GAZETTE

UNITED STATES PATENT OFFICE

DECEMBER

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MICRO[illegible] [illegible]VISION

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 6, 1966 Volume 833 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1966

Examiner affirmed	189
Examiner affirmed in part	35
Examiner reversed	58
Total	282

Failure To Argue Rejection in Brief

In view of the Notice appearing in 826 O.G. 1060 and entitled, "Appeal Briefs Under Rules 192 and 193(b)," whenever a brief is found to be defective for the reason that an applicant has failed to respond to some ground or grounds of rejection advanced by the Examiner, the Examiner should simply note this fact in the Examiner's Answer and point out which claims are affected thereby. Further treatment of the affected claims in the Answer is unnecessary.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 20, 1966.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Reply by Applicant to Office Action

Effective on the date of publication of this notice in the Federal Register, § 1.111(b) is amended to read as indicated below. This amendment provides that objections or requirements as to form not necessary to further consideration of the claims may be held in abeyance only until patentable subject matter in the application is indicated, rather than until a claim is actually allowed, as was heretofore the case. Since the amendment is procedural only, and makes no substantive change, notice and public hearings are deemed unnecessary.

In § 1.111, paragraph (b) is amended by striking out "a claim is allowed" at the end of the parenthetical matter and inserting in lieu "allowable subject matter is indicated," so that the paragraph, amended, reads as follows:

§ 1.111 *Reply by applicant.*

* * * * *

(b) In order to be entitled to reexamination or reconsideration, the applicant must make request therefor in writing, and he must distinctly and specifically point out the supposed errors in the examiner's action; the applicant must respond to every ground of objection and rejection in the prior office action (except that request may be made that objections or requirements as to form not necessary to further consideration of the claims be held in abeyance until allowable subject matter is indicated), and the applicant's action must appear throughout to be a bona fide attempt to advance the case to final action. A general allegation that the claims define invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section.

* * * * *

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6, 131, 132)
Dated: October 24, 1966.

EDWIN L. REYNOLDS,
Acting Commissioner.

Approved:
J. HERBERT HOLLOMAN,
Assistant Secretary for Science and Technology.

[F.R. Doc. 66-11834; Filed, Oct. 31, 1966; 8:45 a.m.]

Published in 31 F.R. 13944, Nov. 1, 1966

Board of Appeals Hearings

Effective January 1, 1967, examiners will be permitted to attend Board of Appeals hearings in cases related to their technology. Not more than two examiners will attend any one hearing, and they will be present as observers only.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 2, 1966.

Hand Delivery of Duplicate Copy of Papers by Attorney

In further implementation of the Notice in 829 O.G. 1755 concerning discontinuation of the practice of hand delivery by attorneys or others of officially date-stamped papers, it is directed that the Examiners promptly consider and take appropriate action on the hand-delivered duplicate copy of such papers filed in a case after final action.

The effect of such consideration and action should be communicated to applicant or his representative at the earliest practicable time to clarify the status of the case as to the necessity for filing an appeal. If requested, at the conclusion of an interview, it would be appropriate for the Examiner to indicate on the attorney's copy and the Office duplicate copy any agreement reached and to initial and date both copies.

Actual clerical entry of amendatory matter usually will require the presence in the file of the original paper; however, pending receipt of the original, examiner and clerical processing of the application should proceed, based on the duplicate copy, as far as practicable in the circumstances of each case.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 9, 1966.

New Applications Received During October 1966

Patents	7539
Designs	381
Plant Patents	7
Reissues	17
Total	7944

Issue—December 6, 1966

Patents	1481	No. 3,289,212 to No.	3,290,692, incl.
Designs	54	No. 206,370 to No.	206,423, incl.
Plant Patents	3	No. 2,688 to No.	2,690, incl.
Reissues	4	No. 26,119 to No.	26,122, incl.
Total	1542		

Disclaimers

3,003,044.—*Frank A. Davis*, Flat Rock, and *Harold H. Loschs*, Greenwood, Ind. DELAY ELECTRIC SWITCH. Patent dated Oct. 3, 1961. Disclaimer filed Nov. 1, 1966, by the inventors.

Hereby enter this disclaimer to claims 1, 2, 3 and 6 of said patent.

3,180,088—*Paul W. Tillisch*, Antioch, and *Albert P. Rafaelli*, Concord, Calif. JOINT STRUCTURE FOR PLASTER BOARD, Patent dated Apr. 27, 1965. Disclaimer filed October 12, 1966, by the assignee, *Kaiser Gypsum Company, Inc.*

Hereby enters this disclaimer to claims 1, 2, 3, 4 and 8 of said patent.

Foreign Patents Received in the Scientific Library as of October 31, 1966

Source	Date received	Highest Number
Australia:		
(*Abstracts*)	Oct. 18, 1966	4,511/66
(*Patents*)	Oct. 17, 1966	260,028
Austria	Oct. 17, 1966	249,650
Belgium	Oct. 18, 1966	643,000
Canada	Oct. 28, 1966	745,395
Czechoslovakia	Oct. 31, 1966	117,750
Denmark	Sept. 14, 1966	104,225
East Germany	Oct. 17, 1966	50,350
Egypt	Dec. 14, 1965	5,228
Finland	June 24, 1966	35,249
France:		
(*Patents*)	Oct. 3, 1966	1,442,050
(*Additions*)	Oct. 3, 1966	87,100
(*Medicaments*)	Sept. 2, 1966	2,600 M
(*Additions*)	Apr. 18, 1966	86 CAM
Germany:		
(*Auslegeschriften*)	Oct. 18, 1966	1,220,800
(*Patents*)	Oct. 18, 1966	1,208,629
Great Britain	Oct. 26, 1966	1,045,007
India	Oct. 27, 1966	96,993
Ireland	July 6, 1966	24,850
Italy	Dec. 27, 1965	650,000
Japan	Oct. 25, 1966	17,560/66
Netherlands:		
(*Octrooiaanvragen*)	Sept. 22, 1966	7,027/66
(*Patents*)	Oct. 15, 1966	121,157
Norway	Oct. 25, 1966	109,306
Pakistan	Feb. 8, 1964	112,446
Philippine Republic	Apr. 18, 1962	458
Poland	Oct. 25, 1966	51,887
Rumania	Oct. 26, 1966	45,699
Sweden	Sept. 7, 1966	206,240
Switzerland	Oct. 26, 1966	409,328
U.S.S.R.	Oct. 18, 1966	183,110

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,562/1951
Ireland: First received 10,000/1929
Italy: First 248,000 incomplete
Rumania: First received 40,350/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1953
Latest 16,461/1941

Patents Available for Licensing or Sale

2,911,219. CAMERA DOLLY WITH DIFFERENTIAL STEERING MECHANISM. Stanley B. Kumler, Box 429, Glenhaven, Calif., 90443.

2,997,210. MICROFILM ELECTRIC HEATERS. Frank C. Walz, et al. Correspondence to: Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,215,006. ADHESIVE-STRIP APPLYING APPARATUS. Inland Paper Products Corp., Brooklyn, N.Y. Correspondence to: Karl F. Ross, 305 Broadway, New York, N.Y., 10007.

3,215,917. ELECTRICALLY-DRIVEN TIMING DEVICE. Willard H. Buck. Correspondence to: Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,253,822. SHAFT FURNACE. Kolsch-Folzer-Werke, Siegen/Westphalia, Germany. Correspondence to: Michael S. Striker, 280 Lexington Ave., New York, N.Y., 10017.

3,250,427. LEVERAGE SEAT LIFTS. Ray S. Wiest, Binghamton, N.Y. Correspondence to: James C. Wray, 1204 Munsey Bldg., Washington, D.C., 20004.

3,289,459. EXTENSIVE SURFACE HEAT EXCHANGER. Dragoljoub Popovitch, 37 Myers Ave., Denville, N.J., 07834.

3,276,110. IMPACT DEVICE FOR REMOVING A TOOTH FROM EXCAVATING APPARATUS. Elmer Denman, Route 1, Box 306, Lincoln, Calif., 95648.

The following 2 patents are offered by: Charles De John, 35 Beverly Road, West Caldwell, N.J., 07006.

2,992,052. SELF SEALING PISTON.

3,267,790. DEVICE FOR PRODUCING VIBRATO IN MUSICAL INSTRUMENTS.

General Electric Company is prepared to grant non-exclusive licenses under the following 29 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Metallurgical Division, Waterford, N.Y., 12188.

3,159,668. POLYMERIC ORGANIC SILICON COMPOUND.

Applications for license under the following 5 patents may be addressed to: Patent Counsel, Metallurgical Products Department, General Electric Company, Box 237—GPO, Detroit, Mich., 48232.

3,138,434. DEPOSITION METHOD OF FORMING A PYROLYTIC GRAPHITE ARTICLE.

3,138,435. DEPOSITION APPARATUS AND METHOD FOR FORMING A PYROLYTIC GRAPHITE ARTICLE.

3,167,449. METHOD OF FORMING CARBON COATING.

3,206,327. PHOSPHATE IMPREGNATED GRAPHITE AND METHOD.

3,206,331. METHOD FOR COATING ARTICLES WITH PYROLYTIC GRAPHITE.

Applications for license under the following 7 patents may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

2,710,880. WINDING TRANSPOSITIONS FOR ELECTRICAL APPARATUS.

2,777,108. ELECTRIC CURRENT RECTIFIERS.

2,875,399. MEANS FOR PROTECTING TRANSITION IMPEDANCES.

2,883,612. AUTOTRANSFORMER TAP CHANGING CONNECTION.

2,959,754. ELECTRICAL REACTOR.

3,014,189. ELECTRICAL REACTOR WITH MAGNETIC SHIELDING.

3,096,390. FLUID SYSTEM.

Applications for license under the following 7 patents may be addressed to: Division Patent Counsel, Information Systems Division, General Electric Company, 3000 Holiday Drive, Charlottesville, Va., 22901.

3,124,675. PHOTOELECTRIC TAPE READER.

3,124,804. ELECTROSTATIC RECORDING HEAD.

3,172,611. TAPE REELER.

3,185,911. CONTROL CIRCUIT FOR TAPE DRIVE MECHANISM.

3,261,566. TAKEUP FOR ACCOMMODATING SLACK AND TENSION VARIATIONS.

3,265,900. TAPE READER WITH INPUT CLIPPING CIRCUIT INCLUDING PHOTOSENSITIVE MEANS.

3,269,626. ADJUSTABLE SUPPORT FOR PRESSURE FIXING ROLLERS.

Applications for license under the following 9 patents may be addressed to: Patent Counsel, Major Appliance and Hotpoint Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,263,459. CLUTCH MECHANISM FOR A WASHING MACHINE.

3,263,914. WASHING MACHINE.

3,267,492. TRIM STRIP.

3,269,027. HUMIDITY-RESPONSIVE AUTOMATIC DRYER CONTROL SYSTEM.

3,269,499. SPEED RESPONSIVE COIL CLUTCH WITH EDDY CURRENT PILOT BRAKE.

3,269,790. RACK STRUCTURE FOR DISHWASHER.

3,272,011. RESERVOIR EMPTY INDICATOR.

3,275,344. MISALIGNMENT COMPENSATING COUPLING.

3,274,472. TWO SPEED INDUCTION MOTOR.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 24, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-3-63	10-10-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Aso; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	8-31-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-1-63	8-21-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-5-63	2-2-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-2-63	8-3-62
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-5-64	4-25-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	2-13-63	6-12-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-13-63	7-31-61
PHYSICS, GROUP 260—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	10-26-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	5-15-65	2-8-65

Total number of pending applications (excluding Designs)	195,508
Total number of Design applications pending	4,290
Total number of applications awaiting action (excluding Designs)	143,916
Total number of Design applications awaiting action	2,461
Date of oldest new application awaiting action	Feb. 5, 1963
Date of oldest amended application awaiting action	June 12, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents: Numbers 2,490,011 to 2,492,943, inclusive
Plant Patents: Numbers 904 to 910, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-64	5-22-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7-1-64	3-26-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-2-64	3-22-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-7-65	10-31-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-10-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-6-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE OTTO VON SCHICKH

No. 7530. Decided July 7, 1966

[53 CCPA —; 362 F.2d 821; 150 USPQ 300]

1. PATENTABILITY—PROCESS—UNEXPECTED RESULT FROM PROCESS TREATED AS UNEXPECTED PROPERTY IN COMPOSITION—35 U.S.C. 103.

"Even assuming the process to be prima facie obvious from a consideration merely of the reactants, media, and steps employed, we think the invention as a whole must be deemed unobvious under 35 U.S.C. 103 by reason of the increase in yield obtained while using considerably less nitrating acid. We find no suggestion of this characteristic of the claimed process. It appears to be quite unexpected and, being part of the invention as a whole, it should be treated under the law as is an unexpected property in compositions. See *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43."

2. SAME—AFFIDAVIT—OBVIOUSNESS—NON-SIGNIFICANT VARIATIONS IN COMPARATIVE TESTS.

"On the question of whether appellant's affidavit proves the improved yield as alleged, we agree with the Board that the experiments are not *strictly* comparable, but we are unable to agree that the deviations referred to are fatal to appellant's case. For example, in view of the large molar excesses of acid employed in all the experiments, we fail to see the significance of the Board's point that in Experiment 1, which relates to the Kornblum et al. process, the amount of nitric and sulfuric acids is the same while in Experiment 3, illustrating appellant's invention, it is not. We believe the amount by which they differ in Experiment 3 to be insignificant. At least the record fails to convince us that such a difference is significant. Furthermore, it is noted that the amount of both sulfuric and nitric acid is much less in appellant's invention than in the prior art process. As to the ten degree differential in temperatures, this would seem to hinder appellant's process since the higher temperature would, we think, drive the reaction toward the unwanted competitive reaction of oxidising the alcohol to the ketone, as appellant points out."

3. SAME—PARTICULAR SUBJECT MATTER—"PRODUCTION OF CYCLOALIPHATIC NITRATES."

The refusal of certain claims in an application entitled "Production of Cycloaliphatic Nitrates," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 640,334.

REVERSED.

Herbert B. Keil, Matthew C. Thompson for appellant.

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection of process claims 8–13 and 16 in application Serial No. 640,334, filed February 15, 1957, for "Production of Cycloaliphatic Nitrates." No claim is allowed.

The invention is an improved process for the direct nitration of cycloaliphatic alcohols and becomes clear from a consideration of the claims:

8. A process for the production of cycloaliphatic nitrates from cycloaliphatic alcohols which comprises dissolving a cycloaliphatic alcohol in an inert solvent, mixing the resultant solution with a nitrating acid at a temperature in the range of from about —40° C. to about 20° C., agitating the mixture, and thereafter removing the solvent to recover said cycloaliphatic nitrate.

Claims 9–13 are dependent on claim 8 and add limitations to specific alcohols and resulting nitrates, for example cyclohexanol resulting in cyclohexanol nitrate, as in claim 10. Claim 16 is the same as claim 8 except that the temperature range is from −10° C. to −5° C. and the nitrating acid is defined as "consisting of one part nitric acid and at least about one part sulfuric acid." According to the specification, the "nitrating acid" is a mixture of concentrated nitric acid and concentrated sulfuric acid, whereby an amount of "about 1 part nitric acid to 1, 2, 3, or more parts of sulfuric acid may be employed."

The references relied on are:

Kokatnur, 2,435,314, February 3, 1948.
Kornblum et al., Journal American Chemical Society, 74, page 3077 (1952).

Another reference, relied on by the Examiner, was dropped by the Board as "less pertinent."

Kornblum et al., discussed in appellant's specification, appears to represent one of the first reports of *directly* nitrating cycloaliphatic alcohols. This reference discloses the production of cyclopentyl nitrate by introducing cyclopentanol into a stirred solution of sulfuric and nitric acids, at approximately −20° C., over a period of thirty minutes. The mixture was stirred for a further fifteen minutes and petroleum ether was added. After stirring for another five minutes, the mixture was poured onto crushed ice. The organic layer was separated, washed with phosphoric acid and dried over anhydrous sodium sulfate. After removal of the petroleum ether the residue was rectified and a *69% yield* of cyclopentyl nitrate was obtained. No mention is made by Kornblum et al. of dissolving the cyclopentyl alcohol in an inert solvent prior to mixing it with the nitrating acids, in which respect the appealed claims distinguish therefrom.

Kokatnur discloses a method of nitrating organic compounds, especially aromatic compounds, by carrying on the nitration reaction in combination with a diluent which is substantially inert to the reacting materials, is substantially immiscible with water, has a suitable boiling point and is *preferably a solvent for the compound to be nitrated* as well as the product of nitration. Except for glycerine, none of the compounds to be nitrated are alcohols. Certain of the diluents disclosed correspond to the inert solvents employed by appellant.

The Board said:

> After review of the references and arguments submitted, we are constrained to affirm the rejection of the appealed claims as unpatentable over Kornblum et al. in view of Kokatnur. Kokatnur's diluent is described as inert and is a solvent for the compound being nitrated. While this diluent is vaporized during use in Kokatnur's process, the vapors are condensed and refluxed to the reaction zone so that some diluent is always present in the reaction zone. In view of this suggestion in Kokatnur of the use of a diluent which functions as an inert solvent in a nitrating reaction and in further view of the fact noted on page 5 of the Examiner's answer, that it is fundamental in chemistry that a solvent will moderate a reaction, we are of the view that it would not be unobvious to one skilled in the art to use an inert solvent in Kornblum et al.'s process.
>
> We have considered appellant's affidavit but are not persuaded thereby to reach a conclusion different from that above indicated. While the affidavit shows improved yields, the several experiments are not strictly comparable. Thus, in Experiment 3 the process was conducted at a higher temperature than in Experiment 1 and in Experiment 3 the sulfuric acid was used in greater volume than the nitric acid, whereas in Experiment 1 the two acids were used in equal volumes.

The affidavit referred to sets forth three experiments: the first is essentially a repetition of Kornblum et al.'s disclosure; the second is the same as the first except that only one-half as much nitric acid and one-half as much sulfuric acid are used, resulting in about one-half the yield; and the third illustrates the present invention wherein about one-third as much sulfuric acid was used as was used by Kornblum et al., a *95% yield* being obtained, i.e., about 35% improvement in yield compared with Kornblum et al. even though much less nitrating acid was employed.

Since we think the art of record fails to suggest both what appellant *did* in terms of carrying out the process per se, and what appellant *found* in terms of an improvement in yield, and since we are unable to agree with the Board's criticism of appellant's affidavit which otherwise proves statements in the specification alleging these improvements over the prior art, we think the decision of the Board should be reversed.

As we view the prior art relied on, Kornblum et al. show that cycloaliphatic alcohols can be *directly* nitrated without great quantities of the alcohol being oxidized to the corresponding ketone or acid—a problem which apparently then went unsolved. However, Kornblum et al.'s procedure was not free from difficulty. Low temperatures were required—the reaction was said to be uncontrollable at 0° C.—and great lengths of time as well as great quantities of nitrating acid were needed.

Kokatnur was interested in the nitration of organic compounds, but not cycloaliphatic alcohols, indeed, not alcohols at all except for glycerine. His primary interest was in nitrating aromatic compounds. But regardless of the type of compounds being nitrated, what Kokatnur did was to reduce local superheating, thereby controlling or moderating the reaction rate, *by eliminating the need for sulfuric acid* commonly used in nitrating reactions to absorb the water produced from the reaction. This absorption aided in driving the reaction to completion but, in so doing, caused localized heating which in turn caused undesirable effects. Thus, Kokatnur *replaced* the sulfuric acid with a diluent or solvent to form an azeotropic mixture with the water of reaction thereby removing that water at a relatively low temperature. Apparently Kokatnur's high yields can be attributed to this efficient removal of water.

The Examiner and Board ignore the bulk of Kokatnur's disclosure and emphasize instead a few selected passages from which they generalize that Kokatnur was concerned with moderating a nitration reaction and that he employs a solvent which would dissolve the material being nitrated—all of which is perfectly true—and then conclude that it would be obvious to use Kokatnur's solvents in the reaction of Kornblum et al. With this we disagree.

What we think the combination of references teaches is to *eliminate* the use of sulfuric acid in Kornblum et al. and use a solvent *instead*. It might even be said that the combination suggests the employment of an azeotropic mixture in the Kornblum et al. process. Any way one looks at it, the result is certainly *not* what appellant has done, for the claimed process uses sulfuric acid *in addition to* the organic solvent. We find no suggestion of this in the references.

[1] Even assuming the process to be prima facie obvious from a consideration merely of the reactants, media, and steps employed, we think the invention as a whole must be deemed unobvious under

35 U.S.C. 103 by reason of the increase in yield obtained while using considerably less nitrating acid. We find no suggestion of this characteristic of the claimed process. It appears to be quite unexpected and, being part of the invention as a whole, it should be treated under the law as is an unexpected property in compositions. See *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43.

[2] On the question of whether appellant's affidavit proves the improved yield as alleged, we agree with the Board that the experiments are not *strictly* comparable, but we are unable to agree that the deviations referred to are fatal to appellant's case. For example, in view of the large molar excesses of acid employed in all the experiments, we fail to see the significance of the Board's point that in Experiment 1, which relates to the Kornblum et al. process, the amount of nitric and sulfuric acids is the same while in Experiment 3, illustrating appellant's invention, it is not. We believe the amount by which they differ in Experiment 3 to be insignificant. At least the record fails to convince us that such a difference *is* significant. Furthermore, it is noted that the amount of both sulfuric and nitric acid is much less in appellant's invention than in the prior art process. As to the ten degree differential in temperatures, this would seem to hinder appellant's process since the higher temperature would, we think, drive the reaction toward the unwanted competitive reaction of oxidizing the alcohol to the ketone, as appellant points out.

In summary, viewing both what appellant did and what he obtained in light of the prior art relied on, we conclude that the invention as a whole is unobvious within the meaning of 35 U.S.C. 103.

[3] The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, and SMITH, *J.*, concur in the result.

In the United States Patent Office Before the Board of Appeals

EX PARTE CHARLES A. LANCASTER AND SYDNEY STEIN

Appeal No. 391—26. Decided October 29, 1965

1. DESIGN—EFFECT OF FOREIGN DESIGN REGISTRATION.

"* * * in a large number of countries ornamental designs for articles of manufacture are protected by a simple registration procedure. An application is filed together with drawings or photographs or samples and registration is effected forthwith. The term 'patent' is not used in many countries with respect to the protection of these designs. The practice in the United States Patent Office has been to consider these design registrations as having the same effect as design patents in various places of the patent law where foreign applications or patents are referred to."

2. SAME—PATENTABILITY—STATUTORY BAR UNDER 35 U.S.C. 102(d) AND 172.

Upon considering the effect of an application for an ornamental design registered in Canada more than six months prior to a United States application for a patent on the design, *Held* that "It is our opinion that the registration in Canada is in the nature of a patent and hence the claim is unpatentable on the ground of statutory bar under 35 U.S.C. 102(d) as modified by U.S.C. 172."

APPEAL from the Examiner (Edwin H. Hunter) of Group 490. Serial No. D-70,424.

AFFIRMED.

Spencer L. Blaylock, Jr. and *W. A. Schaich* for appellants.

Before BAILEY and BREWRINK, *Examiners-in-Chief* and REYNOLDS, *Acting Examiner-in-Chief*

REYNOLDS, *Acting Examiner-in-Chief.*

This is an appeal from the final rejection of the following claim for an ornamental design.

The ornamental design for a bottle substantially as shown and described.

No reference has been relied upon.

The claim has been rejected on the ground of the statutory bar of 35 U.S.C. 102(d) as modified by 35 U.S.C. 172. The record of this case discloses that appellants acknowledged in the original oath filed in this application that an application on this design had been filed for registration in Canada. As the date on which such application was filed in Canada was not given as required by Rule 65, a new oath was required. The new oath discloses that the application was filed July 20, 1961 and was registered on October 23, 1961. This application was filed in the United States on June 5, 1962. Since this application was not filed in the United States within six months after it was filed in Canada, the Examiner rejected the application on the ground of statutory bar under 35 U.S.C. 102(d) as modified by 35 U.S.C. 172.

Appellants state on page 2 of the brief:

"Section 102(d) provides that a person shall be entitled to a patent unless the invention was first patented or caused to be patented by the applicant or his legal representative or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States. This provision is reduced to six months in the case of design application by 35 U.S.C. 172. The critical provisions of this statute are that the 'invention was first *patented* or caused to be *patented*.'"

Appellants further state on pages 2 and 3 of brief:

"The question is now whether the Canadian design registration possesses the characteristics of a patent; since if it is not a patent under either United States or Canadian definition, it could not be the basis for a statutory bar under 102(d). In other words, if the Canadian design does not constitute the grant of a patent to its owner, then such Canadian design registration cannot form the basis for a statutory bar against the granting of a United States design patent on such a design application.

"In part one of chapter 150, the Canadian Revised Statute of 1952; an Act Respecting Industrial Designs and Union Labels, the design is registered if the Canadian Office finds that the design is not identical with, or does not so closely resemble, any other design already registered as to be confounded therewith. This test for registration of a design, which is found in part one, section six, is in the nature of a trademark rather than a patent. The proprietor, as indicated in section 11, may prevent the sale of such design or a fraudulent imitation thereof by another. An action may be maintained by the proprietor of such design for an unauthorized sale or imitation of such design.

"It is submitted that a Canadian industrial design registration is not a grant of a patent, but rather is in the nature of a trademark registration. It is submitted, therefore, that the grant of the Canadian design registration prior to the filing of a United States design application does not fall within the provisions of section 102(d). Accordingly, the rejection on the basis of the statutory bar should be withdrawn."

We have considered the claim in the light of the Examiner's position and the arguments advanced by appellants, but we agree with the Examiner that the claim is unpatentable on the ground of statutory bar under 35 U.S.C. 102(d) as modified by 35 U.S.C. 172, which read as follows:

"102. A person shall be entitled to a patent unless—

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States . . ."

35 U.S.C. 103 by reason of the increase in yield obtained while using considerably less nitrating acid. We find no suggestion of this characteristic of the claimed process. It appears to be quite unexpected and, being part of the invention as a whole, it should be treated under the law as is an unexpected property in compositions. See *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43.

[2] On the question of whether appellant's affidavit proves the improved yield as alleged, we agree with the Board that the experiments are not *strictly* comparable, but we are unable to agree that the deviations referred to are fatal to appellant's case. For example, in view of the large molar excesses of acid employed in all the experiments, we fail to see the significance of the Board's point that in Experiment 1, which relates to the Kornblum et al. process, the amount of nitric and sulfuric acids is the same while in Experiment 3, illustrating appellant's invention, it is not. We believe the amount by which they differ in Experiment 3 to be insignificant. At least the record fails to convince us that such a difference *is* significant. Furthermore, it is noted that the amount of both sulfuric and nitric acid is much less in appellant's invention than in the prior art process. As to the ten degree differential in temperatures, this would seem to hinder appellant's process since the higher temperature would, we think, drive the reaction toward the unwanted competitive reaction of oxidizing the alcohol to the ketone, as appellant points out.

In summary, viewing both what appellant did and what he obtained in light of the prior art relied on, we conclude that the invention as a whole is unobvious within the meaning of 35 U.S.C. 103.

[3] The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, and SMITH, *J.*, concur in the result.

In the United States Patent Office Before the Board of Appeals

EX PARTE CHARLES A. LANCASTER AND SYDNEY STEIN

Appeal No. 391—26. Decided October 29, 1965

1. DESIGN—EFFECT OF FOREIGN DESIGN REGISTRATION.

"* * * in a large number of countries ornamental designs for articles of manufacture are protected by a simple registration procedure. An application is filed together with drawings or photographs or samples and registration is effected forthwith. The term 'patent' is not used in many countries with respect to the protection of these designs. The practice in the United States Patent Office has been to consider these design registrations as having the same effect as design patents in various places of the patent law where foreign applications or patents are referred to."

2. SAME—PATENTABILITY—STATUTORY BAR UNDER 35 U.S.C. 102(d) AND 172.

Upon considering the effect of an application for an ornamental design registered in Canada more than six months prior to a United States application for a patent on the design, *Held* that "It is our opinion that the registration in Canada is in the nature of a patent and hence the claim is unpatentable on the ground of statutory bar under 35 U.S.C. 102(d) as modified by U.S.C. 172."

APPEAL from the Examiner (Edwin H. Hunter) of Group 490. Serial No. D-70,424.

AFFIRMED.

Spencer L. Blaylock, Jr. and *W. A. Schaich* for appellants.

Before BAILEY and BREWRINK, *Examiners-in-Chief* and REYNOLDS, *Acting Examiner-in-Chief*

REYNOLDS, *Acting Examiner-in-Chief.*

This is an appeal from the final rejection of the following claim for an ornamental design.

The ornamental design for a bottle substantially as shown and described.

No reference has been relied upon.

The claim has been rejected on the ground of the statutory bar of 35 U.S.C. 102(d) as modified by 35 U.S.C. 172. The record of this case discloses that appellants acknowledged in the original oath filed in this application that an application on this design had been filed for registration in Canada. As the date on which such application was filed in Canada was not given as required by Rule 65, a new oath was required. The new oath discloses that the application was filed July 20, 1961 and was registered on October 23, 1961. This application was filed in the United States on June 5, 1962. Since this application was not filed in the United States within six months after it was filed in Canada, the Examiner rejected the application on the ground of statutory bar under 35 U.S.C. 102(d) as modified by 35 U.S.C. 172.

Appellants state on page 2 of the brief:

"Section 102(d) provides that a person shall be entitled to a patent unless the invention was first patented or caused to be patented by the applicant or his legal representative or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States. This provision is reduced to six months in the case of design application by 35 U.S.C. 172. The critical provisions of this statute are that the 'invention was first *patented* or caused to be *patented*.'"

Appellants further state on pages 2 and 3 of brief:

"The question is now whether the Canadian design registration possesses the characteristics of a patent; since if it is not a patent under either United States or Canadian definition, it could not be the basis for a statutory bar under 102(d). In other words, if the Canadian design does not constitute the grant of a patent to its owner, then such Canadian design registration cannot form the basis for a statutory bar against the granting of a United States design patent on such a design application.

"In part one of chapter 150, the Canadian Revised Statute of 1952; an Act Respecting Industrial Designs and Union Labels, the design is registered if the Canadian Office finds that the design is not identical with, or does not so closely resemble, any other design already registered as to be confounded therewith. This test for registration of a design, which is found in part one, section six, is in the nature of a trademark rather than a patent. The proprietor, as indicated in section 11, may prevent the sale of such design or a fraudulent imitation thereof by another. An action may be maintained by the proprietor of such design for an unauthorized sale or imitation of such design.

"It is submitted that a Canadian industrial design registration is not a grant of a patent, but rather is in the nature of a trademark registration. It is submitted, therefore, that the grant of the Canadian design registration prior to the filing of a United States design application does not fall within the provisions of section 102(d). Accordingly, the rejection on the basis of the statutory bar should be withdrawn."

We have considered the claim in the light of the Examiner's position and the arguments advanced by appellants, but we agree with the Examiner that the claim is unpatentable on the ground of statutory bar under 35 U.S.C. 102(d) as modified by 35 U.S.C. 172, which read as follows:

"102. A person shall be entitled to a patent unless—

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States . . ."

"172. The right of priority provided for by section 119 of this title and the time specified in section 102(d) shall be six months in the case of designs."

[1] Before considering the question involved it must be pointed out that in a large number of countries ornamental designs for articles of manufacture are protected by a simple registration procedure. An application is filed together with drawings or photographs or samples and registration is effected forthwith. The term "patent" is not used in many countries with respect to the protection of these designs. The practice in the United States Patent Office has been to consider these design registrations as having the same effect as design patents in various places of the patent law where foreign applications or patents are referred to.

It is apparent that the present design, paraphrasing the language of section 102(d), has been patented (registered, protected) in Canada on an application filed more than six months prior to the filing of the present application.

We are unable to agree with appellants that the registration in Canada is in the nature of a trademark registration. [2] It is our opinion that the registration in Canada is in the nature of a patent and hence the claim is unpatentable on the ground of statutory bar under 35 U.S.C. 102(d) as modified by U.S.C. 172.

The decision of the Examiner is affirmed.

AFFIRMED.

In the United States Patent Office
Before the Board of Appeals

Appeal No. 239—48. Decided April 30, 1965

1. DESIGN—PATENTABILITY—STATUTORY BAR UNDER 35 U.S.C. 102(d) AND 172.

"Section 172 merely serves to change the twelve months in section 102(d) to six months in the case of designs."

2. SAME—FOREIGN REGISTRATION PROCEDURE—U.S. PRACTICE RE THESE REGISTRATIONS.

"* * * in a large number of countries ornamental designs for articles of manufacture are protected by a simple registration procedure. An application is filed together with drawings or photographs or samples and registration is effected forthwith. The filing may even be in local offices throughout the country, or in a central office. The term 'patent' is not used in many countries with respect to the protection of these designs. The practice in the U.S. Patent Office has been to consider these design registrations as having the same effect as design patents in various places of the patent law where foreign applications or patents are referred to."

3. SAME—REGISTRATION UNDER THE HAGUE AGREEMENT FOR THE INTERNATIONAL DEPOSIT OF DESIGNS.

"The agreement of the Hague for the International Deposit of Designs of November 6, 1925, revised at London on June 2, 1934, provides for an international registration of designs with respect to the countries adhering to this agreement. These countries include Belgium, France, Germany, Netherlands, Spain, Switzerland, and nine others. According to the agreement, a single registration is made at the International Bureau for the Protection of Industrial Property in Geneva. The registration procedure is the simple one of filing an application together with drawings, photographs or specimens. Registration is effected immediately as of the date of application. This international registration does not create or give any substantive rights to the registrant. It is procedural only, as a substitute for the individual national registrations. After the registration is effected it stands in the same position as a national registration confirming or recognizing the same rights that a national registration does, except that the international registration is not effective in the country of the registrant himself (except in Switzerland which by special law makes the international design registrations of its own nationals effective in Switzerland also)."

4. PATENTABILITY—STATUTORY BAR UNDER 35 U.S.C. 102(d)-35 U.S.C. 119.

"The relationship between 102(d) and 119 which appellant asserts does not exist. There are situations in which an application for patent filed in a foreign country cannot serve as a basis for the right of priority for an application filed in the United States in time, while at the same time a patent granted on such application would serve as a bar under 102(d) when the United States application was filed more than a year later (six months in the case of designs) and the patent issued prior to the filing in the United States."

5. DESIGN—PATENTABILITY—STATUTORY BAR UNDER 35 U.S.C. 102(d).

"The second contention made by appellant is that the international registrations referred to may be secret and hence none can be used under 102(d), citing certain decisions. This argument is considered not convincing. In some of the countries which have been mentioned as having design registration systems and in the case of the international registration, the design may be kept secret for a specified period. This secrecy is effective at the option of the applicant for his own purposes and is not imposed by the law or treaty. The decisions cited and others not mentioned are considered irrelevant since they dealt with secret patents or situations in which the specification of a patent was kept secret for a period, the secrecy being imposed by law. Furthermore, it does not appear that appellant's registration in question was a secret registration."

APPEAL from the Examiner. Serial No. D–66,562.

AFFIRMED.

Waters, Roditi and Schwartz and *Alan K. Roberts* for appellant.

Before FEDERICO and ROSA, *Examiners-in-Chief*, and STONE, *Acting Examiner-in-Chief*

FEDERICO, *Examiner-in-Chief*.

This is an appeal from the final rejection of the single claim in an application for a patent for a design for a bottle.

On December 9, 1960, appellant obtained a registration of his design under the provisions of the Agreement of the Hague for the International Registration of Designs, this date being more than six months prior to the filing date of this application. The claim has hence been rejected as being barred by the provisions of 35 U.S.C. 102(d) and 172 which read as follows:

102. A person shall be entitled to a patent unless—

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States . . .

172. The right of priority provided for by section 119 of this title and the time specified in section 102(d) shall be six months in the case of designs.

[1] Section 172 merely serves to change the twelve months in section 102(d) to six months in the case of designs.

Appellant denies that the international registration can be used as a basis for rejection under section 102(b).

[2] Before considering the question involved it must be pointed out that in a large number of countries ornamental designs for articles of manufacture are protected by a simple registration procedure. An application is filed together with drawings or photographs or samples and registration is effected forthwith. The filing may even be in local offices throughout the country, or in a central office. The term "patent" is not used in many countries with respect to the protection of these designs. The practice in the U.S. Patent Office has been to consider these design registrations as having the same effect as design patents in various places of the patent law where foreign applications or patents are referred to. Appellant does not, we understand, ques-

tion this practice with respect to design applications and registrations effected within a country in accordance with the laws of that country.

[3] The Agreement of the Hague for the International Deposit of Designs of November 6, 1925, revised at London on June 2, 1934, provides for an international registration of designs with respect to the countries adhering to this agreement. These countries include Belgium, France, Germany, Netherlands, Spain, Switzerland, and nine others. According to the agreement, a single registration is made at the International Bureau for the Protection of Industrial Property in Geneva. The registration procedure is the simple one of filing an application together with drawings, photographs or specimens. Registration is effected immediately as of the date of application. This international registration does not create or give any substantive rights to the registrant. It is procedural only as a substitute for the individual national registrations. After the registration is effected it stands in the same position as a national registration confirming or recognizing the same rights that a national registration does, except that the international registration is not effective in the country of the registrant himself (except in Switzerland which by special law makes the international design registrations of its own nationals effective in Switzerland also).

It is apparent that the present design, paraphrasing the language of section 102(d), has been patented (registered, protected) not only in one, but in a number of different foreign countries on an application filed more than six months prior to the filing of the present application.

Appellant presents essentially two arguments. The first associates section 102(d) with section 119 and assumes that a right of priority under section 119 could not be based upon the international registration application, assuming the U.S. application to have been filed in time, and in view of this the international registration cannot be considered under section 102(d). It is unnecessary to discuss the arguments asserted by the appellant for asserting that an international design registration application could not serve as a basis for the right of priority since this is considered wholly irrelevant. [4] The relationship between 102(d) and 119 which appellant asserts does not exist. There are situations in which an application for patent filed in a foreign country cannot serve as a basis for the right of priority for an application filed in the United States in time, while at the same time a patent granted on such application would serve as a bar under 102(d) when the United States application was filed more than a year later (six months in the case of designs) and the patent issued prior to the filing in the United States. A simple example is as follows: An application for patent is filed in Argentina and within one year an application for patent is filed in the United States; the right of priority under section 119 does not apply, since Argentina is not a country with which the required relationship exists. However, if the United States application is filed more than one year after the application in Argentina and the invention has been patented in Argentina prior to the U.S. filing, the bar under 102(d) is applicable.

[5] The second contention made by appellant is that the international registrations referred to may be secret and hence none can be used under 102(d), citing certain decisions. This argument is considered not convincing. In some of the countries which have been mentioned as having design registration systems and in the case of the international registration, the design may be kept secret for a specified period. This secrecy is effective at the option of the applicant for his own purposes and is not imposed by the law or treaty. The decisions cited and others not mentioned are considered irrelevant since they dealt with secret patents or situations in which the specification of a patent was kept secret for a period, the secrecy being imposed by law. Furthermore, it does not appear that appellant's registration in question was a secret registration.

The decision of the Examiner is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE HANS HILMER, GERHARD KORGER, RUDI WEYER, AND WALTER AUMULLER

No. 7482. Decided April 28, 1966

[53 CCPA —; 359 F.2d 859; 149 USPQ 480]

1. PATENTABILITY—STATUTORY BASIS FOR REJECTION—NO DISTINCTION BETWEEN CLAIMED AND UNCLAIMED SUBJECT MATTER IN REFERENCE PATENT—35 U.S.C. 102(e).

"As we see the facts here * * * the Board relied on subject matter *not* claimed [in the reference patent]. We regard the restriction as without legal significance because: (1) *Alexander Milburn Co.* v. *Davis-Bournonville Co.* * * * creating the rule of 35 U.S.C. 102(e), here relied on as basic support for rejection, abolished the distinction between claimed and unclaimed disclosure * * *."

2. PATENT—BENEFIT OF FOREIGN FILING DATE—USE OF PATENT—35 U.S.C. 154.

"A patent may be 'entitled' to a foreign filing date for some purposes and not for others, just as a patent may be 'used' in two ways. A patent owner uses his patent as a legal right to exclude others, granted to him under 35 U.S.C. 154. Others, wholly unrelated to the patentee, use a patent, not as a legal right, but simply as evidence of prior invention or prior art, i.e., as a 'reference.' This is not an exercise of the patent right. This is how the Patent Office is 'using' the Habicht patent. These are totally different things, governed by different law, founded on different theories, and developed through different histories."

3. PATENTABILITY—STATUTORY BASIS FOR REJECTION—35 U.S.C. 102—SECTION 102(e).

"Section 102 has been aptly described * * * as containing 'patent defeating provisions.' They fall into two classes, events prior to an applicant's date of *invention* and events prior to filing his U.S. *application*, related respectively to the requirement of novelty and to provisions for loss of right through delay in filing after certain events have made the invention public. Subsection (e) is one of the novelty provisions, one of the 'conditions for patentability,' and if the facts of an applicant's case bring him within it, his right to a patent is defeated."

4. SAME—ANTEDATING OF REFERENCE—STATUTORY BASIS FOR REJECTION—35 U.S.C. 102(e) AND 119.

"Thus, though both references here were patents copending with appellants' application, issuing after it was filed, 102(e) makes them available as of their U.S. filing dates which are earlier than appellants' U.S. filing date. However, since 102(e) refers to the applicant's *date of invention*, not to his filing date, he is entitled to an opportunity to establish his date of invention to show that his invention possessed *statutory* novelty when he made it. In this case appellants did this by showing that they filed a German application earlier than the U.S. filing dates of the references, specified in 102(e), and that they were entitled to its date for 'priority' under section 119."

5. PATENTABILITY—REFERENCE—EFFECT OF U.S. REFERENCE PATENT FOREIGN FILING DATE—COMMISSIONER'S NOTICE OF MAY 27, 1964.

"May 27, 1964, a Commissioner's Notice issued (published June 9, 1964, 803 O.G. 305) revoking a very long-standing section of the Manual of Patent Examing Procedure (MPEP), 715.01, 'Reference Claims Foreign Filing Date,' based on a Commissioner's decision of May 9, 1935, *Viviani* v. *Taylor* v. *Herzog*,

72 USPQ 448, and providing that an applicant need not antedate the foreign filing date of a reference. The notice stated that 'foreign filing date is considered the effective date in those situations where claimed subject matter of the domestic patent (or disclosed matter related thereto) is being used as the basis for rejection, and where no question of interference exists.'"

6. SAME—SAME—SAME—*Ex parte Zemla* CONSTRUED.

"July 31, 1964, decision rendered by the Board of Appeals in *Ex parte Zemla*, supra, opinion by Examiner-in-Chief Kreek, joined by Examiner-in-Chief Friedman and Acting Examiner-in-Chief Andrews, holding that a U.S. patent 'may be used for all that it discloses as of the date that the same disclosure was made in a foreign country under the Convention.' No mention is made of restriction to claimed subject matter or of any interference situation. The basis of the decision is a verbatim copy of the key segment of the *Hilmer* board opinion, but the limitations of the *Hilmer* decision are omitted and *Hilmer* is, of course, not mentioned."

7. SAME—SAME—SAME—*Ex parte Rapala* CONSTRUED.

"September 18, 1964, decision rendered by the Board of Appeals in *Ex parte Rapala* (unpublished, Appeal No. 225-56, heard June 25, 1964), opinion by Examiner-in-Chief Federico joined by Examiner-in-Chief Rosa and Acting Examiner-in-Chief Stone. The opinion substantially duplicates the contents of *Hilmer*, contains the legal discussion used in *Zemla*, but like the latter does not limit the use of the disclosure of the U.S. patent held effective as of its British priority date to claimed subject matter or disclosure 'relevant to' it."

8. SAME—SAME—SAME—*Lilly* v. *Brenner* CONSTRUED.

December 20, 1965, opinion of the District Court, District of Columbia, in *Lilly* v. *Brenner*, 147 USPQ 442-470. This was a suit under 35 U.S.C. 145 to review the decision of the Board in *Ex parte Rapala*, supra, and so far as we know is the last item to date in the general picture. The opinion adopted by the District Court supports the granting of a summary judgment requested by the Patent Office dismissing Lilly's complaint. On the question of law presented, namely, the effective date of a single U.S. patent cited as a reference to support a rejection under 35 U.S.C. 103 for obviousness, the court agreed with the Patent Office that the effective date was the convention filing date in Great Britain, a date the applicant could not overcome. Had the reference been held effective only as of its actual date of filing in the United States, as plaintiff urged, the Patent Office motion for summary judgment would have been denied. We have most carefully studied this opinion as it is the most recent decision dealing with all of the arguments which have been brought to bear on this problem, contributing not a few new ones. We cannot agree with it.

9. SAME—SAME—SAME—*In re Walker* CONSTRUED.

Held, with respect to *In re Walker* (an appeal from the decision in *Ex parte Blumlein* below, the applicant Blumlein having died prior to appeal to the court), "We therefore have in this *Walker-Blumlein* case decisions by *both* the Board and this court that as to non-interfering subject matter the foreign priority date of a U.S. reference patent is of 'no consequence' and that only the United States filing date has to be overcome."

10. SAME—SAME—SAME—SAME.

"* * * appellants here rely on *Walker* and accurately state what happened in *Blumlein* and in *Walker*, contending it is precedent supporting their contention 'that the domestic filing date of a patent obtained by a foreign applicant is the critical date to be considered when it is desired to use the patent for anticipation purposes,' that is, as an ordinary prior art reference. We fully agree. For the same reasons, we disagree with the *Lilly* opinion (USPQ at 466) where it says: 'the [Walker] case does not really support plaintiff's position.'"

11. SAME—SAME—SAME—35 U.S.C. 119.

"* * * we note first that there is in the very words of the statute [35 U.S.C. 119] a refutation of this literalism. It says 'shall have the same effect' and it then says 'but' for several situations it shall *not* have the same effect, namely, it does not enjoy the foreign date with respect to any of the patent-defeating provisions based on publication or patenting anywhere in the world or public use or being on sale in this country *more than one year before the date of actual filing in this country*."

12. SAME—SAME—SAME—35 U.S.C. 102(b) AND 119.

These patent-defeating one-year time-bars are also contained in 35 U.S.C. 102(b) (formerly R.S. 4886) and have always been included in 119 (formerly R.S. 4887) to assure that it would *not* have the "same effect" if giving effect to a priority date would avoid these time-bars.

13. SAME—SAME—SAME—35 U.S.C. 102(e) AND 119.

"The great logical flaw we see in the Board's reasoning is in its premise (or is it an a priori conclusion?) that 'these two provisions [35 U.S.C. 102(e) and 119] must be read together.' Doing so, it says 119 in effect destroys the plain meaning of 102(e) but the Board will not indulge the reverse construction in which the plain words of 102(e) limit the apparent meaning of 119. We see no reason for reading these two provisions together and the Board has stated none. We believe, with the dissenting Board member, that 119 and 102(e) deal with unrelated concepts and further that the historical origins of the two sections show neither was intended to affect the other, wherefore they should not be read together in violation of the most basic rule of statutory construction, the 'master' rule,' of carrying out the legislative intent. Additionally, we have a long and consistent administrative practice in applying an interpretation contrary to the new view of the Board, confirmed by legislation ratification in 1952."

14. SAME—SAME—SAME—35 U.S.C. 119.

"* * * we are clearly of the opinion that section 119 is not to be read as anything more than it was originally intended to be by its drafters, the Commission appointed under the 1898 Act of Congress, namely, a revision of our statutes to provide for a right of priority in conformity with the International Convention, for the benefit of United States citizens, by creating the necessary reciprocity with foreign members of the then Paris Union."

15. SAME—SAME—EFFECT OF U.S. REFERENCE PATENT FILING DATE—35 U.S.C. 102(e).

"We need not go into the reasoning of the *Milburn* case, which has its weaknesses, because all that matters is the rule of law it established: That a complete description of an invention in *a U.S.* patent application, filed before the date of invention of another, if it matures into a patent, may be used to show that that other was not the first inventor. This was a patent-defeating, judge-made rule and now is section 102(e). The rule has been expanded somewhat subsequent to 1926 so that the reference patent may be used as of its U.S. filing date as a general prior art reference, as shown by *In re Harry*, 51 CCPA 1541, 333 F.2d 920, 142 USPQ 164 (1964), and the December 8, 1965 Supreme Court decision in *Haseltine Research, Inc.* v. *Brenner*, 382 U.S. 252, 147 USPQ 429."

16. SAME—SAME—EFFECT OF U.S. REFERENCE PATENT FOREIGN FILING DATE—35 U.S.C. 102(e) AND 119.

"The Board's new view, as expressed in this case and in the *Zemla* and *Rapala* decisions, the latter sustained in *Lilly*, has the practical potential effect of pushing back the date of the unpublished, secret disclosures, which ultimately have effect as prior art references in the form of U.S. patents, by the full one-year priority period of section 119. We think the *Milburn* rule, as codified in section 102(e), goes far enough in that direction. We see no valid reason to go further, certainly no compelling reason."

17. SAME—SAME—SAME—SAME.

"We have seen that section 119 originated in 1903 and that its purpose was to grant protective priority rights so that the United States might be a participating member in the International Convention by giving reciprocal priority rights to foreign applicants with respect to the *obtaining* of patents. We have also seen that section 102(e) was the codification of a court-developed *patent-defeating* rule based on a statutory requirement that an applicant's invention must not have been previously known by others *in this country*. We see no such relation between these two rules of law as requires them to be read together and it is our view that section 119 should not be so read with 102(e) as to modify the express limitation of the latter to applications 'filed in the United States.'"

18. SAME—PRIOR KNOWLEDGE—35 U.S.C. 102(a).

"We noted * * * that section 102(a) refers to knowledge of an invention *in this country* as a patent-defeating provision. This had been interpreted, long before the 1952 codification, to mean public knowledge."

19. SAME—REFERENCE—EFFECT OF U.S. REFERENCE PATENT FOREIGN FILING DATE—35 U.S.C. 102(a), 102(e), 102(g) AND 104.

"It seems clear to us that the prohibitions of 104, the limitations in sections 102(a) and 102(g) to 'in this country,' and the specifying in 102(e) of an application filed 'in the United States' clearly demonstrate a policy in our patent statutes to the effect that knowledge and acts in a foreign country are not to defeat the rights of applicants for patents, except as applicants may become involved in *priority* disputes. We think it follows that section 119 must be interpreted as giving only a positive right or benefit to an applicant who has first filed abroad to *protect him* against possible intervening patent-defeating events in *obtaining* a patent. Heretofore it has always been so interpreted with the minor exceptions, of little value as precedents, hereinafter discussed. So construed, it has no effect on the effective date of a U.S. patent as a reference under section 102(e)."

20. APPLICATION—BENEFIT OF FOREIGN FILING DATE—BENEFIT CREATED BY FIRST FOREIGN FILING AND NOT NATIONALITY OF APPLICANT.

"It is first filing in a foreign convention country that creates the priority right, *not the nationality of the applicant*. It often happens that American inventors domiciled in the United States file abroad before filing here and claim priority rights in their own country as a result."

21. PATENTABILITY—STATUTORY BASIS FOR REJECTION—REFERENCES ARE MERELY EVIDENCE OF STATUTORY GROUND FOR REJECTION.

"The simple observable fact, therefore, is that the effect of section 102(e) is to make a U.S. patent *available* as a reference, as of its U.S. filing date, and that thereafter the rejection of an application, or the holding of invalidity in the case of a patent, is *predicated on* some other section of the statute containing a patent-defeating provision to which the reference applies. Much confused thinking could be avoided by realizing that rejections are *based* on statutory provisions, not on references, and that the references merely supply the *evidence* of lack of novelty, obviousness, loss of right or whatever may be the ground of rejection. In some cases we have examined on this issue, *Walker-Blumlein* for example, the *statutory ground* of rejection was that the applicant was not the first inventor, the *evidence* of that fact being that he lost a count to the same invention, or one patentably indistinguishable from it, in an interference. Yet the 'reference relied on' in *Walker-Blumlein* was the patent granted to Whiteley after the interference, which *patent* had no relevance *as such*. There were similar aspects to the present case prior to the Board's decision."

22. SAME—REFERENCE—EFFECT OF U.S. REFERENCE PATENT FOREIGN FILING DATE—35 U.S.C. 102(e) AND 119.

"R.S. 4887, predecessor of section 119, was in effect from 1903 to 1952 when it was incorporated unchanged in the present statutes. An examination of the legislative history of that statute fails to reveal a scintilla of evidence that it was ever intended to give 'status' to an application or to serve as a patent-defeating provision except insofar as the application, or patent issuing thereon, becomes involved in a priority contest. The *Milburn* rule, under which U.S. patents are used as prior art references for all matter disclosed in them as of their U.S. filing dates has been consistently and continuously applied since its inception in 1926, if not earlier under lower court decisions, by the United States Patent Office, the agency charged with the administration of the patent system, in accordance with the view expressed by the Commissioner of Patents in 1935 in the *Viviani* case. That view was that R.S. 4887, and later section 119, does not make a U.S. patent effective as a reference as of a foreign priority date to which it may be entitled. This view was further actively promulgated by the Patent Office in the *first edition* of its Manual of Patent Examining Procedure, section 715.01, November 1949, and so continued until May 27, 1964, after the expression by the Board of its new view as exemplified in this case."

23. SAME—SAME—SAME—PRIOR DECISIONS CONSTRUED.

"There is no case 'law' on the issue here worth considering. Some seven cases have been cited pro and con, the most that can be found in a period of thirty-four years from 1926 to 1960. We believe they can be accurately summarized as follows: *Van der Horst* is concededly not in point. There are three cases cited as favoring the Board's position here: *Fleischmann* is a doubtful precedent of uncertain meaning where one of two patents on a single invention was invalidated on the basis of a priority date to which the other was held entitled; a single judge in *Young* thought the priority date of a patent was its effective date as a reference, recognizing conflict as between two precedents; a single judge in *Sperry-Rand*, briefed on prior cases in letters from counsel but not on the statutory history, took the same view as the Board here. On the other side there are also three cases: *Viviani* refusing to follow *Fleischmann* and expressly holding that the priority statute does not apply to the effective date of a reference; *Celanese* where a Court of Appeals refused to apply the priority date to a reference and said it is 'immaterial'; and *Walker-Blumlein* where this 5-judge appellate court held that only the domestic filing date of a reference is effective, in which case the Patent Office Solicitor conceded that to be the law."

24. SAME—SAME—SAME—35 U.S.C. 102(a), (e), (g), 104 AND 119.

"If any 'weight of authority' is to be found in this we would say the scales tip more than perceptibly in favor of the restriction of U.S. patents *as references* to their filing dates *in the United States* [rather than to their foreign dates under 35 U.S.C. 119], as stated in section 102(e) and in accordance with 'in this country' limitations of 102(a), (g), and the prohibitions of section 104."

25. STATUTES—STATUTORY CONSTRUCTION—LEGISLATIVE RATIFICATION OF PATENT OFFICE INTERPRETATION—35 U.S.C. 102(e) AND 119.

"This legislative ratification of the interpretation of the statutes by the Patent Office determines the meaning and effect of section 119 for the future. *Helvering* v. *Winmill*, 305 U.S. 79 (1938), *United States* v. *Dakota-Montana Oil Co.*, 288 U.S. 459 (1933). Under that interpretation, section 119 does not affect the express provision of 102(e) as to filing *'in the United States'* and the decision of the Board that the Swiss filing date of Habicht is the effective date of his U.S. patent as a reference must be reversed."

26. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—REMAND.

"Since the Board predicated its affirmance of the Examiner's rejection entirely on its finding that Habicht was available as a reference to show what the statutory prior art was, since we are reversing on that issue, and since we are unable to ascertain the Board's decision, if any, on the other outstanding rejection, we remand this case for clarification of the Board's position on the rejection of claims 10 and 16 as 'unpatentable over' the interference count in view of Wagner et al."

APPEAL from the Patent Office. Serial No. 750,887.

REVERSED AND REMANDED.

Eugene O. Retter, *John Kekich*, *George E. Frost*, *Henry W. Koster* for appellants.

Clarence W. Moore (*Joseph Schimmel* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

The sole issue is whether a majority of the Patent Office Board of Appeals erred in overturning a consistent administrative practice and interpretation of the law of nearly forty years standing by giving a United States patent effect as prior art as of a foreign filing date to which the *patentee* of the reference was entitled under 35 U.S.C. 119.

Because it held that a U.S. patent, cited as a prior art reference under 35 U.S.C. 102(e) and 103, is effective as of its foreign "convention" filing date, relying on 35 U.S.C. 119, the Board affirmed the rejection of claims 10, 16, and 17 of application Serial No. 750,887, filed July 25, 1958, for certain sulfonyl ureas.

This opinion develops the issue, considers the precedents, and explains why, on the basis of legislative history, we hold that section 119 does not modify the express provision of section 102(e) that a reference patent is effective as of the date the application for it was "filed in the United States."

The two "references" relied on are:

Habicht, 2,962,530, Nov. 29, 1960 (filed in the United States Jan. 23, 1958, found to be entitled to priority as of the date of filing in Switzerland on Jan. 24, 1957).

Wagner et al., 2,975,212, Mar. 14, 1961 (filed in the United States May 1, 1957).

The rejection here is the aftermath of an interference (No. 90,218) between appellants and Habicht, a *priority* dispute in which Habicht was the winning party on a single count. He won because appellants conceded priority of the invention *of the count* to him. The earliest date asserted by appellants for *their* invention is their German filing date, July 31, 1957, which, we note, is a few months later than Habicht's priority date of January 24, 1957.

After termination of the interference and the return of this application to the Examiner for further ex parte prosecution, the Examiner rejected the appealed claims on Habicht, as a primary reference, in view of Wagner et al., as a secondary reference, holding the claimed compounds to be "unpatentable over the primary reference in view of the secondary reference which renders them obvious to one of ordinary skill in the art."

Appellants appealed to the Board contending, inter alia, that "The Habicht disclosure cannot be utilized as anticipatory art." They said, "The rejection has utilized * * * the disclosure of the winning party as a basis for the rejection. The appellants insist that this is contrary to the patent statutes." Explaining this they said:

> * * * the appellants' German application was filed subsequent to the Swiss filing date [of Habicht] *but prior to the U.S. filing date of the Habicht application*. The appellants now maintain that the Habicht disclosure *cannot* be utilized as anticipatory in view of 35 U.S.C. 119 which is entitled "Benefit of Earlier Filing Date in Foreign Countries: Right of Priority." This section defines the rights of foreign applicants and more specifically defines those rights with respect to dates to which they are entitled if this same privilege is awarded to citizens of the United States. There is no question [but] that section 119 only deals with "right of priority." The section does not provide for the use of a U.S. patent as an anticipatory reference as of its foreign filing date. This interpretation of section 119 is also set forth in the Manual of Patent Examining Procedure (section 715.01). The Manual refers to *Viviani* v. *Taylor* v. *Herzog*, 72 USPQ 448, wherein Commissioner Coe clarified the question of priority rights with respect to foreign and domestic filing.

Appellants further pointed out that, "The interference only decided the priority of the interference issue [i.e. the count]; there was no decision made nor was there any attempt to decide who was the inventor of the disclosure. The appellants readily admit the priority of Habicht as to the interference issue, but there is no admission as far as the remaining subject matter is concerned."

The Board, one member dissenting with an opinion, affirmed the rejection. In the majority opinion there are four statements of the issue. The first is:

> As stated by appellants in their reply brief, the *main issue presented by this appeal is the availability of the Habicht patent as a reference*. This question was argued at length at the hearing and appellants were requested to file, and filed, a further legal memorandum concerning it. [Emphasis ours.]

The third statement (second to follow later) involves an expression of the Board's view on the relevance of the interference to the issue and reads:

> It is noted that the instant application was involved in an interference with Habicht (before the patent issued), with claim 1 of the patent as the count, and appellants conceded priority to Habicht. However, *no questions of estoppel or res judicata can be raised* concerning the [presently claimed] cyclohexyl substituted compound; Habicht did not disclose (or even suggest) any cyclohexyl or cycloalkyl compounds, no count to a cyclohexyl compound, or broad enough to include cycloalkyl compounds could have been added to the interference, nor could appellants have relied on such compounds to show priority. Appellants are free to attempt to secure claims to such compounds and to show that they *preceded* Habicht's date as to them, *the question being which date of Habicht is the controlling one*. [Emphasis ours.]

We deem this to be a clear statement that Habicht *did not claim and could not have claimed* the subject matter now claimed by appellants, that therefore there could have been no interference, or *priority* contest, with Habicht with respect thereto, that for this reason no estoppel or res judicata may be asserted against appellants as a result of the interference, wherefore the question is the effective date of the Habicht patent.[1] The Board's fourth statement of the issue reads:

> With respect to claims 10 and 16, *the issue* in this case is:
>
> When the claimed subject matter of a U.S. patent is used as a basis for rejecting a claim in an application and the reference patent is found to be entitled to the date of a prior foreign application under 35 U.S.C. 119, *is the date of the reference which must be overcome*, in order to remove it [as a reference], *its actual filing date in the United States or the priority date* to which the patent is entitled for that subject matter? [Emphasis ours.]

We note that there are two restrictions in this statement not present in any of the others. First, it refers only to *claimed* subject matter of the "reference" patent. That this was deliberate is shown by a footnote to the very end of the majority Board opinion in which the majority said:

> 18. Whether the foreign filing date can be used for such matters as mere descriptions of prior art, disclosures of species not within the scope of any of the claims of the U.S. patent, etc., which may appear in the specification of the latter, is not decided since such matters are not involved herein.

[1] As we see the facts here, however, the Board relied on subject matter *not* claimed. We regard the restriction as without legal significance because: (1) *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390 (1926), discussed infra, creating the rule of 35 U.S.C. 102(e), here relied on as basic support for the rejection, abolished the distinction between claimed and unclaimed disclosure; (2) within a few months of the decision herein the Board decided *Ex parte Zemla*, 142 USPQ 499 (1964), and *Ex parte Rapala* (unreported, Appeal No. 225–56, decided Sept. 18, 1964), discussed infra, in which this distinction is not mentioned, so that the Board now seems to think, as do we, that, as a question of law, whether the disclosure is claimed is irrelevant.[2] Another reason why we shall disregard the limitation to claimed subject matter is that authority higher than the Patent Office, namely the District Court for the District of Columbia in *Eli Lilly & Co.* v. *Brenner*, — F. Supp. —, 147 USPQ 442 (1965), discussed infra, has effectively removed this restriction in a parallel case as shown in the quotation we later make from its opinion. *Lilly* was *Rapala*, supra, in the Patent Office.

The second restriction in the Board's fourth statement of the issue is that "the reference patent is found to be entitled to the date of a prior foreign application under 35 U.S.C. 119 * * *." To some degree this loads the question. There is in it an implicit assumption

[1] The Board's opinion contains no clear recognition of another rejection by the Examiner, different from the rejection above stated, based on *the issue of the interference* in view of Wagner et al. This opinion deals only with the issue the Board chose to deal with. As to the other rejection, see the end of this opinion under "Reason for Remand."

[2] See, however, footnote 1 and the section at the end of this opinion headed "Reason for Remand."

that *if* the patent *is* "entitled to the date of a prior foreign application," it is *entitled* to it, and that is that. But one must examine closely into what is meant by the word "entitled." In essence, that is the problem in this appeal and we wish to point to it at the outset to dispel any mistaken assumptions. [2] A patent may be "entitled" to a foreign filing date for some purposes and not for others, just as a patent may be "used" in two ways. A patent owner uses his patent as a legal right to exclude others, granted to him under 35 U.S.C. 154. Others, wholly unrelated to the patentee, use a patent, not as a legal right, but simply as evidence of prior invention or prior art, i.e., as a "reference." This is not an exercise of the patent right. This is how the Patent Office is "using" the Habicht patent. These are totally different things, governed by different law; founded on different theories, and developed through different histories.

We have seen that 35 U.S.C. 119 is involved with respect to the so-called "priority date" of the Habicht reference patent. The other statutory provision involved in this case, applicable to both of the references, is 35 U.S.C. 102(e). [3] Section 102 has been aptly described (Meyer article, infra) as containing "patent defeating provisions." They fall into two classes, events prior to an applicant's date of *invention* and events prior to filing his U.S. *application*, related respectively to the requirement of novelty and to provisions for loss of right through delay in filing after certain events have made the invention public. Subsection (e) is one of the novelty provisions, one of the "conditions for patentability," and if the facts of an applicant's case bring him within it, his right to a patent is defeated. This subsection together with the heading and introductory line of the section reads:

> § 102. *Conditions for patentability; novelty and loss of right to patent*
> A person shall be entitled to a patent unless—
> * * * * * * * *
> (e) the invention was described in a patent granted on an application for patent by another filed *in the United States* before the invention thereof by the applicant for patent, * * *. [Emphasis ours.]

[4] Thus, though both references here were patents copending with appellants' application, issuing after it was filed, 102(e) makes them available as of their U.S. filing dates which are earlier than appellants' U.S. filing date. However, since 102(e) refers to the applicant's *date of invention*, not to his filing date, he is entitled to an opportunity to establish his date of invention to show that his invention possessed *statutory* novelty when he made it. In this case appellants did this by showing that they filed a German application earlier than the U.S. filing dates of the references, specified in 102(e), and that they were entitled to its date for "priority" under section 119. This right is not in question. The Board ruled:

> Appellants have overcome the U.S. filing date of Habicht by claiming the benefit under 35 U.S.C. 119 of an application filed in Germany on July 31, 1957. The specification of this German application has been examined and is found to contain a full disclosure of the subject matter of the claims, and the U.S. filing date of Habicht is considered overcome.

We can now summarize the issue and simultaneously state the Board's decision. Continuing the above quotation, the Board said:

> The Examiner insists, however, that the effective date of the Habicht patent is January 24, 1957, the date of an application filed in Switzerland which is claimed by Habicht under 35 U.S.C. 119. Appellants have not overcome this earlier date of Habicht. The issue is hence presented of whether the foreign priority date of a United States patent can be used as the effective filing date of the patent when it is used as a *reference*. [Emphasis ours, and this is the second statement of the issue by the Board.]
> * * * * * * * *
> Our conclusion is that the priority date governs * * *.

This is the decision alleged to be in error. We think it was error.

Background of the Issue as to the Availability of Habicht as a Reference

The issue in this case involves a question of statutory interpretation basic to the operation of the patent system. This issue has arisen because after decades of a uniform practice, and interpretation of law which has existed in part since 1903 and in whole since 1926, the Patent Office has made an abrupt about-face; having refused for at least 30 years, after expressly ruling on the question, to apply U.S. patents *as references* as of foreign "priority" dates, it has changed its practice as made manifest in an unknown number of Board decisions. One of them is here on appeal. Another, as will presently appear, has been reviewed under 35 U.S.C. 145 in the District Court for the District of Columbia where the Patent Office was affirmed, *Lilly* v. *Brenner*, supra. A third has been published, *Ex parte Zemla*, 142 USPQ 499.

There has been a spate of writing on the question of law here involved, all of which we have read. The same ground has been plowed and replowed by authors as well as different panels of the Patent Office Board of Appeals. In chronological order, the following articles and opinions have appeared:

August 1963, "*Effective Filing Dates of U.S. Patents Based on 35 U.S.C. Sec. 119*," by Leon Chasan and Frederick H. Rabin, 45 JPOS 601–612, attacking the problem "as to which date—the actual U.S. filing date or the earlier convention date—shall be considered as that of filing under 35 U.S.C. § 102(e)." They conclude that "the answer to the question * * * is not free from doubt * * *." The closing sentence is: "It appears likely that the courts will have to rule expressly on this point, possibly in the near future, and it is also quite possible that the position taken by the Patent Office will be reversed." (Herein "Chasan-Rabin article.")

February 25, 1964, the *Hilmer* opinion below, then unpublished, majority opinion by Examiner-in-Chief Federico joined by Acting Examiner-in-Chief Roedol, dissenting opinion by then Acting Examiner-in-Chief Behrens, holding that the convention date is the effective date of a U.S. patent as a reference with respect to "claimed subject matter" therein and "the disclosure in the specification relevant to the claimed invention."

March 1964, "*An Analysis of the Combined Effect of 35 U.S.C. § 119 and 35 U.S.C. § 102(e)*," by David S. Fishman of the Connecticut Bar, 46 JPOS 181–213, saying "this paper will attempt to demonstrate that such patents [claiming priority to a foreign filing date] should be accorded the foreign filing date for reference purposes * * *." In the context of the article this means as references to defeat claims to patents by all others and with respect to all matter disclosed whether or not claimed, and whether used to show complete anticipation or in support of a claim of obviousness 35 U.S.C. 102, 103. (Herein "Fishman article.")

[5] May 27, 1964, a Commissioner's Notice issued (published June 9, 1964, 803 O.G. 305) revoking a very long-standing section of the

Manual of Patent Examining Procedure (MPEP), 715.01, "Reference Claims Foreign Filing Date," based on a Commissioner's decision of May 9, 1935, *Viviani* v. *Taylor* v. *Herzog*, 72 USPQ 448, and providing that an applicant need not antedate the foreign filing date of a reference. The notice states that "foreign filing date is considered the effective date in those situations where claimed subject matter of the domestic patent (or disclosed matter related thereto) is being used as the basis for rejection, and where no question of interference exists."

June 8, 1964, this *Hilmer* appeal filed in this court with transcript of record making the Board's opinion a public record.

[6] July 31, 1964, decision rendered by the Board of Appeals in *Ex parte Zemla*, supra, opinion by Examiner-in-Chief Kreek, joined by Examiner-in-Chief Friedman and Acting Examiner-in-Chief Andrews, holding that a U.S. patent "may be used for all that it discloses as of the date that the same disclosure was made in a foreign country under the Convention." No mention is made of restriction to claimed subject matter or of any interference situation. The basis of the decision is a verbatim copy of the key segment of the *Hilmer* board opinion, but the limitations of the *Hilmer* decision are omitted and *Hilmer* is, of course, not mentioned.

August 1964, "*Re: 'Ex parte Blumlein,'*" by Robert J. Patterson, 46 JPOS 597, calls attention to the omission in the Fishman article of a decision of this court, *In re Walker*, 41 CCPA 913, 213 F.2d 332, 102 USPQ 79 (1954), affirming *Ex parte Blumlein*, 103 USPQ 223 (1952), reconsideration denied, 103 USPQ 224 (1953), which Fishman had characterized as "completely untenable" and "logically unsound" (pp. 205, 206), and saying: "One cannot but wonder if the author of the article would have said anything differently had he realized that the CCPA affirmed the decision of the Board of Appeals."

August 1964, "*Re: 'An Analysis of the Combined Effect of 35 U.S.C. Section 119 and 35 U.S.C. Section 102(e),'*" by William E. Currie, 46 JPOS 598–599, expresses disagreement with the Fishman article and points to flaws in its reasoning. Currie points out that Fishman omits mention of the caption and the second paragraph of section 119, both of which refer to *priority*. Currie's view is that section 119, contrary to Fishman's view, thus *does* contain language restricting the meaning of the words "the same effect" so that they do *not* include effect as an "anticipation" but are limited to priority issues. Currie concludes:

> Therefore, in view of this section 102(e) should be read to mean just what it says, "filed in the United States." There is nothing in section 119 to carry over to section 102(e). Scope of the priority right is discussed in detail in "Foreign Priority Rights under Section 119 of the Patent Act of 1952," Briskin, 39 JPOS 94–121.
>
> Statutory enactment was required to prevent an applicant from establishing anticipation by using his foreign reduction to practice, but in that case there was no basis for interpretation, as there is here. It would seem to be illogical, and adverse to the interests of United States inventors, to give a foreign patent application the status of a reduction to practice for purposes of anticipation.

The last quoted paragraph refers, of course, to 35 U.S.C. 104, which originated, as a statutory enactment, in section 9 of the Boykin Act, Aug. 8, 1946, 60 Stat. 943, both discussed infra.

[7] September 18, 1964, decision rendered by the Board of Appeals in *Ex parte Rapala* (unpublished, Appeal No. 225–56, heard June 25, 1964), opinion by Examiner-in-Chief Federico joined by Examiner-in-Chief Rosa and Acting Examiner-in-Chief Stone. The opinion

substantially duplicates the contents of *Hilmer*, contains the legal discussion used in *Zemla*, but like the latter does not limit the use of the disclosure of the U.S. patent held effective as of its British priority date to claimed subject matter or disclosure "relevant to" it. The following statement appears at the outset:

> Appellant is aware of the fact that several recent decisions of the Board of Appeals have dealt with the question presented, but inasmuch as these decisions are not public they cannot be used as precedents and the question must be considered anew.

Therefore we find a repetition of most of the *Hilmer* opinion. As of now, of course, three Board opinions are public. See *Lilly* v. *Brenner*, discussed infra.

November 1964, a Commentary, by Gary A. Samuels, 46 JPOS 827–828, critical of the Chasan and Fishman articles, the May 27 Notice, and the Board of Appeals decision, expressing the view that the extension of the effective date of U.S. patents used as references backward in time to their foreign filing dates is contrary to the intent of Congress, referring to items of legislative history.

June 1965, "*Are Patents Effective References as of Foreign Filing Dates?*" by Harold S. Meyer of the Ohio Bar (Mr. Meyer was a member of the Coordinating Committee which helped to write the 1952 Patent Act—see Rich, "Congressional Intent—Or, Who Wrote the Patent Act of 1952?" pp. 61–78, Patent Procurement and Exploitation, BNA, Washington, 1963), 47 JPOS 391–410. Referring to all of the foregoing items, Meyer says: "Those publications and decisions which favor the foreign application date as the effective date of a reference have left out of consideration some significant factors which lead to exactly the contrary conclusion." His article develops this thesis in detail and concludes as to "what the law was intended to be when it was enacted as the present statute, and what it therefore is" in these words: "The provisions of the International Convention and 35 U.S.C. 119 * * * establish only priority rights for the claimed subject matter, and do not change the effective dates of references under 35 U.S.C. 102(a), (b), and (e)." (Herein the "Meyer article.")

October 6, 1965, Manual of Patent Examining Procedure amended by inserting new section 715.01 corresponding in substance to the May 27, 1964 Notice and *Hilmer*.

November 1965, a Commentary, by L. Chasan (see August 1963, supra), 47 JPOS 922–924, on the Meyer article in which this co-author says his former position was that while the answer to the problem of statutory construction "was not free from doubt, on balance the case law and the authorities that have considered this have arrived at the conclusion that it is the *Convention* date which should control." He then tries to discredit *some* of Meyer's authorities, ignoring the mainstream of his argument and ends by saying:

> The matter is of sufficient interest that even the forthcoming CCPA hearings on, e.g., *In re Hilmer, Korger, Weyer and Aumuller*, may not be conclusive. The issue will undoubtedly be raised in interparte [sic] matters of sufficient importance for possible ultimate resolution by the Supreme Court.

[8] December 20, 1965, opinion of the District Court, District of Columbia, in *Lilly* v. *Brenner*, 147 USPQ 442–470. This was a suit under 35 U.S.C. 145 to review the decision of the Board in *Ex parte Rapala*, supra, and so far as we know is the last item to date in the general picture. The opinion adopted by the District Court supports the granting of a summary judgment requested by the Patent Office

dismissing Lilly's complaint. On the question of law presented, namely, the effective date of a single U.S. patent cited as a reference to support a rejection under 35 U.S.C. 103 for obviousness, the court agreed with the Patent Office that the effective date was the convention filing date in Great Britain, a date the applicant could not overcome. Had the reference been held effective only as of its actual date of filing in the United States, as plaintiff urged, the Patent Office motion for summary judgment would have been denied. We have most carefully studied this opinion as it is the most recent decision dealing with all of the arguments which have been brought to bear on this problem, contributing not a few new ones. We cannot agree with it.

To make clear what we disagree with, we quote the District Court's own summary statement of its position (USPQ at 448):

> [5] The important question to be settled in this case is one of first impression in this court. The issue may be stated to be whether, in a situation where a *foreign inventor* has been granted a United States patent on a United States patent *application* which is entitled under 35 U.S.C. § 119 to the *benefit* of an earlier application filing date in a foreign country, this United States patent is available as a reference under 35 U.S.C. 102(e) for *all disclosed subject matter*, whether claimed or unclaimed, as of the filing date of the earlier foreign application. This court agrees with defendant [Patent Office] and holds that the foreign filing date is the effective *reference* date *as to all subject matter which is disclosed, whether claimed or not*, in the foreign application, to the extent that such disclosures are brought forward and included in both the United States application and the United States patent granted on this application, the latter, of course, being the basis for a 35 U.S.C. § 102(e) rejection. [Emphasis ours.]

We regret that we find ourselves in conflict with the District Court, especially with an erstwhile colleague, on a question of patent law, and correspondingly in disagreement with several members of the Board, but we find ourselves in agreement with the Meyers article, with the Patterson, Currie, and Samuels commentaria, and with the dissenting views of Examiner-in-Chief Behrens who found the history of sections 102 and 119 to give "scant comfort to the majority's interpretation." We find it indeed strange that it has suddenly become imperative to reinterpret a statute which was enacted in 1903, later construed in the light of a Supreme Court decision of 1926, and to invert a practice under which a generation of lawyers since the latter date has obtained for clients close to two million United States patents, counting for their validity on a construction of the statutory law not only followed but promulgated by the Patent Office. Furthermore, in 1952 this law, already a quarter of a century old in toto, was carried forward by Congressional action without change, insofar as it was already statutory, and insofar as it was case law it was codified without change, the particulars of which will be dealt with later. This change in long and continuous administrative practice has also been made without any advance notice, hearing, or stated basis in policy, economics, or international relations. While it may be that the world is shrinking and the very concept of "foreign" should be abolished for the good of mankind, this is not a constitution we are expounding but specific statutes enacted to accomplish specific purposes, the meaning of which should stay put, absent intervening Congressional modifications, for well-understood reasons.

Turning from the general to the specific, we will now consider our specific reasons for construing the applicable statutes as they have for so long been construed, contrary to the recent innovation of the Patent Office.

Opinion

The District Court in *Lilly* opens its opinion by observing that the question before it was one of first impression in that court. Here it is otherwise. In 1954 this court decided *In re Walker*, 41 CCPA 913, 213 F.2d 332, 102 USPQ 79. The casual reader of the opinion alone might get the impression, as apparently the District Court did in *Lilly* (USPQ at 466), that *Walker* did not involve the issue here. On careful examination, especially with the aid of the record and briefs, it will be seen to be otherwise. Since it is the one case in point in this court we shall examine *Walker* first, after which we shall approach the problem of statutory construction primarily in a chronological fashion.

Walker was an appeal from the Board decision in *Ex parte Blumlein*, 103 USPQ 223 (1952), decided below prior to the effective date of the 1952 Patent Act but afterward in this court. The discrepancy in names is due to the death of Alan D. Blumlein, said to be a well known British TV inventor, and his U.S. application was filed by his executrix, Doreen Walker (formerly Doreen Blumlein). As here, Blumlein was given an invention date by reason of the priority statute (then R.S. 4887) as of the filing of his British application on June 5, 1942. Involved as a reference was a U.S. patent to Whiteley, the U.S. filing date of which, February 5, 1943, was after Blumlein's date but the British filing date of which was earlier, February 17, 1942. Blumlein was making the same contention in that case that appellants are making here, that as a *reference* the effective date of the Whiteley U.S. patent was its U.S. filing date. *The Board of Appeals agreed with that contention.* The Board also expressly held that Whiteley's British priority date was of "no consequence," apart from the effect of the outcome of an interference between Blumlein and Whiteley.

In the *interference* with Blumlein, Whiteley was able to assert his priority date which enabled him to antedate Blumlein and win the interference on his claims 1 and 2. In subsequent ex parte prosecution the Examiner's rejection which went to the Board was restated in his statement (now called an answer) in these terms:

> Whiteley is considered to be a valid reference for what it shows, since the decision in the above interference was adverse to applicant, and Whiteley proved a foreign filing date prior to applicant's foreign filing date.
>
> * * * * * * *
>
> Applicant has failed to show any special circumstances whereby the Whiteley patent is not a reference against his claims.
>
> In essence applicant argues that Whiteley is not an effective reference for what it shows, but only for what it claims. The effect of such a holding would be to grant applicant the benefit of his British filing date, but to deny it to Whiteley who successfully contested common subject matter with applicant.

The Board, while agreeing with appellant's view that Whiteley was a reference only as of its U.S. filing date, gave a somewhat equivocal opinion about the effect of the interference, saying:

> * * * we are of the opinion that in view of the adverse decision on priority, appealed claims 11 to 17 and 20 were properly rejected as unpatentable over the disclosure of Whiteley as exemplified by the issue of the interference. Accordingly, we sustain the rejection of these claims.

Two subsequent opinions on reconsideration did not satisfy appellant, or clarify for him the exact ground relied on and in appealing to this court three questions were presented: (1) Whether the appealed claims were patentably distinct from claims 1 and 2 of Whiteley; (2) *whether under 35 U.S.C. 119 Blumlein had to overcome Whiteley's*

British priority date; and (3) whether Blumlein was estopped by the interference from claiming the subject matter of his appealed claims. The court had to and did consider all three questions. This court's opinion expressly considers point "(2)" supra, as the argument "that 'By carrying his [Blumlein's] invention back to the *domestic* filing date of the application which matured into the Whiteley patent, the appellant *overcame that patent as a reference* for the integrating circuit which is disclosed but not claimed therein,' citing in support thereof the relevant provision of the code, 35 U.S.C. 119 * * *." [Emphasis ours.] The court answered the argument by quoting a paragraph from the Patent Office Solicitor's brief in which he *conceded* appellant to be correct, that as to structure not claimed by Whiteley it would be "quite permissible" to allow a claim to a later applicant who showed he invented the claimed structure before the filing date of the *domestic* application of Whiteley. The court then placed its own interpretation on the quoted paragraph saying, "In other words, the Solicitor frankly *concedes* that appellant's quoted argument on the point in issue *is* '*absolutely correct*, on the facts stated,' but the Solicitor contends, and we think properly, that appellant's argument is too broad and *inapposite with respect to the case at bar*." [Emphasis ours.]

Having passed on that point, the court then proceeded, in effect, to pass on points "(1)" and "(3)," supra, and to hold that the claims were not patentably distinct from the claims lost by Blumlein in the interference and to say that was the true ground of the decision below, which it affirmed on that ground. [9] We therefore have in this *Walker-Blumlein* case decisions by *both* the Board and this court that as to non-interfering subject matter the foreign priority date of a U.S. reference patent is of "no consequence" and that only the United States filing date has to be overcome. The final decision adopted the first of three possible courses of action for the court as submitted in Walker's brief in the following words:

> 1. It may affirm the decision below on the ground that the appealed claims and the interference counts are for the same invention and that, therefore, they are *res judicata* as to the appellant.

But in the process of arriving at that course of action the court did pass on the law applicable where there is no res judicata, as in the present case.[3] The court's views at that time were in complete accord with the legal expertise in the Patent Office.

We note that in *Lilly*, in discussing *Walker*, the court ignored all of the relevant matters discussed above and proceeded on the assumption it could not possibly have passed on a point on which it did pass. It also ignores the *Blumlein* decision in the Patent Office on the very issue here involved.

We further note that in the instant case the Board's opinion finds "confusion" as to the ground on which this court in *Walker* sustained the rejection, which we think is clearly stated, and that the Board errs in stating the contention of the Solicitor and the court's supposed approval of it. The Solicitor did not contend that all "subject matter recited in the [Whiteley] claims" was available as prior art as of the priority date. Far from it, he said in his brief, "The issue here in no way involves a foreign filing date of the patentee Whiteley. * * *

[3] We trust this explanation of what this court did in *Walker* is a sufficient answer to the curiosity expressed by the District Court in *Lilly* (USPQ 467, col. 1) as to our "reaction" to the argument that we passed on a rejection not relied on by the Board of Appeals. This court did pass on the question as it was presented to it. The confusion as to what the ground of rejection actually was required the court to do so.

The rejection here is not upon Whiteley's foreign filing date. The rejection is based upon the adverse award of priority * * *." *That* is what the court "indicated * * * was proper." We think the Board erred further in reading the second opinion on reconsideration in *Blumlein* (which it refers to as "Walker") in saying that in that opinion "the foreign date was considered relevant with respect to the disclosed but unclaimed components of the combination claimed." We find nothing remotely resembling such a view. In a very short opinion in answer to several requests to clarify its position, what the Board did was to reiterate its position that Blumlein's claims were to subject matter "not patentably distinct" from the *issue* of the interference which he lost. It said nothing at all about "unclaimed components of the combination claimed," as stated by the Board here.

[10] On the other hand, appellants here rely on *Walker* and accurately state what happened in *Blumlein* and in *Walker*, contending it is precedent supporting their contention "that the domestic filing date of a patent obtained by a foreign applicant is the critical date to be considered when it is desired to use the patent for anticipation purposes," that is, as an ordinary prior art reference. We fully agree. For the same reasons, we disagree with the *Lilly* opinion (USPQ at 466) where it says: "the [Walker] case does not really support plaintiff's position."

The Patent Office Solicitor has nothing to say on *Walker* for the interesting reason that he did not really file a brief for the Patent Office position. In his brief he says:

> Inasmuch as the decision [opinion] of the Board of Appeals sets forth in full and exact detail the reasons why the priority date is considered the effective date of the Habicht patent under 35 U.S.C. 102(e), it is believed to be unnecessary and undesirable to repeat or to paraphrase the decision in this brief.

In other words, the opinion of the Board is the brief in this case. That was the position the Solicitor took at oral argument.

We turn now to a chonological review and to the other statutes and precedents relied on by the parties.

The Board's conclusion is that the foreign priority date of a U.S. patent is its effective date as a reference. In identical language in its opinion in this case and in the *Zemla* and *Rapala* (*Lilly*) opinions, the Board's statement is:

> Our conclusion is arrived at simply by considering sections 102(e) and the first paragraph of section 119 of the statute together.
>
> [Here the statutes are quoted]
>
> Section 119 refers to two applications for the same invention stemming from the same inventor, one a first application filed in a foreign country and the other a later application filed in the United States. * * * Section 119 provides that under the specified circumstances, and subject to the requirements of the second paragraph which are not in question here, the second application, filed in the United States, "shall have the same effect" as it would have if filed in the United States on the date on which the application was filed in the foreign country. This language is plain; it gives the application the status of an application filed in the United States on a particular date. Section 102(e) provides that a patent may not be obtained if the invention was described in a patent granted on an application for patent by another *filed in the United States* before the invention thereof by the applicant. This paragraph makes the filing date of a U.S. patent [note the omission of "in the United States"] the effective date as a reference. It refers to an application filed in the United States and since section 119 provides that the application shall have the same effect as if filed in this country on a particular date, *these two provisions must be read together* and the filing date of the foreign application becomes the effective date of the United States reference patent. [Emphasis ours.]

This is so plausible that one's impulse is to say "Q.E.D."[4] We find the reasoning at fault, however, and the interpretation untenable. To discuss it we must have section 119 before us, insofar as applicable:

§ 119. *Benefit of earlier filing date in foreign country; right of priority*

An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, *shall have the same effect* as the same application would have if filed in this country on the date on which the application for patent for the same invention was first filed in such foreign country, if the application in this country is filed within twelve months from the earliest date on which such foreign application was filed; *but* no patent shall be granted on any application for patent for an invention which had been patented or described in a printed publication in any country *more than one year before the date of the actual filing* of the application in this country, or which had been in public use or on sale in this country more than one year prior to such filing.

No application for patent shall be entitled to *this right of priority* unless [here follows the requirement for filing certain papers in the Patent Office and claiming priority not in question here, as the Board held] * * *. [Emphasis ours.]

The Board's construction is based on the idea that the language of the statute is plain, that it means what it says, and that what it says is that the application filed abroad is to have the *same effect* as though it were filed here—*for all purposes*. We can reverse the statement to say that the actual U.S. application is to have the same effect as though it were filed in the U.S. on the day when the foreign application was filed, the whole thing being a question of effective date. We take it either way because it makes no difference here.

[11] Before getting into history, we note first that there is in the very words of the statute a refutation of this literalism. It says "shall have the same effect" and it then says "but" for several situations it shall *not* have the same effect, namely, it does not enjoy the foreign date with respect to any of the patent-defeating provisions based on publication or patenting anywhere in the world or public use or being on sale in this country *more than one year before the date of actual filing in this country*.[5]

As to the other statute involved, we point out that the words of section 102(e), which the Board "simply" reads together with section 119, also seem plain. Perhaps they mean precisely what *they* say in specifying, as an express patent-defeating provision, an application by another describing the invention but only as of the date it is "filed *in the United States*."

[13] The great logical flaw we see in the Board's reasoning is in its premise (or is it an a priori conclusion?) that "these two provisions must be read together." Doing so, it says 119 in effect destroys the plain meaning of 102(e) but the Board will not indulge the reverse construction in which the plain words of 102(e) limit the apparent meaning of 119. We see no reason for reading these two provisions together and the Board has stated none. We believe, with the dissenting Board member, that 119 and 102(e) deal with unrelated concepts and further that the historical origins of the two sections

[4] This construction is reminiscent of the many misreadings of the former statutory definition of the patent right as "the exclusive right to make, use, and vend the invention or discovery." R.S. 4884, which was so often asserted to give the patentee some positive right to make or use or sell things embodying his patented invention. The Supreme Court put this idea to rest in *Bloomer v. McQuewan*, 55 U.S. 539, 549 (1852), but it did not die until the 1952 Act changed the statute to read "the right to exclude others from making, using, or selling the invention * * *." 35 U.S.C. 154. Even now its ghost seems to hover over the opinion in the *Lilly* case (147 USPQ at 451, col. 2, 452).

[12] [5] These patent-defeating one-year time-bars are also contained in 35 U.S.C. 102(b) (formerly R.S. 4886) and have always been included in 119 (formerly R.S. 4887) to assure that it would *not* have the "same effect" if giving effect to a priority date would avoid these time-bars.

show neither was intended to affect the other, wherefore they should not be read together in violation of the most basic rule of statutory construction, the "master rule," of carrying out the legislative intent. Additionally, we have a long and consistent administrative practice in applying an interpretation contrary to the new view of the board, confirmed by legislation ratification in 1952. We will consider these matters separately.

Section 119

We shall now take up the history and purpose of section 119. The Board opinion devotes the equivalent of four pages in the printed record to a scholarly and detailed review of the history of section 119 with all of which we agree, except for the interwoven conclusions as to its meaning as it bears on the effective date of a U.S. patent *used as a reference*.

The Board shows that the predecessor statute (R.S. 4887), containing the words "shall have the same force and effect," was enacted March 3, 1903 (32 Stat. 1225). Theodore Roosevelt signed it into law. The bill was drafted and proposed by a Commission created by Act of Congress in 1898 (30 Stat. 431) to study the effect of the Convention of Paris for the Protection of Industrial Property of March 20, 1883, which was under revision at Brussels even as the Commission deliberated, the revision being adopted at Brussels on December 14, 1900. (It was last revised at Lisbon on October 31, 1958.) The Commission made a report November 27, 1900, printed in 1902, entitled "Report of the Commissioners Appointed to Revise the Laws Relating to Patents, Trademarks, and Trade Names, with Reference to Existing Conventions and Treaties," which is fairly descriptive of its purpose. The section entitled "The Revision of the Patent Law," which we have read, extends from page 6 to page 39. It begins by saying (p. 6):

We have found it desirable in considering the question of revision of the patent law to first consider what changes in the law are needed to give full force and effect to the treaty obligations which the United States has undertaken touching the *protection* of inventions made by the subjects or citizens of certain foreign countries. [Emphasis ours.]

Under the heading "Priority Under the Convention," it says (p. 12):

The second provision of the Convention to be noticed, and one which may be of very great advantage to those of our citizens who desire to secure patents in foreign countries for their inventions, is that contained in article 4, and relates to the so called "delay of priority," or "period of priority."

It then explained that in most countries no valid patent can be obtained if *before the application is filed*, the invention has been described in a printed publication, either in the country of application or even, as in the case of France and six other countries, in *any* country; that the same was true as to public use of the invention; and that the convention gives applicants in member countries a period (then 7 months, soon extended to 12) in which they can file applications in other countries after the filing in their own country and obtain valid patents notwithstanding publication or use *in the interval* and before the filing of the foreign application. This, it explained, is the "delay of priority." In plain English, it was the right of an applicant to have the foreign application treated at law as *prior* to the *intervening* publication or public use, though in fact it was not, by giving a right to that applicant to *delay* filing in the foreign country, instead of filing simultaneously with the home application, yet have it treated as though filed on the date of the home application.

This is what today we call simply "Convention priority," or just "priority." The foreign filing date is the "convention date" or the "priority date."

This priority right was a protection to one who was trying to *obtain* patents in foreign countries, the protection being against patent-defeating provisions of national laws based on events intervening between the time of filing at home and filing abroad. Under the heading "Recapitulation of Advantages Secured by the Convention," the Commission said, so far as relevant here (p. 14–15):

> The advantages to our citizens in the matter of patents directly afforded by the convention may be thus recapitulated.
>
> First. The enjoyment in foreign countries of equal rights with subjects of citizens of those countries.
>
> Second. The "delay of priority" of seven months within which to file applications abroad after filing in this country.
>
> Third. The privilege of introducing articles embodying the invention manufactured in this country into foreign countries to a certain extent without thereby causing the forfeiture of the patents taken out there.

Note the emphasis repeatedly placed in the Commission Report on advantages to United States citizens. It was felt we should do what was necessary to comply with the reciprocity provisions to enjoy the benefits of the convention for our own citizens. It was also believed that by reason of Opinions of Attorneys General, vol. 19, 273, "the International Convention, in so far as the agreements therein contained are not in accordance with the present laws of the United States, is without force and effect; that it is not self-executing, but requires legislation to render it effective * * * and * * * it is our opinion that such legislation should be adopted * * *." (Report p. 19.)

Specific to the question here, the Commission Report says (p. 24):

> We are, therefore, of the opinion that an amendment to the law should be made, providing that the foreign application shall have, in case an application is filed in this country by the applicant abroad within the specified period, the same effect as if filed here on the day it was filed abroad.

The Board thinks this "shows the intention of the Commissioners" to create "a *status* of [an application] having been filed in the U.S. *for all purposes* * * *." [Emphasis ours.] In the context of this case, that means for the purpose of using a U.S. patent, obtained with a claim of priority, as a prior art patent to defeat the right of a third party to a patent on subject matter which does not patentably distinguish from anything that happens to be disclosed in such patent—or at least from anything disclosed "relevant to the [there] claimed invention," depending on which recent Board opinion one looks at. We have read every word of the Commission Report looking for any suggestion of such a concept and have found none. All the Board found was the above quotation. We deem it wholly inadequate as a basis for finding an intent to create a "status" for an application—to say nothing of the patent granted thereon—"for all purposes." There are other factors to consider which negative any such legislative intent.

There is another sentence in the Commission Report we should consider on page 26. It called attention to the fact that in most foreign countries the patent is granted to the first to apply and said:

> The Convention has created an exception to the rule and made an application in any State of the Union for the Protection of Industrial Property of *the same effect as* an application in the country where an application is subsequently made within the time specified *as a period of priority*. [Emphasis ours.]

This couples very nicely with the wording of the first recommendation for a change in U.S. laws on page 27 where it was said:

> First. The application for a patent filed within seven[a] months of the filing of an application for a patent for the same invention in any foreign country which is a party to the International Convention should be given the *same force as regards the question of priority* that it would have if filed on the date on which the foreign application was filed. (Fn. 2: Extended to twelve months.) [Emphasis ours.]

The Commission, page 36, recommended proposed legislation, which is, in substance, the amendment to R.S. 4887 which was passed and is, with no change in substance, what we have today in section 119. The proposed bill in the Commission Report was entitled "A BILL to give effect to treaty stipulations relating to letters patent for inventions." The act passed was entitled "An Act to effectuate the provisions of the additional act of the International Convention for the Protection of Industrial Property." Throughout, the same phrase has always appeared, "shall have the same force and effect," until it was simplified in the 1952 codification to "shall have the same effect." This change was mere modernization in legislative drafting. The revisers note to the section says: "The first paragraph is the same as the present law with changes in language." The Federico Commentary on the 1952 Act, 35 U.S.C.A., says (p. 29):

> This so-called right of priority was provided for in the second paragraph of R.S. 4887 which is the basis for the first paragraph of section 119 of this title. * * * [he here states the 4 conditions for obtaining the right] * * * The new statute made no changes in these conditions of the corresponding part of the old statute except to revise the language slightly * * *.[a]

We need not guess what Congress has since believed to be the meaning of the disputed words in section 119, for it has spoken clearly. World wars interfere with normal commerce in industrial property. The one-year period of priority being too short for people in "enemy" countries, we had after World War I a Nolan Act (41 Stat. 1313, Mar. 3, 1921) and after World War II a Boykin Act. Foreign countries had reciprocal acts. One purpose was to extend the period of priority. House Report No. 1498, January 28, 1946, by Mr. Boykin, accompanied H.R. 5223 which became Public Law 690 of the 79th Cong., 2d Sess., Aug. 8, 1946, 60 Stat. 940. Section 1 of the bill, the report says, was to extend "the so-called period of priority," which then existed under R.S. 4887. On p. 3 the report says:

> In this connection, it may be observed that the portion of the statute which provides that the filing of a foreign application—shall have the same force and effect as the same application would have if filed in this country on the date on which the application for patent for the same invention, discovery, or design was first filed in such foreign country—is intended to mean "shall have the same force and effect," etc., insofar as applicant's right to a patent is concerned. This statutory provision has no bearing upon the right of another party to a patent except in the case of an interference where the two parties are claiming the same patentable invention.

We emphasize none of those words because we wish to emphasize them all. We cannot readily imagine a clearer, more definitive statement as to the legislature's own view of the words "same effect," which now appear in section 119. This statement flatly contradicts the Board's view. The Board does not mention it.

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[a] In the two and a half page analysis of section 119, referred to always as giving a "right of priority," there is no hint that the foreign filing date has anything to do with the effective date of a U.S. patent as a prior art reference. The Commentary was published in 1954. Thus, the present interpretation by Mr. Federico, speaking as an Examiner-in-Chief, represents a later development.

In *Lilly* the District Court (USPQ at 461–462) attempts to depreciate the above quotation to the vanishing point by saying it is nothing but reiteration of an erroneous Commissioner's decision (*Viviani*, supra), was not directly concerned with the Boykin Act, probably was not thoughfully considered by the whole House or even the full committee, and is not a report on section 119, which was not enacted until six years later. If this need be answered, the answer is that the quotation happens to be a precise statement of the construction consistently placed on the statute by the Patent Office until 1963;[7] that the Boykin Act was concerned, as its first order of business in section 1, with extending the right of priority; and finally (omitting comment on the reading habits of Congressmen), section 119 is the very same law as R.S. 4887, the statute about which the report was speaking and, in effect, amending. Presumably Mr. Boykin wished to make it clear to Congress and the public that if his bill passed, it would *not* be pushing the effective date of references back by several years into the fund of unknown applications reposing in foreign patent offices, waiting to have Boykin act counterparts filed in the U.S., which could have had a most serious effect on the validity of U.S. patents issued in the war and post-war period, as well as on applications then pending.[8] R.S. 4887, the predecessor of section 119, is annexed to the report.

Another reason for giving great weight to the Committee Report's comments on what R.S. 4887 meant is that the same bill contained a section 9, the predecessor of present 35 U.S.C. 104, discussed later, dealing expressly with acts of invention in foreign countries and overruling the effect of the Supreme Court decision in *Electric Storage Battery Co.* v. *Shimadzu*, 307 U.S. 5 (1939), all of which has a bearing on the problem before us. That section prohibits proof of *acts* abroad to establish a date of invention, except as section 119 may have been complied with as to an application filed abroad.

[14] For the foregoing reasons, we are clearly of the opinion that section 119 is not to be read as anything more than it was originally intended to be by its drafters, the Commission appointed under the 1898 Act of Congress, namely, a revision of our statutes to provide for a right of priority in conformity with the International Convention, for the benefit of United States citizens, by creating the necessary reciprocity with foreign members of the then Paris Union.

The Board has mentioned that it was not limited in its terms to that treaty, which is true, so that it also functions relative to other treaties and reciprocal laws. We are unable to deduce from this any intent to affect the date as of which U.S. reference patents are effective. Nor can we do so by reason of another "deviation" from the

[7] To show that this was still the established construction in 1959 we cite McCrady, *Patent Office Practice*, 4th ed. (1959), sec. 142, "Effective Date of Domestic Patent," at p. 198:

> Where the reference patent claims benefit of an earlier foreign filing date, it would seem that the validity of such claim cannot be precluded against an applicant except in an inter partes proceeding. Despite the language of 35 U.S.C. § 119, that the U.S. application "shall have the same effect as the same application would have if filed in this country on the [foreign filing] date," the Office does not ordinarily use the foreign filing date in rejections,[56] although where the patentee has won an interference with applicant on the strength of his foreign filing date such date becomes the effective date of the patent as to claims similar to the interference counts.[57]

[56] *Viviani* v. *Taylor* (Comr: 1935) 72 PQ 448, MPEP 715.01.

[57] *Ex parte Kinsella* (BA: 1938) 39 PQ 199. *Ex parte Blumlein* (BA: 1952 and 1953) 103 PQ 223.

To the same effect was the Patent Office's own MPEP, section 715.01 as it was over a long period until changed on May 27, 1964, quoted infra.

[8] We know section 1 of the Boykin Act has a saving clause about "conflicting" rights of applicants and patentees but under the law then existing believe it refers to interference situations, possibly, and note that it refers specifically to infringement situations. In 1946 U.S. patents were not used as "references" as of their foreign priority dates and "conflicting" would not have connoted such situations.

Convention the Board finds in section 4887 (now 119) as to the protection of third parties.

Section 102(e)

We have quoted this section above and pointed out that it is a patent-defeating section, by contrast with section 119 which gives affirmative "priority" rights *to applicants* notwithstanding it is drafted in terms of "An application." The priority right is to *save* the applicant (or his application if one prefers to say it that way) *from patent-defeating provisions* such as 102(e); and of course it has the same effect in guarding the validity of the patent when issued.

Section 102(e), on the other hand, is one of the provisions which defeats applicants and invalidates patents and is closely related in fact and in history to the requirement of section 102(a) which prohibits a patent if

> (a) the invention was *known* or used by others *in this country*, or patented or described in a printed publication in this or a foreign country, *before the invention* thereof by the applicant for patent, * * *. [Emphasis ours.]

In fact, section 102(e) springs straight from 102(a)'s predecessor, R.S. 4886, by decision of the United States Supreme Court in 1926. It was pure case law until 1952 when, having become firmly established, that law was codified by incorporating it in the statute.

We will not undertake to trace the ancestry of 102(e) back of its immediate parentage but clearly it had ancestors or it would never have come to the Supreme Court. We will regard its actual birth as the case of *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390 (March 8, 1926), which we shall call *Milburn*. It is often called the *Davis-Bournonville* case. It was an infringement suit on a patent to Whitford and the defense, under R.S. 4920, was that he was not the first inventor. R.S. 4920, "Fourth" defense, was: "That he was not the original and first inventor or discoverer of any material and substantial part of the thing patented." This was based on that part of R.S. 4886 corresponding to present 102(a), which read, "not known or used by others *in this country*, before his invention or discovery thereof." [Emphasis ours.] Defendant produced a patent to Clifford which contained a full description of Whitford's invention, but did not claim it. The law at that time was in confusion as to whether claiming was relevant to the defense and that was the issue the Supreme Court resolved. The Circuit Courts were in conflict, especially the Second and Sixth. No foreign applications were involved. The U.S. filing date of the application for Clifford's patent was earlier than any date relied on by Whitford. In a short three and a half page opinion Mr. Justice Holmes held that the description of Whitford's invention in Clifford's patent, Clifford's application having been filed in the United States Patent Office with the same description before Whitford's invention, showed that Whitford was not the first inventor, as the law required, and that his patent was therefore invalid.

[15] We need not go into the reasoning of the *Milburn* case, which has its weaknesses, because all that matters is the rule of law it established: That a complete description of an invention in *a U.S.* patent application, filed before the date of invention of another, if it matures into a patent, may be used to show that that other was not the first inventor. This was a patent-defeating, judge-made rule and now is section 102(e). The rule has been expanded somewhat subsequent to

1926 so that the reference patent may be used as of its U.S. filing date as a general prior art reference, as shown by *In re Harry*, 51 CCPA 1541, 333 F.2d 920, 142 USPQ 164 (1964), and the December 8, 1965 Supreme Court decision in *Hazeltine Research, Inc.* v. *Brenner*, 382 U.S. 252, 147 USPQ 429.

What has always been pointed out in attacks on the *Milburn* rule, or in attempts to limit it, is that it uses, as prior knowledge, information which was secret at the time *as of which* it is used—the contents of U.S. patent applications which are preserved in secrecy, generally speaking, 35 U.S.C. 122. This is true, and we think there is some validity to the argument that that which is secret should be in a different category from knowledge which is public. Nevertheless we have the rule. However, we are not disposed to extend that rule, which applies to the date of filing applications *in the United States*, the actual filing date when the disclosure is on deposit in the U.S. Patent Office and on its way, in due course, to publication in an issued patent.

[16] The Board's new view, as expressed in this case and in the *Zemla* and *Rapala* decisions, the latter sustained in *Lilly*, has the practical potential effect of pushing back the date of the unpublished, secret disclosures, which ultimately have effect as prior art references in the form of U.S. patents, by the full one-year priority period of section 119. We think the *Milburn* rule, as codified in section 102(e), goes far enough in that direction. We see no valid reason to go further, certainly no compelling reason.

[17] We have seen that section 119 originated in 1903 and that *right to a patent*; a separate section, *R.S. 4923* [section 72 of former Title 35], its purpose was to grant protective priority rights so that the United States might be a participating member in the International Convention by giving reciprocal priority rights to foreign applicants with respect to the *obtaining* of patents. We have also seen that section 102(e) was the codification of a court-developed *patent-defeating* rule based on a statutory requirement that an applicant's invention must not have been previously known by others *in this country*. We see no such relation between these two rules of law as requires them to be read together and it is our view that section 119 should not be so read with 102(e) as to modify the express limitation of the latter to applications "filed in the United States."

Section 104

This brings us to another related section of the statute. [18] We noted above that section 102(a) refers to knowledge of an invention *in this country* as a patent-defeating provision. This had been interpreted, long before the 1952 codification, to mean public knowledge. Federico's Commentary, 35 U.S.C.A., p. 18 says:

> In the language of paragraph (*a*), an invention is not new if it "was known or used by others *in this country*, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent." The Committee Report both in the general part and in the revision notes recognizes that the interpretation of this condition is somewhat more restricted than the actual language, stating "the interpretation by the courts *excludes* various kinds of private knowledge not known to the public," and the narrowing interpretations are not changed. The first clause of paragraph (*a*) indicates that *prior knowledge or use in a foreign country will not defeat the* in the old statute *duplicated this provision and this old section has been omitted as its provisions are covered here and elsewhere.* [Emphasis ours.]

The "elsewhere" is section 104 which has also superseded section 9 of the 1946 Boykin act, above discussed. Before quoting it, we will mention another patent-defeating provision, 102(g) which says a patent may not be obtained on an invention if "before the applicant's invention thereof the invention was made *in this country* by another who had not abandoned, suppressed, or concealed it." [Emphasis ours.] The first sentence of section 104 reads:

> § 104. *Inventions made abroad*
> In proceedings in the Patent Office and in the courts, an applicant for a patent, or a patentee, may not establish a date of invention by reference to knowledge or use thereof, or other activity with respect thereto, in a foreign country, except as provided in section 119 of this title.

The second sentence is an exception not relevant here.

[19] It seems clear to us that the prohibitions of 104, the limitations in sections 102(a) and 102(g) to "in this country," and the specifying in 102(e) of an application filed "in the United States" clearly demonstrate a policy in our patent statutes to the effect that knowledge and acts in a foreign country are not to defeat the rights of applicants for patents, except as applicants may become involved in *priority* disputes. We think it follows that section 119 must be interpreted as giving only a positive right or benefit to an applicant who has first filed abroad [20] to *protect him* against possible intervening patent-defeating events in *obtaining* a patent. Heretofore it has always been so interpreted with the minor exceptions, of little value as precedents, hereinafter discussed. So construed, it has no effect on the effective date of a U.S. patent as a reference under section 102(e).

As further indication that the *Milburn* rule never applied to foreign filing dates, and that its statutory version, section 102(e), does not either, is the fact that the Supreme Court dealt with the matter. The lower court had attempted to draw an analogy involving R.S. 4887 on the issue whether the anticipatory subject matter had to be claimed. Mr. Justice Holmes said, "The policy of the statute as to foreign inventions obviously stands on its own footing and cannot be applied to domestic affairs." (270 U.S. at 402.) This shows he was at least conscious of the fact that he was dealing only with "domestic affairs." In discussing this point, the *Lilly* opinion (147 USPQ at 453) emphasizes that it is dealing with a 102(e) rejection, involving disclosure which is in a U.S. patent, a rejection "not based on 102(a)." This rather overlooks the fact that *Milburn* rested on the proposition that Whitford was not the first inventor, that there was no 102(e) in those days, and that the court found the basis for its decision in the R.S. 4886 provision that the invention must not have been "known * * * by others in this country, before his invention * * *." Today this provision is 102(a).

[21] The simple observable fact, therefore, is that the effect of section 102(e) is to make a U.S. patent *available* as a reference, as of its U.S. filing date, and that thereafter the rejection of an application, or the holding of invalidity in the case of a patent, is *predicated on* some other section of the statute containing a patent-defeating provision to which the reference applies. Much confused thinking could be avoided by realizing that rejections are *based* on statutory provisions, not on references, and that the references merely supply the

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[20] * It is first filing in a foreign convention country that creates the priority right, *not the nationality of the applicant*. It often happens that American inventors domiciled in the United States file abroad before filing here and claim priority rights in their own country as a result.

evidence of lack of novelty, obviousness, loss of right or whatever may be the ground of rejection. In some cases we have examined on this issue, *Walker-Blumlein* for example, the *statutory ground* of rejection was that the applicant was not the first inventor, the *evidence* of that fact being that he lost a count to the same invention, or one patentably indistinguishable from it, in an interference. Yet the "reference relied on" in *Walker-Blumlein* was the patent granted to Whiteley after the interference, which *patent* had no relevance *as such*. There were similar aspects to the present case prior to the Board's decision.

Section 120

At oral argument the Patent Office Solicitor argued by "analogy" from 35 U.S.C. 120 (a section which he said gives one U.S. application the benefit of an earlier *U.S.* application under specified circumstances *for all purposes*) that section 119 should similarly give to a patent, used as a reference under section 102(e), effect as of an earlier *foreign* filing date.

We could ignore the issue because it was not before the Board here and was not briefed but will consider it because it is extensively discussed in *Lilly* (147 USPQ at 449, 455, 462) wherein the Patent Office pursued the same argument. One aspect of it is that sections 119 and 120 contain the "same phrase," namely "shall have the same effect."

We find no substance in this argument because: (1) as above pointed out, or statute law makes a clear distinction between acts abroad and acts here except for patents and printed publications. Section 120, following policy in sections 102(a), (e) and (g) and 104, contains the limitation to applications "filed in the United States," excluding foreign applications from its scope. (2) Use of the same expression is mere happenstance and no reason to transfer the meaning and effect of section 120 as to U.S. filing dates to section 119 with respect to foreign filing dates. Section 120 was not drafted until 49 years after the predecessor of section 119 was in the statute.

The Cases

With minor exceptions, we deem the few decided cases, which the writers on this issue all discuss, to be of slight significance. What determines the result in this case is statutory history, not judicial precedents. We will therefore treat them as briefly as possible in chronological order. *Milburn* (1926), of course, is part of the statutory history and does not deal with the issue here at all.

Next came *Federal Yeast Corp.* v. *Fleischmann Co.*, 13 F.2d 570 (4th Cir. 1926), affirming 8 F.2d 186 (D. Md. 1925). This was an infringement suit on two patents the validity of which was attacked. The court determined that they were for the same invention and they were both owned by Fleischmann. They could not both be valid. One of them had a 1915 German filing date, effective under the World War I Nolan Act, and a U.S. filing date in 1920. The other had a filing date in 1919. The patent on the former application was sustained and the patent on the latter application held invalid. There is much dispute as to what the case stands for. If the inventions were the same, as they appear to have been, a priority-type situation existed in which the date of priority and foreign filing would be involved.

There was no interference, but in holding valid the patent with the German filing date the court gave the patent the benefit of the "priority" date. It also relied on *Milburn*, then just decided, subsequent to the District Court decision. The lower court found the patent with the German filing date to be the "prior application" by virtue of the Nolan Act, without discussion, said the respective filing dates fixed the dates of invention, found the second invention was the equivalent of the first, and under the authorities found there was "no patentable invention" in the second, wherefore it was invalid. The appellate court affirmed, saying validity was "to be governed by the ordinary rules" and finding, as to the second patent, "in view of the disclosures of Hayduck [the first], their claims in suit cover nothing patentable." It also found the two inventions were the same and remarked that "the plaintiff can get all the relief against the defendant [from the claims of the one patent] it could obtain, if both patents were held valid and infringed." While we are not sure what the case stands for, other than the proposition that there cannot be two valid patents on the same invention, we are sure there was no discussion of the problem before us now. We are willing to say on its facts it is some support for the Board but it seems to us more like a priority case or a double patenting issue than a decision on the effective date of a U.S. patent as a reference. In fact, the appellate court talked about "priority." On the issue here it is a very unclear precedent, as most commentators seem to agree.

Nine years pass without a decision and we then come to *Viviani* v. *Taylor* v. *Herzog*, 72 USPQ 448 (1935), a Patent Office decision which deals squarely with the issue here, is admitted by the Board in *Rapala* (*Lilly*) to be "of course contrary to the holding herein" whereas in this case the Board attempts to distinguish it on the ground there is a difference between matter claimed in a reference and matter not claimed. We quote what the Commissioner said to show the basis of the Patent Office practice for some 30 years.

> Section 4887 R.S. [119] does not concern itself with bars against the issuance of patents in this country, such bars being found in section 4886 R.S. [102] (U.S.C., title 35, sec. 31 [old 35]).
>
> Section 4887 R.S. relates solely to the rights of an applicant in the United States who has filed an antecedent and corresponding application in a foreign country.
>
> * * * * * * *
>
> In view of the origin of that [second] paragraph of the section [4887], it is believed to have the same meaning as if it had read, "shall have the same force and effect, in so far as applicant's right to a patent is concerned." This statutory provision has no bearing upon the right of another party to a patent except in the case of an interference where the two parties are claiming the same invention.
>
> * * * * * * *
>
> Section 4887 R.S. cannot be construed as giving greater effect [to a foreign application, which at most is evidence of knowledge of the invention abroad] than is accorded by section 4923 R.S. to knowledge or use in foreign countries which is actually proven. [The last pair of brackets, inexplicably, appears in the original.]

The Commissioner considered the *Fleischmann* case, explaining at length why he found the basis of the decision unclear, noting that R.S. 4923 had not been mentioned. That old section, somewhat like 35 U.S.C. 104, ruled out knowledge or use in a foreign country as a ground for invalidating a patent. See *Electric Storage Battery Co.* v. *Shimadzu*, 307 U.S. 5 (1939).

Under *Viviani* the Patent Office promulgated section 715.01 of its Manual of Patent Examining Procedure under which it and the bar operated until recently. It read:

> In overcoming, under Rule 131, a *domestic patent* where the patentee has an earlier foreign filing date to which *he* would be entitled in establishing *priority* to the invention claimed in the patent, it is *not* necessary for the *applicant* to carry his date back of the patentee's foreign filing date. (*Viviani* v. *Taylor* v. *Herzog*, 72 USPQ 448). [Emphasis ours.]

In 1941 the Court of Appeals for the second Circuit decided *Celanese Corp. of America* v. *Ribbon Narrow Fabrics Co.*, 117 F.2d 481, 48 USPQ 447, affirming 33 F. Supp. 137, 45 USPQ 492 (S.D.N.Y. 1940). Suit was on a Dreyfus patent and a reference was a U.S. patent to Sponholz with a U.S. filing date after, and an alleged German filing date before, Dreyfus' date of invention. The wording of both opinions is inept and all writers are confused by it but whatever the statements made and reasons given, it is clear that defendant asserted the German filing date for the reference and the District Court refused it, the Court of Appeals saying "Sponholz had previously applied for a German patent on May 11, 1926 but that is immaterial * * *." It may be a precedent of little value but it is certainly on the side of disallowing the foreign filing date as the effective date of the reference patent.

In 1951 *Young et al.* v. *General Electric Co.*, 96 F. Supp. 109, 88 USPQ 174, was decided by an Illinois District Court. It involved validity of a patent in suit and the only pertinent remark is concerned with a Bethenod reference having a U.S. filing date after and a French filing date earlier than the date of invention of the patent in suit. Many other prior art patents were relied on. In footnote 6, USPQ at 195, in a 25 page opinion Judge Barnes said, speaking of Bethenod,

> * * * whether it is prior art as to Young No. 2,179,569 depends on the date to which the Bethenod patent is entitled * * *. The court is of the opinion that it is entitled to the earlier date * * * but there is a difference of opinion on this question among the authorities. [*Fleischmann* and *Celanese*, supra, cited.] Whether Bethenod be regarded as prior art in this case makes little or no difference. There is a wealth of prior art without it.

This is some support for the Board's view, but not much.

Most writers do not bother with the 1952 opinions of the Second Circuit Court of Appeals in *Van der Horst Corp.* v. *Chromium Corp.*, 197 F.2d 791, 93 USPQ 350; 198 F.2d 748, 94 USPQ 288. The court made the mistake of using, "Under the doctrine of Alexander Milburn," the British filing date of a *British* patent cited as prior art. On rehearing, the court, in effect, withdrew that ruling saying, "It is not necessary to decide the point and we leave it open * * *." The stated reason for withdrawal was:

> We failed to take into consideration § 72 of Title 35, U.S.C.A. which provided that it should not "void" a patent that "the invention or discovery" had been previously "known or used in a foreign country, * * * if it had not been patented or described in a printed publication." It is reasonable to assume that Holmes, J., had § 72 in mind in *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, supra, 270 U.S. at page 402, * * * when he said that "The policy of the statute as to foreign inventions obviously stands on its own footing and cannot be applied to domestic affairs."

The statute referred to as § 72 is R.S. 4923. Cf. 35 U.S.C. 104.

Ellis-Foster Co. v. *Reichhold Chemicals, Inc.*, 198 F.2d 42, 94 USPQ 16 (3rd Cir. 1952), is cited in the Fishman article as significant because, in his opinion, it criticizes *Viviani*, which we do not find to be the case. The Board herein in a footnote says that the patentee in *Ellis-Foster* failed to antedate the actual U.S. filing date of the reference patent, wherefore the issue here was not present. We agree.

The last case was in 1960 and at argument the Solicitor indicated that it may have been what triggered the reconsideration of the law by the Patent Office and its subsequent change of position. It is *Sperry-Rand Corp.* v. *Knapp-Monarch Co.*, 193 F. Supp. 756, 127 USPQ 193 (E.D. Pa. 1961). The Examiner here relied on it. The Board seems to give it great weight here and in *Rapala* (*Lilly*), finding in it the key phrase which is now its guiding principle—that section 119 gives "status to an application." The District Judge[10] had a problem with a Wimberger patent cited as prior art, whether it was effective as of its Austrian filing date or only as of its U.S. filing date. He called for authority on the point and counsel for both sides supplied it in letters, with arguments, copies of which we have. Counsel for Sperry-Rand presented the "status" argument, which is its origin, so far as we have seen, based on the "same effect" words in section 119. The only cases he cited as authority for his view were *Young*, *Ellis-Foster*, and *Van der Horst*, all discussed above. The court decided, in a footnote, that section 119 gives "status to an application, as distinguished from mere benefit to an applicant, based on the foreign filing. This status is not limited in its effects to the particular applicant involved. Consequently, the Wimberger patent must be considered." His footnote mentions none of his reasons for so deciding, other than the words of section 119, cites no cases, and does not discuss the matter further. *Viviani* was called to his attention as well as MPEP 715.01.

With regret and for the reasons we have fully explained, we must simply express disagreement with the decision of the single judge in *Sperry-Rand*. Like the view of the Board, we view his construction of the words of the statute as too literal and in disregard of the history of the law which was not called to his attention. As to its lack of compelling force as a precedent, we quote from the Board herein:

> There was a rehearing in which the court held that it was incumbent on the patentee to produce strong and convincing evidence of any prior date asserted, regardless of the Patent Office acceptance of an affidavit antedating references, 129 USPQ 305, 193 F. Supp. 756 (1961). There was no evidence in court, and hence the patentee had not overcome the filing dates of the other references involved, not even the U.S. filing date of the Wimberger patent. *The issue involved here hence became moot and the statements of the court regarding it are dicta*, although this does not mean that they are incorrect. [Emphasis ours.]

Summary as to the Law and Its Legislative Ratification

We have now set forth extracts and digests of the materials produced by legal research to indicate what we believe the "law" to be. This, of course, is no substitute for the much more voluminous original materials. From it the following clear picture emerges.

Section 102(e) was a codification of the *Milburn* doctrine. The *Milburn* case accorded a U.S. patent effect as a reference as of its U.S. filing date and stated that the policy of the statute on domestic inventions "cannot be applied to foreign affairs." No foreign date was involved in the case. The codifying statute specifies that the date as of which the patent has effect is the date of filing "*in the United States*."

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[10] Senior Judge William H. Kirkpatrick, United States District Court for the Eastern District of Pennsylvania, who often sits with this court and is so sitting now, but who did not sit in this case.

[22] R.S. 4887, predecessor of section 119, was in effect from 1903 to 1952 when it was incorporated unchanged in the present statutes. An examination of the legislative history of that statute fails to reveal a scintilla of evidence that it was ever intended to give "status" to an application or to serve as a patent-defeating provision except insofar as the application, or patent issuing thereon, becomes involved in a priority contest. The *Milburn* rule, under which U.S. patents are used as prior art references for all matter disclosed in them as of their U.S. filing dates has been consistently and continuously applied since its inception in 1926, if not earlier under lower court decisions, by the United States Patent Office, the agency charged with the administration of the patent system, in accordance with the view expressed by the Commissioner of Patents in 1935 in the *Viviani* case. That view was that R.S. 4887, and later section 119, does not make a U.S. patent effective as a reference as of a foreign priority date to which it may be entitled. This view was further actively promulgated by the Patent Office in the *first edition* of its Manual of Patent Examining Procedure, section 715.01, November 1949, and so continued until May 27, 1964, after the expression by the Board of its new view as exemplified in this case.

[23] There is no case "law" on the issue here worth considering. Some seven cases have been cited pro and con, the most that can be found in a period of thirty-four years from 1926 to 1960. We believe they can be accurately summarized as follows: *Van der Horst* is concededly not in point. There are three cases cited as favoring the Board's position here: *Fleischmann* is a doubtful precedent of uncertain meaning where one of two patents on a single invention was invalidated on the basis of a priority date to which the other was held entitled; a single judge in *Young* thought the priority date of a patent was its effective date as a reference, recognizing conflict as between two precedents; a single judge in *Sperry-Rand*, briefed on prior cases in letters from counsel but not on the statutory history, took the same view as the Board here. On the other side there are also three cases: *Viviani* refusing to follow *Fleischmann* and expressly holding that the priority statute does not apply to the effective date of a reference; *Celanese* where a Court of Appeals refused to apply the priority date to a reference and said it is "immaterial"; and *Walker-Blumlein* where this 5-judge appellate court held that only the domestic filing date of a reference is effective, in which case the Patent Office Solicitor conceded that to be the law.

[24] If any "weight of authority" is to be found in this we would say the scales tip more than perceptibly in favor of the restriction of U.S. patents *as references* to their filing dates *in the United States*, as stated in section 102(e) and in accordance with "in this country" limitations of 102(a), (g), and the prohibitions of section 104.

But over and above this as a basis of decision we feel there is a paramount principle which controls. The administrative agency known as the Patent Office pursued a uniform policy and interpretation contrary to the new view of the Board for the 26 years from 1926 to 1952, at least. That interpretation was well publicized and well known and must be assumed to have been known to Congress in 1952 when it revised and codified the patent statutes into present Title 35, United States Code. In that codification section 119 reenacted R.S. 4887 with no change in substance, as above shown.

[25] This legislative ratification of the interpretation of the statutes by the Patent Office determines the meaning and effect of section 119 for the future. *Helvering* v. *Winmill*, 305 U.S. 79 (1938), *United States* v. *Dakota-Montana Oil Co.*, 288 U.S. 459 (1933). Under that interpretation, section 119 does not affect the express provision of 102(e) as to filing "*in the United States*" and the decision of the Board that the Swiss filing date of Habicht is the effective date of his U.S. patent as a reference must be reversed.

Reason for Remand

As our analysis of the Board's statements of the issue shows, the Board concerned itself with a single question of law, the effective date of the Habicht patent as a reference under 35 U.S.C. 102(e) and 103. The only other question it dealt with was the merits of the rejection, having found Habicht to have an early enough date to be available as a reference. On the merits, it found the invention of all three appealed claims to be obvious within the meaning of 35 U.S.C. 103. We have not considered that finding because of our decision that Habicht is not available as a prior art reference, which makes it unnecessary to pass on the merits of the rejection based on Habicht in view of Wagner et al.

Claim 17 was rejected only on the disclosure of Habicht in view of Wagner et al. and since we have held Habicht to be unavailable, the rejection of that claim stands reversed.

As to claims 10 and 16, however, the Examiner made an additional rejection (in his answer it was the *only* rejection of these two claims) as "unpatentable over the count of Interference No. 90,218 now claim 1 of the Habicht patent in view of the Wagner et al. reference." (The language is quoted from the Examiner's answer.) So far as we can see, the Board failed to deal with this rejection. The only possibility that the Board dealt with the rejection on the interference issue is in the paragraph we quoted early in this opinion and described as the Board's "third statement" of the issue. We are unable to say whether the Board agreed or disagreed with the Examiner's rejection on the interference issue in saying "no questions of estoppel or res judicata can be raised concerning" the claimed compounds of appellants.

[26] Since the Board predicated its affirmance of the Examiner's rejection entirely on its finding that Habicht was available as a reference to show what the statutory prior art was, since we are reversing on that issue, and since we are unable to ascertain the Board's decision, if any, on the other outstanding rejection, we remand this case for clarification of the Board's position on the rejection of claims 10 and 16 as "unpatentable over" the interference count in view of Wagner et al.

The decision of the Board is reversed and the case is remanded for further proceedings consistent herewith.

REVERSED AND REMANDED.

MARTIN, *J.*, took no part in the decision of this case.

WORLEY, *Chief Judge*, dissenting.

It seems to me the majority below has the better of the argument with the majority here. Typical of my misgivings regarding the reasoning and conclusion of the present majority is the effort to fashion *In re Walker* into a controlling precedent for its position. It would be highly presumptuous of me to assume that merely because of my participation in that decision I became an authority on what the

court held. It would be equally presumptuous to assume that I at once became an expert on Congressional intent merely as one of 435 members of the House of Representatives which passed the Boykin Act, or perchance as one of many who suggested or opposed language in that or other measures. The real test of judicial or legislative intent lies in the language employed. What the *court* held in *Walker* is found in its *decision*, and what *Congress* intended is found in the *statute*. In *Walker* this court expressly said:

> The *rejection* by the tribunals of the Patent Office in the case at bar *is based not upon the filing date of Whiteley's foreign application* but upon the adverse award of priority of invention against appellant and in favor of Whiteley, the patentee. [Emphasis supplied.]

Thus all else is obviously dicta.

There is no real judicial precedent in the cases cited below or here, save the recent District Court opinion[11] in *Eli Lilly* v. *Brenner* where the issue was squarely raised and properly disposed of.[12] In view of the unsettled and conflicting case law when the 1952 Patent Act was passed, it is not possible to ascertain which line of decisions Congress was "legislatively ratifying." Nor am I convinced that under such circumstances Congress was ratifying the then Patent Office practice.[13]

Granted the desirability of following the *status quo*, this court has never been reluctant to depart, in some instances *sua sponte*, from that principle.[14] Thus there is no valid reason in law or logic why this court should prevent the Patent Office from correcting, on its own, what it obviously recognizes to be prior *misinterpretation* of Congressional intent.

While it has been said (see *Bate Refrigerating Co.* v. *Sulzberger*, 157 U.S. 1; *Webster* v. *Luther*, 163 U.S. 331) that the practical construction given to an act of Congress, fairly susceptible of different constructions, by an executive department of the Government is entitled to respect, and in doubtful cases should be followed by the courts especially where interests have grown up under the practice adopted, it seems to me the meaning of the statute is clear and no prior practice inconsistent with that meaning can be given effect. See *Andrews* v. *Hovey*, 124 U.S. 694, 716–718. Antecedent administrative interpretation long in force does not render it impossible for the Patent Office to promulgate a new interpretation changing for the future the earlier practice, particularly when the new interpretation appears to comport with the plain meaning of the statute. See *American Chicle* v. *U.S.*, 316 U.S. 450. Section 119 states that a United States application based on a foreign application "shall have the same effect as the same application would have if filed in this country on the date on which the application * * * was first filed in such foreign country." There is no language in section 119 to restrict that effect in any way, whether for purposes of obtaining a patent or subsequently utilizing that patent as a prior art reference, i.e. evidence of priority as to the disclosed subject matter, to defeat another's right to a patent. It seems to me the majority here legislates into the statute words of limitation which Congress has not placed there. That it cannot do. *Bate Refrigerating Co.* v. *Sulzberger*; *Electric Storage Battery Co.* v. *Shimadzu*, 307 U.S. 5, 14.

I would affirm.

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[11] The author of that opinion is Judge Joseph R. Jackson who rendered distinguished service on this court for many years. He participated in *Walker*, and rejected it as precedent on the issue in *Lilly*.

[12] See also *Sperry-Rand Corp.* v. *Knapp-Monarch Co.* to the same effect, although that discussion is, as in *Walker*, dicta.

[13] The oft-repeated statement that administrative construction of a statutory provision receives legislative approval by reenactment of the provision without material change covers the situation where ambiguities in a statute are resolved by reference to administrative practice prior to reenactment. It does not mean that an interpretation of a provision of one act becomes frozen into another act merely by reenactment of that provision, so that administrative interpretation cannot be changed prospectively through exercise of appropriate administrative discretion. See *Helvering* v. *Wilshire Oil Co.*, 308 U.S. 90. Nor does it mean that prior construction has become so embedded in the law that only Congress can effect a change. *Helvering* v. *Reynolds*, 313 U.S. 428. Moreover, any assumed acquiescence of Congress to the Patent Office interpretation of R.S. 4887 prior to its 1952 enactment of section 119 would appear of little import, absent evidence that that interpretation was expressly called to the attention of Congress at the time and expressly adopted. See Sutherland Statutory Construction, § 5109 (3 ed. 1948).

[14] See, e.g., *Shoe Corp. of America* v. *Juvenile Shoe Corp. of America*, 46 CCPA 868, 266 F.2d 793, 121 USPQ 510, reversing Patent Office practice and judicial precedent which had stood for over 30 years. See also *In re Bremner*, 37 CCPA 1032, 182 F.2d 216, 86 USPQ 74; *In re Nelson*, 47 CCPA 1031, 280 F.2d 172, 126 USPQ 242; *In re Wilke*, 50 CCPA 964, 314 F.2d 558, 136 USPQ 435; *In re Palmquist*, 51 CCPA 839, 319 F.2d 547, 138 USPQ 234; *In re Manson*, 52 CCPA 739, 333 F.2d 234, 142 USPQ 35, many of which are discussed in *Brenner* v. *Manson*, 383 U.S. 519 (1966).

PATENT SUITS

Notices under 35 U.S.C. 290: Patent Act of 1952

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2,598,985. (See 2,520,309.)

2,905,945, L. Winter, COLLAR CONSTRUCTION FOR SHIRTS, filed Mar. 7, 1966, C.C.A., 4th Cir., Doc. 10,525, *Lancer of California et al.* v. *Piedmont Shirt Company*. Decree of District Court affirmed Oct. 28, 1966.

2,906,604, G. M. Mast, TRANSPARENCY VIEWER, filed Nov. 30, 1965, D.C. Minn. (Minneapolis), Doc. 4–65/363, *Mast Development Company* v. *Allied Central Stores, Inc.* Stipulation and order of dismissal without prejudice Oct. 19, 1966.

2,909,816, E. J. Wood, POST SUPPORT, filed Oct. 21, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45840, *Woodmack Products, Inc.* v. *Simpson Company et al.*

2,916,572, N. K. Walker, JET DEFLECTING APPARATUS, filed Oct. 19, 1966, Ct. Cls., Doc. 361–66, *Carl H. Richmond, Jr.* v. *The United States.*

2,939,516, J. R. Drew, FOLDING TABLE, filed Oct. 20, 1965, D.C. Oreg. (Portland), Doc. 65–531, *Dyco, Inc.* v. *City of Eugene*. Order of dismissal Oct. 17, 1966.

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2,954,606, Schur and Rickards, CELLULOSIC SHEET AND FILTER, AND PROCESS THEREFOR; **2,238,852**, same, METHOD AND APPARATUS FOR MAKING FILTERS, filed Oct. 13, 1966, D.C., W.D.N.C. (Asheville), Doc. 2588, *Celfil Company Establishment et al.* v. *Olin Mathieson Chemical Corporation.*

2,956,242, A. Eisele, PRECISION CONCENTRICITY GAUGE; **2,966,556**, J. P. St. Amour, HOLE LOCATION GAUGE, filed Oct. 11, 1966, D.C., E.D. Mich. (Detroit), Doc. 29070, *Andrew Eisele, doing business as Zero Internal Gauge Company* v. *John P. St. Amour.*

2,957,793, J. W. DICKEY, LAMINATING POLYURETHANE FOAM; **Re. 25,492**, same, METHOD OF AND AN APPARATUS FOR FORMING LAMINATED STRUCTURE OF ADHERED MATERIALS, filed Oct. 7, 1966, D.C., N.D. Ga. (Rome), Doc. 1816, *Reeves Brothers, Inc.* v. *Carolyn Chenilles, Inc.*

2,958,149, M. Wenig, APPLICATION OF METAL LEAF, filed Oct. 7, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–956, *Glenn-Mar Products, Inc. et al.* v. *Wil-Ray Co. et al.*

2,963,276, E. S. Nelson, FINNED HEATING UNIT WITH GUIDE RAILS, filed Oct. 6, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–948, *Embassy Industries, Inc.* v. *Triangle Plumbing Supply Co., Inc.* Same, filed Oct. 21, 1966, D.C., S.D.N.Y. Doc. 66/3489, *Embassy Industries, Inc.* v. *Schwartz & Portnoy, Inc.* Same, filed Oct. 24, 1966, D. C., E. D. Mich. (Detroit), Doc. 29102, *Embassy Industries, Inc.* v. *National Gas Corporation.* Same, filed Oct. 25, 1966, D.C., W.D.N.Y. (Buffalo), Doc. 1966–152, *Embassy Industries, Inc.* v. *Goff Supply Corporation.*

2,970,783, D. A. Cheyette, COMPOSITE WEARING PARTS FOR CRUSHERS AND THE LIKE, filed Oct. 21, 1966, D.C., M.D. Pa. (Scranton), Doc. 9656, *Nordberg Manufacturing Company* v. *The Frog, Switch & Manufacturing Co.*

2,963,810, O. R. Huggins, GUY HOOK FOR ATTACHMENT TO TRANSMISSION LINE POLES OR THE LIKE, filed Oct. 19, 1966, D.C., N.D. Ala. (Birmingham), Doc. 66–646–S, *Malleable Iron Fittings Company* v. *Continental Electric Company.* Same, Doc. 66–647–S, *Malleable Iron Fittings Company* v. *Barron Bethea Company Incorporated.*

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2,966,856. (See 2,956,342.)

3,000,576, Levey and Harvey, SPRAY GUN, filed Apr. 4, 1962, D.C., S.D. Tex. (Houston), Doc. 14,247, *The Spee-Flo Manufacturing Corporation* v. *Gray Company, Inc.* Final consent judgment—claims 1 to 6, inclusive, and 8 of Patent No. 3,000,576 held valid and infringed; defendant enjoined Oct. 3, 1966.

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3,030,891, S. M. Taylor, LIQUID SUPPLY PUMPING SYSTEM, filed July 9, 1962, D.C., W.D. Wash. (Seattle), Doc. 5621, *Metal Coating Corporation* v. *National Steel Construction Co.* Defendant's motion for summary judgment granted, wherefore final judgment rendered in favor of defendant as to all issues of infringement Jan. 13, 1964. Appeal from ruling on summary judgment of Jan. 13, 1964, affirmed; complaint and counterclaims dismissed Oct. 21, 1966.

3,032,054, D. W. Irwin, PRESSURE REGULATOR CONSTRUCTION, filed Oct. 7, 1966, D.C., S.D. Ind. (Indianapolis), Doc. IP66–C–465, *Fisher Governor Company* v. *Textron, Inc.*

3,054,167, Bryner and Ianussi, CAPPING MACHINE, filed Oct. 7, 1966, D.C., W.D. Pa. (Erie), Doc. 98–77 *Erie, Helm Instrument Company, Inc.* v. *Sigma Engineering Service, Inc.*

3,061,280, J. A. Kraft, APPARATUS FOR MIXING FLUENT MATERIAL, filed Mar. 5, 1965, D.C., S.D.N.Y., Doc. 65/666, *Scientific Industries, Inc.* v. *Greiner Scientific Corp.* Order of dismissal Oct. 4, 1966.

3,062,183, H. L. Tate, ANIMAL MOVEMENT CONTROLLING APPARATUS, filed Oct. 20, 1966, D.C., E.D. Calif.

(Fresno), Doc. F–66–20, *Herbert L. Tate* v. *K & R Sales Company et al.*

3,269,201, H. E. Mills, FISHING LURE, filed Oct. 31, 1966, D.C., M.D. Fla. (Tampa), Doc. 66–360–T, *Gudebrod Industries, Inc.* v. *L & S Bait Company, Inc.*

3,276,768, F. J. Boylan, DEFOAMER, filed Oct. 21, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1914, *Hercules Incorporated* v. *United States Movidyn Corporation.*

3,269,182, C. W. Lofgren, MARKING DEVICE, filed Nov. 4, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1869, *Sanford Research Company et al.* v. *Eberhard Faber Pen and Pencil Co., Inc. et al.* Judgment holding Patent invalid; complaint dismissed Oct. 12, 1966.

3,269,207, J. E. Ruckstuhl, METHOD OF MAKING SYNTHETIC VELVET-LIKE KNITTED FABRIC, filed Dec. 3, 1964, D.C., S.D.N.Y., Doc. 64/3699, *Terlinden & Co.* v. *Gehring Textiles, Inc.* Consent judgment—defendant enjoined Oct. 6, 1966.

3,154,166, Underwood and Cupolo, SAFETY DEVICE FOR AIRPLANE LOADING TRUCKS, filed Sept. 28, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–911, *John Cupolo* and *Raymond L. Underwood* v. *Sky Chefs, Inc.*

3,161,849. (See 2,953,763.)

3,238,852. (See 2,954,036.)

3,245,409, J. R. Martin, SELF-ADJUSTABLE FOUNDATION GARMENT; **3,245,410,** same, filed Nov. 3, 1966, D.C., S.D.N.Y., Doc. 66/3681, *Fleznit Company, Inc.* v. *Curtis Eddy-Form Co.*

3,245,410. (See 3,245,409.)

3,280,444. (See 3,027,619.)

Re. 25,493. (See 2,957,793.)

Erratum

In the OFFICIAL GAZETTE, vol. 830, page 468, Sept. 13, 1966, under "Patent Suits," col. 2, line 7 "2,993,780" should read *2,933,780.*

REISSUES

DECEMBER 6, 1966

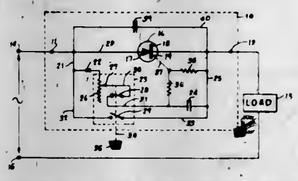
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,119
CONTINUOUSLY VARIABLE DIMMER SWITCH

Saul I. Slater, Glen Cove, N.Y., assignor to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York

Original No. 3,103,618, dated Sept. 10, 1963, Ser. No. 35,298, June 10, 1960. Application for reissue Nov. 16, 1965, Ser. No. 516,821

7 Claims. (Cl. 323—22)



8. A power control and switch device for use as a wiring device to be installed in a building providing substantially continuous control of power supplied to a load over a substantial range of power values, said device comprising an insulating housing adapted to fit in an outlet box, two terminals for connecting said device in series in one side of the two sides of the power line from an alternating current power source supplying current to the load, said power line comprising conductors of a building wiring circuit, means for respectively connecting said terminals to conductors comprising said one side of said power line, a semiconductor control element within said housing having first and second electrodes, said control element normally being substantially non-conductive between said first and second electrodes and being adapted to be rendered conductive in at least one direction by a control signal, means within said housing connecting said control element in series between said two terminals by means of its first and second electrodes, variable time delay means within said housing energized from said two terminals for providing a control signal to said control element, within said housing a mechanical switch arranged to selectively open the circuit for said control signal between one of said terminals and said control element, and a continuously variable manually operable control member for said time delay means extending outside said housing, said mechanical switch being mechanically coupled to said control member and said time delay means being controllable by operation of said control member to initiate conduction by said control element at instants of time bearing a controllable relation with respect to alternating current cycles of power available at said two terminals, whereby portions of alternating current cycles, which portions are continuously controllable in duration over a predetermined range, may be supplied to the load connected in circuit with said device.

26,120
BIT LOADING DEVICE

Jackson M. Kellner, Harris County, Tex., assignor to Jersey Production Research Company, a corporation of Delaware

Original No. 3,088,532, dated May 7, 1963, Ser. No. 78,618, Dec. 27, 1960. Application for reissue Feb. 3, 1966, Ser. No. 525,278

6 Claims. (Cl. 175—230)

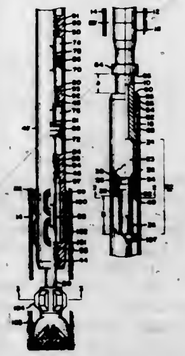
1. An apparatus for forcing a bit against the bottom of a borehole comprising:

an upper hollow shaft section;

a lower hollow shaft section;

a telescoping joint section connecting said upper shaft section and said lower shaft section in a longitudinally slidable and non-rotatable relationship, *said telescoping joint section including means for limiting* the longitudinal movement of said upper shaft *section* and said lower shaft *section* relative to [each other being limited in each direction longitudinally] *one another in both directions;*

a housing member mounted around said upper shaft *section* and said lower shaft *section* in a longitudinally slidable rotable relationship therewith;



pushdown means positioned between said lower shaft section and said housing operable to exert a force on said lower shaft section longitudinally thereof in the direction of said bit and to exert the reaction thrust of such force on said housing member;

means to transfer the force on said lower shaft section to said bit;

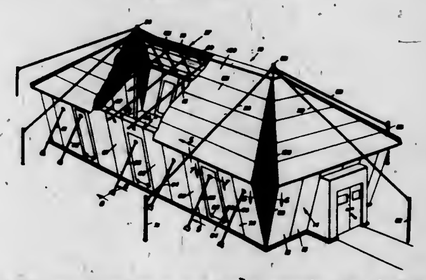
anchor means attached to said outer housing and of a character to transfer the reaction thrust to the borehole wall.

26,121
SAFETY BUILDING CONSTRUCTION

Edward A. Wiegand, 18615 Detroit Ave., Lakewood, Ohio

Original No. 3,034,606, dated May 15, 1962, Ser. No. 713,483, Feb. 5, 1958. Application for reissue July 13, 1962, Ser. No. 210,613

32 Claims. (Cl. 169—5)



19. In combination a structural member for buildings and the like, liquid circulating passage means in said

structural member and forming at least a portion of a closed loop liquid circulatory system, a liquid in said passage means and system, and means circulating said liquid through said passage means and system.

20. The combination according to claim 19 with sprinkler means in communication with said passage means releasing said liquid from said passage means at a predetermined temperature.

26,122
DUCTILE NIOBIUM AND TANTALUM ALLOYS
John W. Semmel, Jr., Wyoming, Ohio, assignor to General Electric Company, a corporation of New York
No Drawing. Original No. 3,156,560, dated Nov. 10, 1964, Ser. No. 818,263, June 5, 1959. Application for reissue Sept. 29, 1965, Ser. No. 491,471
7 Claims. (Cl. 75—174)

7. A body compositionally consisting of (a) at least 90 weight percent of a matrix metal selected from the group consisting of niobium and tantalum, said matrix containing small amounts of oxygen, carbon and nitrogen as nonmetallic impurities, (b) a compound of a metal selected from the group consisting of scandium, yttrium and the rare earth elements of the lanthanide series of the Periodic Table of Elements and combinations thereof, the compound being formed by the combination of the selected metal with the nonmetallic impurities oxygen, carbon and nitrogen present in the original matrix metal, and a metal selected from the group consisting of scandium, yttrium and the rare earth elements of the lanthanide series of the Periodic Table of Elements and combinations thereof dissolved in said matrix metal in an amount larger than that required to precipitate all of the nonmetallic impurities.

PLANT PATENTS

GRANTED DECEMBER 6, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,688
ROSE PLANT
David L. Armstrong and Herbert C. Swim, both of Ontario, Calif., assignors to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California
Filed Oct. 22, 1965, Ser. No. 502,786
1 Claim. (Cl. Plt.—14)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous and upright plant habit which is particularly good for a white-flowered rose variety, large, attractive, leathery and semi-glossy dark green foliage, an excellent urn-shaped bud form which holds up very well under most weather conditions, double flowers of from medium to large size which are borne on strong stems ranging from medium length to long, and a distinctive and attractive white flower color which has a trace of pale yellow.

2,689
ROSE PLANT
Roy L. Byrum, Richmond, Ind., assignor to Joseph H. Hill Company, Richmond, Ind., a corporation of Indiana
Filed Oct. 25, 1965, Ser. No. 505,197
1 Claim. (Cl. Plt.—17)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous habit of growth, abundant foliage, long flower stems, large flowers of attractive Vermilion color, excellent flower keeping qualities, and exceptional suitability for year-around greenhouse forcing use, with consequent ability to hold the flower size and color in hot summer months, yet with good flower production in the dark winter days.

2,690
GLADIOLUS PLANT
Carl H. Fischer, St. Charles, Minn., assignor to Selected Glads, Inc., New Albany, Ind., a corporation of Tennessee
Filed Sept. 7, 1965, Ser. No. 485,660
1 Claim. (Cl. Plt.—85)

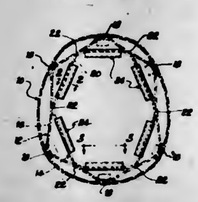
The new and distinct variety of gladiolus plant, substantially as herein shown and described, characterized by its rugged plant, consistent performance, long flowerhead, ruffling, lovely color and greenish throat of its blossom.

PATENTS

GRANTED DECEMBER 6, 1966

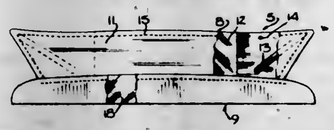
GENERAL AND MECHANICAL

3,289,212
SIZER MEANS FOR HELMETS
Gerard E. Morgan, Glenview, Ill., assignor to John T. Riddell, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 7, 1964, Ser. No. 416,509
6 Claims. (Cl. 2—3)



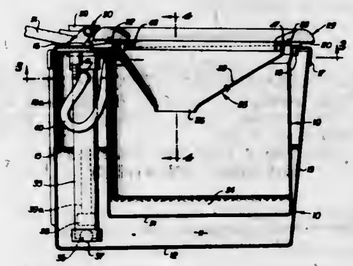
1. In a protective helmet construction comprising a substantially rigid outer helmet shell and including a head cradle within the shell defining an area for receiving the wearer's head and for holding the head in spaced-apart relationship with respect to the interior surface of the shell, said head cradle being formed at least in part by means of straps which are substantially permanently attached to said shell, the improvement comprising head sizer means, means removably securing said sizer means to said cradle straps, said sizer means comprising individual assemblies secured as a plurality of separate locations on said straps, each of said sizer means including a resilient pad portion adapted to be located over the inwardly facing surfaces of said cradle whereby the pad portion is effective to decrease the size of the head receiving area defined by the cradle, and a flexible covering disposed around said resilient pad, and wherein said covering comprises a back portion extending around one of said straps and securing said sizer means to said strap.

3,289,213
STRETCH GARMENT
Carlyle K. Backstrom, Waterville, Maine, assignor to C. F. Hathaway Company, Waterville, Maine, a corporation of Delaware
Filed Nov. 24, 1964, Ser. No. 413,502
6 Claims. (Cl. 2—116)



3. A shirt-like garment comprising the combination of body panels and arms formed of stretch fabric, a collar comprising the combination of a cape having two outer plies formed of stretch fabric having stretch characteristics in one direction and cut for stretching in a longitudinal direction, a liner in the cape intermediate the outer plies and formed of woven fabric cut on a true bias with respect to its longitudinal direction, additional woven liners positioned intermediate the full liner and one of said cape outer plies at opposite end portions of said cape, a band having outer plies formed longitudinally shorter than said cape plies and made of stretch fabric to stretch longitudially, a liner intermediate the outer plies of the band and formed of woven fabric cut on a true bias with respect to its longitudinal direction, elastic thread attaching the top of said yoke to the bottom of said band, and said band plies being attached to said cape in partially stretched condition to correspond to the longitudinal length of said cape.

3,289,214
PORTABLE TOILET
Robert F. Corliss, Hacienda Heights, Calif., assignor, by mesne assignments, to Monogram Industries, Inc., Culver City, Calif.
Filed July 15, 1964, Ser. No. 382,834
8 Claims. (Cl. 4—115)



1. In a portable toilet, means including a receptacle for flush liquid filling the lower interior of the receptacle, a sewage container received downwardly into said receptacle, a toilet bowl having a discharge outlet overlying the lower interior of the container, a toilet seat supporting said bowl to depend therebelow with the seat supported for upward removal relative to the receptacle and container, means for transferring flush liquid from the receptacle to drain downwardly over the upper surface of the bowl and then through said bowl outlet into the container, the container being supported free of the seat and at a concealed location therebeneath for periodic upward withdrawal from the receptacle and emptying after removal of the seat to displace the bowl outside the upward withdrawal path of the container from the receptacle, the lower periphery and bottom of the container downwardly penetrating the flush liquid to upwardly displace said flush liquid about the container, and said flush liquid transferring means penetrating said upwardly displaced flush liquid between the receptacle and container.

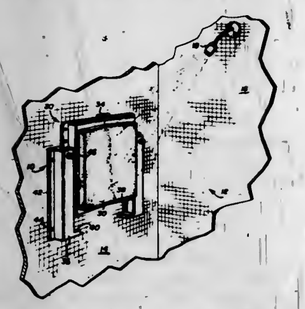
3,289,215
BACK CLEANING DEVICE
Thomas J. Kennedy, Rte. 2, Box 2006AC, Loomis, Calif.
Filed Aug. 16, 1965, Ser. No. 479,866
1 Claim. (Cl. 4—158)

A back cleaning device comprising:

a support member having at least two opposed edge portions, each edge portion being provided with a plurality of spaced apertures;

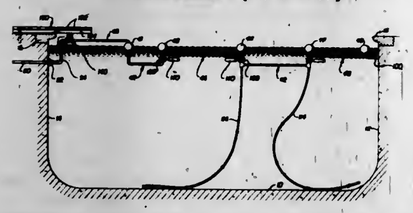
a plastic foam member secured to said support member and particularly adapted to hold a soap and water solution, said support member being formed of a shallow V-shape whereby said secured foam member substantially conforms to the curvature of a user's back; and

at least two channel members secured to the wall of a shower stall for removably receiving said opposed edge portions of said support member, said channel



members including means for cooperating with said apertures for positioning said support member at one of a plurality of predetermined distances from the floor of the shower stall.

3,289,216
RETRACTABLE SWIMMING POOL CLEANER
Myron Phillip Anthony, Newport Beach, and Robert Ortega, Los Angeles, Calif. (both of 5871 Firestone Blvd., South Gate, Calif.)
Filed Feb. 9, 1965, Ser. No. 431,375
11 Claims. (Cl. 4—172)



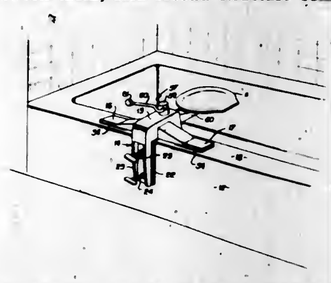
8. In a swimming pool cleaner having a float-supported movable conduit and a flexible hose submergible in the pool water and having its upper end coupled to said conduit for receiving water therefrom, water discharging from its other end serving to dislodge dirt from the pool walls and bottom as the hose moves in sinuous random fashion in the water, said conduit being connected at its one end to a source of pressurized water at the edge of the pool and including at its other end a leader assembly adapted to substantially continuously movably contact the side wall defining the pool periphery and provided with a propulsion port communicating with the conduit interior whereby reactive force of water flowing outwardly through the port serves to propel the leader assembly along the pool side wall, the provision of:

means resiliently biasing the conduit into inoperative retracted position adjacent the pool side wall adjoining the water source;

and means actuated by the pressure of water in the conduit for overcoming the force of the resiliently biasing means.

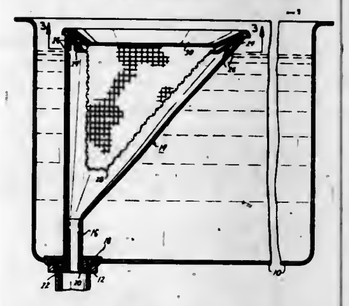
3,289,217
BATH SEAT LIFT
Francis P. Glover, 9400 S. Normandie, Los Angeles, Calif.
Filed May 13, 1964, Ser. No. 366,996
7 Claims. (Cl. 4—185)

1. In a device for maneuvering an invalid patient in and out of a bathtub: a supporting element comprising an elongated central section adapted to extend over and across the side wall of a bathtub and having a pair of arms extending laterally in opposite directions therefrom to rest upon the top edge of said side wall; a first structure depending from said central section, said first structure constructed and arranged to be positioned exteriorly of said wall; a second structure depending from said central section, said second structure constructed and arranged to be positioned interiorly of said side wall; means interposed between said structures for clamping said side wall between them; said second structure comprising of



elongated member and a threaded shaft substantially paralleling said member and rotatably mounted thereon; an internally threaded traveling block mounted on said threaded shaft for movement therealong upon rotation of said shaft; an arm so rotatably carried by said block that in a first angular position thereof it will lie substantially parallel to said side wall and in a second angular position it will extend away from said side wall; a seat carried by said arm; and means for rotating said shaft to raise and lower said seat.

3,289,218
ATTACHMENTS FOR SINKS
Michael G. Mebilos, 2353 Central, Alton, Ill.
Filed Mar. 30, 1964, Ser. No. 355,553
5 Claims. (Cl. 4—286)



1. A sink stopper and drink disposer which comprises:

(a) a frusto-conical base than can extend into the drain opening of the basin of a sink and which can coact with that drain opening to provide a liquid-tight seal,

(b) a tubular discharge end which extends upwardly from said base and which communicates with an opening in said base,

(c) said discharge end having a liquid-tight engagement with said base whereby said sink stopper and drink disposer can coact with said basin to maintain water within said basin,

(d) a funnel-like upper portion that extends upwardly and laterally from said discharge end to laterally displace the center of the upper end of said funnel-like upper portion from the axis of said discharge end,

(e) said funnel-like upper portion being generally conical in configuration,

(f) openings in said funnel-like upper portion adjacent the upper edge of said funnel-like upper portion,

(g) said openings being large enough to permit water to pass freely therethrough,

(h) said openings limiting the maximum level of water in said basin by permitting water to pass therethrough and then downwardly through said funnel-like upper portion and said discharge end to the drain facilities for said basin,

(i) a deflector that is secured to said funnel-like upper portion adjacent said upper edge of said funnel-like upper portion,

(j) said deflector extending downwardly and inwardly of said funnel-like upper portion,

(k) said deflector being generally frusto-conical in configuration and having the small diameter thereof at the bottom thereof,

(l) said deflector overlying said openings but having an angle of generation substantially smaller than the angle of generation of said generally conical upper portion to space the lower portion thereof inwardly of said openings to permit water to flow inwardly through said openings and then downwardly through said funnel-like upper portion and said discharge end to the drain facilities for said basin,

(m) said bottom of said deflector being disposed below the level of said openings to keep the contents of incompletely-emptied drinking glasses from reaching, and passing through, said openings,

(n) a screen that is removably disposable within said funnel-like upper end,

(o) said screen being generally frusto-conical,

(p) a frame for said screen that overlies the upper edge of said funnel-like upper portion,

(q) said frame being generally frusto-conical and having the small diameter thereof at the bottom thereof,

(r) said frame having the outer portion thereof bent outwardly and downwardly to prevent accidental separation of said screen from said funnel-like upper portion, and

(s) a horizontally-directed flange that is stiff and unyielding and that is secured to, and that projects outwardly from, said discharge end above said base,

(t) said flange overlying and engaging a portion of the bottom of said basin to coact with said base to hold said drink disposer upright within said basin,

(u) said sink stopper and drink disposer being substantially as tall as said basin, thereby said basin can be substantially filled with water,

(v) said funnel-shaped upper portion transferring heat from water in said basin to ice cubes held therein and also permitting water that enters said openings to contact said ice cubes,

(w) said discharge end being dimensioned to intercept and hold ice cubes and pieces of fruit whenever said screen is removed from said funnel-like upper portion,

(x) said generally conical funnel-like upper portion having the axis thereof inclined forwardly of the axis of said discharge end to displace the center of the upper end of said funnel-like upper portion substantially forwardly of the axis of said discharge end,

(y) whereby said upper end of said funnel-like upper portion is substantially deeper than twice the distance between said axis of said discharge end and the adjacent wall of said basin.

3,289,219
COMBINED AMBULANCE CART AND ROLLING CHAIR
Richard H. Fernese, Washington Court House, Ohio, and Charles A. Willis, Los Angeles, Calif., assignors to Burt Weil, Cincinnati, Ohio
Filed Oct. 12, 1964, Ser. No. 403,155
10 Claims. (Cl. 5—82)

1. A cart comprising,

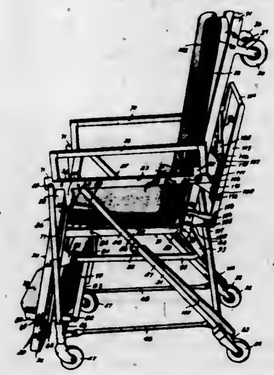
a three-sided, horizontal, rectangular frame,

four downwardly extending legs pivotally mounted on the four corners of said frame,

releasable means normally bracing said legs perpendicular to said frame,

means for actuating said releasable means to permit said legs to swing generally parallel to said frame,

a stretcher frame constituted by a leg panel, a seat



panel and a back panel hinged serially to each other, and

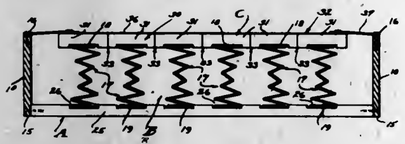
means mounting said stretcher frame on said three-sided frame for movement between a chair position in which said seat panel is horizontal and said leg and back panels are generally vertical, and a stretcher position in which all panels are horizontal.

3,289,220
CUSHION SUPPORTS
Norman Grimshaw, Ashton-under-Lyne, England, assignor to Vitafoam, Ltd., Middleton, Lancaster, England
Filed May 14, 1963, Ser. No. 280,320
Claims priority, application Great Britain, May 15, 1962, 18,570/62
9 Claims. (Cl. 5—220)



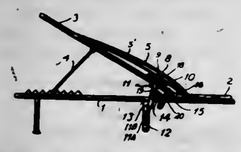
1. A cushion support comprising a unitary resilient member moulded from a material which will flow when subjected to heat and pressure and will be resilient when cold, metallic reinforcing means in the form of substantially U-shaped metallic clips, the arms of which are, at their extremities, in close proximity moulded into said resilient member at least at the ends thereof, hook means removably attached to said metallic clips, and tension adjusting means attached to said hook means at least at one end of said resilient support, said tension adjusting means including at least one metal bar adapted to be adjustably mounted relative to a furniture frame, threaded rods secured to said metal bar, and nuts and lock-nuts on said threaded rods to retain said metal bar in position after tension adjustment of said resilient member.

3,289,221
SPRING UNIT WITH LIMITING MEANS
Melvin N. Jasapol, Los Angeles, Calif., assignor to Wortso Corporation, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 100,421, Apr. 3, 1961. This application Mar. 6, 1964, Ser. No. 350,064
9 Claims. (Cl. 5—239)



1. A spring unit of the character described and including, a set of spring coils in a series displaced from edges of the unit and disposed transversely between the said edges of the unit, and height limiting means comprising a series of bodies and each overlying one of said coils and forming an elongate normally straight element, hinge means joining said bodies for downward flexure of said element, and means preventing upward flexure of said element.

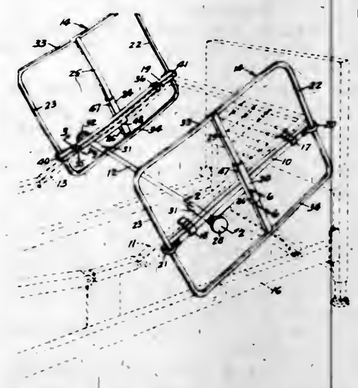
3,289,222
DEVICE FOR AN ADJUSTABLE BED OR CHAIR
Georg Peter Christian Nielsen, Copenhagen, Denmark, assignor to Firm Allan Christensen & Co., Copenhagen, Denmark
Filed July 13, 1964, Ser. No. 382,026
Claims priority, application Denmark, Nov. 4, 1963, 5,162/63
8 Claims. (Cl. 5—327)



1. An article of furniture comprising a back frame and a seat frame said frames being secured together for pivotal movement, a support member slidably supported on the back frame, means secured on said back frame and defining a bearing surface which is supported on the support member, and linkage means connected to said frames and to the support member to displace the support member on said back frame relative to the bearing surface in correspondence with the degree of pivotal movement of the frames.

3,289,223
SAFETY ATTACHMENT FOR BEDS
Carl W. Oja, St. Paul, and Richard L. Scheuerman, Inver Grove, Minn., assignors, by mesne assignments, to Carl W. Oja, St. Paul, Minn.
Filed Oct. 26, 1964, Ser. No. 406,264
15 Claims. (Cl. 5—331)

1. A bed equipped with an adjustable safety attachment, said bed comprising a frame for supporting a mattress and parallel side frame rails, sail safety attachment comprising a base portion rigidly affixed to said side frame rails of said bed, an adjustable side guard carried on said rigidly fixed base portion and adjustable into operative upper and inoperative lower positions with respect thereto, and means for releasably locking said side guard in an operative upper position, said rigidly fixed base portion of said safety attachment including the following, (a) a first support rail mounted laterally adjacent to a first side frame rail of said bed and in essentially linearly aligned relationship thereto, (b) hook means aiding to hold said first support rail in said essentially linearly aligned relationship to said first side frame rail, (c) a second support rail mounted to the second side frame rail of said bed, (d) a connecting rod extending transversely across said bed with a connection at one end to said first support rail and a connection at the other end to said second support rail, said support rails being biased under tension toward each other with the tension of said bias carried through said connecting rod, (e) biasing means movably mounted to a support rail and operable



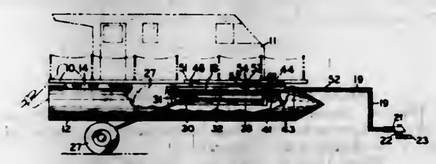
through a handle movably mounted to a support rail, and (f) guide means rigidly fixed to said first support rail for guiding said adjustable side guard during adjustment of the same between operative and inoperative positions, said adjustable side guard of said safety attachment having only one member cooperating with said guide means during said adjustment, said guide means and said member of said side guide cooperating with said guide means during said adjustment being characterized by being non-circular in cross-section and snugly fitted together but slidable with respect to each other.

3,289,224
CONTOUR CUSHION LOUNGE
Arnold D. Witchel, 2527 Matthews Ave., Memphis, Tenn.
Filed Aug. 17, 1964, Ser. No. 390,116
2 Claims. (Cl. 5—345)



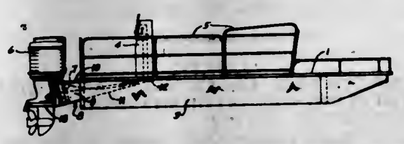
Contour cushion means comprising a substantially pliable foldable cushion, bendable means surrounded by said cushion, and external handle means attached to said bendable means for the manual adjustment of the angular attitude of the profile of said contour cushion means, said pliable cushion being a semi-resilient body-supporting contour cushion in which said bendable means comprise malleable bar means having said handle means extending externally of said cushion, said handle means being integrally connected to said malleable means, rigid strut means interposed between said malleable bar means for the prevention of bulge and planar deformation of the said contour cushion when the said malleable bar means are manipulated to dispose the aforesaid contour cushion into varying degrees of angular curvilinear adjustment.

3,289,225
CONVERTIBLE TRAILER AND PONTOON BOAT CONSTRUCTION
Wayne D. Isch, 285 S. Adam St., Mansfield, Ohio, and Walter J. Lawrence, Sr., 114 Tamarac Drive, Lexington, Ohio
Filed Feb. 1, 1965, Ser. No. 429,597
2 Claims. (Cl. 9—1)



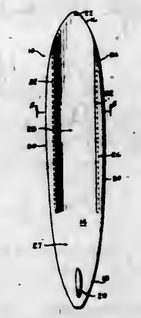
2. In a convertible trailer and pontoon boat construction, a boat deck, spaced apart pontoons suspended below the deck along opposite sides thereof, a draft bar tube, a draft bar telescopically carried in the tube for extension forwardly beyond the deck and retractible to store the same within the confines of the deck and between the pontoons, said draft bar having rotative movement in said tube, said tube and said bar having a plurality of openings to be brought into selective alignment respectively for receiving fasteners whereby to releasably lock the tube and bar in selected extended, retracted and rotated relation, a running gear assembly hingedly supported below the deck and movable to and from a nested position between said pontoons, means for effecting such movement, and means limiting such movement in either direction, a pair of vertically spaced apart rails suspended from said deck in vertical alignment with said telescopic tube and draft bar, a member supported on one of said rails and guided by said rails for movement therealong in opposite directions, tie bars converging from said running gear and pivotally connected at their converging ends to said member, and means operable from access through the deck to move said member to retract the running gear to its nested position between the pontoons, and releasable to return the running gear to non-nested position to support the trailer in land travel.

3,289,226
PONTOON BOAT
George F. Thompson, St. Cloud, Fla., assignor to Klekhaefer Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,680
2 Claims. (Cl. 9—1)



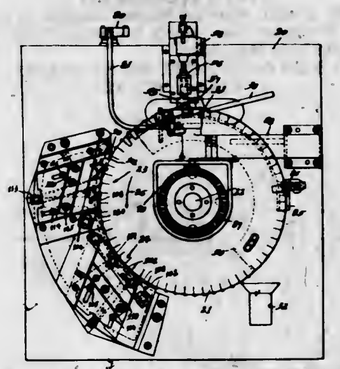
1. In combination in a pontoon boat of the catamaran type having a deck and a pair of laterally spaced side pontoons supporting the deck above the water, a central runner secured beneath the deck and extending rearwardly thereof and of said side pontoons, said runner comprising an upwardly facing hollow channel member with its bottom web inclined upwardly to merge with said deck at its forward end, a transom disposed across said channel member at its rear end and adapted to mount an outboard motor at a position substantially spaced rearwardly from the boat, and anti-cavitation means extending rearwardly of said transom toward the outboard motor to a position closely adjacent the motor to prevent swelling of the water between the runner and the outboard motor.

3,289,227
SURFBOARD WITH NOSE AND/OR MIDSECTION LIFT GENERATING MEANS
John M. Kelly, Jr., 4117 Black Point Road, Honolulu, Hawaii
Filed Nov. 10, 1965, Ser. No. 507,185
16 Claims. (Cl. 9—310)



1. A surfboard comprising an elongated buoyant member which is substantially solid in cross-section having a deck face, an opposite underface and front and rear ends, about the first third of said board's length from said front end aft constituting its nose portion, about the second third of said board's length aft of said nose portion constituting its mid-section, and about the remaining third of said board's length aft of said midsection to said rear end constituting its real stance planing surface, and means in the underface of said board forward of said rear stance planing surface providing at least one open concave area to entrap water and thereby increase lift at said concave area when the rider is positioned on said deck surface forward of said rear stance planing surface, said front and rear ends of said member being tapered and longitudinally upturned and said planing surface including a dependent skeg.

3,289,228
SCREW HEAD SLOTTING APPARATUS
Charles O. Lofgren and Axel Anderson, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Filed Oct. 19, 1965, Ser. No. 498,873
17 Claims. (Cl. 10—6)



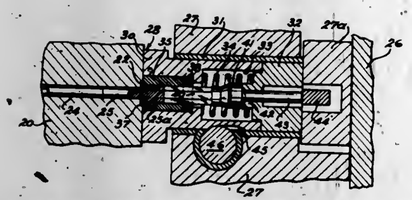
1. In a screw slotting machine, means defining a work station, means for moving screws in a path past said work station, means at said work station for slotting screws, means on said path adjacent said work station for deburring said screws, and sensing means pivotally mounted on said deburring means and having a portion positioned in said path for sensing an unslotted screw.

3,289,229
APPARATUS FOR COLD HEADING BLANKS

Robert G. Friedmann, Tiffin, Ohio, assignor to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio

Original application Sept. 21, 1960, Ser. No. 57,529. Divided and this application July 2, 1965, Ser. No. 469,246

13 Claims. (Cl. 10—12.5)

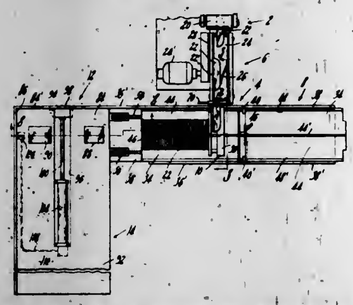


1. A double blow header comprising a work-receiving die adapted to receive an elongated blank with one end protruding therefrom, first and second tools operable to successively upset the protruding end of said blank to form a polygonal head thereon, said first tool including a sleeve formed with a uniform cross-section passage therein, and a polygonal cross-section punch closely fitting in said passage, mounting means mounting said sleeve for axial movement relative to said punch between the forward position toward said die and rearward positions spaced back from said forward position, means maintaining said sleeve in said forward position as said first tool moves toward said die until the end of said sleeve engages the end of said die, said sleeve and die cooperating to define a polygonal die cavity closed at the end face of said die before said punch completes its upsetting operation, said sleeve and die being fixed against relative movement and completely confining said protuding end during at least the final portion of upsetting by said first tool, said second tool being formed with a uniform cross-section polygonal die cavity having side and end walls fixed against relative movement during its entire upsetting operation on said protruding portion, the cross-section of said polygonal die cavity in said second tool being greater than the cross-section of said passage in said sleeve.

3,289,230
APPARATUS FOR LOADING FLAT ARTICLES INTO MAGAZINES

Henry W. Detert, Norway, Maine, assignor to Spaulding Fibre Company, Inc., North Rochester, N.H., a corporation of New Hampshire

Filed Oct. 24, 1962, Ser. No. 233,503
11 Claims. (Cl. 12—1)

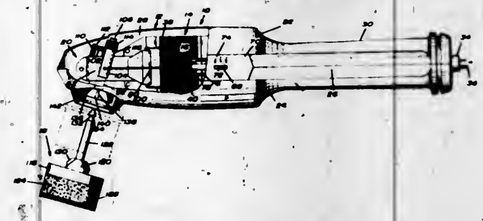


1. An apparatus for loading flat articles into magazines comprising the combination of means for receiving the articles in succession and transporting them to a loading station, means for depositing the articles in succession into a magazine at the loading station, means for advancing the magazine step-by-step along a line past said depositing means in timed relation with the deposition of the articles into the magazine and into a discharge position beyond said depositing means, means for feeding a series of empty magazines in succession to said loading station, and means responsive to the arrival of a loaded magazine at said discharge position for moving the loaded magazines in succession laterally of the line of advance of the magazines and out of said discharge position.

3,289,231
ELECTRIC SHOE POLISHER

Paul Minton, Newington, and John Maslow, Broadbrook, Conn., assignors to The Iona Manufacturing Company, Inc., a corporation of Connecticut

Filed Mar. 2, 1965, Ser. No. 436,488
14 Claims. (Cl. 15—28)

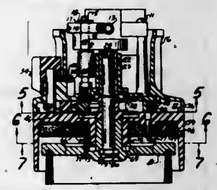


1. In an electric shoe polisher, the improvement comprising: brush means releasably coupled with said shoe polisher;
a driving motor within said polisher operatively coupled to said brush means for operation thereof;
engaging means disposed at least partially within said polisher coupling said brush means with said polisher; and
a manually operable switch means including switch operating means movable to at least three positions nominally defined as first, second and third positions;
said switch operating means in its first position being operative to de-activate said driving motor;
said switch operating means in its second position being operative to activate said driving motor and hence to operate said brush means;
said switch operating means in its third position being operative to actuate said engaging means to thereby release said brush means from its coupling with said shoe polisher;
said brush means having an upstanding stem and said engaging means being movable into and out of releasable engagement with said stem.

3,289,232
PUMP CONTROL, CHECK VALVE AND DRIVE COUPLING MEANS FOR SHAMPOOING AND SCRUBBING DEVICE

Justice H. Beach, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio

Filed Dec. 28, 1964, Ser. No. 421,175
7 Claims. (Cl. 15—29)

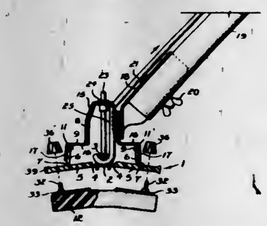


1. A shampooing and scrubbing device comprising:
(a) a casing,
(b) a shaft rotatably mounted on said casing,
(c) scrubbing means mounted on said shaft,
(d) power means for rotating said shaft,
(e) a liquid pump including movable actuating means mounted on said device,
(f) said pump having an inlet and an outlet,
(g) said pump inlet being adapted to be connected to a liquid supply receptacle,
(h) said pump outlet being positioned adjacent said scrubbing means for supplying liquid to a surface being scrubbed,
(i) a check valve in said pump outlet,
(j) selective control means for starting and stopping the flow of liquid through said pump, and
(k) a separable coupling drive between said pump actuating means and said scrubbing means,
(l) said separable coupling drive being automatically engaged when said scrubbing means is mounted on said shaft and being automatically disengaged when said scrubbing means is removed from said shaft.

3,289,233
SQUEEZE MOP

Donald Smyth, Forbes, South Australia, and Raymond H. Morries, Grange, South Australia, Australia, assignors to S. A. Brush Company Limited, Albert Park, South Australia, Australia

Filed July 27, 1965, Ser. No. 475,103
Claims priority, application Australia, July 30, 1964, 47,581/64
5 Claims. (Cl. 15—116)



1. In an improved squeeze mop comprising a transversely extending frame, handle support means on the frame, a squeeze member comprising two pressure members hingedly connected to form a support for a sponge, control members hingedly attached to the pressure members intermediate their edges and operatively coupled to the said transversely extending frame, means connected to the pressure members to move them arcuately under guidance of the control members by moving the hinged interconnection in a medial plane, whereby to move the pressure members from a position where they are relatively co-extensive for mopping to a position where they are substantially parallel for squeezing, the said two pressure members as well as the control members being all formed of a plastic material with the hinges thereof formed by thinner sections of the plastic whereby a single piece unit is formed.

3,289,234
BRUSH ASSEMBLY AND MOUNTING MEANS

Brooks E. Nelson, Chagrin Falls, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed July 17, 1964, Ser. No. 383,301
10 Claims. (Cl. 15—179)

1. A brush assembly comprising a brush-back with a central opening therethrough, a body of bristle material retained therein, a plurality of keyways within said brush-back positioned diametrically opposite one another, and means for mounting said assembly on a shaft comprising a pair of identical interlocking plates on opposite sides of said brush-back, each of said plates including a plurality of pronges and keyways on the inner surface thereof and openings extending transversely therethrough, said

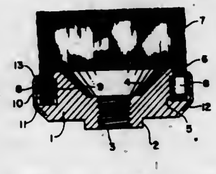


prongs tightly fitting within said openings on the other plate and said keyways in the brush-back to interlock securely said plates and brush.

3,289,235
ROTARY BRUSH

Brooks E. Nelson, Chagrin Falls, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 11, 1965, Ser. No. 494,688
8 Claims. (Cl. 15—200)

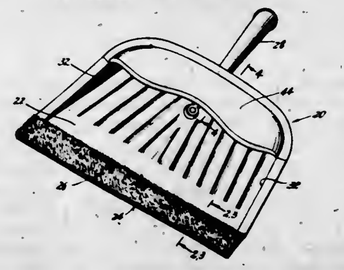


8. A rotary brush comprising a circular body adapted to be centrally mounted for rotation about its axis, a radially outwardly projecting portion circumferentially of said body affording a shoulder, a plurality of tufts of brush material arranged with their inner ends seated against said shoulder and their outer ends extending parallel to such axis beyond the end of said body, individual tuft confining and supporting means gripping the basal portions of said respective tufts, and continuous circumferential retaining means in the form of a separate encircling ring engaging said confining and supporting means to hold said tufts firmly seated against said shoulder in use.

3,289,236
PAINTER'S EDGING TOOL

Ludovit Salka, Botsford, Conn., assignor of one-fourth to Abraham Reback, one-fourth to George R. Wright, both of Stamford, Conn., and one-fourth to David M. Kantor, White Plains, N.Y.

Filed July 6, 1964, Ser. No. 380,289
8 Claims. (Cl. 15—210)



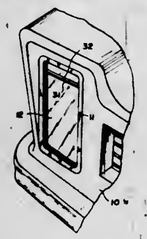
1. A painter's edging tool comprising, in combination:
(a) a holder having a paint-solvent-impervious flat and smooth backing surface for engagement with a paint-applying element to mount the same,
(b) a flat-sheet-like disposable paint-applying element

having fibers projecting from one side, said element having a paint-solvent-impervious barrier extending throughout its area and exposed at the other side thereof,

(c) paint-solvent-resistant, pressure-sensitive adhesive securing the paint-applying element broadside to the said backing surface in closely juxtaposed relation thereto,

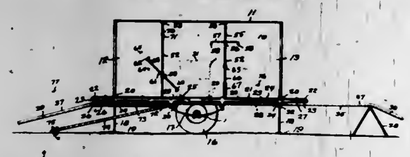
(d) said backing surface and impervious barrier having large continuous areas of contact with the pressure-sensitive adhesive to minimize the likelihood of any paint-solvent, to which the paint-applying element may be subjected, effecting a substantial loosening of the element from the backing surface.

3,289,237
VEHICLE ROADLIGHT WIPER
John W. Lindsey, 1058 Summer Place, Mount Lebanon Township, Allegheny County, Pa.
Filed June 14, 1965, Ser. No. 463,554
10 Claims. (Cl. 15—250.24)



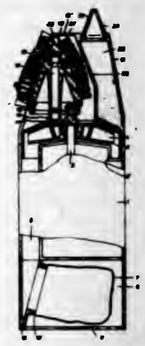
1. Wiper apparatus for a transparency positioned before a light source comprising a carrier movable in a closed path around the light source, means causing the carrier to move in its path, a wiper attached to the carrier, and means defining the path of the carrier so that its movement causes the wiper to pass over the outside surface of the transparency and in back of the light source as the carrier moves in its path.

3,289,238
MOBILE AUTOMATIC STEAM CLEANING UNIT
Dale C. Sorenson, Beresford, and Clayton G. Kelser, Alcester, S. Dak.
Filed Nov. 20, 1964, Ser. No. 412,696
1 Claim. (Cl. 15—306)



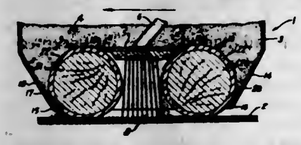
A mobile automatic steam cleaning unit comprising a housing having a top wall and side walls, channel members positioned at the lower portions of said housing for receiving wheeled devices thereon, an endless chain mounted between said channels, means attached to said endless chain for engaging portions of said wheeled devices for moving said wheeled devices, steam ejecting means positioned within said housing and directed against said wheeled devices, said steam ejecting means including oppositely positioned rotating tubes for receiving steam, steam ejecting nozzles attached to the ends of said tubes, said tubes being rotatable in opposite directions, means for adjustably rotating said nozzles on said tubes for adjusting the speed of rotation of said tubes, an upper steam conducting rotatable tube attached to and positioned within said housing and positioned in a horizontal plane for providing means for ejecting steam downwardly, further tubes for conveying steam including flexible end tubes, said flexible end tubes providing means for cleaning lower portions of said wheeled devices and whereby said flexible end tubes will vibrate, still further tubes conveying steam positioned adjacently to said flexible end tubes, said housing having an open bottom, ramp members removably attached adjacently to said channel members, support members for attachment to said housing at the corners thereof for supporting said housing during operation of said unit.

3,289,239
CLEANING DEVICE FOR SHOES, UPHOLSTERY AND THE LIKE
Max Diebold, Eberhard Menge, Hans Schottle, and Rudolf Hanschitz, Reichenbach (Fils), Germany, assignors to Firma Electrostar G.m.b.H., Reichenbach (Fils), Germany
Filed Apr. 28, 1964, Ser. No. 363,200
Claims priority, application Germany, Apr. 30, 1963, E 24,768; Mar. 12, 1964, E 26,600
5 Claims. (Cl. 15—320)



1. A hand held electric motor operated cleaning device comprising, in combination, a relatively elongated hollow casing; an electric motor within said casing with its axis extending substantially longitudinally of the latter; draft creating means including a rotor secured on one end of the motor shaft within said casing; dust collector means within said casing in communication with said draft creating means; a relatively hollow head disengageably secured to one end of said casing, said head being formed with a relatively elongated air inlet aperture communicating with the inlet of said draft creating means; a row of first bristles extending along one edge of said aperture; a relatively elongated dirt stripping ledge extending from the inner surface of said hollow head; a brush element rotatably mounted within said head; and driving means interconnecting said motor and said brush element for rotating said brush element; said brush element including second bristles, said second bristles comprising bundles of bristles, said bundles of bristles being of different length and different strength; the relatively soft bristles being longer than the relatively stronger bristles and projecting outwardly beyond the relatively stronger bristles whereby, when said brush element is pressed firmly against a surface to be cleaned, the surface will be contacted by said relatively stronger bristles for removal of dirt therefrom and, when said brush element is pressed less firmly against the surface to be cleaned, only said relatively soft bristles will contact the surface for polishing thereof; said second bristles continuously beating against said stripping ledge for removal of dirt from said second bristles.

3,289,240
DRY RUG SHAMPOO APPLICATOR
Frederick B. Vanderveer, Grand Rapids, and Robert A. Yonkers, Grandville, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 5, 1964, Ser. No. 387,699
9 Claims. (Cl. 15—532)



1. In a device for shampooing rugs and the like:

(a) a hopper for receiving dry rug shampoo material,

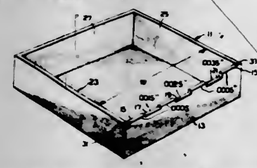
(b) said hopper providing a fixed edge,

(c) a rotatable roller disposed inside the lower portion of said hopper for supporting the device upon a rug,

(d) said roller having a circumferential surface spaced slightly from and coextensive with and movable past said edge during translation of said device over a rug to feed shampoo from said hopper downwardly onto said rug,

(e) and pressure responsive means to automatically increase the effective opening between said fixed edge and said roller surface during said translation in accordance with an increase in the downward pressure applied by the shampoo being fed therebetween.

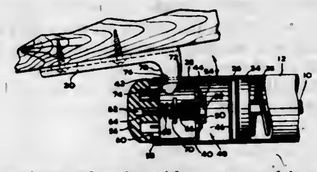
3,289,241
DEVICE FOR APPLYING COATING MATERIALS IN STRIPS
Ross A. Garrison, South Plainfield, and Arthur M. Thomas, Mountainside, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 399,049
8 Claims. (Cl. 15—595)



1. A device for applying a paint-like composition to a sampling panel to test its tendency to flow, which comprises an enclosure structure having an essentially plane and smooth open bottom end interrupted in part of its periphery by a shallow slot of width essentially equal to the full inside width of said structure to provide a gaging element spaced from a plane surfaced panel when the device is resting on said panel by about the desired thickness of a coating of said composition, and additional slots of greater depth formed in said element to apply stripes of thicker coating to selected parts of the panel as the device is moved along the panel while containing the composition.

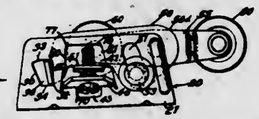
3,289,242
DOOR CLOSERS
George Raeburn Mallory, Sandys St., Blenheim, Ontario, Canada
Filed Jan. 11, 1965, Ser. No. 424,593
6 Claims. (Cl. 16—66)

6. In a door closer for attachment to a door member and a stationary member, and having: a tubular member for connection to one of said door and stationary members; a rod, telescopically slidable relative to said tubular member from an extended to a contracted position, for attachment to the other of said door and stationary members; a spring connected to said rod and said tubular member arranged to bias said members toward the contracted position, wherein said tubular member is cylindrical at the end remote from the projecting end of said rod, wherein means are provided in the said remote end of said tubular member which are rotatable relative to the tubular member to raise or lower the rate of contraction of said



telescopic members, wherein said remote end is provided with a radially inwardly projecting ridge and there is provided a cap having a manually engageable area and a cylindrical resilient skirt, said skirt having a groove adapted to receive said ridge, whereby said cap may be resiliently and rotatably affixed to said tubular member with said ridge resting in said groove, and means coupling said rate controlling means to said knob for rotation thereby.

3,289,243
SLIDING DOOR HANGER
Kenneth A. Milette, Valinda, Calif., assignor to Arthur Cox and Sons, Inc., Pasadena, Calif., a corporation of California
Filed Mar. 19, 1965, Ser. No. 441,244
7 Claims. (Cl. 16—105)



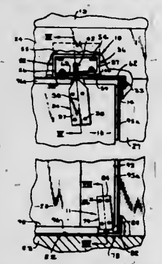
1. A sliding door hanger for movement upon a trackway, including: a bracket having two legs in angular relationship, one leg adapted to be attached to the top edge of a door in horizontal position and the other leg being vertically disposed above the top edge of the door, said vertically disposed leg provided with spaced apart transverse and arcuate slots and with a transverse slot intermediate the aforementioned slots, a lever one end of which is provided with an ear for passage through the transverse slot of the leg to provide a fulcrum point for the lever and likewise provided with attachment means for slide movement within the arcuate slot, the arcuate slot being concentric about the fulcrum point said lever formed with a lug extending through the intermediate slot of the leg, a lug extending outwardly from the vertical leg of the bracket at the intermediate slot, the lug of the lever overlying said last named lug, means extending between the two lugs for adjusting relative separation and approach thereof to swing the lever about its fulcrum point and to move the attachment means in said arcuate slot and a rockerarm provided with wheels secured to the lever at the end opposite the fulcrum point.

3,289,244
OFFSET HINGE ASSEMBLY FOR A SWINGABLE DOOR
Russell N. Carey, deceased, late of Niles, Mich., by Elizabeth M. Carey, executrix, Niles, Mich., assignor to Ellason Refrigerator Company, Hartford, Mich., a corporation of Michigan
Filed Dec. 7, 1964, Ser. No. 416,651
14 Claims. (Cl. 16—154)

13. A hinge structure for supporting a door having panel means adjacent an opening in a wall structure for

movement around a hinge axis substantially parallel with the plane of said door, said axis being at a small acute angle to the vertical centerline of the door, comprising:

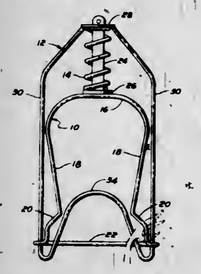
a support mechanism connected between adjacent edge portions of said door and said wall structure adjacent said opening, said support mechanism comprising pin means substantially parallel and substantially concentric with said axis, said axis being offset sidewardly from said panel means, support means mounted upon said pin means, and a support plate substantially perpendicular to said pin means, said plate having a pin opening through which said pin means extends and substantially V-shaped recess means into which said support means is receivable near said pin opening,



whereby said door is substantially supported by said support mechanism for pivotal movement around said axis, said door being urged by gravity into a position wherein it obstructs said opening and said support means is disposed in said recess means and thereby opposes pivotal movement of said door; and

guide means connected between other adjacent edge portions of said door and said wall structure adjacent said opening and spaced substantially from said support mechanism, said guide means being located along said axis to guide the pivotal movement of said other adjacent portion of said door, whereby said door can be pivoted from said first-mentioned position into a second position wherein said opening is unobstructed by said door.

3,289,245
POULTRY SHACKLES
Delos B. Van Dolah, Chicago, and Edwin L. Hulland, Villa Park, Ill., and Franklin E. Best, Uniondale, N.Y., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 21, 1964, Ser. No. 419,911
4 Claims. (Cl. 17—44.1)



1. An improved automatic poultry shackle comprising: a first wire frame having an upwardly extending member for suspending the shackle from an overhead conveyor; a second wire frame formed in the shape of an enclosed figure having substantially vertical sides, said second frame generally encompassing said first frame and being reciprocable vertically with respect thereto; a compression spring attached between said first and second frame to normally urge said second frame upwardly with respect to said first frame; an upwardly curved arch member formed in the bottom of said second frame, said arch member cooperating with said first frame and the side of said second frame to define a pair of upwardly opening slots for receiving the legs of a fowl and retaining said legs against downward and sidewise displacement, said slots being of a width preventing the passage of the feet of said fowl therethrough; a horizontal bottom member at the bottom of said first frame, said horizontal member extending across at least a substantial portion of said slots so as to support the weight of a fowl exerted thereon by the legs thereof; and a substantially horizontally projecting blocking member fixedly mounted on said first frame extending across at least a portion of said slots above said bottom member, said blocking member extending substantially across the space between said vertical sides and arch of said second frame when the latter is in an upper position and extending above said arch when said second frame is moved against said spring to a lower position whereby legs will be ejected from the upwardly open portions of said slots by said bottom member.

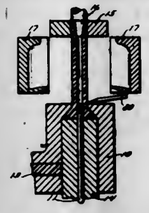
3,289,246
AMUSEMENT DEVICE
Neil S. Deye, 1769 Simpson Drive, Columbus, Ohio
Filed Sept. 10, 1964, Ser. No. 395,403
3 Claims. (Cl. 18—1)



1. A device of the kind described for compressing agglomerate material into a solid article comprising: a pair of rectangular box-like molds each having four sides and a back side, each of said sides of said molds being impervious to said agglomerate of continuous structure to form a closed housing capable of maintaining within said housing said agglomerate material and for compressing the same under pressure into rectangular solid article, a pair of elongated members each having one end thereof connected to the back side of one of said box-like molds, means for hingedly connecting said elongated members in a cross fashion at a fulcrum point, said elongated members having a bend imparted thereto of a sufficient degree to cause said box-like molds to continuously join at all four sides forming a completely enclosed structure when the other ends of said elongated members are advanced together.

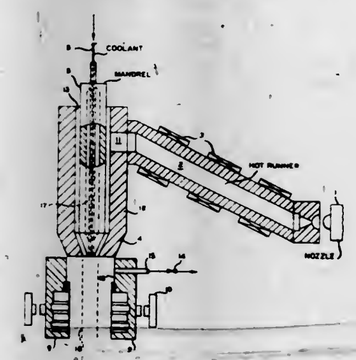
3,289,247
APPARATUS FOR FORMING HOLLOW PLASTIC ARTICLES
Orville B. Sherman Ho-Ho-Kus, N.J., assignor to Owens-Illinois Inc., a corporation of Ohio
Application Oct. 6, 1959, Ser. No. 844,690, now Patent No. 3,114,594, which is a continuation of application Ser. No. 381,257, Sept. 21, 1953. Divided and this application Aug. 23, 1963, Ser. No. 304,134
1 Claim. (Cl. 18—5)

A machine for forming hollow articles of plastic material comprising, in combination, extrusion means including an extrusion die having a substantially vertical axis for extruding a plastic tube in upward direction; a pair of complementary mold halves movable in direction transverse to said axis between an open and a closed position; a blow nozzle having an outer diameter equal to the inner diameter of a neck of the article to be formed, said blow nozzle being arranged concentric with said axis and being movable between a lowered position abutting against said



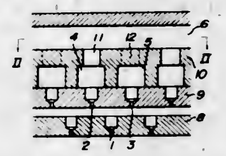
extrusion die and a raised position; a pair of complementary ring halves surrounding said blow nozzle and having inner surfaces corresponding to the outer surface of said neck, said ring halves being movable between an open and a closed position.

3,289,248
BLOW MOLDING APPARATUS WITH BLOW-MOLD EXHAUST MEANS
John N. Scott, Jr., Fred Hicks, and Donald L. Peters, all of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Original application Mar. 23, 1962, Ser. No. 181,879. Divided and this application Oct. 23, 1965, Ser. No. 503,413
5 Claims. (Cl. 18—5)



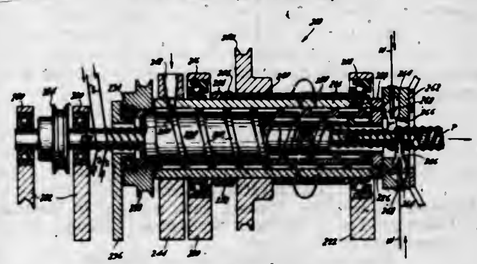
1. Apparatus for blow molding a thermoplastic object comprising in combination sectional mold means which form, when closed, a cavity for forming a molded thermoplastic object, die means having a mandrel means disposed therein in communication at a first end thereof with a supply of molten thermoplastic material so as to extrude from the second end thereof an open-ended tube of thermoplastic material into the space between the open mold sections, said mandrel and die means comprising first, second and third concentric elongated cylinders, said first elongated cylinder forming a first annulus in communication with said cavity at a first end thereof and so extended at the second end thereof to form a first conduit operatively connected to a source of a gaseous pressure medium, said second elongated cylinder disposed around said first elongated cylinder and spaced apart therefrom so as to form a second annulus area, said first and second elongated cylinders being so adapted as to close each end of said second annulus thereby forming a closed annulus between said first and second cylinders, thereby insulating said first annulus, said third elongated cylinder disposed around said first and second elongated cylinders and spaced apart therefrom so as to form a third annulus, said third annulus being operatively connected to said supply of thermoplastic material at a first end thereof and adapted at the second end thereof to form said tube of thermoplastic material, said mold halves being provided with means, when closed to pinch off said tube at a point remote from said die and mandrel means and to close around said mandrel means at a point adjacent thereof and further adapted to carry in the area thereof adjacent said mandrel unobstructed conduit-like exhaust means for the removal of gaseous medium from the mold when closed.

3,289,249
SPINNERETS
Chozo Nakayama, Fuji-shi, Hidehiko Kobayashi, Tokyo, and Shigeo Ito, Hiroshi Yokoyama, and Tooru Hirai, Fuji-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Nov. 26, 1963, Ser. No. 326,141
Claims priority, application Japan, Nov. 24, 1962, 37/52,837
7 Claims. (Cl. 18—8)



1. A spinneret adapted for producing composite filaments comprising a first body having guide passages for separately guiding fiber-forming liquids, a second body having relatively constricted flow passages disposed downstream of said guide passages and in communication therewith for the flow of said fiber forming liquids, and means defining orifices located downstream of the guide passages and in communication therewith for limiting the flow of said fiber-forming liquids therethrough, said guide passages and flow passages being respectively dimensioned to produce respective pressure losses in the fiber-forming liquids flowing therethrough, the ratio of the pressure loss in the guide passages relative to that in the flow passages being between 0.1 and 4.0.

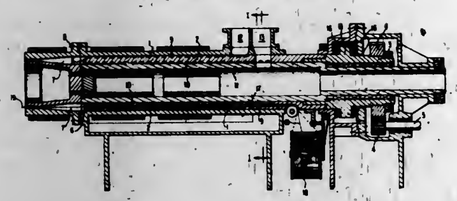
3,289,250
EXTRUDER
Henry J. Zerney, 37—30 83rd St., Jackson Heights, N.Y.
Filed July 26, 1963, Ser. No. 297,820
5 Claims. (Cl. 18—13)



1. An extruder for applying a helical extrusion on a preformed core comprising an external cylindrical casing having internal cylindrical walls, an end piece rigid with and closing one end of said casing, an extrusion orifice formed eccentrically in said end piece, bearing means mounting said casing for rotation about its longitudinal axis, a first hollow extrusion screw mounted coaxially within said casing and having an extrusion thread of a

major diameter complementary to the diameter of the internal cylindrical walls of said casing and having internal cylindrical walls, said first screw and said casing defining an extrusion material passageway therebetween, a second hollow screw providing a sealing function for said passageway mounted coaxially within said first extrusion screw having a thread of a major diameter complementary to the diameter of the internal cylindrical walls of said first extrusion screw and formed in the direction opposite to the direction of said extrusion thread of said first extrusion screw, said second screw rigidly secured to said external casing for rotation therewith, said hollow second screw providing a core passageway through said extruder, a core opening formed in said end piece, mandrel means at said end piece onto which extruded material is deposited, an entry port formed in said casing at the end opposite from said end piece and drive means engaged with said casing for rotating said casing and said second screw to deposit a helical extrusion on a preformed core moving through said extruder.

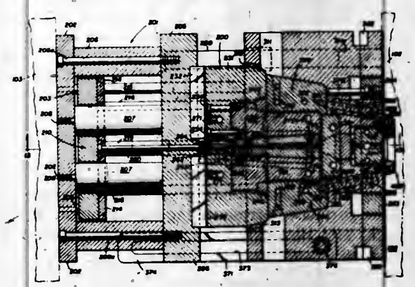
3,289,251
EXTRUDER (SCREW TYPE) FOR THE PROFILING OF PLASTIC MATERIALS I.E., PLASTICS GETTERS, EARTHY MASSES, ETC.
Jean Daubenfeld, Duren, Germany, assignor to Zimmermann & Jansen G.m.b.H., Duren, Rhineland, Germany, a corporation of Germany
Filed March 16, 1964, Ser. No. 385,091
4 Claims. (Cl. 18—13)



1. An extruder comprising: a worm screw having a threaded surface and mounted for rotation about its axis, stationary guide means overlying said threaded surface and forming an extrusion path, means for supplying plastic material to said extrusion path for delivery to the extruder discharge opening, means for rotating said worm screw, at least one axially extending hole formed in said screw member terminating at the discharge end thereof and in line with the extruder discharge opening, and reinforcement filament supply means including a continuous reinforcement filament within said hole whereby as plastic material is extruded through said discharge opening said continuous reinforcement filament is drawn from said supply means and embedded within said extrusion at a constant predetermined radial position.

3,289,252
MACHINE FOR MOLDING BOTTLE CARRYING CASES
Kenneth W. Bromley, Hobart, Ind., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Mar. 25, 1964, Ser. No. 354,653
23 Claims. (Cl. 18—42)

1. A machine for molding a bottle carrying case including a basket-like body having an upstanding handle thereon with lateral projections extending from both sides thereof; said machine comprising a cavity die, a core die including a core block and a pair of wedge sections movable with respect thereto, means for moving said dies along a predetermined path between a molding position and a discharging position, the dies in said molding position cooperating to proivde a molding cavity shaped complementary to the carrying case, said wedge sections having recesses therein disposed substantially normal to said predetermined path and cooperating in said molding position to define that portion of the handle having the lateral projections thereon, means for filling said molding cavity with plastic resin to form the carrying case including the handle and the lateral projections thereon extending into the associated recesses in said wedge sections, and means for moving said wedge sections laterally with respect to said predetermined path incident to the movement of said dies from said molding position toward said discharging position so that said wedge sections clear the associated lateral projections before said cavity die and said wedge sections are moved with respect to each other along said predetermined path.

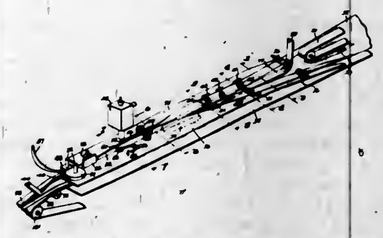


3,289,253
MOLDS
Robert B. Buonaiuto, 3 McLean Parkway, Ludlow, Mass.
Filed Jan. 22, 1964, Ser. No. 339,483
7 Claims. (Cl. 18—47)



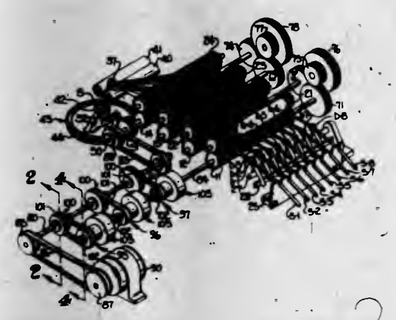
1. A rigid mold constructed of an impervious material having a low-loss factor for high frequency electromagnetic waves and being coated on its molding surfaces with a fibrous material, a portion of the fibers being embedded in the substance of the mold and a portion of the fibers being free.

3,289,254
MACHINE FOR MANUFACTURING SANITARY NAPKINS AND THE LIKE
Curt G. Joa, Ocean Ridge, Fla.
(Box 1121, Boynton Beach, Fla.)
Filed Feb. 2, 1961, Ser. No. 95,767
14 Claims. (Cl. 19—145)



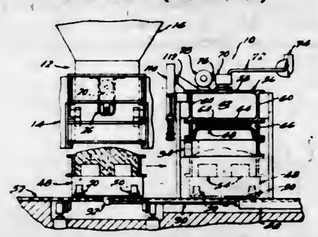
1. In a machine for the manufacture of sanitary napkins or the like, the combination of means for conveying a web of napkin wrapping material having a series of spaced napkin pads disposed on the web, means for folding marginal strip portions of the web into upstanding, abutting relation on substantially the medial line of the web to ensleeve said pads portions of which abutting upstanding marginal strip portions of the web most remote from said pad comprise excess material, said last-named means tensioning said web transversely to snugly wrap said pads, means for joining together said abutting strip portions along a line adjacent said pads, and means for severing excess abutting strip portions of the web from the sleeve along a line substantially parallel to the line of jointure.

3,289,255
CONTROL FOR TEXTILE DRAFTING MECHANISM
Joe R. Whitehurst, P.O. Box 35, Bessemer City, N.C.
Filed July 9, 1965, Ser. No. 470,728
3 Claims. (Cl. 19—240)



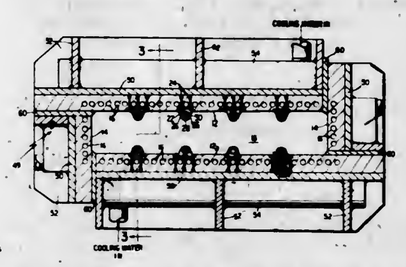
1. Apparatus for driving a series of spaced pairs of drafting rolls and controlling the angular speed of the back pair of rolls in said series relative to the front pair of rolls to produce textile material of substantially uniform weight per unit length from a group of textile strands irrespective of the absence of at least one of the strands in the group, said apparatus comprising
a continuously driven main shaft,
a front shaft fixed to one of the front rolls, first and second pulleys fixed on the main shaft and the front shaft, respectively, and an endless belt engaging and interconnecting said pulleys for transmitting rotation from the main shaft to the front shaft and thus to the front rolls at a constant angular speed,
a normally active slow speed transmission means coupling said main shaft to said back rolls for driving said back rolls at a given relatively slow speed while all the strands in said group are passing through said rolls,
at least one normally inactive transmission means interposed between said main shaft and said back rolls and being arranged, when active, to drive said back rolls at a predetermined fast speed relative to said slow speed,
means for detecting only the absence of each of any of said strands in their course to at least one of said pairs of rolls, and
means operatively connecting said detecting means to said normally active and normally inactive transmission means and being responsive to the detection of the absence of at least one of said strands by said detecting means for inactivating said normally active transmission means and activating said normally inactive transmission means.

3,289,256
MOLD COMPACTING APPARATUS
Burton C. Ferris, Detroit, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,340
8 Claims. (Cl. 22—42)



5. In a mold compacting apparatus, a housing having an opening formed therein for removably receiving a molding flask, means including pressure responsive diaphragm means for compacting molding sand within said flask, means for partially closing said opening, a mold shearing bar movably mounted on said housing, gate means movable parallel to said bar for at least partially closing said opening, and means for moving said flask relative to said bar whereby to form a substantially planar surface on at least a portion of a mold formed in said flask.

3,289,257
CONTINUOUS CASTING MOLD HAVING RIBS
John H. Richards, Penn Hills Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 340,875
4 Claims. (Cl. 22—57.2)

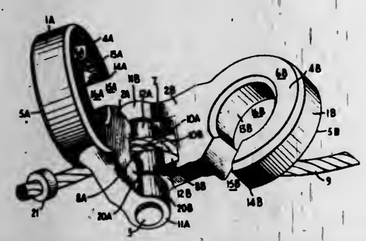


1. An open-ended tubular continuous casting mold of generally rectangular cross section comprising a pair of opposed substantially parallel and substantially vertical side walls and a pair of opposed substantially parallel and substantially vertical end walls defining a mold cavity therebetween, the distance between said end walls being substantially greater than the distance between said side walls, said side walls comprising flat wall surfaces and a plurality of spaced apart vertically extending ribs projecting inwardly from said surfaces, each of said ribs having a vertical cooling water channel therein.

3,289,258
COUPLING HOOK
Erik Helmer Eriksson, Oxelosund, Sweden, assignor to Mo Och Domsjo Aktiebolag, Oxelosund, Sweden, a limited company of Sweden
Filed Sept. 18, 1964, Ser. No. 397,503
Claims priority, application Sweden, Sept. 23, 1963, 10,383/63
13 Claims. (Cl. 24—123)

1. A coupling hook for attachment of a load carried by a coupling cable to a load cable comprising, in com-

bination, a pair of matched coupling members, each formed with a first end having a slotted opening for engagement of a load cable, and pivotally mounted in opposed facing relationship to pivot transversely of their respective planes at the other end by means of lugs which pivotally engage a common shaft therethrough, so that the first ends when in juxtaposition define through the slotted openings a closed guide opening for the cable, and



when pivoted away from each other afford passage of the load cable through the slots thereof for coupling of the coupling hook thereto; each coupling member having an additional guide opening positioned adjacent to the pivotally mounted end between said slotted opening and said lugs for reception of and attachment to a coupling cable, and positioned to bend a coupling cable through a predetermined arc when the said members are pivoted away from each other.

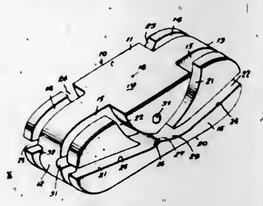
3,289,259
CHOKER
Milo L. Laharty, Rte. 4, Box 331J, Roseburg, Oreg.
Filed Oct. 13, 1965, Ser. No. 495,408
6 Claims. (Cl. 24—123)



1. A log retaining device comprising in combination, a cable, a ferrule mounted on an end of said cable, a choker bell, said choker bell comprising a unitary body member having a ferrule receiving chamber therein, the chamber opening to the front and bottom of said body member, said ferrule adapted to be seated in said chamber, reeveway means in said body member for receiving a portion of said cable transversely therethrough, and resilient means for frictionally retaining said cable in said reeveway means and being urged into contact with said cable by said ferrule when said ferrule is seated in said chamber.

3,289,260
INSULATED WIRE AND CABLE CLAMP
David C. Buscall, Jr., Sierra Vista, Ariz., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 11, 1965, Ser. No. 479,023
8 Claims. (Cl. 24—129)

1. A wire and cable clamp comprising a one piece body having a pair of spaced, parallel grooves set therein, said grooves extending around a greater portion of said body and a pair of identically contoured and intersecting grooves set in each side of said body and each



said pair communicating with a said parallel groove at their terminals.

3,289,261
BUCKLE WITH SWINGING CLAMP BELT ADJUSTMENT
Frank L. Davis, Fort Salonga Road, Fort Salonga, Long Island, N.Y.
Filed Sept. 8, 1964, Ser. No. 394,922
1 Claim. (Cl. 24—193)



A seat belt buckle comprising
a frame of channel form having a back wall and upstanding parallel side walls,
means at one end of said frame for releasable holding engagement with the end of a section of belt webbing,
said back wall at the opposite end having a transversely extending portion struck up into a transverse flange along one edge of a slot extending transversely of the back wall, and
a clamp bar over said slot spaced from and substantially parallel with said flange,
said bar having projecting end lugs at the upper edge of the same loosely pivoted in said side walls at points spaced from the flange and having the lower edge free to swing toward and away from the flange,
to permit a loop of belt webbing extended up through the slot and over said upper edge to be adjusted free of any holding engagement with said flange,
said spacing of the bar from said flange enabling the loop of webbing to be freely adjusted over the same in both directions when said buckle is turned substantially at a right angle to the length of webbing providing the loop aforesaid, said side walls having triangular openings in which said lugs of the clamp bar are loosely journalled, enabling bodily movement as well as swinging movement of the bar toward said transverse flange, and
said flange being transversely bowed toward the clamping bar to carry maximum pressure thereon, and
a smooth U-shaped cover having a rounded top and engaged over the upper edge of the clamp bar and crimped over the lower edge of said bar at one side and terminating in a lower edge short of the lower edge of the bar at the opposite side in opposition to the flange and leaving the lower edge of the bar exposed at that side in opposition to the flange,
whereby the loop of webbing will be free to slide over the smooth rounded top of said cover and will be gripped against the upstanding flange by said lower edge of the cover and the lower edge of the bar exposed below the same.

3,289,262
FAIL-SAFE HOOK
George H. Allen, P.O. Box 776, La Porte, Tex.
Filed Feb. 8, 1965, Ser. No. 431,098
1 Claim. (Cl. 24—201)



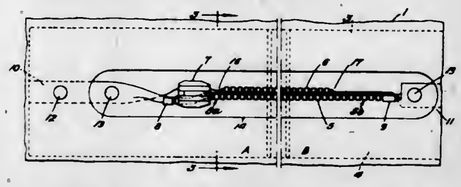
A releasable hook-type connector, comprising:
(a) a first hook having an encircling structure extending about an opening;
(b) said encircling structure being interrupted by a slot which defines a pair of oppositely facing wedge-shaped ends in said structure;
(c) said structure having an eye at one end for connection to a line for placing a tension load on said first hook;
(d) said eye and said hook opening lying in the same plane and on a common longitudinal axis.
(e) said slot being disposed adjacent to said eye and extending in a substantially tangential direction to the opening in said hook and extending at about a 45° angle with respect to said longitudinal axis;
(f) said slot being defined by a first wall and a second wall, said first wall being a continuation of the inner surface of said opening and being wedge-shaped, said wedge-shape extending in said tangential direction into said hook opening;
(g) said second wall being substantially disposed opposite said first wall and also wedge-shaped;
(h) a second hook having a substantially identical structure as said first hook;
(i) said first and second hooks being connected together by the extending of the encircling structure of each hook through the opening of the other so that the hooks remain connected when a tension force is exerted thereon;
(j) the ends of the slot of said first hook becoming aligned and fitting within the ends of the slot of the second hook only upon a disposition of said hooks substantially side-by-side and followed by a rotation of said hook relative to said first hook; and
(k) said slot ends when so aligned being adapted to slide relative to each other and with the lines connected to the hooks being pulled towards each other for effecting a release of said hooks from each other.

3,289,263
ACCESSIBLE FASTENING MEANS
Edwin F. Bohlayer, 5703 Mella St., Springfield, Va.
Filed Mar. 1, 1965, Ser. No. 436,392
1 Claim. (Cl. 24—203)



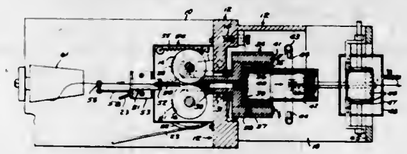
In combination:
a first sheet of fabric having a first edge means,
a continuous fold in said first edge means providing a U-shaped channel means along the entire length of said first edge means, said U-shaped channel means providing a path for the flowing of fluids from the fabric at the ends of said edge means, and
a plurality of reinforcing means in said U-shaped channel means each having a first and a second securing portion,
said first securing portion secured to one of the straight portions of said U-shaped channel means and
said second securing portion secured to the other of the straight portions of said U-shaped channel means,
said reinforcing means maintaining the U-shaped configuration of said channel means; and
a second sheet of fabric having a second edge means,
a fastening means having one portion secured outwardly of said U-shaped channel means to said first edge means and a second portion secured to said second edge means.

3,289,264
SLIDING CLASP CONTINUOUS FASTENERS
Gandolph Doelter, 96 Beaufort Mansions, Beaufort St., London, England
Filed Nov. 25, 1964, Ser. No. 413,867
Claims priority, application Great Britain, Feb. 3, 1964, 4,509/64
8 Claims. (Cl. 24—205.1)



1. A sliding clasp continuous fastener comprising:
(a) two rows of fastener elements along edge portions of two pieces of flexible sheet material to be joined, each element having a head portion arranged to be engageable in holding relation with the heads of a pair of elements in the opposite row,
(b) a clasp movable along the rows of elements and operable on movement in one direction to effect engagement of the elements and on movement in the opposite direction to effect disengagement of the elements, and
(c) at each end of the fastener an extension of one of the rows of elements beyond the other row to receive the clasp free of the other row.

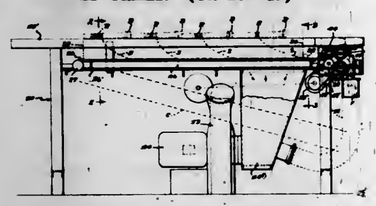
3,289,265
SPUN GLASS CRIMPER
James R. Hodges, Wilmington, and John N. Hall, Newark, Del., assignors to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Filed June 20, 1963, Ser. No. 289,274
14 Claims. (Cl. 28—1)



1. Apparatus for crimping filaments which comprises a member having walls forming a confined crimping chamber having inlet and discharge ends, feed rolls mounted at said inlet end and positioned to feed said filaments into said chamber to be folded over and crimped against the mass of previously crimped filaments in said chamber, a member having walls forming a setting chamber communicating with the discharge end of said crimping chamber and having a cross sectional area sufficiently greater than that of the crimping chamber so as to cause the mass of packed filaments to open up to reduce the strain at the points of crimp and to make

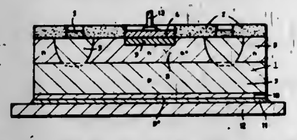
the mass more pervious to air and heat, means heating the setting chamber walls to a temperature of about the softening temperature of the material, said walls being adapted to transfer heat by conduction to said setting chamber for heating the filaments therein to a somewhat lower temperature.

3,289,266
BOBBIN STRIPPING AND WASTE CONDITIONING APPARATUS
James L. Brown, Jr., Richard Ferguson, and Charles V. Hinton, Charlotte, N.C., assignors to The Terrell Machine Company, Charlotte, N.C., a corporation of North Carolina
Filed Sept. 18, 1963, Ser. No. 309,653
12 Claims. (Cl. 28—19)



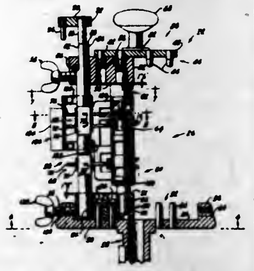
1. Bobbin stripping apparatus comprising first and second elongated roll members disposed adjacently to form a nip, said roll members being arranged to support spent roving bobbins in relation to said nip and to rotate for receiving the free end of waste roving from said bobbins in said nip and causing stripping withdrawal of said waste roving therethrough in strand form, housing means forming a suction chamber in relation to said roll members at the discharge side of said nip, said housing means presenting an open throat at said nip discharge side that is disposed for closely shrouding the surfaces of said roll members in spaced relation beyond said nip, and means for applying suction within said housing means, the open throat of said housing means being fitted with adjustable flanges whereby the shrouding clearance at said open throat may be set in relation to the suction applied thereat to provide a suction draft at said clearance of sufficiently high velocity to obviate lapping of the waste roving on the nip forming means.

3,289,267
METHOD FOR PRODUCING A SEMICONDUCTOR WITH p–n JUNCTION
Hans Ulrich, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Sept. 22, 1964, Ser. No. 398,341
Claims priority, application Germany, Sept. 30, 1963, S 87,651
9 Claims. (Cl. 29—25.3)



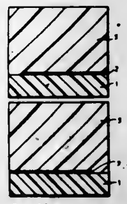
1. The method of producing a semiconductor with p-n junction by diffusing, into a flat semiconductor crystal of one conductance type, a gaseous doping agent of opposite conductance type, which comprises lapping one of the two flat surfaces and polishing the other of the two flat surfaces covering a portion of the surface of the semiconductor crystal with a protective coating preventing the penetration of doping material, providing a ring-shaped window in protective coating on the polished side of the semiconductor crystal, diffusing the gaseous doping agent from opposite sides into the semiconductor crystal to produce diffusion fronts within the semiconductor crystal along a closed line while permitting a region of the original conductance type to remain under the protective coating, and attaching an electrode to this region of original conductance type.

3,289,268
ASSEMBLY JIG
Joseph N. DeBernardis, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 406,734
6 Claims. (Cl. 29—25.19)



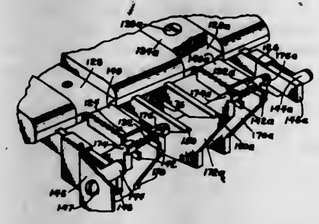
1. An assembly jig for simultaneously assembling and mechanically converging a plurality of electron guns to provide an electron gun mount, said jig comprising: a base member formed to provide a plurality of specifically oriented first aligning means; a top cap formed to provide a plurality of specifically oriented second aligning means; a plurality of electron gun holding cartridges disposed between said base member and said top cap, said cartridges each comprising a base block and a top block formed to matingly engage said first aligning means and said second aligning means respectively, and an alignment rod disposed between said blocks and cooperatively connected thereto, and first and second mandrels disposed between said blocks, said first mandrel being affixed to said base block and said second mandrel being affixed to said top block; and cartridge clamping means formed on said base member whereby precise alignment of said cartridges and guns is maintained.

3,289,269
METHOD OF PRODUCING AN ELECTRICAL CAPACITOR
Karl Dauner, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed May 7, 1963, Ser. No. 278,789
Claims priority, application Germany, May 10, 1962, S 79,376
5 Claims. (Cl. 29—25.42)



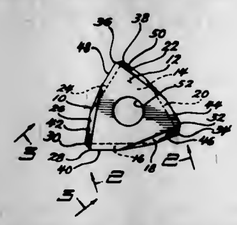
1. A method of producing an electrical capacitor, with regenerative characteristics, having a dielectric formed by a band with a thickness of less than 6 microns, provided with a thin regenerative coating, comprising, placing upon a suitable auxiliary support a first varnish layer made of a material with relatively good regenerative properties and relatively poor dielectric properties, vaporizing upon said first varnish layer a metal coating while leaving a marginal strip thereof free of metal, placing upon said metal coating a second varnish layer which is thicker, preferably considerably thicker, than the first layer and made of a material having relatively good dielectric properties and relatively poor regenerative properties, thus forming upon said auxiliary support a three-layer foil having two varnish layers and one metal coating, removing said three-layer foil from the auxiliary support, and forming a capacitor from at least two such three-layer foils which are assembled with the metal coatings mutually displaced.

3,289,270
APPARATUS FOR ASSEMBLING LEAD WIRES TO CAPACITORS
Charles C. Rayburn, Falls Church, and James G. Black, Jr., Springfield, Va., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,824
11 Claims. (Cl. 29—25.42)



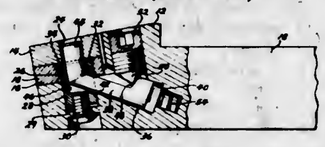
7. In a rolled capacitor assembling machine, means for receiving a plurality of cylindrical capacitor blanks having plastic heat deformable end portions at a single assembly station, means for receiving and locating spaced elongated conductors adjacent said end portions, means at said station for physically and electrically joining said conductors to each of the blanks comprising forcing tool means and electrical means, said electrical means contacting each of said conductors at spaced points for heating selected portions of each of the conductors immediately adjacent the blanks, said forcing tool means being movable into contact with said conductors and capacitor plastic end portions to bondingly join the heated conductors to the blanks and deform the plastic portions so that areas thereof overlie the conductors at the end of each capacitor blank.

3,289,271
INDEXABLE CUTTING INSERTS
Henry W. Stier, Dearborn Heights, Mich., assignor to Willey's Carbide Tool Company, Detroit, Mich.
Filed Oct. 13, 1964, Ser. No. 403,546
2 Claims. (Cl. 29—95)



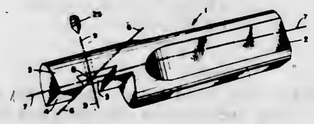
1. An indexable and reversible symmetrical cutting insert having two polygonal parallel plane faces, each one of said faces having *n* plane trapezoidal shaped identical sides and *n*/2 substantially equal cutting edges of less than ninety degrees, each said side forming in conjunction with one adjacent side and one of said plane faces, respectively, a pair of cutting tips.

3,289,272
CUTTING TOOLS WITH THROW-AWAY INSERTS
Henry W. Stier, Dearborn Heights, Mich., assignor to Willey's Carbide Tool Company, Detroit, Mich.
Filed Oct. 13, 1964, Ser. No. 403,547
3 Claims. (Cl. 29—96)



1. A cutting tool comprising:
a shank having at one end thereof a pocket open at least to one side of said shank, said pocket being provided with a bottom surface and at least one back wall;
a first bore in said shank, said first bore having its axis normal to the bottom surface of said pocket and substantially at the geometric center thereof;
a shim disposed on said bottom surface and provided with a top surface parallel to said bottom surface and with a countersunk bore substantially aligned with said first bore in said shank;
a tubular member disposed in said first bore, said tubular member being provided with a tapered head engaging the countersunk portion of the bore in said shim for holding said shim in position in said pocket;
a cutting insert disposed on top of said shim, said cutting insert being provided with a substantially centrally disposed bore having an axis substantially perpendicular to said top surface of said shim and aligned with the hollow portion of said tubular member;
a second bore in the body of said shank angularly disposed in relation to said first bore;
a retractable holding member having a clamping end substantially aligned with and disposed within the bore in the cutting insert and an angled body portion passing through the wall of said tubular member and disposed in said second bore in the body of said shank;
screw means engaging a flat portion of said body portion for drawing said angled body portion so as to cause said clamping end to frictionally engage the bore in said cutting insert for causing at least one side of said insert to press against the back wall of said pocket and the bottom of said insert to press against the top surface of said shim; and
biasing means urging the body portion of said holding member in an opposite direction when said screw means is backed away so as to release said cutting insert.

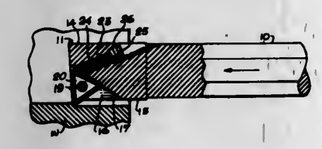
3,289,273
CUTTING TOOL ASSEMBLY
Gerard P. Artaud, 93 1st St., Harrison, N.Y.
Filed Apr. 1, 1964, Ser. No. 356,607
8 Claims. (Cl. 29—96)



1. A cutting tool assembly comprising:
(a) an elongated rod member;

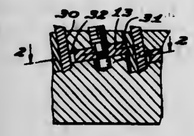
(b) a seating surface of predetermined contour at one end of said rod member;
(c) a separate head member;
(d) a seating surface having a contour complementary to the contour of the seating surface of said rod member;
(e) a cutting element secured to said head member;
(f) a groove extending through one of said members and opening on its seating surface;
(g) a slide secured to the seating surface of the other of said members and having a shape complementary to said groove;
(h) at least one conically tapered recess in either of said members;
(i) an aligning orifice in the other of said members in approximate alignment with said recess when said slide is positioned within said groove; and
(j) a set pin having a conically tapered point complementary to said recess extending through said aligning orifice and into said recess for locking said members together.

3,289,274
CUTTING TOOL
Vincent A. Brucato, 138 Orchard St., Garfield, N.J.
Filed May 3, 1965, Ser. No. 452,943
9 Claims. (Cl. 29—97.5)



1. A cutting tool comprising, in combination, an elongated shank member, a tool head portion at one end of said shank member, a triangular cutting bit having three base portions and three apices defining three cutting tips and being swingably supported with respect to said tool head portion and having one cutting tip projecting outwardly thereof in a transverse direction with respect to said shank member said cutting bit being swingably journalled about its axis of symmetry, abutment means limiting the swinging motion of said cutting bit at first and second end positions thereof, said one cutting tip projecting outwardly of said tool head portion by a greater amount when in said first than when in said second of said positions, and resilient means normally constraining said cutting bit into said first position.

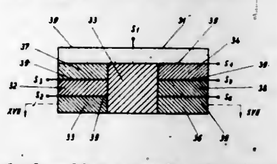
3,289,275
MILLING CUTTER
Walter A. Kulson, 30034 Paul Court, Warren, Mich.
Filed Mar. 25, 1966, Ser. No. 537,479
2 Claims. (Cl. 29—105)



1. A milling cutter head having means for receiving, mounting, locating and securing multiple blades in proper cutting position wherein the blades are easily locked and unlocked for use and replacement respectively, comprising

a circular body having an axis, top and bottom faces normal to said axis, and internal axial aperture leading through said bottom face, and a counterbore leading through said top face; said aperture and counterbore defining an apertured flat bottom wall at said bottom face and an upstanding annular peripheral side wall crown rising above said flat bottom wall;
said annular peripheral side wall having a plurality of radial slots dividing said annular peripheral side wall into circularly oriented and circumferentially spaced crown-segments;
each said crown-segment having a radially outer arcuate face on the radius of said body, a radially inner arcuate face on the radius of said counterbore, a leading blade-abutting radial face, and a trailing blade-locking radial face;
each said crown-segment having a lock-slide circumferential slot opening radially inwardly and opening tangentially through said locking face;
a lock-slide in each said lock-slide slot having a transverse cam aperture;
each said crown-segment having a threaded key-aperture leading transversely to said lock-slide slot;
a threaded key threaded in each said key aperture having an eccentric cam tang lying in said cam aperture of each said lock-slide;
an annular plug lying in said counterbore of said body having an outer peripheral wall abutting said inner arcuate faces of said crown segments preventing radially inward movement of said lock slides from said lock slide slots and a bottom face abutting said body flat bottom wall;
means securing said plug and body together;
said milling cutter head being mountable on the spindle of a milling machine via said axial apertures of said body and plug and securable thereto by means abutting said plug annular flange superposed on said body flat wall;
cutter blades on said head in said radial slots of said body peripheral side wall lying between one said crown-segment blade abutting leading radial face and said blade-locking trailing radial face of a said adjacent crown-segment;
said lock-slide of each said adjacent crown-segment being advanced into forced jamming engagement with each said cutter blade by turning said threaded key to rotate said eccentric cam tang relative to said lock-slide cam aperture to cam said lock-slide against said blade.

3,289,276
METHOD OF PRODUCING ELECTRICAL CIRCUITS
Rostislav Wasylak, Prague, Czechoslovakia, assignor to Tesla, národní podnik, Prague, Czechoslovakia
Filed Apr. 11, 1962, Ser. No. 186,737
Claims priority, application Czechoslovakia, Apr. 21, 1961, 2,473/61
10 Claims. (Cl. 29—155.5)



2. A method of making a passive electric network for for periodic currents having frequencies within a desired frequency range, the network consisting in a parallel combination of a desired resistance R and a desired capacity C, the method comprising the steps of making a solid body of a single dielectric material whose loss factor is greater than 0.1 and whose statical permittivity e_s, electrical conductivity g_s and relaxation time t of its dipoles satisfy the conditions

$$\frac{e_s}{g_s}=C.R$$

$$t \leq \frac{1}{20 \pi f_m}$$

where f_m is the highest frequency for which the network is to be used, shaping the solid body to such form that the thickness A of the body, measured in the direction of the electric field to be applied to it, and the cross-sectional area S of the body, measured perpendicularly to the aforesaid direction, satisfy the condition

$$S=\frac{A}{R.g_s}$$

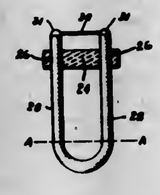
and making single conductive coatings on two opposite sides of the shaped body.

3,289,277
METHOD OF MAKING A FUSE LINK
Gust Albert Berthel, Park Ridge, Ill., and Fred J. Schiffmacher, Winchester, Mass., assignors to Federal Pacific Electric Company, a corporation of Delaware
Original application Feb. 27, 1961, Ser. No. 91,834. Divided and this application Nov. 25, 1964, Ser. No. 423,404
3 Claims. (Cl. 29—155.5)



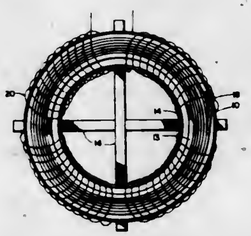
1. The method of making a dual-element fuse link, including the steps of cutting an elongated slot lengthwise in a band of high-melting-point metal and thereby constituting two strips integrally interconnected by a pair of elongated bridging portions, at the sides of the slot, uniting a body of relatively low-melting-point metal to both said bridging portions with the ends of the slot disposed clear of said body, parting one of said strips at one side of said body from the adjoining end of one of said bridging portions and parting the other of said strips at the other side of said body from the adjoining end of the other one of said bridging portions, leaving said body as the sole interconnection between said strips.

3,289,278
METHOD OF MAKING AN ELECTRIC FUSE
Aldino J. Gala, St. Louis, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Original application Sept. 19, 1960, Ser. No. 56,884. Divided and this application Feb. 23, 1965, Ser. No. 439,128
1 Claim. (Cl. 29—155.5)



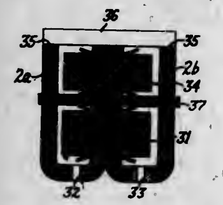
The method of making an electric fuse that comprises forming a housing with a cylindrical wall that has a frusto-conical shoulder at the interior thereof intermediate a small diameter portion and a larger diameter portion, said larger diameter portion of said housing being adjacent an open end of said housing, forming an insulating mounting so it can be telescoped through said open end of said housing into said larger diameter portion and can then be moved into engagement with said frusto-conical shoulder, said mounting having spaced apart openings therein, forming a conductor so it has a U-shaped configuration, extending the free ends of said conductor through said spaced apart openings in said mounting so said free ends of said conductor project upwardly beyond the upper face of said mounting, fixedly securing said conductor to said mounting, securing a fusible conductor to said free ends of said conductor, telescoping said mounting through said open end of said housing into said larger diameter portion of said housing and then moving said mounting into engagement with said frusto-conical shoulder in said housing to dispose said free ends of said conductor and to place said fusible conductor within said housing, using said frusto-conical shoulder to center said mounting within larger diameter portion of said housing, securing said mounting to said housing by a sealing material, and cutting the closed end of said conductor to provide two terminals.

3,289,279
METHOD OF MANUFACTURING ANNULAR LAMINATED CORES FOR TRANSDUCERS
Leon W. Camp, Santa Monica, Calif., assignor to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed Jan. 21, 1964, Ser. No. 339,163
5 Claims. (Cl. 29—155.57)



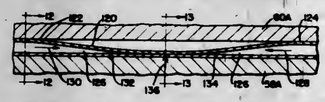
1. In a method of manufacturing annular laminated cores for magnetostrictive transducers wherein is included the stage of
loosely winding a length of thin ferrous metal strip on a circular mandrel until the layers are built up to form a scroll of approximately the desired radial thickness,
annealing said scroll to remove substantially all residual stress in said metal strip while causing said scroll to retain its form as wound,
placing the annealed scroll on a second mandrel, over a strip of binder-repellant material,
immersing said scroll and second mandrel in a tank containing a binder of epoxy resin,
the improvement comprising subjecting the immersed said scroll to an exciting field of alternating polarity of a frequency which causes mechanical resonance of said scroll,
and applying tension to the ends of said strip during said excitation to tighten said scroll whereby said scroll is tightened as desired while retaining a minimum of residual mechanical stress.

3,289,280
METHOD OF MAKING A SHELL TRANSFORMER
Howard T. Jones, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Application Jan. 25, 1965, Ser. No. 434,164, which is a division of application Ser. No. 91,730, Feb. 27, 1961. Divided and this application Nov. 19, 1965, Ser. No. 508,764
1 Claim. (Cl. 29—155.57)



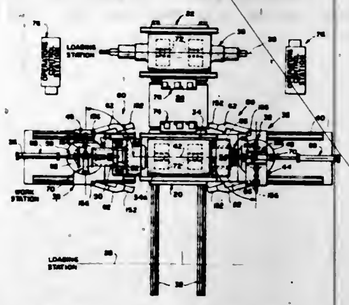
The method of making a shell-type reactive transformer comprising winding a band of magnetic material flatwise layer upon layer to form an elongated straight-sided core, cutting said core in two on a plane midway through the elongated sides to form a pair of substantially equal sized U-shaped core portions; arranging the two U-shaped core portions side by side to form a double U with a central core leg and opposite side legs having their end edges all substantially in the same plane; placing on the central core leg a secondary winding adjacent the closed end of the core and a primary winding adjacent the open end so that the central core leg projects beyond said windings at the open end, closing the open ends by providing a yoke bridging the end edges of all said core legs to provide closed magnetic loops around a pair of windows, said yoke being formed of a flat stack of laminations placed with their edges abutting the end edges of all said core legs and with their planes at right angles thereto, whereby the junctures of the laminations of the core legs with those of the yoke form butt joints next to said primary winding, and placing on said double U-shaped core a reactive shunt formed of at least one flat stack of laminations of magnetic material against the side of the core so as to span said windows, the laminations of the double U-shaped core and of said reactive shunt being placed in edge-to-edge relationship and with their planes at right angles to each other.

3,289,281
MANUFACTURE OF BONDED AND INFLATED SHEET LAMINATIONS
Ernest W. Agin, Boyd D. Cave, and Richard F. Hafer, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,654
13 Claims. (Cl. 29—157.3)



1. The method of producing a bonded and inflated lamination having a tubular passageway capable of withstanding substantial internal working pressure, comprising the steps of providing two sheets of material at least one of which is a work hardenable aluminum alloy sheet, bonding opposing surfaces of said sheets in a bond zone therebetween and controlling said bonding to produce a laminate having a bond in said zone of less strength than the strength of said aluminum alloy sheet yet of such strength that said sheets will not delaminate during normal use of the lamination, said aluminum alloy sheet of the laminate being in work hardened condition, partially annealing the work hardened sheet to approximately quarter hardness, positioning the laminate between die components of a die assembly wherein at least one of said die components has a tube pattern die cavity defining the desired passageway configuration and disposing said aluminum alloy sheet adjacent said die cavity, introducing an inflating fluid under pressure between said sheets of the laminate to separate said sheets along said bond zone and expand said aluminum alloy sheet into said tube pattern die cavity, whereby the strength and elongation characteristic of said aluminum alloy sheet relative to the strength of said bond providing for said sheets in separating to produce a sharp acute angular forwardly moving wedge formation ahead of said inflating fluid substantially to prevent the formation of restrictions in said aluminum alloy sheet during inflation.

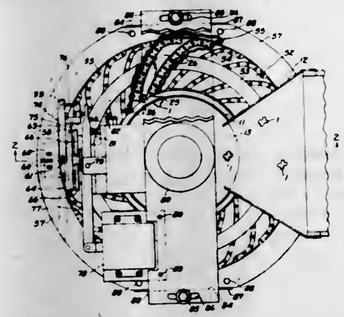
3,289,282
APPARATUS FOR DISMANTLING AND ASSEMBLING ROLL ASSEMBLIES
James O. Shaffer, Youngstown, Ohio, assignor to The Youngstown Foundry & Machine Co., Youngstown, Ohio, a corporation of Ohio
Filed Mar. 22, 1965, Ser. No. 441,786
16 Claims. (Cl. 29—200)



1. In apparatus for forcibly rotating a roll chock retaining nut to effect threading or unthreading of the retaining nut relative to a roll assembly, the combination comprising: a carriage; a ring member; means supporting said ring member on said carriage for rotation about the rotational axis of the nut; connector means carried by said ring member for connecting said ring member in torque transmitting relation with the nut; motor means operatively connected with said ring member for forcibly rotating said ring member about the rotational axis of the nut; and means supporting said carriage for guided movement parallel with the rotational axis of the nut, whereby said carriage is movable relative to the roll assembly during and by the rotation of the nut.

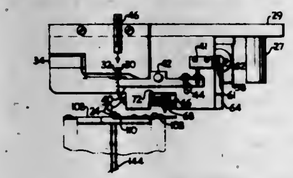
3,289,283
FEEDING MECHANISM
Horst G. Muller, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 23, 1964, Ser. No. 405,987
6 Claims. (Cl. 29—203)

1. A machine for assembling and seating preforms onto die members having a turret continuously rotatable about a vertical axis and having a preform receiving member upstanding on its periphery, and preform feeding, positioning and assembling mechanisms comprising
(a) preform receiving and transporting means continuously rotatable about a vertical axis for carrying the preform into registry with the continuously moving preform receiving member,
(b) preform supporting means beneath a portion of said preform transporting means for supporting the preform until the preform is carried by said preform transporting means proximate to the path of travel of said member,
(c) said transporting means having a peripheral portion defining with said supporting means a preform receiving socket,
(d) preform retaining means adjacent to the said path and resiliently biased against the preform for retaining the preform on the said transporting means as said preform is carried into registry with the said member,



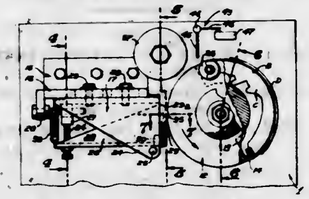
(e) transfer means mounted adjacent said retaining means for exerting on said retained preform a force sufficient to overcome the retaining action of said preform retaining means and to seat said preform on the said member,
(f) said transfer means comprising a plunger having a preform engaging end continuously rotatable about a horizontal axis, and
(g) actuating and timing means interconnecting said transporting means and said transfer means to control the feeding of said preform.

3,289,284
TERMINAL FITTING AND INSULATING SLEEVE APPLICATOR
Clayton M. Zent, Prospect, Ohio, assignor to Automatic Spot Taping Machine Company Inc., Marion, Ohio, a corporation of Ohio
Filed Mar. 22, 1965, Ser. No. 441,561
15 Claims. (Cl. 29—203)



1. An apparatus for applying resilient insulating sleeves and terminal fittings on the ends of wires comprising, in combination, a terminal fitting press means; frame means attached to said press means; sleeve expanding means mounted on said frame means and movable between a closed position wherein each of said sleeves may be freely received thereon and an open position wherein each of said sleeves is expanded to receive a wire provided with a terminal fitting pressed on an end of a wire by said terminal press means; power means operatively connected to said sleeve expanding means for moving said expanding means between said closed and open positions; switch means operatively connected to said power means for automatically and selectively activating said power means; and press activating means operatively connected to said press means for automatically and selectively activating said press means to apply said terminal fitting to the end of said wire.

3,289,285
MACHINE FOR REMOVING BRAKE LINING
George D. Conklin, Torrance, Calif., assignor, by mesne assignments, to George D. Conklin, doing business as Conklin Equipment Co., Gardena, Calif.
Filed June 24, 1964, Ser. No. 377,637
4 Claims. (Cl. 29—233)



1. A machine for removing brake lining from the arcuate rim of a brake shoe, said machine comprising:
(a) a housing having a vertical side wall;
(b) a first carriage movable in said housing;
(c) a shaft and drive means therefor mounted on said carriage, said shaft protruding through said side wall;
(d) a feed wheel carried on the protruding end of said shaft and adapted to receive a brake shoe and lining and interchangeable with similar feed wheels of different diameters;
(e) a bracket mounted on said vertical side wall;
(f) a second carriage carried by said bracket and adjustable to and from said feed wheel to accommodate feed wheels of different diameters;
(g) a knife pivotally supported by said second carriage in an upwardly facing position;
(h) a cam disposed at one lateral side of said knife and fixed relative thereto;
(i) and a cam wheel disposed at a corresponding side of said feed wheel and located at the leading edge of said brake shoe rim, for engagement with said cam to cause said blade to clear the leading edge of said brake shoe rim and thereafter engage said rim.

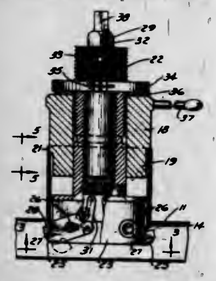
3,289,286
O-RING SEATING TOOL
Celestin Victor Belanger, Beaumont, Tex., assignor to Henry W. Allen, Beaumont, Tex., trustee
Filed Jan. 30, 1964, Ser. No. 341,356
3 Claims. (Cl. 29—235)



1. A tool for seating an O-ring in a compressed condition between a hollow member and a cavity of a retaining member, said cavity being formed about the end of said hollow member which is to be sealed with respect to said retaining member comprising a guide rod having a pilot means at the forward end for insertion into said hollow member, a sleeve slideably and coaxially disposed around said guide rod and movable in a longitudinal direction between a first position and a second position, the forward end of said sleeve being adapted to engage said O-ring during forward movement from said first position to said second position to push said O-ring to a seated position in said cavity, the outer diameter of said forward end of said sleeve being less than

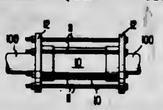
the diameter of said cavity and the inner diameter of said sleeve being greater than the outer diameter of said hollow member so that said forward end of said sleeve may surround said end of said hollow member and lie within said cavity when said O-ring has been moved to said seated position, and a rearwardly extending beveled face around the outer periphery of said forward end of said sleeve for distorting said O-ring to prevent pinching of said O-ring between said forward end of said sleeve and the lip of said cavity during the seating operation.

3,289,287
APPARATUS FOR ATTACHING INSERTS TO DUCTS
Kenneth E. Guritz, % Gurlee Mfg. Co., 160 W. York St., West Chicago, Ill.
Filed Apr. 20, 1964, Ser. No. 361,194
10 Claims. (Cl. 29—243.52)



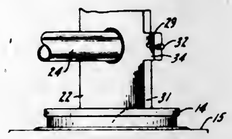
1. Apparatus for attaching inserts to ducts comprising an annular body adapted to rest on the upper edge of an insert, a tubular hammer head extending rotatably through the body, radially extending hammers pivoted on the lower end of the head on axes transverse to the head, and being swingable in planes including the axis of the head, the outer ends of the hammers normally projecting radially beyond the head to engage and deform the skirt of an insert, the hammers being pivotal to positions in which they are substantially withdrawn within the head whereby the head and hammers can pass through an insert, and a hammer shaft extending slidably through the hammer head to engage the inner ends of the hammers and move them about their pivots.

3,289,288
PROCESS OF INSTALLING PLASTIC LINERS INSIDE OF PIPES
Antonio E. Croteau, Coachella, Calif. (6612 Oceanview, Carlsbad, Calif.)
Filed May 2, 1963, Ser. No. 277,659
4 Claims. (Cl. 29—401)



1. A method of lining a pipeline with a tubular plastic liner, comprising the steps of cutting off a pipeline section leaving a plurality of sections, pulling a tubular plastic lining through at least each remaining section, folding back the free end of each plastic liner over the outside of the corresponding pipeline section, and installing a pressure-tight joint at each over each folded back plastic liner at the end of the corresponding pipeline section by mounting a sealing washer over each folded-over plastic liner end, installing a clamp coupling over the sealing washer, and tightening said clamp coupling against said sealing washer to thereby provide a pressure-tight joint.

3,289,289
TOOL AND METHOD FOR OPENING SEALED CONTAINERS
Wilhem H. J. Cambier van Nooten, Amsterdam, Noordholland, Netherlands, assignor, by mesne assignments, to Van Leer Industries Limited, Birmingham, England, a limited-liability company
Filed Feb. 15, 1963, Ser. No. 258,814
Claims priority, application Great Britain, Feb. 21, 1962, 6,713/62
4 Claims. (Cl. 29—427)



1. A method of unsealing a container closure including a capseal having at least one laterally extending perforated ear and one or more score lines extending from the ear across the top of the capseal, said method comprising the steps of applying a tool having a base portion with a laterally projecting pin and a handle portion affixed to the base portion with the handle portion including a lever disposed in substantially perpendicular relationship to the plane of the base portion, inserting said pin into the perforation in the capseal ear while the tool is positioned with its handle portion substantially parallel to the ear, swinging said tool round in a plane substantially normal to the capseal and in the longitudinal direction of the ear while supporting said base portion successively on the adjacent circumferential edge of said capseal, then on the top thereof and thereafter on the remote circumferential edge of said capseal, thereby tearing said capseal in the longitudinal direction of said capseal ear and substantially along the score lines, and removing the thus broken capseal.

3. A universal tool for use in opening a container closure of the type including at least one of a closure plug having a tool receiving recess and a capseal having a laterally extending perforated ear with at least one score line extending from the ear across the top of the capseal, said tool comprising, in combination, a base portion, means on said base portion defining a pin projecting laterally therefrom and adapted to be inserted into the perforation in the capseal ear, said base portion having at least one end portion dimensioned for operative engagement with the tool receiving recess in the closure plug, a handle portion affixed to said base portion, said handle portion including a lever disposed in substantially perpendicular relationship to the plane of said base portion, whereby said tool may be selectively utilized to destroy the capseal by tearing the latter along the score line as the tool is swung through a plane substantially normal thereto, and to operate the closure plug, anu said pin having a transverse groove formed therein adjacent said base portion for receiving the edge of said ear adjacent said perforation, said groove facing in the general direction of the handle.

3,289,290
METHOD AND APPARATUS FOR INSTALLING FASTENERS
Raymond P. Sandor, 21 Cherry St., Darien, Conn.
Filed Mar. 14, 1963, Ser. No. 265,137
5 Claims. (Cl. 29—432)

1. A method for installing a threaded fastener comprising the steps of

(A) drilling a fastener hole with a rotating drill bit passing axially through a threaded fastener,

(B) rotating driving clutch means together with said drill bit,

(C) engaging driven clutch means by said rotating driving clutch means, and

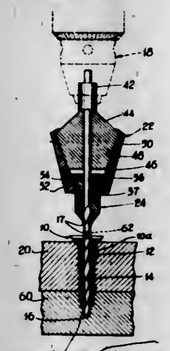
(D) coupling the fastener to said driven means to threadably insert the fastener into the hole while it is drilled.

2. Apparatus for installing a threaded fastener in a hole while the hole is being formed, said apparatus comprising in combination

(A) a friction clutch having

(1) a driving member and

(2) a driven member,



(3) said driving member having means for engaging a drill bit for rotation therewith,

(B) a fastener engaging and driving member joined with said driven member for concentric rotation therewith,

(C) means forming a bore through said fastener engaging and driving member and said clutch driven member,

(1) said bore being concentric with the rotation axis of said clutch driven member

(2) for receiving the drill bit engageable with clutch driving member.

3,289,291
METHOD AND MATERIAL FOR METALLIZING CERAMICS
Leonard Reed, San Jose, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California
No Drawing. Filed May 17, 1963, Ser. No. 281,331
8 Claims. (Cl. 29—473.1)

1. The method of forming a vacuum tight metallizing surface on a high alumina ceramic body, said metallizing surface being inert to halogen gases, comprising the steps of: coating said ceramic body with a metallizing paint which includes a volatile solvent in which is suspended a powdered mixture comprising by weight a majority of platinum and a sufficient quantity of manganese and silica to form a viscous manganese-silica-alumina melt, and firing the coated ceramic body at a temperature between 1200° C. and 1300° C. in an oxidizing atmosphere.

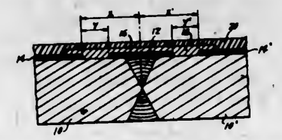
3,289,292
BUILT-UP STRIP MILL GUIDE
Grant A. Oakes, R.D. 4, near Cortland, Ohio
Filed Oct. 29, 1964, Ser. No. 407,511
2 Claims. (Cl. 29—481)

1. The method of making a guide for traveling strip in a strip mill and the like that comprises forming an elongated groove in an elongated metallic body member, heating said member to a temperature between 900° and 1200° F. and depositing a groove filling body of molten metal of the group including silicon bronze alloy and Phosphor bronze alloy in said groove at a temperature sufficient to vaporize some of the metal of said body member and trap the same in said molten metal so as



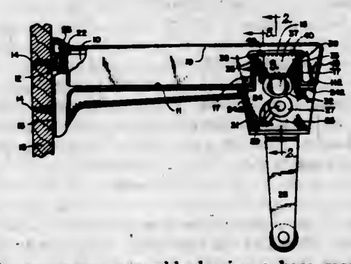
to form bubbles therein, cooling said body member, removing metal to form a transversely flat wearing surface and straightening said body member so that it is longitudinally flat.

3,289,293
PROCEDURE FOR WELDING A JOINT AND PROTECTING THE JOINT AND ADJACENT METAL SURFACES AGAINST RUST AND CORROSION
Knut Torsten Stenquist, Orebro, and Gunnar Walfrid Ringstrom, Goteborg, Sweden, assignors to Torsten Stenquist Ingerjorsforma, Orebro, Sweden
Filed Feb. 6, 1963, Ser. No. 256,747
2 Claims. (Cl. 29—484)



1. A process for welding a pair of edges and protecting the welding joint formed thereby and adjacent metallic surfaces against rust and corrosion comprising cleaning said edges and said surfaces, applying a first coating layer of a zinc-rich paint containing 90–96 percent zinc in the dry film to a portion of said surfaces while leaving uncoated areas up to a distance of 5–25 centimeters from each of said edges, welding said edges together to form a welding joint, cleaning said welding joint and said uncoated areas, applying a coating layer of rust and corrosion inhibiting hot zinc to said welding joint and adjacent portions of said uncoated areas while leaving uncoated zones between said hot zinc layer and said first layer of zinc-rich paint, immediately applying a second coating layer of said zinc-rich paint over said hot zinc layer and said uncoated zones, said second layer of zinc-rich paint overlapping portions of said first layer of zinc-rich paint.

3,289,294
CAN OPENER ASSEMBLY
Casimir F. Gruska, Chicago, Ill., assignor to American Home Products Corporation, a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 403,499
9 Claims. (Cl. 30—9)



1. A can opener assembly having a base member for attachment to a wall or the like, a traction wheel, a

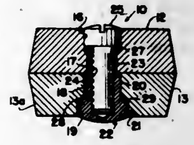
mounting member having front and rear faces and means supporting said traction wheel on said mounting member and defining an axis in intersecting relation to said front and rear faces of the mounting member about which said traction wheel is rotatable while said traction wheel has axial confronting relation to said front face of said mounting member, an upright seating area on said base member with which an upper area of said mounting member conforms for rearward face-to-face engagement with said seating area, lugs on one of said members and mating recesses on the other of said members to define interfitting support means operative to locate said mounting member in a fixed position on said base member radially of the axis of the traction wheel when said upper area of the mounting member has said face-to-face engagement with said seating area, a cutter wheel supported on said mounting member for rotation about an axis upwardly of the axis of rotation of said traction wheel and in radially overlapping relation to said traction wheel, a flange extending from said base member forwardly of said seating area and in overhead relation to said mounting member, a spring member having a first portion thereof in face-to-face engagement with and secured to the underside of said flange, and having a second portion thereof in forwardly and downwardly extending relation to said flange with which said cutter wheel has axial engagement, said first portion of said spring member having a rearwardly facing edge with which said mounting member has forward engagement to prevent withdrawal of said mounting member from said interfitting support means.

3,289,295
ADJUSTABLE HAIR-TRIMMING DEVICE
Anton Evert Törnvall, Granholmsgatan 11, Malmo So., Sweden
Filed June 4, 1964, Ser. No. 372,545
1 Claim. (Cl. 30—30)



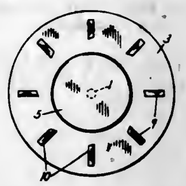
A hair-trimming device which comprises a base plate one end of which is handle-shaped and the other end of which is enlarged, the enlarged end having a recess in its upper surface with tracks along the interior and teeth along its front edge contiguous with the recess, a channel formed in the handle portion which extends into the rear portion of the recess, said channel having lips and catch teeth along its bottom, a cover plate detachable from and adjustable along the base plate into a plurality of operating positions and having a bar extending therefrom which is slidable in the channel, said bar having lips at its forward portion adapted to engage the corresponding lips in the channel during sliding movement of the bar and cover plate into working positions and the rear portion of the bar being formed to project beyond the top side of the handle portion of the base plate and the lower edge of the bar being correspondingly arcuate and together with the rear inclined edge of the bar forms an inclined, downward directed projection which cooperates with catch teeth at the bottom of the channel to stop the bar together with the cover plate in a plurality of operating positions, a cutting edge having holes therethrough sized to fit between the cover plate and the bottom of the recess said edge being adjustable with the cover plate at a plurality of distances with respect to the base plate teeth, and at least two bosses affixed to the underside of the cover plate for engagement in the tracks in the recess through the holes in the cutting edge.

3,289,296
SHEARS, SNIPS AND THE LIKE, WITH LOCKED BUSHING PIVOT BEARING
Lars Hedstrom, Meadham, and Joseph Rega, Belleville, N.J., assignors to J. Wiss and Sons Company, Newark, N.J.
Filed Sept. 20, 1965, Ser. No. 488,662
2 Claims. (Cl. 30—267)



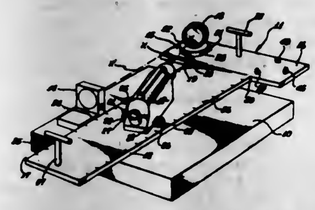
1. In a shear, snip, scissors or the like cutting tool having an upper and lower blade, said upper and lower blades having cutting edges; a countersunk pivot hole in said upper blade, said hole of said upper blade being slotted, a countersunk pivot hole in said lower blade, said hole of said lower blade being cylindrical, a pivot comprising a cylindrical head countersunk in said lower blade, a cylindrical shaft portion adjacent said head, and a flat-sided end portion extending from said cylindrical shaft portion, said countersunk head and said cylindrical shaft portion having a combined length of substantially less than the thickness of the lower blade, said flat-sided portion fitting into said slotted hole of said upper blade, said pivot shaft having a threaded bore extending therethrough, and a locking screw having a head, and an anti-friction washer adjacent said head in said countersunk pivot hole in said upper blade, said washer being disposed with relation to said head in said upper blade for preventing said screw from loosening due to small movement caused by tolerances in assembly.

3,289,297
TOOL FOR REMOVING OLD TILE CEMENT OR MASTIC FROM WALLS AND FLOORS
Clarence M. Casselman and Thomas R. Preston, Sr., both of 448 W. North, Kalamazoo, Mich.
Filed Feb. 12, 1965, Ser. No. 432,247
4 Claims. (Cl. 30—347)



1. A manually manipulatable implement comprising a thrust sustaining and rotary driving spindle,
a circular head member mounted in driven engagement on the end of said spindle and having an outer face extending radially from the spindle,
a work engaging thrust member positioned in the center of said outer face and having a planar outer end normal to the axis of said spindle,
and a plurality of blades mounted on said outer face of said head member in angularly spaced relation around said thrust member and projecting to radially outwardly spaced positions from said thrust member,
said blades having axially facing cutting edges that terminate at their radially inner ends in the plane of the planar outer end of said thrust member and incline axially rearwardly and radially outwardly from said inner ends.

3,289,298
CALIBRATION APPARATUS FOR SURFACE PLATES
Ray D. Standridge, Santa Fe Springs, Calif., assignor to Collins Microfilm Company, Inc., Hawthorne, Calif., a corporation of California
Filed June 1, 1964, Ser. No. 371,300
4 Claims. (Cl. 33—1)



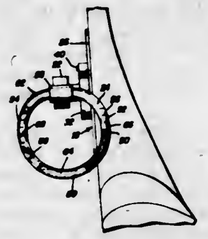
1. In apparatus for calibrating a surface plate: a support having substantially flat undersurface areas adapted to rest upon a surface plate, said support having a substantially flat side edge extending along the length thereof, said support having a part projecting beyond said side edge; a reflecting mirror resting on said surface plate and slidably engaging said side edge; an alignment mirror; means for locating said alignment mirror at said projecting part; a collimator; means for locating said collimator on said support in line with said locating means.

3,289,299
DRAWING DEVICE
Gerd Elger, Winterthur, Switzerland, assignor to Anne Elger, Nurtingen (Neckar), Germany
Filed Nov. 10, 1964, Ser. No. 410,055
Claims priority, application Germany, Nov. 20, 1963, E 25,889
7 Claims. (Cl. 33—27)



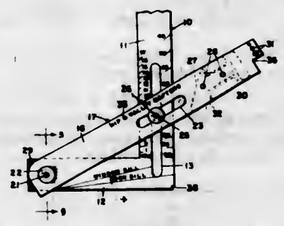
1. A drawing instrument comprising a flat plate element having a plurality of spaced holes therethrough for receiving the point of a writing instrument and for receiving a centering pricking tip, a pricking tip element, a bearing block portion defined on said flat plate element, and means mounting said pricking tip element on said flat element adjacent one of said holes normally holding said pricking tip element on said flat element adjacent one of said holes normally holding said pricking tip element substantially normal to said flat element and within one of the holes but not projecting outwardly therefrom, said mounting means being movable to move said pricking tip element substantially normal to said flat plate element and through the associated hole to project outwardly through the opposite side of said plate element for engaging into a material to be inscribed, said mounting means comprising a resilient spring member, said spring member having a central portion which is rotatable in said bearing block portion, said spring member including coiled portions on each side of the central portion of said spring member, side portions extending outwardly and upwardly from each of said coiled portions and being looped at the outer ends to form finger-engaging portions, and a coiled central portion forming a pricking tip element supporting portion formed between said finger-engaging portions.

3,289,300
BOW SIGHT
Edgar A. Jordan, 2510½ Gottle St., Klamath Falls, Oreg.
Filed Apr. 22, 1964, Ser. No. 361,687
9 Claims. (Cl. 33—46)



9. In combination, a bow, a bow sight secured to said bow, said sight including at least one upstanding tubular member and means defining a liquid receiving space spaced from said tubular member said member and said means lying generally in the plane in which the string of the bow is drawn and of at least some vertical extent, the lower end portion of said tubular member being communicated with said space, a predetermined quantity of liquid in said sight defining a common liquid level in said tubular member and said space, said tubular member including at least one transparent portion with which said liquid level is registrable.

3,289,301
CARPENTER'S TOOL
Ove O. Hanson, Johnson City, Tenn., assignor to Mayes Brothers Tool Manufacturing Company, Johnson City, Tenn., a corporation of Michigan
Filed Mar. 17, 1965, Ser. No. 440,446
2 Claims. (Cl. 33—93)



1. A carpenter's tool comprising
two members detachably interconnected for relative motion with one of said members being a carpenter's square providing parallel-sided integral tongue and beam elements of corresponding width,
having in the free end of the tongue a circular aperture placed on the longitudinal median line thereof,
and having in the beam a slot located on the longitudinal median line and prolonged into the juncture portion of the square which is common to both the tongue and the beam,
the other of said members comprising a parallel-sided straight arm of a width corresponding to that of each of said two elements of the square provided at one end with both a right-angled and a rounded corner with the latter developed on a radius one-half the width of the arm,
having a circular aperture centered in respect of the axis about which said corner is rounded,
and also providing a slot located on the longitudinal median line of the arm with its two ends spaced from

the aperture in approximate correspondence with the spacing between the aperture of the tongue and the inner and outer ends, respectively, of the slot in the beam,

said circular apertures having a like diameter corresponding to a width common to the two slots so as to interchangeably receive two similar nutted bolts as a detachable connection either with one bolt passing through the two circular apertures while the other bolt passes through the two slots or with one bolt passing through one slot and one aperture while the other bolt passes through the other slot and the other aperture,

said straight arm being fabricated from two corresponding pieces secured in parallel spaced relation by a connection located at the end thereof opposite the circular aperture and receiving the square in the space therebetween, the beam element of said square being provided upon one of its faces with two different sets of slant lines each related to the side edge of the straight arm which leads to the right-angled corner and with one of said sets indicating inch rise per foot and occurring to one side of the beam element's slot and with the other set indicating degrees of pitch and occurring to the other side of said slot,

the rounding of said corner causing the same to lie flush with an outer edge of the beam irrespective of any angular position into which the straight arm may be shifted relative to the beam when the straight arm and square are connected in the last-mentioned manner,

the right-angled corner serving to prolong the related side edge sufficient to reach the set of slant lines which occur upon the far side of the beam element's slot,

said straight arm at the end thereof opposite the rounded corner carying leveling bubbles so placed that the bubbles become centered when the parallel side edges of the arm occupy horizontal planes,

means holding said two corresponding pieces in spaced relation to each other,

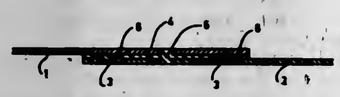
said means comprising a spacer block fixed between said pieces,

said spacer block being firmly fixed between said pieces,

and a leveling device in said spacer block,

said leveling device comprising level bubbles disposed laterally through the side of said pieces whereby the level position of said pieces can be determined either in a vertical or a horizontal plane.

3,289,302
FOLDING MEASURING INSTRUMENTS INCORPORATING SPRINGS OF PLASTIC MATERIAL
André Quenot, Besançon, Doubs, France, assignor to Etablissements Quenot & Cie S.a.r.L., Besançon, France, a firm
Filed Oct. 8, 1964, Ser. No. 402,536
Claims priority, application France, June 9, 1964, 977,666
2 Claims. (Cl. 33—105)



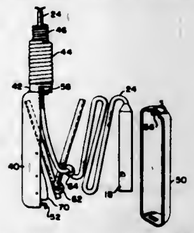
1. A folding measuring rule, comprising, in combination:

(A) a plurality of adjacent elements interconnected over a cooperating area and carrying successive sections of a scale, said elements being pivotally secured together by a rivet; including heads countersunk in the outer surfaces of said elements;

(B) one of said elements having bosses formed therein on either side of said rivet, the end of another of said elements cooperating with said one element being recessed along its longitudinal edges;

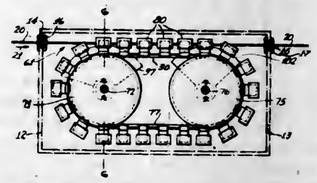
(C) a spring element formed integrally with said rivet and fitted between said elements, said spring element and rivet consisting of a resilient self-lubricating plastic material secured to the recessed end of another element by having portions thereof folded thereover, said spring element having recesses adapted to receive said bosses of said one element therein for holding said adjacent elements in alignment or in superimposition.

3,289,303
INSERTION DEVICE
James H. Farrell, Arlington, and George Henry, Norwell, Mass., assignors to Flow Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Dec. 18, 1964, Ser. No. 419,353
4 Claims. (Cl. 33—126)



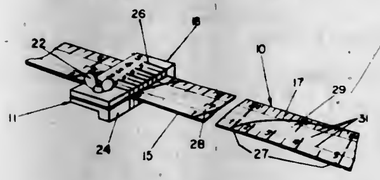
1. An insertion device comprising a hollow flexible cable, a capsule secured to one end of the cable, a cover releasably secured to the capsule, a spring normally urging the cover and capsule to separate, a catch disposed to clamp the cover in place on the capsule, and a trip wire associated with said catch and passing through said cable to the other end thereof, whereby actuation of the trip wire trips the catch to cause the spring to separate the cover from the capsule.

3,289,304
LINE MEASURING DEVICE
Jack O. White, 280 Kingsway, Welland Junction, Ontario, Canada
Filed June 14, 1963, Ser. No. 288,003
Claims priority, application Canada, May 14, 1963, 875,524
2 Claims. (Cl. 33—134)



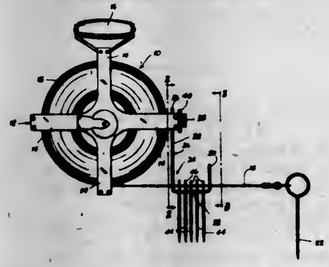
1. A line measuring device comprising a frame, guide means supported by said frame and arranged to guide the line past said frame, first and second pulleys mounted for rotation on said frame, a counter fixed to said frame and arranged to be driven by rotation of one of said pulleys, an endless belt encircling said pulleys and being in driving engagement therewith, said belt presenting a flight parallel and adjacent to said line passing the frame and between said first and second pulleys, a plurality of pairs of first and second transversely disposed jaw members carried by said belt and extending outwardly therefrom, the jaw members of each pair having juxtaposed line engaging surfaces, said first jaw member being fixed to said belt and having a transverse opening formed therein, said second jaw member having a transverse shaft fixed at one end thereto, said shaft extending through said opening in said first jaw member and being mounted for reciprocation therein to permit sliding movement of said second jaw member toward and away from said first jaw member, said shaft having a head at its other end, a compression coil spring surrounding said shaft between said head and said first jaw member and biasing said second jaw member towards said first jaw member for gripping said line between said line engaging surfaces along said flight, and means for forcing said second jaw away from said first jaw to a line releasing position during passage of said belt over said pulleys.

3,289,305
RAFTER MEASURING TAPE
Claud Norton, 2493 Seventh Ave., Yuma, Ariz.
Filed Jan. 4, 1965, Ser. No. 423,115
5 Claims. (Cl. 33—137)



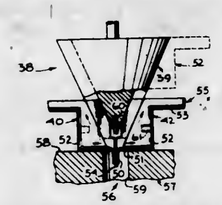
1. A rafter measuring tape adapted for marking rafter lengths, comprising: A measuring tape member including scribed indicia readable longitudinally on at least one side thereof; and a slide member slidably connected to said measuring tape, said slide member including scribed indicia readable transversely to said measuring tape; said measuring tape comprising a flexible metal tape of the type stored wound on a tape reel mounted in a housing; said slide member being fixedly positionable on said measuring tape; and said slide member comprising a U-shaped member the slot of which encloses said measuring tape and the open ends of which are connected, beyond the side of said enclosed measuring tape toward said open ends of said U-shaped member, by a threaded stud and wing nut.

3,289,306
ONE MAN TAPE REEL CONSTRUCTION
Carl L. Todd, 12519 Maret Drive, St. Louis, Mo.
Filed Feb. 15, 1965, Ser. No. 432,612
4 Claims. (Cl. 33—138)



1. In combination, a tape reel unit including a reel, a measuring tape, and an anchor pin connected to the free end of said tape, and an attachment mounted on said reel facilitating one-man use of said tape including a bracket and point marking items, each point marking item having means for threadedly receiving said tape, said tape being threaded through said threadable means disposing said point marking means between said reel and said anchor pin.

3,289,307
DISTANCE GAUGE
Eugene J. Kelly, Los Angeles, Calif. (P.O. Box 8111, Universal City, Calif.)
Filed Apr. 22, 1964, Ser. No. 361,700
5 Claims. (Cl. 33—143)



1. A hole centers distance gauge for measuring the distance between the centers of parallel circular holes in a workpiece, comprising:

a longitudinal beam member bearing a scale;

indicator means slidably mounted on said beam member for movement along the effective length thereof and having means for registration with said scale;

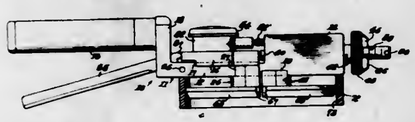
first hole center finder means mounted on one end of said beam member and having a first central vertical axis disposed at right angles to said beam member;

second hole center finder means mounted on said indicator means for longitudinal movement therewith and having a second central vertical axis parallel to said first central axis;

each of said finder means comprising a conical member; and

locator means mounted on at least one of said conical members in slidably retained relationship and comprising a plurality of equally circumferentially spaced members having alternating vertical and horizontal external surfaces.

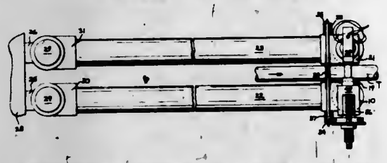
3,289,308
DIAL INDICATOR PLUG GAUGE
Ralph J. Trnka, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 30, 1962, Ser. No. 190,964
10 Claims. (Cl. 33—147)



1. A plug gauge for checking the internal diameters of thin walled objects such as containers, said gauge comprising a base, a slide mounted on said base, a fixed plug element carried by said base, a movable plug element carried by said slide for movement therewith away from said fixed plug element, said plug elements being generally semicircular in outline and having a peripheral surface of a radius corresponding to the radius of the object to be gauged, a spring unit urging said slide to move said movable plug element away from said fixed plug element and a dial indicator between said base and said slide for indicating the position of said movable plug element relative to said fixed plug element, said spring unit including means for adjusting the object reshaping pressure exerted thereby on an object being gauged through said plug

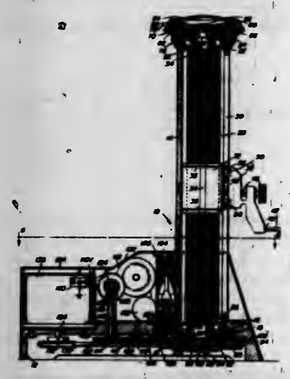
elements and said adjusting means including calibrating means for setting a predetermined reshaping puressure in accordance with the object being gauged.

3,289,309
TUBING DIAMETER GAUGE
Theodore C. Baker, Wayne, Benny B. Mathias, Maumee, and James R. Seger and Lowell W. Sehring, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed May 19, 1965, Ser. No. 456,975
5 Claims. (Cl. 33—148)



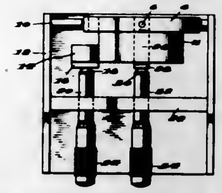
1. Apparatus for gauging the diameter of glass tubing comprising, a pair of elongated, radial arms, means mounting said arms for swinging movement about laterally displaced vertical axes, a gauging roller carried by the extending end of each arm and adapted to contact the sides of the tubing to be gauged, said rollers being mounted for rotation about spaced-apart, parallel, vertical axes in their respective arms, a horizontal micrometer carried on the end of one of said arms and mounted thereto for pivotal movement about the vertical axis of the roller, a linear variable differential transformer, means mounting the transformer coil to the end of the other arm for pivotal movement about the vertical axis of the roller, means coupling the transformer core to the end of the micrometer screw with the core extending within the coil of said transformer, and interconnected means pivotally connected to said roller supports intermediate the height of the rollers for biasing said rollers toward each other.

3,289,310
MOTORIZED MICROMETER COMPARATOR HEIGHT GAUGE
Donald R. Stone, 1106 Windsor Place, South Pasadena, Calif.
Filed Mar. 12, 1965, Ser. No. 439,179
7 Claims. (Cl. 33—170)



1. A motorized micrometer height gauge comprising a base, a barrel extending vertically from and carried on said base, said barrel having bearings in each of its upper and lower ends, a precision lead screw rotatably carried by said bearings, threads on said screw, a nut threaded on said screw threads, said barrel having a vertical slit therein, an external indicator attached to said nut through said vertical slit for vertical travel with said nut, a manually operable vernier dial fixedly secured to said lead screw at the top thereof and at the top of said barrel, complementary calibrations on said dial and the adjacent external area of said barrel, a digital counter mounted on said base, a gear train connecting said lead screw to said digital counter, a reversible electric motor mounted on said base, rotation transmission means connecting said motor to said lead screw, an electric circuit connected to said motor, a reversible switch control means in said circuit for operating said motor in either direction, a gear of said gear train having an annulus of spaced apart indents therein complementary to said dial and barrel calibrations, a plunger normally biased against said annulus of indents, and a solenoid connected to said plunger, said reversible control switch means activating said solenoid to retract and hold said plunger away from said annulus of indents while said motor is operating.

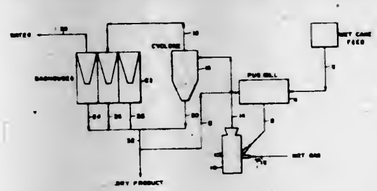
3,289,311
MICROMETER DEVICE
George J. Wolga, 336 Snyder Hill Road, R.D. 2, Ithaca, N.Y.
Filed Nov. 2, 1964, Ser. No. 408,018
2 Claims. (Cl. 33—174)



1. In combination, a frame, a member mounted in said frame to turn about an axis, a second member mounted in said first member to turn about an axis perpendicular to the axis of said first member, each of said members having a part projecting therefrom at a point 90° from the axis about which it is mounted to turn, a pair of actuating members, means mounting said members in said frame for longitudinal movement, said mounting means including means for fine adjustment of the members with respect to the frame, each member having an end part, the path of movement of each of such end parts intercepting one of said projecting parts, said parts normally engaging each other, one each of said projecting parts and end parts having a permanent magnet engageable with the other part, and one of said projecting part and end part being rounded about at least one axis perpendicular to the longitudinal axis of the member.

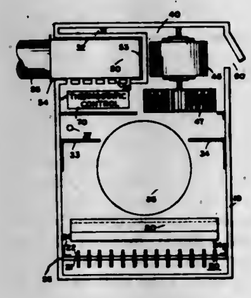
3,289,312
DRYING OF CHLORINATED ISOCYANURATES AND SALTS THEREOF
Carroll J. Weanke, Peekskill, N.Y., and Stephen J. Kovalsky, Scotch Plains, and Raymond A. Olson, Westfield, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 17, 1964, Ser. No. 352,571
14 Claims. (Cl. 34—10)

1. A method for rapidly drying a labile compound selected from the group consisting of dichloroisocyanuric acid, trichloroisocyanuric acid, sodium dichloroisocyanurate, and potassium dichloroisocyanurate, comprising passing a wet cake of said compound into a drying zone, finely dividing and beating said cake into discrete particles by beater means, passing a gas stream maintained at a temperature up to about 550° F. through said drying zone at a flow rate of from about 2000 to about 5000 feet per minute, maintaining the temperature of the exit gas from said drying zone at a temperature of from about 220 to about 320° F., maintaining said discrete particles within said drying zone in contact with said gas stream



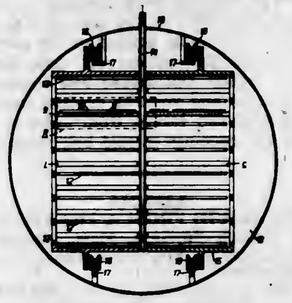
for a uniform treating time until dry, removing particles of dry compound from said drying zone in the exit gas stream, and separating said particles of dry compound from said exit gas stream.

3,289,313
COMBINATION CLOTHES DRYER, HAIR DRYER, AND AUXILIARY HEATER
Paul P. Lechner, Jr., 680 Farrington Drive, and Ralph C. Liebert, 580 Keyes Lane, both of Worthington, Ohio
Filed Jan. 16, 1964, Ser. No. 338,263
8 Claims. (Cl. 34—48)



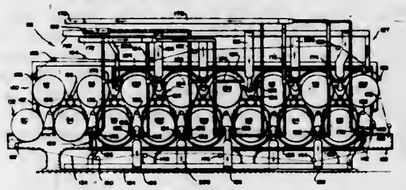
1. A heat chamber as described comprising, an outer housing having a centrally located section, a high air and moisture impervious tumbler adapted to receive wet articles positioned within said section, and means to rotate said tumbler; a moisture chamber within said housing positioned below said central section, a moisture collector in said chamber positioned directly beneath said tumbler and adapted to receive moisture passing through said tumbler; a heater in the lowermost portion of said housing positioned to radiate heat upwardly through said moisture collectors and said tumbler; a heat chamber in the uppermost region of said housing and positioned opposite of said tumbler with respect to said heater, a first opening in said heater chamber, an air drawing means positioned over said opening and operable to draw said radiated heat from said heater through said moisture chamber and said tumbler, a second opening operable to exhaust the hot air from the heat chamber, means to control the operability of said heater in relation to the temperature of the air in said chamber; and a hot air vent also positioned in said heat chamber further comprising an internal housing having means to pass the hot air thereto, and adjustable means to vent the hot air passing into said internal housing to the degree of preventing said air from being vented to complete venting.

3,289,314
FREEZE DRYING
Paolo Della Porta, Milan, Italy, assignor to Edwards High Vacuum International Limited, Sussex, England, a British company
Filed Dec. 19, 1963, Ser. No. 331,652
Claims priority, application Great Britain, Dec. 19, 1962, 47,948/62
6 Claims. (Cl. 34—92)



1. Freeze drying apparatus comprising means for freezing on to heat transferring means material to be freeze dried, means for transferring heat to said material after it has been frozen on the said heat transferring means, an evacuable chamber and means in said chamber for supporting said heat transferring means, said heat transferring means consisting of a substantially flat sheet of material formed with a plurality of apertures through which frozen material disposed on both sides of the sheet has access from one side of the flat sheet to the other side of said sheet to transfix said material to said sheet through said apertures on freezing and means forming part of said sheet for effecting the supply of heat to said sheet.

3,289,315
DRYING ROLLS UTILIZING BELTS TRANSPARENT TO INFRARED RADIATION
Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Oct. 29, 1965, Ser. No. 505,640
8 Claims. (Cl. 34—92)

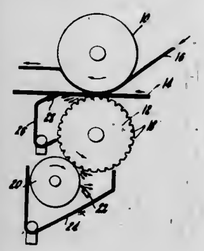


1. Apparatus for heat treating a continuous, moving, sheet of material, comprising:
(a) a plurality of drying rolls alternately located in vertically spaced apart upper and lower decks and adapted to have a sheet of material contacting, alternately, the upper and lower surface portions of successive rolls in the upper and lower decks;
(b) radiant heaters spaced from and surrounding the upper portions of at least the majority of the rolls in the upper deck and the lower portions of at least a majority of the rolls in the lower deck;
(c) first belt means for pressing the sheet material against the rolls in the upper deck, said first belt means extending between said radiant heaters and said upper deck rolls and contacting the upper portions of said upper deck rolls;

(d) second belt means for pressing the sheet material against the rolls in the lower deck, said second belt means extending between said radiant heaters and said lower deck rolls and contacting the lower portions of said lower deck rolls;

(e) said first and second belt means being fabricated of open mesh synthetic material capable of passing a substantial proportion of radiant energy impinging thereon with the mesh openings constituting not less than about 30% of the area of said belt means, whereby a substantial portion of the energy emitted from said radiant heaters will pass through said first and second belt means and impinge on said sheet material and volatiles evolved from the sheet being treated can escape from adjacent said sheet through the openings in said belt means.

3,289,316
REMOVING LIQUID FROM A TRAVELING BODY
Nicolas M. Reitzel, Boylston, Mass., assignor to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 22, 1964, Ser. No. 361,744
3 Claims. (Cl. 34—95)



1. Apparatus for removing liquid from a traveling body which comprises a body-contacting nonporous press roll with a body-contacting surface, said surface being mounted for movement at a speed corresponding to that of said body and in contact therewith and said surface being intermittently relieved to provide for reception of liquid transferred thereinto from said body, and a drying element for removal of liquid from said body-contacting surface prior to a succeeding contact of a portion thereof with said body, said element having a continuous face, said continuous face being mounted for movement at said speed and in continuous noncompressive contact with said body-contacting surface at one portion of said face and continuously out of contact with said body-contacting surface at other portions of said face.

3,289,317
MULTIPLE OUTPUT BLOWERS FOR DRYERS AND THE LIKE
Richard C. Lough, St. Joseph, and Carrol A. Orr, Stevensville, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed May 14, 1964, Ser. No. 367,317
16 Claims. (Cl. 34—133)

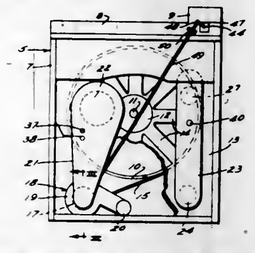
7. A dryer comprising means providing a treatment zone in which materials are to be treated and power driving means,

means defining an air circulation path,

a blower assembly for generating an air stream in said path and including

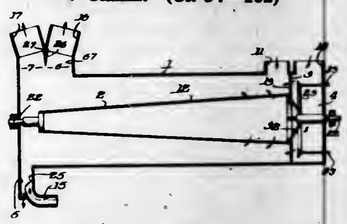
a shaft driven by said driving means,

a pair of impeller wheels mounted on said shaft, one of said impeller wheels being fixed on the shaft and the other of the impeller wheels being adapted for relative rotation of the shaft with respect thereto,



and releasable clutch means for selectively coupling the other of said impeller wheels with the shaft.

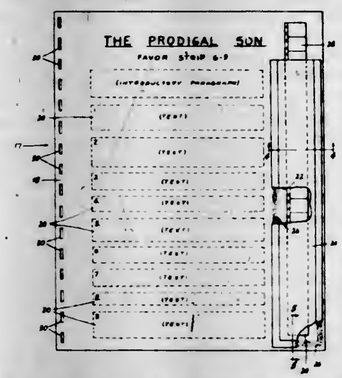
3,289,318
DRYING LIGHTWEIGHT LOOSE MATERIAL
Friedrich Roos, Rotensee, near Bad Hersfeld, Germany, assignor to Benno Schilde Maschinenbau AG., Bad Hersfeld, Germany, a corporation of Germany
Filed Dec. 5, 1963, Ser. No. 328,284
7 Claims. (Cl. 34—182)



1. A device for drying lightweight loose material, comprising an elongated drum-like housing, hopper means at one end of said housing for feeding material to be dried to the section of said housing lying first in material conveying direction, an elongated rotating tubular member extending within said housing centrally axially thereof, the diameter of said tubular member diminishing progressively from the material feed end toward the discharge end of said housing and the wall of said tubular member being provided substantially throughout its length with holes formed therein, conduit means at the feed end of said housing for supplying a stream of air for axial inflow into said tubular member at the wide end thereof and outflow therefrom, through the holes formed in the wall thereof, into the surrounding space of said housing to which the material to be dried is fed from said hopper means, whereby the material fed into said housing is along a helical path transported therethrough toward the discharge end, means for diverting an adjustable amount of the stream of air supplied to said tubular member, for flow into said first section of said housing, whereby the material transport speed is accelerated in said first housing section, means at the discharge end of said housing for discharging coarse material particles downwardly from the bottom portion thereof, and suction controlled means adjacent the upper portion of said housing for upwardly removing from said housing the remaining material particles.

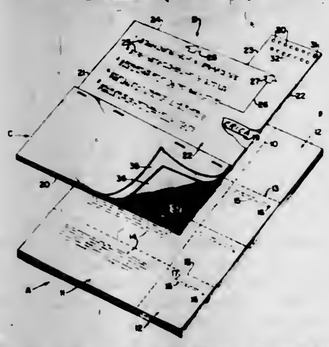
3,289,319
INSTRUCTION PACKAGE AND ELEMENTS THEREOF
Paul G. Kiehl, 11035 Perham Drive, St. Louis, Mo.
Filed Aug. 8, 1963, Ser. No. 300,807
3 Claims. (Cl. 35—8)

1. In combination, an instruction unit comprising a single sheet, reading material on said sheet, a pocket on said sheet elongated in nature, and a film strip in said pocket including a plurality of picture frames containing projectable images in a predetermined sequence, the reading material containing information about the projectable images in a sequence coordinated with the sequence of



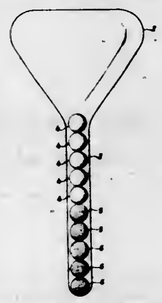
the images, each picture frame thereby being coordinated with said reading material to enable simultaneous consecutive showing of the picture frames on a viewing surface and the consecutive reading of the reading material.

3,289,320
TEACHING APPARATUS HAVING UNCODING TEMPLATE FOR CODED ANSWERS
George L. Mair, 6320 Van Nuys Blvd., Van Nuys, Calif.
Filed June 23, 1964, Ser. No. 377,242
5 Claims. (Cl. 35—9)



1. Teaching apparatus comprising: a question-answer sheet imprinted with adjacent vertical columns of questions and related answers respectively, said answers comprising respective rows of answer-spelling letters interposed with coding letters rendering said answers unintelligible; and a template having a body portion adapted to cover said question column and an integral lateral portion adapted to cover said answer column, said body portion having a horizontal upper margin adapted to be positioned beneath a selected question so as to reveal it above the template and to frame the question for study, and a tab projecting upwardly from said upper margin as an extension of said lateral portion and adapted to cover the answer of the question that is framed for reading, said tab having a row of uncoding apertures adapted to register with the answer of said framed question upon downward shifting of said template from the question-framing position, and thereby to reveal the letters spelling the answer while covering the coding letters, said row of uncoding apertures having therein a registration-indicator aperture, and each of said answers having an indicator character aligned with its row of answer-spelling letters and visible in said registration-indicator aperture when the template is in the proper position for reading the answer.

3,289,321
DEMONSTRATION DEVICE
Martin Victor Sussman, 11 Lexington Ave., Lexington, Mass.
Filed Dec. 31, 1963, Ser. No. 339,837
4 Claims. (Cl. 35—10)



4. A device illustrating irreversibility and "Maxwell's Demon," comprising a closed transparent bottle containing two sets of small spheres all of the same diameter, each set of spheres of a different color, wherein one set of spheres is provided with means for dissipating and absorbing momentum more rapidly and to a significantly greater extent than the other set of spheres, said means comprising each member of the former set of spheres being moulded with a plastic composition and plasticizer which gives higher internal friction and more inelastic bounce than the material used to form the latter set of spheres.

3,289,322
CRYSTAL STRUCTURE DISPLAY AND METHOD
John J. R. Patrick, 1161 Solano Ave., Albany, Calif.
Filed June 8, 1965, Ser. No. 462,206
1 Claim. (Cl. 35—18)



A crystal structure display device comprising

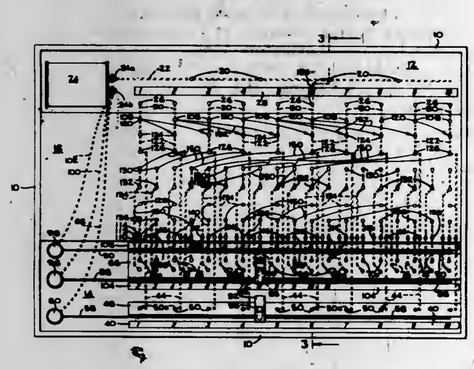
(a) a plurality of scalene shaped transparent plane surfaced elements, each of said elements having a plurality of notches therein;

(b) said plurality of scalene shaped elements being permanently joined together to form a crystal shape having the notches on adjacent members in cooperating relation to form an aperture;

(c) said crystal shape having pairs of oppositely disposed apertures in the middle and extremities thereof;

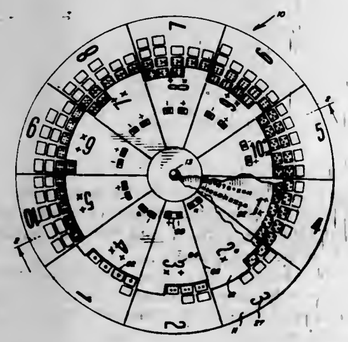
(d) a plurality of intersecting filaments passing through the oppositely disposed apertures in said crystal shape, the ends of said filaments being held in said apertures.

3,289,323
PROJECT NETWORK ANALYZING METHOD AND APPARATUS
John W. Fondahl, 12810 Viscaino Drive, Los Altos Hills, Calif.
Continuation of application Ser. No. 239,229, Nov. 21, 1962. This application May 10, 1965, Ser. No. 458,815
5 Claims. (Cl. 35—24)



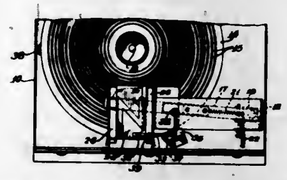
1. A project network analyzer which comprises a panelboard composed of insulating material, a plurality of electrical jacks in said panelboard, a plurality of conductors on said panelboard, each conductor connecting a group of said jacks and representative of one operation in the project network, a unidirectional connector including plugs at its ends arranged for insertion into jacks associated with conductors representative of zero-lag, sequentially-related operations, a power jack forming one terminal of a two-terminal source of direct current power, means including a power connector having plugs at its opposite ends for connecting said power jack to a predetermined one of said conductor jacks, and means for selectively connecting each of said conductors to the other terminal of said power source.

3,289,324
ARITHMETICAL TEACHING DEVICE
Hyman Benson, 2121 Westbury Court, Brooklyn, N.Y.
Filed June 4, 1964, Ser. No. 372,617
1 Claim. (Cl. 35—31)



A calculating and proving instrument for the introduction and solving of problems in simple arithmetic wherein two values are known and a third value is to be solved, comprising a pair of discs, one disc concentrically mounted and journaled to the other, both discs divided into a plurality of radial sectors, each disc having an equal amount of sectors, each sector separated from its adjoining tangent sector by outwardly extending radial lines from hub to periphery, the radial lines of both discs aligning in register, each sector of both discs being numbered in a consecutive sequence, the under disc having a plurality of radially arranged columns of numerals in each sector and geometrically shaped outlines circularly arranged around the periphery in annular rings, the inner circular arrangement of geometrically shaped outlines filled with indicia, the outer circular arrangement of outlines devoid of indicia, the upper disc having a plurality of apertures radially arranged in spiral form beginning near the center of said disc and in each consecutively numbered sector the aperture being positioned one space outwardly from the afore mentioned apertures and extending progressively toward the periphery of said disc, each of the apertures specifically positioned to center on and expose to view only one row of numerals of a series of numerals in a particular column from the plurality of columns of the under disc, the periphery of said upper disc having specific portions cut away in each sector to expose particular amounts of filled geometrically shaped outlines agreeing in amount with the designated number of that sector, said upper disc concealing the remainder of said filled outlines and revealing all the unfilled outlines, the numerals exposed in the apertures representing the answers by means of numerals and the particular specific exposed groups of geometrically shaped outlines both filled and unfilled and the indicia contained in the filled outlines representing the tally of indicia agreeing in amount with the numerals exposed thereby proving the answers with an agreeing tally.

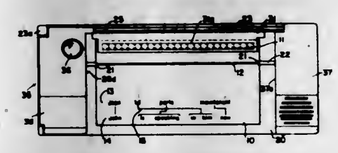
3,289,325
EDUCATIONAL DEVICE
Peter K. Shreck, 555 Cornelia Ave., Chicago, Ill.
Filed Aug. 31, 1964, Ser. No. 393,093
14 Claims. (Cl. 35—35)



1. An educational device comprising a record having a plurality of recordings of different sounds thereon at respectively different positions, a pickup mounted for movement relative to the record into operative relationship with any selected one of the recordings, means defining a recess to receive any one of a plurality of different character blocks, a part connected to the pickup to move it and extending into the recess to be engaged and moved by a keying portion on a character block inserted into the recess, and a plurality of character blocks insertable into the recess, each displaying a different indicia and each having a keying portion thereon to move the pickup into operative relationship with the recording corresponding to said indicia.

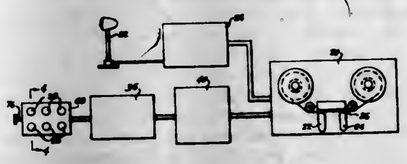
3,289,326
AUDIO-VISUAL TEACHING MATERIAL AND APPARATUS FOR PREPARING SUCH MATERIAL
Werner K. Bender, Plainville, Conn., assignor to The Kalart Company Inc., Plainville, Conn.
Original application Nov. 22, 1961, Ser. No. 154,294. Divided and this application July 29, 1965, Ser. No. 478,023
7 Claims. (Cl. 35—35)

1. An apparatus for use in connection with teaching material in sheet form having printed thereon at least one word in two languages and a recording of said word in one of said languages, said apparatus comprising a flat base for placing thereupon a sheet of said teaching material; guide means mounted on said base; a scanning device slideably guided on said guide means along said recording for coaction therewith and including a housing, a battery, a magnetic sound head and an amplifier; said battery, sound head and amplifier being fixedly mounted within said housing; a loudspeaker; circuit means including said battery, said sound head, said amplifier and said



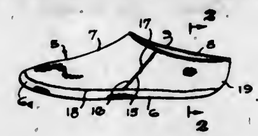
loundspeaker; control switch means included in said circuit means for controlling the activation thereof; and drive means for moving said housing along said guide means from a starting position at the beginning of said recording to an end position at the end of said recording, said housing coacting with said switch means to open the switch means when the housing is in said end position and to close the same when the housing is in said starting position and while travelling toward said end position, closing of said switch means activating said circuit means for audible reproduction of the recording.

3,289,327
BRAILLE RECORDING AND REPRODUCING MEANS
Manuel Chevillon, Montgomery County, Md. (14506 Fairacres Road, Silver Spring, Md.)
Continuation of application Ser. No. 200,124, June 5, 1962. This application Mar. 10, 1966, Ser. No. 536,561
4 Claims. (Cl. 35—35)



1. In a braille recording and reproducing system,
a keyboard having six keys arranged in two adjacent vertical rows of three keys in each row corresponding to the six bump positions in a braille character,
said keys having base flanges and being normally biased upwardly into an inactive position with their base flanges biased upwardly against a surface under said keyboard,
a switch arm pivoted adjacent each key to swing along said surface and extending inwardly from the outside of either of said rows into the space between them,
each switch arm in an open switch position being resiliently biased in the same direction against the peripheral edge of the base flange of its key, so that upon depressing a key, its switch arm latches over the base flange into a closed switch position and holds the key down, and
a release bar slidably mounted between said rows and having shoulders on it for engaging the inner ends of said switch arms for moving said arms off the base flanges of the depressed keys to return all the switch arms to open switch positions and release all the keys into their inactive positions.

3,289,328
SPORT SOCK
Ursula E. Abel, 902 W. Roma Ave., Phoenix, Ariz.
Filed Aug. 30, 1965, Ser. No. 483,522
1 Claim. (Cl. 36—9)



A sports sock comprising a single piece of soft, flexible fabric material folded to provide a sole wall to underlie the foot of the wearer, said wall having along one of its sides an integral upturned flange extending lengthwise of the sock and having along its opposite side an integral extension folded to conform to the upper and heel portions of said foot and defining a foot-passing opening; a first seam securing the free end portions of said extension together between the ends of said sock above said flange, and a second seam securing the contiguous edge portion of said extension to the free edge portion of said flange, whereby to render all portions of said sole wall entirely uninterrupted by and spaced below any seam.

3,289,329
SOCK
Rosalie R. Weiss, 749 Eaton St., Memphis, Tenn.
Filed Oct. 7, 1963, Ser. No. 314,301
1 Claim. (Cl. 36—10)



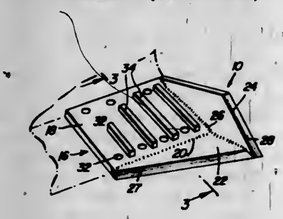
A sock comprising a body including a toe, sole, heel and instep engaging portion; said sock body having an upper crocheted edge defining a substantially V-shaped opening through which the foot of the wearer is adapted to pass, said edge including elastic means therein and being of a height to extend adjacent the edge of a shoe to be worn with said edge of said sock adjacent the sides thereof being spaced substantially below the edge of the shoe and with said edge of said sock adjacent said heel and said instep engaging portion being closer to the edge of the shoe whereby none of said sock extends over the portions of the wearer's foot and ankle that are exposed by the shoe and yet the portions of the shoe which might otherwise rub are covered, said edge including a rearward portion adjacent said heel of said sock, said heel of said sock comprising an inner portion and a relatively thick outer portion of a plurality of vertically extending rib-like structures which provides a heel thickness of at least twice the thickness of the remainder of the body of the sock, said heel of said sock extending upwardly from said sole to said rearward portion of said edge and upwardly therebeyond for a substantial distance to provide a substantially rectangular tab having vertically extending ribs and adapted to be folded down over the outside heel of the shoe to be worn with said rearward portion of said edge serving as the folding place.

3,289,330
BLANK FOR A MOCCASIN SHOE
Herbert H. Tracheal, Cincinnati, and Charles P. Kelly, Norwood, Ohio, assignors to The United States Shoe Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 5, 1964, Ser. No. 349,648
3 Claims. (Cl. 36—48)



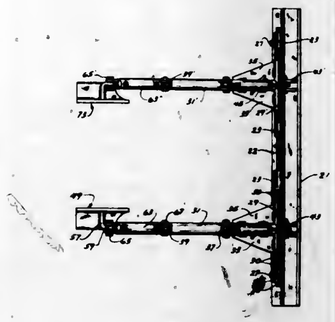
1. A blank for a moccasin shoe upper comprising a single elongated strip of flat material, having in a rectilinear row a central toe-wall-forming portion, and side portions extending outward fro msaid toe-wall-forming portion in a substantially straight line, said toe-wall-forming portion having a forward edge, said side portions having bottom forming portions extending therefrom to the same side of said strip as said forward edge, a first one of said bottom forming portions having a front edge joining said forward edge at an obtuse angle and being curved away from said forward edge in a smooth and gradual reverse curve, a second one of said bottom forming portions having a front edge joining said forward edge at an acute angle and curving away from said forward edge in the shape of a "question mark," said forward edge and said bottom forming portions all being disposed along the same edge of said elongate strip, said strip being adapted to be bent to the configuration of a shoe upper, and said forward edge and said bottom forming portions being adapted to be bent under, and the second one of said bottom forming portions being adapted to be joined to said forward edge and to the said first bottom forming portions by a single continuous seam having the general appearance of a "question mark."

3,289,331
END BIT FOR EARTHMOVING EQUIPMENT
Willie E. Freeman, 140 E. 4th St., Gold Beach, Oreg.
Filed Apr. 15, 1964, Ser. No. 360,037
4 Claims. (Cl. 37—143)



2. A bit for use with the moldboard of an earthmoving device comprising a one-piece body including a cutting blade and an end wall rigidly secured to an end of said blade, the front edges of said blade and end wall projecting forwardly of the front edge of said moldboard and with said end wall being positioned at the side edge of said moldboard, the forward edges of said blade and end wall being beveled and constituting edges and being inclined rearwardly from the outer to the inner faces of said body, means fixedly attaching said body upon said moldboard, said blade including a rear mounting portion and a forward cutting portion, said rear portion being relatively softer and more yieldable than said forward portion and constituting the sole means of attachment of said body to said moldboard, said attaching means comprising fasteners extending through said blade into said moldboard, longitudinally extending bar-like reinforcing ribs rising from said blade adjacent and extending above said fasteners and constituting both a stiffening and reinforcing means for said blade and a protecting means for said fasteners, said ribs extending along a major portion of the length of said blade.

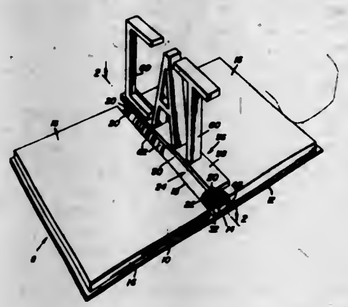
3,289,332
TRACTOR SCRAPER BLADE
Randal A. Cox, Van Wert, Iowa
Filed Mar. 30, 1965, Ser. No. 443,962
6 Claims. (Cl. 37—144)



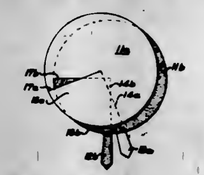
6. In an earth working implement for a tractor,
a support member for said implement extending transversely of said tractor,
a plurality of horizontally disposed, spaced apart sleeves secured to the support member,
a shaft rotatably received by and extending between said sleeves,
first and second pipes rotatably embracing said shaft adjacent opposite ends thereof,
a plurality of shim elements removably embracing said shaft and being selectively positioned thereon whereby said first and second pipes may be selectively spaced from each other by the selective positioning of said shim elements on said shaft with respect to said sleeves and said first and second pipes,
first and second arm members secured to said first and second pipes respectively and extending rearwardly therefrom,
first and second brackets adapted to be secured to the frame of a tractor at opposite sides thereof,
said first and second arm members being pivotally connected at their rearward ends to said first and second brackets,
and first and second hydraulic ram means operatively connected to said first and second arm members respectively to raise and lower said first and second arm members and said support member.

3,289,333
EDUCATIONAL TOY BOOK
Benjamin A. Watrous, Jr., Annandale, Va., assignor of five percent each to James A. Ballard and Rosemary A. Horning, both of Suitland, Md.; Paul M. Dunlap, Landover Hills, Md.; Richard F. Rooney and Helen S. Weston, both of Washington, D.C.; and Robert S. Winokur, Silver Spring, Md.
Filed Sept. 10, 1964, Ser. No. 395,407
6 Claims. (Cl. 40—1)

1. An aid to education comprising a book having at least two opposed hinged leaves, an inflatable and deflatable character adapted to be sandwiched and normally deflated between the opposing faces of said leaves, and an associatively cooperable source of air built into said book and with which said character is communicatively connected.

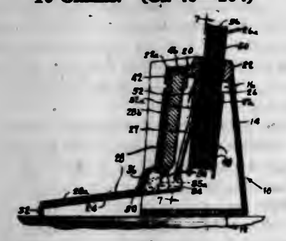


3,289,334
DISK TYPE CALCULATING AND DISPLAY DEVICE
Alexander R. Forest, 551 5th Ave., New York, N.Y.
Filed June 6, 1963, Ser. No. 285,912
15 Claims. (Cl. 40—70)



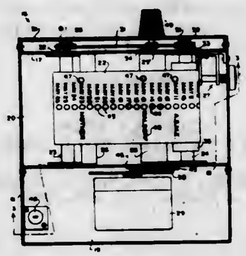
1. A device consisting essentially of a plurality of superimposed and interleaved disks positioned on a common axis, each of said disk being independently rotatable with respect to the remaining disks and each said disk having a radial slit extending from a point on the circumference to the center thereof and a leaf portion integrally affixed to said disk along the entire length of one edge of said slit and extending below the body of said disk a substantial distance outwardly from said one edge of the slit, each said leaf portion interconnecting its associated disk with the remaining disks and lying flatly against one of the latter, whereby said disks are adapted to remain in said interleaved condition when 360 degrees of surface area of any one thereof is exposed.

3,289,335
LIST FINDER
Hildaur L. Nelson, 2 Juniper St., Metuchen, N.J.
Filed Nov. 24, 1964, Ser. No. 413,515
10 Claims. (Cl. 40—104)



1. A list finder comprising support means, a stack of list cards having lower marginal portions thereof in pivotal engagement with said support means, a back rest member against which said stack rests with the cards of the stack in an upright position, magnetic means effective between said back rest and cards to hold the latter releasably against movement forwardly away from the back rest, each of said cards having an upper marginal, actuating portion, separately engageable manually, enabling a selected list card to be manually pulled forwardly from said back rest member, to cause the selected card and any card forwardly thereof to pivot forwardly and downwardly, to open surfaces of the selected card and a succeeding one of the cards to view; the list finder further comprising a cover disposed forwardly of all list cards of said stack, and pivotally mounted for pivotal movement, through an area forward of said back rest member, about an axis adjacent to a bottom margin of the cover and bottom margins of said list cards, a manually operable, cover-closing slide element guided for sliding in an approximately vertical plane, and a motion-transmitting member interacting between said slide element and said cover, eccentrically with reference to the cover's said axis, to pivot the cover and all list cards resting thereon from an open position to an upright closed position.

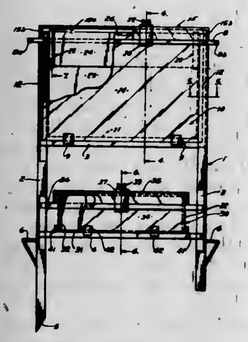
3,289,336
REMINDER DEVICES
Harry Weiner, Newburgh, and Herbert Friedmann, Scarsdale, N.Y., and Peter Katz, Livingston, N.J., assignors to General Slicing Machine Company, Inc., Walden, N.Y., a corporation of New York
Filed June 18, 1964, Ser. No. 376,101
1 Claim. (Cl. 40—117)



In a reminder device of the character described, a casing including top and upright walls, first, second and third spaced parallel rollers rotatably mounted within said casing, means associating said rollers so that upon the rotation of one of them, all of them will rotate; said third roller having a sprocket and a gear secured thereon to turn therewith and its axis being away from the plane of the axes of said other rollers, a dielectric tape having a series of equi-spaced holes along the length thereof, each of said holes of said series, determining a traverse zone on said tape; one end of said tape being held on the first roller; the other end of said tape being held on the second roller and an intermediate portion of said tape being on and around a portion of the third roller; teeth of said sprocket being meshed in holes of said series whereby the tape is caused to be moved longitudinally upon rotation of the third roller; said tape being wound on each of said first and second rollers so that upon rotation of the rollers, said tape will unwind from one and wind up on the other of said first and second rollers; said tape being taut; said casing having a viewing window in said top wall to expose one traverse zone of the tape and a write-in window in said upright wall to expose and make accessible another of said zones, means positioned within said casing, supporting said tape adjacent said

windows, an electric motor for continuously driving a wheel associated with said motor within the casing; the speed of rotation of said wheel being one revolution per prescribed unit of time, an element extending from said wheel for engaging said gear to make it turn just sufficient to advance the tape one zone in a predetermined direction during a comparatively small portion of said unit of time, an electric switch comprising two conductive elements normally insulated from each other, fixed in the casing and touching the tape at the same one zone, one zone at a time, which is at a prescribed distance along the tape measured from and starting with the tape zone at the viewing window, the tape being provided with at least one hole at a predetermined transverse zone spaced from said series of holes; said switch elements being one at each surface of said tape respectively; at least one of said elements resiliently pressing on said tape whereby said elements will contact each other when the last mentioned hole reaches them, a hole puncher means mounted in said casing, for making holes in the tape to allow said switch elements to come into contact therethrough; said hole puncher means having an operating element; said operating element extending through an opening in said upright wall, and mounted for movement along the horizontal; said hole puncher means being associated with the tape so that when it is operated, it will make a hole in a zone in the tape; the distance from the zone in which such hole is punched, measured along the tape to the zone of the tape at the write-in window, being equal to the distance measured along the tape in the same direction as from the zone at the switch elements to the zone at the viewing window, and a circuit including an electrically-actuatable signal means; said switch being interposed in said circuit to control the operation of said signal means; said tape having indicia thereon at each of its zones, indicating successive units respectively, of said prescribed unit of time.

3,289,337
DISPLAY SIGN
Lloyd F. Golkowski, 4921 E. 106th St., Garfield Heights, Ohio
Filed May 8, 1964, Ser. No. 366,087
6 Claims. (Cl. 40—125)



1. An advertising sign apparatus comprising a rigid frame including a pair of upright channels having their open sides in spaced parallel aligned relation to each other and opening toward each other, means for supporting the channels in upright position, said channels being open at their upper ends,

an open top container having transparent imperforate front and rear walls spaced flatwise from each other with the space therebetween closed in sealed relation at the lateral edges of the front and rear walls by side walls, respectively,

the lateral edges of the container being slidably supported in the channels for vertical movement therealong, said container being insertable in, and removable from the channels through the open upper ends of the channels,

means on the frame limiting the downward movement of the container relative to the channels and positively constraining the container to a position wherein the upper margin of the container extends a substantial distance above the frame such that the upper margin can be grasped by the fingers for lifting the container upwardly out of the frame,

a detachable cover on and closing the open top of the container and having front and rear walls in overlapping relation to said portion of the margins above the frame,

and a stiff double face removable placard receivable in the container through the open top thereof, said placard being substantially coextensive with said front and rear walls of the container.

3,289,338
SUPPORT FOR DETACHABLE SIGNS
Paul B. Stephens, Windale Hotel, 6019 Winthrop Ave., Chicago, Ill.
Filed Aug. 11, 1964, Ser. No. 388,784
13 Claims. (Cl. 40—125)



1. A support for detachably supporting selected signs of thin sheet-like material for display, and comprising

a nonmetallic body in the form of a shallow box having a front wall of large area on which a sheet-like sign is to be supported in face to face relation, said box being adapted to be supported in substantially upright position with one edge at the top,

an inside metal member within the box arranged for moving freely therein parallel to the plane of the front wall,

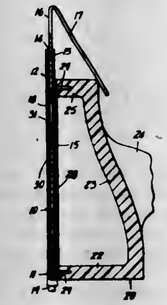
a trackway in the body having a supporting surface spaced from and facing toward said one edge and sloping, endwise of the trackway, to a preselected low point, whereby when the box is supported in said substantially upright position, the inside metal member is normally caused to move by gravity along said surface to said preselected low point and there come to rest,

a companion member for the inside member, said companion member being adapted to be placed detachably against the outer face of the front wall,

at least one of said members being magnetic,

said members being in magnetically attractive relationship to each other, when aligned, such that when in predetermined alignment on opposite faces of the forward wall, the inner member can be moved as a slave to the outer member as the outer member is moved along the front wall, and when so aligned will, under the influence of their magnetic attraction, clamp between them the aligned portions of the front wall and the aligned sign portion juxtaposed against the front wall.

3,289,339
PERPENDICULAR MERCHANDISE-DISPLAY
Henry N. Rowder, New York, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 6, 1963, Ser. No. 300,291
2 Claims. (Cl. 40—126)



1. A merchandise display device of the character defined comprising a stand, a rectangular supporting frame mounted on said stand and having rails generally of channel cross-sectional form, the upper portion of the frame having an opening, a mounting element passing through said opening and supported by said frame, said element having an aperture therein, a hollow merchandise display form having inwardly extending top, bottom and side walls including shoulder portions, said display form having a back wall fixed to said top, bottom and side walls including said shoulder portions, said back wall having an integral coupling tongue adapted for mounting in the aperture of said element to support the display form on said element, said back wall being also supported on the surface of said frame, said merchandise display form comprising a molded plastic body upon which merchandise is arranged, and said display form being of a contour conforming to and fitting snugly within at least part of an article of merchandise arranged thereon.

3,289,340
DISPLAY SIGNS
Lindell N. Edwards, St. Louis, Mo., assignor to Commander Board International Inc., St. Louis, Mo., a corporation of Missouri
Filed May 23, 1966, Ser. No. 552,303
8 Claims. (Cl. 40—143)

1. A display sign that comprises:

(a) a panel that has a plurality of sections,

(b) indicia, and

(c) securing elements that releasably secure said indicia to said panel,

(d) one section of said panel having a plurality of spaced-apart surfaces at the front face thereof to define a plurality of recesses in said front face of said one section of said panel,

(e) said one section of said panel having a plurality of spaced-apart surfaces at the rear face thereof to define a plurality of recesses in said rear face of said one section of said panel,

(f) said spaced-apart surfaces at said front face of said one section of said panel being spaced apart to provide equal center-to-center spacings for said recesses in said front face of said one section of said panel,

(g) said spaced-apart surfaces at said rear face of said one section of said panel being spaced apart to provide equal center-to-center spacings for said recesses in said rear face of said one section of said panel,

(h) said center-to-center spacings between said recesses in said rear face of said section of said panel being substantially equal to said center-to-center spacings between said recesses in said front face of said one section of said panel,

(i) said recesses in said front face of said one section of said panel being adapted to receive portions of said securing elements,

(j) said recesses in said rear face of said one section of said panel being adapted to receive portions of further of said securing elements,

(k) said one section of said panel having an abutting portion at one edge thereof,

(l) a second section of said panel having a plurality of spaced-apart surfaces at the front face thereof to define a plurality of recesses in said front face of said second section of said panel,

(m) said second section of said panel having a plurality of spaced-apart surfaces at the rear face thereof to define a plurality of recesses in said rear face of said second section of said panel,



(n) said spaced-apart surfaces at said front face of said second section of said panel being spaced apart to provide equal center-to-center spacings for said recesses in said front face of said second section of said panel,

(o) said spaced-apart surfaces at said rear face of said second section of said panel being spaced apart to provide equal center-to-center spacings for said recesses in said rear face of said second section of said panel,

(p) said center-to-center spacings between said recesses in said rear face of said second section of said panel being substantially equal to said center-to-center spacings between said recesses in said front face of said second section of said panel,

(q) said recesses in said front face of said second section of said panel being adapted to receive portions of still further securing elements,

(r) said recesses in said rear face of said second section of said panel being adapted to receive portions of additional securing elements,

(s) said center-to-center spacings between said recesses in said front face of said second section of said panel being substantially equal to said center-to-center spacings between said recesses in said front face of said one section of said panel,

(t) said second section of said panel having a further abutting portion at one edge thereof,

(u) said further abutting portion at said one edge of

said second section of said panel being disposed in abutting relation with said abutting portion at said one edge of the first said section of said panel,

(v) said further abutting portion at said one edge of said second section of said panel and said abutting portion at said one edge of the first said section of said panel having a combined width substantially equal to the spacing between adjacent recesses in said front face of said one section of said panel,

(w) whereby the center-to-center spacing between recesses which are in said front face of said panel and which are disposed on opposite sides of said one abutting portion of said one section and of said further abutting portion of said second section of said panel will be substantially equal to the center-to-center spacings between the other recesses in said front face of said panel,

(x) said abutting portion at said one edge of the first said section of said panel and said further abutting portion at said one edge of said second section of said panel permitting full and free access to said recesses in said front and rear faces of said one section and of said second section of said panel.

3,289,341
POSTER FRAME
David S. Howell, Royal Oak, Mich., assignor to Arlington Aluminum Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 14, 1964, Ser. No. 389,624
8 Claims. (Cl. 40—152)



1. A poster frame, comprising

a multiplicity of frame rails having obliquely-directed ends disposed end-to-end in an open-centered arrangement,

said frame rails at their opposite ends having longitudinally-extending recesses therein,

and corner locks extending across the junctions between said obliquely-directed ends and having arms extending into said recesses,

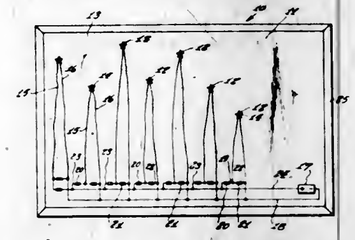
each arm having unidirectional locking means thereon effecting free sliding insertion thereof into its respective recess but resisting withdrawal thereof from said recess,

each corner lock comprising a plate of resilient materials with said arms disposed at substantially right angles to one another and having interrupted inner edges,

said locking means including an elongated resilient locking finger connected to the inner edge of each arm near the outer end thereof and projecting away from said outer end toward the junction of said arms and outwardly beyond said inner edge into engagement with its respective rail within the recess thereof.

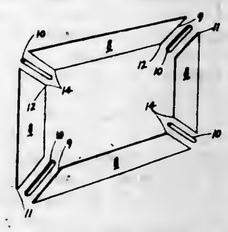
3,289,342
NOVEL LIGHT
Preston H. Gibson, Jr., 946 Oakland Drive, SW., Atlanta, Ga.
Filed June 26, 1964, Ser. No. 378,391
2 Claims. (Cl. 40—152.2)

1. In an illuminated picture, the combination of a panel, one side of said panel having a pictorial scene, the opposite side of said panel carrying an electrical circuit, said panel having a plurality of openings therein, a plurality of neon bulbs, one of said neon bulbs being in alignment, and extending through, each of said openings, whereby the electrical circuit will produce a glowing effect on certain parts of said one side of said panel, said electrical circuit comprising a battery, common wires attached to each end of said battery, one of said common wires, being connected to a plurality of wires each



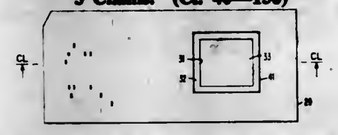
of which extend and is electrically connected to one of said neon bulbs, and the other of said common wires from said battery is connected to one end of a resistor, the opposite end of said resistor being connected to one end of said neon bulbs and to one end of a condenser, the opposite end of said condenser being connected to the first said wires connected to the first said common wires.

3,289,343
MEANS AND METHOD FOR MAKING MATS FOR PICTURES AND THE LIKE
Robert P. Jensen, 918 Van Buren, and Donald W. Sackett, 323 Selby St., both of Owatonna, Minn.
Filed Oct. 28, 1964, Ser. No. 407,166
4 Claims. (Cl. 40—154)



1. The means for making mats for art work, pictures, drawings, and the like comprising in combination four pre-cut sections of mat-board all four of which being of identical length to form a finished square mat when assembled or alternatively two of said pre-cut mat-board sections being of one length and the other two thereof being of a contrasting length to form a finished rectangular mat, the end portions of each of said mat-board sections being cut at a 45 degree angle and having close mating relation the one with the other, an elongated clip having an upper section and a lower section applicable to the respective joints formed by the assembling of the said mat-board sections, the said upper and lower sections of said clips being held spaced apart transversely by a central longitudinally disposed divider the said clips being dimensioned to extend the full length of the joint formed by the abutting engagement of the end portion of the mat-board sections and holding said sections in assembled relation by frictional gripping engagement each of said sections between the upper and lower sections of said clips said assembled mats being adapted to surround the marginal portion of a rectangular picture or other display.

3,289,344
FILM RECORD CARDS AND METHOD FOR MAKING THE SAME
Ernest P. Koller, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,401
3 Claims. (Cl. 40—158)



1. A film record card for use in card record systems comprising:

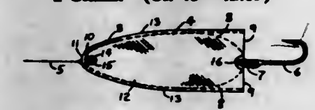
a relatively thin card of fibrous material impregnated with an epoxy resin composition for increasing the strength of said card;

an aperture in said card with the edge portions of the card surrounding the aperture being ground to a depth to provide a recessed shoulder;

a coating of adhesive material on said shouldered edge portions; and

a film insert positioned over said aperture and bonded to said adhesive coated shouldered portions, the opposite surfaces of said film insert lying between the planes of the opposite surfaces of said card.

3,289,345
FISHING SPOON LURE
Gail Ted Reisinger, 2707 Tidewater, Houston, Tex., and Richard Louis Reisinger and Richard Louis Reisinger, Jr., both of Box 214, La Salle, Tex.
Filed Oct. 19, 1964, Ser. No. 404,858
1 Claim. (Cl. 43—42.09)



A combination of sleeves of different colors and/or designs that can be individually fitted over an elliptical fishing spoon and fastened to give said spoon several different fishing lure variations, in which each said sleeve would be made of suitable materials, in which each said sleeve is thin walled, hollow, and resembles a flat sock, in which the inside or hollow part of each said sleeve is shaped to tightly fit the contour and size of said spoon at its forward end and is shaped at its rear portion to provide parallel side edges and a transverse straight back edge normal to said side edges whereby said sleeve may fit less tightly near the back end of said spoon, in which each said sleeve is open at its back end, closed at its front end, closed at each of its flat sides, and closed at its side edges, except that said sleeve has a small hole in each of its flat sides near the front end and a notch in each of its flat sides near the back end, said sleeve having a length corresponding to that of said spoon in which said spoon with line detached and hook attached may be fitted with one of the said sleeves by inserting the front end of said spoon into said back end of said sleeve and then pushing same all the way into said sleeve until a line attachment hole on said spoon is even with the said small holes on said sleeve and then the line may be fastened thru these said small holes and thru said line attachment hole which thereby fastens said sleeve to said spoon and makes the assembly ready for fishing, and in which said spoon can be fitted with other color and/or design sleeve variations by un-fastening said line from the above assembly, pulling said spoon out of said sleeve, inserting said spoon into a desired second sleeve as above, and fastening as above.

3,289,346
FISH HOOK
Robert C. Ebling, 187 Spring Brook Trail, Sparta, N.J.
Filed July 30, 1964, Ser. No. 386,244
4 Claims. (Cl. 43—44.6)



1. A fish hook comprising,

(a) a plurality of spaced hook body members, each having hook portions at one end,

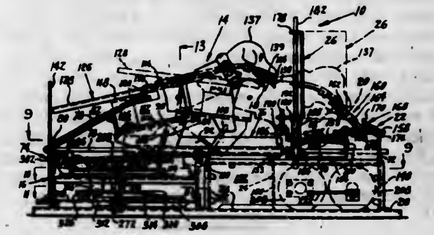
(b) tensile means providing a pivotal connection for said members connected to the other end of said members to undergo compression in response to compressive movement of said hook portions,

(c) jaw members for receiving bait,

(d) said jaw members including means detachably receiving said hook body members, said jaw members extending oppositely said pivotal connection with respect to said last named means,

(e) said tensile means comprising a coil spring whose ends are co-extensive and integral with said hook body members.

3,289,347
ELECTRO-MECHANICAL TOY BANK
Arthur Ginsberg, Roosevelt, N.Y., assignor to Royal London, Ltd., New York, N.Y., a corporation of New York
Filed Mar. 8, 1966, Ser. No. 532,700
8 Claims. (Cl. 46—4)



1. A bank comprising

a base;

a carriage mounted on the base for movement between a coin releasing position and a coin grasping position;

means for moving the carriage between the coin releasing position and coin grasping position;

a coin receptacle adjacent the coin releasing position for accumulating the coins deposited therein;

a coin receiver adjacent the coin grasping position for accepting coins to be deposited in the receptacle; and

grasping means on the carriage for grasping a coin in the receiver and depositing it in the receptacle, the coin grasping means including

a pair of jaws configured to receive the coin therebetween;

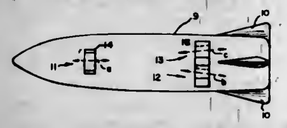
one of the jaws being relatively rigid and concavely curved from a point vertically spaced from the coin receiver toward the coin receiver;

the other jaw being complementarily curved with respect to the rigid jaw and biased thereagainst; and

means slidably mounting the other jaw from a first position, extended with respect to the rigid jaw, for initially contacting the coin to a second

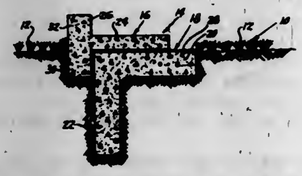
position, retracted with respect to the rigid jaw, for increasing the biasing force between the jaws and coin, and then to a third position extended with respect to the rigid jaw slidably moving the other jaw to relax the biasing force between the jaws and coin when both jaws are in a downwardly inclined position to release the coin into the coin receptacle.

3,289,348
SOUNDING APPARATUS FOR BICYCLES
Earl M. Terry, G–6044 E. Pierson Road, Flint, Mich.
Filed Nov. 20, 1963, Ser. No. 325,185
1 Claim. (Cl. 46—175)



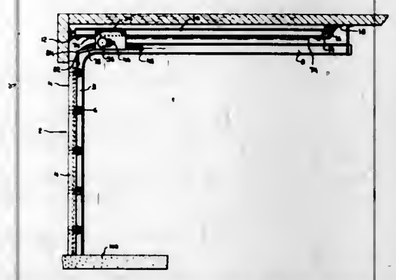
Sounding apparatus for use with a spoke wheel vehicle having a ribbed fender brace adjacent said wheel, said apparatus comprising a body member; first attaching means on said body member adjacent one end thereof, said first attaching means comprising a clip member having an opening therein shaped to complement the ribbed surface of said brace, said opening being in communication with a slot through which said brace may pass, for removable accommodation in said opening; second attaching means on said body member adjacent the other end thereof, said second attaching means comprising two of said clip members arranged in vertically spaced relation, each of said two clip members having an opening therein shaped to complement the ribbed surface of said brace, and each of such openings being in communication with a slot through which said brace may pass for removable accommodation in said opening, whereby said body may be supported on said brace by said first attaching means and by either of said two clip members in a substantially horizontal position regardless of whether said brace is horizontal or is inclined to the horizontal; and a fin secured to said body member and projecting laterally therefrom a distance to be engaged by successive spokes of said wheel in response to rotation of the latter.

3,289,349
CURBING AND BORDERING MEANS
Crescencio Valdez, 151 Tesla, San Antonio, Tex.
Filed Feb. 9, 1965, Ser. No. 431,261
3 Claims. (Cl. 47—33)



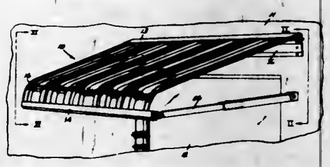
1. A curb for use in bordering an area of a garden and the like comprising a plurality of block members, each block member consisting of an upper removable section and a lower section for embedding in the soil, said lower section being an inverted L shape with the vertical leg extending downwardly in the garden soil and its horizontal leg having its upper surface disposed substantially at the level of the soil, said upper section being a T shape with the T being disposed horizontally with the bottom leg of the T seated on said upper surface and the lower half of the top leg of the T shape extending below the level of the soil and disposed adjacent the upper side of the vertical leg of said L shape section, and the upper half of the top leg of the T shape extending substantially above its bottom leg, and the horizontal leg of the L shape.

3,289,350
GARAGE DOOR OPERATORS
Warren E. Moody, 95 Fiesta Way, Fort Lauderdale, Fla.
Filed July 7, 1964, Ser. No. 380,903
8 Claims. (Cl. 49—28)



1. An operator for moving a closure member between an open and a closed position on a building comprising a carriage, means connecting the closure member with the carriage for simultaneous movement, a trackway shiftably mounted on the building, means mounting the carriage on the trackway for movement therealong, means for moving the carriage along the trackway, and means operated by the trackway during shifting for controlling the operation of the means for moving the carriage.

3,289,351
STRUCTURAL DEVICE
James A. Ford, Sturgis, Mich., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan
Filed Nov. 12, 1963, Ser. No. 322,821
10 Claims. (Cl. 49—208)

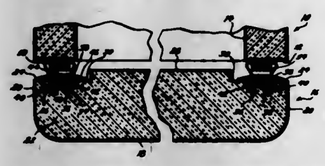


9. In an awning construction, means securing the lower edge of the awning to a supporting surface, comprising:
a mounting member secured to the lower end of the awning and having a rearwardly extending flange terminating in an upwardly convex arcuate surface spaced rearwardly from the rear side of the awning defining an upwardly opening slot;
a brace extending forwardly from said supporting surface and having a nose at its forward end which is snugly receivable in said slot, said nose having an arcuate surface for overlying and snugly engaging said arcuate surface on said mounting member.

3,289,352
GASKET CONSTRUCTION
Jerome P. Hellwell and Albert Edward Schweizer, Philadelphia, Pa., assignors to Glenco Refrigeration Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 15, 1964, Ser. No. 337,761
2 Claims. (Cl. 49—485)

1. A door construction including an outer panel having side and end walls terminating in an inwardly extending peripheral flange which is spaced from, and is parallel to,

said outer panel, the edge of said flange defining an opening,
an inner panel co-planar with said flange and coacting with said outer panel and said side and end walls to form an insulation material receiving enclosure,
the edge of said inner panel being spaced from the edge of said flange to form a slot, and
a gasket retainer carried by said flange and by the adjacent edge of said inner panel and closing said slot, said retainer comprising:
a body portion adapted to overlie the adjacent marginal portions of said flange and said inner panel,
an engaging member generally shaped to simulate the letter H, and carried by said body portion,
outwardly diverging arms extending from the inner ends of the limbs of this H toward the marginal por-



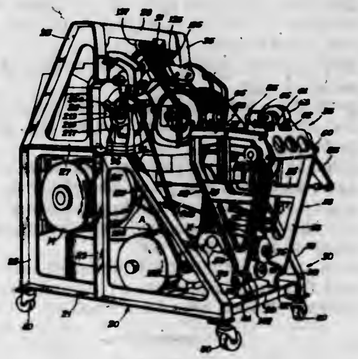
tions of said flange and said inner panel, respectively, said engaging member being insertable through said slot when said arms are compressed,
a gasket comprising a wall adapted to overlie said body portion,
there being an aperture in said body portion aligning with the space between the outer ends of the limbs of the H,
an arrow shaped head carried by said wall and insertable through said aperture, and into said space,
the maximum dimension of said head being greater than the width of said aperture and the distance between the cross bar and outer ends of the limbs of the H being such that, when the tip of the head engages the cross bar of the H, the opposite end of said head engages the inner face of said body portion to either side of said aperture.

3,289,353
DEVICE FOR STRAIGHTENING WARPED DOORS
Donald J. Van Eden, 1670 Ottawa Beach Road, Holland, Mich.
Filed Mar. 8, 1965, Ser. No. 437,873
1 Claim. (Cl. 49—503)



Apparatus for straightening warped doors, comprising in combination with a door: a pair of substantially rigid upper and lower elongate tension members; said members each having a threaded portion near each end thereof extending away from the axis of the member at an angle and directly toward the door substantially normal thereto; anchor means threadable upon said threaded tension member portions for securing the said member fixedly to the door; a plurality of vertically aligned externally concealed spaced recesses formed in the interior of said door; each such recess receiving one of said anchor means and being located such that engagement of the anchors and tension member portions mounts the tension members in vertical alignment downward from the top of the door and upward from the bottom thereof with a space between the members in the area of the door knob, permitting easy actuation thereof; each of said anchor means having a generally flat surface for bearing against an internal wall of said recesses in securing said tension members to the door; and a pair of adjustable force-exerting means positioned between said door and each of said tension members, for forcing such members outward and away from the door with different degrees of force determined by the relative positioning and adjustment of each of said force means, thereby putting said members in tension and drawing their anchored ends outwardly, straightening the door; said force-exerting means each comprising a threaded male member with one end contacting the inner surface of the tension member and the other end passing into the door a distance, and a threaded female member engaged with said male; said end of said male member contacting said tension member having a recessed portion complementary in cross section to that of the tension member for receiving at least a portion of said member therein, whereby said male member is indexed against rotation; and said female member bearing against the surface of the door and forcing the male and the tension member seated thereagainst outward away from the door by relative threading adjustments between the male and female members.

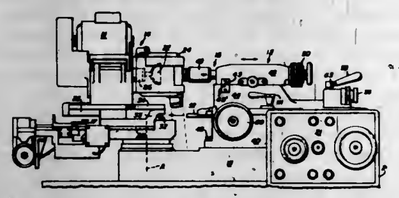
3,289,354
BALL RECONDITIONER
Eric S. Stevens, St. Charles, Mo., and Otto E. F. Puhlmann, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Mar. 11, 1964, Ser. No. 350,983
23 Claims. (Cl. 51—5)



1. A ball reconditioner comprising in combination: means for supporting a ball in work position; a plurality of ball working devices; a single movable carrier supporting said devices; and means including a single timing member for indexing the carrier to move said ball working

devices sequentially into a work position for working upon said ball.

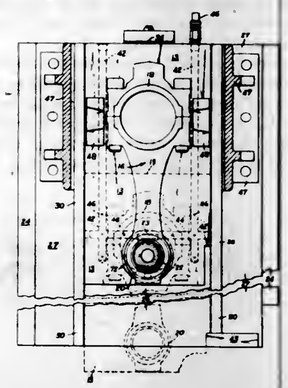
3,289,355
AUTOMATIC LENS GRINDING MACHINE
Orin W. Coburn, Jack M. Suddarth, and Forrest E. Gardner, Muskogee, Okla., assignors to Coburn Manufacturing Company, Inc., Muskogee, Okla., a corporation of Oklahoma
Continuation of application Ser. No. 76,196, Dec. 16, 1960. This application Apr. 22, 1963, Ser. No. 285,167
4 Claims. (Cl. 51—33)



1. An improvement in a lens grinding machine of a type for abrading the concave side of a lens blank having a known, mean curve on the convex side thereof, said blank having a center axis extending through the apogee of said convex surface, a base, a tailstock supporting assembly mounted on said base, a chuck mounted on said assembly for supporting said lens blank and having a chuck face in a plane transverse to said center axis when said lens blank is supported by said chuck, an abrading tool having an arcuate grinding edge, a support pivotally mounted on said base for swinging said grinding edge through an abrading sweep which intersects said axis, said improvement comprising:
an annular spacer of known dimensions between said convex surface and said chuck face,
said spacer having a first end in contact with said chuck face and a second end contacting said blank at a plurality of points on said convex surface in a second plane parallel to said first plane,
said points of contact being of equal and known radial distances from said center axis such that said apogee is supported a known distance from said first plane an amount equal to the distance between the first and second ends of said spacer minus the distance defined by a normal from said apogee to said second plane,
a pin supported along the same vertical axis as said abrading edge,
a positioning yoke slidably received in said tailstock for horizontal movement toward and away from said pin,
positioning means for locating said yoke a fixed distance from said first plane whereby when said tailstock carries said yoke into engagement with said pin, said first plane is said fixed distance from said point of intersection, and
second means for visually representing and retracting said face from said point an amount equal to said distance defined by said normal.

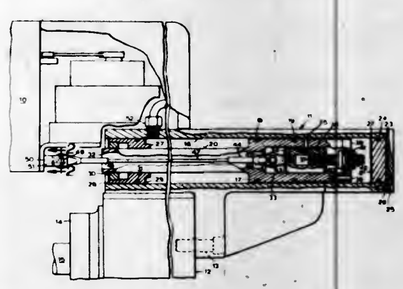
3,289,356
WORK LOCATING MEANS
Stuart Jackson Hunt and Meral Calvin Irish, Richmond, Ind., assignors to National Automatic Tool Company, Inc., Richmond, Ind., a corporation of Indiana
Filed July 29, 1964, Ser. No. 383,703
9 Claims. (Cl. 51—165)

1. Work locating means of the character disclosed, comprising a supporting base, a work support floatingly mounted thereon, clamp means carried by said supporting base and adapted to clamp work against said work support and said work support against said supporting base, a rotatable and expandable honing tool rigidly supported in relation to said supporting base and adapted to hone work on said work support when clamped by said clamp



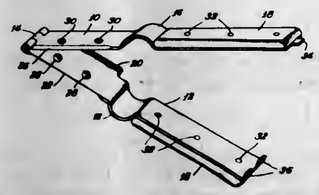
means, said honing tool expanding to provide initial engagement with the portion of the work to be honed and align it with said honing tool before said clamp means is operated and before said honing tool is rotated, and control means to sequentially expand said honing tool into engagement with the work, operate said clamp means and rotate said honing tool.

3,289,357
MACHINE TOOL ANTI-BACKLASH MECHANISM
Jacob Decker, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 28, 1964, Ser. No. 392,691
3 Claims. (Cl. 51—165)



1. In a machine tool having a slide received on a base for reciprocal movement by a feed mechanism, an anti-backlash motor adapted to impose a constant bias force in one direction comprising in combination:
(a) a cylinder fixed to the machine base and spaced from the slide,
(b) a piston received in said cylinder for movement in the direction of movement of the slide,
(c) a hollow piston rod connected to one end of the piston and extending outward from said cylinder toward the slide,
(d) means for sealing one end of said cylinder around said rod to allow axial movement thereof,
(e) a flexible wire extending loosely through said rod,
(f) means for securing one end of said wire inside said piston,
(g) means for securing the other end of said wire to the slide, and
(h) means for connecting fluid under pressure to the cylinder between said means for sealing and said piston to urge said piston away from the slide and maintain said wire in tension.

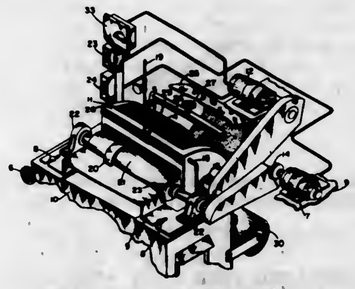
3,289,358
RAZOR BLADE HOLDER AND STROPPER FOR A HONE AND STROP
Felice Longobardi, 3643 W. 55th St., Chicago, Ill.
Filed May 21, 1964, Ser. No. 369,230
1 Claim. (Cl. 51—218)



A razor blade holder and honer for double-edged blades having aligned openings along the center comprising:
(a) two generally rectangular flat metal strap members hinged at one end of each one to swing apart and fold flatly together about a pin having an axis in the plane of said straps clamping a razor blade between them at the hinged end;
(b) each member having a blade receiving portion near its closed end with blade engaging means eccentrically located nearer corresponding edges of the members for engaging said center blade openings, so that one edge of a blade projects from the corresponding edges of the members when they are closed;
(c) the other edge of a blade being covered by the wider eccentric portions of the members so that the blade does not project at the corresponding side of the holder;
(d) the relatively outer edges of the members from which a blade projects being beveled to direct a projecting blade edge closely to a hone at both exposed side faces of the member sides;
(e) means on the outer ends of the strap members providing a single hand grip when a blade is in honing engagement and having oppositely outward curved portions constituting a blade warning safety stop at the outer end of a blade clamping position;
(f) and a flange at the edge of blade receiving portion of one member which extends eccentrically beyond the other strap member but parallel thereto, the flange also projecting in the direction of the other strap member but free thereof and in an amount at least equal to the thickness of said other strip member and the blade itself, to overlap and protect the adjacent edge of a blade when the opposite edge is being honed.

3,289,359
WIRE BRUSH SHARPENING DEVICE
Clarence E. Kruse and Glenn F. Richmond, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Apr. 22, 1964, Ser. No. 361,720
6 Claims. (Cl. 51—241)

1. Apparatus for sharpening a wire brush, comprising, in combination, a rotary wire brush, abrasive cloth, means securing said abrasive cloth tightly against the bristles of said brush, and means for rotating said brush while it



is tightly against said abrasive cloth to sharpen the ends of the bristles of said brush.

3,289,360
FABRICATED FOLDED PLATE ROOF STRUCTURE AND SUPPORT THEREFOR
Rodney W. Gartner, Buffalo, N.Y., assignor to Fenestra, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Nov. 18, 1963, Ser. No. 324,349
4 Claims. (Cl. 52—18)



3. Folded plate roof structure comprising a plurality of spaced apart vertical supporting structural members, parallel spaced apart roof end frames having transversely aligned ridges and valleys which end frames are supported on said structural members, V-shaped plate fold-line members extending transversely between and secured to the end frames at both the ridges and valleys, the structural members having V-shaped ends at the ridges and the fold-line members at the ridges having downwardly opening V-shaped cross section complementary to the ends of the structural members at the ridges, said end frames being rigidly secured to the ends of the structural members at the ridges, the fold-line members being secured to the top of the structural members at the ridges and providing coplanar upper surfaces on the fold-line members and end frames at the ridges, light gage metal panels extending between and secured to the adjacent fold-line members to cover the area between the end frames and fold-line members, rigid insulation positioned over the panels and roofing material applied over said rigid insulation.

3,289,361
SNOW GUARD CONSTRUCTION AND METHOD OF MAKING THE SAME
William H. Holliday, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed June 1, 1962, Ser. No. 199,310
11 Claims. (Cl. 52—24)

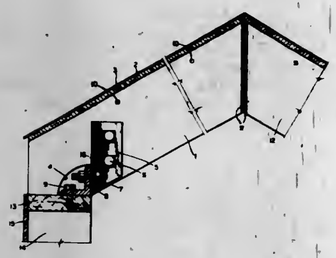
1. A snow guard or the like having an arresting end thereof raised relative to an attaching end thereof and having a plurality of legs joined together at said arresting end and disposed adjacent each other at said attaching end, at least one of said legs being shorter than the other

legs to hold said arresting end raised relative to said attaching end, said legs each having a reverse bend means



for defining part of said attaching end and being in alignment with the other reverse bend means.

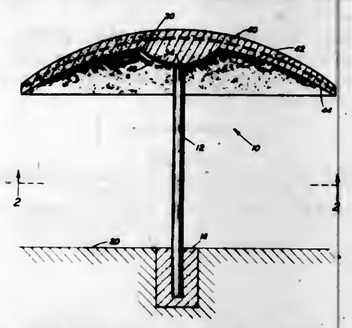
3,289,362
PREFABRICATED ROOF AND EAVE ANCHOR MEANS THEREFOR
Joseph A. Whelan, Box 114, Paoli, Pa.
Filed Nov. 9, 1964, Ser. No. 409,637
8 Claims. (Cl. 52—92)



1. In a roof construction, a rafter with a notch near the eaves end thereof, reinforced by a bracket lying within the longitudinal outline of said rafter, one leg of said bracket being bolted to said rafter and the other leg projecting perpendicularly to the side of said rafter and having its outward face in line with the inward face of said notch cooperating to absorb any shock or stress on said notch and having a hole in said projecting leg registered with a hole in the vertical leg of a brace whose horizontal leg is bolted to the structural members of a building, said brace positioned to engage said notch and, after engagement, cooperating to restrain outward longitudinal movement of rafter while permitting rotary, lateral and inward longitudinal movement during adjustment and, after final adjustment, affording means of permanently fastening rafter to structural members by a bolt passing through the registered holes in the bracket and brace.

3,289,363
LAWN SHADE WITH CANTILEVERED CONCRETE ROOF PORTION
William D. Patch, Welch, Okla.
Filed Sept. 3, 1963, Ser. No. 306,091
1 Claim. (Cl. 52—73)

A lawn shade structure having a single center post, a cuplike supporting member fixed to the upper end of said post and having a convex under surface and a concave upper surface, a reinforced concrete roof structure disposed across the upper side of said support member, said roof structure having a downwardly depending and protruding portion having a convex under surface complemental in size and shape snugly fitting against and being received in coextensive abutting contact throughout the extent of the concave upper surface of said support member, and said support member being of a substantial size as seen from its under side so as to give substantial support to said roof structure, said roof structure being concave



on its underside and convex on its upper side for construction of a minimum material with an inclined roof.

3,289,364
COMPOSITE TOWER STRUCTURE AND METHODS OF TOWER ERECTION AND STORAGE
Harley B. Watts, Jr., and John P. Apel, Columbus, Ohio, assignors to The Thomas Engineering and Surveying Co., Columbus, Ohio
Filed Dec. 9, 1963, Ser. No. 329,026
18 Claims. (Cl. 52—117)



1. A method of storing a composite tower structure which includes inner and outer tower components, said method comprising:

pivoting the legs of said outer tower about a top platform thereof so as to bring the extremities of said legs into converged relationship;

inserting the converged extremities of the legs of said outer tower component into the base portion of said inner tower; and

advancing said outer tower component into the interior of said inner tower component until the top platform of said outer tower component is telescoped within the base portion of said inner tower component.

3,289,365
ELECTRICAL CONTINUITY FOR ALUMINUM SIDING
Everett R. McLaughlin and Elmer R. Queer, University Park, Pa., assignors to The Aluminum Association, New York, N.Y.
Filed Dec. 3, 1963, Ser. No. 327,686
1 Claim. (Cl. 52—173)

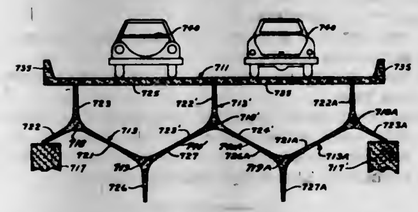
A metallic siding including at least two successive interlocking panels having a protective coating on one side

thereof and each comprising: an attachment section for accommodating means for securing same to an under surface, a body section formed as a continuation of said attaching section, a first interlock section between said attaching and body sections, said interlock section including a generally U-shaped portion the legs of which are generally parallel to said attaching and body sections and a pair of extensions joining the legs of said interlock to said attaching and body section and maintaining said U-shaped portion in spaced relation to said body section, a bottom section angularly disposed to said body section



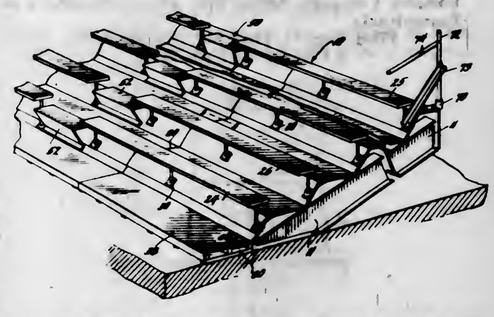
and connected thereto at a point remote from said attaching section, a second interlock section joined to said bottom section engaging the U-shaped section of the first interlock section of the adjacent successive panel in the space between said U-shaped and body section, and protuberances spaced longitudinally along the coated surface of one of said interlock sections, the coating being fractured in the area of said protuberances by the formation of same, said protuberances engaging the adjacent panel at the interlock section devoid of the protective coating to effect electrical interconnection of said adjacent panels.

3,289,366
STRUCTURAL MEMBERS AND STRUCTURES
Ned H. Abrams, 575 Britton Ave., Sunnyvale, Calif.
Filed Jan. 2, 1962, Ser. No. 163,446
14 Claims. (Cl. 52—174)



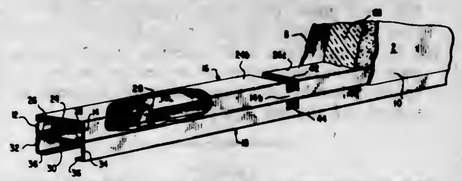
13. A reinforced concrete structure, as exemplified in a multi-level bridge or vehicle storage building; said structure comprising a first structural member, a second structural member, a third structural member and a fourth structural member connected together to present said first and said second structural members at one level and to present said third and said fourth structural members at a different level and underlying said one level; each of said structural members comprising a pair of hub sections, an integral web spanning said hub sections and maintaining said hub sections in spaced relationship to one another, a pair of wings on each of said pair of hub sections; each of said pair of wings being spaced apart in angularly symmetrical relationship to one another and to said web and extending radially from said hub sections with the wings of each pair of wings lying on opposite sides of said webs, means engaging the tips of one wing of each pair of wings each of said third and fourth structural members to support said connected structural members with the webs of said first and said second structural members coplanar in a horizontal plane at said one level, and with the webs of said third and said fourth structural members coplanar in a horizontal plane at said different level underlying the webs of said first and said second structural members so that vehicles may pass over the webs of said structural members at different levels and in the same or opposite directions, or vehicles may be stored on said webs of said structural members.

3,289,367
GRANDSTANDS
Charles Mackintosh, 306 N. Vermont Ave., Los Angeles, Calif.
Filed Mar. 30, 1964, Ser. No. 355,779
8 Claims. (Cl. 52—191)



1. A grandstand structure comprising a supporting framework, a stepped sheet metal deck structure, and seating means supported thereby, said deck structure comprising alternating tread and modified riser portions, said tread portions being somewhat narrowed to provide only the transverse walkway width needed for comfortable passage therealong, said riser portions being inclined to provide forwardly and downwardly sloping areas, and means securing said seating means to said sloping riser portions only of the deck.

3,289,368
MODULAR PARTITION STRUCTURE
Edward H. Mark, South Bend, Ind., assignor to Interstate Industries Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 6, 1964, Ser. No. 343,859
11 Claims. (Cl. 52—220)



1. A modulator partition unit comprising

(a) a unitary channel member including

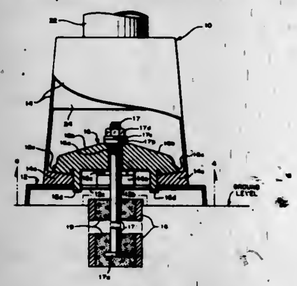
(1) a pair of parallel spaced generally-rectangular vertical side walls,

(2) a pair of spaced horizontal flanges extending inwardly from the lower edges of said side walls, respectively,

(3) at least a pair of longitudinally-spaced horizontal upper walls the longitudinal edges of which are connected with the upper edges of said side walls, respectively, said side walls including, in the space between said upper walls, reduced portions having a smaller vertical di-

mension than the remaining side wall portions, (4) and a transverse cable supporting strap beneath the space between said upper walls, said supporting strap including a horizontal first portion adjacent the upper surfaces of said flanges, and a pair of vertical second portions adjacent the inner surfaces of said side wall reduced portions, respectively, said vertical second portions being connected at their lower and upper edges with the longitudinal edges of said strap first portion and with the upper edges of said side wall reduced portions, respectively.

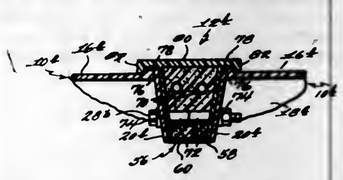
3,289,369
LIGHT STANDARD BASE HOLD DOWN
Samuel S. Marcus, Villanova, Pa., assignor to Spring City Foundry Company, Spring City, Pa., a corporation of Pennsylvania
Filed Aug. 11, 1964, Ser. No. 388,877
8 Claims. (Cl. 52—295)



1. A base hold down comprising:
(a) a foundation means, part of said foundation means comprising part of a fastening means,
(b) a plinth over and around each part of foundation means, said plinth having an upper surface, an aperture therein, and a spider guide therein,
(c) a base comprising a casing and a foot portion at the bottom of said casing, said foot portion extending horizontally inwardly across only part of the bottom of said casing,
(d) a spider having a vertical central aperture, a leg extending horizontally away from said central aperture, a pad at the end of said leg remote from said central aperture, said pad bearing on said foot portion, a guide pin extending downwardly from said leg, said guide pin bearing against said foot portion and mating with said spider guide in said plinth,
(e) fastening means, said fastening means bearing on part of said foundation means and on the top of said spider, whereby said base is securely fastened to the top of and aligned with said plinth.

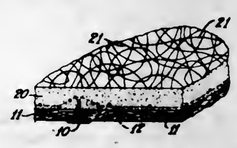
3,289,370
SELF-SUPPORTING PREFABRICATED PANELS AND SEALING MEMBERS THEREFOR
Wallace D. Van Etten, R.D. 2, Box 402, Warwick, N.Y.
Filed Dec. 21, 1964, Ser. No. 419,692
4 Claims. (Cl. 52—309)

1. A building structure formed of separate self-supporting prefabricated panels, each of said panels including a wall section and a flange depending from at least one edge of the wall section in a direction generally normal to the wall section, each panel having a shoulder portion extending along the juncture between each flange and its wall section; adjacent panels being disposed with their flanges facing each other in opposed relationship; an elongated sealing member interposed between the opposed flanges, each sealing member having a batten portion cooperating with the shoulder portions of the panels and an integral leg depending therefrom and extending between the panel flanges; fastening means passing through opposed flanges and the leg of the sealing member thereby holding the panels in sealing relationship; said sealing member forming with the flanges of adjacent panels an unobstructed enclosed passage de-



fined in part by the respective panel flange and in part by the sealing member, said passage extending substantially the entire length of said sealing member and parallel to said flanges, either one of said shoulders or said batten having a groove for breaking the capillary action acting within any film of water which has penetrated between said sealing member and the flanges.

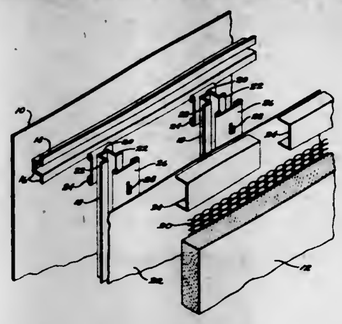
3,289,371
REINFORCED COMPOSITES AND METHOD FOR PRODUCING THE SAME
Arthur J. Pearson, Granville, and Homer W. Duffee, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Sept. 1, 1961, Ser. No. 135,616
4 Claims. (Cl. 52—338)



1. A gypsum deck having a reinforced upper surface comprising:
supporting members,
a base for said gypsum deck extending between said supporting members,
a layer of gypsum covering said supporting members and base,
glass fibers distributed and embedded in a relatively thin region at the exposed surface of said gypsum in sufficient concentration as reinforcement to impart strength to said surface against cracking.

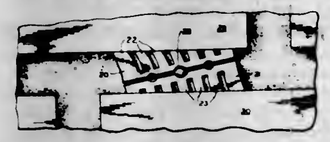
3,289,372
REFRACTORY SUPPORT
Mark F. Adams and Ethan Max Huffaker, Pullman, Wash., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 2, 1963, Ser. No. 313,326
6 Claims. (Cl. 52—346)

1. Apparatus for connecting a monolithic refractory lining to a support wall having a different coefficient of thermal expansion comprising: a plurality of generally parallel primary tracks mountable on said support wall, a plurality of generally parallel secondary tracks overlying said primary tracks and extending in directions to intersect the directions of said primary tracks, means supporting said secondary tracks on said primary tracks for expansive sliding movement in the direction of said primary tracks, track guard elements overlying said primary tracks and extending between said secondary tracks to separate the primary tracks from the refractory lining, and means engaging the refractory lining, said last mentioned means including elements slidably engaging



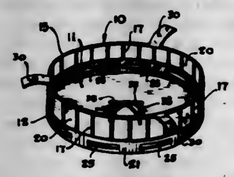
said secondary tracks to be expansively movable along the length thereof.

3,289,373
WEDGE SHAPED ANCHOR DEVICE
William Howard Miller, 1523 Altamont Ave., San Jose, Calif.
Filed Apr. 20, 1964, Ser. No. 365,229
3 Claims. (Cl. 52—375)



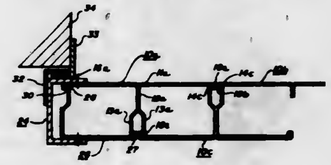
1. In a device for firmly fixing pins and the like for supporting articles on walls made of brick or blocks joined with mortar so that the joints are slightly recessed the combination comprising a pair of wedge members positioned in overlapping relation in a recessed joint in the wall so that the adjacent overlapping sides of said wedge members define an inclined joint therebetween the opposed surfaces of said inclined joint having pin receiving recesses therein extending at least part way across said wedge members, an article supporting pin frictionally held by said members in at least one of said pin receiving recesses, each of said wedge members having a plurality of fingers engaging opposing surfaces of the wall recess under pressure when said pin is driven between said members so that said pin and said members are firmly held in the selected mortar joint of the wall and an article may be supported in the wall thereby.

3,289,374
WALL REPAIR DEVICE
Henry L. Metz, 21401 Edgecliff Drive, Cleveland, Ohio
Filed July 3, 1963, Ser. No. 293,923
11 Claims. (Cl. 52—514)



1. A patching insert for repairing hollow breaks in plaster-type walls and the like and comprising an open-ended generally box-like member of a size to be inserted in the break, said member including at the other end thereof a base plate adapted to be located at the rear face of the wall having the break when said member is inserted in the break, a side wall projecting from the base plate and forming a tubular member and defining an open-ended cavity into which the patching material is to be pressed, said side wall terminating opposite the base plate in a rim to be located at the front face of the wall having the break, elongated tongues of bendable material radiating from said rim, said tongues being bendable to extend at substantially right angles to said rim and for engagement with the front of the wall having the break to be repaired, and said side wall having unobstructed openings for enabling plaster to be extruded therethrough for keying to key around the rear surface of the wall having the break therein.

3,289,375
PANEL CONSTRUCTION
Robert Sherrill Cline, Bradenton, Fla., assignor to Cline Aluminum Products, Inc., Bradenton, Fla., a corporation of Florida
Filed May 7, 1964, Ser. No. 365,753
14 Claims. (Cl. 52—593)



1. A panel member comprising:
an elongated, substantially flat flange having a pair of parallel edges;
an elongated, substantially flat web extending perpendicularly from said flange to define a structure having a substantially T-shaped cross-section, the edges of said flange terminating in a pair of opposed portions which are L-shaped in cross-section with the bases of the L's directed toward each other, the edge of the web remote from said flange terminating in an elongated portion which is substantially U-shaped in cross-section with each of the forks of the U terminating in an angularly projecting edge.

3,289,376
GRILLE OR SCREEN
Lemual G. Brown, P.O. Box 14488, Britton, Okla.
Filed June 18, 1964, Ser. No. 376,048
9 Claims. (Cl. 52—626)



1. An end bracket for supporting grille-forming strips having notched end portions, comprising:
a frame member disposed adjacent the notched end portions of the grille-forming strips;
a supporting member having a surface attached to said frame member and having divergent side surfaces extending from said surface for connecting the

notched end portions of said grille-forming strips to said frame member; and

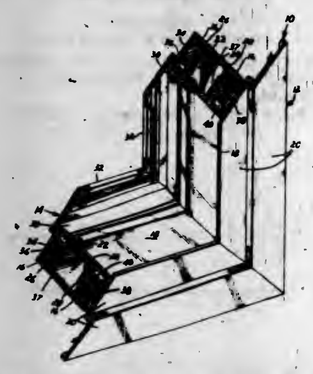
a plurality of spacer members, each having a web portion and a pair of convergent leg portions arranged to be slidably received by said supporting member, said spacer members being disposed on said supporting member and between adjacent grille-forming strips.

3,289,377

INSULATED FRAME AND CONNECTOR THEREFOR

Frank W. Hetman, Minneapolis, Minn., assignor to Alpana Aluminum Products, Inc., Minneapolis, Minn.

Filed Nov. 7, 1962, Ser. No. 236,695
2 Claims. (Cl. 52—656)



2. In a framing construction for windows, an inner pane-carrying frame member, an outer pane-carrying frame member, said inner frame member having a bottom wall, an inner side wall connected to said bottom wall, an outer side wall connected to said bottom wall, an inner short flange extending inwardly from said inner side wall, an inner sash connected to said inner side wall, an outer short flange extending inwardly from said outer side wall, said outer pane-carrying frame member having an outer sash portion, a first flange extending from said outer sash portion, a second flange extending from said outer sash portion spaced from said first flange, each of said first and second flange portions having a lip portion extending therefrom, first and second thermal barrier-connector members, each including an elongated body member having a recess formed longitudinally therein, said first thermal barrier-connector member positioned within said inner short flange and said bottom wall of said inner frame, with said lip of said first flange of said outer sash extending into said recess of said first thermal barrier-connector, said second thermal barrier-connector member positioned within said outer short flange and said bottom wall of said inner frame with said lip portion of said second flange of said outer sash extending into said recess of said second thermal barrier-connector member, to thereby rigidly connect said inner frame member with said outer frame member with a minimum of heat conduction therebetween.

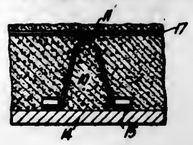
3,289,378

REINFORCING ROD SUPPORT

William Jay Carroll, Harbor Road, Sands Point, N.Y.

Continuation of application Ser. No. 20,102, Apr. 5, 1960. This application Feb. 10, 1964, Ser. No. 344,526
3 Claims. (Cl. 52—688)

1. A supporting device for supporting elongated reinforcing members at a predetermined distance above a removable surface serving as a form for the fabrication of a reinforced structure of hardenable construction material such as concrete, the reinforcing members and the support device being adapted to be embedded in and constitute a permanent part of the reinforced structure, comprising a preformed unitary support means including a longitudinally extending metallic support rod adapted to support at least one reinforcing member at at least one point of contact at a first predetermined distance above the removable surface and a plurality of spaced-apart transversely extending rigid metallic rods, each of said transversely extending rods being fixedly attached and in rigid relation to said support rod prior to fabrication of the reinforced structure at a point preestablished fixed distances along said longitudinally extending support rod from the points of attachment of others of said transversely extending rods and having a plurality of opposite ends extending from said longitudinally extending support rod for supporting said support rod relative to the removable surface, and individual preformed nonmetallic plastic contact members of predetermined configuration capable of withstanding compression during fabrication of the reinforced structure mounted on and having a channel formed therein of fixed predetermined dimensions with predetermined fixed spacings relative to the exterior of said respective member for fixedly receiving after fabrication a respective opposite end of one of said plurality of rods, each of said contact members supporting a respective one of said opposite ends of said plurality of transverse rods a second predetermined distance above the removable surface.

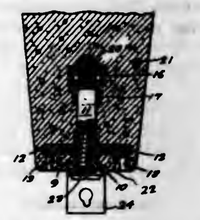


3,289,379

HANGER INSERT FOR PRESTRESSED CONCRETE

John L. Watts, R.D. 1, Box 1905, Port Orange, Fla.

Filed Oct. 9, 1963, Ser. No. 314,937
5 Claims. (Cl. 52—689)



1. An insert for a concrete structural member adapted to be wedged between a part of a metal form and a lowermost tensioned wire rope disposed parallel to said form part comprising, a lower section and an upper section, said lower section comprising an upright stem having a substantially flat bottom surface adapted to rest flush on an upper surface of a part of a form, said stem having a longitudinal bore opening outwardly of said bottom surface, arms extending radially from said stem and disposed above and spaced from said bottom surface and in spaced apart relation to one another, solid foot members depending from outer portions of said arms and having lower ends disposed coplanar with one another and with said bottom surface and adapted to rest on said upper surface of the form part; said upper section comprising a downwardly opening socket having a smooth bore engaging detachably over a smooth exterior of the upper end of said stem and an upwardly opening yoke, consisting of a base portion and upstanding spaced apart terminal elements, in which a tensioned wire rope is adapted to seat for wedging the insert between the wire rope and said upper surface of the form part to be embedded in concrete applied to said form such that said bottom surface of the stem and the lower ends of said foot members will be exposed when the form is removed from the set concrete, said bore being adapted to receive and secure a hanger bracket fastening to the insert for suspending a hanger bracket therebeneath and beneath the concrete structural member.

3,289,380

VENTILATED METAL CORNER PIECES

Joseph Charuiga, Jr., R.D. Box 296, Poland, Ohio

Filed Aug. 9, 1963, Ser. No. 300,976
3 Claims. (Cl. 52—716)



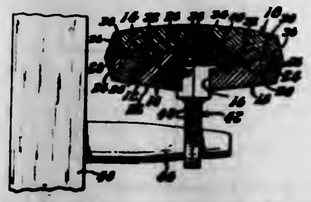
1. A metal corner piece for lap siding construction and comprising an angular section of sheet metal having a vertical axis and sidewardly extending flanges relative thereto, each of said flanges having a plurality of vertically spaced horizontally disposed ventilating slots formed therein, the material of said metal corners being depressed below each of said slots and bulged upwardly and outwardly above each of said slots.

3,289,381

HANDRAILS

Louis Blum and William J. Hargus, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm composed of Hyman Blum, Louis Blum, Max Blum, and Harry P. Blum

Filed June 26, 1964, Ser. No. 378,185
1 Claim. (Cl. 52—730)



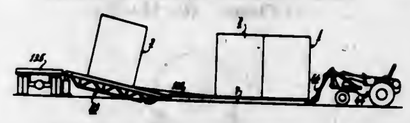
In a handrail, the combination consisting of an elongated solid base member, an elongated solid wooden grip member, said members being the same in width, and being disposed with the undersurface of the grip member in full face engagement with the upper surface of the base member, a central longitudinally extending T-shaped slot in the undersurface of said base member adapted for receiving handrail supports, and means for affixing said grip member to said base member including a pair of longitudinally extending tongues depending from the undersurface of said grip member and received respectively in a pair of grooves formed in the upper surface of said base member, said tongues being spaced apart a distance approximately equal to one-half the width of said base and grip members, and wood screws inserted through said T-shaped slot and the overlying base wall thereof into said grip member.

3,289,382

METHOD OF BUILDING UP BUILDINGS FROM PREFABRICATED BOX-SHAPED ELEMENTS

Cornelis van der Loly, Zug, Switzerland, assignor to Patent Concern N.V., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands Antilles

Filed Jan. 24, 1962, Ser. No. 169,031
Claims priority, application Netherlands, Feb. 3, 1961, 260,966
4 Claims. (Cl. 52—741)



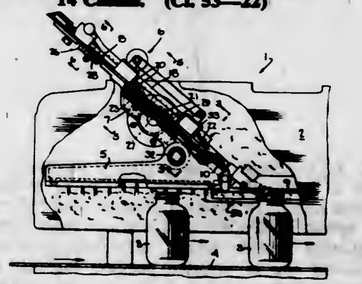
1. An improvement in the method of assembling buildings from prefabricated box-shaped elements each having dimensions compatible with being transported on highways by transport vehicles, which comprises transporting one of said box-shaped elements by transport vehicle alongside the site of said building, placing foundation beams on said site, locating the bed of said transport vehicle higher than said foundation beams, positioning a bridge member having a length greater than the width of said element between the side of said transport vehicle and said site so that said bridge member is supported on one end by said beams and is inclined downwardly towards said beams, connecting a flexible hauling means to said element, pulling said element by said hauling means sidewise off of said transport vehicle and across said bridge member and said foundation beams until said element is disposed in its desired position on said site, said bridge member and foundation beams having operatively related guidance means including upstanding portions extending above said bridge member and foundation beams, said guidance means retaining said element in a predetermined angular relationship as said element is pulled across said bridge member and said foundation beams, and repeating the foregoing operation with at least one further of said box-shaped elements, the latter being pulled to a location adjacent said first-mentioned element and secured thereto.

3,289,383

METHOD AND MEANS FOR FEEDING CAPS

George J. Foss, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

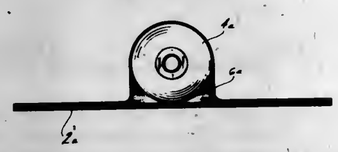
Filed Jan. 27, 1964, Ser. No. 340,318
14 Claims. (Cl. 53—22)



13. The method of feeding and applying closure caps having thermoplastic gaskets to containers in a sealing machine which comprises filling the headspaces of the open containers with steam by a first steam distribution at a predetermined concentration of steam and air, feeding a cap toward each container, steam heating the cap gaskets by a second steam distribution at a position remote from the containers, exhausting the gasket heating steam

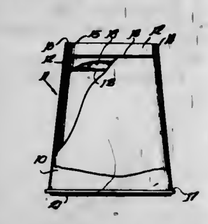
from the caps, and thereafter applying the caps to the containers and entrapping steam from the first distribution in the container headspaces.

3,289,384
METHOD OF FORMING PACKAGES
Herman G. Kraut, New Britain, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Nov. 19, 1963, Ser. No. 324,692
11 Claims. (Cl. 53—22)



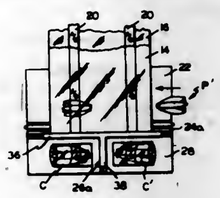
1. In the method of skin-packaging articles between a substrate and a thermopastic film to form a composite package, the steps comprising: moistening one surface of an air-pervious paperboard substrate with an aqueous agent; placing an article to be packaged upon the outer surface of said substrate, said moistened surface being disposed downwardly; supporting a length of synthetic thermoplastic film adjacent the margins thereof in a position overlying said substrate and article; heating said thermoplastic film to deformability; drawing suction through said substrate while supporting the deformably heated film in a position closely overlying said substrate and article to draw said film into a sheath about said article and into laminar contact and bonding engagement with said other surface of said substrate about said article to form a composite package; and removing sufficient moisture from said one surface of said substrate to produce compensating stresses therealong and substantially eliminate curling of the package under varying atmospheric conditions.

3,289,385
METHOD OF PACKAGING
Martelle J. Syverson and Jon R. Syverson, Lake Mills, Iowa, assignors to Compact Industries, Inc.
Filed July 8, 1963, Ser. No. 293,342
5 Claims. (Cl. 53—22)



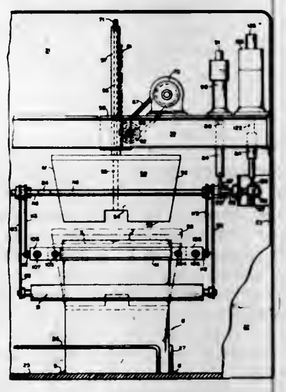
1. In a method of packaging a material to be mixed with a liquid, the steps of supporting a first recessed bottom cup in an inverted position with the recess opening upwardly, depositing in said upwardly opening recess a quantity of said material, telescoping said first cup and a second cup in inverted position together to bring a bottom exterior portion of the first cup into engagement with an interior bottom portion of the second cup to form a seal to prevent the escape of said material from said recess, applying an endwise pressure to said cups to maintain the cups in sealing engagement and, while maintaining said endwise pressure on said cups, enclosing the cups in a container which continues to apply the endwise pressure on the cups to maintain the sealing engagement of the cups.

3,289,386
METHOD OF MAKING LABELED PACKAGE
Harold L. Farmer, Henrico County, Va., assignor to Reynolds Metal Company, Richmond, Va., a corporation of Delaware
Original application Mar. 1, 1963, Ser. No. 262,045. Divided and this application Sept. 23, 1964, Ser. No. 403,685
2 Claims. (Cl. 53—28)



1. In a method of packaging, the steps of
advancing spaced superposed webs of transparent thermoplastic packaging material,
simultaneously advancing a spaced parallel pair of narrow webs of printed thermoplastic packaging material between said superposed webs and in intimate contact with one of said superposed webs to cause snug adherence therebetween,
placing two charges of contents in spaced transverse relation between said superposed webs,
longitudinally severing said superposed webs between said article charges and between said printed films,
transversely severing said superposed webs forwardly and rearwardly of said charges,
and heat sealing said webs along the longitudinal and transverse lines of severence to form two cup-like labeled packages having one open end.

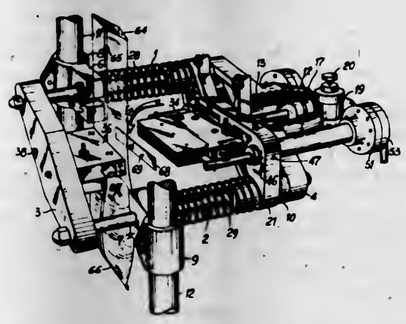
3,289,387
VACUUM BALING APPARATUS
Arthur F. Stagmeier, New York, and Harry E. Rothmann, Valhalla, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 268,883
12 Claims. (Cl. 53—112)



1. In a packaging machine of the character described for sealing the mouth of a container formed of flexible air-impervious sheet material, means for supporting said container in an operative position within said machine,

nozzle means comprising a substantially flat member insertable into the mouth of said container and formed with opposed end edges which taper outwardly from the leading edge thereof to spread apart opposite ends of the container mouth to collapse the sides of said container around said nozzle member, said nozzle means communicating with means operative for evacuating air from said container when said nozzle means is inserted in said container mouth, pressure applying means disposed on opposite sides of said container and coactuable to engage the collapsed sides of the container for maintaining a temporary seal of said container mouth after the said air evacuating means becomes inoperative and said nozzle means is being withdrawn, and means disposed on opposite sides of said container and coactuable after said nozzle means is withdrawn and while said pressure applying means is activated for adhering together the opposed side walls of said container to effect a permanent hermetic seal between the interior and exterior of said container.

3,289,388
APPARATUS FOR PACKING FLUENT SUBSTANCES IN SEALED PLASTIC CONTAINERS
Claude A. Aubin, Paris, France, assignor to Societe d'Etude & d'Application Industrielle de Brevets (S.E.A.B.), Villejuif, Seine, France, a corporation of France
Filed May 29, 1963, Ser. No. 284,203
Claims priority, application France, May 30, 1962, 899,254
14 Claims. (Cl. 53—180)



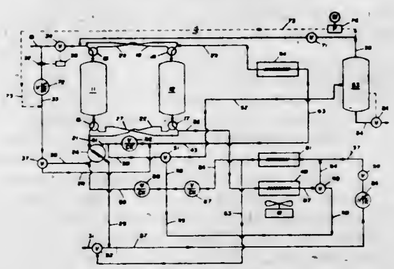
1. Apparatus for producing individual sealed plastic containers filled with doses of a fluid substance, which comprises means for feeding stepwise a continuous tubular blank of thermoplastic sheet material lengthwise of the blank, means for feeding stepwise towards said blank a continuous tape of reinforcing material having a thermoplastic surface and corresponding in width to the width of the tubular container each step of said tape feed corresponding in length to the minor dimension of said strip, means for cutting said tape along a direction transverse to the length dimension of the tubular blank near the free end thereof to produce a separate reinforcing strip, means for feeding the separate strip towards a side of the blank; bonding means including a pair of clamping members at least one of which is movable towards and away from the other and reciprocable for periodically clamping opposite wall portions of the tubular blank against each other and said thermoplastic surface of the separate strip against the outer surface of a wall portion of the blank transversely thereto in a narrow bonding area, and means for applying heat to said bonding area to form a thermoplastic bond between said wall portions of the blank and said strip surface; means for introducing a dose of substance into the tubular blank above the bond thus formed; and means for transversely cutting through said tubular blank and strip in the bond area to provide a filled and sealed container.

3,289,389
SADDLE CINCHA BILLET HOLDER
Arsenio Herrera, 635 Pennsylvania St., Denver, Colo.
Filed Mar. 17, 1965, Ser. No. 440,472
4 Claims. (Cl. 54—23)



4. A billet holder comprising a substantially flat horizontal rectangular top having a length and a width, a retainer means secured to the ends of a length of said top, said retainer means comprising a depending substantially vertical arm, on the end of which is secured an outwardly extending U-shaped deformable receiver.

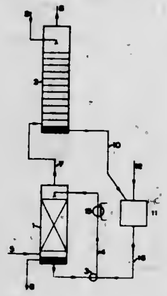
3,289,390
HYDROCARBON ADSORPTION APPARATUS AND PROCESS
Curtis L. Humphries, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,574
6 Claims. (Cl. 55—62)



1. A process for recovering hydrocarbons in a solid adsorbent hydrocarbon recovery unit from a main flow stream of natural gas comprising the steps of:
(a) passing the main flow stream of natural gas through a first and only bed of solid adsorbent so that at least a portion of the hydrocarbons therein is adsorbed in such bed,
(b) passing a flow of heated regeneration gas through a second bed of solid adsorbent so that at least a portion of the hydrocarbons therein is desorbed from such bed,
(c) passing the main flow of natural gas through the second and only bed when in a heated condition after regeneration and passing the flow of heated regeneration gas through the first bed, and

(d) recovering the hydrocarbons desorbed from the first and second beds from the regeneration gas while repeating the steps (a), (b), and (c).

3,289,391
PROCESS FOR PREPARING CONCENTRATED FORMALDEHYDE SOLUTIONS
Abraham H. De Rooij, Geleen, and Pierre A. M. Aggenbach, Brunssum, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
Filed Sept. 18, 1964, Ser. No. 397,444
Claims priority, application Netherlands, Sept. 23, 1963, 298,226
13 Claims. (Cl. 55—89)



1. Continuous process for the direct recovery of formaldehyde, in the form of a concentrated aqueous-alcohol solution, from formaldehyde synthesis gas, which process consists essentially in

(A) introducing continuously a supply of formaldehyde synthesis gas into a first absorption stage of an absorption system,

scrubbing said gas in said first stage with a continuously circulating countercurrent flow of a first liquid mixture of formaldehyde and alcohol, and a minor amount of water, whereby at least a major portion of the formaldehyde content of said synthesis gas is absorbed in said first liquid,

(B) thereafter introducing at least a portion of the remainder of said synthesis gas from which said formaldehyde has been removed in said first stage into a final absorption stage of said absorption system,

scrubbing said portion of said synthesis gas therein with a countercurrent-flowing second liquid, containing alcohol, whereby substantially all remaining portions of the formaldehyde content of said gas are absorbed in said second liquid, and

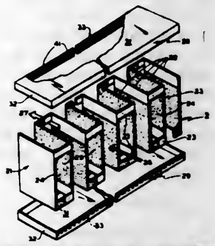
(C) introducing an added amount of alcohol, and delivering said second liquid, containing absorbed formaldehyde from said final stage, to said circulating first liquid mixture of said first absorption stage,

while withdrawing portions of said first liquid mixture circulating in said first absorption stage as the desired concentrated aqueous solution of formaldehyde,

at a rate and in an amount such that the solution thus discharged removes the formaldehyde and alcohol from said system at substantially the same rate the formaldehyde and alcohol are introduced thereinto, and

while balancing the amount of water, alcohol and formaldehyde supplied to the system, so that said first aqueous liquid mixture circulating in said first absorption stage is maintained at a composition containing from 5% to 40% by weight of water with from about 0.5 mols to at most about 5 mols of formaldehyde per mol of alcohol.

3,289,392
COLLECTOR CELL HOUSING FOR ELECTROSTATIC PRECIPITATOR
Evans E. Fowler, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Original application Aug. 29, 1963, Ser. No. 305,280. Divided and this application Dec. 21, 1965, Ser. No. 539,590
2 Claims. (Cl. 55—142)



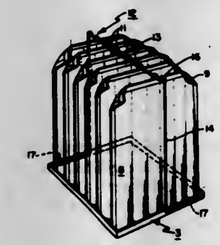
1. A collector cell housing for an electrostatic precipitator comprising: a continuous sheet of dielectric material folded to provide a bank of spaced, parallel, side-by-side walls having intermediate wall connecting portions therebetween with said extreme side-by-side walls of said bank forming cell housing end walls; said intermediate connecting portions extending transverse a gas stream to be treated and having apertures therein to permit passage therethrough of a gas stream to be treated; said side-by-side walls extending parallel to the gas stream to be treated as it passes through said cell housing; the inner faces of said cell housing end walls, each of said other parallel, side-by-side walls, and a part of said intermediate connecting portions being substantially coated on the face portions thereof with electrically conductive material with adjacent walls being electrically insulated from each other; a pair of spaced, box-like members positioned along opposite edges of said folded sheet of dielectric material to support said sheet in folded form, said box-like members including a conductive stripe thereon to connect alternate coated intermediate portions which in turn are connected to alternate side-by-side walls so as to provide first and second interleaved sets of coated, side-by-side walls, one of which is connected to ground and the other to an electric charge.

3,289,393
FILTER PLANT
Walter Spötta, Linz, Austria, assignor to Vereinigte Österreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Feb. 11, 1965, Ser. No. 431,876
Claims priority, application Austria, Feb. 13, 1964, A 1,215/64
3 Claims. (Cl. 55—302)



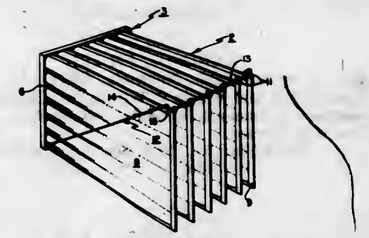
1. A filter plant comprising a housing having walls, an inlet connection in one of said walls for entry of dust-laden air, a plurality of substantially parallel slots in another wall of said housing, a pure air outlet communicating with a first portion, only, along the length of each of said slots, a scavenging air inlet communicating with a second portion only, of each slot, along its length for introducing air through said slots into said housing, a slide valve corresponding to each slot mounted on said another wall and including a slide member having apertures therein movable to a first position to connect said first portions of said slots to said outlet and disconnect said second portions of said slots from said scavenging air inlet and to a second position to connect said second portions of said slots to said scavenging air inlet and disconnect said first portions of said slots from said air outlet, means for moving said slide members intermittently between said first and second positions, and a filter pocket corresponding to each slot mounted in said housing and having an open side communicating with a corresponding slot; said filter pockets being disposed in side-by-side, spaced, substantially parallel relation.

3,289,394
FILTER SUPPORT ARRANGEMENT
George W. Young, Fern Creek, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,532
1 Claim. (Cl. 55—341)



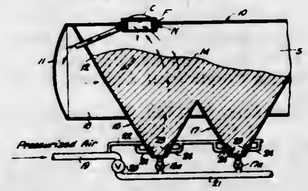
Dust filter apparatus comprising: a boxlike set of vertically extending spaced and parallel filter pockets having upstream open-ended mouth portions; a substantially rectangular horizontally extending apertured header fastened to and communicating with said upstream open-ended mouth portions of said filter pockets, said header having a rectangular border member extending along the perimeter thereof to provide first and second pairs of oppositely disposed recess corners along the perimeter thereof; a single U-shaped rod member comprising the sole support for said set of filter pockets having its base portion extending transverse to the downstream edges of said pockets to be adjacent points substantially half way between downstream corners of said filter pockets, said rod member having its legs extending in longitudinal vertical fashion along the outer sides of said boxlike set of pockets to said header; means to fasten said base portion of said rod member to said filter pockets along said points half way between the downstream corners of said pockets; a pair of support legs extending in horizontal right-angle fashion from the extremities of said vertically extending legs of said rod member in opposite directions from each other, said support legs being positioned to engage in nesting relationship with one of the two pairs of opposite recess corners formed by the border member on said header, the sum of the lengths of said support legs being substantially equal to the length of one of the recess corners with which the legs engage so that the ends of the support legs abut against the sides of the border member forming the other pair of opposite recess corners to hold said support rod member in fast position.

3,289,395
FILTER SUPPORT ARRANGEMENT
Allan R. Getzin, Jeffersontown, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,565
2 Claims. (Cl. 55—341)



1. Dust filter apparatus comprising: a boxlike set of horizontally-extending, spaced and parallel filter pockets having upstream open-ended mouth portions; a vertically-extending apertured header fastened to and communicating with said upstream open-ended mouth portions of said filter pockets; a single U-shaped rod member comprising the sole support for said set of filter pockets having its base portion extending transverse and adjacent to said upper downstream corners of said pockets; means to fasten said base portions to the upper downstream corners of said pockets, said rod member having its legs extending diagonally downward from said base portion in a longitudinal fashion along the outer sides of said boxlike set of pockets to the diametrically opposed lower upstream corners of said pockets to abuttingly engage with and fasten to adjacent lower corners of said header member, said rod member being sized relative said set of filter pockets to hold the upper sides of said pockets in tension when said pockets are disposed to extend in the horizontal direction with said diagonally extending legs of said rod member being held in compression.

3,289,396
PRESSURE EQUALIZING AND FILTER ARRANGEMENT FOR PRESSURIZED STORAGE TANKS HAVING VOIDS THEREIN
Arthur I. Anderson, St. Paul, Minn., assignor to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Jan. 14, 1963, Ser. No. 251,310
6 Claims. (Cl. 55—385)



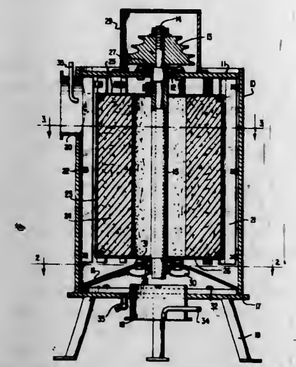
1. The combination with a vessel including a pneumatically pressurized storage compartment and a pressure equalization chamber having a common wall with the storage compartment, of a filler neck fitted into an opening in said vessel and communicating with said compartment, a removable cap for the outer end of said neck, a conduit proceeding laterally from a side opening in said filler neck and establishing communication between the space enclosed by said neck and said pressure equalization chamber, a filter structure removably inserted through the outer end of said filler neck and to a location inwardly of said side opening, seat means

within said neck for supporting said filter structure at said location while still permitting withdrawal of said filter structure from the filler neck through the outer end thereof, and positioning means extending from said cap when said cap is closed to said filter structure and operable to hold said filter structure seated when said cap is closed.

3,289,397
AEROSOL FILTER

Roger L. Schoenewald, Norwich, Oliver L. I. Brown, Quaker Hill, and Mason P. Wilson, Jr., Cheshire, Conn., assignors to General Dynamics Corporation, a corporation of Delaware

Filed Mar. 31, 1964, Ser. No. 356,278
1 Claim. (Cl. 55—392)



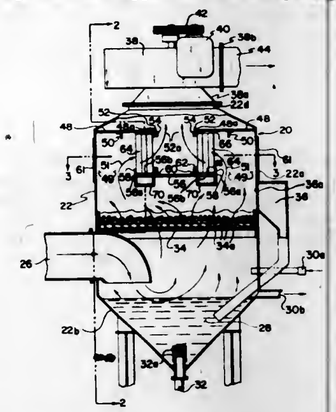
A filter for removing aerosol particles from a gaseous stream, comprising a cylindrical chamber having an inlet duct along the center of the chamber for introducing said stream into said chamber and a peripheral outlet duct for discharging the filtered stream, a perforated drum connected to a rotatable shaft supported within said chamber in bearings, a tubular layer of fibrous media disposed within the inner surface of said drum, means for rotating said shaft and thereby said drum, a plurality of equally spaced radial impaction plates mounted longitudinally along and slightly away from the inner periphery of said chamber and extending inward therefrom toward said drum, and means for removing from said chamber the aggregate filtered from said stream.

3,289,398
ENTRAINMENT SEPARATOR

Robert L. McIlvaine, Winnetka, Ill., assignor to National Dust Collector Corporation, Chicago, Ill., a corporation of Illinois

Filed Sept. 18, 1963, Ser. No. 309,789
1 Claim. (Cl. 55—440)

Apparatus for separating liquid contaminants from a gaseous fluid stream, said apparatus comprising: a row of individually replaceable, spaced apart vertically upstanding separator vanes, said row extending transversely across the path of said fluid stream, each of said vanes including a plurality of vertical surfaces disposed in angular relationship with one another and the path of said fluid stream, horizontal flanges projecting from the top and bottom edges of said vertical surfaces, an upper channel shaped spacing element having upwardly extending vertical side flanges and a horizontal surface to which said top flange is secured, and a lower channel shaped spacing element having downwardly extending vertical side flanges and a perforated horizontal surface to which said bottom flange is secured, said upper and lower elements extending lengthwise along and having ends projecting beyond the top and bottom edges respectively of the vane, a support member for said vanes comprising a perforated bottom plate underlying said row of vanes on which said vertical side flanges of said lower spacing elements rest, a pair of lower parallel upstanding edge guides extending along opposite side of the row of vanes in engagement with the projecting ends of said lower spacing elements, and an upper edge guide parallel to said pair of lower guides in engagement with a projecting end of each of said upper spacing elements, a liquid collecting channel underlying said plate including a sloped bottom wall, and a liquid discharge outlet in communication therewith, said vertical side flanges of said upper and lower spacing elements

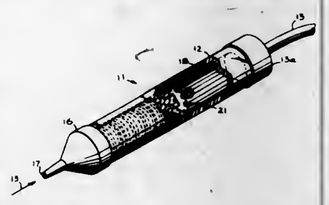


abutting the side flanges of adjacent spacing elements, said abutting side flanges and edge guides cooperating to maintain said vanes in spaced apart upstanding relationship, whereby said vertical surfaces abruptly change the direction of said fluid stream flowing between adjacent vanes to intercept impinging liquid contaminants of the stream, causing said contaminants to flow down said surfaces through the perforations in the lower spacing elements and the perforations in the bottom plate, along said sloped wall to said outlet, the channel shape of said lower spacing element obviating the need for registration of the perforations therein with the perforations in said bottom plate.

3,289,399
VACUUM OPERATED SOLDER REMOVING FILTER

Josef E. Princiotta, Jr., North Hollywood, Los Angeles, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Nov. 5, 1963, Ser. No. 321,632
2 Claims. (Cl. 55—445)



1. A solder removing tool comprising:
a cylindrical, circularly hollowed housing having an axis and two open ends;
means connected to said housing at one of its open ends for creating a vacuum therein; and
a filter positioned in said housing for trapping solder sucked into said housing through the other open end thereof, said filter comprising a shaft having its length substantially shorter than the length of said housing and disposed within said housing substantially parallel to said axis, and a plurality of serrated discs, each of said discs having an enlarged central opening through which said shaft extends that is of sufficiently greater diameter than the diameter of said shaft whereby said discs are loosely mounted thereon in an in-line relationship to permit rotatable and axial movement of said discs on said shaft, and means on the opposite ends of said shaft for restricting axial movement of said discs therebetween and for retaining said discs on said shaft, said serrated discs having planar cross-sectional areas substantially equal to but no greater than the cross-sectional area of the circular hollow portion of said housing.

3,289,400
APPARATUS FOR PRODUCING MODIFIED TWIST CRIMPED YARN

Frederick Scragg, Mobberley, England, assignor to Ernest Scragg & Sons (Holdings) Limited, Macclesfield, England

Filed Sept. 21, 1964, Ser. No. 397,827
10 Claims. (Cl. 57—34)

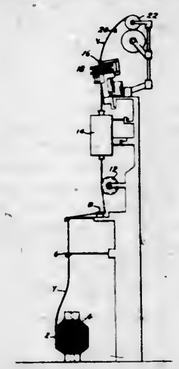


1. Apparatus for producing modified twist-crimped yarn, comprising, in combination, heating means for heating yarn, said heating means defining three distinct yarn paths along said heating means; take-up means for taking up yarn; guide means for guiding a pair of yarns respectively along a pair of paths of movement from a given starting location to said take-up means, said pair of paths of movement respectively extending separately along two of said yarn paths of said heating means and together along the third of said yarn paths, so that each yarn passes twice along said heating means; a pair of false twist means respectively located along said pair of paths of movement for false twisting the yarns after they have passed at least once along said heating means; and a pair of tension control means respectively located along said pair of paths of movement for controlling the extent to which the yarns are tensioned while passing along said heating means, while travelling through said pair of false twist means, and while travelling to said take-up means.

3,289,401
STRETCH YARN AND PROCESS FOR PREPARING THE SAME

David Glikmann, Bronx, N.Y., and David W. Petree, High Point, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Original application Dec. 13, 1962, Ser. No. 244,310, now Patent No. 3,247,569, dated Apr. 26, 1966. Divided and this application Jan. 4, 1965, Ser. No. 423,256
14 Claims. (Cl. 57—157)

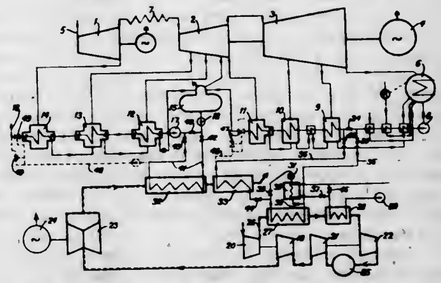


1. The process for preparing a stretch yarn which comprises mechanically false twisting with rotating mechanical parts at least one end of staple spun yarn selected from the group consisting of:
(a) staple spun yarns made up entirely of wool fibers; and
(b) staple spun yarns made up of thermoplastic and non-thermoplastic staple fibers,
and subjecting said end of staple spun yarn to dry heat while in the false twisted condition, the wool and non-thermoplastic staple fibers in said staple spun yarns retaining their non-thermoplastic characteristics during said mechanical false twisting and heat treatment and being free from any wetting and chemical treatment prior to and during said mechanical false twisting and heat treatment which would render the same functionally thermoplastic.

3,289,402
THERMAL POWER INSTALLATION

Ingvar Karl Einar Jung and Lars Erik Elmeskog, Finspong, Sweden, assignors to Stal-Laval Turbin AB, Finspong, Sweden

Filed Dec. 3, 1964, Ser. No. 415,719
Claims priority, application Sweden, Dec. 20, 1963, 14,290/63
5 Claims. (Cl. 60—39.18)



1. A thermal power installation comprising, a steam power arrangement including a steam turbine with a generator, condenser and preheaters for heating condensate

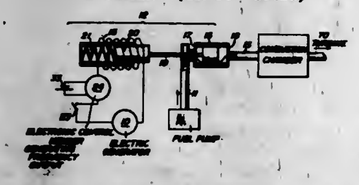
by means of steam drawn from the turbine, a gas turbine with a generator, the steam power arrangement and the gas turbine being adapted for either combined or separate operation, the gas turbine installation having compressors and exhaust heat exchangers having means to preheat condensate and feed water respectively, said heat exchanger being coupled in series with and ahead of the preheaters and having means by which full amounts of condensate and feed water respectively, pass through both the gas heat exchanger and preheaters, means by which low pressure is attained in one group of the preheaters and means for attaining high pressure in a second group, means by which high pressure is attained in one part of the heat exchanger and means by which low pressure is obtained in another part thereof, the low pressure part of the heat exchanger being coupled up in series with and ahead of the low pressure preheaters, the high pressure part of the heat exchanger being coupled up in series with and ahead of the high pressure preheaters, a booster pump and a feed pump coupled up in series ahead of the high pressure preheaters, the high pressure part of the heat exchanger being coupled up in series with and between the pumps in such a manner that they can be by-passed only when the steam turbine is in operation.

3,289,403

ELECTRONICALLY CONTROLLED REGULATING DEVICE FOR GAS TURBINES

Ulrich Oprecht, Wittenbach, St. Gall, Switzerland, assignor to Adolph Saurer Ltd., Arbon, Switzerland

Filed Nov. 4, 1964, Ser. No. 409,011
Claims priority, application Switzerland, Jan. 29, 1962, 1,070/62
1 Claim. (Cl. 60—39.28)



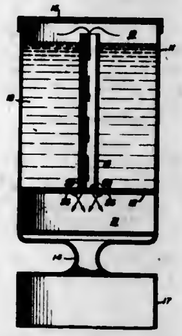
In combination, a regulating device for a gas turbine having a fuel pump, a combustion chamber and an electric generator driven by the turbine, said regulating device consisting of: a valve for adjusting the flow of liquid fuel in an inlet line from said pump to an outlet line to the combustion chamber, said valve including a chamber, a piston displaceable in said chamber and a piston rod connected to the back of said piston which projects out of said chamber; an armature connected to the end of said rod, said armature, rod and piston all being aligned with the outlet line; a sleeve maintained in fixed position which encases the rear portion of said armature; a tension spring fixed at one end to said sleeve and at its other end to said armature; a field coil wound about said sleeve; a closed circuit including said field coil and said electric generator; a signal generator in said closed circuit between said electric generator and said field coil; a direct current battery source feeding said signal generator; said valve chamber providing two spaced apart and parallel control faces which define the respective fixed limits of movement of said control piston; the increase in the speed of the electric generator increasing spring tension by solenoid action to displace the piston towards said control face adjacent the inlet line to thereby reduce the fuel flow into the valve, and the decrease in the speed of the electric generator decreasing spring tension by solenoid action to displace the piston towards the other control face adjacent the outlet to thereby increase the fuel flow; said direct current battery source independently energizing said signal generator to preset the electrically energized spring loading in said sleeve and thereby provide effective lateral control of the movement of the piston, rod and armature assembly as a unit; and a switch in said circuit for disconnecting solenoid operation.

3,289,404

LIQUID MONOPROPELLANT GAS GENERATOR

Crestus L. Adams, Bryans Road, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 10, 1964, Ser. No. 410,922
9 Claims. (Cl. 60—39.48)



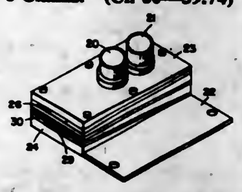
1. A liquid monopropellant gas generator comprising an elongated hollow tank having a normally closed upper end portion and a lower end portion,
said tank having a transverse partition formed therein to divide the tank into upper and lower chambers,
said partition having at least one through aperture formed therein to provide fluid communication between said upper and lower chambers,
pressure responsive flow control means positioned within said through aperture to prevent flow of fluid from the upper chamber into the lower chamber at normal atmospheric pressures,
conduit means providing fluid communication between said lower chamber and a zone in said upper chamber above the highest level of liquid monopropellant therein,
means within the upper chamber for igniting a liquid monopropellant,
whereby ignition of a liquid monopropellant with the upper chamber pressurizes the propellant to inject the propellant through the through aperture into the lower chamber and to conduct hot combustion gases through said conduit means to the main combustion chamber to ignite the injected propellant.

3,289,405

PROPELLANT OXIDIZER MIXING SYSTEM FOR ROCKET MOTORS

Harvard Eng, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Jan. 16, 1964, Ser. No. 338,270
6 Claims. (Cl. 60—39.74)



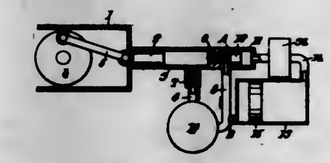
1. A rocket motor fuel and oxidizer injector unit comprising: a stacked housing having laterally arranged thin plates with each of said plates having a thin injector port formed therein with the width of each injector port being from about 100 to about 700 times its thickness, spacer means including two plates that have their entire sides tapered and separating said three laterally arranged plates, said tapered sides aligning said injector ports at an impingement angle of from greater than 0° to about 15°, outside cover plates on oppositely facing sides of two of said three laterally arranged plates, and fluid communicating means in communication with each injector port whereby when propellants flow through said injector ports, said propellants will exit said ports in sheet form and have interfacial mixing.

3,289,406

HYDRAULIC TRANSMISSION DEVICES

Paul Panhard, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a society of France

Filed Apr. 23, 1965, Ser. No. 450,474
Claims priority, application France, Apr. 24, 1964, 972,337
5 Claims. (Cl. 60—51)



1. A hydraulic transmission device which comprises, in combination:
a hydraulic pump having a cyclically variable instantaneous delivery rate, said pump having an input and an output,
a hydraulic receiver having an input and an output,
a conduit connecting the input of said receiver with the output of said pump,
means for connecting the output of said receiver with the input of said pump,
means forming a closed space, said means including a deformable wall forming a partition between the inside of said space and the portion of said conduit adjoining the output of said pump,
said means including another deformable wall forming a partition between the inside of said space and the portion of said conduit adjoining the input of said receiver,
said space being filled with a gaseous fluid.

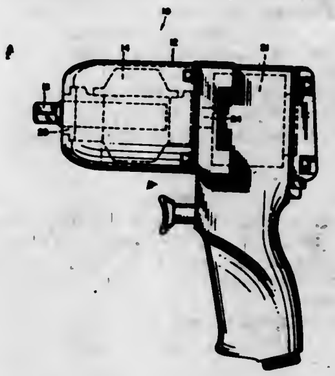
3,289,407

TORQUE DEVICE

Christopher K. Brown, Camp Hill, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Original application May 17, 1963, Ser. No. 281,158, now Patent No. 3,210,959, dated Oct. 12, 1965. Divided and this application June 9, 1964, Ser. No. 375,971
44 Claims. (Cl. 60—54.5)

1. Apparatus connected to a tool and for driving said tool by fluid impulses, said apparatus comprising:
(a) stationary casing means,
(b) housing means within said casing means,
(c) spindle means mounted in said housing means,
(d) one of said spindle means and housing means being secured to said casing means,
(e) said spindle means being provided with passage means in communication with said housing means, extending through said spindle means and connected to said tool,
(f) and drive means connected to the other of said housing means and said spindle means for causing rotation of said other with respect to said casing means,
(g) said one being provided with:
(1) compression chamber means for containing and compressing a fluid and
(2) overflow chamber means for receiving fluid from said compression chamber means,
(h) valve means disposed in said one between said compression chamber means and said overflow chamber means,
(i) fluid compression means forming an end closure for said compression chamber means,



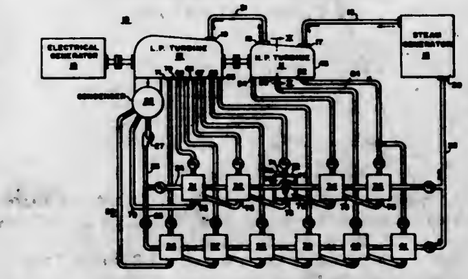
(j) operating means carried by said other and engageable with said fluid compression means during a portion of each revolution of said other, for causing said fluid compression means to pump fluid in said compression chamber means through said valve means into said overflow chamber means and to compress said fluid in said compression chamber means,
(k) said fluid compression means being operative during compression of said fluid in said compression chamber means to rotate said other and to apply said predetermined torque to said object.

3,289,408

REGENERATIVE TURBINE POWER PLANT

George J. Silvestri, Jr., Merion, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 22, 1964, Ser. No. 376,910
7 Claims. (Cl. 60—67)



1. A regenerative turbine power plant comprising
a vapor turbine having a plurality of vapor expansion stages,
vapor generating means for providing pressurized vapor to said turbine,

a condenser for condensing the exhausted vapor from said turbine,

means including a pair of conduits connected in parallel for dividing the condensation from said condenser into two streams and directing the condensate to said vapor generating means as feed liquid,

at least a pair of feed liquid heaters interposed one in each of said conduits,

first and second extraction conduits for extracting partially expanded vapor from at least one expansion stage of said turbine and directing the partially expanded vapor to said feed liquid heaters,

means associated with said one expansion stage for collecting moisture carried by the partially expanded vapor in said turbine, said collector means having an outlet for bleeding said moisture from said turbine, and

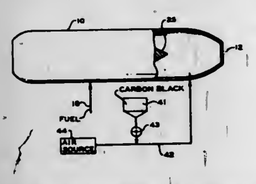
at least one of said extraction conduits being connected to said outlet, whereby the collected moisture is bled from said turbine jointly with the extracted vapor.

3,289,409

HIDING CONDENSATION TRAILS FROM HIGH ALTITUDE AIRCRAFT

Robert M. Schirmer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 13, 1964, Ser. No. 382,168
10 Claims. (Cl. 60—205)



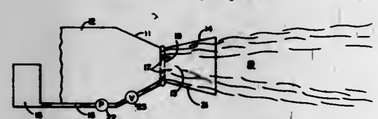
1. A method of hiding contrails from high flying aircraft which comprises introducing carbon black into the aircraft engine effluent while the aircraft is at altitudes at which contrails occur.

3,289,410

METHOD AND APPARATUS FOR WEEDING THE FLAME PLASMA OF A ROCKET EXHAUST

William W. Balwanz, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 17, 1964, Ser. No. 375,989
5 Claims. (Cl. 60—205)



1. A method for weeding the flame plasma of a rocket exhaust resulting from the combination of propellants in a rocket engine which comprises:

injecting a substance into the exhaust flame of a rocket engine within the exhaust nozzle thereof,

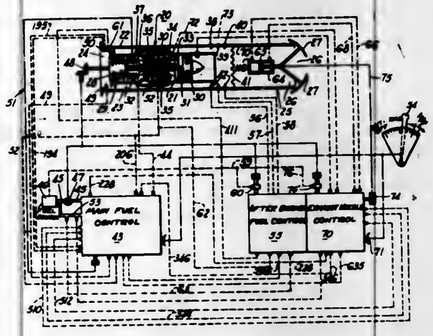
said substance being selected from the group of substances consisting of CBr_2F_2, $CBrF_3$, and K_2SO_4 and being injected into the flame at a flow rate in the range of from about 4 to about 20 percent based on the flow rate of the propellant.

3,289,411

COORDINATED AFTERBURNER FUEL CONTROL AND EXHAUST NOZZLE AREA CONTROL FOR GAS TURBINE ENGINE

Francis R. Rogers, Howard L. McCombs, Jr., and Mike Saider, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware

Original application Sept. 13, 1963, Ser. No. 308,799, now Patent No. 3,232,053, dated Feb. 1, 1966. Divided and this application Oct. 22, 1965, Ser. No. 501,443
10 Claims. (Cl. 60—237)



1. Fuel flow control apparatus for a gas turbine engine provided with an afterburner, a variable area exhaust nozzle and a control lever for controlling the operation of the engine, said fuel control apparatus comprising:

a source of pressurized fuel;

a conduit connected to deliver fuel from said source to the afterburner;

valve means in said conduit for controlling fuel flow therethrough to the afterburner;

first means operatively connected to the exhaust nozzle and the control lever for varying the area of the exhaust nozzle in response to the position of the control lever;

second means operatively connected to said valve means and the control lever for actuating said valve means in response to the position of the control lever;

third means including a rotatably and axially movable nozzle area feedback cam operatively connected to the exhaust nozzle and to said first and second means for actuating said first and second means as a function of the existing area of said exhaust nozzle; and

fourth means responsive to the pressure ratio across the gas turbine operatively connected to said cam means for actuating the same;

said cam means being operative to actuate said first and second means simultaneously to effect a coordinated modification of exhaust nozzle area and afterburner fuel flow.

3,289,412

HYBRID INJECTOR

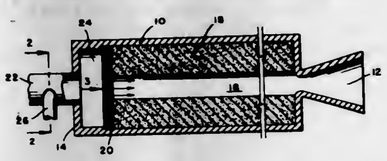
Bernard L. Iwanciow, Sunnyvale, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 29, 1965, Ser. No. 443,724
3 Claims. (Cl. 60—251)

1. In a hybrid bi-propellant rocket motor of the type wherein one of the propellants is a solid cylindrical grain having a central port extending between opposite ends thereof and the other propellant is a liquid adapted to be injected axially of the port, the improvements, in combination, comprising:

(a) a nozzle disk of foraminous material abutting the annular end surface at the front end of the grain having spaced apertures extending therethrough communicating with said port at the commencement of combustion and other like apertures blocked from communication by the annular end surface of the grain, said other apertures adapted to communicate with the port as it enlarges in diameter when the annular end surface reduces in area,

(b) a manifold disposed forwardly of said nozzle plate communicating with all of said apertures,



(c) means for delivering the liquid propellant to said manifold, and

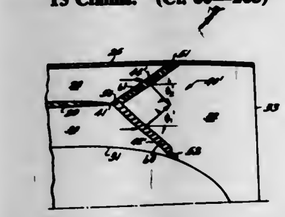
(d) means for delivering an inert fluid to the manifold in such direction to produce a rotary motion to the liquid propellant and inert fluid within the manifold, said inert fluid adapted to fill apertures blocked by the unburnt grain to thereby obviate premature local reaction between the liquid propellant and the grain.

3,289,413

FLUID MIXING APPARATUS FOR TURBOFAN ENGINES

William Bruce Gist, Jr., Lynnfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Aug. 19, 1964, Ser. No. 390,567
13 Claims. (Cl. 60—263)



1. Fluid mixing apparatus comprising:

(a) concentric walls forming inner and outer annular axially extending passageways having upstream and downstream ends,

(b) at least one wall forming a mixing chamber axially downstream of said inner and outer passageways,

(c) and first and second flow directing means between said inner and outer passageways, respectively, and said mixing chamber,

(d) each of said first and second flow directing means being radially coextensive with the respective passageway and adapted to channel the entire flow of fluid from the respective passageway into a plurality of streams and to discharge the streams therefrom into said mixing chamber in interdigitated relationship with the unconfined streams of fluid discharged from the flow directing means of the other of said passageways, said streams having substantial velocity components in both the radial and the axially downstream directions,

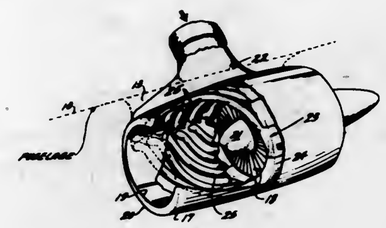
(e) whereby mixing occurs in a short axial distance due to the high relative radial velocities of the interdigitated streams of fluid entering said mixing chamber.

3,289,414

CRUISE FAN POWERPLANT

John T. Kutney, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed July 30, 1964, Ser. No. 386,295
8 Claims. (Cl. 60—263)



1. A cruise fan powerplant comprising,

a barrel-like casing structure having inner and outer walls to form a hollow elongated nacelle,

a tip turbine fan rotatably mounted in the nacelle for movement of air therethrough to produce thrust,

a scroll means disposed about the periphery of said fan between said walls and oriented to direct gas to the tip turbine to drive said fan,

said scroll containing a plurality of segmented sections of discrete degrees of arc,

individual ducts connected to each segment to direct gas to said segment,

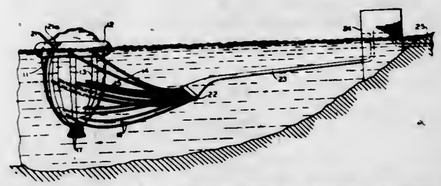
said ducts extending between said walls side-by-side to a common plenum disposed at the side of said nacelle.

3,289,415

METHOD AND APPARATUS FOR TRANSPORTING POTABLE WATER TO RELATIVELY ARID AREAS

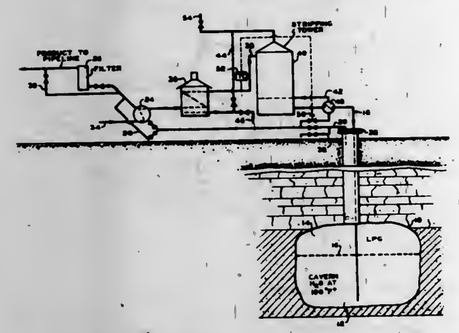
George E. Merrill, 5616 Croydon Ave., San Jose, Calif.

Filed Dec. 21, 1962, Ser. No. 246,461
5 Claims. (Cl. 61—1)



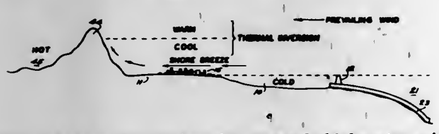
1. A method of delivering potable water comprising the steps of providing a bag of impervious sheet material with an open bottom, substantially enclosing a mass of ice in the ocean body of water in said bag through said open bottom, supplying potable water through the top of said bag to expel the ocean water captured with said mass of ice through said open bottom, closing said open bottom, floating the bag and enclosed ice and water on said ocean body by virtue of the lower specific gravity of the bag and enclosed ice and water than the specific gravity of the ocean water, towing the bag with enclosed ice and water on said ocean body to the proximity of an area where the ice and water is to be used, melting the ice in said bag, attaching the bag to a pipe line leading to a pump, driving the pump to pump the potable water out of the bag and into a reservoir in the proximity of the area where the water is to be used.

3,289,416
STORAGE-CAVERN APPARATUS AND PROCESS FOR TREATMENT OF THE DISPLACING WATER
Charles W. Varvel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 14, 1964, Ser. No. 337,676
13 Claims. (Cl. 61—.5)



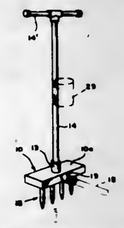
1. In a process for handling liquefied stored gas in an underground cavern over water wherein the gas is displaced from the cavern into metal conveying equipment such as a pipeline or metal cylinders, by water which is saturated with at least one gas of the group consisting of CO_2 or O_2 at a temperature lower than reservoir temperature so that upon displacing said liquefied gas with said water, the saturating gas diffuses into said liquefied gas at the water-gas interface and causes corrosion in said equipment, the improvement comprising:
(1) heating said water to a temperature at least as high as cavern temperature;
(2) passing the heated water of step (1) thru a stripping zone in countercurrent flow with vaporized liquefied gas as stripping gas; and
(3) passing the stripped water from step (2) into said cavern to displace stored liquefied gas therefrom.

3,289,417
APPARATUS FOR EXCHANGING COASTAL TIDAL WATERS WITH FRESH SEA WATER
Barney B. Girden, 32 W. 76th St., New York, N.Y.
Filed Jan. 24, 1962, Ser. No. 168,463
4 Claims. (Cl. 61—1)



1. Apparatus for exchanging coastal tidal water with fresh sea water comprising:
(a) means enclosing an existing body of coastal tidal water;
(b) gate means interposed in said enclosing means and including a vertically movable gate element, and means responsive to the level of water in said adjacent sea to move said gate element vertically with the rising and falling tides of said adjacent sea so that the top edge of said gate element is maintained above the level of the water in said adjacent sea, whereby said gate means is operative to permit the flow of water therethrough from the top of the enclosed body of water into the adjacent sea only during a falling tide of the latter; and
(c) conduit means opening from said adjacent sea into said enclosed body of coastal tidal water and having check valve means interposed therein to permit flow therethrough only in the direction into said enclosed body of coastal tidal water, thereby to conduct fresh sea water into said enclosed body from said adjacent sea under the pressure of a rising tide of said sea.

3,289,418
SUB SOIL IRRIGATING MEANS
John W. Edgerton, 3841 34th W., Seattle, Wash.
Filed Feb. 28, 1964, Ser. No. 348,231
3 Claims. (Cl. 61—13)

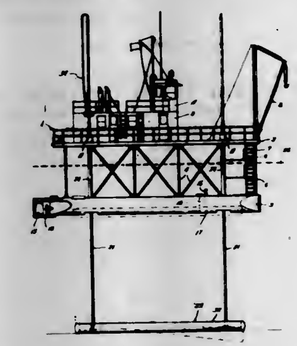


1. A sub-soil irrigating device comprising a horizontal manifold enclosing a water tight chamber therein, a handle fixed to the manifold for its placement and holding of the device in use, means for effecting a water line with the manifold chamber, a plurality of water injecting nozzles mounted by and directed downwardly from the manifold; each of said nozzles comprising a tubular body that is mounted by the manifold and is open at its upper end to said chamber and open at its lower end, a valve stem extending through and contained in the tubular body with clearance for water discharge between them and extended at its ends from upper and lower ends of said tubular body, a valve head mounted on the upper end of said valve stem to close against and normally be held seated against the tubular body upper end by water confined under pressure in the chamber; each of said stems extending beyond the lower end of its respective tubular body a sufficient distance so as to protrude beyond the tubular body lower end when actuated upwardly by pressure of its lower end against and into the soil thus to facilitate ground piercing by the tubular body; and each of said stems loosely fitting in its respective tubular body such that insertion of said nozzle tubular bodies into the soil will effect the lifting of each valve head independently of one another for discharge of water from the manifold and nozzle tubular bodies against and into the soil.

3,289,419
SEA RAFT
Harold E. McGowen, Jr., Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed Feb. 3, 1964, Ser. No. 341,872
5 Claims. (Cl. 61—46.5)

1. In a marine craft for use in positioning work equipment at an offshore well, a raft comprising,
a work deck superstructure,
a buoyant pontoon structure underlying and supporting said work deck superstructure above water level at all times and having a floodable compartment for receipt of ballast water of a volume insufficient for a negative pontoon buoyancy,
weighted anchor means suspended beneath said craft and provided with a water compartment of a size that when empty of water renders the anchor means of substantially zero flotation weight,
a series of vertical rigid posts slidably connected with said raft,
means mounted on the raft for projecting and retracting the posts towards and from the sea bottom,

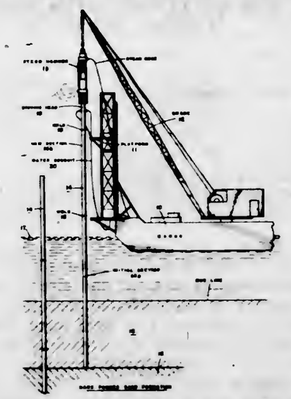
said anchor means including an elongated hollow member joined near its opposite ends to a pair of said vertical posts,
a universal joint connecting the lower end of each of said vertical posts to said hollow member,
a pressure air supply conduit extending through a post and swivelly connecting with the interior of the member,
sea water piping containing a valve and controlling entrance and exhaust of sea water to and from said hollow member and including a valve unit having a flow passage and a closure therefor normally biased to passage closing position,



a conduit connecting said passage with the exterior of the hollow member,
a conduit having a pair of branches connecting said passage with the interior of such hollow member and terminating near opposite ends of the member,
a float valve and a vertical guide cage therefor at each of the ends of the branches and seated downwardly to close the same,
means responsive to pressure air to open the first mentioned valve and connected to said pressure air supply conduit, and
means on the raft controlling the delivery of pressure air to the air supply conduit.

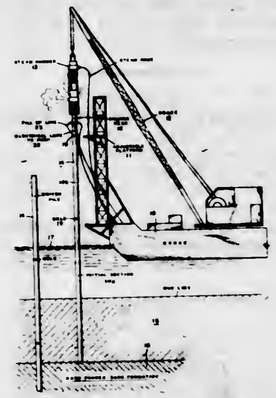
3,289,420
METHOD FOR DRIVING PILES
Arthur L. Guy, Metairie, La., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,923
4 Claims. (Cl. 61—53.5)

1. A method for driving hollow, tubular pile sections into the ground in a substantially vertical direction in which a driving member adapted to be attached to a hammer is attachable to the upper end of each pile section to be driven and in which said driving member includes a hollow section closed at its upper end and provided with means for supplying water and air to the interior thereof, comprising the steps of:
arranging in a longitudinally extending position in a previously driven pile section a tubular means provided with openings at its upper and lower ends adapted to jet water contained in said piles from said lower openings;
attaching a new pile section to said driven pile section;
attaching said driving member to said new pile section, the interior of said hollow section being in fluid communication with the interior of said new pile section;
adding water to said pile sections until the level of said column of water is above the level of the upper opening in said tubular means;
maintaining an air column at least in a portion of the hollow section of said driving member above said water column; and
then hammering said driving member and said attached



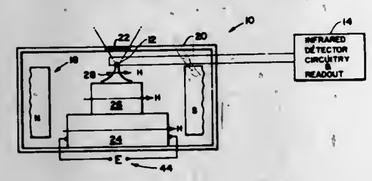
pile sections into the ground while simultaneously jetting water under hydraulic pressure into the ground through said tubular means.

3,289,421
METHOD FOR DRIVING PILES
Robert G. Hindman, New Orleans, La., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,922
8 Claims. (Cl. 61—53.74)



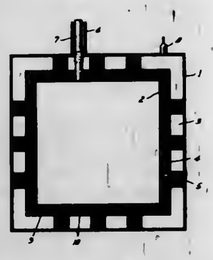
1. A method for driving tubular pile sections into the ground in a substantially vertical direction in which a driving member adapted to be attached to a hammer is attachable to the upper end of each pile section to be driven comprising the steps of:
arranging in a longitudinally extending position in a previously driven pile section below the level of a column of water contained in said pile section a tubular means provided with perforations at its lower end and a pump at its upper end;
attaching a new pile section to said driven pile section;
attaching said driving member to the top of said new pile section; and
then hammering said driving member and said attached pile sections into the ground while simultaneously operating said pump to pump water contained in said pile sections through said tubular means and out said perforations.

3,289,422
COOLING APPARATUS FOR INFRARED DETECTING SYSTEM
Joseph V. Fisher, Ridge Road, R.F.D. 1, Valencia, Pa.
Filed Aug. 16, 1965, Ser. No. 479,787
14 Claims. (Cl. 62—3)



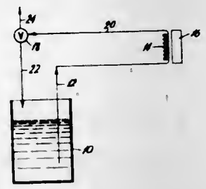
1. In an infrared detecting system of the type having an infrared detecting element and circuit means operatively connected to said infrared detecting element for indicating the incidence of infrared wave energy on said infrared detecting element, the combination comprising: means for cooling said infrared detecting element comprising multistage, thermoelectric refrigerating devices, a magneto-thermoelectric prism having a base thermally and electrically connected to the last of said thermoelectric refrigerating devices and an edge remote from said base to which said infrared detecting element is thermally and nonelectrically bonded, means for passing a current through said thermoelectric refrigerating devices and said magneto-thermoelectric prism, and means for impressing a magnetic field across at least the thermoelectric refrigerating devices of the last stages and said magneto-thermoelectric prism and perpendicular to the current flow therethrough; and means for encapsulating at least said infrared detecting element and said magneto-thermoelectric prism, said encapsulating means being evacuated whereby said infrared detecting element and said magneto-thermoelectric prism reside in a vacuum.

3,289,423
LOAD SUPPORT MEANS FOR THERMALLY INSULATED CONTAINERS
William L. Berner and Charles P. Mulcahey, Indianapolis, Ind., and Ransom P. Skinner, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 340,311, Jan. 27, 1964. This application Nov. 30, 1965, Ser. No. 532,818
11 Claims. (Cl. 62—45)



1. An insulated container for storing materials at other than ambient temperatures comprising in combination an outer shell; an inner storage compartment enclosed by and spaced from the outer shell so as to define an intervening evacuable space; a compression-sensitive composite multi-layer insulating material in the evacuable space composed of alternating layers of a low heat conducting component and a radiant heat reflecting component; load supporting means disposed in the evacuable space consisting essentially of narrow sheets of glass fiber material in alternating sequence between layers of a minor portion of said composite multi-layer insulating material so that said minor portion is in load transmitting contact with both the inner surface of the outer shell and the outer surface of the compartment so as to transmit loads on one surface to the other surface through said minor portion of composite multi-layer insulating material, thereby minimizing compression of said major portion of composite multi-layer insulating material due to such loads, the glass fibers in said glass fiber material being oriented so that the longitudinal axes of the fibers are substantially perpendicular to the direction of heat leak into the container; and access means for introducing material to be stored in the inner compartment.

3,289,424
CRYOSURGICAL FLUID CONTROL SYSTEM
Jim Lee Shepherd, Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed July 1, 1963, Ser. No. 291,876
5 Claims. (Cl. 62—55)

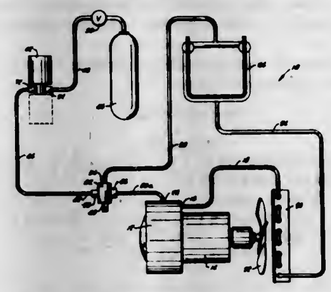


1. In a system for controlled freezing of tissue in indirect heat exchange with a cryogenic liquid supplied from a source thereof including apparatus comprising cryogenic liquid storage means, a surgical cannula, having a fluid inlet and a fluid outlet, and cryogenic liquid supply means joined to said inlet to said surgical cannula and to said cryogenic liquid storage means, and venting means communicating with said outlet to said surgical cannula to vent vapor therefrom; the combination with such apparatus of cryogenic liquid flow control means connected to said cryogenic liquid storage means and said venting means downstream from the surgical cannula outlet, and constructed and arranged to provide alternate fluid communication between said venting means and the vapor space of said cryogenic liquid storage means and between said venting means and the surrounding atmosphere such that the flow of cryogenic liquid in the freezing system may be terminated by communicating said venting means with said vapor space.

3,289,425
ICE REINFORCEMENT
Adam L. Shrier, Orange, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed July 27, 1965, Ser. No. 475,237
6 Claims. (Cl. 62—68)

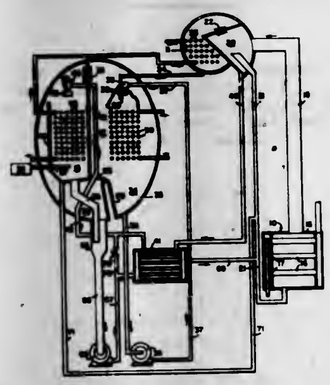
1. A method of obtaining a strong, substantially homogeneous and bubble-free frozen admixture of liquid and a relatively large amount of fibrous filler which ordinarily does not remain suspended in said liquid once dispersed therein and which ordinarily promotes the formation of air bubbles in the admixture comprising: dissolving a thickening agent into said liquid in an amount sufficient to increase the viscosity of said liquid, dissolving a wetting agent into said liquid in an amount sufficient to ensure the wetting of said fibrous filler by said liquid, admixing a fibrous filler into said liquid to obtain a substantially homogeneous admixture, and freezing said admixture.

3,289,426
LUBRICATING REFRIGERATION SYSTEMS
Earl Dean Music, 416 S. Main, Elk City, Okla.
Filed Feb. 17, 1966, Ser. No. 540,113
12 Claims. (Cl. 62—77)



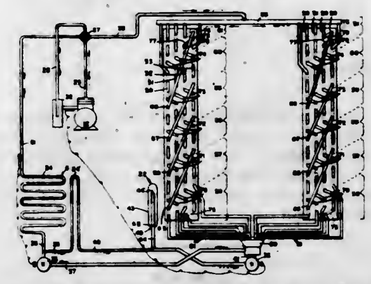
1. A method of lubricating a refrigeration system having a compressor comprising:
partially filling a container with lubricant for the refrigeration system;
forcing refrigerant under pressure through the container above the lubricant therein to remove substantially all of the air from the container;
inverting the container;
connecting the then lowermost end of the inverted container to the suction side of the compressor; and
applying refrigerant to the container under a pressure greater than the suction pressure of the compressor to force lubricant from the container into the compressor suction until the desired amount of lubricant has been supplied to the refrigeration system.

3,289,427
ABSORPTION REFRIGERATION SYSTEMS AND METHOD OF OPERATION PROVIDING IMPROVED SOLUTION DISTRIBUTION OVER THE TUBES OF THE ABSORBER
Joseph R. Bourne, Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,526
7 Claims. (Cl. 62—101)



4. In a method of distributing strong solution over a tube bundle in a region of lower pressure in an absorption refrigeration system employing a salt solution as an absorbent and a liquid compatible therewith as a refrigerant the steps which consist in forwarding strong solution from a region of higher pressure in the system to the region of lower pressure, the strong solution being superheated with respect to pressure in the region of lower pressure, admitting refrigerant vapor to be absorbed in the region of the tube bundle, passing a cooling medium through the tubes of the tube bundle to cool solution passing over the exterior surfaces of the tubes, adiabatically expanding the strong solution to saturated condition as it enters the region of lower pressure to cool the strong solution and to create a substantial volume of vapor, and utilizing the vapor as it is created to distribute the cooled solution in droplets substantially uniformly over the tube bundle.

3,289,428
REVERSE CYCLE REFRIGERATION SYSTEM
John Thomas Haines, Cazenovia, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 6, 1965, Ser. No. 445,883
7 Claims. (Cl. 62—149)

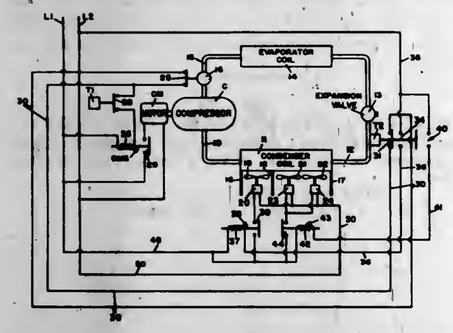


1. In a reverse cycle refrigeration system, the combination of a compressor, an outdoor coil, an indoor coil, and a reversing valve, effective when in a first position to connect the indoor and outdoor coils to the compressor suction and discharge sides respectively, and when in a second position to connect the indoor and outdoor coils to the compressor discharge and suction sides respectively, a first refrigerant conduit between said indoor coil and said outdoor coil, said first conduit including first refrigerant expansion means, a second refrigerant conduit between said indoor coil and said outdoor coil, said second conduit including second refrigerant expansion means, means for varying the amount of refrigerant in said system in response to system operating conditions including a closed vessel for storing refrigerant and a conduit connecting said vessel with said first conduit at a point between said indoor coil and said first expansion means, said outdoor coil comprising a plurality of heat exchange tubes placed in at least two substantially parallel rows, tubes in each of said rows being included in separate circuits through said coil, and crossover means serially connecting tubes in one row with tubes in another row to form at least three refrigerant paths extending throughout the length of the coil.

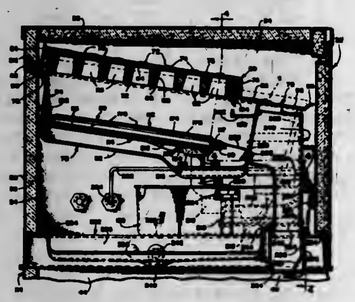
3,289,429
CONTROLS FOR REFRIGERATION SYSTEMS HAVING AIR COOLED CONDENSERS
Charles N. Beard, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 467,832
3 Claims. (Cl. 62—183)

1. In a refrigeration system comprising a compressor, an air cooled condenser coil, a discharge gas tube connecting said coil to said compressor, an expansion device, a liquid tube connecting said coil to said device, an evaporator coil connected to said device, and a suction gas tube connecting said evaporator coil to said compressor, said suction gas tube containing a low pressure cut-out having a switch which opens at abnormally low suction gas pres-

sures, said compressor having an electric driving motor, said motor having a starter relay, electric supply connections, said relay having a switch for connecting said motor to said connections, a control switch, and means connecting said control switch, said switch of said cut-out and said relay in series to said connections, the combination of a thermostat responsive to the temperature of the liquid within said liquid tube, said thermostat having a switch which opens when the temperature of the liquid within said liquid tube decreases to a predetermined temperature, and means connecting said switch of said thermostat across said switch of said cut-out.

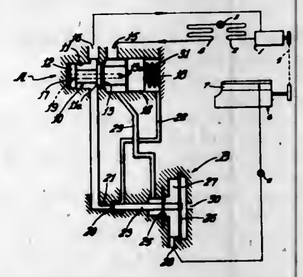


3,289,430
SPRAY TYPE ICE CUBE MAKING MACHINE
Alvin N. Dedricks and Richard H. Swanson, Manitowoc, Wis., assignors to The Manitowoc Company, Inc., Manitowoc, Wis., a corporation of Wisconsin
Filed Mar. 27, 1964, Ser. No. 355,302
44 Claims. (Cl. 62—188)



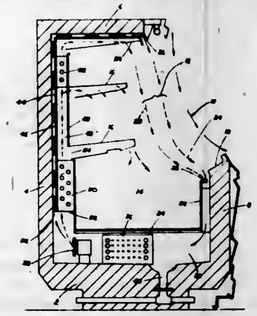
11. In apparatus for making a frozen product of predetermined shape, the combination of:
a cabinet,
a freezing mold mounted in said cabinet and adapted for connection to a refrigeration system,
said freezing mold having at least one generally downwardly opening freezing cell therein of a configuration corresponding to said predetermined shape, and
a liquid manifold mounted in said cabinet below said freezing mold,
said liquid manifold comprising:
a pair of upper and lower plate-like members disposed in facing relationship relative to each other to define a liquid receiving chamber therebetween,
a sealing gasket interposed between said plate-like members,
at least one clamping device mounted on said plat-like members to place them into sealing engagement with said sealing gasket and to firmly secure said plate-like members together,
the upper of said plate-like members having at least one liquid discharge duct therein which is generally in alignment with the downwardly facing freezing cell of the freezing mold and in communication with the liquid receiving chamber of the liquid manifold, and
at least one of said plate-like members having a liquid intake aperture therein.

3,289,431
REFRIGERATION SYSTEM CAPACITY CONTROL WITH PILOT OPERATED REGULATING VALVE
William J. Haley, Muncie, Ind., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed June 4, 1964, Ser. No. 372,614
4 Claims. (Cl. 62—217)



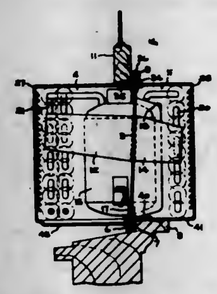
1. In an automotive air conditioning system including a compressor, an evaporator, and condenser connected in a closed circuit, said compressor being driven by an internal combustion engine having an intake manifold, a capacity control system including a valve between said evaporator and said compressor for controlling the flow of suction gas to said compressor; means for adjusting the setting of said valve including an operator which is responsive both to evaporator pressure and an adjustable control pressure; conduit means connecting said engine intake manifold to said operator to supply said control pressure and an adjustable constant pressure regulating valve.

3,289,432
DISPLAY CASE
James H. Brennan, Trenton, N.J., and Malcolm D. MacMaster, Yardley, Pa., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Aug. 6, 1965, Ser. No. 477,681
5 Claims. (Cl. 62—256)



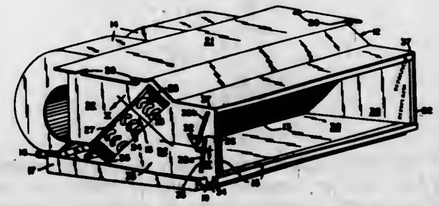
1. A refrigerated display case having a storage space therein provided with an access opening in the front thereof and means for establishing an air curtain embodying a plurality of layers of air directed across said access opening between said storage space and ambient air, said means comprising an inner refrigerated air duct provided with an outlet opening located on one side of the access opening for directing a refrigerated layer of air across said access opening as one layer of said air curtain, an outer protective air duct provided with an outlet opening located adjacent said one side of the access opening and farther from said storage space than the outlet opening of the refrigerated air duct for producing an outer protective layer of air as a second layer of said air curtain, air inlet means located at the opposite side of said access opening in position to receive air from both said layers of air in the air curtain, a plenum chamber communicating with said air inlet means, said inner refrigerated air duct and said outer protective air duct each communicating with said plenum chamber to receive air therefrom, blower means operable to circulate air from said air inlet means through said plenum chamber and both said inner refrigerated air duct and said outer protective air duct to their respective outlet openings, and an evaporator located in at least said refrigerated air duct and beyond said plenum chamber to refrigerate air passing through the refrigerated air duct, the cross sectional area of said refrigerated air duct and said protective air duct through which air flows to their respective outlet openings during operation of said display case being variable in response to accumulation of frost on the surfaces of said ducts and any refrigerating means therein, whereby the proportion of the air from said plenum chamber which flows through said refrigerated air duct and protective air duct to form the inner refrigerated layer of air and the outer protective layer of air in said air curtain will be variable and dependent in part at least upon the amount of frost accumulated on the surfaces and refrigerating means in said refrigerated and protective air ducts, respectively.

3,289,433
AIR CONDITIONING UNIT
Roy W. Abbott, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed July 23, 1965, Ser. No. 474,332
3 Claims. (Cl. 62—262)



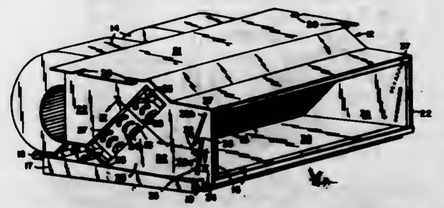
1. A window mounted room air conditioning unit adapted to be supported on the inner sill of a window comprising:
a refrigeration system and indoor and outdoor air circulating means,
a structural member including a substantially vertical partition functioning to divide said unit into an indoor section and an outdoor section, means including an open framework for supporting all of the components of said system and said air circulating means on said partition, and flange means extending from the lower edge portion of said partition into said indoor section for supporting the entire weight of said unit on the inner sill of a window,
a plastic casing including an indoor section and an outdoor section cooperating to enclose completely all of said structural member and the components supported thereon,
said casing including a depression in the outer section bottom wall portion for receiving condensate from said system.

3,289,434
AIR CONDITIONING MEANS HAVING MEANS TO PREVENT CONDENSATION
Darwin G. Traver, De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 482,422
3 Claims. (Cl. 62—272)



1. In an air conditioning unit, the combination of means including a casing forming a passage for air, said casing having a wall with a surface on which droplets of condensate may form when the surface temperature is below the dew point of ambient atmosphere, said surface including first and second portions, said first portion being below the dew point during operation of the unit, means for supplying air through said passage, means adapted to cool the air passing through said passage, and means for substantially preventing conduction of heat through said wall between said portions sufficient to permit formation of condensate on said second portion.

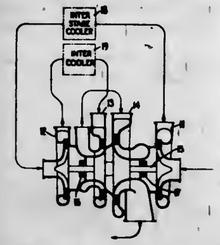
3,289,435
AIR CONDITIONING APPARATUS HAVING CONDENSATION PREVENTING MEANS
Carl C. Herb, Syracuse, and David F. Bryans, Canenovia, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 482,438
5 Claims. (Cl. 62—272)



1. In an air conditioning unit, the combination of means including a casing forming a passage for air, said casing having a wall with surface on which droplets of condensate may form when the surface temperature is below the dew point of ambient atmosphere, said surface including first and second portions, said first portion being below the dew point during operation of the unit, means for supplying air through said passage, means adapted to cool the air passing through said passage, and at least one generally upright slot in said wall for substantially preventing conduction of heat through said wall between said

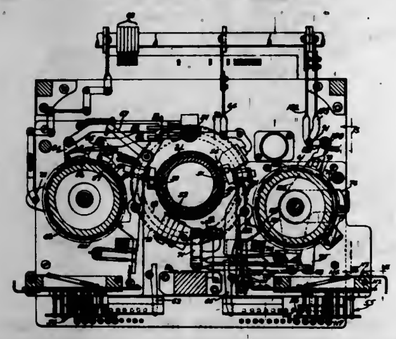
portions sufficient to permit formation of condensate on said second portion and for substantially preventing any condensate on said first portion from passing onto said second portion.

3,289,436
AIR CONDITION SYSTEMS
Henry W. Groves and Laurence Goodwin, Hatfield, England, assignors to Hawker Siddeley Dynamics Limited, Hatfield, England
Filed Apr. 29, 1965, Ser. No. 451,905
Claims priority, application Great Britain, Apr. 29, 1964, 17,891
9 Claims. (Cl. 62—402)



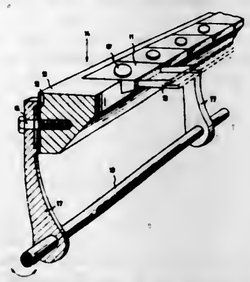
1. An air-conditioning system for an aircraft, comprising high and low pressure compressor stages and high and low pressure turbine stages all coupled to one another whereby the turbine stages provide driving power to the compressor stages, conduit means for feeding air through said low and high pressure compressor stages in succession, and then through said high and low pressure turbine stages in succession, and means mixing refrigerated air delivered from the low pressure turbine with air from upstream of the low pressure compressor to obtain the final temperature of the air output.

3,289,437
PATTERN DRUM INDEXING FOR CIRCULAR KNITTING MACHINES
Peter A. Mahler, High Point, N.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 27, 1964, Ser. No. 363,024
8 Claims. (Cl. 66—50)



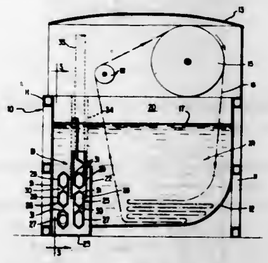
1. In a circular knitting machine having a rotary needle cylinder with a driving gear therefor, needles and jacks carried by said cylinder and having butts, actuators in the form of cams and slides selectively engaging said butts for displacing said needles, selected actuators being mounted for selective displacement radially of said cylinder, and at least one pattern drum for operating said selected actuators; means for indexing said drum at least twice for a revolution of said cylinder comprising at least two drum-advancing devices, each device comprising a ratchet wheel fixed to said drum and having a tooth length corresponding to the distance said drum is indexed for each revolution of the cylinder, and a separate pawl engageable with said teeth and operable to advance the ratchet wheel and drum a distance less than the distance of one tooth, means to operate the pawls of said devices in sequence so that the drum is indexed the distance of one tooth in steps, whereby disengagement of any pawl from the teeth prevents completion of the indexing and arrests the indexing of said drum.

3,289,438
SINKER BAR FOR STRAIGHT MACHINES
Karl Kohl, Offenbacher Landstrasse, Hainstadt am Main, Germany
Filed June 9, 1964, Ser. No. 373,614
Claims priority, application Germany, June 14, 1963, M 57,186
4 Claims. (Cl. 66—109)



1. In a knitting machine, in combination:
(a) an elongated bar member of light metal having a longitudinal face;
(b) securing means for securing a plurality of yarn engaging elements on said bar member in a longitudinal row; and
(c) an elongated steel member fixedly fastened to said longitudinal face, said steel member being longer than said bar member and longitudinally projecting beyond the ends of the bar member;
(d) abutment means on the projecting portions of said steel member and longitudinally engaging said bar member.

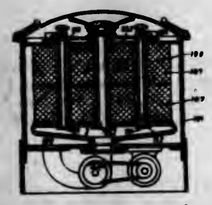
3,289,439
DYE BECK HAVING FLAME FIRED HEAT EXCHANGER
Herman M. Hall, Dalton, Ga., assignor to Dalton Sheet Metal Co., Inc., Dalton, Ga., a corporation of Georgia
Filed June 2, 1964, Ser. No. 371,910
1 Claim. (Cl. 68—15)



A dye beck comprising a vat body portion adapted to hold a dyeing bath, an upstanding perforated baffle within said body portion near one side wall thereof and dividing

the interior of the body portion into a wide dyeing chamber and a narrow heat exchanger chamber, a main cloth reel and spreader roll supported above said dyeing chamber for propelling and guiding a cloth tow through said bath in the dyeing chamber continuously, and a direct flame-fired heat exchanger submerged within the dyeing bath of the heat exchanger chamber, said heat exchanger comprising plural substantially vertical banks of large cross section direct flame-fired tubes which extend for substantially the entire length of the heat exchanger chamber, the total cross sectional area of said tubes constituting a major fraction of the complete cross sectional area of the heat exchanger chamber, the ends of the tubes in each bank connected to form a continuous zigzag passage through each bank of tubes, the passages of said banks being in opposed flow relationship.

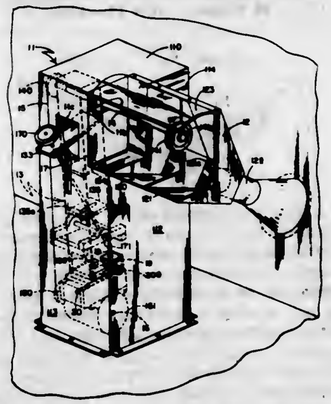
3,289,440
APPARATUS FOR THOROUGHLY EQUABLY DYEING YARN IN THE FORM OF A LARGE YARN PACKAGE
Heinrich Buddecke, Faurndau, Wurttemberg, Germany (16 Gansweg, Goppingen, Wurttemberg, Germany)
Filed Nov. 13, 1962, Ser. No. 236,913
Claims priority, application Germany, Nov. 18, 1961, B 64,841
6 Claims. (Cl. 68—189)



1. In an apparatus for thoroughly equably dyeing yarn in form of a large yarn package having a central perforated bush and consisting of two or more strips of windings having a flat, helical and elongated shape, the longitudinal direction of the windings being arranged transversely to the direction of said strip, divider filament strips consisting of fine wires for supporting, conveying and separating each two neighbouring yarn winding strips from each other, the wires thereof having high tensile strength and such a fine gauge as to not injuring the equableness of dyeing, said winding strips together with said divider filament strips being rolled upon said bush, a dyeing kettle having a central perforated rising pipe for introducing the dyeing liquid into said yarn package, said yarn package adapted to be mounted, by means of its bush, on said rising pipe, and means for keeping all points of contact between yarn parts of neighbouring winding strips under a mutual equable gentle pressure, said pressure means consisting of a device for holding, during the dyeing process, the yarn pack under a gently resilient pressure approximately in the direction of the elongated windings, and a device for holding the winding strips under a gently resilient traction at their ends in peripheral direction.

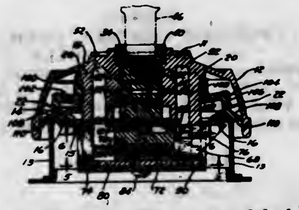
3,289,441
SHOE BOTTOM ROUGHING MACHINE
George Schultz, 54 Brush Hill Road, Newton Highlands, Mass.
Filed Oct. 28, 1964, Ser. No. 407,147
4 Claims. (Cl. 69—6.5)

1. The combination of a horizontal support member and a vertical assembly pivotable on said support; the upper end of said assembly containing a tool mounted on a rotatable shaft; the lower end of said assembly containing driving means for said shaft; said assembly being substantially counterbalanced, said combination being so characterized that pressure of a workpiece against the



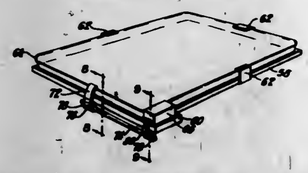
driven tool tends to move the tool away from the workpiece while release of pressure permits return of said tool to its initial position.

3,289,442
CLOSURE DEVICE
Brandt W. Berger, Chicago, and Jerry F. Kohler, Melrose Park, Ill., assignors, by mesne assignments, to Allen Electric and Equipment Company, Kalamazoo, Mich., a corporation of Michigan
Filed May 15, 1964, Ser. No. 367,792
7 Claims. (Cl. 70—173)



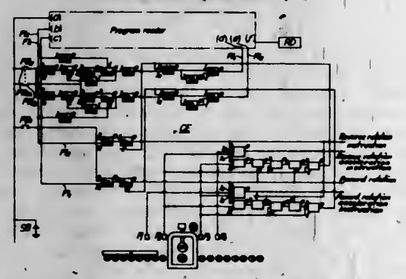
1. A locking cap for the filler necks of fuel tanks in a variety of vehicles wherein each filler neck has an inwardly extending flange at the top thereof defining an opening for the filler neck, the internal diameter of the openings of at least one or more of said filler necks being substantially smaller than the opening of at least one of the other filler necks, said cap comprising: a filler neck closing cap portion from which downwardly extends a central body portion, a locking mechanism carried by said central body portion and including retractable locking bolts for underlying the filler neck flanges and retaining the cap on said filler necks, said central body portion having an outer extent enabling it to fit with limited clearance within said smaller filler neck openings, said locking cap further including a removable shell member carried by said central portion and having an outer extent substantially greater than that of said central body portion as to fit with limited clearance within said larger of said filler neck openings to prevent said retractable locking bolts of said locking mechanism from being unauthorizedly or inadvertently disengaged from beneath the flange, said shell member when removed from said central body portion of said cap enabling said central body portion of said cap to be inserted into and locked within said smaller filler neck openings.

3,289,443
THEFT CONTROL APPARATUS FOR TRAYS
Nathan Norman, Toledo, Ohio, assignor to Egrad Incorporated, Toledo, Ohio, a corporation of Ohio
Filed Sept. 20, 1965, Ser. No. 492,983
16 Claims. (Cl. 70—276)



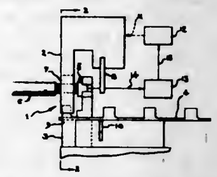
3. For a food tray support of the type used in drive-in restaurants and a food tray to be supported thereon, means for locking the food tray on the support comprising means for said support to limit movement of said tray in all but one direction, means for attaching said first means to said support, a lock housing for said tray support to be located at a predetermined position spaced from said first means, a latch member, means for pivotally mounting said latch member in said housing for pivotal movement in a generally vertical plane, at least a portion of said latch member being of a magnetic material and adapted to be raised when subjected to a magnetic field, said latch member having a hook portion extending downwardly therefrom, means cooperating with said hook portion when in a lower position and positioned to be engageable with said tray to prevent movement of said tray if moved in said one direction, a magnet for raising said latch member to clear said preventing means when placed against said housing, and a wrist band attached to said magnet and adapted to be worn on a wrist of a waitress, whereby the waitress can place the magnet on top of the housing and remove the tray with the other hand.

3,289,444
PROGRAM CONTROL DEVICE FOR ROLLING MILLS
Yutaka Takuma, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 26, 1963, Ser. No. 311,770
Claims priority, application Japan, Sept. 28, 1962, 37/41,996
1 Claim. (Cl. 72—7)



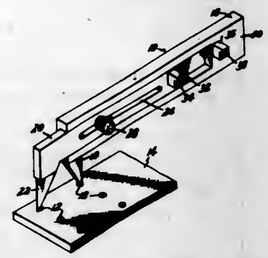
A program control device for rolling mills including in combination program reading means for providing automatic programmed control over the operation of a rolling mill, logic-circuit means including sensors for observing operation of the rolling mill, said logic-circuit means being coupled to and controlled by said program reading means and being coupled to control automatically the cyclical operation of the rolling mill, and manually operable take-over control means coupled to said program reading means in parallel with said logic circuit means for stepping the program reading means through any desired number of pre-programmed operational passes independently of the operation of the rolling mill.

3,289,445
WIRE-SENSING MEANS
Robert K. Grebe and Earl R. Kreinberg, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 21, 1963, Ser. No. 325,321
6 Claims. (Cl. 72—14)



1. In a press having upper and lower die parts for operating on a workpiece therebetween, operating means to cause the die parts to press the metal part, electrical circuit means connected to said operating means including switching means, and control circuit means connected to said electrical circuit means including tactile sensing means, said control circuit means havng a first state and a second state, said control circuit means being operated from said first state to said second state upon nonconductive engagement of said workpiece with said tactile sensing means to operate said switching means to operate the press.

3,289,446
LEAD FORMING TOOL
Thomas J. Davey, 67 Taunton Road, Fairfield, Conn.
Filed Nov. 26, 1963, Ser. No. 325,990
4 Claims. (Cl. 72—36)

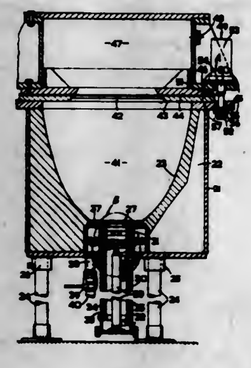


1. A tool for locating spaced openings in a printed circuit board and to determine therefrom sizes of elements to be assembled in said openings comprising a body member including relatively movable means, one of said means including an immovable locating means extending normal to said body and adapted for insertion in an opening in the printed circuit board, and the other of said means including a movable locating means extending normal to the body and coplanar with said first locating means, and other means arranged in spaced relation to said relatively movable spaced opening locating means for forming an element of a size for use in said spaced openings.

3,289,447
EXPLOSION FORMING PROCESS
Ehssanollah Amini, Sutton Coldfield, and Stephen Albert Tobias, Birmingham, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Aug. 8, 1963, Ser. No. 300,749
Claims priority, application Great Britain, Aug. 9, 1962, 30,600/62
10 Claims. (Cl. 72—56)

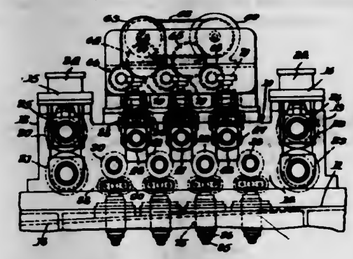
1. An explosion-forming apparatus for performing a forming operation on a workpiece, comprising a pressure-

pulse-shaping part, said pulse-shaping part being arranged to face upwardly so as to retain liquid for pulse transmitting purposes, a workpiece-retaining part, said workpiece-retaining part being arranged for substantially pressure-tight connection to said pulse-shaping part, an explosive-positioning means associated with said pulse-shaping part,



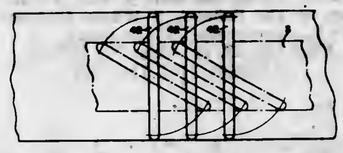
extension means for said explosive-positioning means, said extension means being arranged to extend said explosive-positioning means from its operative position within said pulse-shaping part to be positioned such that a spent charge may be removed and to be replaced by a fresh charge, for retraction into its operative position.

3,289,448
BACK-UP MEANS FOR STRAIGHTENING ROLLS
Chester M. Wilg, Chicago, Ill., assignor to F. J. Littell Machine Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 31, 1964, Ser. No. 341,546
3 Claims. (Cl. 72—163)



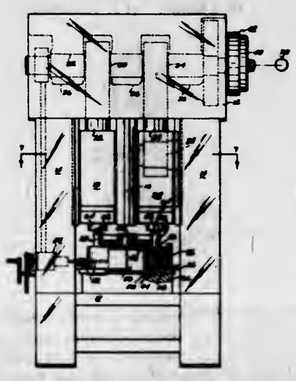
1. In a feeding and straightening machine for metal strip material, in combination, a pair of feeding rolls operating to engage the material therebetween and to feed the material when the rolls are rotated in a feeding direction, a plurality of straightening rolls located in associated relation with the said feeding rolls, gearing connecting the rolls whereby the feeding and straightening rolls rotate in unison, and backing-up means for each of said straightening rolls, each said backing-up means including a plurality of rollers having contact with the periphery of a straightening roll approximately mid-way of the length of the roll, supporting means including a carriage block providing journalling means for the rollers, and a fulcrum rod having a ball and socket connection with the carriage block.

3,289,449
METHOD AND APPARATUS FOR COOLING STRIP
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 20, 1964, Ser. No. 368,935
Claims priority, application Great Britain, June 4, 1963, 22,140/63
4 Claims. (Cl. 72—201)



2. An apparatus for cooling heated metallic workpieces, such as strips, said strips having varying characteristics that effect their thermal conditions as they issue over a predetermined path, comprising:
a plurality of coolant discharge members arrange over the path of the strip,
means for supporting said coolant discharge members in a relationship to produce a field of coolant across the strips,
means for adjusting the members in a manner so that the field of coolant may be displaced relative to the strips to compensate for a change in the cooling rate of the strips caused by a change in the characteristics thereof,
said means for adjusting the member being connected to two or more of the members thereby the members are adjusted in unison, and
strip width determining means controlling the means for adjusting the discharge member to adjust said member pursuant to a change in the width of the strip.

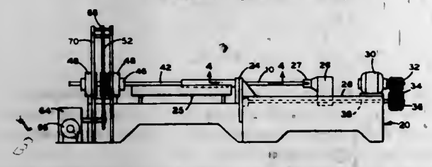
3,289,450
CAN EXTRUSION MACHINE
Albert Clements, Hamilton, Ohio, assignor to Minster Machine Company, Minster, Ohio, a corporation of Ohio
Filed Nov. 26, 1963, Ser. No. 326,045
9 Claims. (Cl. 72—267)



1. In an extrusion press the combination of: a press frame having a bed, a press slide slidably guided in said press frame for movement toward and away from said bed, a crankshaft in the press frame, a connecting rod connecting the crankshaft with the slide, an extrusion die on the bed, an extrusion punch mounted independently of said press slide on said press bed for lateral movement, and means for interposing the punch between the slide and the die for carrying out an extrusion operation upon

movement of the slide toward the bed and for moving the punch laterally out of punching position upon retraction of the slide from the bed.

3,289,451
METHOD AND APPARATUS FOR FORMING INTERNAL HELICAL RIBBING IN A TUBE
Paul H. Koch, Akron, and John R. Hill, Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 22, 1964, Ser. No. 369,405
4 Claims. (Cl. 72—283)



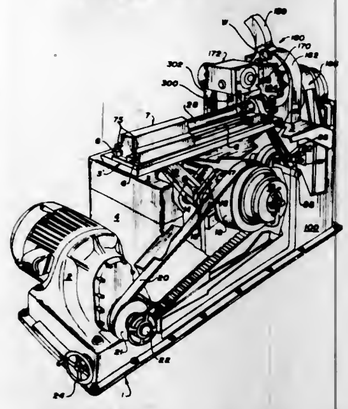
1. Tube drawing apparatus comprising a draw bench, a die supported on said bench, a spiral-grooved mandrel, a bar for supporting said mandrel in operative association with said die, a device movably supported on said bench for pulling tubing through a passageway defined by said die and said mandrel, a chuck rotatably supported on said bench and adapted to grip said bar for rotation therewith, a motor, a chain gear system including a chain for transmitting unidirectional rotational motion from said motor to said chuck and further including a pair of horizontally spaced idler wheels spanned by a portion of said chain, and a freely rotatable weight suspended from said portion of said chain for transmitting said weight through said chain to apply a torque through said chuck to said bar and said mandrel.

3,289,452
METHOD AND DEVICE FOR BONDING A CONTACT WIRE TO A SEMICONDUCTOR MEMBER
Hartwig Kölbaer, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed June 5, 1964, Ser. No. 372,912
Claims priority, application Germany, July 23, 1963, S 86,328
10 Claims. (Cl. 72—324)



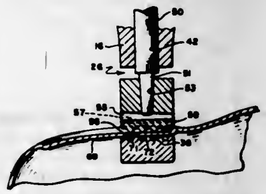
2. In a device for bonding a contact wire to a semiconductor member by thermocompression, guide nozzle means for supplying a contact wire, and trimming means including a pair of shear blades spaced from said nozzle means and having a cutting plane located transversely to the axis of the wire, said blades being normally set to abut against each other but being elastically yieldable perpendicularly to said cutting plane into an overlapping relation for trimming the wire to a given length of which the wire portion between the cutting plane and said nozzle means is shorter than the sum of the wire diameter and the thickness of one of said blades and for simultaneously imparting to the extreme end portion of the wire a lateral bend of a predetermined short length readily attachable to a semiconductor member of relatively small attaching area.

3,289,453
APPARATUS FOR MANUFACTURING CONTAINER BODIES FROM BLANKS
Charles Wyle, Palo Alto, and John S. Nagy, Saratoga, Calif., assignors, by mesne assignments, to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,719
16 Claims. (Cl. 72—349)



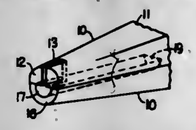
1. In a workpiece forming apparatus the combination of a die means including a reverse draw die and at least one ironing die aligned with said reverse draw die, a forming ram means moveable into and out of said dies and operable to force a cup-shaped workpiece successively through said reverse draw die and ironing die during the forward stroke of the forming ram means, means connected to said ram means for motivating said ram means during its forward and return strokes, and common means both for supporting said ram means and initially advancing said workpiece towards said reverse draw die prior to engagement of the workpiece by said forming ram.

3,289,454
JOGGLING TOOL
Earl Chandler, 17211 NW. 37th Ave., Opa-Locka, Fla.
Filed Sept. 6, 1963, Ser. No. 307,105
6 Claims. (Cl. 72—385)



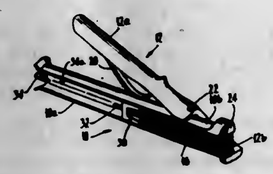
1. In a hand held tool adapted to be traveled along the marginal edge of a contoured sheet of metallic material to joggle the edge and in which said tool is adapted for attachment and operation by a power hammer the improvement comprising a head having front, rear and side surfaces, and a mouth extending into the head across the front surface with the mouth defining a roof, a recessed floor, a rear wall and a lip having a distal surface extending from the floor into the opening along the front surface, the floor of the mouth being provided with a plurality of parallel teeth extending rearwardly across the floor; a moveable jaw having a top, bottom and side surfaces disposed in the mouth with the bottom surface being relieved defining a first and second area with a relief area there-between, the said second area having a plurality of parallel teeth across the surface thereof opposing in meshing relationship the teeth of the floor, said jaw being moveable within the mouth from a jaw open position to a jaw closed position and adapted to receive the marginal edge of a contoured sheet of metal between both the roof and distal surface and the jaw with the edge of the sheet extending into the mouth, said first area, said second area, and said relief area confronting the distal surface, said floor and said lip respectively when in the jaw closed position whereby rapid reciprocating of said jaw between jaw open and closed positions strikes and grips rapidly and successively on and joggles the marginal edge.

3,289,455
CRIMPING PLIERS
Ronald J. Pinko, 2165 Westminster Ave., Camden, N.J., and John Weiss, Old Marlton Pike, R.D. 2, Marlton, N.J.
Filed May 26, 1964, Ser. No. 370,310
5 Claims. (Cl. 72—409)



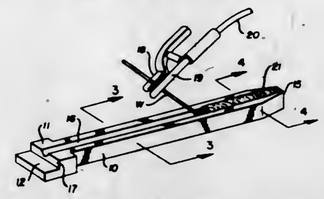
1. Crimping pliers of the character described, comprising two body members swingably hinged together by a pin, each said body member having a tapering nose from one of which extends a recess at right angle thereto and from the other of which longitudinally extends a concave recess in the upper face thereof, the first mentioned recess being adapted to fit over a given pin and the second mentioned recess being adapted to fit over the bare end of a wire looped around the said pin to which it is desired to crimp the same thereto when the said body members of the said crimping pliers are manually squeezed together.

3,289,456
STAPLING PLIERS
Ivan Baldwin, 49 Earl St., Kew, Victoria, Australia
Filed Mar. 30, 1964, Ser. No. 355,814
Claims priority, application Australia, Apr. 5, 1963, 29,245/63
8 Claims. (Cl. 72—410)



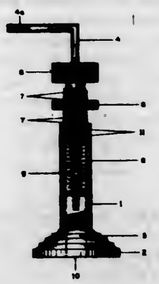
2. Stapling pliers for forming ring staples comprising a magazine member, an actuating member, means pivotally connecting said members together in crossing relationship whereby said members are divided into an opposed pair of work arms and an opposed pair of handle portions, and a transversely opposed pair of co-acting jaws on said work arms for engagement with the respective side arms of a staple arranged therebetween, said magazine being hollow thereby to accommodate a strip of staples longitudinally therein, and said strip being slidable forwardly within said magazine member towards and into engagement with said jaws, whereby the leading staple while still on the strip thereof may enter the space between said jaws when the latter are retracted, and whereby when said jaws are subsequently moved inwardly towards each other, the back of said leading staple is bent and the free ends of the arms thereof are caused to close together.

3,289,457
BUILT-UP STRIP MILL GUIDE
Grant A. Oakes, R.D. 4, near Cortland, Ohio
Filed June 22, 1964, Ser. No. 376,943
1 Claim. (Cl. 72—428)



A guide for traveling strips in a strip mill and the like comprising a metallic elongated wear member of rectangular cross sectional shape having a T-head on one end, an angular configuration on the opposite end and a longitudinally extending centrally disposed groove having an irregular surface in which a groove filling body of relatively harder metal is deposited and uniformly welded to said metallic wear member and thus forming a principal wearing surface, said relatively harder metal consisting of the group including aluminum bronze alloy.

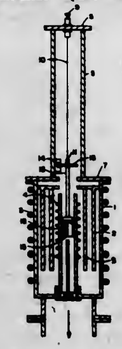
3,289,458
APPARATUS FOR TESTING THE MAR RESISTANCE OF MATERIALS
William George Deichert, Flushing, N.Y., and Heinz Kurt Walter Voigt, Ridgefield, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Aug. 17, 1964, Ser. No. 390,037
1 Claim. (Cl. 73—7)



An apparatus for testing the mar-resistance of materials comprising (1) a hollow cylindrical housing having threads at the upper end thereof, (2) a flat base at the lower end of said cylindrical housing, (3) a piston slidably mounted in said cylindrical housing, said piston having a solid, flat, circular face upon which an abrasive disc can be adhesively mounted, (4) a handle detachably mounted on said piston and extending upwardly through said cylindrical housing, (5) a coil loading spring surrounding said handle and contained within said cylindrical housing, (6) a threaded hollow adjusting screw, (7) threads thereon which engage said threads on the upper end of the hollow cylindrical housing and (8) a

lock-nut mounted to jam against and thus lock said adjusting screw, said handle being turnable through 360° about the axis of the said cylindrical housing.

3,289,459
METHOD OF MEASURING INTERFACIAL BONDING ENERGY
Bernard Steverding, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed May 19, 1964, Ser. No. 368,722
2 Claims. (Cl. 73—15)



1. A method of determining the interfacial bonding energy of a material bonded to a substrate material, the method comprising:

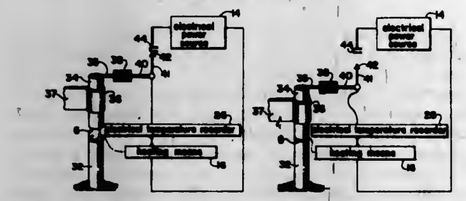
heating said material to a predetermined temperature at which evaporation of said bonded material occurs at a first constant measurable rate during a first time period, the vapor pressure during this period being defined as the bulk vapor pressure, P_0, of said bonded material;

recording the value of P_0;

maintaining isothermal conditions while there is a transition period wherein the vapor pressure decreases indicating the interfacial binding forces are effective and maintaining said isothermal conditions until the vapor pressure of the bonded material again becomes constant thereby indicating that only a monolayer of bonded material remains on the substrate, the latter vapor pressure being defined as the vapor pressure of the monolayer, P, of the bonded material remaining on the substrate; and,

recording the value of P, wherein, by utilizing the resulting measurements, P and P_0, an indication of the interfacial bonding energy is obtained.

3,289,460
MELTING POINT DETERMINING APPARATUS
William M. Anderson, 154 Atlantic St., Quincy, Mass.
Filed Feb. 2, 1965, Ser. No. 431,770
4 Claims. (Cl. 73—17)



3. An apparatus for determining the melting point of a chemical compound, said apparatus comprising:

(a) Means for holding the compound to be tested:

(b) A movable member, said movable member engaging said compound and being prevented from moving when said compound is in the solid state but being movable when said compound melts:

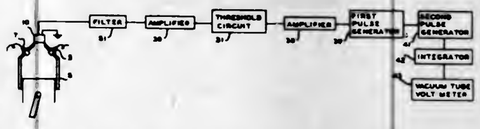
(c) Means for heating said compound.

(d) Means for measuring the temperature of said compound including means for recording the maximum temperature.

(e) Circuit control means controlling a circuit for shutting off at least one among said heating means and said temperature measuring means and

(f) Coupling means between said movable member and said circuit control means whereby upon the movement of said movable member said circuit control means is actuated to shut off at least one among said heating means and said temperature measuring means and thereby bring about the recording of the melting point by the means for recording the maximum temperature reached.

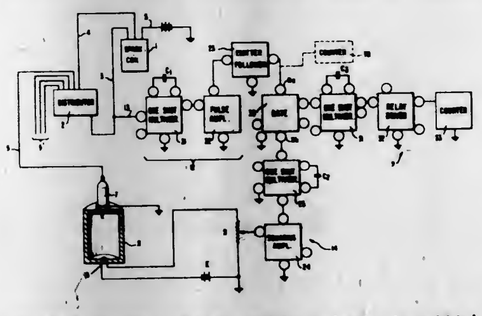
3,289,461
DETONATION METER
Paul E. Kahler, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 5, 1963, Ser. No. 328,367
3 Claims. (Cl. 73—35)



1. In a detonation measuring system comprising means for converting pressure variations in an engine cylinder into electrical current comprising voltage components representative of unwanted vibrations, voltage components representative of the main pressure variations in the cylinder, and voltage waves representative detonation, each voltage wave having an amplitude proportional to the peak intensity of a detonation in the cylinder, a filter, a threshold circuit for eliminating voltages of less than a predetermined amplitude whereby the output of said threshold circuit comprises a series of pulses, means for connecting the output of said means for converting through said filter to an input of said threshold circuit, and means responsive to said series of pulses for producing an output signal representative of the average peak detonation intensity; the improvement comprising means for producing dual ignition at two spaced points in said cylinder and wherein said filter is a bandpass filter which substantially blocks frequencies outside the range of 200–4000 c.p.s.

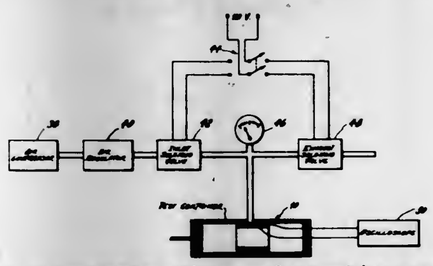
3,289,462
METHOD AND APPARATUS FOR ANALYZING OPERATION OF SPARK IGNITION ENGINE
Wolfgang J. Wostl, South Holland, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 24, 1964, Ser. No. 362,428
15 Claims. (Cl. 73—35)

1. In combination with a combustion chamber adapted to receive a fuel and ignition means for igniting said fuel including spark discharge means arranged to discharge within said chamber and pulse delivery means adapted to deliver a voltage pulse to said spark discharge means whereby said spark discharge means sparks and ignites said fuel, an apparatus for analyzing the operational characteristics of said spark discharge means which comprises a first pulse transmission circuit having an input coupled with said ignition means whereby to impress on said first circuit an initial voltage signal for each voltage pulse to said spark discharge means, first component means in said first transmission circuit adapted to delay transmission of said initial signal for a period of time less than the time between each voltage pulse, a second transmission circuit including means arranged in said chamber to sense the existence therein of ignition of said fuel, and means for developing a characteristic electrical pulse when said desired characteristic is present in said chamber, second component means in said second transmission circuit adapted to produce an output signal corresponding to said electrical pulse, a counting circuit including means for counting



individual current pulses adapted for activation by said initial signal, circuit breaker means between said first transmission circuit and said pulse counting means adapted to electrically connect said first transmission circuit and said pulse counting means, and means including said second transmission circuit for operating said circuit breaker means by impressing said output signal of said second transmission circuit upon said circuit breaker means to control operation thereof.

3,289,463
PIEZOELECTRIC CRYSTAL EVALUATOR
Edward T. O'Neill, Rye, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 4, 1965, Ser. No. 456,033
2 Claims. (Cl. 73—37)



1. In combination with means for supplying pressurized fluid thereto and quickly releasing it therefrom, a test container comprising in combination:

a fluidtight chamber having inner and outer walls,

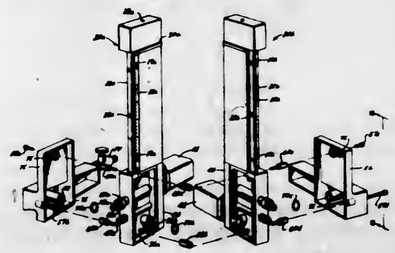
said inner wall being fabricated from a flexible material and encircling a space in which an object can be placed;

means for connecting said chamber to said source of supply of pressurized fluid;

said test container including an end plug which seals said inner and outer walls at one end and plunger means having a shaft and a piston member,

said end plug being formed with a bore through which said plunger shaft extends so that said plunger can be manipulated to position an object placed within the space encircled by said inner wall.

3,289,464
PNEUMATIC GAGING APPARATUS
Elwood L. Byrkett and Jesse H. Straw, Kettering, and Arthur W. Wiseman, Xenia, Ohio, assignors to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Continuation of abandoned application Ser. No. 344,894, Feb. 4, 1964. This application Dec. 22, 1965, Ser. No. 524,361
17 Claims. (Cl. 73—37.5)



13. A module forming the major component of an indicating apparatus for use in pneumatic gaging circuits, said module being adapted for connection to a supply of air under pressure and having an outlet for connection to gaging tooling wherein the flow of said air is controlled in accordance with a characteristic of a product being measured, said module comprising a longitudinally extended unit of limited transverse dimension between its side faces and adapted for vertical mounting,

mounting means in said unit detachably supporting a transparent indicating tube along the forward face of said unit,

indicating means in said tube positioned therealong in accordance with the characteristic of the product being measured,

an air supply passage extending transversely through said unit, opening at its opposite ends in the transversely opposed side faces thereof for mating relationship at each end with adjoining components of said apparatus,

a connection at the forward face of said unit for connection to gaging tooling,

further passage means in said unit communicating between said air supply passage and said connection including means for positioning said indicating means in accordance with flow through said connection and to said tooling,

and side faces and top, rear, and bottom surfaces forming the basic exposed configuration within which each module is a complete operative unit with components thereof being independent and self-sufficient when used singly and when readily assembled into an operating assembly comprising a plurality of such modules coupled together, whereby said module provides the maximum in versatility in that no part of such a module or any complete operative assembly of a plurality thereof is unique to the number of modules employed.

3,289,465
ULTRASONIC LEAK LOCATOR
Carl L. Parker, Fort Worth, Tex., assignor to Major Manufacturing, Inc., Fort Worth, Tex., a corporation of Texas
Filed June 12, 1964, Ser. No. 374,627
1 Claim. (Cl. 73—40.5)

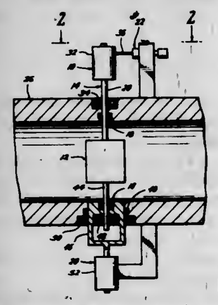
Apparatus for locating leaks in pressurized aerial cables, said apparatus comprising a pole, a single circumferentially grooved wheel on an end of said pole and having its axis transverse to the pole's length, an ultrasonic detector directed along said pole toward said

cable when said wheel is mounted thereon, a control box connected with said ultrasonic detector, and a head set connected with said control box, an arm angu-



larly supporting said wheel with reference to the length of said pole and directing said ultrasonic detector forwardly of said wheel.

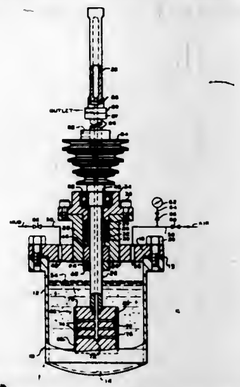
3,289,466
APPARATUS FOR MEASURING VISCOSITY
William B. Banks, Houston, Tex., assignor to Automation Products Inc., Houston, Tex., a corporation of Texas
Filed June 23, 1964, Ser. No. 377,330
3 Claims. (Cl. 73—59)



1. An apparatus for measuring viscosity of a fluid in a container comprising,
a rotatable member positioned in said container for contact with said fluid,
two rotatable rods connected to said member, and at least one of said rods extending out of said container,
a first seal engaging said one rod,
a second seal engaging said second rod, said seals being substantially identical,
first drive means connected to said one rod for rotating said one rod and said member,
a rotatable carriage supporting said second seal, and
second drive means connected to said carriage for rotating said carriage and second seal, and
measuring means measuring the driving force applied to said one rod.

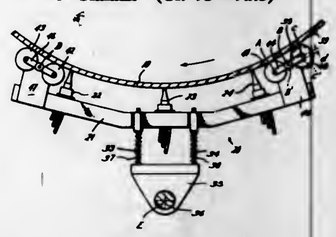
3,289,467
PROCESS AND APPARATUS FOR TESTING DRILLING MUD CHARACTERISTICS
Harry W. Parker and Charles J. Engle, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 30, 1964, Ser. No. 355,623
14 Claims. (Cl. 73—61.4)

12. A process for determining the liquid loss rate of drilling mud which comprises:
(1) maintaining a mass of said mud in an enclosed zone under a substantial pressure;
(2) rotating a hollow cylindrical filtering head in the mud in said zone;
(3) maintaining a pressure differential radially across said filtering means so as to cause filtrate to pass radially thru the filter head, thereby forming a filter



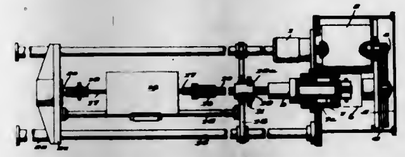
cake on the cylindrical surface of said filtering means which is subjected to a shear force by the mud as said filter means is rotated;
(4) withdrawing filtrate from said filter means at the rate at which said filtrate passes into said filter means; and
(5) measuring said rate.

3,289,468
ULTRASONIC TRANSDUCER POSITIONING APPARATUS
William R. Van der Veer and Walter A. Gunkel, San Antonio, Tex., assignors to Southwest Research Institute, San Antonio, Tex., a trust estate of Texas
Filed May 29, 1963, Ser. No. 284,114
9 Claims. (Cl. 73—71.5)



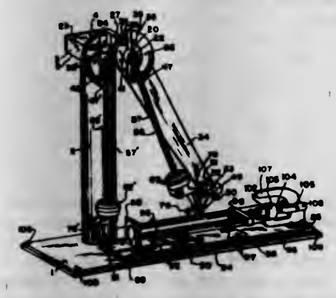
1. Apparatus for supporting a transducer adjacent the external surface of a pipe to be inspected by the ultrasonic energy produced by the transducer, comprising in combination, a support member; means mounting the support member to extend transversely of the pipe and for pivotal movement about an axis extending longitudinally of the pipe and including resilient means biasing the support member toward the pipe; an ultrasonic transducer mounted on the support member; spacing means attached to the support member and disposed on opposite sides of the pivotal axis of the support member to engage the pipe and hold the support member away from the pipe being inspected, said spacing means comprising arms pivotally connected intermediate their ends to the support member and pipe engaging means attached to the arms on opposite sides of the point where the arms are pivotally connected to the support member.

3,289,469
MEANS OF PROVIDING CONTROLLED INTERMEDIATE STRAIN RATES FOR THE TESTING OF MATERIALS UNDER UNIAXIAL IMPACT LOADING CONDITIONS
Joseph M. Wentzell, Robert A. Woodall, and Thomas H. Millar, Whitesboro, N.Y., assignors, by mesne assignments, to Special Metals Corporation, a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,975
9 Claims. (Cl. 73—95)



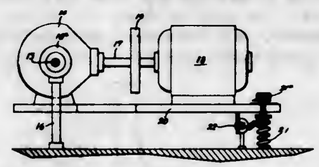
1. A uniaxial-loading metals-testing apparatus operating at controlled intermediate strain rates, comprising, in combination,
a motor-driven flywheel having a shaft;
a change speed gear system driven from said flywheel shaft;
a clutch-brake mechanism having an input shaft coupled to said gear system and an output shaft;
a ball nut rotatable by the output shaft of said clutch-brake mechanism;
a screw shaft threaded at one end within said ball nut, said screw shaft being mounted for non-rotational axial displacement within said ball nut;
means including a slack adapter, said means connecting the other end of said screw shaft to one end of a specimen to be tested; and
means anchoring the other end of such specimen.

3,289,470
PAPER TESTING MACHINE
Anthony S. Hubin, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,998
8 Claims. (Cl. 73—102)



8. In a compound pendulum, a longitudinally extending hollow shaft, a rod secured in the upper end of said shaft projecting therefrom and adapted for fixed attachment to a rotatable member, a rod secured in the lower end of said hollow shaft and projecting below the shaft, said rod having a shoulder, a hollow pendulum bob abutting said shoulder, a carrier including a hub within the pendulum bob and support means in the general form of a bow depending from the hub, and a penetrator element in the form of a spherical ball carried by the bow, said spherical ball, hollow shaft and pendulum bob being in axial alignment.

3,289,471
DYNAMOMETER
Lloyd R. Maxwell, Bradford Hills, Downingtown, Pa.
Filed Dec. 23, 1964, Ser. No. 420,651
23 Claims. (Cl. 73—117)

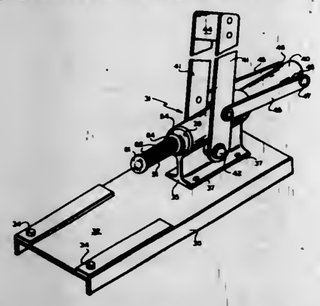


1. A dynamometer system comprising
a rotatable test load device,
a torque frame to which the test load device is affixed and to which reactive forces from said test load devise are applied,
means including trunnion bearings rotatably supporting the torque frame relative to the ground and acting as a pivot about which reactive forces are applied,
a shaft rotatably supported relative to the torque frame coaxial with the axis of rotation of the torque frame at a finite angle with the axis of rotation of said test load device for coupling to a device to be tested,
a drive connection between the shaft and the test load device,
energy storage means between the ground and the torque frame at a point remote from said shaft so that it opposes with equal and opposite force all forces whether static or dynamic applied to the torque frame, including reactive forces applied from said test load device regardless of the direction of the reactive forces and so that tractive effort measurements of a device to be tested may be made with the device to be tested both driving and being driven and the measurements summed to obtain total tractive effort without reading the effect of dynamometer frictions and other losses twice, whereby the torque frame assumes a unique balanced position for each condition of loading,
means directly calibratable in terms of tractive effort to indicate the position of the torque frame relative to the ground, and
adjustment means whereby under dynamic conditions of operation any selected position of the torque frame may be taken as a zero position from which measurements may be made.

3,289,472
SKI BINDING RELEASE CHECKING DEVICE
Gordon C. Lipe, West Lake Road, and Charles W. Hinds, 67 State St., both of Skaneateles, N.Y.
Filed Apr. 22, 1965, Ser. No. 452,448
6 Claims. (Cl. 73—133)

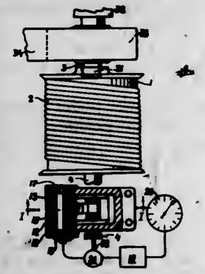
2. A device for checking the release point of a releasable ski binding mounted on a ski, said device comprising in combination a base portion over which a portion of the ski is adapted to be positioned; means on said base portion engageable with one edge of the ski to prevent lateral displacement thereof; support means on said base portion; an actuator member movable horizontally in said support means; a plunger slidably mounted in said actuator member; the outer end of said plunger being engageable with the sole of a ski boot mounted in the ski binding, said plunger-boot engagement being at a point on the opposite side of the ski from said base portion edge engaging means; a compression spring positioned in said actuator member, said spring being engaged at its opposite ends by an end of the actuator member and the inner end of said plunger; means to move said actuator member towards the ski boot, said actuator movement

causing said spring to compress when the outer end of said plunger is engaged with the boot, continued movement of the actuator member and compression of the spring causing the binding to ultimately release; and means on said plunger coactable with said actuator member to enable the point at which the binding releases to be determined, said last-named means including force indicating graduations inscribed on the plunger and a



resilient O-ring mounted on the plunger and normally located at the zero mark of the graduations, said O-ring being pushed along the plunger by the movement of said actuator member to the graduation that indicates the amount of force that was required to effect the release, said O-ring having a frictional engagement with said plunger whereby the ring remains at said graduation after the release has been effected.

3,289,473
TENSION MEASURING APPARATUS
Jan Loula, Pizen, Czechoslovakia, assignor to Zavody V.I. Lenina Plzen, narodni podnik, Plzen, Czechoslovakia
Filed July 14, 1964, Ser. No. 382,541
8 Claims. (Cl. 73—143)



1. An apparatus for measuring tension in a tension member comprising, in combination:
(a) drum means adapted to have a tension member wound thereon, said drum means having an axis and two axial end portions;
(b) drive means arranged for rotation about a fixed axis and pivotally engaging one of said end portions for rotating said drum means about the axis thereof;
(c) bearing means for supporting the other end portion of said drum means, said bearing means including
(1) a fixed support,
(2) a bearing member movable on said support in a direction transverse of the axis of said drum means, said other end portion rotatably engaging said bearing member, and
(3) yieldably resilient means urging said bearing member toward a predetermined position relative to said support; and
(d) measuring means for measuring the spacing of said bearing member from said predetermined position.

3,289,474
BOREHOLE POROSITY TESTING DEVICE
Orville R. Smith, Houston, Tex., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,848
8 Claims. (Cl. 73—155)

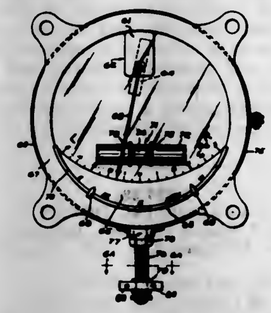


1. A device for investigating the character of an earth formation traversed by a borehole comprising: a support adapted to be located at desired depth within a borehole opposite a formation to be investigated; a chamber in said support containing a first fluid distinctive from fluids saturating the formation about the borehole; a first means mounted on said support for isolating a first borehole wall formation portion from borehole fluids and for establishing fluid communication with said formation portion when engaged therewith; a second means mounted on said support for isolating a second borehole wall formation portion from borehole fluids and for establishing fluid communication with said second formation portion when engaged therewith; motive means in said body for moving said first and second means into engagement with the wall of the borehole at locations spaced from one another; first and second fluid channels respectively communicating between said first means and said chamber and between said second means and said chamber; means in said support for inducing said first fluid to displace from said chamber via said first channel and first means into the formation at said first borehole wall formation portion, within said information between said spaced locations and back through said second means, said second fluid channel, and into said chamber; means in said support for measuring the quantity of said first fluid displaced from said chamber at any point of time; and means in said second channel for detecting the arrival time of said first fluid within said second channel, said quantity at said arrival time being a measure of the volume of formation fluids displaced by said first fluid and hence a measure of the permeability of the formation under investigation.

3,289,475
BLIND FLIGHT WITHOUT GYROS, METHODS AND INSTRUMENTS
Ralph W. Kenyon, 345 Linwood Ave., Newtonville, Mass.
Filed Aug. 14, 1963, Ser. No. 306,977
20 Claims. (Cl. 73—178)

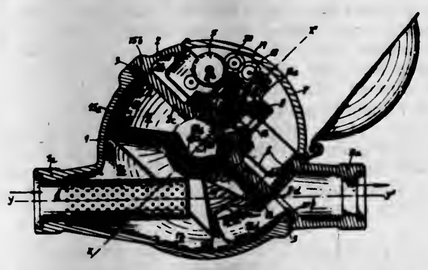
1. In an instrument for use in bank, turn, roll and heading control, first, second and third elements of which the first is to be fixed relative to the air or other craft

to be controlled, said second element including a pair of supports and a balanced magnet unit between said supports and pivotably connected thereto and free to move only at right angles to the pivot axis, said second element being connected to the first element with said unit free to move in a transverse plane with respect to the craft when the first element is so fixed; said third



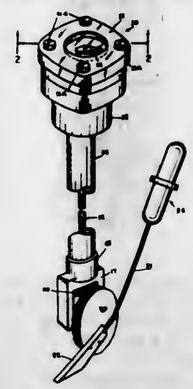
element being a level type indicator of the ball or bubble type and including an approximately straight transparent tube, said third element also being attached to the first element whereby movement of either the magnet unit or the ball or bubble from a predetermined relation to said first element indicates bank or turn correctable by re-establishing said predetermined relation.

3,289,476
OSCILLATING DISC LIQUID METER
Alfred Jacques Marius Brette, Montrouge, France, assignor to Compagnie des Compteurs, Paris, France, a company of France
Filed Mar. 18, 1964, Ser. No. 352,897
Claims priority, application France, Mar. 25, 1963, 929,006, Patent 1,360,250
10 Claims. (Cl. 73—258)



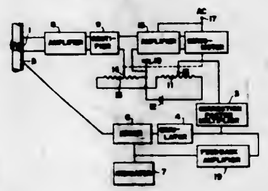
8. A meter for liquids comprising a pair of hemispherical shells connected together, one of said shells including a liquid inlet and the other a liquid outlet, means supported within the shells and defining a measuring chamber for the flow of liquid through the shells, said means including an outer casing and an inner bowl in said casing, said bowl and casing having complementary spherical walls in surface contact with one another, said bowl having an inlet opening and an outlet opening, said casing having an inlet opening in registry with the inlet opening of the bowl and in communication with the liquid inlet opening whereby liquid may enter the bowl, said casing having a cavity in the wall thereof in registry with the outlet opening in the bowl and in communication with the liquid outlet opening whereby liquid may be discharged from the bowl, disc means supported in said bowl for oscillating nutation movement under the action of the liquid flow, and totalizator means supported in the shells in operative association with the disc means for being driven thereby to provide a measurement of the quantity of liquid flowing through the shells.

3,289,477
FLOAT FOR LIQUID LEVEL GAUGE
Leta S. Taylor, Paul B. Johnson, and Eugene D. Huskey, all of Garland, Tex., assignors to J. Y. Taylor Company, a corporation of Texas
Filed Sept. 28, 1965, Ser. No. 490,907
4 Claims. (Cl. 73—322.5)



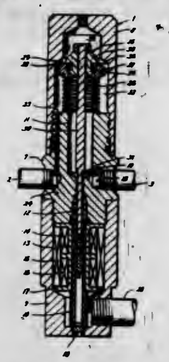
1. A float for a liquid level gauge, said float being made by forming two hollow float sections by molding chemically resistant plastic with each of said sections having an integral peripheral flange adjacent its open end, one of said flanges having a groove and the other of said sections having a tongue adapted to be positioned in said groove, said groove being wider than said tongue and said tongue being longer than the depth of said groove, uniting said sections by joining said flanges with said tongue in said groove to form an integral construction.

3,289,478
SUPERVISORY SYSTEM FOR TEMPERATURES OF ELECTRIC CABLES
Shinichi Tokunaga, Kawasaki-shi, and Toshio Kanahara, Kamakura-shi, Japan, assignors to Showa Denden Denran Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company of Japan
Filed Mar. 2, 1964, Ser. No. 348,652
6 Claims. (Cl. 73—339)



1. A supervisory system for the temperature of an electric power cable comprising in combination: first means to produce a signal representing the temperature difference between the conductor and the sheath of said cable, said first means including a detector for the current flowing through said conductor, a squaring circuit, a correction factor multiplying circuit, and a thermal delay simulating circuit; adding means to add said signal to a signal obtained from a sheath temperature detector; and means to represent the sum of said signals.

3,289,479
DIFFERENTIAL PRESSURE SENSING TRANSDUCER
Gilbert H. Tausch, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed Oct. 5, 1964, Ser. No. 401,303
9 Claims. (Cl. 73—407)



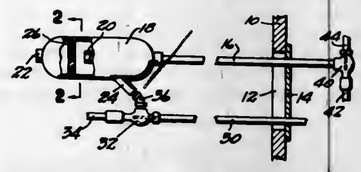
3. In a differential pressure transducer, a differential transformer having relatively movable coil means and armature means, a housing having fixed relation with one of said means and enclosing a pair of chambers for reception of pressure fluid, a movable partition separating said chambers and responsive to relative fluid pressures within the chambers, said partition including a flexible bellows secured at one end to the housing, a valve seating ring on the free end of the bellows and a valve member having motion transmitting connection with the other of said means and seating engagement with said ring for movement therewith throughout a given range of bellows flexure, said sealing ring being movable away from the valve member beyond one end of said given range and said valve member being movable away from the seating ring beyond the opposite end of said given range.

3,289,480
PRESSURE DETECTOR AND UNIT
Charles T. Sams, 1411 Parkview Drive, Poplar Bluff, Mo.
Filed May 11, 1964, Ser. No. 366,300
1 Claim. (Cl. 73—419)



In combination, a pressure detector for measuring the pressure in closed systems and areas including an elongated slender gauge component, and an elongated slender probe operatively connected to said gauge component as an extension thereof, said probe including apertured needle-like means for tapping and receiving a pressurized fluid from a system, said probe being readily and quickly removable from said gauge component permitting quick cleaning thereof, means for communicating said pressure fluid to said gauge component to measure the same, said pressure detector being of a size and shape in the order of a fountain pen facilitating handling and pocket carrying, said gauge component including an indicator stick marked for ready reference, said indicator stick being adapted to remain in the pressure indicating position to which moved until manually retracted, said probe including means for removably receiving a cover for protecting the tapping means, a cover removably disposed on said probe, and means for maintaining said detector in a pocket.

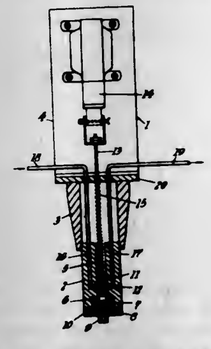
3,289,481
GAS SAMPLING DEVICE
Lyle K. Barnes, Michigan City, Ind., assignor to The Hays Corporation, Michigan City, Ind., a corporation of Indiana
Filed Dec. 24, 1964, Ser. No. 420,891
10 Claims. (Cl. 73—421.5)



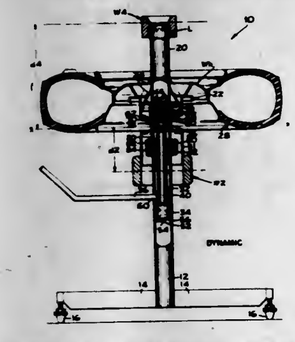
1. Apparatus for securing a sample of gas from an enclosure having a gaseous atmosphere containing suspended impurities, comprising a casing, gas inlet means communicating with said casing and with said enclosure, said casing having an impurity outlet spaced from said gas inlet means and a gas outlet means located between said gas inlet means and impurity outlet and positioned centrally in said casing and substantially parallel to said inlet means, means for aspirating gas and suspended impurities into said casing through said gas inlet means and through said casing past said gas outlet means to said impurity outlet, and means located in said casing between said gas inlet means and said gas outlet means for centrifugally separating impurities from gas and laterally deflecting said impurities in said casing in a path clear of said gas outlet means as gas and impurities are advanced in said casing toward said impurity outlet.

3,289,482
SAMPLING DEVICE
David W. Grant, Gomersal, near Leeds, England, assignor to The Coal Tar Research Association, Yorkshire, England
Filed Feb. 28, 1964, Ser. No. 348,131
4 Claims. (Cl. 73—422)

1. A device for taking a sample of gas and supplying the sample to a gas analyzer, comprising
means defining a bore;
means defining a sample withdrawal duct leading to one end of said bore from a sample source;
one-way valve means in said withdrawal duct;
piston means slidably mounted in said bore in sealing contact with the walls thereof;
means defining an inlet duct to said bore and an outlet duct from said bore for passing a gas flow of known composition transversely across said bore to the analyzer;
actuating means for retracting said piston in a direction away from said one end from a forward position at least partially forward of said inlet and outlet ducts to a rearward position at least partially rearward of said inlet and outlet ducts to provide a chamber in said bore for the sample between the inlet and outlet ducts and to withdraw said sample through said one-way valve into said chamber;
said piston means in a forward position permitting said gas flow across said bore and sealing said gas flow from said withdrawal duct.

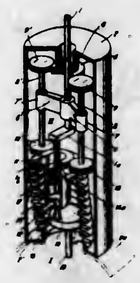


3,289,483
BALANCER
Arthur J. Siemmons, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 17, 1964, Ser. No. 352,587
21 Claims. (Cl. 73—459)



4. A dynamic wheel balancer comprising pedestal means, wheel mounting means above said pedestal means, a self aligning bearing supporting said wheel mounting means on said pedestal means, an annular weight having a low polar moment of inertia mounted on said wheel mounting means a substantial distance from said bearing, said distance being sufficient to cause the diametral moment of inertia of the assembly of said weight, balancer and wheel to approach the value of the polar moment of inertia of the assembly; a universal spirit level on the upper end of said wheel mounting means having a transparent upper wall and a lower wall, a spirit with an occluded bubble between said walls, said level including an indicia surface on the top of the lower wall that is visible through said bubble and has a plurality of sectors of different colors for indicating the location of unbalance, and concentric rings of indicia on said indicia surface for indicating the amount of unbalance, said bubble being flattened sufficiently for providing a window through which one of said indicia is readable.

3,289,484
DEVICE FOR THE LEAK-TIGHT TRANSMISSION OF MOVEMENT THROUGH A WALL
Jacques Archer, L'Hay-les-Roses, and Pierre G. Boiron, Fresnes, France, assignors to Groupement Atomique, Alsacienne Atlantique, Le Plessis-Robinson (Seine), France
Filed Nov. 12, 1963, Ser. No. 322,744
Claims priority, application France, Nov. 13, 1962, 915,284, Patent 1,347,160
7 Claims. (Cl. 74—18.1)

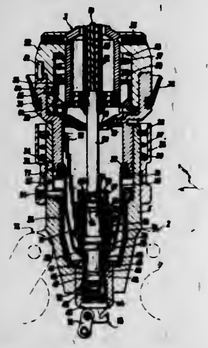


1. A device for the leak-tight transmission of movement through a wall, said device comprising a driving shaft, a stationary pinion, said driving shaft rotating about the same axis as said stationary pinion, at least one crank arm attached to said driving shaft for rotation therewith, an intermediate shaft supported by said crank arm, at least one intermediate pinion carried by the intermediate shaft and operably geared to said stationary pinion, a pinion of fixed directional orientation having its axis off-set with respect to the axis of said driving shaft, said last-mentioned pinion meshing with at least another intermediate pinion carried by said intermediate shaft, whereby the rotation of the driving shaft is transmitted as a circular translational movement of the pinion of fixed directional orientation, a deformable membrane having one end thereof fixedly secured to said pinion of fixed directional orientation and the other end secured to said wall, a hole in said wall opening into a space within said membrane, and a driven shaft passing through said hole into said space, said driven shaft being operably connected at its inner end with said pinion of fixed directional orientation, whereby the circular translational movement of said pinion of fixed directional orientation produces a rotational movement of the driven shaft corresponding to that of said driving shaft.

3,289,485
LEAK-TIGHT COUPLING DEVICE FOR MASTER-SLAVE MANIPULATOR
Jean-Pierre Canalis, Bezons, Guy Lefort, Paris, and Joseph Rouillard, Nantes, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed July 8, 1965, Ser. No. 470,479
Claims priority, application France, July 24, 1964, 983,001
6 Claims. (Cl. 74—18.2)

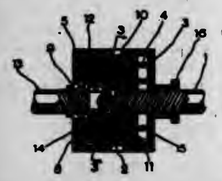
1. Device for providing a leak-tight coupling between the handling grab of a master-slave manipulator and a control arm, the movements of the grab jaws being carried out by means of a traction cable which passes axially through said arm, characterized in that said device comprises in combination an intermediate bushing on which is fixed externally a flexible protection hose surrounding said arm, said being made fast at the lower end thereof with a deformable diaphragm designed to support axially of said arm a coupling member provided with two cylindrical extensions on each side of said diaphragm, said bushing being partly engaged within a casing constituting

the grab body and locked in said casing by means of a first set of balls which are adapted to cooperate with an annular sleeve which surrounds said casing externally thereof, a transmission member which is secured to said annular sleeve by means which traverse said casing through lateral slots, a bottom locking-unit body which rests on a shoulder provided at the extremity of said transmission member and which secures said transmission



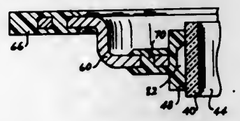
member to the lower extension of said coupling member by means of a socket and a second set of balls, a top locking-unit body engaged within the extremity of the bushing and securing said bushing to the extremity of said arm by means of a third set of balls and an internal ring, said control cable having an extension in the form of a rigid rod which is coupled by means of a fourth set of balls and an annular retaining flange to the upper extension of said coupling member.

3,289,486
CLUTCH TRANSMISSION
Tibor Horvath, 944 Avenue R, Brooklyn, N.Y.
Filed Nov. 18, 1963, Ser. No. 324,580
8 Claims. (Cl. 74—64)



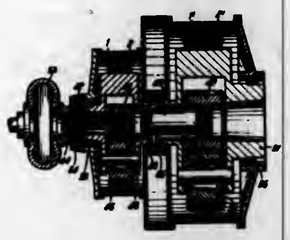
1. A transmission for shaft speed regulation comprising a drive shaft, a driven shaft, and a cylinder assembly operatively connecting said drive and driven shafts, said cylinder assembly comprising a disc, and two hollow cylinders, and two solid cylinders, and a bearing operatively connecting one of said solid cylinders to said driven shaft, other said solid cylinder being mounted on said drive shaft, said solid cylinders having angularly cut surfaces, each said solid cylinder being situated inside one of said hollow cylinders, said hollow cylinders being connected to each other by angularly cut teeth, one said hollow cylinder being mounted on its corresponding solid cylinder, the other said hollow cylinder being connected on its corresponding solid cylinder in such a way as to enable said hollow cylinder to slide axially on said corresponding solid cylinder, said sliding axial movement causing said solid cylinders to grip said disc which is held by said driven shaft through a universal joint, said disc transferring power to said driven shaft.

3,289,487
POWER DRIVE PULLEY
Clarence W. Woodfall, 2520 Willa Drive, St. Joseph, Mich.
Filed July 15, 1964, Ser. No. 382,813
9 Claims. (Cl. 74—214)



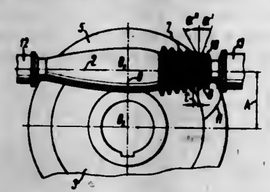
1. An idler wheel for phonograph turntables, comprising a cylindrical hub having a bore therethrough, an inner annular member of neoprene of a durometer between 20 and 25 mounted on and extending radially from said hub, said member having a cylindrical portion with an annular groove on the inner side adjacent said hub, a rigid annular member having inner and outer radial flanges in off-set relation, each flange having a plurality of holes, and an outer annular member secured to the outer flange of said rigid member and being constructed of relatively firm and wear resistant neoprene material of a durometer between 60 and 65, said inner and outer resilient annular members overlapping the respective edges of said rigid member and embracing said holes.

3,289,488
PLANETARY GEAR CONSTRUCTION
Karl Breuer, Duisburg, Germany, assignor to Demag Aktiengesellschaft, Duisburg, Germany
Original application Apr. 11, 1962, Ser. No. 186,697, now Patent No. 3,244,020, dated Apr. 5, 1966. Divided and this application May 21, 1965, Ser. No. 457,644
Claims priority, application Germany, Apr. 11, 1961, D 35,826
19 Claims. (Cl. 74—410)



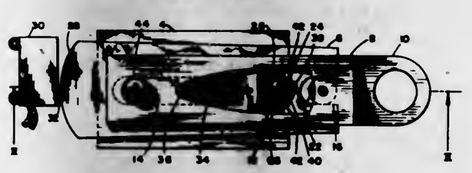
1. In a planetary gearing including a sun gear, a casing, a rotatable carrier, an internal ring gear within the casing and constituting the outer member of the gearing, and planet pinions rotatable on the carrier and meshing with the sun gear and the ring gear: a supporting arrangement for said ring gear on said casing, normally restraining said ring gear against rotation relative to said casing while providing for relatively slight compensatory movements of said ring gear; said casing having a relatively thin cylindrical wall embracing said ring gear and having an axial extent very substantially greater than that of the teeth of said ring gear; the external periphery of said ring gear having bearing engagement with the inner surface of said casing cylindrical wall over a narrow annular cylindrical contact area constituted by circumferentially continuous, smooth and uninterrupted cylindrical surfaces of said ring gear and said casing cylindrical wall, and which is axially substantially centrally of said ring gear and has an axial extent substantially less than that of the teeth of said ring gear.

3,289,489
ORTHOGONAL WORM-BEVEL GEARING
Anatoly Konstantinovich Georgiev, Izhevsk, U.S.S.R., assignor to Izhevsky Mekhanicheskiy Institute, Izhevsk, U.S.S.R.
Filed June 1, 1964, Ser. No. 371,590
6 Claims. (Cl. 74—427)



1. A right angle skew axis gearing comprising a conically tapered worm having a thread of constant axial lead, and a face-type worm gear having an axis, said gear including teeth meshing with the thread of said worm, the meshing portions of said worm and gear being positioned between the apex of the conical surface of said worm and a plane which is coincident with the axis of said gear and extends normal to the axis of said worm.

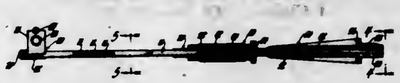
3,289,490
OVERRIDE MECHANISM
William G. Redmond, Jr., Arlington, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,780
3 Claims. (Cl. 74—469)



1. Override mechanism comprising:
a shaft rotatable to control desired means,
a crank member connected to rotate with said shaft,
mechanically operable switch means for controlling a desired electrical means,
switch actuator means carried by said shaft and slidable axially with respect to said crank member between a switch opening position and a switch closing position,
resilient means urging said switch actuator means to said switch closing position,
link means mounted on said shaft and adapted to be coupled to said desired means for delivering to said desired means torque received through said switch actuator means from said crank member, and
camming means coupling said switch actuator means with said crank member and serving to force said switch actuator means to said switch opening position in response to torque applied between said link means and said shaft exceeding a predetermined value.

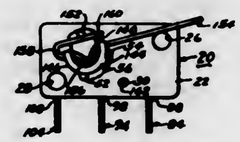
3,289,491
CONTROL ASSEMBLY
Winthrop B. Conrad, Franklin, Mich., assignor to Teleflex, Inc., North Wales, Pa., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,333
6 Claims. (Cl. 74—501)

1. A motion transmitting remote control assembly of the type comprising a flexible conduit, a core element movably supported within said conduit, and means for adjusting the length of said assembly in which said means includes; a threaded member formed on one end of the conduit, an end fitting adapted to support one end of said conduit and terminating in a threaded portion,



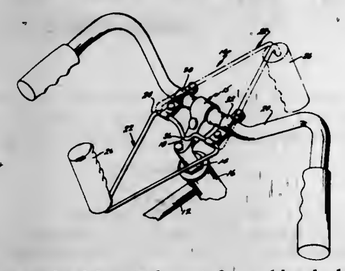
and a connector nut coacting with said threaded member and said threaded end fitting portion to vary the distance between said conduit and said end fitting.

3,289,492
SWITCH ACTUATORS
Gustav F. Erickson, Kirkwood, Mo., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Original application Apr. 24, 1959, Ser. No. 808,669, now Patent No. 3,123,688, dated Mar. 3, 1964. Divided and this application Nov. 19, 1962, Ser. No. 238,652
4 Claims. (Cl. 74—526)



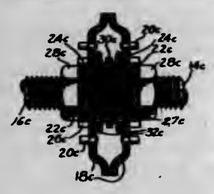
1. The combination of:
(a) an actuator,
(b) an actuator arm,
(c) a connector that intereconnects said actuator and said actuator arm to enable said actuator arm to move said actuator, and
(d) a plurality of abutments on said connector,
(e) said abutments being spaced apart to define a triangle,
(f) one of said abutments coacting with an adjacent portion of said connector to define a recess,
(g) a second of said abutments coacting with an adjacent portion of said connector to define a second recess,
(h) a third of said abutments coacting with an adjacent portion of said connector to define a third recess,
(i) said actuator arm having a bent end thereon which is generally U-shaped in configuration,
(j) one of the sides of said bent end of said actuator arm having a generally V-shaped bend therein,
(k) said one side of said bent end of said actuator arm normally being lodged within the first said and said second recesses defined by the first said and said second abutments and the said adjacent portions of said connector,
(l) the other side of said bent end of said actuator arm normally being lodged within said third recess defined by said third abutment and the said adjacent portion of said connector,
(m) said generally V-shaped bend in said one side of said bent end of said actuator arm normally being disposed between the first said and said second abutments on said connector,
(n) said bent end of said actuator arm having an unstressed size greater than the size it has when the said sides thereof are lodged within said recesses, whereby said bent end must be stressed to dispose the said sides thereof within said recesses, and whereby the resulting restorative forces in said bent end effectively hold the said sides of said bent end within said recesses and thus in assembled relation with said connector.

3,289,493
BICYCLE HANDLEBAR ATTACHMENT
James Church, 1656 5th St., Muskegon, Mich.
Filed Jan. 28, 1965, Ser. No. 428,681
4 Claims. (Cl. 74—551.8)



1. A control stick attachment for a bicycle having a gooseneck with an upwardly projecting base and an upwardly and forwardly projecting upper end secured to handlebars, comprising: a rod formed into a triangular shaped rigid body; a control stick grip extending upwardly generally normal to said body at the apex of said triangle for gripping; a pair of spaced clamps on the base of said triangle opposite said apex for attachment to the bicycle handlebars on opposite sides of the gooseneck; said base including a bight depending from said body between said clamps, to extend down and abut the gooseneck, whereby said clamps and bight provide three point bearing while allowing control of the bicycle with said stick.

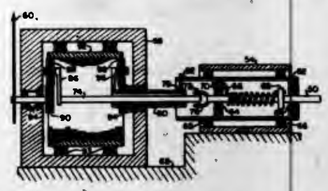
3,289,494
ADJUSTING MEANS FOR CAMS AND THE LIKE
Donald J. Gaffney, Marshalltown, Iowa, assignor to Fisher Governor Company, Marshalltown, Iowa, a corporation of Iowa
Filed July 10, 1964, Ser. No. 381,688
9 Claims. (Cl. 74—568)



1. In adjusting means of the character disclosed, a rotatable shaft, an element carried thereby for rotation therewith and rotatably adjustable thereon, friction means interposed between said shaft and said element to permit such adjustment and to thereafter retain the same, means to effect such adjustment comprising a disc fixed relative to said shaft and having a toothed periphery adapted for the end of an adjusting lever to selectively coact with the teeth thereof, and a projection on said element spaced beyond the periphery of said disc and adapted for the side of such adjusting lever intermediate the ends thereof to engage whereby said projection may be moved circumferentially relative to said shaft and disc by the application of pressure to the outer end of said lever.

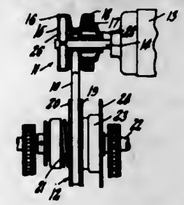
3,289,495
DYNAMIC TORQUE RESPONSE DEVICE
Salvatore F. Leto, 75 College Ave., Arlington, Mass., and Joseph Leto, 175 Sherburne Road, Lexington, Mass.
Filed Apr. 1, 1964, Ser. No. 356,509
5 Claims. (Cl. 74—674)

1. A torque-responsive device comprising, in combination:
an input shaft and an output shaft resiliently coupled to said input shaft whereby said shafts may be angularly displaced relatively to each other proportional to the torque between them;
a planetary gear set including a freely rotatable sun gear rotatably mounted on a major axis of the set, a coaxial internal gear, and a planet gear engaged with said sun gear and with said internal gear, together with a spider rotatably supported on the axis of said planetary set and supporting said planet gear



for rotation about its own axis at an effective radius from said major axis,
and drive means drivingly connecting said shafts each with one of said spider and said internal gear to drive said spider and said internal gear in the same angular direction, said drive means establishing a linear velocity ratio of said spider with respect to said internal gear of one-half, whereby said sun gear is caused to be angularly displaced only in proportion to the relative displacement of said shafts.

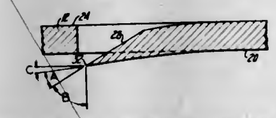
3,289,496
VARIABLE SPEED TRANSMISSION
Walter S. Hoover, Green River Road, Williamstown, Mass.
Filed June 11, 1964, Ser. No. 374,352
4 Claims. (Cl. 74—689)



1. In a variable speed reversible automotive transmission for a throttle controlled motor driven vehicle, the combination with a drive shaft and a driven shaft of a torque converter comprising a V-belt, a variable pitch driving sheave comprising an axially fixed and an axially adjustable driving sheave element rotatably mounted on said drive shaft, and an axially fixed and an axially adjustable driven sheave element rotatably mounted on said driven shaft, a centrifugally controlled driving clutch connected between the drive shaft and said axially fixed driving sheave element, ball fluid biasing means comprising ball fluid, and a housing directing said ball fluid against an axially disposed biasing surface area of said movable driving sheave element, said biasing area diminishing with movement of said movable sheave element from low pitch to high pitch position, means biasing said driven movable sheave element to the low pitch position, braking and reversing means connected between said axially fixed driven sheave element and said driven shaft comprising an internal driving gear connected to turn with said axially fixed driven sheave element, a driven gear connected to turn with said driven shaft, a planet gear cage, planetary gears carried by said cage engaging said driving and driven gears respectively, a friction clutch element on said gear cage for

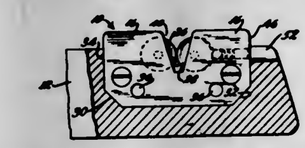
engagement with said driven sheave element, a brake member supported coaxially with and for a limited rotational movement relative to said gear cage, means normally engaging said friction clutch, and means actuated by a relative movement of said brake member and gear cage upon application of said brake to release said clutch.

3,289,497
CUTTING AND ABRADING TOOLS, AND METHOD OF FORMING SAME
Robert F. West, Simsbury, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Aug. 14, 1964, Ser. No. 389,712
8 Claims. (Cl. 76—24)



1. A method of producing a cutting and abrading tool in which each cutting tooth is integral with the blade body of the tool and extends below the riding surface thereof comprising the steps of forming upwardly for each cutting tooth a portion of a metal sheet thereby providing a free tab having at least a portion of a leading face disposed above the top surface of the sheet; grinding the protruding portion of each tab thereby removing at least a portion thereof and providing a smooth ground surface on said tab as well as a leading top edge; and reversely forming the ground tab downwardly through the plane of the metal sheet to the extent that said leading top edge falls below the bottom riding surface of the sheet, whereby said ground surface forms a rake face for each cutting tooth.

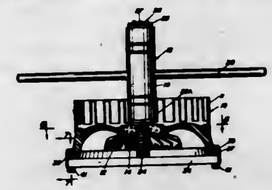
3,289,498
KNIFE SHARPENER
Jack Pleasants, Somerville, N.J., assignor to Nova Products, Inc., Union, N.J., a corporation of New Jersey
Filed Apr. 15, 1965, Ser. No. 448,385
3 Claims. (Cl. 76—87)



1. A knife sharpener comprising, in combination, a housing formed with an internal recess and a cutout communicating with said recess, a pair of metal-cutting discs freely disposed in said recess in co-planar tangential relationship in said housing, but movable in their common plane out of tangential contact, and spring means acting upon one of the discs to urge it into tangential contact with the other disc.

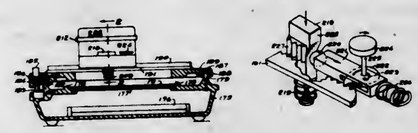
3,289,499
APPARATUS FOR RECONDITIONING BUSHING STRUCTURES
John H. Metternheimer, Jr., and Cresswell E. Stedman, Jr., both of Miami, Fla., assignors to M & S Tool Co., Inc., Miami, Fla., a corporation of Florida
Filed June 30, 1965, Ser. No. 468,232
10 Claims. (Cl. 77—2)

1. A driving torus bushing reboring apparatus for reboring a bearing or bushing opening in the body of the driving torus member of an automotive vehicle transmission unit, comprising an elongated substantially cylindrical cutter-bearing head including an end portion having a cutter member attached thereto, said cutter member being provided with a centrally arranged opening, handle means carried by the said cutter-bearing head for rotating the latter, the said cutter-bearing head having a centrally arranged and axially extending internally threaded bore therein in alignment with said opening in said cutter member, a screw-threaded member adjustably mounted in the said axially extending internally threaded bore in the said cutter-bearing head and having a reduced



externally threaded end portion, a locating plate member having a centrally arranged threaded opening therein for the reception of the said reduced externally threaded end portion of the said screw-threaded member, locating means cooperating with the said locating plate member and with the body of the driving torus member for locating the said cutter-bearing head and the said cutter member carried thereby in position to enable the said cutter member to only cylindrically rebore the bearing or bushing opening in the body of the said driving torus member.

3,289,500
DRILLING MACHINE WITH AN INDEXABLE DRILL HEAD
William Robert Tarello, Rockville, Md., assignor to Jonker Business Machines, Inc., a corporation of Delaware
Filed May 28, 1963, Ser. No. 283,933
2 Claims. (Cl. 77—5)

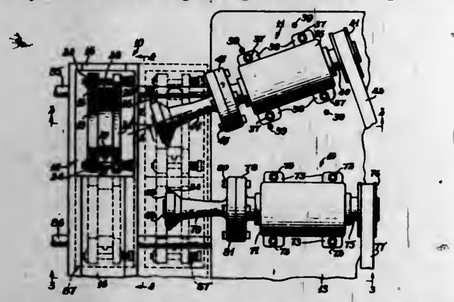


1. In card drilling apparatus of the type comprising a frame including a flat card-supporting area, a cross carriage movably supported on said frame for slidable movement parallel to one major dimension of cards disposed thereon, a drill carriage mounted on said cross carriage for sliding movement parallel to the other major dimension of said cards, and a toothed rack bar carried by said frame for establishing equally-spaced positions of one of said carriages, the improvement comprising a spring-pressed toothed detent member reciprocably mounted on to the last-named carriage for movement through a distance equivalent to one tooth spacing of the rack bar for advancing said carriage stepwise relative to said rack bar, and a spring-pressed detent actuator engaging the teeth of said rack bar.

3,289,501
METHOD OF MACHINING A PUMP STATOR
John Dubrovin, Lincolnwood, Ill., assignor to The Welch Scientific Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1964, Ser. No. 403,991
2 Claims. (Cl. 77—61)

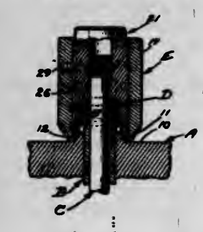
1. The method of final shaping of the cavity of a high vacuum pump stator, which stator is initially formed with a cylindrical bore which in turn is to be enlarged to define an elliptical cavity and thereafter provided with an arcu-

ate seat interrupting but closely merging with the surface of the elliptical cavity and having a single radius with its center coinciding with the center of rotation of a vane-carrying pump rotor to be received in said cavity upon subsequent assembly of said pump, said method comprising introducing a first boring means into said cylindrical bore of said stator along a first axis coinciding with the geometric center of said cylindrical bore, rotating said first boring means during said introduction about a second axis which is in acute angular relation to said first axis and reshaping said cylindrical bore into an ellipse having a geometric center which is common with that of said cylindrical bore, separating said first boring means



and said stator along said first axis, introducing a second boring means into said elliptical bore of said stator along a third axis which is perpendicular to the plane defined by the major and minor axes of said elliptical bore and which intersects said minor axis in radially offset relation to the intersection of said major and minor axes and which further coincides with the center of rotation of a rotor to be received in said cavity, rotating said second boring means during said introduction about said third axis and forming an arcuate seat in the surface of said elliptical bore, which arcuate seat closely merges with the adjacent elliptical surface portions of said bore, and thereafter separating said second boring means and said stator along said third axis.

3,289,502
SEAL PLACEMENT TOOL
Paul J. Jensen, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Jan. 5, 1965, Ser. No. 423,555
5 Claims. (Cl. 81—8.1)



1. For use in placing an elastic annular seal having axially spaced concentric sealing surfaces in situs on a valve stem and on a hollow valve stem guide, wherein the valve stem is reciprocable in the guide and projects beyond the end of the guide and wherein the guide is mounted in a cylinder head having a locating shoulder encircling the guide, a seal placement tool comprising:

(a) a sleeve having an end wall with a bore therethrough having an inside diameter slightly larger than the outside diameter of the locating shoulder whereby the end wall encircles the shoulder;

(b) said sleeve having an internal bore concentric with the end wall bore;

(c) said end wall having an end face lying in a plane at right angles to the axis of the sleeve end wall bore and sleeve internal bore;

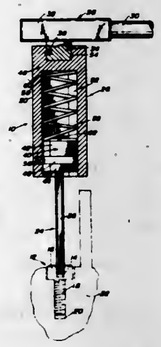
(d) a plunger reciprocably mounted in the sleeve internal bore;

(e) said plunger having a bore with an inside diameter slightly greater than the outside diameter of the valve stem;

(f) said plunger having a first counterbore communicating with the plunger bore and a second counterbore communicating with the first counterbore;

(g) an annular shoulder formed at the junction of plunger bore and first counterbore for engaging the end of the seal.

3,289,503
ALLEN WRENCH DEVICE
Henry G. Klatt, Jr., 5722 S. Elizabeth, Chicago, Ill.
Filed Nov. 18, 1965, Ser. No. 516,193
2 Claims. (Cl. 81—71)



1. An Allen wrench apparatus of the character described, comprising, in combination,

(a) a socket wrench body including

(1) a socket portion entering the upper end of said body, said socket portion being removably attachable to the drive means of a standard socket wrench,

(2) a longitudinally disposed central cavity entering said body from the bottom thereof and having a polygonal cross section, said central cavity being of uniform size throughout its entire extent,

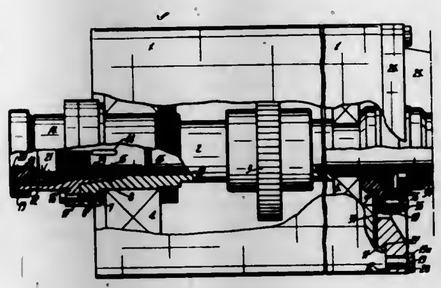
(b) spring means disposed in said central cavity, and

(c) a solid, one piece Allen wrench bit slidably mounted centrally in said cavity, said Allen wrench bit comprising

(1) a solid, lower, screw-engaging portion which is narrower than said central cavity, and

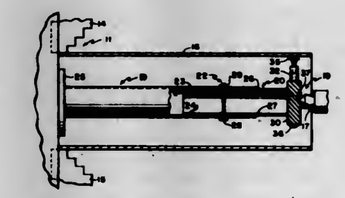
(2) a solid, upper head portion, said head portion being larger than said screw engaging portion, of the same cross sectional configuration as said central cavity, and sized for snug engagement therein, said head portion being adapted to engage one end of said spring means, said head portion further including a cut out portion therein, and means contained in the lower end portion of said central cavity for engaging said cut out portion to prevent said bit from falling freely from said cavity, but for allowing said bit to be removed therefrom.

3,289,504
AUTOMATIC LATHE
Pierre Bergonzo, 117 Route de la Capite, Cologny, Geneva, Switzerland
Filed Mar. 12, 1964, Ser. No. 351,333
Claims priority, application Switzerland, Mar. 15, 1963, 3,348/63
3 Claims. (Cl. 82—28)



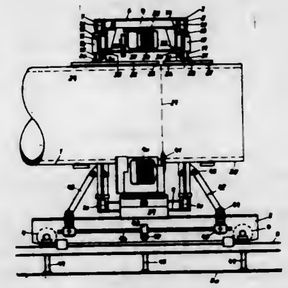
1. An automatic lathe which comprises a rotary spindle passing through a headstock from one end to the other, this spindle comprising at its front end attachment means for a removable clamping device for clamping a workpiece to be machined and at its rear end a coupling member constituted by a disc rigidly fixed at the end of said spindle and having a plurality of studs extending parallel to said spindle and outwardly relatively to said headstock removably to secure a control device to said spindle, said headstock comprising on its rear face an attachment device and in which further the coupling member and the attachment device mechanically connect the spindle and the headstock respectively to said control device controlling in particular the said clamping device.

3,289,505
ADJUSTABLE CENTERING FIXTURE FOR USE IN MACHINING LONG TUBULAR WORK PIECES
John W. Pyke, 898 Montrose Ave., Bexley, Ohio
Filed June 9, 1965, Ser. No. 462,601
4 Claims. (Cl. 82—45)



1. A centering fixture for positioning a tubular work piece in a lathe comprising the combination of a pair of telescoping members, one adapted to bear against a chuck and the other adapted to extend toward a live center, means for adjustably but fixedly determining the extent of the telescoping of the two members and their net over-all length, the two members being adapted to be positioned within and in concentric relation to said work piece, and a spider member secured to said other telescoping member and formed to be aligned with the live center and to maintain the outer end of said work piece in concentric relation to said live center.

3,289,506
CUTTING-OFF MACHINE FOR TRANSVERSE CUTTING OF TUBES
Paul Morsbach, Bahnhofstr. 3, Angermund, Germany, and Klaus Leben, Hirschstr. 19, Oberhausen-Sterkrade, Germany
Filed May 18, 1964, Ser. No. 368,251
Claims priority, application Germany, May 18, 1963, J 23,735
3 Claims. (Cl. 82—53.1)



1. Apparatus for transverse cutting off of a longitudinally advancing tube comprising:

(A) a frame encircling the path of such tube and being axially advanceable therewith;

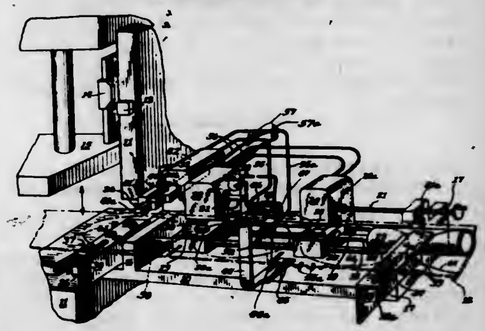
(B) a plurality of tube engaging claws encircling the path of such tube, pairs of said claws rigidly connected to each other so as ato cradle a longitudinal portion of such tube;

(C) a pair of motor driven circular plates supported in roller bearings rotatably supported in said frame, together with hydraulic means interposed between said circular plates and said tube engaging claws;

(D) a cutting device with cutting member supported in said frame so that its cutting member engages such tube between said pairs of tube engaging claws;

(E) articulated knees vertically adjusting said frame with respect to a base upon which it is supported, so as to maintain leveling of said frame and such tube, while adjusting the height of said cutting device.

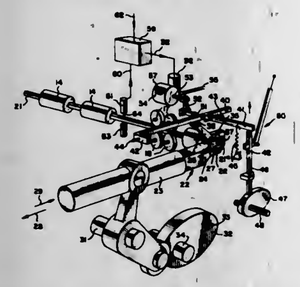
3,289,507
SELF-CORRECTING FEED DEVICE FOR PRE-PRINTED SHEET STOCK
Eugene F. Grewe, Mount Prospect, Ill., assignor to Ekco Containers, Inc., a corporation of Illinois
Filed Nov. 20, 1964, Ser. No. 412,751
6 Claims. (Cl. 83—74)



1. In combination, a punch press or the like having a die adapted to form a work piece from a ribbon of sheet

stock, said sheet stock being pre-printed with a repetitive design, a reciprocating feed device adapted to move said ribbon of sheet stock into said punch press so that a pre-printed design is in register with said die to permit the forming of said work piece therefrom, said feeder device having a reciprocating gripper device, movable between forward and rear stops, said gripper device adapted to engage said ribbon of sheet stock and move the same an amount equal to the distance between successive designs thereon, one of said stops being automatically adjustable for adjusting the length of the stroke of said gripper, and sensor means connected with said adjustable stop and adapted to detect error in the length of the stroke of said gripper, and automatically adjust said adjustable stop to correct said error.

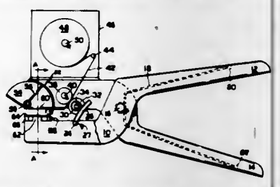
3,289,508
DEVICE FOR THE CONTROL OF A MACHINE TOOL
Rudolf Sollanek, Hamburg, Germany, assignor to F. B. Hatebur, Basel, Switzerland
Filed Dec. 7, 1964, Ser. No. 416,238
Claims priority, application Germany, Dec. 7, 1963, H 51,078
15 Claims. (Cl. 83—80)



1. A device for controlling a machine in which an operation is performed on material supplied to the machine which has a drive shaft, means for feeding the material, a cutting device for cutting the material, and clamping means for holding the cut-off material, which device includes a control-point in the path of the material, a sensing device associated with the control-point, counter means connected to an output from the sensing device and arranged to be brought into a state of readiness by a signal from the sensing device, means to connect a signal from the cutting device to the counting means to record the number of cutting operations performed, means associated with the counter to modify the operation of the clamping means when a first given number of cutting operations has been performed and to cause the counting means to count a second given number of cutting operations, and means to restore the operation of the clamping means when the second given number of operations has been counted.

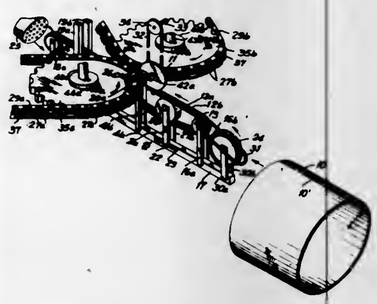
3,289,509
REINFORCEMENT APPLICATOR
John J. Cahill, Rostke Road, R.D. 1, Shongum Lake, Dover, N.J.
Filed Jan. 13, 1965, Ser. No. 425,327
4 Claims. (Cl. 83—140)

1. A pressure-sensitive tape applicator and hole punch which comprises a hollow body forward lower handle portion, a hollow body forward upper handle portion, said upper and lower handle portions pivotally mounted and extending rearwardly therefrom and forming a pair of hand grips, spring means within said hand grips, pressure-sensitive tape supply means removably secured to said forward upper handle portion, tape advancing means within said forward upper handle portion and mechanically operated by gear means secured to said lower handle portion, an anvil plate enclosing a plunger slidable through said anvil plate and forming lower hole punch means on said lower handle portion, a plunger receiving hole mounted on said upper handle portion, tape guide means



mounted between said receiving hole and said plunger, a tape cutting blade mounted rearwardly of said anvil plate, spring means urging said anvil plate to a normal horizontal level above said tape cutting blade and said plunger, and sheet stop means disposed adjacent to said tape cutting blade whereby the tape is cut along the edge of a sheet received within the applicator.

3,289,510
SPLITTING MACHINE
Sidney L. Carter and Alan Gutschmit, both of Lumberton, N.C., assignors to Alamac Knitting Mills, Inc., New York, N.Y.
Filed Oct. 12, 1965, Ser. No. 495,107
7 Claims. (Cl. 83—151)

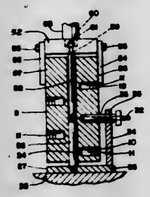


1. Apparatus for splitting tubular knit cloth comprising:
a cutting tool for splitting a tubular knit cloth;
conveying means for feeding a single thickness of said tubular knit cloth to said cutting tool, said conveying means so disposed as to lie within said tubular knit cloth as said tubular knit cloth is fed to said cutting tool;
means disposed behind the back edge of said cutting tool for supporting said conveying means;
and means adjacent both sides of said cutting tool for grasping the split edges of said cloth after it has been split by said cutting tool and for drawing said cloth past said cutting tool.

3,289,511
APPARATUS FOR PUNCHING A HOLE BY A TOOL INSIDE A HOLLOW WORKPIECE
Zdenek J. Lansky, Winnetka, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio
Filed May 6, 1963, Ser. No. 277,999
3 Claims. (Cl. 83—191)

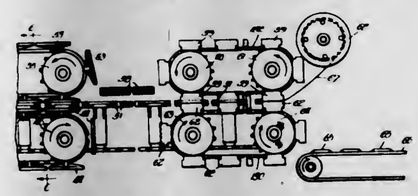
1. In apparatus for forming an inner portion of a flow port in a valve body by punching a hole through a web separating an outer portion of the flow port from a valve bore in the body, first and second mandrels insertible

in said bore, a punch insertible in said bore between the mandrels, a stop surface on the first mandrel engageable by the punch for locating the axial position of the punch within the bore, a member supporting the first mandrel, a locating pin carried by said member, said pin being insertible within said outer portion whereby said



pin and member locate the axial position of said first mandrel within said bore, said second mandrel being engageable with said punch for moving the same laterally of the bore, and a pin projecting from the punch for punching a hole through the web when the punch is moved laterally by the second mandrel.

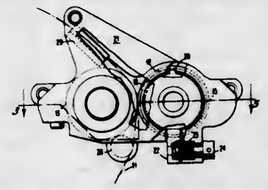
3,289,512
APPARATUS FOR SEPARATING SPACED PACKAGES FROM A CONTINUOUS MOVING FILM OF PACKAGING MATERIAL
Edward C. Sloan, Augustus H. Eberman, and Hans A. Jensen, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Original application May 29, 1962, Ser. No. 205,818, now Patent No. 3,195,288, dated July 20, 1965. Divided and this application Sept. 28, 1964, Ser. No. 399,582
2 Claims. (Cl. 83—326)



1. Package holding and removal apparatus for use in separating a plurality of spaced packages from a continuous film of packaging material such as polyvinylidene chloride, said apparatus including oppositely positioned upper and lower package clamping members of frame-like shape connected to means for at least vertically moving said members into and out of successive package surrounding and film clamping position, the lower of said clamping members having means receiving and engaging a package in unattached vertical support thereof, one of said members carrying reciprocal knife means, the opposite opposed faces of peripheral portions of said members being aligned for film clamping in package surrounding relation upon receipt of a package on said support means, and actuation means forming a part of said members in operative association with said knife means.

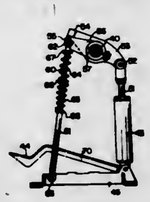
3,289,513
ROTARY CUTTING APPARATUS
Oliver D. Johnson, Vestal, and David W. Leach, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 1, 1964, Ser. No. 393,518
7 Claims. (Cl. 83—344)

1. A rotary cutting apparatus of the class described comprising:
a rigidly supported rotatable back-up roll;
a pivotally supported rotatable toolholder roll;
a cutting tool fastened on the periphery of said toolholder roll;
a pair of bearer members on said toolholder roll for coaction against the periphery of said back-up roll;
a pair of gang spring assemblies associated with said



toolholder roll for biasing said bearers against said back-up roll; and
means for adjusting said spring assemblies, said spring assemblies and bearers constituting a differential spring for locating the cutting edge of said tool with respect to said back-up roll.

3,289,514
CLAMP OPERATING MECHANISM FOR PAPER CUTTING MACHINES AND THE LIKE
William C. Rupp, Parma, Ohio, assignor to The Chandler & Price Company, Cleveland, Ohio, a corporation of Ohio
Original application Apr. 6, 1962, Ser. No. 185,567, now Patent No. 3,233,492. Divided and this application May 26, 1965, Ser. No. 458,952
5 Claims. (Cl. 83—459)

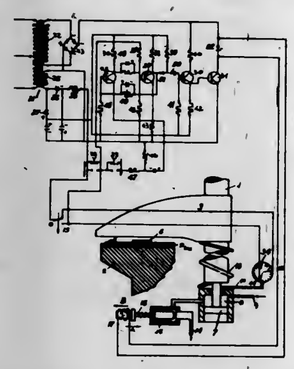


1. A paper cutting machine comprising a hydraulically operated binder clamp operative to clamp a stack of papers or the like in position to be severed, a hydraulically operated knife adapted to sever the thus clamped stack of papers, link means operatively connecting said binder clamp with a hydraulic motor, means operative manually to operate said binder clamp without disturbing said hydraulic motor and spring pressure means operative uniformly to resist actuation of said clamp when thus operated manually.

3,289,515
MACHINE FOR SHEARING OR PUNCHING OF SHEER MATERIALS
Artorige Chiesa, Via F. 111 Cagnoni 19, Vigevano, Italy
Filed July 15, 1964, Ser. No. 382,815
Claims priority, application Italy, Oct. 12, 1963, A/39,945; Dec. 6, 1963, A/41,716
7 Claims. (Cl. 83—533)

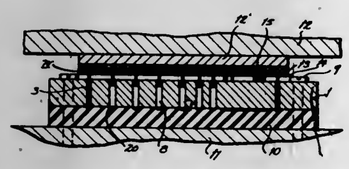
1. In combination: a machine including an upper movable table and a fixed lower table on which is adapted to be placed a blank and a tool surmounting the blank; means engaged with the movable table to displace the same with respect to the fixed table, the latter means including hydraulically actuated piston and cylinder means for lowering the movable table towards the fixed table, means for supplying hydraulic pressure fluid to said piston and cylinder means to operate the same, said upper table being lowered to contact the tool and force the same through the blank into contact with the lower table at which time the pressure of the hydraulic fluid in the

piston and cylinder means instantaneously increases; and means connected to said piston and cylinder means to instantaneously relieve the pressure of the fluid therein and thereby terminate displacement of the movable table upon the generation of the instantaneous pressure; said means for relieving the pressure of the fluid comprising first means connected to the piston and cylinder means and responsive to the pressure of the fluid developed therein, electronic circuit means connected to said first means for generating an electrical impulse instantaneous with the sensing by said first means of the instantaneous fluid pressure increase, and valve means connected to said electronic circuit means and to the piston and cylinder means to regulate outflow of pressure fluid from the latter and arrest movement of the upper table upon the generation of an electrical signal by said electronic



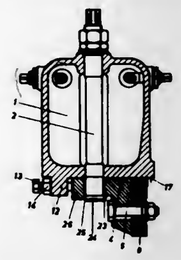
circuit means, said electronic circuit means comprising a first transistor connected to the first means which is responsive to the pressure of the fluid, control means for the conductivity of said transistor, a second transistor placed in parallel to the first transistor, two flip-flop circuits to selectively make the first and second transistors periodically conductive and non-conductive, dependent on the state of said first means, a third and fourth transistor to control the energization of said valve means said latter two transistors being respectively controlled by the conductive relationship of the first two transistors to constitute a block circuit for the movable table of the press to stop said movable table after the penetration of the blank by the tool and thereby avoid further displacement of said movable table downwards which is possible only after subsequent lifting of the upper movable table to the starting position thereof.

3,289,516
MASKING CUTTER
Alphonse S. Bohrer, 6932 Zacharias Court, and Donald C. Apple, 1234 Dammert Ave., both of Lemay, Mo.
Filed Mar. 15, 1965, Ser. No. 439,868
10 Claims. (Cl. 83—588)



1. A cutting die comprising a base plate having upper and lower parallel surfaces, at least one slot-like opening formed in said base plate for extension therethrough, a cutting blade member disposed in said slot-like opening for vertical movement therein, and means provided proximate the lower surface of said plate and at the lower end of said opening for urging said blade member upwardly within said opening.

3,289,517
ADJUSTING DEVICE FOR SHEAR KNIVES
Ernst Brombach, Dahlbruch, Kreis Siegen, and Horst Ganseuer, Eichen, Kreis Siegen, Germany, assignors to Siegner Maschinenbau G.m.b.H., a corporation of Germany
Filed Feb. 2, 1965, Ser. No. 429,848
Claims priority, application Germany, Feb. 5, 1966, S 89,383
4 Claims. (Cl. 83—640)



1. In a shear for cutting strip-like material and having two cooperative cutting knives, an apparatus for adjusting one of the knives in a plane perpendicular to the cutting plane of the knives,

a knife holder for carrying one of said knives,

said knife holder being carried by a knife beam and being adjustable relative thereto in a direction towards said cutting plane,

said knife holder and knife beam contacting each other through shearing load-transmitting surfaces,

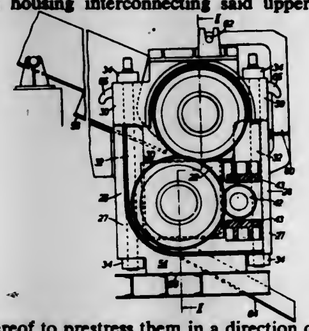
releasable connecting means carried by said knife beam and secured to said knife holder for pressing the load-transmitting surfaces forcibly together,

at least two shafts independent of said releasable connecting means rotatably carried by said knife beam, each having eccentric portions received in bores formed in said knife holder,

the axes of said eccentric portions being normal to the direction of displacement of said knife holder, whereby on rotation thereof, said knife holder and its knife are moved to the cutting plane.

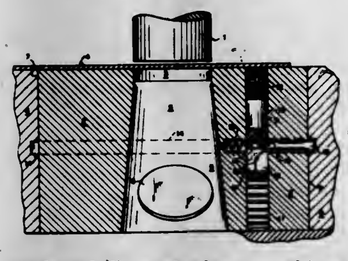
3,289,518
SHEARING MECHANISMS
William James Richmond, Sheffield, England, assignor to Davy and United Engineering Company Limited, Yorkshire, England
Filed May 26, 1964, Ser. No. 370,198
Claims priority, application Great Britain, May 28, 1963, 21,276/63
1 Claim. (Cl. 83—664)

A rotary drum shear comprising, in combination, two spaced-apart housings, upper and lower blade-carrying drums rotatably mounted between said housings, and drive means coupled to said drums for rotating said drums in said housings, each said housing comprising separate upper and lower parts, said lower housing parts being of U-sections and carrying chocks rotatably mounting said lower drum between them, and said upper housing parts directly containing the bearings for the upper drum to form a unitary structure rotatably housing said upper drum and detachable as a whole with said upper drum from said lower housing parts to provide access to said lower drum for vertical removal thereof, and bolt means for each housing interconnecting said upper and lower



parts thereof to prestress them in a direction opposing the shearing force.

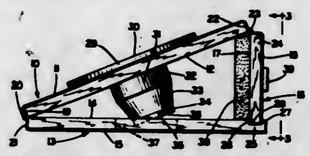
3,289,519
LATCH MECHANISM FOR DIE BLOCK OF PUNCH PRESS
Donato L. Piccone, 315 E. Williams, Ann Arbor, Mich.
Filed Dec. 14, 1964, Ser. No. 418,018
5 Claims. (Cl. 83—685)



1. A punch and die mechanism comprising a punch reciprocatory up and down, a die formed with a passage accommodating the punch and adapted for shearing coaction with the punch, a retainer having a socket wherein the die is removably received, the peripheral face of the socket having a recess formed in the peripheral face of the socket, a plunger slidable in substantially up and down travel in the die at one side of said passage, a bolt slidable in the die to have releasable engagement in said recess to resist withdrawal of said die from said socket, the plunger and bolt having interengageable cam faces, retractable drive means to actuate the plunger in downward sliding travel whereby said cam faces urge said bolt into said releasable engagement, means yieldable urging said plunger in upward travel responsive to retraction of said drive means, and means to urge said bolt to slidably disengage from said recess consequent to said upward travel to afford withdrawal of said die from said socket.

3,289,520
DRUM PRACTICE DEVICE
Allan R. Simpson, 5656 Spring Lake Road NW., Canton, Ohio
Filed Nov. 23, 1965, Ser. No. 509,396
5 Claims. (Cl. 84—411)

1. A drum practice device including a pad-target member having pad and target sides, a base member having inner and outer sides, a wrist development member having inner and outer sides, means operably connecting ends of the pad-target and base and wrist development members for selected hinged movement between assembled and collapsed positions, the pad-target member extending at an acute angle between an end of the base member and an end of the wrist development member when in assembled position with the pad side facing angularly upwardly, the base member extending horizontally between an end of the pad-target member and an end of the wrist development member when in assembled position with the inner side facing upwardly and the outer side facing downwardly, the wrist development member extending generally vertically between an end of the pad-target member and an end of the base member when in assembled position with the inner side facing inwardly generally toward the pad-target and base members and the outer side facing generally away from the pad-target and base members, resilient material practice pad means mounted on the pad-target member pad side having a relatively large exposed surface area and simulating the resilient effect of a drumhead when struck by drumsticks, a pedestal of dimensions spaced smaller than said practice pad means surface area mounted on and projecting from the pad-target member target side, resilient material target means mounted on the pedestal spaced from the pad-target member target side having an exposed surface area only a fraction of the exposed surface area of the practice pad means for simulating the resilient effect of



a drumhead when struck by drumsticks, the target means and pedestal extending angularly downwardly toward the base member inner side when the pad-target and base members are in assembled position, opening means formed through the base member between the inner and outer sides and generally underlying the pad-target member pedestal and target means when the pad-target and base members are in assembled position, impact absorbing means mounted on the wrist development member inner side, the wrist development member extending in generally the same plane and away from the end of the pad-target member with the impact absorbing means exposed upwardly when the pad-target and wrist development members are in collapsed position and the pad-target member is positioned with the pad side facing downwardly, and the pad-target member target side abutting the base member inner side with the pedestal projecting upwardly through the base member opening and positioning the target means spaced upwardly from the base member outer side when the pad-target and base members are in collapsed position and the pad-target member pad side is facing downwardly.

3,289,521
SECURING APPARATUS
Peter H. Van Sloun, Hopkins, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,220
2 Claims. (Cl. 85—8.1)



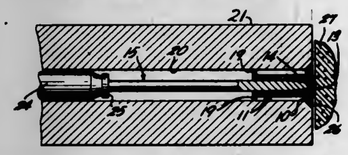
1. A device for securing an elongated shaft having a circular cross section to a shaft supporting member surrounding said shaft; said shaft and shaft supporting member each having corresponding holes formed there-

in; said device comprising: an elongated cylindrical pin for inserting through said holes to secure said shaft and shaft supporting member together; the length of said pin being greater than the outer diameter of said shaft supporting member so that first and second ends of said pin extend from opposite sides thereof; a flexible circular retaining ring having a diameter greater than the diameter of said supporting member and smaller than the length of said pin; said ring having a portion of the periphery thereof cut away to form an opening equal in size to the diameter of said pin; a pair of hinge members connected to said ring on opposing sides of said opening; said hinge members each having a hole formed therein and extending outwardly from said ring, with respect to the center of said ring, and in the plane of said ring; said pin having a hole formed laterally therethrough in said first end corresponding in size to said holes in said hinge members; and a pivot pin extending through said holes in said hinge members and said hole in said first end to pivotally connect said ring to said pin; said ring under normal conditions being pivotable less than one full revolution with respect to said pin with the portion of said ring opposite said opening striking said second end of said pin; said ring being constructed from a flexible material so that the normal circular shape can be distorted into an elongated generally elliptical shape to allow said ring to pass over said second end to secure said pin in said holes in said shaft and shaft supporting member.

3,289,522
WASHER ASSEMBLY WITH FASTENER

Lewis Walter Bell, Monroe, N.Y., assignor to Star Expansion Industries Corporation, Mountainville, N.Y., a corporation of Delaware

Filed Nov. 30, 1964, Ser. No. 414,828
8 Claims. (Cl. 85—10)



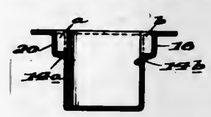
1. In combination with a fastener having a given hardness adapted to be driven from the barrel of a driving tool and having a tapered forward end, a shank portion rearwardly thereof, and a head portion, a holder of considerably less hardness than said fastener assembled to the forward end of the fastener, said holder comprising a generally tubular portion having a substantially central bore therein extending at least half the axial length of said holder, said bore being so shaped as to be retained on at least the tapered portion of said fastener in substantial axial alignment therewith and in which at least the tapered end of the fastener is received, and means on said holder adjacent the tapered end of said fastener mounting a washer thereon in assembled relation thereto, said washer being rigid in a radial direction relative to the holder and having a substantially centrally located aperture therein of a size to be retained on said shank portion by said head portion when said fastener is driven into a workpiece.

3,289,523
PUSH-ON RETAINERS

Hyman Kramer, 2764 E. 16th St., Brooklyn, N.Y.

Filed Nov. 24, 1964, Ser. No. 413,509
4 Claims. (Cl. 85—35)

1. An end cap-type retainer device for push-on assembly on the end of a shaft and like carrier member comprising: a cap-form body having a substantially cylindrical crown portion defining a shaft-receiving opening and an integral brim-like retaining flange extending radially outwardly from an end thereof and adapted to take thrust loads applied in axial direction against its under face, a plurality of circumferentially spaced, radially outwardly projecting embossments formed in the side wall of said crown portion and terminating at their ends remote from said flange in substantially plane end walls, and locking prongs comprising areas struck out from at



least said end walls and having length such that their free ends extend radially inwardly into the interior space of said crown portion, and said locking prongs further having inclination such that said prongs will flex outwardly during push-on assembly of the device on said carrier member but will tend to assume radial positions in which the free-end edges thereof bite into the material of the peripheral surface of said member when thrust loads are applied to the under face of said retaining flange as aforesaid.

3,289,524
TORQUE LIMITING NUT

Norman N. Rubin, 10012 Portland Place, Silver Spring, Md.

Original application Feb. 28, 1964, Ser. No. 348,917. Divided and this application Sept. 20, 1965, Ser. No. 488,827
1 Claim. (Cl. 85—61)



A separable fastener comprising:
a threaded bolt;
a substantially cylindrical interiorly threaded nut formed with an enlarged head and an annular exterior recess adjacent said head;
teeth integral with and exteriorly of said head, each of said teeth being formed with one radial face and one angled face;
a ring mounted in said recess and extending beyond the wall of said cylindrical nut;
a substantially hexagon shaped disc-like housing removably fitting over said toothed head and rotating on said cylindrical nut, said housing engaging and supported by said ring;
pins mounted in diametrically opposite corners of said hexagon shaped housing;
U-shaped spring members, including a pair of straight legs diverging from an inter-connecting bend portion, supported by said pins, one of the legs of said spring members engaging the side of said hexagon housing, the other leg of the U-shaped spring member extending at an angle, which is less than the angled face of a tooth relative to a diametrical line passing through said pins and through the radial faces of diametrically opposite teeth into the path of the nut, said other leg abutting the radial face of a tooth, the length of said other leg being adapted to be brought into frictional contact with the angled face of a tooth upon movement of the hexagon housing in a direction to thread the nut onto the bolt, and upon rotation of the housing in the other direction the abutting end of the leg of the spring member is urged against the radial face of a tooth,

the angled face serving as a brace against the length of the leg to maintain the leg of the spring member in a substantially rigid extended position;
whereby threading the nut onto the bolt is accomplished through rotation of the hexagon housing on the nut, the frictional engagement of the leg of the spring member with the angled face of a tooth rotating the nut, the leg slipping over said angled face of a tooth when the torque necessary to tighten the nut is greater than the frictional force between the leg of the spring member and the angled face of the tooth, removal of the nut being accomplished through a force applied, by rotation of the hexagon head, through the pin and along the leg of the spring member and the abutting contact with the radial face of a tooth, the contact of the length of the leg of the spring member with the angled face of a tooth serving to prevent buckling of the leg of the spring member.

3,289,525
POSITIVE RELEASE PIN-TYPE CLAMP

James H. Lee, Lawndale, Calif., assignor to Monogram Industries, Inc., Culver City, Calif.

Filed Mar. 16, 1964, Ser. No. 352,063
2 Claims. (Cl. 85—81)

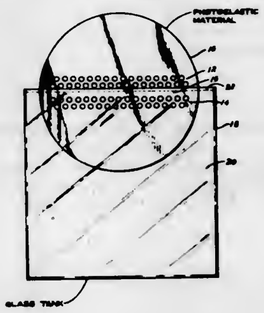


1. An axial, pin type clamp for temporarily holding a plurality of apertured work pieces in assembled relation with the apertures in alignment, comprising: an elongate generally hollow casing having a substantially closed forward end adapted for clamping engagement with a work piece and formed with an axial passage therethrough, and having an inturned flange at its aft end to provide within said aft end an axially extending annular recess having a smooth inner surface; a retainer member slidably and non-rotatably mounted in said casing; said retainer member having a base slidable within said casing, a gripper extending through the passage at the forward end, and a drive shank extending through the aft end, the shank being at least partly threaded; and a drive nut mounted for limited axial movement having a threaded bore for engagement with the threaded portion of the shank to move the retainer member axially; said limited axial, slidable, movement of said nut having an extent equal to the advance of a plurality of said threads so that the nut will re-engage a plurality of threads on the drive shank before assuming the load of retracting the retainer member; said nut having an aft tool engaging portion and a forward portion of reduced diameter terminating in an outward flange at its forward end, said second flange being located in said recess in the casing for sliding axial movement and rotatable movement; the flanges serving as abutments to prevent separation of the drive nut from the casing and to take the thrust force of the nut; said gripper having a headed free end and being collapsible upon forward extension to pass through the apertures in the work piece assembly, and expandable laterally upon rearward retraction to tightly engage the walls of the apertures and to cause the headed free end to engage the remote surface of the assembly to grip the latter between the headed free end and the forward end of the casing; said drive nut acting to forcefully and positively move said gripper into and out of binding engagement with the walls of said aperture and said headed free end into and out of clamping engagement with the assembly.

3,289,526
METHOD OF SIMULATING THERMAL STRESSES AND PRODUCING THE RESULTING PHOTOELASTIC FRINGE PATTERNS

William H. Tuppeny, Jr., Rockville, and Sigmund J. Ligenza, East Granby, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Jan. 28, 1963, Ser. No. 254,502
8 Claims. (Cl. 88—14)

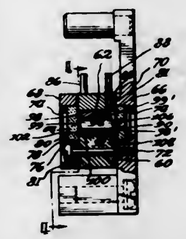


1. The method of producing a photoelastic fringe pattern from which the stress condition of a component of a prototype having one region that operates at a much higher temperature than an adjacent region can be predicted comprising providing a photoelastic scale model of the component, surrounding the region thereof corresponding to said one region with a first fluid, surrounding the region thereof corresponding to said adjacent region with second fluid maintained at a much lower temperature than said one temperature, while in this condition placing the model between the elements of a polariscope.

3,289,527
FLOW-THROUGH CELL INCLUDING MEANS FOR PROVIDING A UNIFORM FLOW PATTERN THERETHROUGH

Saul R. Gilford and Robert J. Emary, Oberlin, Ohio, assignors to Gilford Instrument Laboratories, Inc., Oberlin, Ohio, a corporation of Ohio

Filed Aug. 2, 1963, Ser. No. 299,549
5 Claims. (Cl. 88—14)



5. In apparatus for use in optical monitoring of flowing fluid fractions, a flow-through cell comprising a cell block having an open-ended precise axial bore of known predetermined volume and sealing means, including transparent windows, disposed over the ends of said bore, conduits defining inlet and outlet ports communicating to the interior of said cell block adjacent respective opposite ends of said bore, an internal portion within said cell block and located between the ends of said bore, said internal por-

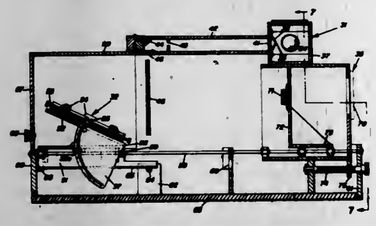
tion having opposite end surfaces, said internal portion having at least a portion of one end surface thereof flush with the window adjacent thereto at the inlet port, and the opposite end surfaces at each end of said internal portion defining a channel between its adjacent window and the respective end surface communicating respectively between the inlet and outlet ports and the axial bore to direct the fluid in a sweep across the window in its passage therepast and simultaneously imparting to said flowing fluid, an increased momentum along select portions thereof during passage of said fluid fractions through the axial bore compensating for normal lag of said select portions whereby to maintain the flowing fluid in discrete fractions during passage through the cell.

3,289,528

APPARATUS FOR MAKING AXONOMETRIC PROJECTIONS

Michael G. Petreyclk, 96 Hope St., Bridgeport, Conn.

Filed Mar. 7, 1963, Ser. No. 266,128
12 Claims. (Cl. 88—24)



1. An apparatus for producing axonometric photographs comprising means defining a light tight housing, means within said housing for producing a plane of light therein, a stage assembly for supporting the object to be photographed within said housing, said stage assembly including a universally pivoted platform, a rotatable table mounted on said platform, and means for supporting an object thereon, said object supporting means being normally disposed on one side of said plane of light, camera means disposed on the other side of said plane of light, said camera means having its lens disposed within said housing, and means for moving said object supporting means within said housing through said plane of light and toward said camera whereby the illuminated contours of the object are recorded by the camera to the exclusion of the perspective.

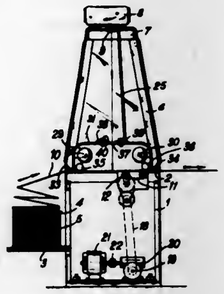
3,289,529

APPARATUS FOR REPRODUCING CONTINUOUSLY MOVING DOCUMENTS

Georges René Darthenay, Paris, France, assignor to Robert Albert Antoine Darthenay, Versailles, Seine-et-Oise, France

Filed July 24, 1963, Ser. No. 297,368
Claims priority, application France, July 26, 1962, 905,119, Patent 1,338,426
7 Claims. (Cl. 88—24)

1. Apparatus for reproducing documents in continuous strip form, comprising, in combination, means for positively guiding and advancing continuous strip documents, at least one photographic chamber positioned remotely with respect to the path of travel of said strip documents, shutterless camera means with an open lens within said chamber and operatively positioned with respect to the path of travel of said strip documents to view the same, means in said chamber for advancing photographic film continuously therein, to receive an image from said open lens, a common slip-free positive transmission interconnecting said means which advances the strip and the means for advancing the film to correlate the advancement of the strip and the film, a supporting platen for said strip documents, an adjustable slit mask above said platen between the latter and the chamber for the passage



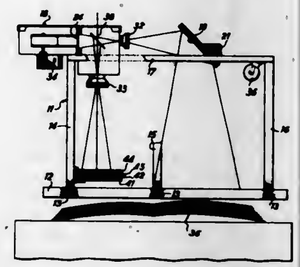
of the image from said strip documents to said lens, and illuminating means within said mask extending parallel with said slit and concealed from said lens by said mask.

3,289,530

METHOD AND APPARATUS FOR PREPARING MICROFILE RECORDS

Jacques Emile Evariste Samain, 74 Rue des Saints-Peres, Paris, France

Filed Apr. 27, 1964, Ser. No. 362,849
Claims priority, application France, May 8, 1963, 934,080
2 Claims. (Cl. 88—24)



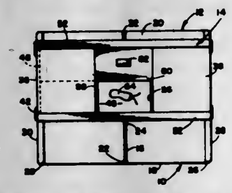
1. A camera arrangement comprising, in combination:
(a) a support including a base member having a contact face;
(b) bracket means on said support for holding an object to be photographed in a predetermined plane; and
(c) a camera mounted on said support, said camera including
(1) a housing,
(2) film transporting means in said housing for sequentially moving longitudinal portions of a film toward and away from a predetermined position in a predetermined direction, and
(3) two lenses mounted on said housing and simultaneously focused on respective portions of said film in said position, said portions being spaced in said direction, whereby respective images of objects viewed by said lenses are simultaneously projected on said film portions,
(4) said lenses differing in the respective ratios between the size of a viewed object and the size of the projected image of the object,
(5) one of said lenses being trained on an object held by said bracket means, and
(6) the other lens being trained on said contact face of said base member.

3,289,531

PHOTOGRAPHIC PRINTING DEVICE

Vernon B. Streit, 16048 Vanowen St., Van Nuys, Calif.

Filed Apr. 28, 1964, Ser. No. 363,109
3 Claims. (Cl. 88—24)



1. A photographic printing device for positioning a sheet of sensitized photographic paper in such a manner that multiple prints may be projected thereon, said device comprising:
a base member having a groove formed along its minor axis and a riser attached to each edge of said base member which is parallel to said groove;
a stop member mounted on said base member at each end of said groove;
a printing frame reciprocally mounted on said base member, said frame having a guide member engaging said groove, one end of said guide member being engageable with said stop member at one end of said groove and the other end of said guide member being engageable with said stop member at the other end of said groove;
depending side wall means mounted on said frame at right angles to said guide member, said side wall slidably engaging said risers to maintain said frame in spaced relation with said base member;
an opening mounted in said frame;
a cover member slidably mounted in said opening, said cover member being slidable to a first position to cover one half of said opening when said one end of said guide member is engaging the stop member at said one end of said groove and being slidable to a second position to cover the other half of said opening when said other end of said guide member is engaging the stop member at the other end of said groove; and
a support member affixed to said frame subjacent said opening for supporting a sensitized photographic paper in a position to receive pictures projected through said opening.

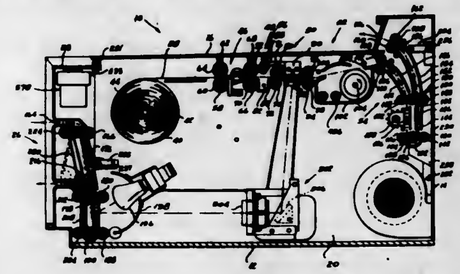
3,289,532

VARIABLE SHEET LENGTH ELECTROSTATIC COPIER

Fritz Baumgarten, Giessen-Heuchelheim, Germany, and Jules Nissonson, Rye, N.Y., assignors to Savin Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 24, 1964, Ser. No. 384,934
10 Claims. (Cl. 88—24)

9. In apparatus for producing a copy of an original, means forming a first exposure window past which an original is to be moved, means forming a second window past which copy material is to be moved, an original transport system for moving an original along a path past said first window, a supply of copy material, means adapted to be actuated to cut material passing thereby, means adapted to be actuated to feed material from said supply successively past said cutting means and said second window, a sensor disposed along said original transport path ahead of said window, means mounting said first and second window forming means in spaced relationship at locations at which the distance between said sensor and said first window corresponds to the distance between said cutter and said second window, means responsive to actuation of said sensor by an original moving into said transport system for actuating said copy material feeding means and means responsive to release



of said sensor by an original passing through said transport system for deactivating said feeding means and for activating said cutting means.

3,289,533

MISSILE LAUNCHING TUBE SEAL

Charles R. Brown, Sunnyvale, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 6, 1965, Ser. No. 446,138
1 Claim. (Cl. 89—1.810)



A submergible missile launching device comprising:
a vertically oriented missile launching tube,
a plurality of annular supports of resilient material spaced apart from one another and securely attached to the inner wall surface of said launching tube, and
a plurality of annular elastomeric seals positioned between adjacent annular supports for providing a fluid seal between the inner wall surface of said launching tube and a missile to be launched therefrom, each said annular elastomeric seal being comprised of a cylindrical portion and an annular lip extending downwardly and outwardly from said cylindrical portion, said cylindrical portion being securely attached to said inner wall surface of said launching tube.

3,289,534

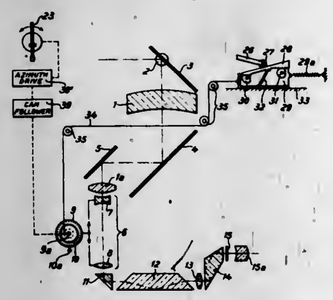
GUN ELEVATION CONTROL DEVICE

Helmut Becker and Helmuth Freak, Wetzlar, and Horst Schmidt, Nauborn, Kreis Wetzlar, Germany, assignors to Ernst Leitz G.m.b.H. Wetzlar, Wetzlar, Germany, a corporation of Germany

Filed May 19, 1964, Ser. No. 368,580
Claims priority, application Germany, May 22, 1963, L 44,932
8 Claims. (Cl. 89—41)

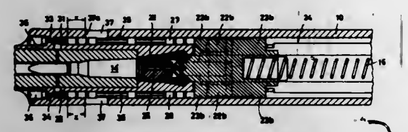
7. A device for adjusting the elevation of a gun barrel comprising:
an optical gun sight incorporating therein adjustable

optical means for variation of magnification so as to constitute a combined gun sight and range finder;
direction adjustable optical means optically coupled to said gun sight for directing the viewing field into the line of sight with a target;
means for transmitting the adjustment of said optical



means as line of sight elevational adjustment to said gun barrel;
and means coupled to said magnification adjustment means for providing an additional corrective value corresponding to the ballistical correction of the elevation of said gun barrel.

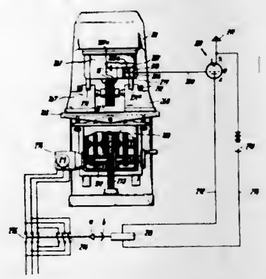
3,289,535
BREECH OPERATING MECHANISM FOR A GAS PRESSURE LOADER FOR GUNS
Gerhard Hupp, Oberndorf (Neckar), Germany, assignor to Messrs. Mauser-Werke Aktiengesellschaft, Oberndorf (Neckar), Germany
Filed Mar. 19, 1965, Ser. No. 441,035
Claims priority, application Germany, Mar. 20, 1964, M 60,385
8 Claims. (Cl. 89—191)



1. Breech operating mechanism for a gas pressure loader for guns comprising a two-part breech of which one part is a carrier and the other part is a head piece, gas pistons for opening the breech, said breech head being composed of a greater mass than the breech carrier, each breech carrier and breech-head being provided with guide wings slidable in a common groove in a gun housing.

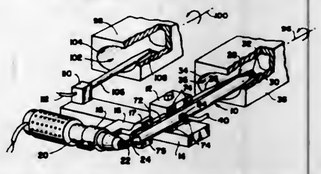
3,289,536
MACHINE FOR FINISHING GEARS AND THE LIKE
Fritz Hurth, Grunwald, near Munich, Germany, assignor to Carl Hurth Maschinen- und Zahnradfabrik, Munich, Germany
Filed June 9, 1964, Ser. No. 373,741
Claims priority, application Germany, June 10, 1963, H 49,410; July 20, 1963, H 49,782
16 Claims. (Cl. 90—1.6)

1. In a machine for finishing gears and similar toothed workpieces, in combination, frame means; movable holder means, one of said means being arranged to support a material removing tool and the other of said means being arranged to support a workpiece; a feed for moving said holder means with reference to said frame means so as to bring the tool into and out of material removing engagement with a workpiece so that the tool and the workpiece can exert against each other a pressure which decreases in response to removal of material from the workpiece; a blocking element mounted on one of said means and arranged to limit the extent of movement of said holder means with reference to said frame means and to thus determine the minimum distance between the workpiece and the tool; and a control apparatus comprising a pressure responsive device mounted on one of said means and constructed to initiate the generation of an impulse in response to a predetermined pressure



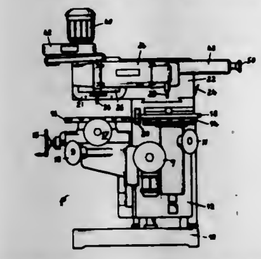
thereon corresponding to a minimum pressure between the tool and the workpiece, a pressure transmitting member mounted on the other of said means and arranged to transmit said predetermined pressure to said device in a selected position of said holder means when the pressure between the tool and the workpiece equals said minimum pressure, and an operative connection between said device and said feed for changing the condition of said feed in response to such predetermined pressure upon said device so that the feed then disengages the tool from the workpiece.

3,289,537
ROTARY CUTTER BAR
Robert W. Adams, Greensburg, Pa., assignor to Overmyer Mould Company of Pennsylvania, Greensburg, Pa., a corporation of Pennsylvania
Filed May 22, 1964, Ser. No. 369,389
8 Claims. (Cl. 90—11)



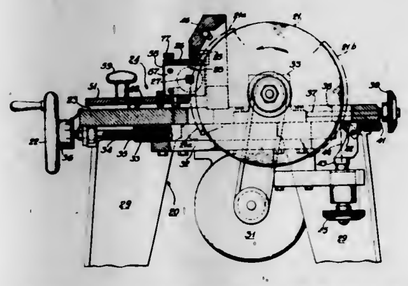
1. A rotary cutter for machining the interior surface of a hollow workpiece, comprising in combination: an elongated bar having a first end insertable within said workpiece; journal means disposed in said first end of said elongated bar and positioned to define a rotational axis extending transversely of said elongated bar; a chuck supported by said journal means for rotation about said rotational axis; a cutter bit carried by said chuck, said cutter bit being rotatable with said chuck and having a tip adapted to machine the interior surface of said hollow workpiece; means carrying said elongated bar for positioning said cutter bit with respect to the surface being machined; a drive motor supported adjacent to the opposite end of said elongated bar; an idler pulley secured to and rotatable with said chuck; a drive cord extending parallel with said elongated bar for connected said drive motor in driving relation with said idler pulley; conduit means extending through said elongated bar, around said journal means for communicating a cooling fluid to said journal means; and means for introducing a cooling fluid into said conduit means.

3,289,538
DUPLICATING MILLING MACHINE
Josef Ostler, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich Wilhelm Deckel, Zug, Switzerland
Filed May 18, 1965, Ser. No. 456,725
Claims priority, application Germany, May 26, 1964, D 44,535
4 Claims. (Cl. 90—13.1)



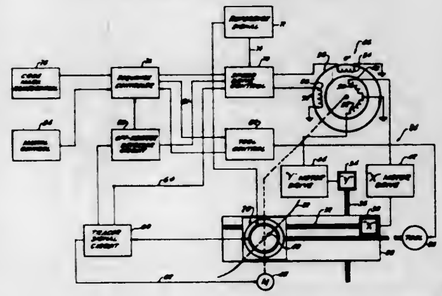
1. A duplicating machine comprising a machine column, table means for work and model connected for movement relative to said machine column, machine head means shiftably connected to the top of said machine column and being selectively shiftable transverse of said table means, a machine portion connected to said machine head means above said table means, an arm portion connected at one end to said machine portion and extending longitudinally of said table means and transverse of the path of movement of said machine head means and having a free opposite end, a parallelogram mechanism carrying working tool means and tracer means connected to said machine portion above said table means for movement in three coordinates, a pantograph connected to said parallelogram mechanism and to said arm portion intermediate the ends thereof, and counterbalance means connected in said arm portion and connected to said parallelogram mechanism to counterbalance the weight thereof, whereby the relatively small working range of said parallelogram mechanism in the transverse direction is selectively shiftable transverse of said table means.

3,289,539
METHODS AND APPARATUS FOR PRODUCING TEST SPECIMENS
Robert Sieburg, New Fairfield, Conn. (% Sieburg Industries, Inc., Danbury Industrial Park, Danbury, Conn.)
Filed Oct. 4, 1965, Ser. No. 492,710
14 Claims. (Cl. 90—13)



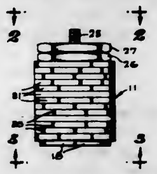
1. A method of producing physical test specimens from bar stock of metallic and non-metallic materials comprising in combination the steps of:
(A) supporting a cutting tool for machining rotation with its cutting edge adjustably positioned between an underlying worktable and a guide sleeve positioned above the worktable and adjustably spaced from the cutting edge of the cutting tool,
(B) supporting a workpiece length of bar stock for rotation about a longitudinal axis between the worktable and an overlying guide template having a guide surface of predetermined shape,
(C) independently rotating both the workpiece and the cutting tool about their respective axes,
(D) progressively reducing the spacing between the guide sleeve and the cutting edge of the cutting tool,
(E) moving the rotating workpiece to and fro endwise in repeated reciprocation cycles while maintaining the template guide surface in guiding engagement with the guide sleeve.

3,289,540
AUTOMATIC CONTOUR TRACER PROGRAMMING APPARATUS AND METHODS
Francis G. Bardwell, Chicago, and Frans Brouwer, Glencoe, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Apr. 16, 1965, Ser. No. 448,605
20 Claims. (Cl. 90—13.5)



1. Apparatus for tracing a pattern guide, said pattern guide having contour indicia forming a desired pattern, lead indicia forming a travel guide to and from said contour indicia, and a code mark, said apparatus comprising tracing means for automatically following along said indicia, means for detecting a code mark, and means for transferring said tracing means from one type of indicia to the other type of indicia upon detection by said code mark detection means of a code mark.

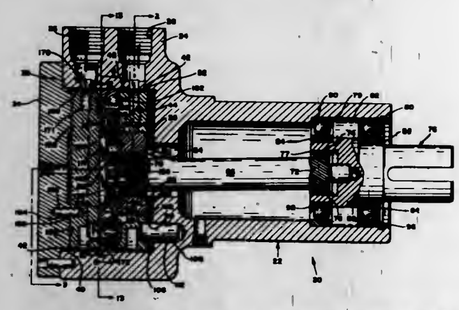
3,289,541
PROFILING STYLUS
Connie E. George, 5715 Fountain Ave., Hollywood, Calif.
Filed Aug. 30, 1965, Ser. No. 483,521
10 Claims. (Cl. 90—62)



1. An adjustable diameter profiling stylus, comprising a tubular inner section made up of a plurality of segments with arcuate outer surfaces together forming an axially interrupted cylindrical surface, a center member within said inner section and adjustably positionable axially with respect thereto, said center member and said inner section having interengaging axially tapered wedging surfaces whereby the relative axial position of said

member to said section determines the diameter of said inner section, an outer annular section around said inner section made up of a plurality of superposed corresponding rings each including a plurality of ring segments with arcuate outer surfaces together forming an axially interrupted cylindrical outer surface, said ring segments having arcuate concave inner surfaces with a radius substantially the same as the radius of the arcuate outer surfaces of the inner section, and means on said inner section and said center member releasably fixedly holding said rings in place.

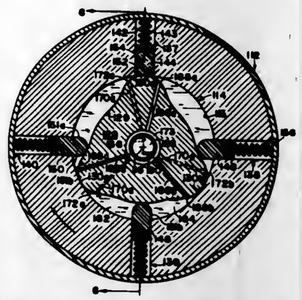
3,289,542
HYDRAULIC MOTOR OR PUMP
Tyman H. Fikse, Enumclaw, Wash., assignor to Lawrence Machine & Manufacturing Company, Seattle, Wash., a corporation
Filed Oct. 29, 1963, Ser. No. 319,776
10 Claims. (Cl. 91—56)



1. In a rotary fluid motor, a housing enclosing a fluid operating space having a fluid inlet opening adapted to be connected to a source of pressurized operating fluid and a fluid outlet opening, means in said space providing a plurality of expansible fluid chambers and comprising interengaging stator and rotor elements, a member axially spaced from said stator and rotor elements in said space and having a plurality of inlet ports communicating with said inlet opening, a plurality of outlet ports formed in said stator element and communicating with said outlet opening, a ported valve plate non-rotatably coupled to said rotor and so disposed axially between said member and said stator element as to cyclically establish and block fluid communication between said chambers and said inlet and outlet ports for admitting and exhausting operating fluid to drive said rotor, said housing having an axial access opening at one end of said space for permitting introduction and removal of said rotor and stator elements and said member, a cover detachably secured to said housing and extending over said opening, and surface means in said housing and coacting with said cover to axially confine said rotor and stator elements and said member in place.

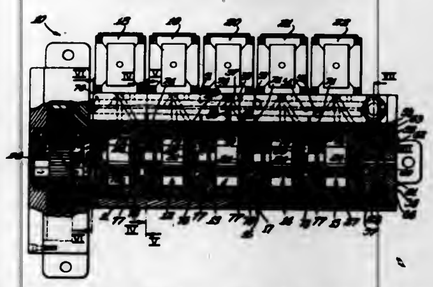
3,289,543
FLUID MOTOR WITH PERIPHERAL POWER TAKE-OFF
Baron C. Wolfe, 24 W. Grant St., Eureka, Calif.
Original application Dec. 26, 1962, Ser. No. 247,184, now Patent No. 3,241,456. Divided and this application May 19, 1965, Ser. No. 473,257
3 Claims. (Cl. 91—71)

1. A rotary fluid motor comprising a casing forming a chamber with a smooth arcuate internal surface contoured symmetrically with respect to an axis and opposing side surfaces formed symmetrically with respect to the same axis, a shaft journaled for rotation relative said casing on the axis, a body in said chamber mounted on said shaft for rotation therewith, said body having side surfaces in non-contacting fluid-sealing relation to the side surfaces of said casing and a peripheral surface extending between said body side surfaces, said peripheral surface forming at least two lobes spaced uniformly thereabout, said lobes having outer peripheral surfaces in non-contacting fluid sealing relation to said internal arcuate surface, said casing being formed with a plurality of radially extending slots opening onto said internal arcuate surface, said slots being uniformly spaced around said arcuate surface and being greater in number by one than the number of lobes on said body, a vane having opposed faces for slidably supporting a vane



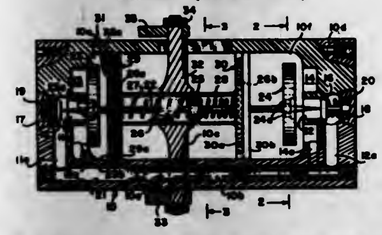
in each said slot, each said vane having on an end thereof a surface for bearing in fluid-sealing relation upon the peripheral surface of said body, means for radially biasing each said vane into contact on the bearing surfaces thereof with said peripheral body surface, said body being formed with first fluid conduits terminating in said peripheral body surface, each conduit terminating adjacent a body lobe on the same side of the respective lobes relative to the direction of rotation of said casing relative said body, said body also being formed with second fluid conduits terminating in said peripheral body surface adjacent respective said lobes on the side opposite the first conduit terminations, and means for supplying fluid under pressure to said first conduits.

3,289,544
ROTARY ACTUATOR
Dennis Daniels, 122 Berkley Road, Williamsville, N.Y.
Filed Mar. 4, 1964, Ser. No. 349,264
11 Claims. (Cl. 91—167)



1. A mechanism for angularly positioning a rotatable element, comprising:
(a) a group of individually actuatable rotary fluid actuators whose combined angular travel exceeds 360°, said actuators comprising a series of separate hollow housings and a corresponding number of rotors respectively disposed therein;
(b) a block having means defining a continuous cylindrical bore of uniform diameter receiving and rotatably supporting said hollow actuator housings;
(c) rotary drive connections between actuator rotors and adjacent hollow actuator housings, by which connections said rotary actuators are connected together in series;
(d) one end of said group having means by which said one end is normally supported against rotation; and
(e) the other end of said group having means by which said group is drivingly coupleable to the rotatable element.

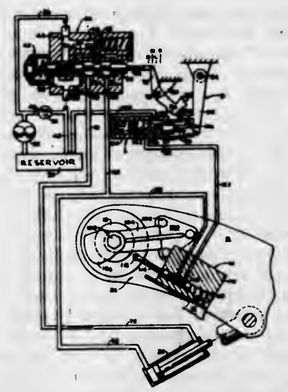
3,289,545
FLUID POWERED HYDRAULIC MOTOR
Lawson W. Duffy, 640 Meadow Ave., Santa Clara, Calif.
Filed Jan. 14, 1966, Ser. No. 520,681
7 Claims. (Cl. 91—273)



1. In a hydraulic motor, the combination of a housing having a cylindrical cavity therein, piston means slidably positioned in said cavity, said piston means dividing said cavity into working chambers on opposite sides thereof, each of said working chambers having an intake port and an exhaust port, intake valve means, a rigid member extending between said intake valve means for controlling said valve means whereby said intake ports are opened and closed alternately, exhaust valve means associated with said exhaust ports, passages supplying fluid under pressure to said working chambers through the intake ports when the intake valve means thereof is open, passages exhausting fluid from said working chambers through the exhaust ports when the exhaust valve means thereof is open, each of said exhaust valve means having an area in the corresponding working chamber exposed to hydraulic pressure in that working chamber sufficient to hold the exhaust valve means in that working chamber closed when the intake valve means thereof is opened, said exhaust valve means being attached to spaced points on said rigid member such that when the exhaust valve means of one of said working chambers is closed, the intake valve means of said one working chamber is opened by said rigid member, resilient means controlled by said piston means and acting on said rigid member shifting said rigid member and the exhaust valve means carried thereby to open the exhaust valve means of said one working chamber when the piston means in said one working chamber has been moved to expand this chamber to its maximum volume, said rigid member simultaneously closing the exhaust valve means in the other of said working chambers and opening intake valve means of this latter chamber, and means coupling said piston means to a work load.

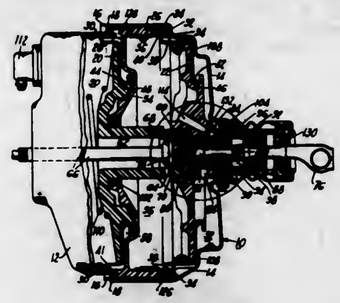
3,289,546
HYDRAULIC ACTUATING MECHANISM
Rodney R. Erickson, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 11, 1964, Ser. No. 388,789
5 Claims. (Cl. 91—358)

1. A control device for a fluid circuit comprising a moveable support, a fluid motor being arranged to impart movement to said support, a valve mechanism for communicating pressure fluid to said motor to cause operation thereof, means including a pressure operated device connected to the circuit for maintaining said valve mechanism in a position communicating pressure



fluid to said motor, and means actuated in response to the position of said support and being operable to communicate pressure fluid to said pressure operated device for disconnecting said motor from a source of pressure fluid in order to arrest movement of said moveable support.

3,289,547
FLUID PRESSURE SERVOMOTOR
Oswald O. Kytta, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,941
5 Claims. (Cl. 91—376)



1. A servomotor comprising:
a housing having two portions which are joined together with a spacer means arranged to sealingly hold a first flexible member and a second flexible member, said spacer means including a depending partition having a central opening;
a front movable wall having an annular groove whose internal dimension is greater than an opening diameter of said first flexible member to provide an interference fit as said first flexible member is snap-fitted into said groove to join said front movable wall and said first flexible member on a forward side of said partition, said front movable wall including an integral rearwardly projecting tubular member which is threaded at its rearmost point and a radial slot ahead of said threads, said rearwardly projecting tubular member being sealingly and slidably sup-

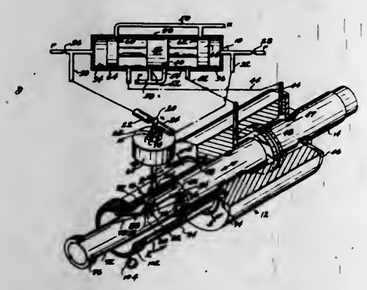
ported in the central opening of said partition and open by means of a central passage to a first variable volume chamber ahead of said front movable wall to communicate same with an area within said housing behind said partition by way of said radial slot;

a rear movable wall having an annular groove whose internal dimension is greater than an opening diameter of said second flexible member to provide an interference fit as said second flexible member is snap-fitted into said groove to join said rear movable wall and said second flexible member in said area to create a second variable volume chamber and a third variable volume chamber ahead and behind said rear movable wall, respectively, said rear movable wall having a threaded bore on a front face thereof receiving said threaded, rearwardly projecting tubular member to join said front and rear movable walls, which bore is open to a valve cavity in said rear movable wall communicated by a substantially axial passage in said rear movable wall to said second variable volume chamber and a radial passage to said third variable volume chamber and by means of a tubular extension to the exterior of said housing;

a passage means in said housing for communicating said third variable volume chamber to a fourth variable volume chamber ahead of said partition behind said front movable wall; and

valve means in said valve cavity to suspend the front and rear movable walls in an equal pressure medium or to create a pressure differential of equal magnitude across each of said walls, said valve means having a lost motion connection with said walls to be mechanically connected to both said walls by abutting said tubular projection of said front wall after being operated to create the pressure differential.

3,289,548
SERVO STROKE DIVIDER
William E. Jensen, Tujunga, George Gross, Burbank, and Hugh A. Morris, Sepulveda, Calif., assignors to Bell Aerospace Corporation, a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,845
13 Claims. (Cl. 91—387)



1. A mechanical linkage for coupling a drive member to a driven member, comprising:

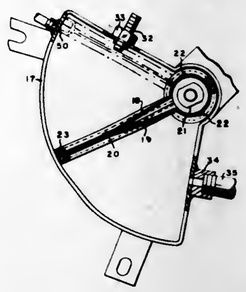
a rotative assembly means including extending arms;

a member having a cam surface engaging one extending arm of said assembly;

means for imparting relative motion between said member having a cam surface and said rotative assembly means, whereby said one extending arm is variously positioned on said cam surface according to movement of said drive member and whereby said rotative assembly means is rotatively moved; and

a coupling means defining an elongate surface receiving the other extending arm of said rotative assembly whereby rotative motion of said assembly is imparted to said driven member.

3,289,549
HYDRAULIC ACTUATOR
Howard M. Purcell, South Euclid, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Apr. 14, 1964, Ser. No. 359,737
2 Claims. (Cl. 91—402)

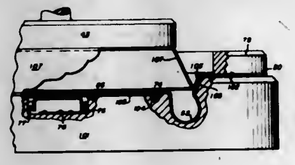


1. A hydraulic actuator comprising; a casing substantially sector shaped in longitudinal cross section and rectangular shaped in transverse cross' section, a shaft extending into the casing substantially at the apex of said casing, a paddle in the casing sealingly fitted in the casing and fixed to said shaft, and conduit means for selectively admitting pressure fluid into and from said casing on respectively opposite sides of said paddle effective to rotate said shaft, said casing comprising two substantially identical sector shaped portions, having upstanding peripheral walls, said portions being placed together with the respective walls substantially coplanar and in engagement, and means sealingly rigidly connecting said walls together, said paddle having groove means extending completely around the edge of the paddle and including portions extending around opposite sides of the shaft, and resilient seal means in said groove means to seal the paddle to the interior walls of the casing and including the region thereof around said shaft, said paddle comprising two substantially identical members having marginal steps thereon and placed together in face to face engagement so the said steps cooperate to form said groove means, means fixedly securing said members together and to said shaft, port means in the said casing located adjacent each terminal position of said paddle and which the paddle passes over in moving into its respective terminal positions, said port means being connected with said associated conduit means and a check valve connected to each port means permitting fluid flow from each port means in a direction away from said casing only.

3,289,550
METERING DIAPHRAGMS
Charles Vernon Watson, Buena Vista, Va., assignor to Reeves Brothers, Inc., New York, N.Y., a corporation of New York
Filed Mar. 14, 1961, Ser. No. 107,280
4 Claims. (Cl. 92—99)

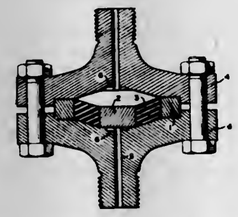
1. An improved gas meter diaphragm assembly comprising a pan having a bottom wall and a side wall extending upwardly from said bottom wall for a distance, thence extending downwardly and outwardly at an angle, and peripherally terminating in a substantially planar peripheral lip, and a flexible, impermeable sheet formed with a central portion, an endless trough of uniform size and shape surrounding said central portion, and a substantially planar peripheral portion around said trough,

said peripheral portion being formed substantially in the outline of said lip of said pan and being sealed to said



lip to dispose said trough substantially above said pan and to close said pan.

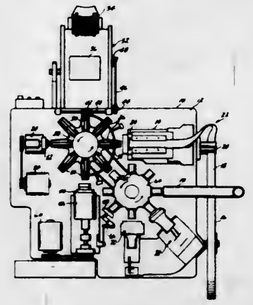
3,289,551
YIELDING PRESSURE-CHAMBER PARTITIONS
Josef Rzepecki, Allschwil, Switzerland, assignor to Maschinenfabrik Burckhardt A.G., Basel, Switzerland
Filed Mar. 25, 1964, Ser. No. 354,697
Claims priority, application Switzerland, Mar. 29, 1963, 4,042/63
2 Claims. (Cl. 92—99)



1. A restrained yielding partition disposed between two flanges forming two chambers of equal pressure comprising an exterior holder ring made of metallic resistant material clamped between said flanges, an interior stopper made of metallic resistant material located within said chambers and spaced from said ring, an intermediate ring of an elastic material tightly connected to said exterior ring and said stopper to form a fluid tight partition between said chambers, a feed bore in each of said flanges opening into its associated chamber opposite said stopper, and said intermediate ring in the unloaded state abutting one of said flanges and having a form corresponding to maximum deflection so that said intermediate ring upon being moved into the plane of said exterior ring is tightly compressed against said exterior ring and said interior stopper.

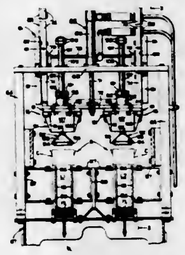
3,289,552
PAPER CUP MAKING MACHINE
Paul J. Corazzo, New Britain, Conn., assignor to Sherwood Tool Incorporated, Kensington, Conn., a corporation of Connecticut
Filed Mar. 5, 1963, Ser. No. 263,011
23 Claims. (Cl. 93—39.3)

1. In a paper cup making machine the combination comprising a frame, first and second turrets supported for rotation relative to said frame about spaced first and second axes respectively, an indexing drive unit carried by said frame and having an output shaft directly connected with said first turret for moving the latter in an indexing manner about said first axis, drive means between said indexing drive unit output shaft and said second turret for driving said second turret in response to movement of said output shaft and which drive means permits said second turret to move a limited extent relative to and independently of said output shaft so that said second turret is roughly indexed about said second axis as a result of each indexing movement of said output shaft, the extent of said independent relative movement of said second turret being small in comparison to the total angular movement of said output shaft accomplished during each indexing period, a plurality of circumaxially spaced locating means fixed relative to said second turret, and a locating device connected with said frame and having



a part movable into engagement with one of said locating means on said second turret during each dwell period of said first turret, said locating means and said movable part of said locating device being so constructed and arranged as to move said second turret about said second axis if necessary to bring the same closer to a predetermined and desired index position relative to said frame and first turret.

3,289,553
APPARATUS FOR PREFORMING FLAPS OF A CARTON
Leslie Vadas, Los Gatos, and Frederick W. Kendrick, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 331,007
7 Claims. (Cl. 93—44)

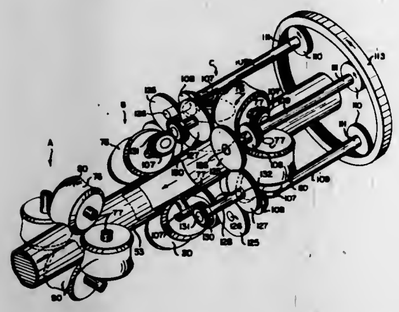


1. An apparatus for preforming end closure flaps of a carton comprising back-up means having a circular periphery, means for moving said back-up means into said carton and for holding said back-up means in fixed position within said carton, certain portions of the circular periphery of said back-up means defining folding surfaces disposed immediately adjacent the transverse mid-point of each wall, and external flap bending means connected to said moving means for movement against the external surfaces of the flap for bending the flaps inwardly about said folding surfaces of said back-up means, said circular periphery of said back-up means permitting the back-up means to be reliably guided into the carton and to be easily withdrawn from the carton after the end closure flaps are preformed.

ERRATUM

For Class 93—39.3 see Patent No. 3,289,552

3,289,554
METHOD AND APPARATUS FOR ROTATING AND/OR AXIALLY ADVANCING TUBULAR STOCK OR THE LIKE
Daniel S. Cvacho and Field I. Robertson, Jr., Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,727
10 Claims. (Cl. 93—80)



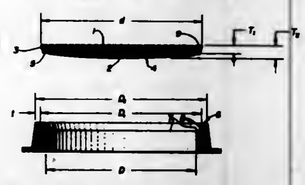
3. In combination, a mandrel, means for angularly feeding at least one strip of material onto said mandrel to form tubular stock, a plurality of sets of roller means engaging said tubular stock, each set of roller means being axially spaced from its adjacent set of roller means and being out of phase therewith, means operatively interconnecting one set of roller means with another set of roller means whereby rotation of said roller means of said one set causes like rotation of said roller means of said other set, and means for rotating said roller means of said one set to cause said other roller means to rotate and axially advance said tubular stock on said mandrel.

3,289,555
ROADSIDE MARKING POST
Andreas Peter Steenberg, Hvidovre, Copenhagen, Denmark, assignor to Dammarnbeeken Plasticindustri A/S, Copenhagen, Denmark
Filed Apr. 27, 1964, Ser. No. 362,711
Claims priority, application Denmark, Apr. 26, 1963, 1,956/63; Jan. 24, 1964, 369/64
4 Claims. (Cl. 94—1.5)



1. A resilient post having a base portion and a body portion, said base having an outwardly projecting boss adapted to resiliently engage the inner walls of a hollow receiver for mounting of said post, said body having a recess, inwardly directed resilient flanges extending from peripheral portions of said recess, the inward edges of the flanges being spaced from the bottom of said recess, and a plate of reflective material disposed in said recess and held in place by said resilient flanges.

3,289,556
MANHOLE FRAME AND COVER
Clayton D. Russell, Piedmont, Calif., assignor to Phoenix Iron Works, a corporation of California
Filed Apr. 14, 1964, Ser. No. 359,646
1 Claim. (Cl. 94—34)

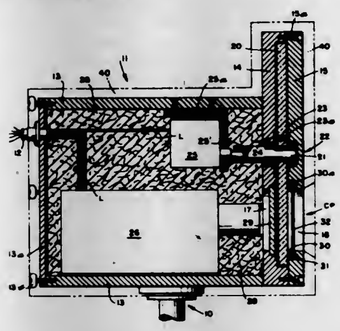


A manhole frame and cover comprising:
a cast iron frame of generally cylindrical configuration;
bearing surfaces machined on the upper circumferential edge of said frame to form an annular seating ledge therein,
said ledge comprising upper and lower horizontal surfaces and an internal inclined surface joining said horizontal surfaces and forming a predetermined angle of inclination with the vertical;
a cast iron cover of generally cylindrical configuration;
bearing surfaces machined on the outer periphery of said cover,
said bearing surfaces comprising a lower horizontal surface for engagement with said lower horizontal surface of said frame and an external inclined surface having a predetermined angle of inclination to the vertical for engagement with said internal inclined surface of said frame;
pick holes through said cover to facilitate removal of said cover,
said pick holes being located relatively close to the periphery of said cover;
said pick holes being further characterized by having their axes form an angle of approximately forty-five degrees with the surface of said cover.

3,289,557
EXTREME ENVIRONMENTS PROTECTIVE CAMERA ENCLOSURE
Thomas Garcia, Carl G. Daus, and Alfred Celestine, China Lake, and Paul D. Bevis, Ridgecrest, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 9, 1964, Ser. No. 410,038
6 Claims. (Cl. 95—11)

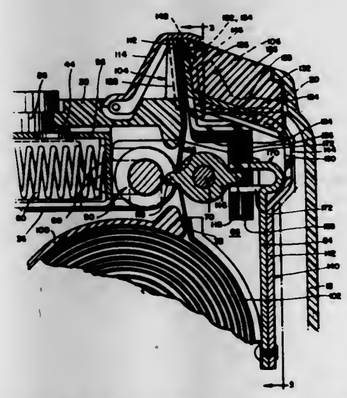
1. An enclosure of the type adapted to insure effective operation of a light sensitive device within a heated, dirty atmosphere comprising, in combination:
a sealed housing having an opening extending into said housing for conducting beams of light projected from an external source;
means mounting a light sensitive device within said housing and adjacent said opening adapted to retain said device for intercepting projected light beams conducted through said opening;
a rotatable disk of transparent material having a first and a second plane side surface mounted on said housing across said opening with radial segments of its first side surface disposed across said opening facing said device and radial segments of its second side surface facing said source, and having an axis of rotation aligned in an off-set, parallel relationship with respect to the longitudinal axis of said opening;

an operative power train connected with said disk and adapted to rotate said disk about its axis of rotation, whereby successive radial segments of said disk are caused to progress across said opening as said power train is actuated;
means defining a disk cover arranged adjacent to the second side surface of said disk and mounted on and sealed to said housing and having means defining therein a port disposed in coaxial alignment with said opening; and



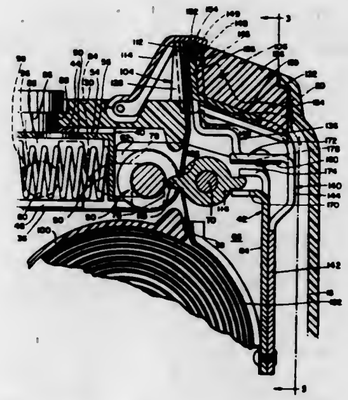
sealing means disposed about the circumference of said port and extending between said disk cover and said second surface of said disk adapted to seal said port to ambient atmosphere, whereby the radial segments of said disk may be exposed to ambient atmosphere only at such time as they may become interposed between said opening and said port.

3,289,558
SELF-DEVELOPING CAMERA WITH INDEXING MECHANISM
Richard R. Wareham, Marblehead, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,069
12 Claims. (Cl. 95—13)



1. In photographic apparatus including an engagement member mounted for rotation, by and in response to movement of a photographic sheet relative to said member from said apparatus, about an axis disposed transversely of the direction of movement of said sheet, said engagement member including a plurality of radial projections for engaging successive engageable portions of said sheet to arrest movement of said sheet, and a manually engageable control member adapted to be moved from a rest position to a release position prior to commencement of movement of said sheet and from said release position to said rest position during initial movement of said sheet, the combination therewith of means for controlling the rotation of said engagement member comprising:
an elongated stop member mounted on said control member and including a free end section extending in the same general direction as said axis of rotation of said engagement member into the circular path of rotation of said projections; and
support means located in fixed position adjacent said path of rotation on opposite sides of said end section and positioned to permit movement of said end section lengthwise into and from said path of rotation and limit motion of said end section in directions tangential to said path of rotation;
said stop member being mounted on said control member for lengthwise movement of said end section from said path during and in response to movement of said sheet-severing member from said rest position to said release position and into said path during and in response to movement of said control member from said release to said rest position;
said free end section of said stop member being biased by said support means, when said control member is in said release position, in a direction opposite to the direction of movement of said projections in response to movement of said sheet in engagement therewith.

3,289,559
CAMERA INDEXING MECHANISM
Otto E. Wolff, Wayland, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,070
5 Claims. (Cl. 95—13)



1. In photographic apparatus including a rotatable pressure-applying member for distributing a processing liquid in contact with a photographic sheet during movement of said sheet relative to and in engagement with said pressure-applying member, an engagement member mounted coaxially with said pressure-applying member for rotation in response to rotation of said pressure-applying member, said engagement member including a plurality of radial projections for engaging successive engageable portions of said sheet to arrest movement of said sheet and a manually engageable control member adapted

to be moved from a first position to a second position prior to commencement of movement of said sheet and from said second position to said first position during initial movement of said sheet, the combination therewith of means for controlling rotation of said engagement member comprising:

an elongated resilient stop member coupled with said control member and including an end section extending in a direction generally parallel with the axis of rotation of said pressure-applying member and engagement member into the circular path of rotation of said projections;

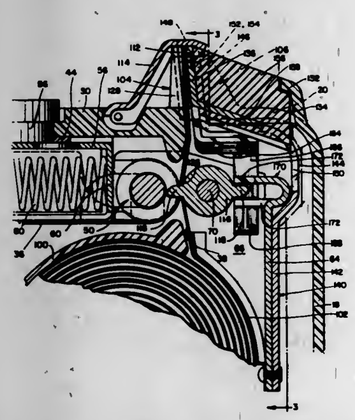
support means including support members located adjacent said path of rotation of said radial projections on opposite sides of said end section in position to allow lengthwise motion of said stop member and predeterminedly limit transverse motion of said end section in a direction tangential to said circular path of rotation;

said control member being engaged with said stop member for moving said end section of said stop member lengthwise between said support members in said path of rotation in response to movement of said control member between said first and second positions thereof; and

resilient means for biasing said control member into said first position;

said end section of said stop member being biased in a direction opposite to the direction of rotation of said radial projections and including a first portion disposed in said path of rotation at said first position of said control member, a second portion disposed in said path of rotation at said second position of said control member and an intermediate portion connecting said first and second portions and located to one side of said circular path of rotation of said projections whereby said end section is disengaged from one of said projections during movement of said control member between said first and second positions.

3,289,560
SELF-DEVELOPING CAMERA
Vaito K. Eloranta, Needham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,248
12 Claims. (Cl. 95—13)



1. In photographic apparatus including a housing having an opening through which successive sections of a sheet are withdrawn during processing and indexing means for engaging and arresting movement of said sheet through said apparatus, means for sealing said opening against the admission of light, severing said succession sections along transverse lines and controlling advancement of said sheet through said apparatus, the last-mentioned means comprising, in combination:

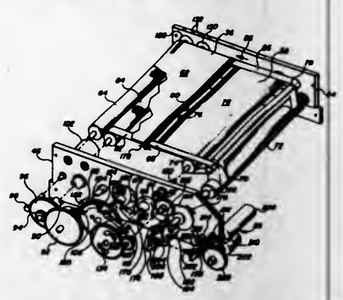
a pair of lips extending from said housing adjacent opposite sides of said opening for excluding light therefrom and at least one of said lips having an outer longitudinal edge at least equal in length to the width of said sheet;

said lips being formed with adjacent indentations extending inwardly to permit manual engagement of portions of said sheet located between said lips; and

a cutting member having an edge section mounted between said lips for manual movement from a cutting position to permit manual engagement of said sheet between said lips, said cutting member in said cutting position being located with said edge section extending adjacent said edge of said one lip across said indentation to provide an edge against which said sheet can be drawn for severing said sheet along a transverse line;

said cutting member being coupled with said indexing means for releasing said sheet for movement in response to displacement of said cutting member from said cutting position thereof.

3,289,561
FOCAL PLANE SHUTTER
John A. Maurer, Somerset, N.J., assignor to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,864
12 Claims. (Cl. 95—57)



1. An improved focal plane shutter meachanism comprising

a leading curtain means and a following curtain means,

a spring powered take-up roller for each of said leading and following curtain means,

a curtain feed roller common to both said leading and following curtain means,

guide roller means for varying the position of said leading curtain means relative to said following curtain means,

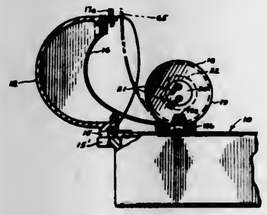
oscillatable lever means supporting said guide roller means for controllably oscillating the latter between a slit defining position and a curtain capped position,

drive means for releasing said curtain feed roller to permit said spring powered take-up rollers to wind said leading and following curtain means thereon to thereby cause said curtain means to traverse an exposure area with an exposure slit of predetermined width therebetween,

cam and rocker means coupled between said drive means and said oscillatable lever means for oscillating the latter from said slit defining position to said curtain capped position and for returning said lever means to said slit defining position, and

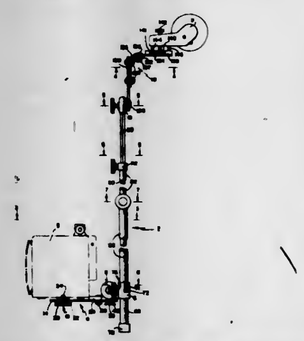
limit means for establishing the slit defining position of said oscillatable lever means.

3,289,562
HOLDER FOR EXPOSURE STATION OF DOCUMENT COPIER
Walter Robert Hicks, Manhasset, N.Y., assignor to Reeves Industries, Inc., New York, N.Y., a corporation of New York
Filed May 24, 1965, Ser. No. 458,085
2 Claims. (Cl. 95—77.5)



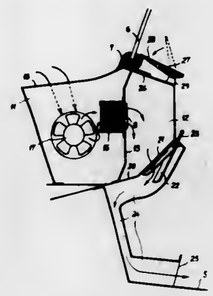
1. Apparatus for making contact prints including a relatively fixed and substantially cylindrical translucent support having a surface curved about a longitudinal axis and a source of light extending generally parallel to said longitudinal axis, a cover angularly movable with respect to the support between open and closed positions and that extends over the translucent support when in closed position for making a print, a sheet having one end fixed at a location close to the translucent support and having its other end connected to the cover remote from the axis of movement of the cover and movable with the cover from a position away from the support to a position wrapped around the support for the major part of the circumferential extent of the support as the cover is moved with respect to the support between open and closed positions, said sheet having a light-reflective surface on at least that side of the sheet confronting the cylindrical support, said light-reflective surface reflecting most of the light that strikes it so as to reduce the exposure time of the copier.

3,289,563
EXTENSIBLE CAMERA AND FLASH GUN SUPPORT
Owen Kent, Chicago, Ill., assignor to Reliance Camera & Photo Supplies Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 12, 1964, Ser. No. 389,000
7 Claims. (Cl. 95—86)



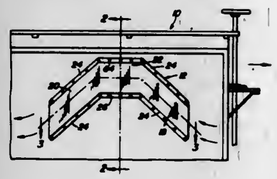
1. A hand-held camera and flash gun support comprising a support for detachably supporting a camera, a supporting member for detachably supporting a flash gun, a plurality of telescoping members including first and second telescoping tubes and a hexagonal rod, means for clamping said telescoping tubes in adjusted positions, mounting means secured to said camera supporting member and slidably receiving the outer one of said telescoping tubes for adjustment of said mounting means longitudinally of said outer telescoping member, said hexagonal rod having an annular groove adjacent to the outer end thereof, and means for mounting said flash gun support on the outer end of said hexagonal rod, said mounting means comprising a sleeve having an opening herein and closed at its upper end, a clamping screw carried by said sleeve and projecting into the opening in said sleeve, said sleeve being mounted on said rod for longitudinal movement relative thereto to align said screw with said annular groove or selectively with a flat surface of said rod below said groove whereby to position said sleeve for adjustment of said flash gun angularly about the longitudinal axis of the rod or selectively to clamp the flash gun against rotational adjustment relative to the rod.

3,289,564
AIR-CONDITIONING DEVICES FOR AUTOMOBILE VEHICLES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Seine, France
Filed Oct. 1, 1964, Ser. No. 400,787
Claims priority, application France, Oct. 3, 1963, 949,487, Patent 1,388,717
10 Claims. (Cl. 98—2)



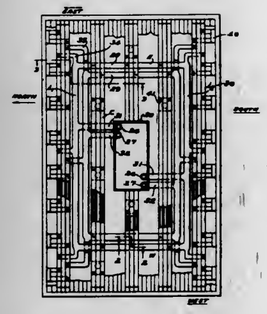
1. An air-conditioning device for automobile vehicles having a hollow girder forming a transverse reinforcing member arranged substantially under the windscreen of a vehicle comprising a partition perpendicular to the longitudinal plane of symmetry of the vehicle separating said hollow girder into a hot-air compartment and a forward cold air compartment, means communicating with the exterior of the body to said cold-air compartment, radiator means disposed in means connecting said hot- and cold-air compartments, at least one orifice in said hot-air compartment connecting said compartment to the passenger space, duct means communicating with the lower part of said hot-air compartment and extending over the whole width of the vehicle and terminating in the proximity of the floor of the vehicle by an elongated orifice orientated towards the rear of the vehicle, at least one shutter means being disposed between the hot-air compartment and said orifice of said duct, and an evacuation conduit constituted by parts of the vehicle body and opening into the ambient air in a zone in which the ambient air is put into depression by the movement of the vehicle.

3,289,565
AERATION SYSTEM FOR FREIGHT CAR
Thomas H. Papworth, 552 Honore Drive, New Orleans, La.
Filed Jan. 18, 1965, Ser. No. 426,280
5 Claims. (Cl. 98—6)



1. A ventilator duct formed of sheet material for ventilating box cars, said duct comprising an inlet duct, a ventilator box and an outlet duct, said inlet duct and outlet duct being U-shaped in cross section with flanges along the ends thereof for securing the inlet duct and outlet duct to the car to be ventilated, said ventilator box having flanges disposed centrally along the top and bottom thereof for securing the ventilator box to the car to be ventilated, said ventilator box having openings in one side and in the front and rear, said inlet duct having a conduit communicating with the front opening of the ventilator box, and said outlet duct having a conduit communicating with the rear opening in the ventilator box, the flanges on the inlet duct, ventilator box and outlet duct all being substantially in the same plane, said ventilator box extending on both sides of said plane whereby the ventilator box is adapted to partially fit into a car to be ventilated through an aperture provided therefor when said flanges are secured to the sides of the car.

3,289,566
STRUCTURAL AND AIR CONDITIONING SYSTEM FOR MULTI-STORY BUILDINGS
John S. Todd, Grosse Pointe Woods, Mich., assignor to The R. C. Mahon Company, Warren, Mich., a corporation of Michigan
Filed Mar. 21, 1963, Ser. No. 267,055
11 Claims. (Cl. 98—38)



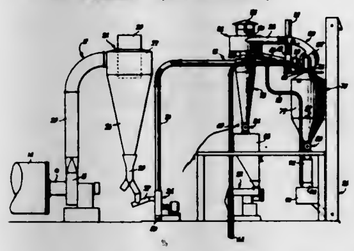
1. In a multi-story building, a combined structural and air conditioning system comprising
spaced apart horizontal supports at each story of the building,
a plurality of structural cells extending in side-by-side relation across said supports,
each said cell having a length many times its width and height,
means defining a vertically extending service core spaced from the periphery of said building,
at least two air supply risers extending substantially vertically in said service core for supplying conditioned air to each story,
a first continuous closed loop duct of substantially uniform cross section positioned at each story adjacent said structural cells and in horizontally spaced relationship to said service core and to the periphery of the building in the area of transition between the thermal interior and peripheral zones of the building,
means for connecting said first continuous closed loop duct with one of said air supply risers,
a second continuous closed loop duct of substantially uniform cross section at each story positioned adjacent said structural cells in horizontally spaced relation to said service core and to the periphery of the building in the area of transition between the thermal interior and peripheral zones of the building,
means for connecting said second continuous closed loop duct with the other of said air supply risers,
at least some of said cells at each story traversing said closed loop ducts at diametrically opposed points of said closed loop ducts intermediate the ends of said cells,
means for connecting at least one of said last-mentioned cells to said first closed loop duct at said points,
means for connecting at least another of said last-mentioned cells to said second closed loop duct at said points,
and means for mixing the air streams from said cells connected to said closed loop ducts and introducing them to zones of the building.

3,289,567
MINE VENTILATING APPARATUS AND METHOD
Kurt Renner, Krockhausstrasse 23, Bochum-Stiepel, Germany
Filed Apr. 22, 1964, Ser. No. 361,678
Claims priority, application Germany, Apr. 24, 1963, B 71,625
6 Claims. (Cl. 98—50)



1. A method of carrying away dangerous layers of gas collecting adjacent the inner wall surfaces of a tunnel or mine working, which is ventilated by an air stream flowing through the tunnel, which comprises blowing air into said layers of gas from the periphery of an air duct, characterized in that the air issues from the air duct in the vicinity of the outer surface of a convexly curved surface on the duct, said surface being near and essentially parallel to the wall of the tunnel, the direction of issuance of the air being tangential to the outer curved surface so that a portion of the issuing air flow is curved away from the wall surfaces of the tunnel thereby introducing into the main air stream of ventilating air a swirling, rotary component of motion transversely of the length of the tunnel which superimposes itself upon the linear motion of the main stream of ventilating air flowing through the tunnel.

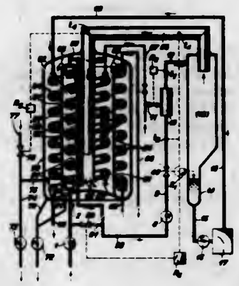
3,289,568
PRODUCT PELLETING AND COOLING APPARATUS
Richard L. Ronning, 8914 Eby Drive, Overland Park, Kans.
Filed Apr. 14, 1965, Ser. No. 448,168
13 Claims. (Cl. 99—235)



1. Apparatus for processing a dehydrated crop comprising:
a grinder;
a pelleter;
a cyclone separator for receiving ground crop from the grinder, the separator having an air outlet and particulate discharge means for discharging heavy particles of crop to the pelleter;
first conduit means between the grinder and the separator;
first blower means coupled with the separator air outlet for maintaining negative fluid pressure in the separator and in the first conduit means sufficient to effect pneumatic conveying of ground crop to the separator;
a fluid bed cooler for receiving pelletized crop from the pelleter, said cooler having a pellet inlet, air inlet means spaced below the pellet inlet. and an air outlet above the air inlet and proximal to the pellet inlet;
second conduit means between the pelleter and the pellet inlet of the cooler;
a collector for particulate crop, said collector having an air outlet;
second blower means coupled with the cooler air outlet for maintaining negative fluid pressure in the cooler and said second conduit means to pneumatically conduct pelletized crop to the cooler and draw air through the cooler, said second blower means having discharge means in communication with the collector for conveying particulate crop entrained in the air from the cooler to the collector; and
means communicating the collector with the separator for conducting said particulate crop to the separator, whereby the particulate crop is separated from said pellets and returned through the separator to the pelleter.

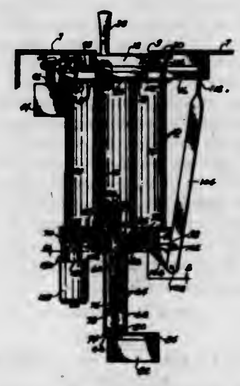
3,289,569
APPARATUS FOR HEATING LIQUID, PARTICULARLY FOR STERILIZING MILK
Martin Fröhlich, Rueruchen, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Sept. 2, 1964, Ser. No. 393,943
Claims priority, application Switzerland, Sept. 4, 1963, 10,922/63
13 Claims. (Cl. 99—251)

1. An arrangement for temporarily heating a liquid, more particularly for sterilizing milk, comprising:
a heat exchange apparatus including a vessel,
tubular heat exchange means placed in said vessel,
means for supplying liquid to be heated to said heat exchange means for preheating the liquid,
means for mixing the preheated liquid with live steam for heating the liquid to the desired temperature,
conduit means connecting said mixing means to said tubular heat exchange means for conducting the preheated liquid from the latter to the former, said conduit means including means for increasing the pressure of the preheated liquid,
expansion means connected to said mixing means for receiving heated liquid therefrom and for expanding and cooling the liquid and releasing vapor therefrom,
said expansion means being connected to said vessel for conducting the vapor released in said expansion means into said vessel for heating said tubular heat exchange means for preheating said liquid and condensing a portion of the vapor,



cooling means placed in said vessel and connected to said expansion means for receiving liquid wherefrom vapor has been released,
means conducting a coolant in heat exchange relation with said cooling means in said vessel, and
means for conducting the uncondensed portion of the vapor in said vessel in heat exchange relation with said coolant conducting means for condensing the portion of the vapor which has not been condensed when heating said tubular heat exchange means and preheating the liquid.

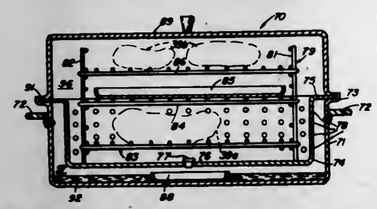
3,289,570
ELECTRONIC OVEN
Peter H. Smith, Maidenhead, England, assignor to J. Lyons & Company, Limited, London, England, a corporation of England
Filed Oct. 19, 1964, Ser. No. 404,770
14 Claims. (Cl. 99—327)



6. In an oven having heating means, means for energizing said heating means, and timing means for generating an electrical signal a predetermined time after said heating means has been energized, the combination comprising a metal wall having an aperture therein, a cylindri-

cal heating chamber disposed normal to said wall with an open end aligned with said wall, door means slidable along said wall between a first position covering said open end and a second position uncovering said open end, holding means for holding said door in its first position, means urging said door means toward said second position, a piston disposed within said cylinder for sliding movement between first and second positions, means latching said piston in said first position, means urging said piston toward said second position, means responsive to said door means moving from first to said second positions for unlatching said latch means, and means responsive to said electrical signal for disabling said holding means.

3,289,571
COOKING APPARATUS
Alexander J. Lewus, Cicero, Ill.
Original application Apr. 5, 1963, Ser. No. 270,840, now Patent No. 3,212,426, dated Oct. 19, 1965. Divided and this application July 7, 1965, Ser. No. 470,050
5 Claims. (Cl. 99—339)



1. A roaster apparatus for cooking meat, vegetables, and other food items within an oven comprising:

enclosure means, comprising a base member and a cover member loosely resting on said base member, defining a closed, unvented chamber having a low height in relation to its width and having minimal pressure-retention capability, adapted to be heated from all sides simultaneously in an oven;

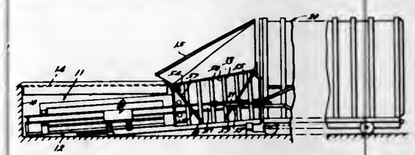
a moisture barrier, removably mounted in said enclosure means and closing off the lower portion of said chamber from the upper portion, said lower portion constituting a moisture chamber for holding a limited supply of water and said upper chamber constituting a cooking chamber;

the bottom of said barrier being substantially completely imperforate to prevent direct upward flow of steam from said moisture chamber into said cooking chamber, a limited peripheral portion only of said barrier pan affording a limited opening between said chambers to permit circulation of a limited supply of steam to said cooking chamber;

and support means, removably mounted within said base member and extending above said barrier into said cooking chamber, for supporting food items in elevated cooking position within said cooking chamber in position to be cooked by convection currents of dry air and moist air within said cooking chamber, said support means constituting a bar rack open on all sides to permit the flow of convection currents of dry heated air and of said limited supply of steam all around the food.

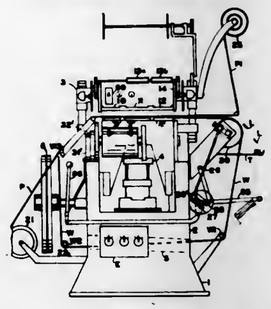
3,289,572
REFUSE LOADING AND COMPACTING APPARATUS
Robert J. Ploch, 116 Frost St., Jackson, Mich.
Filed Aug. 24, 1965, Ser. No. 482,080
10 Claims. (Cl. 100—53)

1. Apparatus for containerizing and compacting waste material or the like including a ram housing comprising spaced parallel side walls, a header bar interconnecting upper front corner portions of said side walls, a ram movable through said housing from a retracted position spaced from the header bar to a projected position under said header bar whereby material in said housing may be forced therefrom into a desired receiver, and means for sensing bending of the header bar including a shaft



extending parallel to and rotatable with respect to the header bar, said sensing means adapted to modify the actuation of the ram when said bar is bent and cam and follower elements carried by intermediate portions of the header bar and shaft and effective to rock the shaft in response to bowing of the header bar.

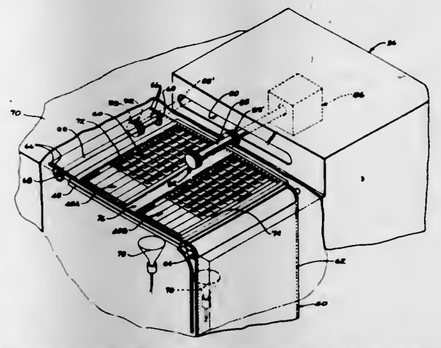
3,289,573
PRINTING AND STAMPING PRESS
Anthony Apicella, 39 Oaktree Lane, Levittown, Long Island, N.Y.
Filed Mar. 9, 1965, Ser. No. 438,298
2 Claims. (Cl. 101—27)



1. In a label manufacturing apparatus, means for simultaneously printing and applying heat sealable material to a web comprising, a reciprocating press having an upper frame and a lower frame, an upward actuating reciprocating member on said lower frame, a plurality of corresponding dies mounted in said upper and lower frames in the same horizontal plane, means to ink said dies with different colors, means to feed a first web in a first direction into operative contact with at least one of said dies, means to heat at least one of said dies, and means to simultaneously feed a second web of heat sealable material in a second direction at 90° to said first direction into operative contact with said heated dies, said webs being juxtaposed and stationary between said upper and lower frames at the time of printing and stamping whereby said heat sealable material of said second web is applied to said first web and said first web with said heat sealable material applied thereto is adapted to be simultaneously printed in multi colors.

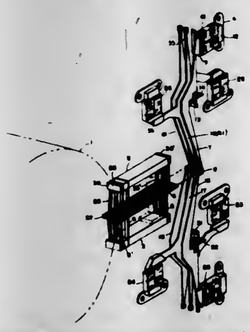
3,289,574
SETTABLE TYPE WHEEL PRINTING APPARATUS FOR A BOWLING GAME
Ernest C. Webb, Bay Village, Ohio, assignor to Cleveland Trust Company, Cleveland, Ohio
Filed Aug. 30, 1963, Ser. No. 305,591
5 Claims. (Cl. 101—93)

1. Apparatus for recording the frame-to-frame ball results and scores achieved in a bowling game on a sheet, comprising: stationary frame means; plate means disposed exteriorly of said stationary frame means and adapted to support said sheet; said plate means having ruled thereon a score sheet divided into player lines each of which is divided into frame spaces, said frame spaces being divided into score spaces and ball results boxes disposed directly above said score spaces; first carriage means slideably supported on said stationary frame means for reciprocal movement in a first direction; second carriage means slideably supported on said first carriage means for reciprocal movement in a second direction which is perpendicular to said first direction; said first and second directions being parallel to said player lines and the rows of frame spaces; movable frame means pivotally supported on and movable with said second carriage means;



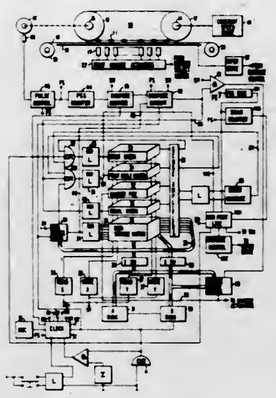
printing wheel drive means supported by said movable frame means; coaxially-aligned shaft means connected to said printing wheel drive means and extending therefrom in cantilever beam relation and adjacent to one face of said sheet; said frame means being pivotal about an axis extending transversely of said coaxially-aligned shaft means; three axially-aligned printing wheels connected to the free ends of said shaft means and disposed adjacent to said sheet; cooperating means associated with each of said first and second carriage means for positioning said printing wheels with respect to said score spaces and ball results boxes of said player lines; and means for moving said printing wheels into printing engagement with said sheet.

3,289,575
HIGH SPEED PRINTER HAMMER ASSEMBLY
Carl I. Wassermann, Queens Village, N.Y., assignor to Datamark, Inc., Westbury, N.Y., a corporation of New York
Filed Jan. 8, 1964, Ser. No. 336,519
5 Claims. (Cl. 101—93)



1. In a high speed printer, the combination of: a plurality of hammers each comprising a linear bar-like element, at least two leaf springs attached to each of said elements, and mounting means for said springs oriented to resiliently hold said linear element directed toward a predetermined printing area on a high speed character drum; an actuator for each of said hammers comprising three arms directed outwardly from two flat mutually perpendicular surfaces, two crossed flat springs one of which is secured to each of said surfaces, mounting surfaces for each of said springs at right angles to each other, wherein the first of said arms is adapted to be magnetically attracted by an electromagnet, the second of said arms is adapted to strike one end of one of said hammers and the third of said arms is adapted to bear against an adjustable stop to control the gap between the first said arm and its attracting electromagnet when said magnet is deenergized.

3,289,576
HIGH SPEED PRINTER WITH VARIABLE CYCLE CONTROL
Earl M. Bloom, Jr., Endicott, and Gonadij Krysiak, Vestal, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 2, 1964, Ser. No. 415,237
13 Claims. (Cl. 101—93)



1. In a printer apparatus, the combination comprising

(a) a print mechanism having an impression device at plural print positions of a print line for forming impressions from character type on a constantly moving type means,

(b) means for cyclically operating said print mechanism, including

(c) first means for generating character signals to determine characters in position to be printed,

(d) second means including a data storage means for presenting signals of characters in a line of data to be printed at various print positions,

(e) third means for generating an equal compare signal each time an identity occurs between signals from said first and second means,

(f) and means for regulating the cycle of said print mechanism as a function of the number of characters to be recorded in a line of data including

(g) a cycle control storage device comprising plural bistable storage elements adapted to be switched from a first to a second state for indicating positions at which characters are to be printed,

(h) means for controlling the switching of said bistable storage elements,

(i) said control means being responsive to equal compare signals generated by said third means for switching bistable storage elements to said first state,

(j) means operable during the operating cycle of said print mechanism for periodically interrogating said cycle control storage print cycle to determine when all bistable elements thereof have been restored to the same state,

(k) and means for terminating the print cycle of said print mechanism including means responsive to a line full signal from said interrogating means indicating that all bistable elements are in said first state.

3,289,577

WETTING AND CLEANSING AGENT FOR USE IN OFFSET PRINTING

Fritz Uhlig, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,002
Claims priority, application Germany, Jan. 11, 1962, K 45,625
4 Claims. (Cl. 101—149.2)

1. In an offset printing process, the improvement which comprises dampening the printing plate with an aqueous fountain solution containing 0.001 to 0.1 percent by weight of a compound selected from the group consisting of polyvinyl sulfonic acid and polystyrene sulfonic acid.

3,289,578

LITHOGRAPHIC PRINTING PLATE WITH VACUUM DEPOSITED IMAGE

Patrick F. Grosso, Stamford, Conn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 11, 1966, Ser. No. 541,535
6 Claims. (Cl. 101—149.2)

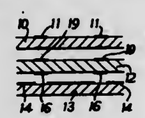
1. A lithographic printing plate, consisting of a substrate of low vapor pressure having an imagewise surface deposit in predetermined areas thereof corresponding to information to be duplicated and consisting of an invisible layer of refractory metal about 20 to 150 Angstrom units in thickness and a receptivity-modifying material of the class consisting of oil and water co-deposited in vacuo, the said metallic image areas being hydrophilic and printing ink repellent when water is present and hydrophobic and printing ink receptive when oil is present.

3,289,579

DUPLICATING MASTER SHEETS

Alfred Ernest Block, Bourne End, England, assignor to Block and Anderson Limited, London, England, a British company

Filed Mar. 22, 1965, Ser. No. 441,817
Claims priority, application Great Britain, Mar. 8, 1961, 8,508/61
8 Claims. (Cl. 101—149.4)



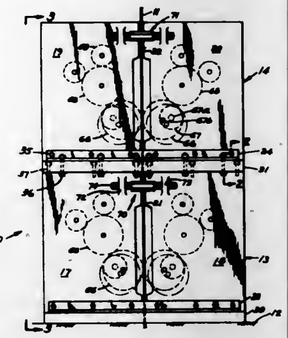
5. The method of producing a hectographic spirit duplicating master or like sheet from a sheet bearing an original image in material non-absorptive of infra-red radiation, which comprises the steps of providing an offset repeat of the original image in heat sensitive pigment-containing material which is absorptive of infra-red radiation on the side of said original sheet opposite to that carrying the original image, placing a receptive sheet of material suitable for forming the base of the produced master sheet between the image-bearing original sheet and a transfer sheet of heat sensitive transfer material including an alcohol-soluble pigment, the side of said original sheet carrying said off-set repeat of the original image being in contact with one side of said receptive sheet and the heat sensitive transfer material of said transfer sheet being in contact with the opposite side of said receptive sheet, maintaining said sheets in face-to-face contact with one another while subjecting them to infra-red radiation of an amount sufficient to cause melting and displacement of said off-set image material and said transfer material to opposite sides of said receptive sheet by heat from said off-set repeat of the original image upon heating of such off-set repeat image by absorption of said radiation and then removing said receptive sheet for use as the required duplicating master sheet.

3,289,580

ROLLER SUPPORT ADJUSTING DEVICE

Orville V. Dutro, 5068 N. Commonwealth, La Canada, Calif.

Filed Aug. 4, 1964, Ser. No. 387,358
12 Claims. (Cl. 101—221)



1. In a press adapted to be supported vertically from a foundation, said press being of the class wherein a pair of cylinders is rotatably mounted so as to contact the opposite sides of a web, the improvement comprising: two opposed and mutually facing side plates, each of said side plates comprising two spaced-apart rigid cylinder support members, a bight joining the support members of each pair adjacent to a lower margin thereof; a resilient, incompressible separator member contiguous to and disposed beneath and supporting the support members of each side plate; and adjustable spacer member interconnecting the support members of each pair at a location vertically spaced from the bight member; and opposed cylinder support means carried by each of said support members and adapted to journal a cylinder to the cylinder support means, whereby adjusting the spacer members varies the spacing-apart of the two support members and thereby adjusts the spacing-apart of the cylinders which they support.

3,289,581

INK MONITORING SYSTEM FOR PRINTING PRESSES

James Burton Roozee, Arlington Heights, Ill., assignor to Vandercook & Sons, Inc., Chicago, Ill., a corporation of Delaware

Filed May 12, 1964, Ser. No. 366,845
1 Claim. (Cl. 101—269)

A printing press comprising,

a horizontal bed,

a carriage mounted on said bed for reciprocal movement longitudinally therealong between opposite ends of the bed,

an ink drum and a fountain roll having a supply of ink thereon rotatably mounted on fixed spaced parallel axes on said bed at one end thereof,

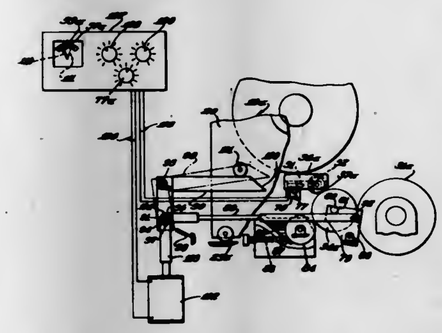
means for rotating said ink drum and said fountain roll,

a transfer roll mounted on said bed between said fountain roll and said ink drum for pivotal movement therebetween and for alternate ink transfer engagement therewith for depositing a layer of ink on said ink drum,

a longitudinal linkage arm connected to said transfer roll,

said linkage arm being movable reciprocally in a longitudinal direction for pivoting said transfer roll back and forth between said fountain roll and said ink drum and being swingable in a longitudinally transverse direction between first and second positions thereof,

actuating lever means mounted on said bed and operatively engageable with said carriage and said linkage arm and effective when said linkage arm is in said first swingable position thereof to pivot said transfer roll from said ink drum to said fountain roll when said carriage is moved to said one end of said bed and to pivot said transfer roll from said fountain roll to said ink drum when said carriage is moved to the other end of said bed,



said actuating lever means being effective when said linkage arm is in said second swingable position thereof to maintain said transfer roll in engagement with said ink drum when said carriage is moved to either end of said bed,

an electric solenoid for moving said linkage arm between said first and second swingable positions thereof upon energization and de-energization of said solenoid, respectively, and

ink monitoring means for energizing and de-energizing said solenoid as a function of the thickness of the layer of ink on said transfer roll comprising,

a hollow translucent monitoring roll having a cylindrical wall engaging said transfer roll for corotation therewith whereby the layer of ink on said monitoring roll is proportional to the layer of ink on said transfer roll,

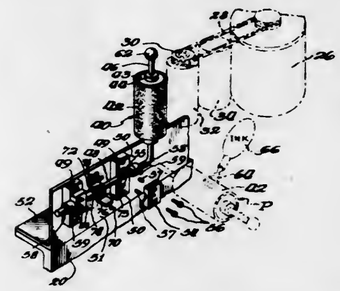
an electric lamp situated outside of said monitoring roll for directing light through the wall thereof and the ink deposited thereon, and circuit means comprising a photo cell situated within said monitoring roll to sense the intensity of light transmitted through said wall and a relay interconnecting said photocell and said solenoid for energizing and de-energizing said solenoid as a function of the intensity of the light being received by said photocell.

3,289,582

INKING DEVICE FOR PRINTING MACHINES HAVING A PIVOTALLY MOUNTED INKING WHEEL

James G. McKay, Chicago, Ill.
(196 N. Dee Road, Park Ridge, Ill.)

Filed May 27, 1964, Ser. No. 370,534
4 Claims. (Cl. 101—329)



1. In a rotary printing apparatus for marking individual packages moving in a line past a rotary printing member, a rotary inking device for mounting on the apparatus comprising, an inking wheel including a cylindrical body of cellular porous material, a unitary axle member having said inking wheel mounted thereon in a first position for rotation on an axis substantially parallel to the axis of rotation of the printing member for affecting ink transfer from the circumference of the wheel during rotation thereof, spring-loaded journal-bearing members adapted to be installed on the apparatus having said axle member pivotally mounted thereon for selective movement of the inking wheel to a second position wherein the axis of rotation of the inking wheel is transverse to the axis of rotation of the printing member and the wheel is offset from the ink transfer position thereof relative to the printing member, and stop means secured to and movable with said axle member to abut said apparatus for preventing movement of said inking wheel past either one of said two mentioned positions thereof, said axle member comprising a substantially L-shaped member having the inking wheel mounted on one leg thereof and the second leg mounted on said bearing members, said stop means comprising a clamping plate secured to said axle member having a flange portion at opposite ends thereof arranged to be selectively engaged against the apparatus for preventing such movement of the inking wheel.

3,289,583

EXPLOSIVE CHARGE

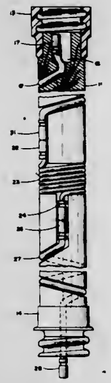
Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Apr. 21, 1965, Ser. No. 449,836
6 Claims. (Cl. 102—20)

2. A linear explosive charge element adapted to be fastened in linear combination with at least one or more similar elements to form an explosive charge assembly for detonation below the surface of the earth, each charge element being of such a length as to be easily handled at a shot point, and each element adapted to be constructed for a predetermined average velocity of propagation of detonation along the axis of the element which is substantially matched to the velocity of elastic wave propagation in the earth material adjacent the explosive element, comprising,

(1) a linear substantially rigid cylindrical support member,

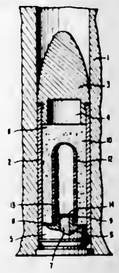
(2) means forming a pattern of helical guides at the surface of said support member adapted to guide the placement of a length of cordlike explosive element,
(3) said guides occupying substantially the entire length of said support member,
(4) said pattern of guides comprising at least two segments, each segment having a different helical angle from the other segment,
(5) cordlike explosive composition placed in said helical guides and extending from end to end of said member, the composition in the helix of greatest angle being larger in charge weight per unit length than the composition in the helix of smallest angle,
(6) the helical angle of said guides having the larger weight per unit length of composition in one segment, being such that with the known velocity of detonation of said explosive, the velocity of propagation of detonation along the axis of said element in said segment is greater than the velocity of propagation of elastic waves in the adjacent earth material,
(7) the helical angle of said guides having the smaller weight per unit length of composition in the other segment, being such that with the known velocity of detonation of said explosive the velocity of propagation of detonation along the axis of said element in said other segment is less than the velocity of propagation of elastic waves in the adjacent earth material,



whereby the average velocity of propagation of the detonation along the axis of said support member from one end to the other is intermediate between the velocity of propagation in the two segments.

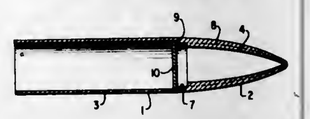
3,289,584
MORTAR AMMUNITION
Hans Stadler, Nurnberg, and Heinz Gawlick, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Apr. 13, 1965, Ser. No. 447,812
Claims priority, application Germany, Apr. 18, 1964, D 44,201
18 Claims. (Cl. 102—38)

1. A cartridge comprising a substantially tubular cartridge case; a base portion closing the rear end of said cartridge case; a hollow propellant charge within said cartridge case; substantially tubular case means defining a substantially axial free expansion chamber for the propellant charge gas extending between 20% to 80% of the entire length of said propellant charge within said hollow propellant charge, said free expansion chamber consisting essentially of gases and being substantially free of any explosive material; a projectile telescopically engaged with the forward end of said cartridge case; said cartridge case and said projectile having interengaging means for normally preventing relative axial movement; and said projectile having central recess means opening



rearwardly for providing an additional free expansion chamber for the gases produced by the combustion of said propellant charge.

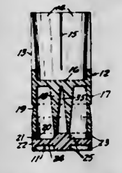
3,289,585
SHELL CONSTRUCTION
Hans Heinrich Rudolph and Dieter Menzel, Egersdorf uber Nurnberg, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdrof, Germany
Filed Apr. 23, 1965, Ser. No. 450,401
Claims priority, application Germany, Apr. 23, 1964, D 44,248
20 Claims. (Cl. 102—41)



1. A shell for maneuver ammunition, comprising case means, an easily disintegrating powder-like filling means within said case means, the forward part of said case means forming the shell tip, the internal diameter of said shell tip being substantially less than the internal diameter of said rearward section substantially at their junction, a generally radially inwardly extending and rearwardly facing substantially longitudinal extending reinforcing rib means reinforcing said case means at least in the area of said shell tip, said rib means being distributed over the circumference and being provided at least one the inside of said shell tip,
and at least one step-shaped offset means extending over the entire circumference for enlarging the interior space of the case means at the transition from said shell tip to the substantially cylindrical rearward section of said case means, and said offset means absorbing to a substantial extent the thrust exerted by said filling means because of the propellant gas pressure on the rear of the shell during firing.

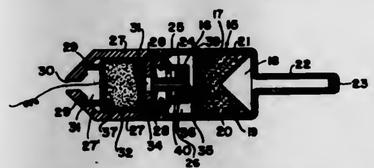
3,289,586
WAD COLUMN
William B. Horn, Minneapolis, and William N. King and Edward E. Merritt, Anoka, Minn., assignors to Federal Cartridge Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 9, 1964, Ser. No. 409,723
6 Claims. (Cl. 102—42)

4. A pouch wad for a shot shell comprising in combination: a flanged gas sealing overpowder wad; a hollow cylinder of plastic material open at one end and having a transverse web intermediate its ends, said cylinder including longitudinally extending slits on one side of said web communicating with said open end, said open end of said cylinder and said web forming a pouch for receiving the shot of a shot shell; an interconnecting portion rigidly secured to one of said flanged gas sealing wad and hollow cylinder and releasably secured to the other;



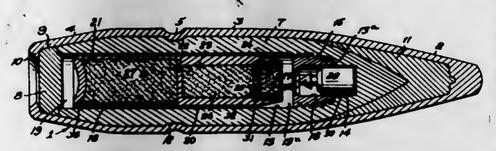
and yielding means on said hollow cylinder on the other side of said web allowing controlled and only limited collapse of said hollow cylinder upon firing of said shot shell.

3,289,587
FIN STABILIZED PROJECTILE
John J. Donnelly, Willingboro, N.J., and Andrew J. Grandy, North Hills, and Francis J. Shinaly, Levittown, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed July 7, 1965, Ser. No. 470,303
5 Claims. (Cl. 102—49)



1. A propellant actuated device comprising,
a main body having a peripheral portion,
fin means connected to said body and extending rearwardly of said body and outwardly substantially as much as said peripheral portion,
said fin means having means protruding from a rear portion thereof and extending inwardly of said peripheral portion for controlling exhausting propellant gas, and
propellant means positioned forwardly of said inwardly extending portion.

3,289,588
CALIBER .50 SPOTTING BULLETS
Aaron L. Hitchens, North Haven, Henry F. Fountain, Madison, Vernon L. Dawson, Wallingford, and Edward D. Lowry, New Haven, Conn., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 16, 1954, Ser. No. 416,724
1 Claim. (Cl. 102—60)



A spotting and observing bullet comprising a hollow jacket having a forward ogive, a central cylindrical body portion and a plug closing off the rear end of said jacket, a core in said jacket tightly engaging the inner wall thereof, and having it rear end abutting said plug and its front end tapering forwardly and axially to within a short distance of said forward ogive, there being an axial bore of substantial diameter in said core extending for almost its entire length and ending rearwardly of said forwardly tapering portion, said axial bore having a forwardmost portion of reduced diameter, an insert screw threadedly engaging the wall of said axial bore adjacent said portion of reduced diameter, said insert having a bore in axial alinement with said bore portion of reduced diameter, said insert bore having its rear end closed off by a thin metal diaphragm, a firing pin having an enlarged portion slidable within said bore of reduced diameter and a rearwardly directed point extending almost to said thin diaphragm, said firing pin being rearwardly moveable at setback to pierce said diaphragm and expose said point, a setback responsive inertia weight slidable in said axial bore rearwardly of said diaphragm, said inertia weight having a rearward axial bore for receiving a smoke producing agent when expelled into atmosphere and a forward axial bore for receiving an explosive charge detonatable when forcibly engaged by the exposed portion of said firing pin to expel said smoke producing agent into atmosphere, said inertia weight being forwardly slidable at impact to bring said firing pin into engagement with said explosive charge.

3,289,589
CALIBER .50 SPOTTING BULLETS
Aaron L. Hitchens, Northridge, Calif., Henry F. Fountain, Madison, Conn., Vernon L. Dawson, Aberdeen, Md., and Edward D. Lowry, Short Beach, Conn., assignors to the United States of America as represented by the Secretary of the Army
Original application Mar. 16, 1954, Ser. No. 416,724. Divided and this application July 30, 1958, Ser. No. 752,149
4 Claims. (Cl. 102—60)



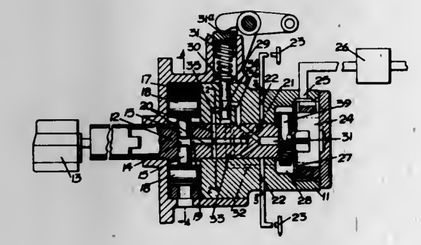
1. A spotting and observing bullet comprising a hollow jacket having a forward ogive, a central cylindrical body portion and a plug closing off the rear end of said jacket; a core in said jacket tightly engaging the inner wall thereof, said core having a rearward tail portion abutting said plug at its rear end and extending forwardly for a short distance, and a forward portion abutting said tail portion at its rear end and a front end tapering forwardly to within a short distance of said forward ogive; there being an axial bore formed in said tail portion ending in a forward transverse wall, a smoke producing agent spontaneously combustible when exposed to atmosphere received in the rear end of said tail portion and flash initiated explosive charge in the forward end thereof detonatable to expel said smoke producing agent to atmosphere, said transverse wall having a central flash hole, means forming an axial bore in said forward core portion extending forwardly from said transverse wall to within a short distance of said forwardly tapering front end, there being a rearwardly directed pointed projection forming a firing pin integral with said front end and extending axially a short distance into the axial bore in said forward core portion, an inertia weight slidably engaging the wall of the bore in said forward core portion and having a reduced rearward portion, a flash initiated powder charge in said rearward reduced portion, a primer in the forward portion of said inertia weight ignitable when forcibly engaged by said firing pin to initiate said powder charge, set-back responsive differential crimp mechanism for normally maintaining said bullet unarmed and comprising diametrically opposed flap arms secured to the forward portion of said core adjacent said inertia weight and having inwardly turned edges received in corresponding

grooves formed in the reduced portion of said weight, the inwardly turned edges of said flap arms having angularly disposed rear surfaces normally engaging a rear edge on said recesses whereby said inertia weight is normally locked against forward sliding movement, said inwardly turned edges being radially outwardly yieldable upon set back to release said inertia weight for forward sliding movement at impact to bring said primer in contact with said firing pin.

3,289,590
LIQUID FUEL PUMPING APPARATUS FOR INTERNAL COMBUSTION ENGINES

Keith Finer Hutcheon, Gerrard's Cross, England, assignor to C.A.V. Limited, London, England

Filed Sept. 14, 1964, Ser. No. 396,076
Claims priority, application Great Britain, Sept. 14, 1963, 10,098/63
6 Claims. (Cl. 103—2)

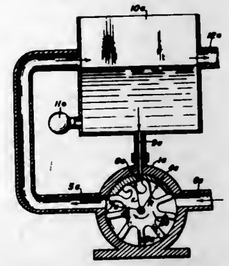


1. Liquid fuel pumping apparatus for supplying fuel to an internal combustion engine, and comprising in combination, an injection pump which is arranged to be driven in timed relationship to an engine for supplying fuel thereto, a feed pump for supplying fuel to the injection pump, passage means connecting said feed pump to said injection pump, governor means in said passage means for controlling the amount of fuel fed by the feed pump to the injection pump, said governor means being in part, responsive to the output pressure of the feed pump, a valve for controlling communication between the feed pump and said passage means, centrifugal biasing means acting to close said valve as the engine speed increases, fluid pressure biasing means acting to open said valve with a force dependent upon the output pressure of the feed pump, said centrifugal biasing means being such that at any given speed, the valve will be moved to its closed position to shut off the supply of fuel to the injection pump when the force of said centrifugal biasing means exceeds the force dependent upon the output pressure of the feed pump.

3,289,591
DEVICE FOR SUCKING LIQUID, AIR AND SOLID PARTICLES

Sven Gustaf Eriksson, 15 Sveavagen, Djursholm, Sweden

Filed Feb. 10, 1964, Ser. No. 343,794
Claims priority, application Sweden, Feb. 12, 1963, 1,532/63
2 Claims. (Cl. 103—25)

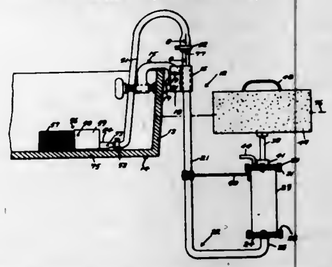


1. A rotary pump comprising a casing having an inlet for primary fluid and an outlet located approximately on opposite sides of its periphery, a rotor located in said casing and having a plurality of elastic vanes extending radially and spaced apart circumferentially, an insert in said casing between said outlet and said primary fluid inlet considered in the direction of movement of said vanes, said insert having inner surfaces concentric with the axis of said rotor, and located consecutively in the direction of rotation of said rotor, the first of said inner surfaces being located closer to said axis than the next inner surface, said casing having an opening for a lubricating liquid extending into said casing and through said insert where said first and second inner surfaces are adjacent each other, means supplying said lubricating liquid to said opening whereby when one of said vanes ascends to said second surface it sucks a predetermined volume of said lubricating liquid through said opening to prevent overheating of said elastic vanes, the circumferential spacing of said vanes being less than the circumferential spacing between said inlet for primary fluid and said opening for secondary liquid whereby interference between the action of said inlet and said secondary opening is avoided.

3,289,592
WAVE OPERATED PUMP

John K. Franzreb, Rte. 2, Box 252, Kingston, Tenn.

Filed Feb. 16, 1965, Ser. No. 433,087
5 Claims. (Cl. 103—68)



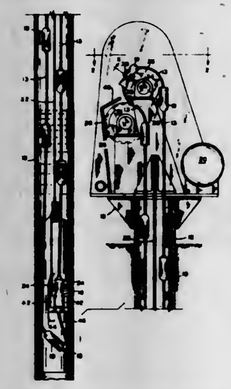
1. A boat pump comprising a pump cylinder, a pump piston reciprocatory mounted in said cylinder, means supporting one of said pump parts on a boat, a float adapted to be supported in water surrounding the boat and supporting the other pump part, an outlet port opening through the upper end of said cylinder, an inlet port opening through the lower end of the cylinder, a conduit having an outlet end connected to said inlet port and an inlet end adapted to be disposed in the bilge of the boat,

said piston having a passage extending therethrough, an upwardly opening check valve for closing the piston passage during movement of the piston toward the upper end of the cylinder, a check valve for closing said conduit when the piston is moving toward the lower end of the cylinder, and float actuated means connected to the inlet end of the conduit for closing the inlet end of the conduit when the liquid level in the boat bilge falls below a predetermined point to prevent operation of the pump.

3,289,593
DEVICE FOR TRANSFERRING LIQUIDS

Stuart E. Corry, 4511 S. Lewis Place, Tulsa, Okla.

Filed Oct. 19, 1964, Ser. No. 404,703
6 Claims. (Cl. 103—72)

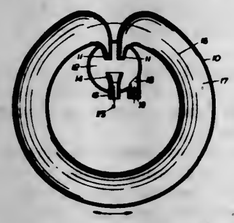


1. A device useful for transferring liquids comprising:
a series of compressible cups attached to a continuous cable, each of said cups having an open end and a closed end and having perforations in the side walls near said closed end;
a first power-driven upper roller wheel which contains an upper pressure squeezer assembly and an upper roller wheel recess;
a second upper roller wheel parallel to said first upper roller wheel; and
a divider wall having a lower cup guide, a vent, a cup-positioning flange, and bottom rollers.

3,289,594
VALVELESS PUMP FOR LIQUIDS

Ernst Thiele, 61a Rossauerlaende, Vienna, Austria

Filed July 8, 1964, Ser. No. 381,157
Claims priority, application Austria, July 11, 1963, A 5,546/63
5 Claims. (Cl. 103—76)

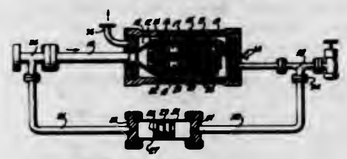


1. A valveless pump, comprising a pump tube in the form of a closed ring which oscillates about its axis at high speed to impart motion to liquid contained in the tube, said tube having an inlet and an outlet, a nozzle tapered toward said outlet for ejecting a liquid jet during the oscillating movement of the tube in one direction, a cavity adjoining the outlet end of said nozzle, a discharge duct communicating through said outlet with the cavity opposite to the outlet end of said nozzle to receive the liquid jet ejected by the nozzle, a supply duct connected to said inlet to discharge laterally into said cavity, said supply and discharge ducts extending to the axis of the ring and being bent at said axis to extend in the axis and form the mounting for oscillating the ring tube of the pump.

3,289,595
HIGH PRESSURE CANNED MOTOR PUMP

Friedrich Bach, Leuna, Kreis Merseburg, Germany, assignor to Veb Leuna-Werke "Walter Ulbricht," Leuna, Kreis Merseburg, Germany

Filed Aug. 20, 1965, Ser. No. 481,161
5 Claims. (Cl. 103—87)

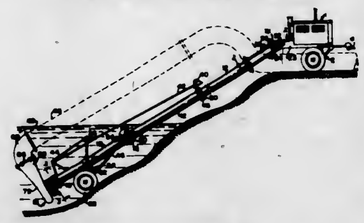


1. A hermetically sealed motor pump unit comprising a pressure-resistant casing, a canned motor, a pump for pumping high-pressure fluids, said pump and said motor being disposed in said casing, said motor having a stator compartment and a rotor compartment, means for connecting said rotor compartment to the pressure side of said pump, and means for connecting said stator compartment to the suction side of said pump for producing a pressure differential between said rotor and said stator compartments such that the pressure acting on the stator compartment is lower than the pressure in the rotor compartment.

3,289,596
COMBINATION CENTRIFUGAL AND TURBINE PUMP

Frederick Howard Springer, Rte. 1, Hale Center, Tex.

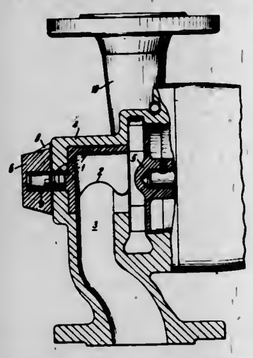
Filed Sept. 8, 1964, Ser. No. 394,929
6 Claims. (Cl. 103—88)



1. A centrifugal pump comprising;
(a) a volute housing in the form of a helix,
(1) said volute housing having an inlet opening formed in one side thereof in volute axial relation thereto,
(b) circumferentially spiral partitions in said housing intermediate said opening therein and the periphery thereof,
(1) said spiral partitions being substantially complementary in curvature,
(2) said housing having a passage intermediate the outer ends of said spiral partitions and the inner periphery of said housing,
(3) said spiral partitions each having the distal end thereof in overlapping relation with respect to the opposite end of the preceeding adjacent partition,
(c) a bearing support connected to the inlet end of said housing,

(d) a shaft journaled in said bearing support,
(e) a unitary vaned impeller including spiral screw vanes integrally associated with impeller blades mounted on said shaft and extending into said housing through said opening therein,
(1) a hollow casing extending outwardly and axially of said shaft for a spaced distance and including means forming an opening in opposite sides thereof to provide fluid flow to said inlet opening, and
(f) said housing having a discharge opening formed in the periphery thereof tangential to the periphery of said housing.

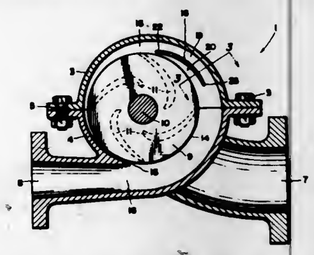
3,289,597
CENTRIFUGAL PUMP
Max Stehrenberger, Brugg, Switzerland, and Leif Rasmussen, Glostrup, Denmark, assignors to K. Rutschi AG, Pumpenbau Brugg, Brugg, Switzerland
Filed Dec. 23, 1963, Ser. No. 332,441
Claims priority, application Switzerland, Jan. 16, 1963, 524/63
4 Claims. (Cl. 103—97)



1. A circulating pump comprising a pump casing defining an impeller chamber, a transverse inlet passage leading to said impeller chamber and including an inlet chamber adjacent to and coaxial with said impeller chamber and a discharge passage leading away from said impeller chamber, an impeller rotatably mounted in said impeller chamber, means connected to said impeller to rotate said impeller, a throttle member mounted in said inlet chamber and being rotatable to vary the flow area through said inlet passage, said throttle member comprising a gate including a wall portion which may be moved across the inlet passage to block at least a portion of the flow therethrough, and adjusting means on the exterior of said casing connected to said throttle member to rotate said throttle member to vary the amount of fluid circulated through said inlet passage to said impeller.

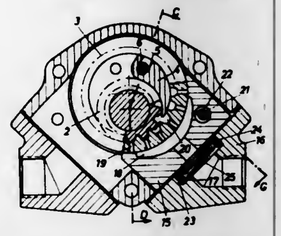
3,289,598
CENTRIFUGAL PUMPS
Frederic William Buse, Bloomsbury, and Samuel H. Weaver, Phillipsburg, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 21, 1965, Ser. No. 499,838
7 Claims. (Cl. 103—103)

1. A centrifugal pump comprising:
an impeller;
a casing surrounding the impeller and containing a volute-shaped chamber extending around the circumference of the impeller and including a cutwater area at one end and a throat outlet area at the other end;
said casing being divided into two halves for purposes of assembly of the pump;
one of said halves containing said cutwater area; and
a splitter partition located in said volute chamber and wholly contained in the other of said casing halves



for dividing the discarge flow of the impeller into two paths extending along a portion of said volute chamber.

3,289,599
HEAVY-DUTY GEAR PUMP
Otto Eckerle, Am Bergwald 3, Malsch, Germany; Helmut Weinzierl, Lisztstr. 5, Rastatt, Germany; and Robert Jung, Friedrich Ebertstr. 7, Malsch, Germany
Filed Apr. 6, 1964, Ser. No. 357,728
Claims priority, application Germany, Apr. 11, 1963, E 24,667
1 Claim. (Cl. 103—126)



A gear pump comprising, in combination:
(a) casing means defining a cavity therein;
(b) a drive shaft journaled in said casing means for rotation about a fixed axis;
(c) a pinion member mounted on said shaft in said cavity;
(d) an internally toothed annulus having a pitch diameter greater than the pitch diameter of said pinion member, said annulus being movably received in said cavity;
(e) control means engaging a circumferential portion of said annulus for urging the same in a direction toward said pinion member for meshing engagement with the same, whereby the engaged annulus and pinion member define therebetween a sickle-shaped space;
(f) an elongated filler member movably received in said space, said filler member tapering from one toward the other of the longitudinally terminal portions thereof;
(g) first pin means loosely securing said one terminal portion to said casing means for pivotal movement of the filler member about a first pivot axis parallel to said fixed axis, and for limited movement of the filler member relative to said pivot axis, said other terminal portion being received between said annulus and said pinion member and held in sealing engagement therewith by the engagement of said control means with said annulus, said control means including
(1) a plunger member,

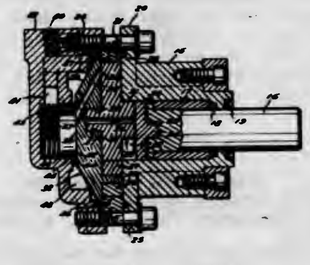
(2) means mounting said plunger member on said casing means for movement in said direction and for angular movement in a plane parallel to said direction,
(3) a control member interposed between said plunger member and said annulus in said direction,
(4) second pin means securing said control member to said casing means for pivoting movement about a second pivot axis parallel to said fixed axis and for limited movement of the control member relative to said second pivot axis, and
(5) means for urging said plunger member in said direction for abutting engagement with said control member.

3,289,600
HELICALLY THREADED ROTORS FOR SCREW TYPE PUMPS, COMPRESSORS AND SIMILAR DEVICES
Joseph E. Whitfield, P.O. Box 325, York, Pa.
Filed Mar. 13, 1964, Ser. No. 351,766
18 Claims. (Cl. 103—128)



1. In a fluid displacement device of the type having a housing provided with intersecting cylindrical rotor chambers and suction and discharge ports arranged diagonally opposite each other adjacent to the opposite ends of the housing, and a pair of complementary mating helically threaded rotors symmetrical in cross section throughout their length consisting of a main rotor and a gate rotor each having a plurality of threads and troughs, said rotors being rotatably supported within the chambers of said housing and cooperating with each other and said housing to form pockets at the suction port, to advance said pockets and the fluid therein axially along the rotors and to exhaust the fluid at the discharge end of the rotors through the discharge ports as the rotors revolve in opposite directions about the axes thereof, the rotors being held in timed relation by timing gears and the threads of each rotor cooperating with the troughs of the mating rotor and with said housing chamber walls to provide fixed close running clearances which effectively seal said pockets against leakage as the rotors are rotated to advance the pockets therealong, the improvement which comprises:
each of said rotors having a uniform section and a non-uniform section, the uniform sections extending from the suction end of the rotors to a point intermediate the ends of said rotors and the non-uniform sections extending from the discharge end of the rotors to the uniform section;
the main rotor characterized by having uniform cylindrical lands throughout its length at the root of the threads and uniform cylindrical lands throughout the uniform section at the tips of the threads, the sides of the threads throughout their length being generated by the crest edges of the gate rotor, the tips of the threads in the non-uniform section being cut away in a generally tapered manner to form inclined lands, said inclined lands beginning at the tips of the threads at the junction between said uniform and non-uniform sections and terminating at the discharge end of the rotor, the length of the inclined lands being less than the normal axial dimension of the discharge port and the height of the threads being reduced by substantially one-half at the discharge end of the rotor, the sharp edges formed by the intersections between the inclined lands and the sides of the threads being rounded to form generating arcs, said arcs being substantially tangential to the inclined lands and the sides of the threads, said inclined lands being widest at the discharge end of the rotor to form unbroken seal lines with the gate rotor as the rotors revolve in timed relation; and
the gate rotor being characterized by having inclined lands at the root of the troughs in the non-uniform section of said rotor complementary to the inclined lands of said main rotor and generating surfaces in said troughs.

3,289,601
FLUID DISPLACEMENT DEVICE USABLE AS A HYDRAULIC MOTOR OR PUMP
James A. Compton, South Euclid, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Feb. 12, 1965, Ser. No. 432,166
20 Claims. (Cl. 103—130)

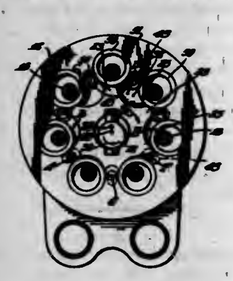


1. A fluid displacement device usable as a hydraulic motor or pump and comprising:
a fixed outside gear having an annular series of internal gear teeth;
means coacting with the outside gear to provide two fluid pockets circumferentially separated within the outside gear, said means including an inside gear eccentrically mounted within the outside gear and having a smaller number of external gear teeth for meshing engagement with the internal gear teeth on the outside gear and providing therewith the inner and outsides of said pockets, said inside gear being rotatable on its own axis and being revolvable orbitally about the axis of the outside gear to move said pockets circumferentially around the inside of said outside gear;
means for passing hydraulic liquid to and from said pockets between the gears;
a rotary shaft;
and Oldham coupling means acting between the inside gear and the shaft for imparting rotation between them.

3,289,602
FLUID PRESSURE DEVICE
Bernard C. Hudgens, West Lafayette, Ind., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 3, 1965, Ser. No. 484,918
13 Claims. (Cl. 103—130)

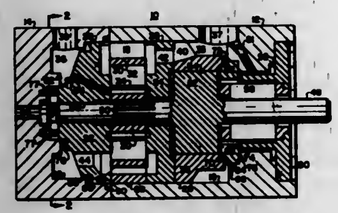
1. In an internal gear type fluid pressure device including a first gear surrounded by and meshed with a second gear, one of said gears having one less tooth than the other gear, said gears being relatively rotatable, one of

said gears being mounted for orbital movement relative to the other gear, said second gear having circumferentially spaced fragmental cylindrical recesses around the inner periphery thereof opening through said inner periphery, cylindrical rollers mounted in said recesses and free to rotate therein, said rollers projecting beyond said openings through the inner periphery of the second gear to provide the teeth for said second gear, said first gear



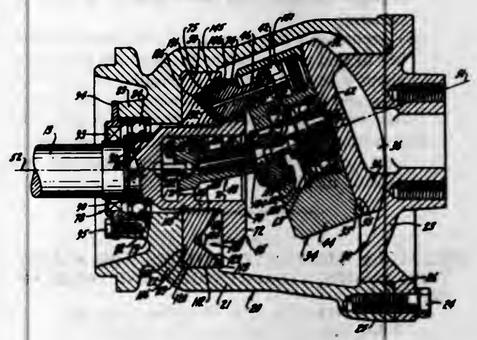
and a portion of the second gear between the rollers cooperating with the rollers to form expanding and contracting chambers therebetween, said first gear simultaneously contacting at least two rollers in all positions of the gears to form seals, two of said seals separating the expanding chambers from the contracting chambers, and passages communicating with the chambers for flow of fluid into the expanding chambers and out of the contracting chambers.

3,289,603
POWER TRANSMISSION
Raymond B. Pettibone, Detroit, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,729
15 Claims. (Cl. 103—136)



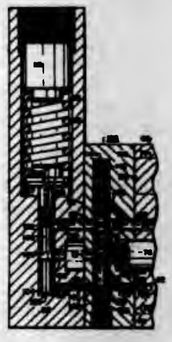
1. A fluid energy translating device comprising: a housing having a cavity; a cartridge assembly axially floatable in said cavity comprising a rotor operatively connected to a shaft extending from said housing and two plate members on opposite sides of said rotor, said shaft being rotatably journalled in said plate members, one of said plate members having a cam surface portion on one face thereof; means forming a complementary cam surface portion in one end wall of the housing cavity, said housing having a different co-efficient of temperature expansion than said cartridge elements and shaft; and means continuously urging said cartridge toward said end wall to maintain a sliding fit engagement between the complementary cam surfaces of the plate member and the cavity end wall, said sliding engagement complementary cam surfaces, upon relative expansion of said housing with the cartridge assembly, maintaining by wedging action the original concentric location of the cartridge assembly relative to the shaft axis and the housing.

3,289,604
FLUID DEVICE
Gunnar A. Wahlmark, 211 S. Rockford Ave., Rockford, Ill.
Filed Sept. 23, 1964, Ser. No. 398,571
11 Claims. (Cl. 103—162)



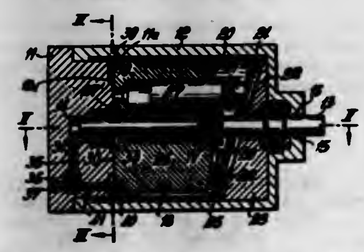
1. In a fluid device wherein a rotatable swash mechanism is universally drivingly connected with a rotatable cylinder mechanism and a plurality of pistons are operatively disposed between the mechanisms for reciprocation in the cylinder mechanism, the improvement comprising: an annular bearing ring having a bearing track formed therein, a plurality of bearing shoes seated on and slidable around said track, and spider means on the wash mechanism in mesh with said shoes whereby said shoes and the swash mechanism rotate together around an axis of rotation, said shoes being universally connected to the pistons.

3,289,605
POWER TRANSMISSION
Charles W. Funk, Garden City, and Harold R. Ward, Pontiac, Mich., assignors to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,653
7 Claims. (Cl. 103—162)



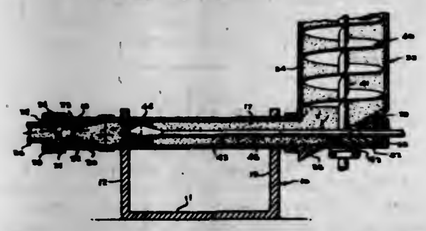
1. In combination with a fluid pump having fluid pressure operated mechanism for varying the displacement of the pump normally biased to a maximum displacement position, and a compensator control valve normally biased to a position closing the outlet side of the pump from the displacement varying mechanism and operable by pump fluid outlet pressure relatively higher than required to actuate the displacement varying mechanism to connect the outlet side of the pump to said mechanism for decreasing pump displacement: a fluid pressure actuated compensator bypass valve biased at starting of said pump to a position connecting the outlet side of the pump directly to the displacement varying mechanism for decreasing pump displacement and operable to another position, after the pump has been brought up to operating speed, by pump outlet fluid pressure lower than required to operate the compensator control valve to close direct communication between the outlet side of the pump and the displacement varying mechanism, said compensator bypass valve after said pump has been brought up to operating speed being adapted to remain in such other position and permitting the pump to operate in conjunction with the compensator control valve, as a normal pressure compensated, variable displacement pump.

3,289,606
AXIAL PISTON PUMP OR MOTOR ARRANGEMENT
Paul Bosch, Ludwigsburg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Mar. 16, 1965, Ser. No. 440,176
Claims priority, application Germany, Mar. 20, 1964, B 75,995
18 Claims. (Cl. 103—162)



1. In an axial piston pump or motor, in combination, casing means having a first control face and including high pressure and low pressure conduits opening in ports on said first control face; rotary cylinder means mounted in said casing means and having a second control face in sliding contact with said first control face, and cylinders with ports opening on said second control face, said first and second control faces forming two separate recessed areas, one of said recessed areas communicating with said low pressure conduit, said cylinder means having a surface forming a cavity in said casing means communicating with the other recessed area; and throttling means in one of said means connecting said other recessed area with said low pressure conduit so that leakage fluid from said high pressure port flowing into said recessed areas and into said cavity produces on said surface a pressure exceeding an opposing pressure acting only in the other recessed area whereby said cylinder means is pressed with said second control face against said first control face.

3,289,607
PUMP APPARATUS
Raymond A. Dellagatti, 815 Ogden Ave., Fairmont, W. Va.
Filed June 25, 1964, Ser. No. 377,889
7 Claims. (Cl. 103—178)



1. A piston construction comprising a piston head having a passageway therethrough, said passageway having rearwardly and forwardly facing conically shaped sections defining a restriction in said passageway, a connecting rod receivable within said passageway, said connecting rod having a forwardly facing surface complementary to and engageable with the rearwardly facing conically shaped section of said passageway during the pump stroke thereof for closing said passageway and said connecting rod having a plurality of forwardly and outwardly extending arm members having the ends thereof engageable with the forward end of said piston head during the return stroke of said connecting rod whereby the piston head may be moved while permitting said passageway to remain open, each of said arm members having a slender cross-sectional configuration.

3,289,608
SEPARATING DEVICE
Claude C. Laval, Jr., 2444 Farris Ave., Fresno, Calif.
Filed Apr. 23, 1965, Ser. No. 451,697
2 Claims. (Cl. 103—220)

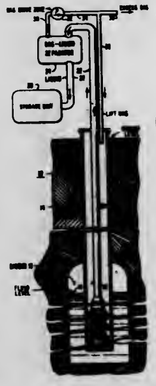


1. In combination with a pump adapted for location in a well in water having particles of sand or the like borne thereby and providing a downwardly extended intake conduit and an upwardly extended discharge conduit; a venturi located in the discharge conduit; a device for separating sand and the like from the water of the well having a fluid outlet connected to the intake conduit of the pump, a side wall concentric to a predetermined axis immersed in water in the well, and a lower end, said side wall having a multiplicity of inlets disposed tangentially concentrically about said axis in a common circumferential direction and directed inwardly obliquely toward the lower end of the tubular member; and a bypass conduit connected to the lower end of the separating device and to the venturi whereby upon actuation of the pump, water and particles of sand and the like borne thereby are drawn into the separating device through the multiplicity of inlets and the particles centrifuged from the water for descent in the separating device and passage through the bypass conduit to the venturi in bypass relation to the pump while the cleaned water rises in a vortex from the lower end of the separating device to the intake conduit of the pump for discharge through the discharge conduit and venturi.

3,289,609
LIQUID RECOVERY
Robert O. Pale, Los Angeles, Calif., assignor to Signal Oil and Gas Company, Los Angeles, Calif., a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 346,135
11 Claims. (Cl. 103—232)

1. A continuous process for recovering readily vaporizable liquid from an underground cavern, which process comprises carrying out in sequence and on a continuous

basis the steps of passing a lift gas comprising the gas phase of a readily vaporizable liquid down a well annulus and into contact with a readily vaporizable liquid in an underground cavern, said lift gas being under a drive pressure just sufficient to cause said lift gas to depress the liquid level in said annulus to below that in said cavern external of said annulus, the lift gas being passed into said cavern at about the dew point of said lift gas but at a rate sufficient to substantially maintain said gas in uncondensed form during said gas lifting, establishing and maintaining laminar flow of said lift gas in said annulus whereby a thermally insulative layer of said lift gas is formed around a plurality of gas lift zones to prevent condensation of said lift gas in said annulus and evaporation of said cavern liquid in said gas lift zones, injecting at least a major proportion of said lift gas containing a minor proportion of said liquid through a plurality of unrestricted upwardly directed



flow paths and into contact with the periphery of a lower gas lift zone of said plurality of gas lift zones, passing at least a mixture comprising a major proportion of said liquid and a minor proportion of said lift gas into the bottom of said lower gas lift zone and upwardly in said lower gas lift zone, said smaller unrestricted flow paths intersecting said upwardly moving liquid mixture in said lower gas lift zone to form a turbulent mixture therewith, whereby the rate of upward movement of said liquid in said lower gas lift zone is accelerated and laminar flow is inhibited in said gas lift zones, passing said liquid in mixture with said injected lift gas upwardly into and through an upper unrestricted gas lift zone of smaller cross section than the cross section of said lower gas lift zone, whereby upward movement of said gas and liquid is further accelerated, passing said mixture from said upper gas lift zone and into a gas-liquid separating zone and separating said gas from said liquid therein, passing said gas through a gas drive zone, and thereafter returning said gas from said drive zone down said flow path for gas lifting further liquid from said cavern.

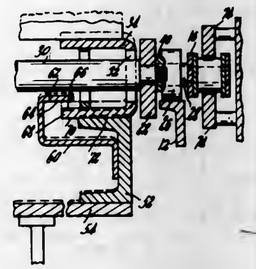
3,289,610
CHOCOLATE SHAKER
Donald H. Lounsbury, Reading, and James R. Cowdery, Andover, Mass., assignors to J. W. Greer Company, Wilmington, Mass., a corporation of Massachusetts
Filed Aug. 10, 1964, Ser. No. 388,632
13 Claims. (Cl. 107—8)

1. Apparatus for processing chocolate comprising a member having an upwardly facing support surface,

chocolate mold carrying means adapted to be supported on said member in a manner permitting at least limited freedom of generally vertical movement of said chocolate mold carrying means,

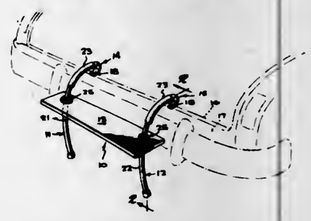
said chocolate mold carrying means including a downwardly facing surface and an upwardly facing surface spaced apart a predetermined distance,

downwardly facing stop surface means carried by said member positioned above said support surface a distance greater than said predetermined distance, and



means to vibrate said member at a rate such that said upwardly facing and downwardly facing surfaces of said chocolate mold carrying means alternately strike said downwardly facing stop surface means and said support surface, respectively.

3,289,611
LIGHTWEIGHT PORTABLE CHAIR
Stuart Flanders, 2213 Main St., Little Rock, Ark.
Filed Aug. 16, 1965, Ser. No. 479,802
2 Claims. (Cl. 108—44)



1. A lightweight portable chair adapted to be used in conjunction with a supporting structure comprising, a pair of tubular, spaced apart vertically elongated, curvilinear, inverted J-shaped side supports; each support having at one end thereof a reentrant hook member, a seat spanning the distance between the side supports thereby maintaining the supports in parallel planes at a predetermined horizontal spacing, the seat being capable of adjustment along the length of the supports, the seat having a pair of apertures therein, the tubular supports adapted to be received in sliding relation within the apertures, adjustable frictional means interlocking the seat to the supports for maintaining the seat in a predetermined desired location along the supports, and the reentrant hook member adapted to engage the supporting structure for suspending the chair in operable relation therewith.

3,289,612
SUNSHADE AND TABLE UNIT
Albert A. Mouw, 330 E. 237th St., Wilmington, Calif.
Filed Oct. 15, 1965, Ser. No. 496,533
3 Claims. (Cl. 108—50)

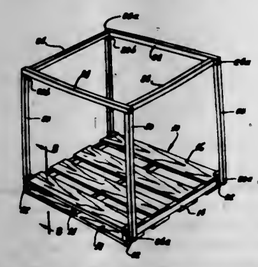
1. A sunshade unit, comprising: a base; a standard; means mounting said standard in upright position on said base and for rotation relative to said base; a planar sunshade member including a skeleton frame and a lightweight sheeting secured in overlying relation on said skeleton frame; said sheeting with said frame being generally

rectangular in form; and means connected to said skeleton frame centrally thereof and mounting said planar sunshade member on the upper end of said standard for rotative movement about the axis of the standard upon rotation of the latter and for tilting movement relative to the



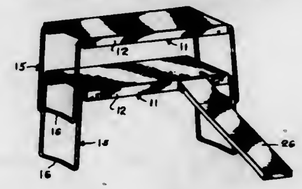
standard; said sunshade member having an extent from its center substantially approaching the height of said standard; whereby said planar sunshade member may be disposed in positions with respect to the sun to provide therebeneath a shaded area for a table, chair, or the like.

3,289,613
STACKING FRAME ASSEMBLY FOR A PALLET
George Q. Evans, 917 S. Santa Fe Ave., Compton, Calif.
Filed Aug. 26, 1965, Ser. No. 482,756
6 Claims. (Cl. 108—53)



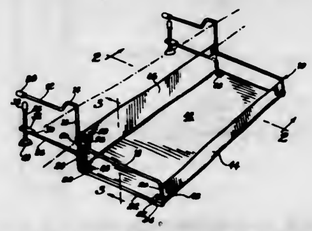
1. An integral stacking frame assembly for mounting on a pallet, said pallet including a generally flat platform having a top and bottom surface and a plurality of parallel stringers secured to said bottom surface, ends of said stringers being flush with the marginal edges of said platform comprising: upright independent leg sections which are longitudinally rigid and resilient laterally of their own planes, said leg sections each being spaced apart so as to resiliently engage at least two opposing sides of the periphery of a pallet on which said stacking frame is to be mounted; rigid arm sections interconnecting the upper ends of said leg sections and disposed in a plane substantially perpendicular to said leg sections so as to provide a unitary assembly therewith; foot brackets secured to the lower end of at least two of said leg sections and adapted to be detachably secured to said pallet; each of said foot brackets comprising a generally L-shaped inverted section of flat rigid material; the base of the inverted L comprising a horizontal plate adapted to seat upon the top surface of the platform; and the leg of the inverted L comprising a vertical plate adapted to bear against the marginal edge of said platform and a subjacent portion of a stringer; a vertical flat wing extending from and generally normal to the vertical plate having an upper straight edge spaced downwardly from the bottom of said horizontal plate the approximate thickness of the platform whereby the platform may be frictionally held between said bottom of said horizontal plate and said upper straight edge and the inner surface of said wing is adapted to bear against a surface of said stringer normal to the portion of the stringer which the vertical plate is adapted to bear against whereby said foot brackets are disengaged from a pallet by direct lateral movement outwardly generally in alignment with the axis of said stringers and are engaged with a pallet by direct lateral movement inwardly so that said foot brackets, leg sections and arm sections provide a vertically rigid unitary stacking frame structure.

3,289,614
MULTI-DECK TABLE
Donald Frazier, R.D. 1, Meadham Road, Far Hills, N.J.
Filed June 21, 1965, Ser. No. 465,434
4 Claims. (Cl. 108—91)



1. A multi-deck table comprising:
(a) a lower table top;
(b) legs attached to the lower table-top and extending in an outward and downward direction;
(c) at least a portion of each leg extending beyond the end of the said lower table-top;
(d) an upper table-top;
(e) legs attached to the upper table-top and extending in a downward direction;
(f) horizontal bars integral with pairs of legs of the upper table-top;
(g) hooks pivotably attached to the legs of the lower table-top and supporting the horizontal bars;
(h) each hook comprising a flat member;
(i) an arcuate seat on one edge of the flat member;
(j) a flange generally perpendicular to the plane of the flat member formed on the flat member beneath the arcuate seat;
(k) a top on the flat member extending in a direction opposite the arcuate seat, and,
(l) a piercing member depending from the said top.

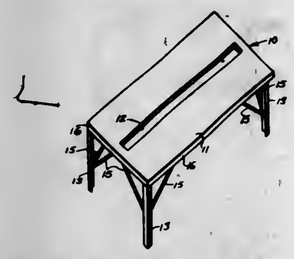
3,289,615
DEVICE READILY ATTACHABLE TO A SHELF OR THE LIKE FOR FORMING A SHELF EXTENSION OR TRAY
Howard J. Marschak, 855 W. North Ave., Evanston, Ill.
Filed June 21, 1965, Ser. No. 465,525
2 Claims. (Cl. 108—97)



1. A device of the character described comprising, a pair of spaced side frame members, each integrally formed of a substantially rigid wire or the like and each shaped to provide a pair of spaced upper and lower rear horizontal sections parallel to each other, upper and lower vertical intermediate sections in substantially the same vertical plane forwardly of the rear sections, a pair of spaced upper and lower front horizontal sections parallel to each other and extending forwardly of the intermediate

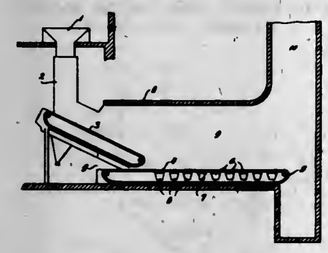
vertical sections and a front end section between the spaced upper and lower front horizontal sections, a tray secured to said front sections and supported between said spaced side frame members, said rear sections having means engaging a shelf for securing said device to the shelf so that the tray extends forwardly of the shelf.

3,289,616
SLOTTED TOP WORK BENCH
Ronald M. Donlin, 1336 Stoltz Road, Bethel Park, Pa.
Filed Oct. 24, 1965, Ser. No. 504,908
1 Claim. (Cl. 108—161)



A slotted top work bench comprising, in combination, a table top, which includes a plurality of downwardly positioned panels secured to each side of said table top, a steel frame of a rectangular configuration secured to the bottom portion of said table top, said table top being provided wtih an elongated slot for holding and securing a work piece within said work bench, a pair of elongated steel strips on each side of said slot spaced from each other in a parallel relationship and abutting the lateral end extensions of said steel frame, a plurality of legs provided at each corner portion of said table top, each leg abutting the perpendicularly disposed mating portions of said panels, and a pair of angularly positioned elongated panels secured to the inner portions of said downwardly positioned panels and each of said legs being supported by at least a pair of said angularly positioned panels.

3,289,617
REFUSE DISPOSAL
Frank S. Simpson, Alton, Ill., assignor to Illinois Stoker Company, Alton, Ill., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,401
1 Claim. (Cl. 110—7)



The method of promoting combustion in refuse burning incinerator furnaces provided with a traveling grate and apertures through the grate to pass air for combustion, which method comprises,

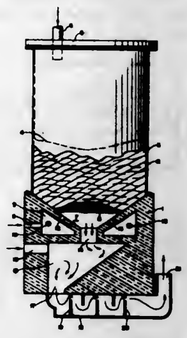
(a) loading on said grate a bed of refuse which is some feet in thickness and which covers said apertures,

(b) moving said bed of refuse by said grate through said furnace where combustion of the refuse takes place,

(c) supplying said bed of refuse while undergoing combustion with air to support combustion from tuyeres located below and within a narrow zone along said grate as successive grate apertures open to said tuyeres, and

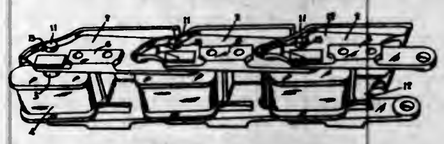
(d) providing sufficient air pressure to some of said tuyeres that the air passing through apertures aligned therewith produces sufficient force to lift and agitate the refuse locally of said some of said tuyeres and progressively along the grate as it burns.

3,289,618
INCINERATOR DEVICE
Gerald E. McGinnis, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1963, Ser. No. 331,044
8 Claims. (Cl. 110—8)



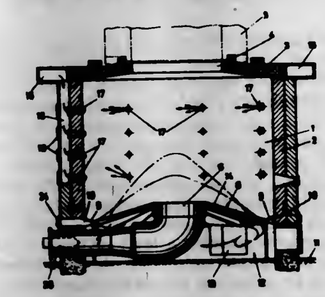
2. An incinerator device comprising means defining a combustion chamber, compacting means for forming waste material into a compacted plug and advancing such plug into said combustion chamber for burning, means for introducing combustion air into said combustion chamber, means defining a cooling chamber disposed beneath said combustion chamber and open to the bottom thereof to receive all gases and incombustible solid matter exiting therefrom, means for introducing cooling air into said cooling chamber in by-pass of said combustion chamber for cooling the aforesaid gases and solid matter, a removable ash receptacle open to the bottom of said cooling chamber to receive cooled solid matter therefrom, and means defining a low-temperature exhaust vent via which the cooled gases from the cooling chamber exit the device.

3,289,619
TRAVELING GRATES FOR INCINERATORS
Frank S. Simpson, Alton, Ill., assignor to Illinois Stoker Company, Alton, Ill., a corporation of Delaware
Filed May 26, 1965, Ser. No. 458,926
11 Claims. (Cl. 110—40)



1. In an endless traveling grate having a plurality of spaced parallel series of drive links, articulating pins connecting each drive link to its leading and trailing neighbors in the same series, said articulating pins extending horizontally normal to the direction of travel of said endless grate, a supporting rail for each series of articulated drive links, grate bars extending laterally between and interconnecting drive links in different series, and bearing members between said drive links and the supporting rail for the corresponding series of drive links, said bearing members being mounted upon said articulating pins, said drive links comprising an integral casting including a cover part and a pair of drive bars depending from said cover part, said bearing members consisting of skid blocks, and means for limiting the rotation of said skid blocks about said articulating pins.

3,289,620
COMBUSTION FURNACES
Antti K. Heilala, Knipola, Finland, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Oct. 12, 1964, Ser. No. 403,169
Claims priority, application Sweden, Oct. 23, 1963, 11,617/63
3 Claims. (Cl. 110—45)



1. In a furnace provided with a vertical cyclone action combustion chamber having a bottom structure for separating said chamber from a space therebelow and means for feeding fuel into the furnace

a tent shaped grate provided with air passage in its sloping parts, said tent-shaped grate forming the central part of said bottom structure, said grate having a base area smaller than the cross section of the combustion chamber but with sufficient area to ensure combustion of the fuel supplied while the same is sliding down the grate

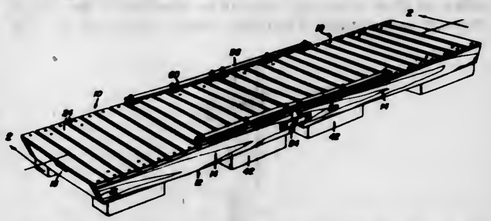
a partially perforated ash and slag collecting belt surrounding the base of the grate and extending from the grate to the wall of the combustion chamber said perforations being spaced from the base line of the grate

walls for subdividing the space below the bottom structure into a first compartment below the grate and a second compartment below the collecting belt

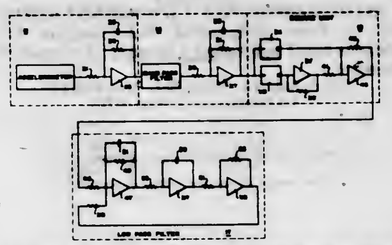
means to supply combustion air to the first compartment only and further means to remove ash and slag from the second compartment without contact with the combustion air, the air passages in the grate being arranged in a manner to augment the transportation of ash and slag from the grate to the perforations in the belt.

3,289,621
FLOATING DOCK
Roy C. Sebring, Box 19, Southworth, Wash.
Filed Jan. 26, 1965, Ser. No. 428,104
8 Claims. (Cl. 114—.5)

1. A prefabricated dock section comprising an elongated substantially horizontal frame, deck planking overlying and secured to said frame, internal bracing means within said frame below said planking, a pair of downwardly opening compartments, one adjacent each end of the dock section and defined by the frame and bracing means, flotation means located within each compartment, and means fixing the flotation means in each compartment, in a manner so as to project vertically below the frame, said flotation means being removably mounted and movable to a second position substantially completely received within the compartments, said frame including a pair of parallel spaced side boards and a pair of parallel spaced end boards rigidly interconnected into a rigid rectangular frame, said internal bracing means including a pair of rigid bracing members crossing each other and extending into abutting engagament with the two side boards at longitudinally spaced points along an intermediate portion thereof, a pair of elongated tension bars engaged between the side boards adjacent the bracing members, and means for tensioning said bars and drawing said side boards toward each other and into clamping engagement with the bracing members.



3,289,622
SUCTION FORCE COMPUTER CONTROLLER
Donald F. Renz, Montgomery County, Md., and Thomas L. Moran, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 30, 1964, Ser. No. 386,464
9 Claims. (Cl. 114—16)



1. A suction force computer controller for controlling the depth of a submarine comprising:

an accelerometer for producing a signal corresponding to vertical components of surface wave oscillation, said accelerometer being connected to a band pass filter;

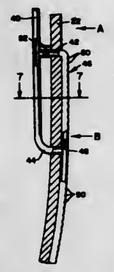
a square unit connected to the output of the said band pass filter; and

the output of the said square unit connected to a low pass filter whereby the control output signal of the said low pass filter is adaptable for control of a depth controlling system of a submarine.

3,289,623
FRICTIONAL RESISTANCE REDUCTION USING NON-NEWTONIAN FLUID
William O. Gray, Darien, and Bryant A. Hilliard, Norwalk, Conn., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,264
2 Claims. (Cl. 114—67)

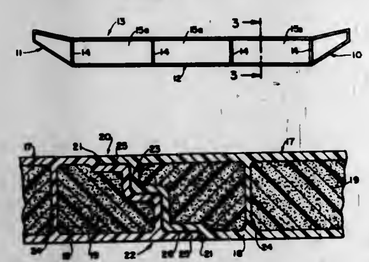
1. Apparatus for reducing the frictional resistance of a liquid-supported vessel in a ballast as well as loaded condition comprising, in combination, a hull having a bow

and a stern and means carried by said vessel for introducing a small quantity of non-newtonian fluid at the bow into the adjacent vessel supporting liquid to thereby alter the shear characteristic of said liquid from a newtonian to a non-newtonian relationship wherein the shearing stress is no longer a fixed ratio to the rate of shear; said introducing means including, a substantially vertical conduit affixed to the exterior of the hull and having a plurality of fluid discharge apertures throughout the length thereof, said conduit extending above and below the bal-



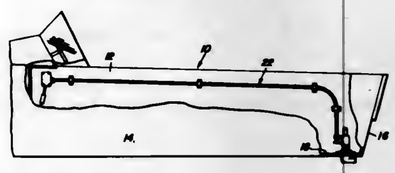
last water line of said hull, plug means in said conduit in the area of said ballast water line for fluid isolating the upper portion of said conduit from the lower portion thereof, and valve means for controlling the flow of non-newtonian fluid to the upper portion of said conduit above said plug means to thereby prevent the discharge of fluid from said upper portion during travel of the vessel in a ballast condition while permitting discharge of fluid from the lower portion of said conduit during travel in a ballast condition.

3,289,624
PLASTIC BARGE FOR CRYOGENIC SERVICE
Harold R. Pratt, Ridgewood, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,271
3 Claims. (Cl. 114—74)



1. A rigid barge for transporting cryogenic cargoes at atmospheric pressure comprising
(a) a deck portion,
(b) a rigid hull having forward and after portions and intermediate cargo-carrying portions, said cargo carrying portions cooperating with said deck portion to define a closed liquid carrying cargo hold,
(c) said hull and deck portion being substantially entirely fabricated from rigid load bearing insulation panels,
(d) said panels being matingly stepped at their peripheries,
(e) said panels also having fiberglass reinforced polyester resin shells filled with a suitable insulating foam and a plurality of integral transverse web sections between the principal inner and outer shell walls,
(f) said integral web sections being constructed of fiberglass-reinforced-polyester and of sufficient strength to contribute to the overall structural rigidity of said insulation panels.

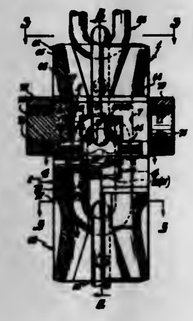
3,289,625
BOAT HULL DRAIN ASSEMBLY
Milton D. Grubb, Wytheville, Va., assignor of one-half to N. Stanley King, Wytheville, Va.
Filed Apr. 21, 1965, Ser. No. 449,807
5 Claims. (Cl. 114—183)



1. A boat hull drain assembly for plugging a drain hole formed through a boat hull, said assembly comprising a tubular member with means at one end adapted to secure said tubular member to said hull with said one end aligned with said hole, a plug reciprocally mounted in said tubular member for movement between first and second positions seated in said hole and displaced inwardly therefrom, respectively, control means operatively connected to said plug and operable to reciprocate the latter between said first and second positions from a remote location, said control means including a lever pivotally supported, intermediate its opposite ends, from said tubular member for oscillation about an axis extending transversely of said tubular member and operatively connected to said plug for positive reciprocation of the latter in response to oscillation of said lever, said control means also including mounting means adapted to be positioned remotely relative to said tubular member, an operating member movably supported from said mounting means, and an elongated motion transmitting means operatively connected at its opposite ends to said lever and said operating member, said operating member comprising a second lever pivotally supported from said mounting means, said second lever being also slidably supported from said mounting means for longitudinal movement relative to its axis of rotation relative to said mounting means between two limit positions, means operatively connected between said second lever and said mounting means yieldingly urging said lever toward one of said limit positions, said coacting means being operable to retain said second lever in preselected adjusted position when said lever is in said one limit position and inoperable to retain said second lever in preselected adjusted position when said lever is in the other limit position.

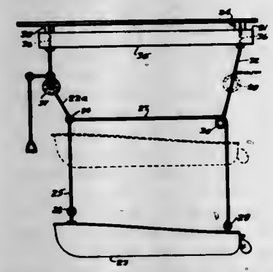
3,289,626
CHAIN STOPPERS
Warren A. Petrie, New Orleans, and George R. Smith, Covington, La. (both % J. Ray McDermott & Co., Inc., Saratoga Bldg., New Orleans, La.)
Filed Aug. 19, 1965, Ser. No. 480,979
8 Claims. (Cl. 114—200)

1. In a device of the type described, the combination of a rigid body having a passage extending axially therethrough,
said body having a normal operative position in which said passage extends upwardly,
said passage having a generally X-shaped transverse cross section, the wall of said passage defining two pairs of opposed elongated straight parallel grooves with the grooves of each pair opening toward each other and lying in a common plane, the plane occupied by one of said pairs of grooves intersecting the plane occupied by the other of said pairs of grooves along a line coincident with the central axis of said passage;
a pawl mounted on said body for pivotal movement about an axis which is at least substantially at right angles to one of said planes,



said pawl being disposed to move between a retracted position, in which the pawl is withdrawn from said passage to allow movement of a chain therethrough, and a chain-engaging position, in which said pawl projects into said passage,
said pawl being biased toward said chain-engaging position; and
support means operatively connected to said body to support the same for pivotal movement about at least one axis transverse to said passage.

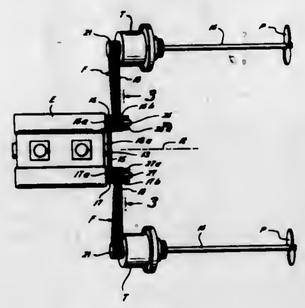
3,289,627
AQUA LIFT
Lawrence Malaby Frederick, Gulfport, Fla., assignor to Indiana Avirett, Lake Wales, Fla.
Filed Aug. 18, 1964, Ser. No. 390,366
1 Claim. (Cl. 114—230)



A tide actuated boat lift comprising: a drum, a spring for actuating the drum, a yoke for supporting said drum, a ratchet wheel secured to the drum for rotation therewith and a latch means engageable with said ratchet wheel for releasing said drum, said drum keeping a line secured to a boat taut as the tide rises and preventing the boat from being lowered as the tide recedes and thereby holding the boat above water except at high tide.

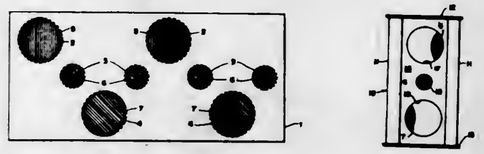
3,289,628
MARINE PROPULSION APPARATUS
Carl Sable, Box 747, Seguin, Tex.
Filed Nov. 23, 1964, Ser. No. 413,224
3 Claims. (Cl. 115—37)

1. A marine propulsion apparatus for propelling a boat hull including:
(a) a single engine mounted in said boat hull,
(b) drive gear means connected to said single engine for rotation thereby,
(c) a pair of driven gear means connected to said drive gear means,
(d) first pulley means with each of said pair of gear means,
(e) a pair of propeller shafts mounted in said boat hull with propellers connected thereto,



(f) transmission means having forward, neutral, and reverse positions connected to each of said propeller shafts for rotating such shafts independently of each other,
(g) second pulley means connected to each of said transmission means, and
(h) flexible belt drive means connecting said first pulley means and said second pulley means for operably connecting said transmission means to said engine means for driving said transmission means and said propellers connected thereto.

3,289,629
TRAFFIC SIGNAL
Milton Ray Yarger, 300 1st St., Morgantown, W. Va.
Filed Feb. 14, 1964, Ser. No. 344,870
2 Claims. (Cl. 116—63)



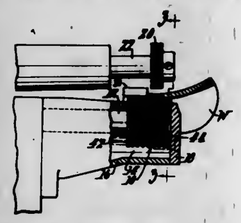
1. A traffic signal comprising a hollow cylinder having circular pairs of red, amber and green lenses mounted in cut-out portions thereof staggered vertically and circumferentially of said cylinder, the amber lenses being central in a vertical direction light bulb means inside said cylinder for providing illumination, a housing surrounding said cylinder having cut-out portions offset vertically and circumferentially so as to effect sequential registry with said lenses, whereby only one pair of lenses will be fully exposed at any one time, and means for slowly rotating said cylinder with respect to said housing so as to effect sequential full registry with pairs of said lenses, whereby an observer will have a visual indication of the time remaining for a change in signal by noting the amount of area of exposure of the various lenses.

3,289,630
CLOCK DIAL HAND
Samuel Polonsky, Medway, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1964, Ser. No. 407,820
1 Claim. (Cl. 116—136.5)



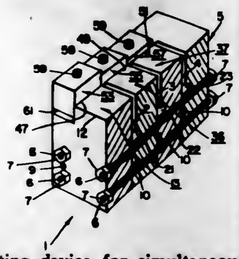
A timing mechanism comprising:
(a) a generally cylindrical rotatable driving shaft;
(b) a dial pointer hand having a periphery and a longitudinal axis, said hand having an elongated shape tapering from a point to a larger end portion;
(c) said hand being bent about its longitudinal axis so that the hand has a shallow V-shaped cross-section;
(d) said hand including a first wall portion, a second wall portion and a ridge disposed between said first and second wall portions, said first and second wall portions being inclined at a shallow angle with respect to each other;
(e) a generally circular aperture for frictionally receiving said generally cylindrical driving shaft formed in the larger end portion of said hand, said ridge extending along the longitudinal axis of said hand and said longitudinal axis being coincident with a diameter through the center of said generally circular aperture; and
(f) a pair of slits intersecting said generally circular aperture and extending from opposite sides of said circular aperture along said longitudinal axis and both of said slits terminating before the periphery of said hand.

3,289,631
COATING ROLL
Hubert J. Vachon, Lynn, and Frank H. G. Lester, Beverly, Mass., assignors to Boston Machine Works Company, Lynn, Mass., a corporation of Massachusetts
Filed Jan. 28, 1964, Ser. No. 340,759
1 Claim. (Cl. 118—244)



In a machine for applying liquid cement to insoles, a trough adapted to hold a pool of liquid cement, said trough having an inwardly projecting lip at one side thereof, a cementing roll rotatably mounted in said trough to rotate about a horizontal axis parallel to said lip and on a level therewith, said roll comprising a cylindrical core, a cylindrical layer of substantial thickness of soft resilient material fitted on said core, and a series of narrow rings of rigid material arranged side by side and fitted on said soft layer, each said ring having plane parallel side faces in face-to-face contact with the next adjacent rings, the outer circumferential faces of said rings together normally presenting a cylindrical surface, said lip of the trough presenting a vertical flat face to the surface of the roll, said flat face having a vertical width as great as the maximum downward displacement of said rings resulting from pressure on top thereof.

3,289,632
CASCADE COATING APPARATUS FOR APPLYING PLURAL LAYERS OF COATING MATERIAL TO A MOVING WEB
Frederick C. Barstow, Sudbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 2, 1963, Ser. No. 313,262
1 Claim. (Cl. 118—412)



A cascade coating device for simultaneously feeding a plurality of coating solutions in superposed and distinct layer relationship, to a point of deposition, where they are deposited onto the surface of a web moving relative thereto, which comprises, in combination:
(a) a first member having a downwardly inclined plane surface terminating in a transverse edge adjacent said point of deposition;
(b) a plurality of distributing orifices, one for each coating solution, extending through said first member for conducting a layer of coating solution onto said plane surface, the lowermost of said orifices being spaced from said transverse edge and the remaining of said orifices spaced above said lowermost orifice and from each other to provide an uninterrupted slide surface below each of said orifices, over which the layer of coating solution discharged therefrom flows, by gravity, in the case of all but the lowermost orifice, to the next lowest orifice and flows onto the top of, and along with, the layer of coating solution discharged therefrom, and, in the case of the lowermost location, before it reaches said transverse edge;
(c) a pair of guide members mounted on said first member adjacent opposite longitudinal edges of each of said slide surfaces said members having facing surfaces extending in the direction of flow, perpendicular to said slide surface, and cooperating with said slide surface to form a channel extending in said direction of flow, said facing surfaces adjacent adjoining longitudinal edges of said slide surfaces extending in coplanar relationship; and
(d) means for mounting said guide members on said first member for selective adjustment of the height said facing surfaces extend from their associated slide surface.

3,289,633
BUCKET FOR MILKING APPARATUS
Clifford G. Simons, Delavan, Wis., assignor to Sta-Rite Products, Inc., Delavan, Wis., a corporation of Wisconsin
Filed June 24, 1965, Ser. No. 466,606
6 Claims. (Cl. 119—14.01)

1. A milking apparatus, comprising a bucket having an opening in the upper end and having a bottom wall and a side wall providing a top edge, a lid to enclose the opening in the bucket and including four milk inlet openings with each milk inlet opening connected to a teat cup, wall means extending up from the bottom of the bucket to the top edge thereof and dividing the bucket into four individual chambers with each chamber com-



municating with one of the milk inlet openings in the lid whereby milk from each individual teat cup is collected in a separate chamber, and means for connecting each of the chambers to a source of vacuum.

3,289,634
PREDETERMINED COLLAPSE TYPE MILKING MACHINE INFLATION
Clifford G. Simons, Delavan, Wis., assignor to Sta-Rite Products, Inc., Delavan, Wis., a corporation of Wisconsin
Filed June 25, 1965, Ser. No. 467,037
3 Claims. (Cl. 119—14.52)



1. An inflation for a milking machine, comprising a one-piece body portion, a mouth portion located at one end of the body portion and adapted to receive a cow's teat, and a nipple section located at the opposite end of the body portion and adapted to be connected to a source of vacuum, said body portion including a first body section and a second body section, said first body section being located adjacent the mouth and having a substantially greater wall thickness than the second body section, the end of the first body section joining the second body section defining a generally abrupt step, said step being adapted to be located approximately at the termination of the teat end when the inflation is applied to the cow's teat, and said second section initially collapsing when atmospheric pressure is applied to the outer surface of said inflation to thereby shut off the vacuum to the sphincter muscle of the teat.

3,289,635
MOUTH ACTUATED ANIMAL WATERING DEVICE
Robert P. Eagles, Richmond, Va., assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia
Filed Mar. 26, 1965, Ser. No. 442,985
6 Claims. (Cl. 119—72.5)

6. An animal watering device comprising a tubular sleeve, a tubular valve body located in one end of said sleeve, a valve seat on said valve body, a tubular valve stem extending through the other end of said sleeve and having a valve closure seal on the end thereof engaging said valve seat, and a resilient seal ring located in said sleeve sealing the annulus formed between said stem and the inner wall of the other end of said tubular sleeve,



said seal ring constituting means for urging said valve seat and valve closure seal into sealing engagement and spacing said stem from said inner wall whereby said sealing engagement may be broken by slight movement of said stem.

3,289,636
WRITING INSTRUMENT
Aram J. Tessier, Warwick, R.I., assignor to T & T Mfg. Co., a corporation of Rhode Island
Filed Jan. 12, 1965, Ser. No. 425,043
2 Claims. (Cl. 120—18)



1. In a writing instrument, a writing unit, a pair of relatively rotatable tubular sections embracing said unit, a carrier for said unit having threads along one portion and a polygonal section along another portion, one of said sections having threads engaging the threads of said carrier, a cap member frictionally removably engaging said other section and a split sleeve fixed in said cap to engage said polygonal portion to rotate the same and slide therealong.

3,289,637
WRITING INSTRUMENT
Aram J. Tessier, Warwick, R.I., assignor to T & T Mfg. Co., a corporation of Rhode Island
Filed Jan. 12, 1965, Ser. No. 425,044
2 Claims. (Cl. 120—18)

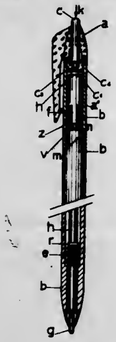


1. In a writing instrument, a writing unit, a pair of relatively rotatable tubular sections embracing said unit, a carrier for said unit having threads along one portion and a polygonal section along another portion thereof, a first one of said sections having threads engaging the threads of said carrier, and a second of said sections having a mating polygonal section engaging the polygonal section of said carrier whereby rotation relative to said second section is prevented but sliding movement of the carrier is permitted so as to axially move said unit through said sections as rotative relative movement of the sections occurs and detent means on said second tubular section to friction said sliding axial movement of the carrier in the polygonal portion of the tube section.

3,289,638
PUSH BUTTON OPERATING DEVICE FOR BALL POINT PENS

Francis Levoin, Lugano-Paradiso, Switzerland, assignor to IDEAL s.r.l. Minuterie Metalliche, Campione d'Italia

Filed July 23, 1963, Ser. No. 297,153
Claims priority, application Italy, Mar. 29, 1963, Patent 690,549
5 Claims. (Cl. 120—42.03)



1. In a ball point pen, in combination:
(a) an upper tubular barrel member;
(b) a lower tubular barrel member;
(c) fastening means securing said barrel members to each other in a fixed position in which said barrel members have a common axis and jointly define an axial passage having terminal orifices in said barrel members respectively;
(d) a cartridge member axially movable in said passage;
(e) a ball point on one longitudinal end portion of said cartridge member, said ball point moving between a writing position outside the orifice of said passage in said lower barrel member and a retracted position inside said orifice during axial movement of said cartridge member;
(f) yieldably resilient means urging said cartridge member to move into the retracted position of said ball point;
(g) a button member axially movable in said passage between a first and a second position and rotatable about said axis, one portion of said button member projecting from the orifice of said passage in said upper barrel member in the first position of the button member, and another portion of said button member abuttingly engaging said cartridge member; and
(h) cooperating cam means on said barrel members and on said button member for incrementally rotating said button member about said axis in response to each axial movement of said button member between said positions thereof, and for arresting said axial movement of the button member from said second toward said first position in such a manner that the ball point is held in said writing position thereof by abutting engagement of said other button member portion with said cartridge member when said button member is rotated into a predetermined angular position by said cam means,
(1) said cam means including a first cam face formed integrally with said upper barrel member, a second cam face formed integrally with said lower barrel member, said first and second cam faces being axially spaced from each other, and a cam portion of said button member axially interposed between said first and second cam faces for engagement with said first cam face during movement of said button member from said second to said first position thereof, and for engagement with said second cam face and disengagement from said first cam face during movement of said button member from said first to said second position thereof, said cam faces being obliquely inclined relative to said axis.

3,289,639
RETRACTABLE WRITING INSTRUMENT

Charles K. Lovejoy, Atlanta, Ga., assignor to Scripto, Inc., a corporation of Georgia

Filed Feb. 23, 1965, Ser. No. 434,414
2 Claims. (Cl. 120—42.03)



1. In a writing unit comprising a barrel having a forward end and a rearward end, a depressible plunger located at said rearward end for movement within said barrel, a writing element biased rearwardly within said barrel and slidably disposed therein to shift longitudinally between projected and retracted positions with respect to said forward end, and a laterally rockable and longitudinal movable latch member disposed within said barrel rearwardly of said writing unit and forwardly of said plunger, said latch member having a rearwardly facing contact area and a longitudinally spaced shoulder portion, said barrel having a shoulder positioned therein for releasably engaging said shoulder portion of said latch and pivoting said latch thereabout to position said writing element at projected position, said plunger having a forwardly facing contact area disposed in opposing operative relation to said latch member contact area and being engageable with said latch member upon successive plunger depressions for laterally rocking said latch member alternately in opposite directions for engaging and disengaging said latch shoulder portion with said barrel shoulder portion; the improvement comprising said latch having its shoulder portion formed as two laterally extending projections each being disposed on opposite sides of said latch in a plane that is substantially perpendicular to the plane in which said latch rocks.

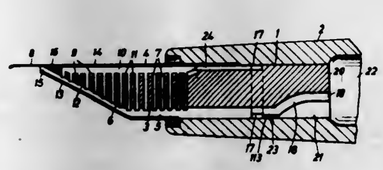
3,289,640
INK CONDUCTOR FOR FOUNTAIN PENS

Ernst Rösler, Hamburg, and Konrad Kressel, Hamburg-Poppenbuttel, Germany, assignors to Montblanc-Simplo G.m.b.H., Hamburg, Germany

Filed May 27, 1965, Ser. No. 465,819
Claims priority, application Germany, Dec. 22, 1956, M 32,760; Nov. 7, 1957, M 35,846
11 Claims. (Cl. 120—50)

1. In combination with a fountain pen having an ink reservoir and a nib; an ink conductor comprising a shank portion disposed in one end of said reservoir and a tongue portion disposed beneath said nib, said ink conductor being provided on the side opposite said nib with a capillary slit extending longitudinally therein from said ink reservoir along said shank portion and tongue portion to the outer end of said tongue portion, said tongue portion on the side thereof toward said nib being provided with an air space larger than capillary size, said tongue comprising alternate transverse ribs and slots with the slots communicating with said slit and said space, said

capillary slit on the end portion toward the reservoir widening into a region wider than capillary and communicating the slit with the reservoir, and passage means

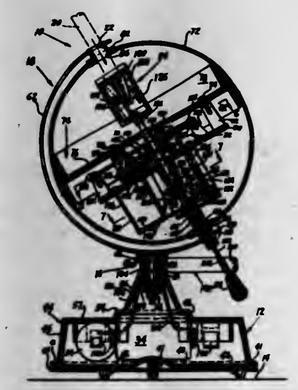


larger than capillary connecting said air space with said region and including a portion adjacent said slit and forming a control section for controlling the flow of ink and air to and from said reservoir.

3,289,641
PENCIL SHARPENER

Arthur Ginsberg, Roosevelt, N.Y., assignor to Royal London, Ltd., New York, N.Y., a corporation of New York

Filed Apr. 29, 1966, Ser. No. 546,400
9 Claims. (Cl. 120—96)

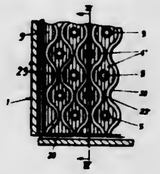


1. A pencil sharpener comprising:
a stationary base adapted to be supported by an adjacent surface;
a hollow housing having a pencil receiving opening;
means rotatably mounting the housing on the base;
a point sharpener, rotatably mounted in the housing, in alignment with the pencil receiving opening for receiving and sharpening the end of a pencil inserted into the housing;
means, carried by the pencil sharpener, for simultaneously rotating the point sharpener at a first rate of rotation and rotating the housing at a second rate of rotation less than the first rate of rotation,
said mounting means including
a band, on the base, surrounding at least half of the housing having a journal aligned with and engaging the pencil receiving opening and a rotation preventing means, approximately 180° from the journal for receiving a nonrotating support;
a nonrotating support, held in the rotation preventing means, extending into the housing; and
means connecting the housing and the nonrotating support for relative rotational movement; and
wherein
the rotating means includes
means drivably rotating the housing about the nonrotatable support.

3,289,642
BOILER FOR THE HEATING OR VAPORIZATION OF A LIQUID MEDIUM

Fritz Schoppe, 8 Wiesengrund, Munich-Pasing, Germany

Original application Sept. 23, 1963, Ser. No. 310,939. Divided and this application Oct. 18, 1965, Ser. No. 508,883
3 Claims. (Cl. 122—240)



1. A boiler for the heating or vaporization of a liquid medium, particularly water, comprising:
a boiler casing;
wall means inside of said casing dividing same into a plurality of separate cells, said wall means being hollow so that the medium to be heated can flow therethrough;
burners for supplying combustion gases to said cells, any two adjacent cells having common intermediate wall means and the other cell being on the other side of said common intermediate wall means so that said common intermediate wall means are contacted on opposite sides thereof by the combustion gases supplied to the respective adjacent cells;
said cells being constructed and arranged in horizontally and vertically offset relation to form a honeycomb, said common intermediate wall means having an undulating shape and being common to a plurality of pairs of adjacent cells, adjacent ones of said common intermediate wall means being joined together at the points where they are closest to each other.

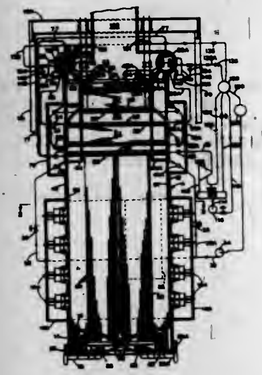
3,289,643
VAPOR GENERATOR

Rudolf E. Rothemund, Wadsworth, Ohio, Mathias P. Reiter, Park Forest, Ill., and William H. Wilcoxson, Wadsworth, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 9, 1963, Ser. No. 328,830
11 Claims. (Cl. 122—406)

1. A vapor generator having a natural circulation fluid circulation system and comprising walls including vapor generating tubes forming an upright furnace chamber and an upright convection gas cooling chamber overlying said furnace chamber, said gas cooling chamber having a lower portion of substantially uniform horizontal cross-sectional area throughout its height, an upper portion having a horizontal cross-sectional area substantially smaller than that of the lower portion, and an intermediate portion of continuously decreasing horizontal cross-sectional area in the direction of said upper portion opening at its opposite ends to said lower and upper portions, a pair of vapor and water drums disposed on opposite sides of and adjacent said gas cooling chamber, an integral economizer connected for parallel flow of fluid to said drums and having one section in said upper portion of the gas cooling chamber and another section in said lower portion of the gas cooling cham-

ber, a superheater in said gas cooling chamber disposed upstream gas-wise of said economizer and connected for parallel flow of fluid from said drums, means supplying



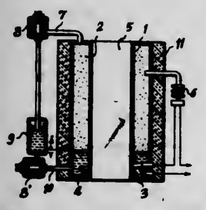
high temperature heating gases to said furnace, and means connecting the vapor generating tubes into said fluid circulation system for fluid flow to and from said drums.

3,289,644

VAPOR HEATING APPARATUS OF CLOSED OR HALF-CLOSED TYPE

Nobuhisa Kodaira, 851 Kamirenjaku Mitaka-shi, and Norio Motegi, 752 4 Setagaya, Setagaya-ku, both of Tokyo, Japan

Filed Nov. 20, 1964, Ser. No. 412,783
6 Claims. (Cl. 122—406)



1. In apparatus of the type comprising a closed vessel which surrounds a heating chamber, means providing a heat source in the lower portion of the closed vessel, and a quantity of normally liquid heating medium in the closed vessel, a portion of which is adapted to be maintained in vapor form by the heat source and to transfer heat from it uniformly to all portions of the heating chamber, means for withdrawing from the closed vessel low boiling point materials which are normally admixed with the heating medium and which accumulate in vapor form in the upper portion of the closed vessel after a protracted period of operation, said last named means comprising:

(A) a settling vessel external to the closed vessel at one side thereof having its bottom at a level below the lowest surface level attained by liquid heating medium in the closed vessel during operation of the apparatus;

(B) first duct means providing restricted communication between the interior of the closed vessel, at the uppermost portion thereof, and the top of the settling vessel;

(C) valve means operatively associated with the first duct means for controlling communication therethrough; and

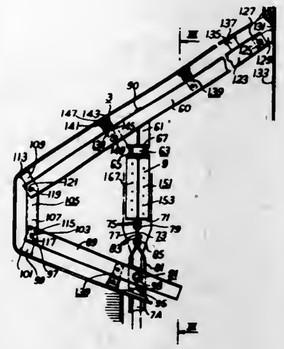
(D) second duct means providing restricted communication between the bottom of the settling vessel and the interior of the closed vessel at a level in the latter which is below said surface level.

3,289,645

VAPOUR GENERATOR NOSE ARCH SUPPORTS

Richard H. Evans, London, England, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain

Filed Aug. 10, 1964, Ser. No. 388,551
Claims priority, application Great Britain, Aug. 9, 1963, 31,515/63
7 Claims. (Cl. 122—510)



1. A vapor generator comprising:

tubulous wall structure defining an upright furnace chamber,

said wall structure having a side thereof extending inwardly of said furnace chamber at an upper region thereof to define a hollow arch which is impervious to gas flow,

a lateral gas passageway above said arch and communicating with said furnace chamber,

a beam disposed outside said furnace chamber and within said hollow arch, said beam spanning said side of said wall structure and supporting a portion thereof below the arch,

and means including lengths of fluid-conducting tubes extending within said hollow arch along the length of said beam in heat transfer relationship therewith for heating said beam during operation of the vapor generator to minimize differential thermal expansion between said wall structure and said beam.

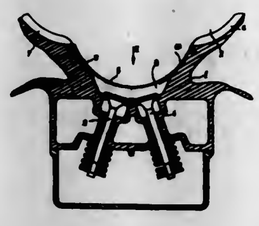
3,289,646

CYLINDER-HEADS FOR ROTARY ENGINES

Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed June 25, 1964, Ser. No. 377,930
Claims priority, application France, Aug. 14, 1963, 944,690, Patent No. 1,390,199
3 Claims. (Cl. 123—8)

1. Improvements in cylinder-heads of rotary engines having a rotor with N-lobes rotating eccentrically in a stator with $N+1$ lobes forming $N+1$ working chambers, with which are respectively associated combustion chambers into which the valves open, characterized in that in the flushing surface of the cylinder-heads associated with each working chamber are provided hollowed out portions opening into the combustion chambers, these hollow portions having a shape such that the air which is compressed between the surface of the rotor and the said flushing surface is channelled by the hollows and flows through



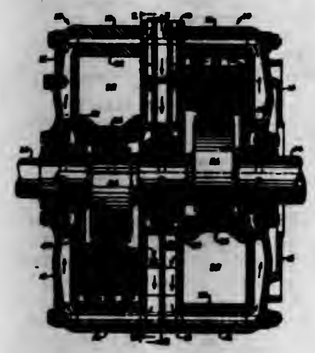
them so as to terminate tangentially to the periphery of the combustion chamber and causes a rotational movement of the air about the axis of the said chamber.

3,289,647

COOLING SYSTEM FOR MULTI-UNIT ROTARY MECHANISMS

Alec F. Turner, Paramus, and Howard R. Corwin, Jr., North Caldwell, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,670
7 Claims. (Cl. 123—8)



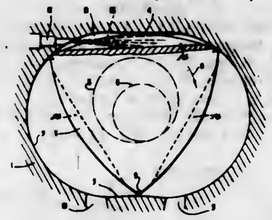
1. A liquid cooling system for the outer body of a rotary combustion engine having at least two units with said outer body having a first portion exposed to relatively high heat input and a circumferentially-spaced portion exposed to relatively low heat input, said outer body including a pair of coaxially-spaced peripheral walls, an intermediate wall and a pair of coaxially-spaced end walls disposed at opposite ends of the outer body such that each engine unit includes one of said peripheral walls and its adjacent end wall and such that said intermediate wall is common to the two engine units, said outer body having first and second liquid coolant passage systems, one for each of the engine units, each said passage system including a plurality of circumferentially-spaced but serially connected liquid coolant passage groups extending from said intermediate wall through the peripheral wall of its engine unit to its end wall for flow of liquid coolant back and forth through each peripheral wall between said intermediate wall and the associated end wall, inlet means provided in said intermediate wall for supplying liquid coolant to the inlet ends of the passages of both said passage systems, and outlet means provided in said intermediate wall for discharge of said liquid coolant from the outlet ends of the passages of both said passage systems.

3,289,648

ROTARY PISTON ENGINE

Alfred H. Müller, Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

Filed Sept. 2, 1964, Ser. No. 393,905
Claims priority, application Germany, Sept. 6, 1963, D 42,412
11 Claims. (Cl. 123—8)



1. A rotary piston diesel-type internal combustion engine, especially of trochoidal construction, comprising:

housing means having lateral parts and effectively forming internal surface means of two-arched shape forming two zones in proximity to the engine axis,

inlet and outlet channel means arranged in said housing means within the area of one of said zones,

eccentric shaft means provided with an eccentric means,

triangular shaped piston means rotatably supported on said eccentric means, said piston means sliding with the piston corners thereof along said internal surface means during movement relative thereof to said housing means and to said eccentric shaft means thereby controlling the inlet and outlet channel means arranged within one of said zones, said piston means, during relative rotation thereof, effectively forming together with the internal surface means of said housing means a suction space and a compression space, said compression space being located substantially opposite the area of said one of said zones,

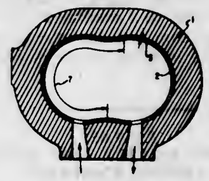
and injection nozzle means in said housing means including means for injecting a diesel fuel jet into the compression space substantially in the longitudinal direction thereof.

3,289,649

ROTARY PISTON ENGINE

Heinz Lamm, Stuttgart-Bad Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

Filed Sept. 22, 1964, Ser. No. 398,367
Claims priority, application Germany, Sept. 26, 1963, D 42,569
12 Claims. (Cl. 123—8)

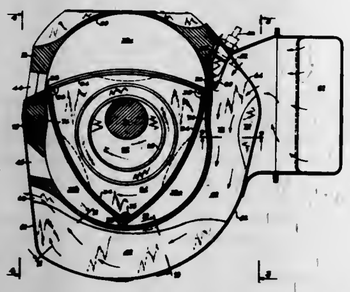


12. In a rotary piston internal combustion engine of trochoidal construction, which comprises a casing, a polygonal piston rotatable within said casing and having sealing strips at the corners thereof, inlet and outlet means in said casing, a sprayed-on relatively hard metal layer on the inside of the housing casing serving as inner runner surfaces for the rotating piston and filler means essentially consisting of a synthetic resin applied to said layer for closing the pores thereof, said filler means having admixed

thereto over at least a portion of the runner surfaces a substance with lubricating properties,

the improvement essentially consisting of operating said engine during a short running-in period with the use of a plain running-in oil to adapt the sealing strips to said inner runner surfaces.

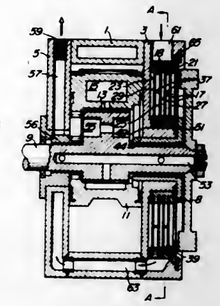
3,289,650
AIR COOLED ROTARY COMBUSTION ENGINE
Max Bentele, Ridgewood, Charles Jones, Paramus, and Frederick A. Kling, North Haledon, N.J., and Charles J. Slane, Riverdale, N.Y., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,043
14 Claims. (Cl. 123—8)



1. An air cooled outer body structure for a rotary combustion engine having a plurality of working chambers which travel around the outer body axis during operation and wherein the heat rejection from the engine working fluid in said chambers in nonuniform; said outer body structure comprising a peripheral wall having a plurality of circumferentially extending fins projecting outwardly from said outer body peripheral wall forming air passages therebetween, said fins being disposed in a region of relatively high heat rejection to said outer body from the engine working fluid with said fins extending circumferentially from one end of said region to the other, baffle means extending across the outer ends of said fins to close the outer portions of the air passages between said fins, said baffle means being formed to provide an air entrance opening for permitting cooling air to enter into the inter-fin passages adjacent to one end of said region and to provide an air discharge opening for permitting the cooling air to discharge from said inter-fin passages adjacent to the other end of said region, and means to progressively vary the height of said inter-fin passages in a section of said region having relatively high heat rejection to said outer body peripheral wall so that in said section the height of said inter-fin passages progressively decreases to a minimum substantially intermediate of the upstream and downstream portions thereof and progressively increases at the downstream portion of said section.

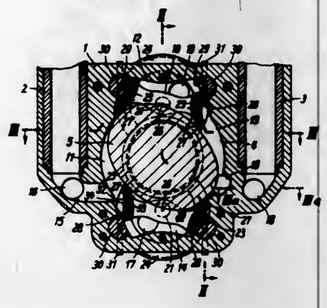
3,289,651
COOLING DEVICE FOR ROTARY PISTON ENGINES
Seizo Jinno, Nagahama-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 2, 1964, Ser. No. 415,243
Claims priority, application Japan, Dec. 10, 1963, 38/66,083
3 Claims. (Cl. 123—8)

1. In a rotary piston engine of the type including a casing comprised of a center housing having an inner peripheral wall profiled parallel to a two-lobed epitrochoid and side housings arranged on opposite sides of said center housing and a generally triangular piston mounted in said casing for planetary motion therein, a cooling device characterized in that at least one of the side housings has a cooling water passage formed therein, a lubricant heat



exchanger core arranged in said passage and including at least one cooling element disposed in a manner so that said lubricant heat exchanger core is cooled by the cooling medium being circulated through the associated side housing for forced cooling thereof.

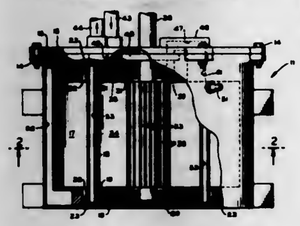
3,289,652
ROTARY DISPLACEMENT MACHINE
Peter Müller, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschränkter Haftung, Essen, Germany
Filed Dec. 4, 1964, Ser. No. 416,038
Claims priority, application Germany, Dec. 12, 1963, B 74,635
10 Claims. (Cl. 123—15)



1. In a rotary displacement machine, housing means comprising chamber means having at least four working chambers which are connected to the cylinders of reciprocating displacement means so that each working chamber at any one time is in a different phase of change in liquid pressure from the adjacent working chambers, rotor means rotatable in said chamber means, the peripheral surface of said rotor means having at least two planes of symmetry and having different radii in said planes of symmetry, certain of said working chambers having cylindrical wall surface portions, rocker means pivotally mounted in each of said certain working chambers on an axis concentric with said cylindrical surface portions and engaging said rotor means to separate its working chamber from an adjacent chamber, each of said rocker means having four sealing means, said sealing means being spaced about the periphery of said rocker means at points defining a quadrilateral, certain of said sealing means engaging the rotor means and the others engaging the cylindrical wall surface portions, said sealing means confining two pairs of substantially equal and opposite

surface sections on said rocker maens, the pressures on each pair of opposite surface sections being substantially equal and opposite so that the fluid pressure exerts a minimum force on the mounting of said rocker means.

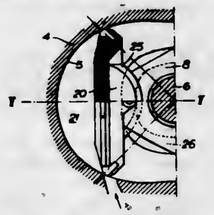
3,289,653
ROTARY PUMP OR MOTOR
Anthony Kuttas, 2127 E. 20th St., Oakland, Calif.
Continuation of application Ser. No. 115,173, June 6, 1961. This application Oct. 12, 1964, Ser. No. 406,212
4 Claims. (Cl. 123—16)



1. A rotary vane device comprising means defining a closed cylindrical stator chamber, a cylinder mounted for rotation about an eccentric axis within said stator chamber and defining a rotor chamber sealed from said stator chamber, said cylinder sealing engaging the peripheral walls of said stator chamber along a line of tangency, a shaft disposed in said rotor chamber and journalled for rotation about the central axis of said stator chamber, a vane mounted rigidly on said shaft and projecting radially through said cylinder in sealed relation thereto and into sealing engagement with the peripheral walls of said stator chamber, said vane extending longitudinally through said rotor and stator chambers and sealingly engaging the end walls thereof, sealing means effecting a rotary seal between said shaft and the inner peripheral wall of said cylinder along a line of contact in diametric opposition to said line of tangency between the cylinder and stator chamber peripheral walls, means defining ports in communication with said motor chamber on opposite sides of and closely adjacent said rotary seal, means defining ports in communication with said stator chamber on opposite sides of and closely adjacent said line of tangency means communicably interconnecting the rotor chamber port on the side of said rotary seal in contra-direction to rotation of said vane to the stator chamber port on the side of said line of tangency in the direction of vane rotation, means selectively blocking and opening communication between the interconnected ports during rotation of said vane to open communication for a relatively short period closely subsequent to said vane passing said interconnected stator port and to block communication during the remaining rotation of said vane, and ignitor means disposed within said stator chamber adjacent said interconnected stator chamber port.

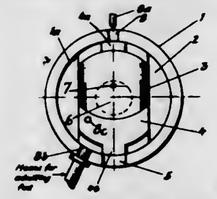
3,289,654
ROTARY PISTON TYPE INTERNAL COMBUSTION ENGINE
Johann Geiger, 262 Triesterstrasse, Vaduz, Liechtenstein, Austria
Filed Nov. 19, 1963, Ser. No. 324,618
Claims priority, application Austria, Nov. 22, 1962, A 9,195/62
8 Claims. (Cl. 123—17)

1. A rotary piston-type internal combustion engine, particularly with fuel injection, comprising a stationary housing with an inlet aperture and an outlet aperture and an ignition point opposite said aperture, a cylindrical race of an oval cross-section in said housing, said cross-section consisting of two azimuths of identical radii opposing each other in the direction of the major axis of the cross-section and two curves of a higher order interconnecting the said azimuths, a centrally located driven shaft, a hub on the said driven shaft, swinging supports on the said hub comprising supporting and retaining elements for the support of orientable piston bodies designed as segmental pistons and having a central lug on the side facing the hub, a convex circular-cylindrical guide surface on the said lug adjacent to and guided by the supporting elements of the said swinging support, said lug having a concave circular-cylindrical guide surface thereon adjacent to and guided by the said retaining elements of the swinging support, the concave and the



convex circular-cylindrical guide surfaces having the same center of curvature located outside the said hub on a circle the radius of which is larger than the distances from the center of the driven shaft defined by the parallel connecting lines at the points of transition between the azimuths and the curves of a higher order on the minor and major axis respectively, of a cross-section of the housing, and packing strips at the extremities of the piston bodies sliding on the said race of the housing, each piston body defining working spaces in the area between the said packing strips, and the said working spaces presenting a variable volume during rotation and forming aperture angles of over 45 degrees with the center of the shaft.

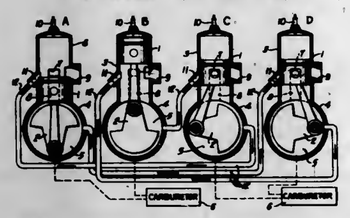
3,289,655
ROTARY PISTON APPARATUS
Walter Franke, Maschen, Kreis Harburg, Germany
Filed Dec. 30, 1963, Ser. No. 334,339
Claims priority, application Germany, Dec. 29, 1962, F 38,681
15 Claims. (Cl. 123—44)



1. A rotary piston engine, comprising a fixed housing defining a cylindrical space and having spaced inlet and outlet openings communicating with said space; a rotary cylinder coaxially received in said space and defining a chamber extending transversely thereof, said chamber having spaced extensions which sweep consecutively along said openings when the cylinder rotates; igniter means adjacent to one of said openings, said one opening being located on one side of an axial plane of symmetry thru said cylindrical space and the other of said openings being located on the opposite side of said axial plane of symmetry; means for admitting a combustible fluid into said chamber through said other of said openings; a piston reciprocably received in said chamber intermediate said extensions and arranged to rotate about a second axis which is parallel with but spaced from the axis of said cylinder; and guide means operatively connecting

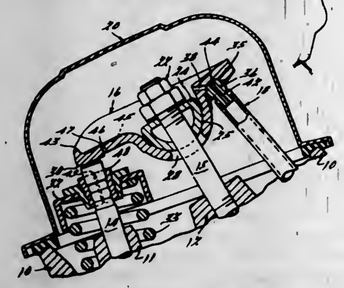
said piston with said housing so that the piston rotates about said second axis in response to reciprocation thereof whereby the piston automatically compresses the fluid admitted through said other opening and such fluid is compressed prior to being ignited by said igniter means to develop combustion products which expand to reverse the direction of movement of said piston in said chamber, said housing having an outlet opening also located on said opposite side of said plane of symmetry in the region of said other opening through which the products of combustion escape via said extensions prior to passage of said extensions along said other opening.

3,289,656
CROSSFEED SCAVENGING FOR MULTI-CYLINDER TWO CYCLE ENGINES
Charles D. Strang, Oshkosh, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,567
6 Claims. (Cl. 123—59)



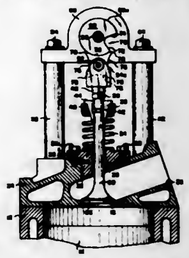
5. The improvement in multi-cylinder two cycle internal combustion engines employing crankcase fuel feed through conventional transfer passages between the crankcase chambers and their corresponding cylinders, comprising a crossfeed passage for fuel-air mixture from the crankcase chamber for each cylinder to the cylinder immediately ahead in firing sequence, and means to open each said passage momentarily during scavenging of the cylinder into which it discharges.

3,289,657
VALVE ACTUATING MECHANISM
John R. Winter, Jr., 4276 S. Shore Drive, Pontiac, Mich.
Filed May 25, 1964, Ser. No. 370,010
1 Claim. (Cl. 123—90)



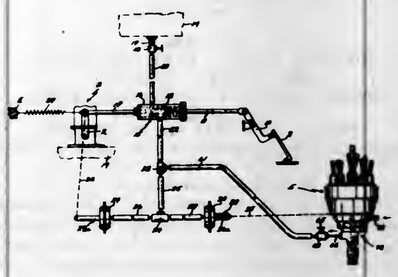
In combination with a rocker arm having a pushrod end having a valve end and having a hub portion located between said ends for rockably supporting the arm, said arm having a concavely recessed upper portion defining a receptacle for oil, means for introducing oil into the receptacle-defining upper portion of the arm from the pushrod end, a restricted orifice-defining portion extending downwardly through the arm in the valve end for conducting a limited quantity of oil from said receptacle-defining portion to the lower surface of the arm at the valve end, an oil escape-defining portion spaced from said orifice for diverting from the portion of the arm near said restricted orifice-defining portion oil which does not pass through said orifice, the receptacle-defining upper portion of the arm being of substantial width, the means for introducing oil thereinto comprising a passage extending through the pushrod end of the arm, and a pair of open-topped channels extending longitudinally of the valve end of the arm and having inlets located in the hub area and spaced apart substantially the full width of the interior of the receptacle-defining portion and extending to communication with said orifice.

3,289,658
VALVE ARRANGEMENT FOR INTERNAL COMBUSTION ENGINES
Thomas A. Surovek, Sr., 4328 Dearborn Ave., Hammond, Ind.
Filed Oct. 20, 1965, Ser. No. 502,772
9 Claims. (Cl. 123—90)



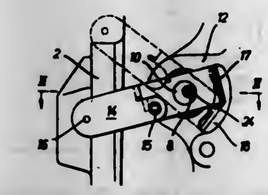
1. In an internal combustion engine, valve means for controlling the intake and exhaust of gaseous mixtures from the intake and exhaust ports in the cylinders of the engine, said means including valve bodies associated with each port, each of said valve bodies having a valve head at one end adapted to be seated in the port to close said port to the passage of the gaseous mixture against the cylinder compression, and a cam follower rotatably mounted on the other end, a cam, engageable with said follower, said cam having a base circle surface and an indented surface, said follower having a plurality of radially extending lobes which are sequentially engaged in the indented surface of the cam, said lobes being separated by concave circular surfaces which mate and slide against the cam base circle surface between lobe engagements.

3,289,659
ENGINE CONTROL DEVICE
Peter J. Koole, Rocky River, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 16, 1964, Ser. No. 352,050
2 Claims. (Cl. 123—97)



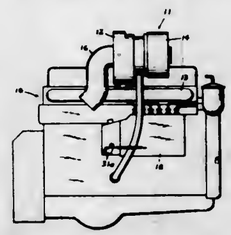
1. In a control device for an internal combustion engine having an intake manifold, a carburetor connected to said manifold, a throttle valve in said carburetor for controlling the mixture of air and an ignitable fuel being supplied to said engine by said carburetor, and a distributor with a movable member for controlling the timing of the ignition of said fuel in said engine, said control device including a fluid motor means responsive to a high vacuum in said intake manifold for slightly opening said throttle valve and moving said member in the ignition retarding direction, said fluid motor means being operable to cause more complete burning of fuel in said engine during deceleration of said engine without a corresponding increase in the power output of said engine, the improvement comprising: a conduit means for communicating said fluid motor means with a source of pressurized air, a valve means in said conduit means, said valve means being responsive to the speed of said engine with said valve means being closed at all speeds above a preselected control speed, said control speed being slightly higher than a preselected idle speed for said engine, and being opened at all speeds below said preselected control speed whereby said fluid motor means are rendered inoperative when said engine speed is below said control speed, a foot operated pedal member and a rod connecting said pedal member with said throttle valve, movement of said rod by said pedal member in a first direction opening said throttle valve to accelerate said engine and release of said pedal member allowing said rod to be moved by a spring means in a second direction closing said throttle valve to decelerate said engine, and a second valve means closed when said rod is moved in said first direction and open when said rod is moved in said second direction to the throttle valve closed position of said rod, said second valve means being positioned between said manifold and said fluid motor means whereby said motor means is inoperative when said second valve means is closed, said second valve means being mounted on said rod and a first flexible conduit connecting said manifold with said second valve means and a second flexible conduit connecting said second valve means with said fluid motor means.

3,289,660
CONTROL DEVICES FOR FUEL INJECTION PUMPS FOR USE IN INTERNAL COMBUSTION ENGINES
Ludwig Lohr, Lampertheim, Germany, assignor to Farymann Diesel, Farny & Weidmann oHG, Lampertheim, Germany, a German company
Filed Aug. 31, 1964, Ser. No. 393,316
Claims priority, application Germany, Sept. 18, 1963, F 40,781
6 Claims. (Cl. 123—139)



1. Apparatus for controlling a fuel injection pump of an internal combustion engine, said apparatus comprising in combination: a control rack movable longitudinally in one direction in response to loading of the engine for controlling fuel quantities injected by the fuel injection pump, and a control stop device, said control stop device being independent of said control rack and comprising a stop carrier, means for mounting said stop carrier for rotation between first and second positions about an axis disposed substantially parallel to the longitudinal axis of said control rack, and spring means for urging said stop carrier in a direction of rotation from said second position towards said first position, there being bolt means mounted on said stop carrier and defining an end face forming a stop surface which is remote from said axis of rotation of said stop carrier and which, when said stop carrier is in said first position, lies in the path of longitudinal movement of said control rack in said one direction to define a limiting position of said control rack for injection of normal quantities of fuel by said pump, and said stop surface, when said stop carrier is in said second position, being remote from said path of longitudinal movement of said control rack to permit longitudinal movement of said control rack in said one direction beyond said limiting position for injection of increased quantities of fuel by said pump, and including means associated with said stop carrier for adjusting the position of said stop surface relatively to said stop carrier and thereby also said limiting position of said control rack.

3,289,661
INTERNAL COMBUSTION ENGINE
Walter M. May, Allentown, Pa., and Winton J. Pelizzoni, Hagerstown, Md., assignors to Mack Trucks, Inc., Montvale, N.J., a corporation of New York
Filed Sept. 16, 1964, Ser. No. 396,946
5 Claims. (Cl. 123—140)

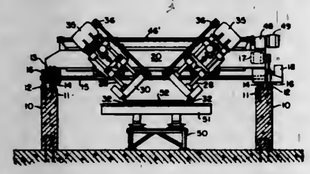


1. A turbocharged internal combustion engine having a substantially uniform horsepower output over the range of useful operating speeds, comprising a reciprocating internal combustion engine, means for supplying fuel to said engine for combustion therein, operator-controlled means for regulating the supply of fuel charge to said engine, engine-speed controlled means for regulating the maximum supply of fuel to said engine, means in said engine-speed controlled means for progressively increasing the maximum fuel charge supplied to the engine as the engine speed decreases, and a turbocharger efficient in the lower useful operating speeds of said engine and driven by combustion gases from said engine for supplying air to said engine for combustion of fuel therein, said engine and turbocharger combination having a volumetric efficiency which is substantially constant throughout said range of useful operating speeds, producing an increasing positive scavenging pressure differential with decreasing engine speed and an inlet manifold charge pressure substantially constant throughout said range of useful operating speeds thereby matching the increasing fuel charge with decreasing engine speed to produce substantially constant horsepower output throughout said range of useful operating speeds.

3,289,662
DUAL HEAD SAWING MACHINE
Langdon I. Garrison, Henniker, N.H., assignor to The John Swenson Granite Co., Inc., Concord, N.H., a corporation of New Hampshire
Filed Feb. 4, 1964, Ser. No. 342,465
5 Claims. (Cl. 125—14)

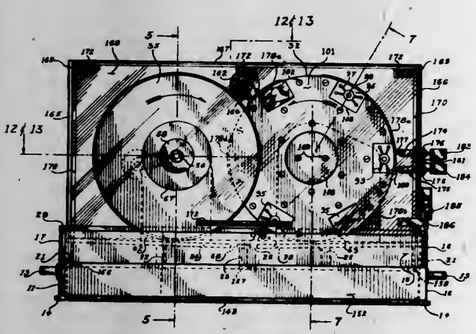
1. A dual head sawing machine comprising means for supporting a block of stone, a bridge movable lengthwise over the support and a saw head movable transversely on the bridge and including a vertically disposed plate, a disk

concentrically mounted on the plate for angular adjustment, a pair of rods slidably mounted on said plate, a motor and rotary saw mounted on said rods at a fixed



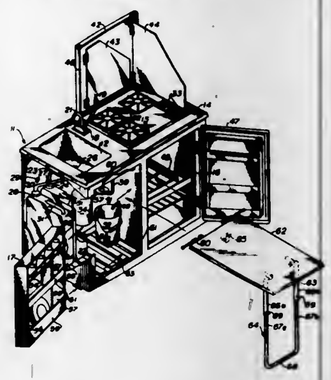
distance apart, and motor driven means also mounted on the plate for moving the rods longitudinally with their motor and saw in all angular positions of the rods with respect to the surface of the block beneath the bridge.

3,289,663
AUTOMATIC SECTIONING MACHINES
Paul O. Cary, 423 E. Mayfield Drive, Grand Junction, Colo.
Filed July 3, 1964, Ser. No. 380,172
13 Claims. (Cl. 125—13)



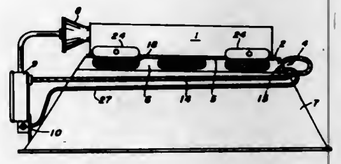
13. In an apparatus of the character described for processing solid material into precise cross-sections, means for loading said apparatus with one or more workpieces, means for adjusting and setting said apparatus so it will automatically apply a circular shaped processing tool to said workpieces, said apparatus comprising a chuck mounted for rotation about an axis upon a stationary tubular shaft, said chuck having a face that has a series of recesses for gripping said workpieces, an area on said chuck face void of said gripping recesses, means to vacuumize said recesses, a spindle mounted for rotation in a longitudinally movable quill, means for coupling said spindle to a longitudinally stationary motor shaft, said processing tool mounted upon said spindle so the processing tool will rotate in a plane overlapping and substantially parallel to the plane of rotation of said chuck face, means for mounting said tubular shaft and said quill to a base that has a deck and an inclined drain floor, a pair of wedge blocks working in conjunction with the inclines of said drain floor to provide means with which to adjust the relative position of said processing tool to said chuck face, means for adjusting said processing tool in regard to the amount of material to be removed from said workpieces, means for automatically feeding said workpieces to the processing tool, said feeding means being adjustable regarding the rate of feed, means for automatically increasing the said rate of feed when the processing tool is not being applied to a workpiece, means for automatically clearing all said workpieces from the overlap of said processing tool, means for automatically stopping the operation of said apparatus when a chuck-load of processed workpieces is cleared and when the said void area on the face of the chuck is evenly overlapped by the processing tool.

3,289,664
KITCHEN UNIT
James B. Hewitt, 5147 S. Front Road, Livermore, Calif.
Filed Dec. 14, 1964, Ser. No. 418,113
11 Claims. (Cl. 126—37)



1. In a self-contained and portable kitchen unit, a generally rectangular cabinet having a countertop, a sink in said countertop having a water faucet and a drain, a water supply tank contained within said cabinet beneath said sink and communicating with said faucet, a pump for pumping water from said supply tank through said faucet, a conduit for communicating the drain of said sink to the exterior of said cabinet, a door in said cabinet permitting access to the area beneath said sink and to said water supply tank, a stove unit mounted in said countertop, and means within said cabinet for supplying heat energy to said stove.

3,289,665
RADIANT GAS BURNER ASSEMBLY
Abraham P. Loeb, McCandless Township, Allegheny County, and Morgan P. O'Laughlin, Pittsburgh, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1962, Ser. No. 237,172
2 Claims. (Cl. 126—92)



1. A radiant gas fired burner and heat reflector assembly, comprising

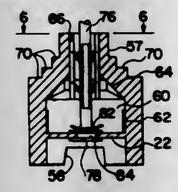
a reflector member providing a top wall and depending outwardly inclined side and end walls, with said top wall sloping downwardly between opposite end walls,

a pasageway through said reflector member inclined top wall and disposed in spaced relation to the adjacent side and end walls,

a radiant gas fired burner manifold disposed over said passageway in the inclined top wall with the heat emitting face of the manifold overlying said passageway and supported upon the adjacent top wall portion about the periphery of said passageway, and

vent openings in at least two opposite depending reflector member walls and adjacent the inclined reflector top wall thereof for venting the burner combustion gases.

3,289,666
MOVABLE PREFABRICATED FIREPLACE AND HANDLING HANGER ATTACHMENT THEREFOR
Alfred G. B. Prather, 9906 Lincoln Ave., Lanham Park, Lanham, Md.
Filed Apr. 5, 1965, Ser. No. 445,549
4 Claims. (Cl. 126—120)



1. A movable ready built fireplace including

a pair of side walls joined by a horizontal firebox floor, spaced above the bottom of said side walls to form an ash pit space below it,

said floor having an ash dump hole for dumping ashes into the ash pit,

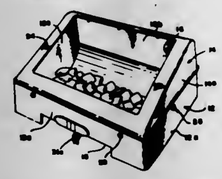
said ash dump hole being substantially aligned vertically with the center of gravity of said fireplace, and

a hanger attachment adapted for connection to said fireplace, and comprising

a lift plate for placing under said floor and having a hanger shaft adapted to extend through said ash dump hole with a threaded lower portion and a washer plate over it and a wing nut on said threaded portion adapted for clamping said washer plate over the top of said floor to stabilize the fireplace during handling operations, when the fireplace is lifted into the air,

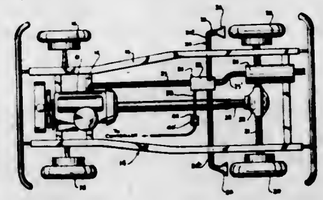
the upper portion of said hanger shaft having means for suspension to a lifting and moving means.

3,289,667
FUEL BURNER
Henry E. Nelson, 901 Edward Ave., Everett, Wash.
Filed Jan. 25, 1965, Ser. No. 427,736
3 Claims. (Cl. 126—165)



1. A fuel burner comprising a housing having front, back and opposite end walls, said back wall being higher than said front wall, an upwardly and rearwardly inclined cover portion defining a top opening, a trough-like fuel container supported in said housing spaced from the walls of said housing and said cover portion, said container having a trough-like bottom portion of cylindrical curvature and having a low front wall and a rear wall extended to a substantially higher level than said front wall of the housing and closed at its opposite ends by vertical end walls, and said fuel container being supported at its opposite ends from the end defining portions of the cover plate, and the longitudinal edge portions of said cover plate being shaped to deflect the air currents delivered from the housing chamber inwardly across the top edges of the container walls to facilitate the combustion of fuel burning in the container.

3,289,668
SNOW AND ICE MELTING AND TRACTION DEVICE FOR VEHICLES
Siegfried Drucker, 830 W. 177th St., New York, N.Y.
Filed Feb. 11, 1964, Ser. No. 344,010
4 Claims. (Cl. 126—271.1)



1. In combination with an automotive vehicle having a control panel, a pair of driving wheels, an engine, an engine exhaust pipe for receiving hot exhaust gases from the engine, and a muffler for silencing, cooling and discharging exhaust gases, a valve assembly having an inlet for connection to said exhaust pipe to receive the hot exhaust gases therefrom, and an outlet for connecting said muffler thereto, a pair of outlet pipes connected to two other outlets of said valve assembly, a movable gas distributor member in said valve assembly for selectively passing exhaust gas from said inlet to selected ones of said outlets, nozzles at outer ends of the outlet pipes terminating in front of said wheels respectively, and control means on the control panel operatively connected to said valve assembly for actuating said gas distributor member to divert exhaust gas selectively to one of the nozzles in one position of said member, to the other nozzle in a second position of said member, to both of said nozzles simultaneously in a third position of said member, and to said muffler alone in a fourth position of said member.

3,289,669
BIOPSY CAPSULE ARRANGEMENT
Donald J. Dwyer, 1516 S. Vine Ave., Park Ridge, Ill., and Raymond C. Piccony, 246 Pamela Drive, Bensenville, Ill.
Filed Feb. 25, 1964, Ser. No. 347,270
15 Claims. (Cl. 128—2)



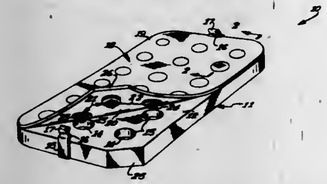
15. A biopsy capsule arrangement, comprising:

(a) a pair of hollow, cylindrical members each having an open end and a closed end;

(b) one of said members having extending through a side thereof adjacent its closed end an opening presenting a cutting edge;

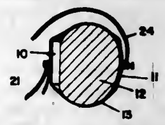
(c) the other of said members having its open end telescopically received within the open end of said one member for relative axial movement between the members and presenting on its open end a cutting edge disposed for cooperation with the cutting edge of said one member as the members are urged toward each other;
(d) retaining means for preventing the separation of the members as they are urged away from each other;
(e) spring means reacting between the closed ends of the members for urging them away from each other; and
(f) hydraulic means in communication with the interior of the capsule through the closed end of said one member for urging said members toward each other.

3,289,670
DEVICE FOR ABRADING AND APPLYING BIOLOGICALS TO THE SKIN OF A PATIENT
James R. Krug, Denver, Colo., and Milo E. Bundy, Watertown, S. Dak., assignors to Milo Bundy Corporation, Watertown, S. Dak., a corporation of South Dakota
Filed Mar. 9, 1964, Ser. No. 350,260
3 Claims. (Cl. 128—2)



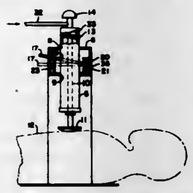
1. A device for use in simultaneously abrading and applying biologicals to a plurality of cutaneous sites at a specific body surface area such as the back of a patient, said device comprising:
a multi-well structure having a substantially planar upper surface and having a plurality of recesses formed in said upper surface to thereby define a plurality of wells, said wells adapted to contain different liquid biological substances therein,
a multi-member abrading structure comprising a flexible body member having a substantially flat lower surface positioned upon and sealingly engaging the upper surface of said multi-well structure, said body member being removable from said multi-well structure, and being capable of flexing movement to accommodate the contours of a body area of a patient,
a plurality of spaced-apart similar skin abrading members affixed to the lower surface of said body member and projecting therefrom, each of said skin abrading members including a positioning element corresponding in shape to the configuration of said wells and being slightly smaller in size than the cross sectional size of said wells, each positioning element extending downwardly into one of said wells and spaced inwardly of the sides of the associated well,
each skin abrading member including a plurality of elongate abrading points affixed to and depending from the associated positioning element and adapted to extend into one of the wells for immersion in the specific liquid biological substance therein when said wells contain such liquid biological substances, whereby when said multi-member abrading structure is removed from said multi-well structure, and pressed and manipulated against the specific body surface area such as the back of a patient, a plurality of scratches will be simultaneously produced and the liquid biological substances carried by the abrading members will be simultaneously applied to the cutaneous sites.

3,289,671
IONTOPHORESIS METHOD
Edwin Glenn Troutman, 1300 W. Cannon St., Fort Worth, Tex., and William E. Romans, 5323 Harry Hines Blvd., Dallas, Tex.
Filed Sept. 11, 1963, Ser. No. 308,178
2 Claims. (Cl. 128—2.1)



1. A method of obtaining samples of sweat from a body member by iontophoresis, said method comprising the steps of placing on one side of the body member a pad saturated with a liquid capable of stimulating secretion of sweat upon contact with sweat glands, applying a positive electrode to said pad, applying a negative electrode to the relatively opposite side of the body member, and applying an electric current of a constant amperage to said electrodes, whereby said liquid may be introduced into the skin at a constant rate proportionate to the constant current strength.

3,289,672
HEART RESUSCITATOR APPARATUS
Eugene P. Thomas, Catonsville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1964, Ser. No. 347,887
3 Claims. (Cl. 128—53)

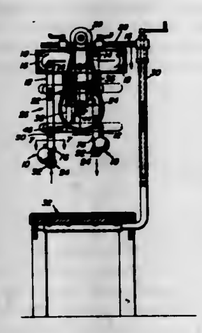


1. In a closed-chest fluid-pressure-actuated heart resuscitator unit, a frame, a reciprocable-chest compressing member constructed for engagement with the chest of a heart arrest victim to alternately force compression and release thereof for causing pumping of the victim's heart, a reciprocable fluid pressure actuator including an elongated actuator housing and a movable abutment therein operatively connected to said chest-compressing member having a stroke sufficient for chest-deflection movement but less than that required for initial orientation movement to suit various sizes of victims, means secured to said frame for guiding constraint of said actuator housing, locking means carried by said frame to permit rapid victim-direction-advancing manual movement of said housing within said guiding constraint to bring said chest compressing member into initial contact with the victim's chest and to retract said housing automatically a selected short distance to a locked position permissive of unconstrained expansion of the victim's chest.

3,289,673
ADJUSTABLE MASSAGE ROLLERS IN A MASSAGE MACHINE
Benjamin J. Russo, Norristown, Pa. (P.O. Box 62, Rte. 113, Creamery, Pa.)
Filed Nov. 12, 1963, Ser. No. 322,810
19 Claims. (Cl. 128—57)

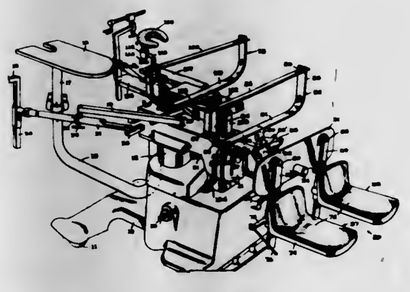
1. In a massage machine, a plurality of vertically depending spaced apart support arms, a massage roller assembly mounted on the lower ends of said support arms, said massage roller assembly comprising a plurality of

individual massage rollers, an individual vertical fork and horizontal axle thereon for each said massage roller, fork supporting means extending transversely between and supported on said spaced apart support arms, and means for vertically adjustably securing each said fork



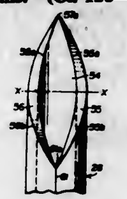
to said transverse fork supporting means, said adjustable fork securing means including a pair of parallel, horizontal, spaced apart bars extending between said spaced apart support arms, said forks being located between said parallel bars.

3,289,674
SURGICAL TABLE
Joseph L. Platt, 3308 Woodridge Place, Lynchburg, Va.
Filed Dec. 24, 1963, Ser. No. 333,140
6 Claims. (Cl. 128—71)



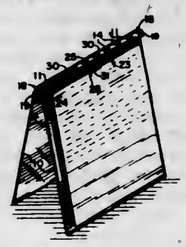
1. In a surgical table for adjusting for surgical purposes, the position of a patient disposed face down, a main frame, spaced knee supports for the patient, means for mounting said supports on and adjustable toward and away from said main frame and adjustable in height with respect thereto and adjustable angularly with respect to each other and with respect to said main frame; a scoliosis yoke for supporting the pelvic region of the patient, means for mounting said yoke on and adjustable toward and away from said main frame and adjustable in height with respect thereto and adjustable angularly in a horizontal plane with respect to said main frame and rotatable about a vertical axis; a chest yoke supporting the patient's chest, means for mounting said chest yoke on and vertically adjustable with respect to said main frame; arm rests for the patient carried by said main frame; and a headrest supporting the patient's head carried by said arm rests and means for adjusting said head rest toward and away from said main frame.

3,289,675
TUBULAR HYPODERMIC NEEDLE
Russell P. Dunmire, deceased, late of Chagrin Falls, Ohio, by Hannah Dunmire, executrix, Chagrin Falls, Ohio, and Harry C. Eby, Mendville, Pa.; said Eby assignor to said Hannah Dunmire, executrix
Original application Dec. 8, 1961, Ser. No. 158,944, now Patent No. 3,173,200, dated Mar. 16, 1965. Divided and this application May 25, 1964, Ser. No. 374,870
14 Claims. (Cl. 128—221)



1. A tubular hypodermic needle having a pointed end defined by a pair of end edge surfaces that diverge axially of the cannula from an apex at its point while extending around the cannula in opposite directions from one side to the opposite side thereof, said end edge surfaces intersecting at said apex and at said opposite side along lines substantially normal to the axis of the cannula, and each of said surfaces twisting continuously about a median line thereof from said apex to said intersection at the opposite side of the needle through an angle of 180°, at least the apex and adjacent portions of said end edges being hardened and thinned.

3,289,676
HOSPITAL PATIENT'S CHART HOLDER
Joseph A. Saunders, Readfield, Maine
Filed Oct. 15, 1964, Ser. No. 404,092
7 Claims. (Cl. 129—35)



3. A chart holder comprising a loose-leaf notebook-type structure having front and back covers and a hinge-type connector means therebetween,
said connector means including a portion of circular section and a pair of substantially parallel leg portions abreast of each other and of a length approximating the radius of said circular portion,
means pivotally mounting each of said front and back covers from each of said leg portions thereby spacing said covers apart at one end thereof,
a tubular member of circular section fitting in and secured to said circular portion of said connector means and having bearing end portions extending beyond the ends of the latter,
bearing caps mounted on said bearing end portions,
said front cover on the front surface thereof near said connector means having struck-up portions thereon for the receipt of a name plate,
said back cover on the front surface thereof and near said connector means having a spring clip thereon of a height less than that of the circular portion of said connector means whereby said chart holder can be supported with front cover substantially flat

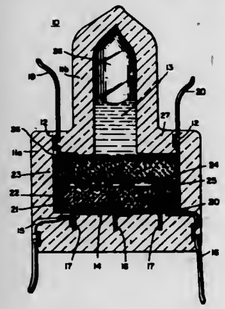
against the back cover and a chart therebetween or the chart and said back cover can be relatively rotated about said connector means and the chart holder self-supportingly stood with the free ends of the front and back covers resting on a support and the chart exposed for exterior observation.

3,289,677

ELECTRICAL READOUT INTEGRATOR HAVING POROUS INSULATORS AND SPACED ELECTRODES IN AN ELECTROLYTE

Clarence W. Hewlett, Jr., Hampton, N.H., assignor to General Electric Company, a corporation of New York

Filed Mar. 29, 1963, Ser. No. 269,037
14 Claims. (Cl. 317—231)



1. An electrical readout integrator comprising a redox electrolytic solution, a container for said electrolytic solution; a plurality of spaced electrodes arranged within said container, said plurality comprising an input electrode, a shield electrode, a readout electrode and a common electrode; first porous insulating means interposed between and in contact with said input and said shield electrodes, said input and shield electrodes defining a reservoir compartment therebetween, said shield electrode being deposited on one planar surface of said first porous insulating mean; second porous insulating means interposed between said shield and said readout electrodes, said readout electrode being deposited on one planar surface of said second porous insulating means; first electrically conductive means interposed between and in contact with said shield electrode and said second insulating means for establishing a connection to said shield electrode; second electrically conductive means for spacing apart said readout and common electrodes to define an integral compartment therebetween; and a plurality of conductor means connected to said input electrode, said first electrically conductive means, said second electrically conductive means and said common electrode for establishing externally available connections to said electrodes, said electrodes being taken from the class consisting of platinum and its noble metal alloys.

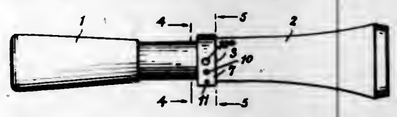
3,289,678

SMOKING IMPLEMENTS FOR REGULATING THE AMOUNT OF AIR ADMITTED INTO THE SMOKE PASSAGE

Frederick A. Fassbender, West Orange, N.J., assignor to S. M. Frank & Co., Inc., New York, N.Y., a corporation of New York

Filed Oct. 18, 1965, Ser. No. 496,974
1 Claim. (Cl. 131—198)

A smoking implement having a cigar or cigarette holding portion at its forward end, a stem on which said portion is fitted, said stem having an annular shoulder from which a tubular shank portion extends, an air adjustment ring encircling said shank portion and bearing against the shoulder, a radial air passage extending through the shank portion and over which the ring is rotatably positioned, a stop pin extending transversely through the shank portion and diametrically across the smoke passage therein and having one end projecting radially out of the same and located forwardly of the shoulder, the ring having a groove in one of its faces into which the projecting end of the pin extends and which limits the extent of rotative movement of the ring relatively to the stem, with the projecting end of the pin terminating within the groove



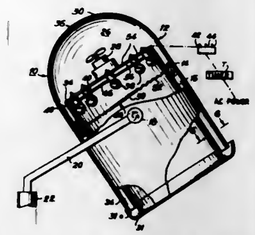
and disposed inwardly of the periphery of the ring so as to be wholly covered and concealed by the ring, the shank portion having an annular groove located forwardly of the air adjustment ring, a retaining ring fitted in the annular groove and disposed against the forward end of the air adjustment ring to thereby confine the air adjustment ring between the retaining ring and the shoulder, and the air adjustment ring having a plurality of radial passages extending through it, any one of which is adapted to be aligned with the air passage in the shank by the rotative movement of the air adjustment ring.

3,289,679

LUMINOUS INFRA-RED METHOD AND APPARATUS FOR ACCELERATING COLORING OF HAIR ON HUMAN HEAD

Gabor Zellerman, Toronto, Ontario, Canada, assignor to Ambel Laboratories, Inc., New York, N.Y., a corporation of New York

Filed Dec. 17, 1965, Ser. No. 514,644
11 Claims. (Cl. 132—7)



1. A method of coloring hair on the human head comprising:

(A) applying an oxidative hair color changing chemical reactant to a mat of hair on the human head,

(B) accelerating the ensuing oxidative chemical hair coloring reaction of the rectant with the hair by

(I) subjecting the mat of hair and reactant to a substantially uniform field of radiant electromagnetic energy from about 7,000 A. which is at the low end of the visible spectrum to about 12,000 A. which is at the high end of the infra-red spectrum

(II) in an essentially static atmosphere of high humidity without appreciable drying of the mat,

(a) with the mat of hair in a hood having a large open mouth at the lower end only thereof in which the head is disposed and

(III) with the said static atmosphere closely confined around the mat by the hood,

(IV) providing said energy in a quantum of from 200 to 500 watts and so spaced from the head as to shorten the hair coloring time with said reactant to a time which is from 10 to 25% of the time that would be required to effect said coloring with said reactant but without the concurrent application of the radiant electromagnetic energy, and

(C) continuing to apply said radiant electromagnetic energy long enough to complete the hair coloring.

7. For use in accelerating the oxidation reaction in the oxidative bleaching, tinting, toning and dyeing of a mat of hair on the human head wetted with a color changing chemical oxidation reactant, an apparatus comprising:

(A) a hood comprising an elongated tube having a closed top, said tube forming with the top a closed chamber having a large open mouth at the lower end only thereof, said chamber and mouth being such as to receive through the mouth into the chamber a wetted mat of hair on a human head with the head spaced from 3 to 6 inches from the top of the chamber, said closed chamber with its open mouth providing an essentially static locally restricted atmosphere around the wetted mat in which a high level of humidity is maintained without appreciable drying of the mat during operation of said apparatus, the entire internal surface of the closed chamber being reflective, and

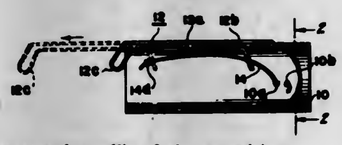
(B) a cluster of mutually spaced electric lamps adjacent the inside top of said chamber and distributed in cooperation with said reflective surface so that said lamps will radiate upon the wetted mat of hair a substantially uniform field of radiant electromagnetic energy, the energy emitted by said lamps being from about 7,000 A. which is at the low end of the visible spectrum to about 12,000 A. which is at the high end of the infra-red spectrum, said lamps providing energy in a quantum of from 200 to 500 watts and so spaced from the head as to shorten the hair coloring time with said reactant to a time which is from 10 to 25% of the time that would be required to effect said hair coloring with said reactant but without the concurrent application of the radiant electromagnetic energy, said radiant electromagnetic energy being of a sufficient quantity to raise the temperature of the mat adjacent the scalp to at least 110° F.

3,289,680

HAIR ROLLING APPARATUS

Victor Kubiak, County Line Road and Glendale Ave., Huntingdon Valley, Pa.

Filed Nov. 13, 1963, Ser. No. 323,498
2 Claims. (Cl. 132—40)



1. Apparatus for rolling hair comprising,

a hollow cylindrically shaped roller having two open ends,

a holder in gripping engagement with said roller having two legs spring biased one leg with the other, a first of said legs being disposed interiorly of said roller and the second of said legs being disposed on the exterior surface of said roller,

a non-resilient flexible member disposed within said roller having one end thereof secured to said roller adjacent one end thereof,

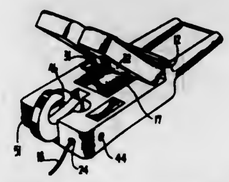
said first leg having a free end bent away from said second leg and having an opening therein slidably receiving said flexible member to allow said holder to be slid longitudinally about said roller without twisting said member, and said member including stop means to allow said holder to be manually pulled longitudinally of the roller by only a predetermined amount of travel thereby to tension said member and whereby said tension is released as said holder is pushed back onto the roller with said second leg securing said rolled hair in place.

3,289,681

DENTAL FLOSS HOLDER

Ondas S. Chambers, 1530 Court St., Alameda, Calif.

Filed Apr. 8, 1964, Ser. No. 358,194
7 Claims. (Cl. 132—92)
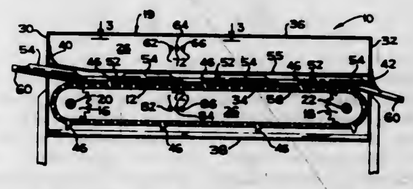


1. A dental floss holder comprising a body having a pair of spaced apart prongs projecting from an end thereof, said body having a recess in an upper face thereof for receiving a supply of dental floss and a guide path for the strand of the floss supply including a section extending from said recess through one prong and a second section extending through the other prong, said second section extending rearwardly of the body to an exterior outlet, said strand of floss as extended along said guide path bridging the gap between said prongs, a cover disposed upon said upper face of said body, means including complementary engaging portions of said cover and body intercepting said first and second sections of said guide path for gripping said strand extending therealong, and latch means for selectively clampingly engaging said cover with said body.

3,289,682

MACHINE FOR SIMULTANEOUSLY CONVEYING AND WASHING DISHWARE

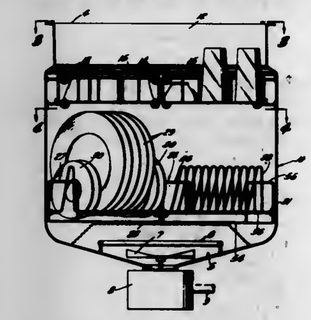
Erik Naslund, Santa Clara, Calif., assignor to FMC Corporation, a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,233
3 Claims. (Cl. 134—125)



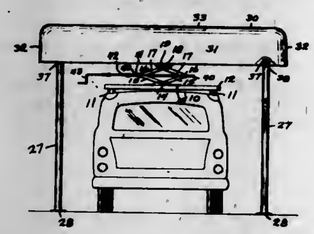
1. Apparatus for washing dishes comprising longitudinally extending laterally spaced parallel upper and lower side rails for receiving the opposed rim portions of dishes, power driven dish pusher means individually engaged with the trailing rim portions of the dishes for propelling the dishes along said rails, each of said rails having interrupted portions forming laterally extending vertical apertures so that successive areas of the dishes conveyed along said rails are exposed through said apertures, upper and lower side spray nozzles spaced from and in alignment with said apertures for directing liquid spray onto those portions of the dishes which traverse said apertures, and central spray nozzles for directing liquid spray onto those portions of the dishes which lie between said side rails.

3,289,683
RACK STRUCTURE FOR A DISHWASHING MACHINE
Betty B. Tomlin, 14502 W. Grand Ave., Elsinore, Calif.
Filed June 29, 1966, Ser. No. 561,490
6 Claims. (Cl. 134—147)



1. A dishwashing machine comprising a tank having a rectangular array of side walls and top, and a bottom having a centrally positioned sump and impeller, a rectangular dish tray having a length to extend from the middle portion of one wall to the middle portion of an adjacent wall diagonally across the corner of said cabinet walls, said tray having a side spaced from the corner of the associated tank walls to provide a storage space, said adjacent tank walls each having a hook for supporting the opposite ends of said tray, and a screen in the bottom of said tank above said impeller and extending in supporting relation with the bottom of said tray.

3,289,684
AUTOMOBILE SLEEPING UNIT
Lyall L. Lowe, 2405 E. 4th St., Sioux City, Iowa
Filed Nov. 20, 1964, Ser. No. 412,737
1 Claim. (Cl. 135—1)



An automobile sleeping unit comprising an upper casing adapted to be carried on the top of said automobile, said casing including fabric tent members secured along the marginal portions of said casing, a plurality of vertically positioned tubes attached to said casing, further vertically positioned support members adapted to engage said tubes, bed members engaging said tubes and said support members, said bed members being lowered along said support members, longitudinally positioned support bars adjustably attached between said support members, means for pivoting said bed members about said longitudinally positioned support bars to provide exteriorly positioned beds, and whereby said fabric tent members can be draped over said bed members to enclose the same, a floor member adjustably secured to said tubes and to said support members, a jack attached to the top of said automobile for raising or lowering said floor member and said casing when said floor member is within said casing, means for providing rotation of said casing to a position substantially at right angles to the longitudinal axis of said automobile for providing a larger space when said automobile is moved from beneath said casing, said floor member having an opening, an upper plate attached to said jack, a boss attached to said plate, a horizontally positioned rod attached to said boss, rollers journalled on said rod adapted to bear against said floor member when said rod is rotated, said floor member having slots adapted to allow passage of said rollers through said slots when said jack is lowered.

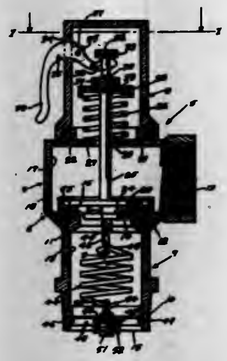
3,289,685
STEP STICK WALKING AID
Alene McCall Parker, Laurinburg, N.C.
(Rte. 1, Box 23, Windsor, N.C.)
Filed Oct. 5, 1964, Ser. No. 401,452
2 Claims. (Cl. 135—45)



2. In an aid for disabled persons in walking, a lower tubular section including an extension element having its lower end fitting and fixed within said lower section, there being a plurality of vertically-spaced apertures in said extension element, an upper tubular section slidably fitting over and about said extension element, first and second hand grips fixed with said upper section in vertically-spaced relation therealong, lock bolt means slidably fitting within the lower one of said grips and having an end adapted to enter any selected one of said apertures in said extension element, operating means connected with said bolt and engageable exteriorly of said lower grip closely adjacent said upper tubular section, to slide said lock bolt means from a first position wherein the end thereof is engaged within a selected aperture of said extension element, to a second position free and clear thereof, means interconnecting said extension element and said upper tubular section, and operating to limit them to relative longitudinal movement only, and a foot plate detachably secured to the lower end of said lower tubular section at a point offset forwardly from the geometrical center of said plate whereby the instrument when lifted by either of said first and second hand grips, has substantially no tendency to tilt, and four tips of resilient material secured to the lower surface of said foot plate in equiangularly-spaced relation about and radially of said point.

3,289,686
PRESSURE OR TEMPERATURE RESPONSIVE RELIEF VALVE
Clarence C. Tyer, Jr., 4233 Prospect Drive, Carmichael, Calif.
Filed Nov. 15, 1963, Ser. No. 324,063
3 Claims. (Cl. 137—73)

1. A pressure or temperature responsive relief valve comprising a valve housing having an inlet and an outlet, said housing containing a valve seat interposed between said inlet and outlet, a valve engaging said valve seat for closing the passage between the inlet and outlet, a first spring disposed on one side of and connected to said valve and urging the valve to an open position, and a second stronger spring connected to and disposed on the opposite side of said valve and normally retaining the valve in a closed position, said valve opening away from



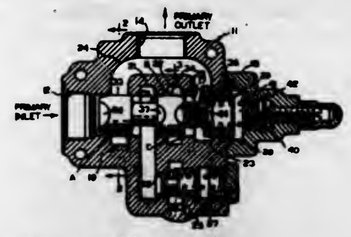
the inlet and a temperature responsive element disposed in the valve housing between the inlet and the valve and connecting said stronger spring to the valve for releasing the valve from the stronger spring in response to a predetermined temperature in the valve housing.

3,289,687
ACTUATOR FOR PURE FLUID AMPLIFIER
J. C. Dunaway, Falkville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 13, 1964, Ser. No. 344,788
3 Claims. (Cl. 137—81.5)



1. In a fluid amplifier having a power stream input duct for receiving fluid under pressure therein, a plurality of output ducts, a receiver section disposed in communication with said input and output ducts for passage of said fluid flow from said input to said output ducts, and a pair of control ports disposed in communication with the atmosphere and said receiver section, the improvement residing in an actuator carried by said fluid amplifier for selectively closing off one of said pair of control ports while maintaining the other said control port open to the atmosphere to provide a pressure differential across said fluid in said receiver section to control flow of said fluid through a preselected one of said output ducts, said actuator including an arm secured on said amplifier, said arm having the distal ends thereof carried adjacent said control ports, energizing means for pivotal movement of said arm, movable means carried in each said control port, said movable means being secured to said ends of said arm for movement thereby for selectively opening opposite sides of said receiver section to the atmosphere, whereby responsive to the opening of one said control port and the closing of the other said control port a vacuum is created in said closed control port and a pressure differential is created across said movable means and said arm to assist said energizing means in the pivotal movement of said arm.

3,289,688
FLOW DIVIDER VALVE FOR USE WITH TWO PUMPS
Thomas J. Malott, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Jan. 16, 1964, Ser. No. 338,176
4 Claims. (Cl. 137—114)

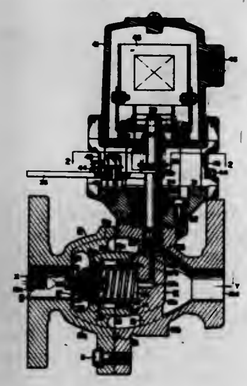


1. A valve comprising
(a) a housing containing a valve bore;
(b) five flow passages communicating with the valve bore at longitudinally spaced points, there being a first inlet passage and a first outlet passage, a second outlet passage which communicates with the bore between the first inlet and outlet passages, a second inlet passage which communicates with the bore between the first and second outlet passages, and a third outlet passage that communicates with the bore between the first inlet passage and the second outlet passage;
(c) a flow passage interconnecting the first and third outlet passages;
(d) a valve plunger reciprocable in the bore between first and second positions;
(e) means carried by the valve plunger and the housing defining a variable area orifice in the bore between the first inlet passage and the third outlet passage, the flow area of the orifice increasing progressively as the plunger moves toward the second position;
(f) means carried by the valve plunger and the housing defining a second variable area orifice in the bore between the second inlet passage and the first outlet passage, the flow area of this orfice being a maximum when the valve plunger is in the first position and decreasing progressively as the plunger moves toward the second position;
(g) means carried by the valve plunger and the housing defining a third variable area orifice in the bore between the second inlet passage and the second outlet passage, the flow area of this orfice being a maximum when the valve plunger is in the second position and decreasing progressively as the plunger moves toward the first position;
(h) spring means biasing the valve plunger toward the first position; and
(i) means carried by the plunger and responsive to the pressure differential across the first orifice for shifting the plunger toward its second position against the bias of the spring means.

3,289,689
VALVE ASSEMBLY
Hiroto Kobayashi and Kosaku Albara, Kawasaki, Japan, assignors to Kabushiki Kaisha Keihin Seiki Seisakusho, Kawasaki, Japan, a corporation of Japan
Filed Dec. 28, 1965, Ser. No. 517,023
3 Claims. (Cl. 137—221)

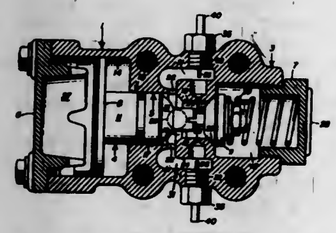
1. In a pilot-operated valve assembly, the improvement comprising a valve body having a fluid inlet passage and a fluid discharge passage, a hollow piston slidably mounted in said body with a sufficient gap therebetween so as

to cause said piston to assume a floating condition when fluid flows through said gap, said piston comprising a hollow cylindrical element having an enlarged flange portion and a cone as a forward extension of said element, a pilot fluid passage extending through said cone and said valve body and providing a flow path from said inlet passage, through said hollow cylindrical element to said fluid discharge passage, a solenoid-operated plunger for opening and closing the pilot flow passage at the downstream end thereof, a first sealing ring mounted on said



hollow cylindrical element and butting said enlarged flange portion, a stationary support member provided in said fluid inlet passage, a buffer member movably mounted on said support and a resiliently urging means supported on said support member exerting upon said buffer member an urging force towards the inlet end of said pilot fluid passage, said buffer being adapted for providing a gradually increasing fluid buffering action upon said piston when the latter advances towards its closing position.

3,289,690
CONTROL VALVE
Virgil Lanier Frantz, Salem, Va., assignor to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia
Filed Feb. 12, 1963, Ser. No. 258,050
4 Claims. (Cl. 137—244)



3. In a control valve having a body, a bore in said body, an outlet port in said body and an orifice in said body communicating a part of said bore with said outlet port, the improvement comprising a plunger mounted on and projecting outwardly from said body and slidable therein in alignment with said orifice, said plunger being projectable into said orifice counter the direction of air flow therethrough for cleaning foreign matter therefrom, said plunger on actuation of said valve being automatically responsive to air introduced into said bore part for retracting from said orifice.

3,289,691
VALVE SUB
Thomas A. Kennard, 1506 Conrad Sauer, Houston, Tex.
Filed Nov. 9, 1964, Ser. No. 409,648
12 Claims. (Cl. 137—496)

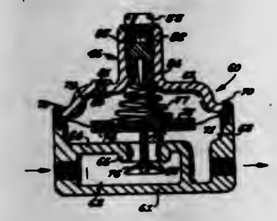


1. A valve sub for including in a drill string below the kelly to prevent loss of drilling fluid while making connections during down hole drilling comprising:
a body member having means for attaching in said drill string and having an axial bore therethrough,
piston means mounted for axial movement in said body member, said piston means including a tubular member having an axial bore therethrough of a diameter substantially as large as the diameter of the bore through the drill string,
resilient biasing means for urging said piston means downwardly,
full opening bore closing means operably connected to the lower end of said piston means and adapted to be placed in the closed position by movement of said piston means downwardly, and
means for applying a pressurized fluid to said piston means to thereby drive said piston means upwardly and to move said bore closing means to an open position.

3,289,692
SPRING ADJUSTING MEANS FOR A PRESSURE OPERATED VALVE
William R. Dunn, Los Angeles, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 5, 1964, Ser. No. 387,596
8 Claims. (Cl. 137—505)

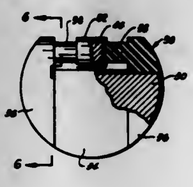
1. A pressure regulator valve comprising: a valve body having inlet and outlet chambers separated by an apertured wall having a valve seat opening therethrough; a movable wall having one side exposed to fluid in said outlet chamber and the other side exposed to fluid in a control chamber; a valve closure member operably connected to said movable wall and cooperable with said valve seat with said movable wall adapted to move said closure member toward a closed position in response to pressure in the outlet chamber; a loading spring having one end operably connected to said movable wall and urging the movable wall in a valve-opening direction; a spring housing for said loading spring, said housing having a cylindrical opening therethrough having an inner end connected to the control chamber, an internally threaded portion adjacent the outer end of said opening, a spring enclosing portion adjacent the inner end of said

opening, and an annular flange portion extending into said opening intermediate said threaded portion and said spring enclosing portion; and an adjustment member formed of a resilient material and including an externally threaded base portion threaded into the threaded portion of said opening, a relatively thin annular skirt portion extending axially from said base portion and of a diameter slightly greater than the inner diameter of said flange portion in the opening, and a plurality of axially



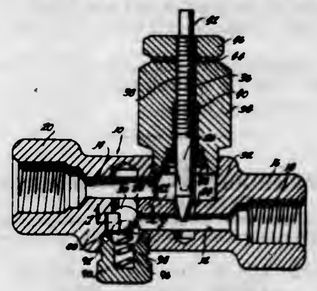
extending stiffening ribs spaced about the inner periphery of said skirt portion and each extending to a position slightly beyond the end of said skirt portion, said adjustment member being so constructed that when said base portion is threaded into the threaded portion of said opening, said skirt portion extends into said flange portion and has an interference fit therewith to form a seal therewith and the extending ends of said ribs extend into the spring enclosing portion of the spring housing to form a retainer for the free end of the spring.

3,289,693
CHECK VALVE
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla.
Filed Feb. 10, 1964, Ser. No. 343,518
10 Claims. (Cl. 137—525.3)



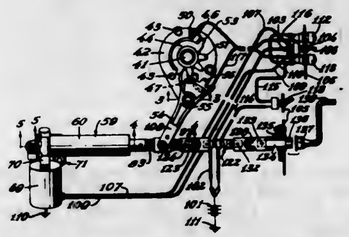
1. A check valve including:
a tubular body having inlet and outlet ends;
a generally planar seat extending across said body between said ends;
means forming an aperture extending through said planar seat; and,
a valve member mounted on the outlet side of said planar seat,
said valve member including a flapper member adapted to cover said aperture, a substantially rigid mounting member, a pair of relatively rigid flapper suspension members joined with said flapper member and extending therefrom in spaced apart relation with said mounting member, and resilient connecting means joining each of said suspension members to said mounting member whereby rotation of said flapper member relative to said mounting member imparts a torsional force to said resilient connecting means.

3,289,694
BALL CHECK VALVE WITH PARTICULAR CAGE MEANS
Charles F. Frye, deceased, late of Bellwood, Ill., by Robert A. Elliott, executor, Glen Ellyn, Ill., and The Continental Illinois Bank and Trust Co., executor, Chicago, Ill., assignors to Deltrol Corp., Bellwood, Ill., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,433
5 Claims. (Cl. 137—533.13)



1. In a ball check valve, the combination comprising: a ball chamber defining a bore having an outwardly opening passage at one end, the inner lip of which passage defines a generally circular seat, and a line passage port opening laterally off one side; a ball of a diameter substantially smaller than the bore which is sealingly engageable with the seat and is movable within the bore between the seat and a position substantially past the port; and a guide member in the bore at the level of the port to define a bore portion of reduced diameter through which the ball passes as it moves past the port, said guide member being cut away over the entire area of the port and having a pair of edges defining its cut-out portion which are generally parallel to the axis of the seat and are disposed on opposite sides of the port, which edges are flexed inwardly from the walls of the bore so that the bore portion formed by the guide member has its axis offset, with respect to the axis of the seat, in a direction substantially directly away from the port.

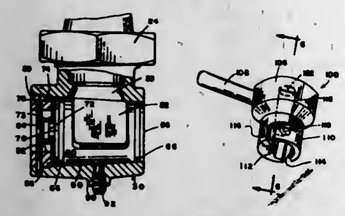
3,289,695
CENTRIFUGAL PUMP TRANSFER VALVE
David F. Thomas, West St. Paul, and George A. Rathburn, St. Paul, Minn., assignors to Waterous Company, St. Paul, Minn., a corporation of Minnesota
Filed Nov. 16, 1964, Ser. No. 411,216
12 Claims. (Cl. 137—554)



12. A device for pivoting a valve between two extreme positions, the device including:
a valve,
an electrically conductive housing enclosing said valve and having a valve stem extending through said housing,
an electrically conductive arm secured to said stem externally of said housing,

lever means connected to said arm to actuate the valve,
an electrically conductive projection on said arm,
a pair of fixed abutments on said housing in the path of movement of said projection and acting to limit pivotal movement of said valve,
each abutment including a contact insulated from the housing,
a signal circuit for each abutment each including a source of electrical current one side of which is grounded to the housing and gear segment, a signal light, and a corresponding one of said insulated contacts,
whereby engagement of said projection with either contact will complete a circuit from the power source to one of said signal lights.

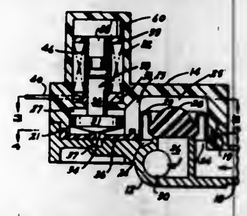
3,289,696
TAMPER-PROOF CONTROL FOR A BY-PASS TYPE METER BAR
Ronald H. Champion, Rockford, Ill., assignor to Eclipse Fuel Engineering Co., Rockford, Ill., a corporation of Illinois
Filed Apr. 14, 1964, Ser. No. 359,586
8 Claims. (Cl. 137—599.1)



1. In a rotary spool-type directional valve assembly, in combination, a valve casing providing an internal valve chamber, a valve plug disposed within said valve chamber and capable of angular turning movement between first and second extreme positions, the wall of said valve casing having a circular opening therein in registry with the chamber and through which opening one end face of the valve plug is accessible for manipulation, a fixed cross pin extending diametrically across said circular opening in front of said end face of the valve, a rotary valve actuator for said valve plug having a cylindrical hub capable of endwise insertion in said circular opening, a non-circular protuberance on said end face of the valve plug, said cylindrical hub being formed with a cooperating and conformably non-circular socket therein receivable over said protuberance for transmitting torque from the valve actuator to the valve plug, the side wall of said socket being formed with diametrically disposed bayonet slots therein having axially extending portions in register with the cross pin when the non-circular protuberance and socket are in angular register, and having circumferentially extending portions conformable in arcuate extent to the extent of angular turning movement of which the valve plug is capable.

3,289,697
SOLENOID VALVE HAVING THE SOLENOID ENCAPSULATED WITHIN A DIELECTRIC COVER
James A. Kozel, Franklin, Emil Robert Plasko, Walled Lake, and Henry W. Kogan, Oak Park, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1964, Ser. No. 336,685
3 Claims. (Cl. 137—606)

1. In a mixing valve having a pair of individually energizable solenoid coils arranged in side-by-side relation for controlling the flow of fluids through the valve: the improvement comprising a spool for each coil; a first terminal mounted one one spool in electrical connection with one end of the coil carried thereon; a second terminal mounted on the other spool in electrical connection with one end of the coil carried thereon; a third terminal mounted jointly on both spools is electrical



connection with the other end of each coil; and a single continuous molded dielectric cover material encapsulating both coils and their spools; said terminals being located closely adjacent one another for connection with the wires of a three wire power supply cable.

3,289,698
DEVICE FOR PROVIDING A LEAK-TIGHT COUPLING BETWEEN TWO SEALED ENCLOSURES
Jean Pierre Cazalis, Bezons, and Guy Lefort, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Oct. 28, 1963, Ser. No. 319,230
Claims priority, application France, Nov. 8, 1962, 914,840
1 Claim. (Cl. 137—614.01)

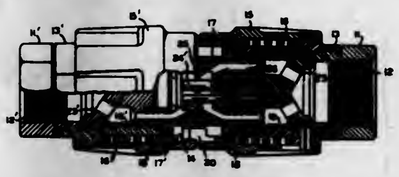


Device for providing a leak-tight coupling between two sealed enclosures, characterized in that said enclosures to be joined together are provided with two openings having the same dimensions and designed to be brought into oppositely facing relation, each of said openings being surrounded by a flange which is provided on the outer face of the corresponding enclosure and closed by a plug which is adapted to fit with a small clearance within said flange, the outer face of the flange of the first enclosure being provided with an open internal groove whilst the plug thereof is plain, the flange of the second enclosure being plain whilst the outer face of the plug thereof is provided with an open external groove, each of said two grooves being designed to accommodate a gasket having a cross-section in the shape of a curvilineal polygon comprising at least four summits or lips, and each of the four bearing faces, namely two groove faces, one plug face and one flange face, which are formed by portions of surfaces of the three components which surround each gasket being in contact with at least one of the lips of said gasket, at least one lip of one of said two gaskets being in contact with at least one lip of the other gasket.

3,289,699
VALVED COUPLING
Robert C. Westveer, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Apr. 18, 1963, Ser. No. 273,973
6 Claims. (Cl. 137—614.03)

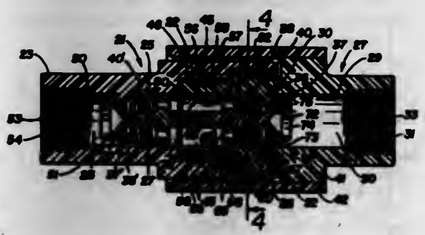
1. In a coupling including two mating units, valves effective to permit flow through said coupling when the units are connected together and prevent flow from either unit when they are disconnected comprising
(a) valve means mounted in each unit for longitudinal movement relatively thereto and each valve means

including a longitudinally movable valve seat and a longitudinally movable valve head, said head and seat being movable relatively to each other between an outer closed position and an inner open position;
(b) said valve means having complementary outer end surfaces which are brought into face to face engagement over the entire area of said surfaces, as said units are brought together;



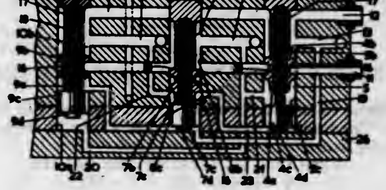
(c) sealing means mounted for longitudinal movement in each unit closely encircling the outer end surfaces of said valve means and brought into abutting, sealing contact with one another at the same time as the outer end surfaces of the valve means come into engagement, whereby minimum clearance volume is defined by the engaged sealing means and the engaged end surfaces of the valve means; and
(d) thrust means carried by each unit and rendered effective as an incident to coupling movement of said units after sealing contact occurs to unseat the valve means in each unit.

3,289,700
VALVE CONNECTOR
Anthony Michael Gildone, 26500 Oriole Ave., Euclid, Ohio
Filed Aug. 10, 1964, Ser. No. 388,454
7 Claims. (Cl. 137—614.04)



1. A valve comprising:
(a) a valve body constructed with:
(i) interior surfaces defining a main through-passage,
(ii) a valve seat in the passage, said valve seat diverging and facing generally toward an inlet end of the main passage,
(iii) a smaller passage through the valve seat, and
(iv) a generally peripheral camming surface adjacent the valve seat, said camming surface facing generally in an opposite direction from the valve seat toward an outlet end of the main passage and converging toward the valve seat passage;
(b) a valve member having a valve head and stem extending from the valve head, said stem extending through the passage of the valve seat;
(c) the valve head being resiliently constrictable without permanent deformation and constructed:
(i) of a shape compatible with the passage through the valve seat to seal the passage when in contact with the seat,
(ii) with an outer peripheral dimension substantially greater than the interior dimension of the passage through the valve seat;
(iii) with a divergent portion adjacent the stem that diverges in a direction away from the stem to the outer peripheral dimension of the valve head, generally complimentary to the valve seat, and which is adapted to cooperate with the valve seat, and
(iv) with a terminal portion contiguous with the diverging portion that converges from the outer peripheral dimension to a smaller dimension no greater than the outer dimension of the camming surface;
(d) guide means carried by the valve stem and positioned in the valve body on the opposite side of the valve seat from the valve head to position the stem and to guide movement of the stem within the valve body; and
(e) bias means interposed between the valve body and the guide means for urging the valve member toward the valve seat.

3,289,701
FLUID CONTROLLED SAFETY DEVICES FOR SELECTOR VALVES
Stanley Henshaw Booth, Wokingham, and Edward William Arthur Scrivener, Staines, England, assignors to Her Britannic Majesty's Principal Secretary of State for the War Department, Whitehall, London, England
Filed Mar. 3, 1964, Ser. No. 349,104
Claims priority, application Great Britain, Mar. 4, 1963, 8,503/63
10 Claims. (Cl. 137—637.1)



1. A safety control means for the supply of fluid under pressure from a common source of supply to separate supply lines, comprising a group of at least two selector valves each of which controls a separate supply line, separate means for actuating each selector valve, and auxiliary lines controlled by each selector valve to supply fluid to act on other selector valves of the group to prevent their actuation when it has been actuated to connect its supply line to the source of supply.

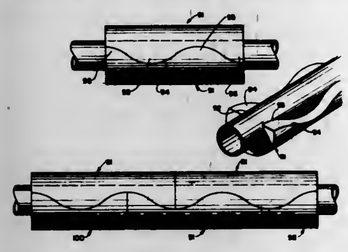
3,289,702
COVERINGS FOR CONDUITS
Philip C. Sherburne, Rumford, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Jan. 16, 1963, Ser. No. 251,963
4 Claims. (Cl. 138—118)

1. A snap-on two piece, preformed, insulating cover for a length of pipe comprising:
(1) two substantially, semi-cylindrical complementary sections joined about said pipe to form a uniformly thick cylindrical cover composed of a rigid and slightly flexible insulating material whose interior

surface is substantially wholly in contact with said pipe, each section including:

(A) two longitudinally extending edge portions, each for abutting engagement with an adjacent edge portion of the other section:

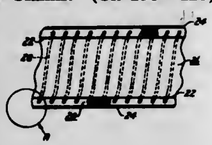
(1) at least a part of said two edge portions being spaced apart a chord distance less than the outside diameter of said pipe and the angular circumferential extent of the interior surface of said cylindrical cover at said part being slightly greater than 180°,



(2) each of said parts of said edge portions being non-reentrant in configuration and in abutment with corresponding non-reentrant segments of the adjacent section, which segments contain an interior surface with a circumferential angular extent of slightly less than 180°, the total angular extent of the interior surfaces of each part and its abutting segment being 360°,

whereby each of the two said sections may be snapped onto said pipe and held thereon by engagement with the pipe in abutment with each other to form a complete cylindrical cover about said pipe.

3,289,703
FLEXIBLE HOSE AND METHOD OF MAKING THE SAME
Raymond L. Brown, Banksville, N.Y., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,160
10 Claims. (Cl. 138—125)



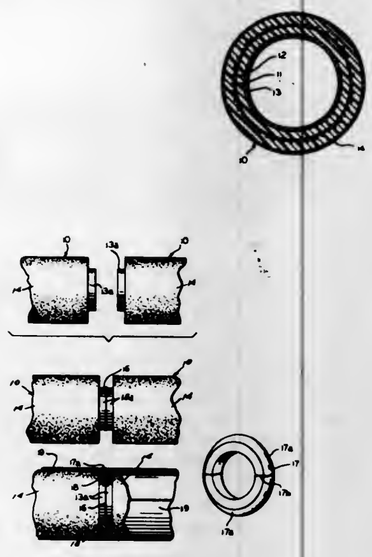
1. A hose comprising: a tubular body of cellular elastic material; a thin tubulation of solid elastic material encompassing said tubular body and forming an outer wall portion of the hose; and, a helix of resilient material wholly embedded in said tubular body and extending coaxially with said body and tubulation.

3,289,704
SECTIONALIZED PIPE
Joseph A. Nicosia, 819 N. Thatcher Ave., River Forest, Ill.
Filed Jan. 22, 1965, Ser. No. 432,047
7 Claims. (Cl. 138—155)

1. A load bearing pipe section capable of being used in a fluid pipe line comprising

a tubular moisture absorption resistant rigid type foamed polyurethane body,

said tubular polyurethane body having a load bearing liner extending interiorly the length of the tubular polyurethane body and beyond its opposite ends for bonded attachment with other pipe sections,

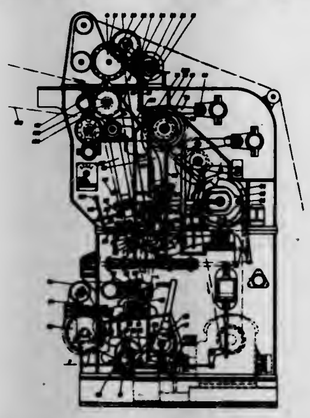


a tubular wire screen reinforcing means extending substantially the entire length of said pipe section and embedded in said body, and

said wire screen being substantially centered in the cross-sectional thickness of said body.

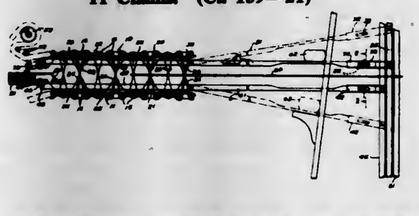
3,289,705
APPARATUS FOR WEAVING AND KNOTTING CUT-PILE FABRICS
Svend Sigurd Christie Fleischer, Kroyersvej 14, Klampenborg, Denmark; Christen Carl Thomsen, Skovvej 93, Charlottenlund, Denmark; Gottfried Gerhard Wilhelm Hofmann, Am Baum 37, Hamburg-Bergedorf, Germany; and Werner Heinrich Rossborg, Moosberg 17c, Hamburg-Bergedorf, Germany
Filed Sept. 15, 1964, Ser. No. 396,512
Claims priority, application Germany, Sept. 17, 1963, F 40,776
24 Claims. (Cl. 139—5)

1. A carpet loom comprising, in combination, heddle means for forming warp sheds comprised of two warp sheets, each sheet having one warp thread of pairs of warp threads which are arranged across the warp; a row of pairs of first and second gripper means disposed in one direction across one of said warp sheets, said pairs of first and second gripper means being spaced from each other corresponding to the spacing between said warp threads of one warp sheet, said first and second gripper means of each pair being movable in said one direction between a first position in which said second gripper means is located on one side of said first gripper means so that said first and second gripper means are located on opposite sides of one warp thread of one warp sheet, a second position in which said second gripper means is located on the other side of said first gripper means and spaced from the same so that said first and second gripper means are located on opposite sides of another warp thread of the other warp sheet and so that a kink is formed in said one warp thread, and a third position in which said first and second gripper means are aligned, each pair of first and second gripper means being movable between a retracted position located outside of said warp shed, an intermediate position penetrating said one warp sheet, and an operative position penetrating also the other warp sheet between said warp threads; first control means for moving said first and second gripper means of each pair between said first, second and third positions; second control means for moving said pairs of gripper means from said retracted position to said intermediate and operative positions, and back; holding means for holding a row of pile tufts outside of the other warp sheet and with the tuft ends in the region of said operative position of said pairs of gripper means; third control means for opening and closing said first and second gripper means;



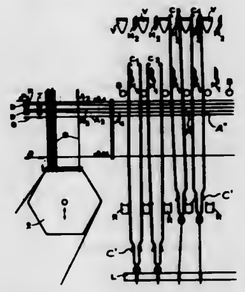
and drive means for driving said first, second and third control means in timed relationship so that said one warp thread is kinked in said second and intermediate positions, said other warp thread is embraced by said first and second gripper means on opposite sides in said operative and second positions, so that said other warp thread is kinked and crosses said one warp thread in said operative and third positions while said first and gripper means are open, so that the tuft ends are gripped by said first and second gripper means being closed by said third control means in said operative and third positions, and so that said tuft is drawn through crossing warp threads by said closed first and second gripper means as the same are moved back to said retracted position by said second control means.

3,289,706
MEANS FOR THE MANUFACTURE OF CUT PILE FABRICS
Linden Morgan Valentine, Danbury, Conn., assignor to L. Morgan Valentine Company, New York, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,962
11 Claims. (Cl. 139—21)



1. In a loom of the double shuttle type for weaving upper and lower fabric layers face to face on opposite sides of a median plane with pile yarns anchored in said layers and extending therebetween, upper and lower sets of warpwise sheddable pile gage members disposed between said layers on opposite sides of said median plane, heddle means connected to said members, spacing means disposed between and engaging the forward ends of said sets of gage members, a knife mounted to reciprocate between said supporting members for cutting said pile yarns in a zone between said sets.

3,289,707
JACQUARD MACHINE WITH AN OPEN SHED CARRYING HOOK NEEDLES, PROVIDING A DOUBLE POSITIVE ACTION
Victor Wittendal, 45 Rue Florimond Desbarbieux, Croix, France
Filed Mar. 30, 1964, Ser. No. 355,719
Claims priority, application France, Apr. 5, 1963, 18,284
3 Claims. (Cl. 139—63)



1. In combination in a Jacquard machine of the open-shed type:

(A) pattern delivery means;

(B) a plurality of vertical needles operated by said pattern delivery means;

(C) a plurality of flexible, selectively reciprocating, superimposed needles, each being in contact with one of said vertical needles, each having a front and a back end, said front end terminating in a right-angle bend, said needles being adapted to bend slightly in a vertical direction under the action of a respective one of the said vertical needles;

(D) a plurality of lifting knives having a vertical path of travel;

(E) a plurality of resilient, reciprocating, double-armed hooks actuated by said knives, each of said hooks terminating (1) in its upper part in a laterally extending nose; (2) said noses facing one another and in the inoperative position lying outside the path of said knives; (3) each arm of said hooks having a retaining nose at its lower end;

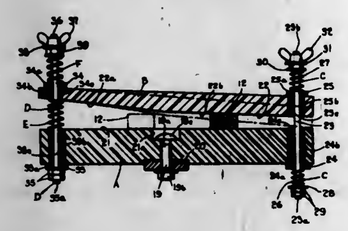
(F) a plurality of arresting bars for supporting said hooks in a raised position by engaging said retaining noses;

(G) a plurality of stationary bars for limiting the spacing apart of said arms of said hooks;

(H) a plurality of fixed deflecting members for causing said hooks to engage said lifting knives only when these meet therewith in their raised position;

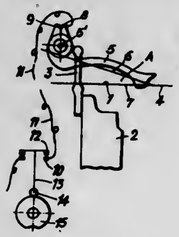
(I) double reciprocatory drive means for said superimposed needles consisting of two horizontally reciprocating rows of spaced bars one row serving for pulling and the other for pushing said main needles by engaging said right-angle bends thereof in response to selection by said vertical needles.

3,289,708
PICKER STICK CHECKING DEVICE
James J. Jester, 118 Kathryn Court, Greenville, S.C.
Filed Oct. 12, 1964, Ser. No. 403,268
8 Claims. (Cl. 139—164)



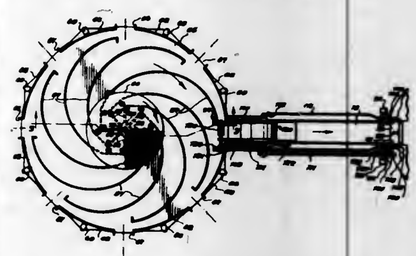
1. A picker stick checking device for use in a loom having a lay including, a pair of elongated members aligned for presenting opposed inner faces for engagement with the picker stick on a checking stroke, a rigid connection between one of said elongated members and the lay, resilient means for yieldably urging the outer end of the other elongated member toward the outer end of said one elongated member and for resisting lateral outward displacement of the inner end of said one elongated member, an inwardly tapering inner face portion carried adjacent the inner end of said other elongated member, and a planar surface on said rigidly connected elongated member adjacent the path traveled by said picker stick for guiding said picker stick on a power stroke.

3,289,709
WEFT STOP MOTION FOR LOOMS
José Lladó Lladó, Calle Jorge Girona Salgado 12, Barcelona, Spain
Filed June 22, 1964, Ser. No. 376,899
Claims priority, application Spain, July 5, 1963, 289,962
2 Claims. (Cl. 139—370)



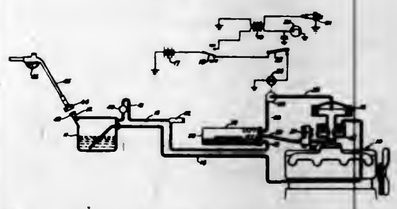
1. In a loom, in combination with a reciprocating slay carrying a reed, and remotely controlled switch means in an electric circuit controlling the stop mechanism of the loom, which switch means are synchronously operated with the reciprocating movement of the slay, a weft stop motion comprising a stationary support secured to the loom frame at the rear of said reed, thin feeler means carried on said support for pivotal movement and passage of a free end thereof through a dent of the reed, an electric contact comprising contact means at the other end of said feeler means and movable therewith and stationary contact means at the loom electrically connected to said switch means, said electric contact remaining open when said feeler means are pivoted upwardly by a respective weft and being closed when the free end of said feeler means is in dropdown position due to lack of contact with a weft, closure of said electric contact and switch means actuating said stop mechanism of the loom.

3,289,710
CONTAINER FILLING MACHINE
Alexander Litchard, 322 N. Main St., Wellsville, N.Y.
Filed Dec. 6, 1963, Ser. No. 328,544
9 Claims. (Cl. 141—116)



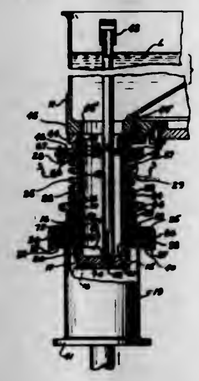
1. A container filling machine including a belt for carrying material to its discharge end for deposit in a container,
a cutoff part on said machine movable into position to remove material from said belt when the container is filled to the desired extent and for returning the removed material to said belt,
a bin at the receiving end of said belt in which material is deposited and having a discharge opening for passage of material to said belt,
a connection between said cutoff part and the receiving end of said belt for interrupting the passage of material from said discharge opening of said bin to said belt when the discharge of material from said belt is interrupted, said bin having a revolving bottom for carrying the material to the receiving end of said belt,
and a spreader over said bottom for deflecting material to a discharge opening of said bin,
said connection including means for raising said spreader out of contact with the material on said revolving bottom for interrupting the passage of material to the receiving end of said belt when the discharge of material from said belt to a container is interrupted.

3,289,711
DEVICE FOR CONTROLLING THE HYDROCARBON EVAPORATION LOSSES FROM AUTOMOTIVE VEHICLES
Fred V. Hall, San Francisco, Calif., assignor to Brooks Walker, San Francisco, Calif.
Continuation of application Ser. No. 407,946, July 27, 1964, which is a division of application Ser. No. 50,589, Aug. 18, 1960, now Patent No. 3,191,587. This application Dec. 13, 1965, Ser. No. 517,501
2 Claims. (Cl. 141—286)



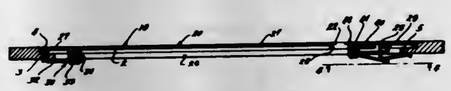
1. A device for controlling fuel evaporation and leakage losses when filling an automobile fuel tank having a filling spout from a filling station pump having a nozzle, comprising: vapor seal means for sealing between said spout and said nozzle to prevent leakage of vapors from said tank when it is being filled with gasoline, a vent line extending from said tank, and filter means for withdrawing gasoline vapor from air connected to said gasoline vent line.

3,289,712
RECEPTACLE FILLING MACHINES
Robert L. Smith, Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 342,427
8 Claims. (Cl. 141—295)



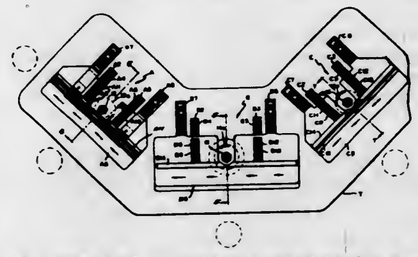
1. In a receptacle filling machine: a reservoir, at least one depending valving device in liquid communication with said reservoir, a stationary valve element and a cooperating movable valve element, means for urging said movable valve element downwardly into a closed position to prevent flow out of said valving device, an actuator for actuating said movable valve element upwardly to an open position enabling flow out of said valving device into a receptacle, a first cam surface on said reservoir, a second cam surface on said valving device, and a clamp for locking said valving device to said reservoir against movement, said clamp having cam surfaces coacting with said first and second cam surfaces to urge said valving device into a locked position.

3,289,713
MACHINERY TABLE INSERT
Leroy L. Herzog, Belleville, Ill., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Oct. 26, 1964, Ser. No. 406,496
7 Claims. (Cl. 143—132)



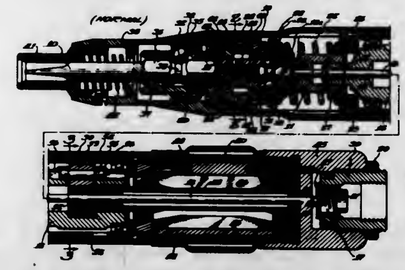
1. An insert for closing an access opening in a machine table top, comprising a plate having a clamp near one edge and, spaced therefrom near another edge, a latch comprising a dog leg clamping member having a finger lift tab exposed along the upper side of the plate, a pivot-stop section extending through a passage in the plate and a clamp leg beneath said plate, cooperating pivot means on said plate and pivot-stop section, and biasing means bearing on said dog leg clamp member and normally biasing the clamp leg toward the underside of said plate, said plate having a finger accommodating concavity in its top surface within a part of the reach of which the finger lift tab extends.

3,289,714
MULTIPLE VERTICAL SPINDLE WOODWORKING MACHINE AND METHOD OF WOODWORKING
Waldemar Hammer, 972 Petaluma Hill Road, Santa Rosa, Calif.
Continuation of application Ser. No. 147,814, Oct. 26, 1961. This application July 13, 1964, Ser. No. 383,549
15 Claims. (Cl. 144—1)



1. A power tool comprising a stand having a main horizontal work supporting table mounted at the upper side thereof, a plurality of vertically disposed power driven spindles arranged in lateral spaced relationship to one another and extending upwardly through the work supporting table, adjustable spindle holder mechanism mounted below the work supporting table for raising and lowering the spindles, a plurality of vertically spaced adjustable cutting elements fixed to the upper ends of the spindles, a plurality of superimposed work guiding fence means mounted upon the horizontal work supporting table, said fence means including an adjustable horizontal portion and a vertical portion carried thereby, said fence means presenting a plurality of vertical guide surfaces through which the said cutting elements project laterally, interchangeable dimensional guide means detachably secured to the work guiding fence means at one of the said spindles, said dimensional guide means including an elongated guide element which has at least one dimension chosen to correspond to a similar dimension of a cutter on an adjacent spindle.

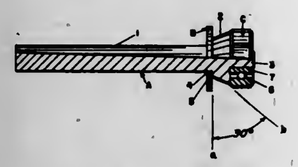
3,289,715
AUTOMATIC SHUT-OFF TOOL
Morton S. De Groff and Richard E. Plouck, Bryan, Ohio, assignors to The Aro Corporation, Bryan, Ohio, a corporation of Ohio
Filed Mar. 19, 1964, Ser. No. 353,069
8 Claims. (Cl. 144—32)



1. In an automatic shut-off tool of the character disclosed, a drive spindle, a motor for rotating said drive spindle, a rotatable tool holder having a camming clutch jaw, an operative connection between said drive spindle and said tool holder comprising a drive-clutch jaw member continuously meshing with said camming clutch jaw, a torque spring normally biasing said jaws to full mesh with each other, a drive element between said drive spin-

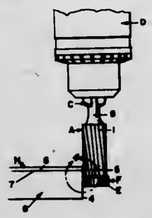
dle and said drive clutch jaw member axially movable by engagement of a tool element in said tool holder with the work, a normally inoperative control means for said motor, an operative connection between said drive element and said control means to render the latter operable when said drive element is moved axially by engagement of the tool element with the work, and means for releasing said control means to return to normally inoperative position upon said jaws camming to a partially unmeshed position responsive to predetermined torque of the work, said last means being mechanically actuated by the relative movement of said jaws during the camming action and at a point in such action short of unmeshing of said jaws.

3,289,716
ROTARY EDGE TRIMMING TOOL
Wilbur E. Dutot, 4021 Edgemoor Place, Oakland, Calif.
Filed July 13, 1964, Ser. No. 382,001
2 Claims. (Cl. 144—134)



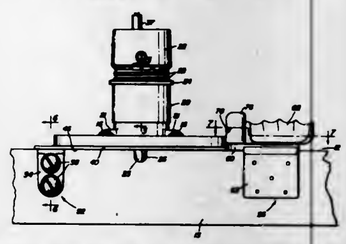
1. A rotary scribing tool comprising:
(a) a shank;
(b) a tapered cutter integral with said shank and having its axis aligned with said shank axis; said cutter having inclined cutter teeth on its tapered periphery;
(c) an integral shaft projecting beyond said tapered cutter and having its axis aligned with the axis of said cutter and with said shank;
(d) a ball bearing guide wheel mounted on said shaft and having an outer diameter slightly larger than the outer diameter of said tapered cutter; and
(e) a washer mounted on said shank and being disposed adjacent to said cutter, the outer diameter of said washer being greater than the outer diameter of said tapered cutter.

3,289,717
ROTARY EDGING TOOL WITH GUIDE WHEEL
Wilbur E. Dutot, 4021 Edgemoor Place, Oakland, Calif.
Filed July 13, 1964, Ser. No. 382,227
2 Claims. (Cl. 144—134)



1. A rotary tool for edge dressing a piece of work mounted on a supporting base wherein the edge of said piece of work projects a slight distance beyond the edge of said supporting base comprising:
(a) a cylindrical cutter having a shank at one end adapted to be removably gripped by a rotatable chuck;
(b) said cutter having an integral shaft at its other end whose outer diameter is less than that of the cutter and whose axis coincides with the cutter and shank axis; and
(c) a ball bearing guide wheel mounted on said shaft for rotative movement independent of said cutter, the diameter of said wheel being slightly larger than that of the cutter so that the outer periphery of said guide wheel can rotatably ride on the edge of said supporting base independently of any movement of said cutter, said wheel supporting said cutter in spaced relation to the edge of said work and acting as a fulcrum to permit the cutter to be inclined towards and engage the edge of said piece of work.

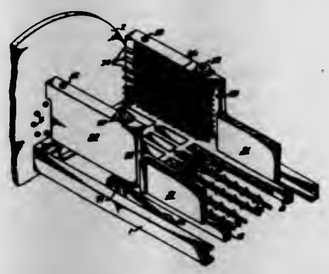
3,289,718
ROUTER
Bobby G. Willis, 2560 Alder St., Eugene, Oreg.
Filed Mar. 23, 1964, Ser. No. 353,917
5 Claims. (Cl. 144—136)



1. A router comprising a base having a sight opening therethrough, said base having a planular, lower surface for engagement with a surface of a beam member to be routed, a pair of guide members mounted on said base, said guide members extending parallel to each other and to said lower surface and being located respectively on opposite sides of said sight opening, motor mounting means slideably guided on said guide members, a motor mounted on said motor mounting means, said motor and said motor mounting means comprising means for adjusting the position of said motor vertically with respect to said lower surface, a routing tool mounted on said motor in driven engagement therewith, said routing tool having its axis of rotation disposed vertically with respect to said lower surface, and said routing tool projecting through said sight opening and beyond said lower surface, a ring mounted on and surrounding said base, said base and said ring comprising annular tongue and groove means for permitting angular shifting of said ring with respect to said base about an axis disposed vertically with respect to said lower surface, and releasable clamping means mounted on said ring and projecting beyond said lower surface in the same direction as said routing tool, said annular tongue and groove means being interrupted whereby to permit separation of said mounting ring from said base in one relative angular position thereof.

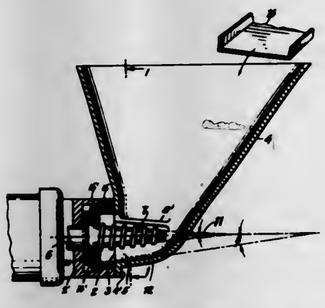
3,289,719
APPARATUS FOR PRODUCING FIBROUS WAFERS OR FLAKES
John M. Gunn, 9010 NE. 37th, Bellevue, Wash.
Application Jan. 25, 1965, Ser. No. 427,676, which is a continuation of abandoned application Ser. No. 203,245, June 18, 1962. Divided and this application Mar. 14, 1966, Ser. No. 533,951
1 Claim. (Cl. 144—162)

A wood flake-cutting machine comprising a continuously-rotating flake-cutting cutterhead carrying a flake-cutting knife, generally horizontal channel-shaped means defining a work feed passage extending into a position closely adjacent to said cutterhead, constantly rotating feed chain sprockets supported at the end of said channel-shaped means adjacent to said cutterhead, feed chains extending along opposite sides of the work feed passage and having horizontal rows of lugs engageable with opposite ends, respectively, of curved-side workpieces in such work feed passage, each having the length of its grain extending transversely of such work feed passage and a curved side downward, said feed chains being engaged with said feed chain sprockets to move said workpieces transversely of their lengths along such passage, and work-supporting and guiding blades at opposite upright sides of the work feed passage, disposed in substantially horizontal planes parallel to the work feed passage, respectively, generally in horizontal registry with said rows



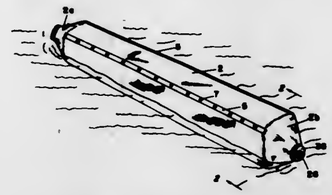
of work-engaging feed chain lugs and extending between the location of said feed chain sprockets in the work feed passage and said cutterhead and into close proximity to the cutting path of said cutterhead knife, engageable simultaneously with opposite ends, respectively, of each workpiece for supporting such workpiece independently of the bottom of the work feed passage and guiding such blade-engaged workpiece for substantially linear movement along the work feed passage to said cutterhead in a constant attitude relative to said cutterhead until virtually the entire workpiece has been cut into flakes.

3,289,720
CHARGING ARRANGEMENT FOR A MEAT GRINDER OR THE LIKE
Fritz Otto, Hameln, Germany, assignor to A. Stephan u. Söhne, Hameln (Weser), Germany, a corporation of Germany
Filed Nov. 4, 1964, Ser. No. 408,799
7 Claims. (Cl. 146—182)



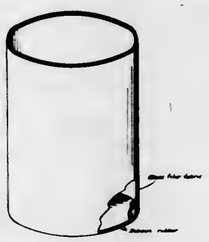
1. A charging arrangement for a meat grinder or the like, comprising, in combination, a substantially horizontally arranged casing having an open inlet end; a feed hopper connected to said casing and having an outlet end communicating with said inlet end of said casing; a feed screw having a substantially horizontal axis extending through said inlet end of said casing and through said outlet end of said hopper into the latter and being adapted to be rotated at high speed in one direction about its axis said feed screw having a free end in said hopper spaced from a wall portion of the latter facing said outlet end thereof; and wall means in said hopper extending transversely over the ascending side of said feed screw for preventing material fed by the feed screw from being upwardly flung in said hopper on the ascending side of said feed screw.

3,289,721
COLLAPSIBLE VESSELS
Albert H. Benson, 89 W. Broad St., Hopewell, N.J.
Filed May 7, 1964, Ser. No. 365,760
9 Claims. (Cl. 150—.5)



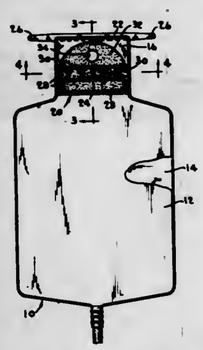
1. A semi-rigid collapsible tank for retaining a fluid therein comprising an outer continuous covering of foldable flexible material forming a closed chamber when expanded having side walls, front and rear end portions, ribs extending longitudinally along the inner surface of said covering and affixed thereto at predetermined intervals therearound, a central control shaft, a plurality of collars movably mounted on said central control shaft, linkage arms pivotally mounted at predetermined intervals along said ribs and pivotally mounted on the other end to the collars movably mounted on said control shaft, means associated with said central control shaft and with said collars for moving said collars along said control shaft when said central control shaft is actuated and causing said linkage arms to move outwardly therefrom, said central shaft having means associated and movable therewith and expanding the front and rear end portions of said tank.

3,289,722
FLEXIBLE COOKING BAG
Frederic G. Hardenbrook, Fallston, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 4, 1965, Ser. No. 437,325
1 Claim. (Cl. 150—.5)



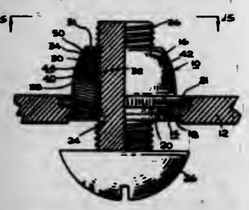
A flexible cooking bag comprising a seamless fabric material having a coating which is easy to clean and keep sterile, said fabric material comprising heat-conducting glass fiber and said coating comprising heat-conducting silicone rubber both inside and outside of said glass fiber.

3,289,723
CLOSURE CONSTRUCTION FOR A FLEXIBLE CONTAINER
James L. Clark, Whitefish Bay, Wis., assignor, by mesne assignments, to Plastronics, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 9, 1964, Ser. No. 350,423
1 Claim. (Cl. 150—7)



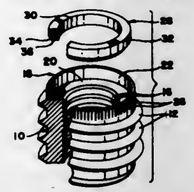
Closure means for a flexible container comprising:
a neck portion formed in the container and having a front and a rear wall and an opening therein, one wall of said neck portion extending beyond the edge of the other wall at the opening;
a lock bar member mounted on the portion of said one wall which extends beyond the edge of said other wall, said lock bar member being of a relatively stiff bendable material and having ends which extend outwardly from the side edges of said neck portion; and
a holding means mounted on said one wall of said neck portion and positioned to retain the bent ends of said lock bar after said bar has been folded a plurality of times to a closed position whereby the material of the neck portion is folded snugly therearound to seal the opening, said holding means including a strip of plastic material fastened to said one wall of said neck portion and having a pair of slots therein through which the ends of said lock bar extend when said lock bar has been folded and bent to closed position, said strip having a hanging flap integral therewith at the top portion thereof which will extend upwardly beyond the container when the lock bar is folded to a closed position.

3,289,724
SELF-LOCKING NUT HAVING SECURED LOCKING RING
Richard B. Ernest, Richboro, Pa., assignor to Penn Engineering and Manufacturing Corporation, Doylestown, Pa., a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 346,335
9 Claims. (Cl. 151—7)



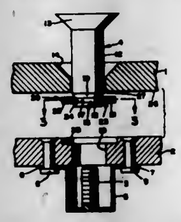
1. A self-locking nut comprising a body and an integral extension, said body having a threaded bore, said extension having an enlarged counterbore coaxial with said threaded bore and defining an annular seat adjacent thereto, said extension including a generally axially extending flange having an inner wall which is non-circular when viewed in a plane transverse to the length of the nut, and a resilient locking ring housed entirely within said extension and being positioned on said seat, said ring having an outer non-circular surface mating with said flange inner wall, said flange inner wall comprising an annular array of substantially flat surfaces and outwardly recessed sections intermediate the end portions of said flat surfaces, said recessed sections receiving, in keying relationship therewith, radially outer portions of said ring, said recessed sections being undercut whereby the depth of said sections is greater at the end thereof closer to said body than at the end remote from said body, said ring having a hole defined by an inner surface lockingly engageable by a screw threadable through said body, the diameter of said hole being less than the root diameter of the thread in said bore, whereby said ring is restrained against rotation and against axial movement when said screw is threaded into said ring, the end of said flange opposite to said body being bent in toward said body to compress said ring against said seat and thereby retain said ring against axial movement.

3,289,725
INSERT
James Henry Gehring, 4080 N. Sagamore Drive, Fairview Park, Ohio
Filed Dec. 21, 1964, Ser. No. 420,035
10 Claims. (Cl. 151—41.72)



1. A replaceable insert adapted to be received into an opening in a parent material comprising a generally cylindrical body member of a material characterized as exhibiting the property of slight spring back when released after being stressed beyond its elastic limit, external threads on the first end of the body member adapted to be received in said opening, a generally cylindrical bore in said body member, fastening means in said bore adjacent said first end of the body member adapted to receive a connection means and secure same to said body member, a generally annular radially expandable locking collar defining the second end of the body member and substantially concentric therewith, said locking collar having irregularities on the outer surface thereof adapted to grippingly engage the walls of the parent material forming said opening and secure said insert against rotation in the parent material, the outside diameter of the locking collar being no greater than the root diameter of the external threads on said first end of the body member, said locking collar having a generally smooth inner surface, a generally annular shoulder extending between the inner surface of said locking collar and said bore, and a generally annular locking ring having an outside diameter slightly greater than the inside diameter of the locking collar and dimensioned to be forcibly received therein to expand the locking collar into bearing relationship with said walls to thereby cause said collar to grippingly engage the walls, so that the locking collar will contract slightly upon removal of the locking ring therefrom and withdraw from said gripping engagement, thereby allowing the insert to be received by, secured in, and removed from the opening in the parent material without substantial deformation of said walls.

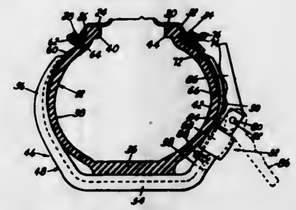
3,289,726
RETAINING DEVICE
Bobbie S. Sautter, Van Nuys, Calif., assignor to Deutsch Fastener Corp., Los Angeles, Calif., a corporation of California
Filed Mar. 25, 1963, Ser. No. 268,217
3 Claims. (Cl. 151—69)



1. In combination with a threaded fastener having a nut portion and a bolt portion, one of said portions being provided with an elongated shank and provided with a head at one end of said shank, said shank having an annular groove at the opposite end thereof, the end of said groove adjacent said head being outwardly flaring toward said head, the opposite end of said groove having an abutment shoulder, a retaining device for preventing separation of said shank from a workpiece comprising
an annular member
having an outer circumferential wall,
and a pair of spaced parallel radial annular flanges at the ends of said wall,
said flanges having an inside diameter greater than the outside diameter of said shank, and smaller than the outside diameter of said head,
and a resilient member associated with said annular member,
said resilient member being of split annular construction and formed of resilient spring wire of undulating contour to present inner portions of jacent said shank and outer portions in said receptacle intermediate said flanges,
said resilient member being resiliently biased inwardly,
whereby said resilient member is adapted to enter said groove for preventing separation of said shank from a workpiece,
the undulations of said resilient member being proportioned so that when said inner portions of said resilient member are in said groove, outer portions of said resilient member are in said receptacle intermediate said flanges,
said resilient member being radially expansible upon axial movement of said member relative to said shank toward said head along said outwardly flaring end of said groove
and dimensioned to be substantially entirely received within said receptacle when so expanded, whereby said retaining device is axially slidable relative to said shank.

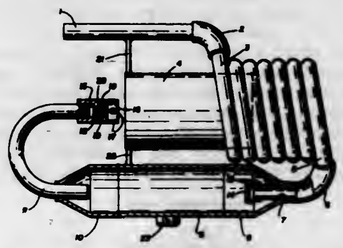
3,289,727
EMERGENCY TRACTION CLEAT FOR VEHICLES
Charles A. Marks, 1541 S. Main St., Elkhart, Ind.
Filed Apr. 13, 1966, Ser. No. 542,310
14 Claims. (Cl. 152—225)

1. An emergency traction cleat for a pneumatic tire having a circumferential tread, a convexly bulged, annular back side wall and a convexly bulged, annular front side wall which comprises:
a lug member comprising a tread bridging portion,
a back tire side wall embracing arm portion disposed generally at an obtuse angle to, and generally in alignment with said tread engaging side of said lug portion,
said arm portion being concavely bowed on the side thereof normally facing the back side of the tire and being fixedly connected to said lug portion,
a stub portion disposed at an obtuse angle to and generally in alignment with said tread engaging side of said lug portion but opposite to said arm portion and spaced from said arm portion,
said stub portion being joined at one end to said lug portion,



a clamp arm member which is generally concavely bowed on the side thereof normally facing the front, tire side wall with one end thereof disposed adjacent said stub portion of said lug member,
said clamp arm member and said stub portion forming a front tire side wall embracing arm disposed oppositely to said back tire side wall embracing arm portion,
and means releasably connecting said clamp arm member to said stub portion to interlock said clamp arm member and said stub portion against angular motion in the plane of the side of said tire while causing said clamp arm member and said back tire side wall embracing arm portion to clamp said cleat to said tire.

3,289,728
FUEL BURNER
Frank F. Moench, Denver, Colo. (314 S. Salem St., Aurora, Colo.), and Carl W. Johnson, 3886 Chase Court, Boulder, Colo.
Filed Apr. 30, 1965, Ser. No. 452,307
5 Claims. (Cl. 158—79)

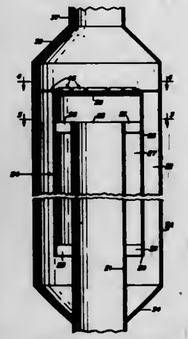


1. A burner assembly for liquefied petroleum gas comprising a line for attaching a source of supply of liquid petroleum gas, a coil of conduit connected to said line and provided with a passage centerwise therethrough, a blast tube at least partially telescoped in said coil, a burner nozzle to direct the flame through said blast tube and said coil, an expansion chamber interconnecting said coil and said burner nozzle, and an expansion nozzle internally of

said expansion chamber connected to said conduit providing initial expansion of liquefied petroleum gas passing therethrough.

3,289,729
APPARATUS FOR LIMITING ENTRY OF AIR INTO FLARE STACK

Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,762
4 Claims. (Cl. 158—99)



1. In a flare stack assembly, a vertically disposed flare stack having an open upper end, a vertically disposed tube forming a part of said stack and positioned near the upper end thereof for receiving waste gas at its lower end having a molecular weight less than that of air, said tube having an open upper end for escape of said waste gas, an inverted cup-shaped member having a closed upper end spaced above and over the upper end of said tube and a cylindrical wall surrounding the exterior of said tube in spaced relationship providing a first annular space between the exterior of said tube and the interior of said cylindrical wall in which the waste gas escaping through the upper end of said tube may move downwardly, a housing surrounding said cylindrical wall in spaced relationship providing a second annular space between the interior of the housing and the exterior of said cylindrical wall in which the waste gas escaping through the lower end of the first annular space may move upwardly, means closing the lower portion of said housing with respect to said tube, means closing the upper end of said housing with respect to said flare stack so that the waste gas from the second annular space may escape through the open upper end of the flare stack, a plurality of elements circumferentially spaced from each other adapted to partially obstruct the upper end of said second annular space, means supporting said elements for movement to positions unobstructing said second annular space in response to the flow of waste gas, and said elements being arranged to move to positions to partially obstruct the upper end of said second annular space upon interruption of the upward flow of waste gas.

3,289,730
GAS BURNER

Richard A. Elmy, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 9, 1964, Ser. No. 336,705
4 Claims. (Cl. 158—113)

1. A gas burner structure comprising means defining a chamber for mixing gas and air,

a venturi tube having one end opening into said mixing chamber,

a flame spreader disposed at the opposite end of said tube,

said flame spreader comprising a hemispherical bowl having,

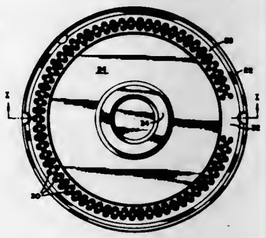


a radiused flange disposed at the peripheral edge thereof and merging smoothly with said opposite end of said tube,

whereby gas flowing from said venturi tube is provided a smooth flow path over said peripheral edge of said flame spreader bowl.

3,289,731
BURNER FOR GASEOUS FUEL

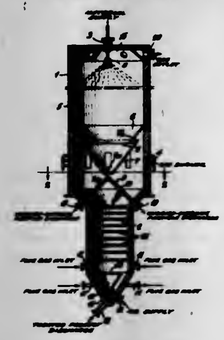
Ernst Gustav Arvid Geber, Sundbyberg, Sweden, assignor to Aktiebolaget Max Sievert, Sundbyberg, Sweden, a corporation of Sweden
Filed Aug. 5, 1963, Ser. No. 303,205
1 Claim. (Cl. 158—116)



In high pressure windproof gas burner apparatus adapted for direct connection to a bottle of pressurized fuel gas, the combination which comprises a feed pipe including primary air mixing means for feeding an air-gas mixture to said burner and disposed substantially in the center thereof, two interfitting and spaced frustroconical plates forming a bowl-shaped burner member with a substantially flat top and downwardly and outwardly extending sides, said feed pipe being in flow communication with the space between said plates for feeding said air-gas mixture thereinto, a large plurality of small and closely spaced discharge openings in said sides of the outer of said plates for combustion of said air-gas mixture upon discharge through said openings whereby a continuous ring of flame is provided around said burner with the combustion through each said opening merging with that through adjacent openings into said continuous flame ring, said discharge openings being disposed in a plurality of staggered rows with the spaces between adjacent said openings being substantially no greater than the diameter of each said opening a single area in said sides devoid of said holes for interrupting said otherwise continuous flame ring around said burner permitting secondary combustion air to flow into said continuous flame ring through said interrupted area, and a raised central portion on said flat top of said burner member for spacing the bottom of a cooking vessel resting thereon above edge portions of said burner permitting secondary air entering said flame ring through said interrupted area to flow beneath said vessel through all angular portions around said burner and within said flame ring.

3,289,732
APPARATUS FOR DRYING SOLUTIONS, EMULSIONS AND SUSPENSIONS AND FOR HEAT TREATMENT OF THE DRIED MATERIAL

Georgy Romanovich Kotelnikov, Ivan Romanovich Trokhachev, and Alexandr Nikitich Boochin, Jaroslavl, Alexei Vasiljevich Klinin, Leningrad, Stanislav Pavlovich Jablonsky and Jury Nikolaevich Chikhachev, Jaroslavl, Semen Markovich Monozon, Leningrad, Valerian Mikhailovich Sobolev and Otar Akakievich Mkheidze, Jaroslavl, and Vladimir Alexeevich Zigel, Leningrad, all of U.S.S.R., assignors to Nauchno-Issledovatelsky Institute Monomerov dlja Sinteticheskogo Kauchuka, U.S.S.R., Jaroslavl Tutaevskoje Chaussee
Filed Feb. 6, 1964, Ser. No. 342,958
4 Claims. (Cl. 159—4)

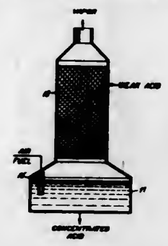


4. An apparatus for drying solutions, emulsions and liquiform suspensions of solids and for the heat treatment of the dried material, comprising wall means defining a housing having superposed upper and lower chambers for spray drying material and the heat treatment of the dried material respectively, sprayer means in communication with the upper part of the upper chamber for introducing the material to be dried and heat treated, burner means in communication with the interior of the upper chamber at a level below said last mentioned means, a plurality of vertically spaced horizontal screens within the lower chamber, a grate means within the lower chamber below the lowermost one of said horizontal screens, an inverted conical air supply means depending from said grate means and defining a space between it and the grate means, means for admitting flue gas into the lower chamber at a level below the lowermost one of said horizontal screens, sieve means above the uppermost one of said horizontal screens for screening material passing downwards toward said lower chamber, discharge means associated with said sieve means for discharging material that does not pass through said sieve means, funnel means mounted within the upper chamber above said sieve means for directing material thereto and further discharge means associated with the lower portion of the lower chamber for the discharge of treated material.

3,289,733
SULFURIC ACID CONCENTRATION

Thomas C. Martin, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 13, 1963, Ser. No. 323,402
12 Claims. (Cl. 159—15)

1. The method for concentrating aqueous sulfuric acid to a strength of above about 70 percent acid comprising the simultaneous steps of (1) continuously feeding liquid acid to be concentrated to the upper portion of a single vertically-oriented rectification zone having a plurality of vapor-liquid contacting zones situated therein whereby horizontal vapor liquid contact plates define said contacting zones; (2) passing liquid acid downwardly from said point of feed in counter-current contact with a vapor stream through at least three of said vapor-liquid contacting zones, each contacting zone containing a body of liquid acid of increasing strength in the direction of acid flow; (3) producing said vapor stream by the submerged flame combustion of a fluid fuel in the final contacting zone having acid of highest concentration; (4) maintaining the temperatures of the gas vapor streams leaving any two successive contacting zones in conformance with the relationship:



$$t_1 - t_2 \leq 0.25 t_1$$

wherein t_1 and t_2 are the temperatures in degrees centigrade of the vapors leaving the contacting zone of higher acid concentration and lower concentration, respectively; and (5) continuously withdrawing concentrated acid from said final contacting zone and vapors from the top of said rectification zone.

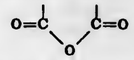
3,289,734
SCALE DEPOSITION INHIBITION IN BLACK LIQUOR MULTIPLE EFFECT CONCENTRATION PROCESSES USING A STYRENE COPOLYMER

Reed S. Robertson, Glen Ellyn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Aug. 17, 1965, Ser. No. 480,524
5 Claims. (Cl. 159—47)

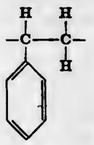
1. A method of inhibiting deposit formation on metal surfaces of a multiple-effect evaporator used for the processing of black liquor which comprises the step of treating said black liquor at any point prior to completion of said processing with a polymeric resin having a molecular weight less than 10,000 and characterized as a polyalkane having chemically integral therewith 25–50 mole percent of reoccurring moieties represented by the formula:



wherein R_1 and R_2 when taken individually represent a radical selected from the group consisting of carboxyl, alkali metal and ammonium carboxylate and where R_1 and R_2 when taken together constitute the following radical:



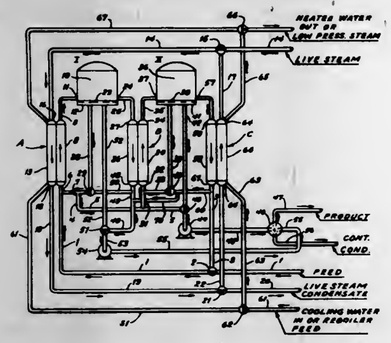
and 50–75 mole percent of reoccurring moieties represented by the formula:



3,289,735
MULTIPLE EFFECT EVAPORATOR OF THE SWITCHING TYPE

Axel E. Rosenblad, % Rosenblad Corp., P.O. Box 585, Princeton, N.J.

Filed July 15, 1964, Ser. No. 382,903
2 Claims. (Cl. 159—20)



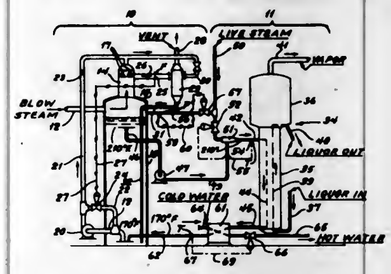
1. A channel switching multiple effect evaporator, comprising n indirect heat exchangers, $(n-1)$ vapor bodies, n being a positive whole number, each heat exchanger having separated first and second channels in heat exchanging relationship to each other, first conduit means including a respective one of the vapor bodies connecting the second and first channels of successive heat exchangers, means to remove liquid product from the lower end of the vapor bodies, a second conduit means having valves therein selectively operable, (1) in a first condition to direct liquor to be evaporated into the second channel of the first and all subsequent heat exchangers except the last heat exchanger, and upon channel switching, (2) in a second condition, to direct liquor to be evaporated into the first channels of the last and all prior heat exchangers except the first heat exchanger, the terms "first," "second," and "last" referring to position only, considered from left to right, a third conduit means having valves therein operable when the evaporator is operating in said first condition to introduce heating steam into the first channel of the first heat exchanger and to exhaust condensate therefrom, and to introduce water into the second channel of the last heat exchanger and to exhaust such water in heated condition therefrom, and a fourth conduit means having valves therein operable when the evaporator is operating in said second condition to introduce heating steam into the second channel of the last heat exchanger and to exhaust condensate therefrom, and to introduce water into the first channel of the first heat exchanger and to exhaust such water in heated condition therefrom.

3,289,736
TEMPERATURE CONTROL FOR EVAPORATION SYSTEM

Axel E. Rosenblad, % Rosenblad Corp., P.O. Box 585, Princeton, N.J.

Filed June 30, 1964, Ser. No. 379,280
14 Claims. (Cl. 159—24)

11. A system having a condenser fed intermittently with flashed vapors, an accumulator tank receiving condensate from said vapors issuing from the condenser, said accumulator tank being of such character as to hold the condensate therein with the condensate at a marked temperature differential between the condensate at different first and second spaced zones therein, a heated surface type evaporator having an inlet port connected to receive liquid functioning as a source of heat for the evaporator from a hot zone of the accumulator tank and an outlet port to discharge such liquid, means for introducing a process liquor into the evaporator in heat exchanging relationship with said heating liquid in the evaporator, means disposed in advance of said inlet port for adding heat to the hot liquid fed to the evaporator and functioning as a source of heat therefor so as to maintain the temperature of such hot liquid at a desired high level, an indirect heat exchanger, a conduit con-

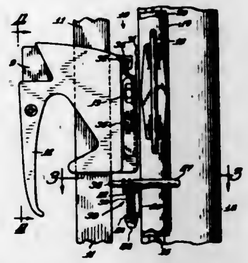


necting the outlet port of the evaporator to discharge cooled heating liquid from the evaporator via the heat exchanger to a markedly cooler zone of the accumulator tank, and means for introducing a cooling fluid into the heat exchanger in heat exchanging relationship with the discharged heating liquid flowing through the heat exchanger so as to maintain the temperature of such discharged heating liquid at a desired low level.

3,289,737
SLAT LOCK ASSEMBLY FOR PORTABLE SCREENS

Harry Kozel, Bensenville, Ill., assignor to Radiant Manufacturing Corporation, Morton Grove, Ill., a corporation of Illinois

Filed Nov. 16, 1964, Ser. No. 411,331
5 Claims. (Cl. 160—24)

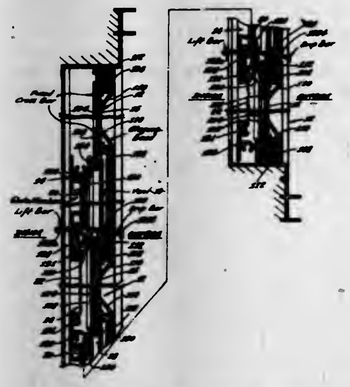


3. A portable projection screen assembly comprising a vertical column having stand means at its lower end, elongated housing means carried by said column for movement from storage position to operating position, a roller carried by and mounted at its ends in said housing means, a screen wound upon said roller and affixed to said roller at one end thereof, a supporting slat affixed to the other end of said screen, said roller being biased to roll up said screen to rolled up position but permitting said screen to be unrolled to unrolled position, extensible means for supporting said screen in unrolled position, and slat lock means movably carried on said housing means and biased from slat engaging position, said slat lock means being operative in response to movement of said housing means with respect to said vertical column for automatically engaging and holding said supporting slat and thereby preventing unrolling of said screen when said housing means are moved from operating position to storage position.

3,289,738
WINDOW ASSEMBLY

William C. Williams, Cudahy, Calif., assignor to B & N Manufacturing Co., Inc., Corona, Calif., a corporation of California

Filed Aug. 31, 1964, Ser. No. 393,323
5 Claims. (Cl. 160—102)



1. A multiple-ventilating window assembly including: a unitary stationary unit having a frame-like configuration, and including a pair of elongated channel-like side sections and a plurality of cross-bars extending between said side sections at spaced positions in said stationary unit; a plurality of fixed panels mounted in uniplanar relationship in said stationary unit between said cross-bars and defining openings therebetween, said cross-bars individually defining a transverse channel at the lower edge of each of said openings; a strip of resilient weather stripping positioned in each of said channels; a unitary slide unit having a frame-like configuration, and including a pair of elongated side sections slidably supported in said channel-like side sections of said stationary unit and a plurality of transverse bars extending between said side sections of said slide unit at spaced positions therealong; a plurality of further panels mounted in uniplanar relationship in said slide unit between said transverse bars to define openings therebetween, said further panels in said slide unit being located to cover the openings between said panels in said stationary unit when said slide unit is in a first position with respect to said stationary unit and to extend over said panels in said stationary unit when said slide unit is in a second position with respect to said stationary unit; and at least one of said transverse bars of said slide unit having an integral section extending laterally inwardly from the plane of said slide unit to form a means for manually moving said slide unit between said first and second positions with respect to said stationary unit, and said transverse bars having corresponding integral sections extending along the length thereof and extending laterally outwardly from the plane of said slide unit through respective ones of said first mentioned openings selectively to engage the aforesaid strips of weather stripping so as to prevent moisture from entering the assembly.

3,289,739
LADDER CORD OR LADDER TAPE CARRIER

Erich Emil Hensel, The Hague, Netherlands, assignor to Hunter Douglas International Ltd., Montreal, Quebec, Canada, a corporation of Quebec

Filed Nov. 25, 1964, Ser. No. 413,885
Claims priority, application Netherlands, Dec. 17, 1963, 301,964
3 Claims. (Cl. 160—178)

1. A ladder carrier for a Venetian blind having an operating shaft, said ladder carrier comprising an open ring of resilient material having a middle portion and two curved legs adapted to grip around the operating shaft; said middle portion being provided with an accommodation space for part of at least one ladder cord,

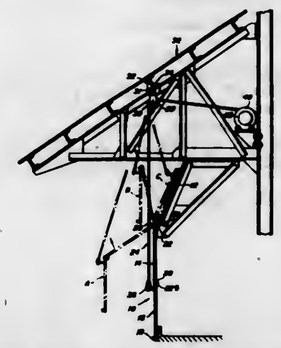


two cross-pieces leaving an opening between them extending above said accommodation space, and a projection pointing towards the opening between the cross-pieces.

3,289,740
FOLDABLE WALL ASSEMBLY

Richard F. Heler, Jr., Lansing, Ill., assignor to United States Steel Corporation, a corporation of Delaware

Filed Nov. 6, 1964, Ser. No. 409,400
3 Claims. (Cl. 160—188)



1. A foldable wall assembly comprising a fixed, wall panel-supporting structure, a plurality of foldable wall panels adapted to depend seriatim from the lower edge of said fixed panel-supporting structure, said fixed wall panel-supporting structure being inclined upwardly and rearwardly at an acute angle to a vertical plane through the foldable wall panels when in the unfolded position, said foldable wall panels being pivotally attached at their upper edge to the next succeeding upper adjacent panel and the uppermost of said panels being pivotally attached at its upper edge to the panel-supporting structure, means for raising said pivotally attached foldable panels so that said panels fold in face to face relationship and come to a position of rest on said inclined fixed panel-supporting structure by a force caused by centrifugal rotation of said panels about the lower edge of said panel-supportting structure and means to withdraw and to controllably lower said pivotally attached foldable panels.

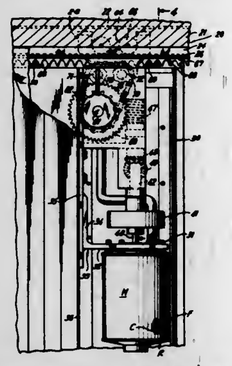
3,289,741
SELF-PROPELLED PARTITION ASSEMBLY

Robert Clarence Gossling, Cincinnati, Ohio, assignor, by mesne assignments, to Torjesen, Inc., Brooklyn, N.Y., a corporation of New York

Filed Nov. 24, 1964, Ser. No. 413,449
7 Claims. (Cl. 160—188)

7. A foldable door assembly comprising a track, a door member mounted for translatory movement along said track, said member having motor means mounted thereon,

regularly spaced toothed members formed on said track drive means operatively connected to said motor means, said drive means including a chain link in driving relationship with said motor means, idler sprocket means car-



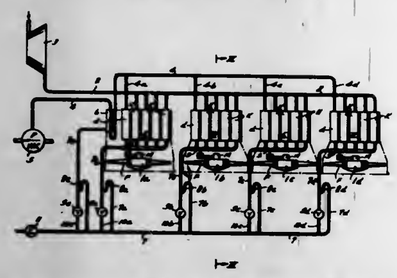
ried by said door and supporting a discrete length of chain in meshed relation with said tooth members, whereby a plurality of links of said chain are simultaneously engaged with a plurality of teeth.

3,289,742

AIR COOLED SURFACE CONDENSER AND METHOD OF OPERATING THE SAME

Johann Christoph Niemann, Markstrasse 281a, Bochum, Germany

Filed Feb. 4, 1966, Ser. No. 525,169
Claims priority, application Germany, Sept. 19, 1962, G 35,949
23 Claims. (Cl. 165—1)



22. A method of operating an air-cooled surface condenser having a plurality of groups of heat exchange elements including condenser elements, dephlegmator elements and an after-cooling element for one of the groups, comprising the steps of blowing air by means of an air blower for each group over the elements of each group; and regulating the air blower means for each group in such a manner that the air blower means for said one group always delivers an equal or a greater quantity of air than the other air blower means and is switched on first and switched off last.

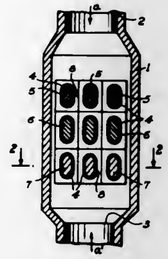
3,289,743

ISOTHERMIC HEAT EXCHANGERS

Attila Biro, Miskolc, Hungary, assignor to Nikex Nehezipari Kulkereskedelmi, Vallalat, Budapest V, Hungary

Filed June 15, 1964, Ser. No. 388,339
Claims priority, application Hungary, Aug. 2, 1963, BI-180
3 Claims. (Cl. 165—10)

1. In a heat exchanger containing a regeneration section through which a hot fluid medium at a predetermined temperature is passed and cooled and through which a cold fluid media maintained at a temperature below said predetermined temperature is passed and heated to said predetermined temperature, said fluid media being selected from the group consisting of liquid and gas; the improvement in that said regeneration section contains a plurality of longitudinally disposed zones which contact said cold and hot fluid media, the first zone which contacts the hot fluid media contains a plurality of hollow elements formed from a heat resistant material having enclosed in their cavities a fusible material having a melting point at about said predetermined temperature, each of the other said zones having a plurality of hollow ele-



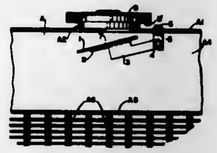
ments formed from a heat resistant material and containing enclosed therein a fusible material having a melting point lower than the melting point of the fusible material contained in the hollow elements of said first zone, the melting point of the fusible material within a zone which first contacts the hot fluid media being greater than the melting point of a material within a subsequent zone which later contacts said hot fluid media, said fusible material within each of said zones being disposed in said section to thermally contact the hot and cold fluid media, and said fusible material within each of said zones being adapted upon thermal contact with said hot and cold fluid media to change its physical state.

3,289,744

RADIATOR SAFETY VALVE

Warren S. Hosmer, 655 E. Main St., Bartow, Fla.

Filed Feb. 19, 1965, Ser. No. 433,857
6 Claims. (Cl. 165—11)



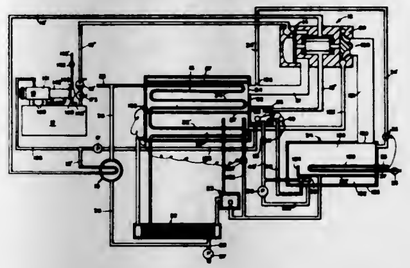
1. In combination with an automotive vehicle having a radiator casing containing engine coolant under pressure, said radiator casing having a top plate provided with a filling neck carrying a readily removable radiator cap; a safety valve comprising a rubber disk of larger diameter than the filling neck disposed below and axially of the neck within the casing; a member within the casing supporting said rubber disk; an arm on said member extending laterally of said neck; and means in said casing for pivotally supporting the outer end of the arm to permit movement of the rubber disk by pressure within the casing into position to close the filling neck when the radiator cap is removed, and to permit gravital movement of the disk into position to open said neck when the radiator cap is positioned on the filling neck.

3,289,745

HEATING AND COOLING SYSTEM

Louis H. Leonard, Jr., Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed June 23, 1964, Ser. No. 377,314
12 Claims. (Cl. 165—14)



1. A heating and cooling machine comprising, a refrigerant side operable for cooling a load, a steam generator, a steam condenser, operating means for receiving steam from said steam generator and responsive thereto operating said refrigerant side and discharging the steam into said steam condenser, means for regulating the steam condensing rate of said steam condenser in proportion to the cooling capacity of said refrigerant side, means including a heat exchanger for receiving steam from said steam generator and having a tube bundle for circulating a heating medium to be heated by the steam for heating a load, container means for holding water about said bundle to reduce heat transfer from the steam to said bundle and therefore the heating capacity of the heat exchanger, means for passing said steam condensate from said steam condenser to said container means, and regulating means for covering said bundle with steam condensate in proportion to said steam condensing rate of said steam condenser, whereby the heating and cooling capacities of the system vary inversely of each other.

3,289,746

AIR CONDITIONING APPARATUS

John L. Kline, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,490
4 Claims. (Cl. 165—36)



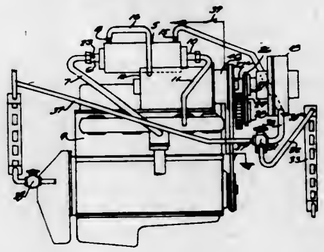
1. An air-conditioning apparatus comprising:
a casing including means defining a path for the flow of air therethrough, and including a recirculation air inlet and an air outlet in communication with said path;
means for inducing a flow of air through said path;
heat exchanger means extending substantially along the length of said path and across a part of the width of said path;
a bypass passage adjacent a downstream edge of said heat exchanger means for air to pass around said heat exchanger means;
damper means extending along the length of said air flow path and pivoted adjacent said downstream edge of said heat exchanger means to move into a stream of air flowing through said path to one extreme position entirely closing said bypass passage, and to move to an opposite extreme position covering at least a major portion but substantially less than all of the face of said heat exchanger means; and
means for terminating the flow of the tempering medium to said heat exchanger means in response to said damper means moving to said opposite extreme position.

3,289,747

HEATING AND STORING HEAT TO POWER A GENERATOR AND A COMPRESSOR IN A VEHICLE

Mack Harris, 214 N. Ash St., Pine Bluff, Ark.

Filed Aug. 10, 1964, Ser. No. 388,465
1 Claim. (Cl. 165—42)



In a vehicle including an engine, an exhaust manifold connected to said engine and a refrigeration circuit including a compressor, a turbine, a condenser and an evaporator, the improvement comprising a case of heat storage material connected between said compressor and said turbine and including first passage means to provide compressed refrigerant gas flow therethrough, second passage means in said case and connected to said exhaust manifold to receive hot exhaust gas therefrom to thereby heat said storage material and in turn super-heat said compressed refrigerant gas, and said case further provided with a sealed partial vacuum chamber between said first and second passage means for limiting the flow of heat from said second passage means to the compressed refrigerant gas in said first passage means.

3,289,748

HEAT TRANSFER GARMENT

David C. Jennings, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

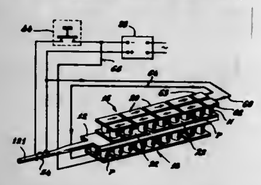
Filed Sept. 4, 1964, Ser. No. 394,548
13 Claims. (Cl. 165—46)



10. A garment enclosing and cooling the body of the wearer, including a plurality of cooling tubes supported in contact with the wearer's body, a fabric supporting the tubes, said fabric formed by interlocking threads defining

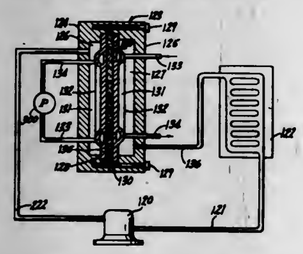
strands arranged in an open mesh joined at spaced intervals, said strands of said fabric being oriented at approximately 45° angle with respect to the axis of the garment so as to be flexible in two axes and said tubes being arranged to substantially follow the 45° slope of said strands.

3,289,749
REFRIGERATED MEDICAL APPARATUS AND HEATING MEANS THEREFOR
Ralph E. Crump, Trumbull, Conn., assignor to Frigitronics, Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Mar. 24, 1964, Ser. No. 354,268
9 Claims. (Cl. 165—48)



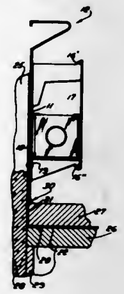
1. A refrigerated medical instrument which comprises: a cooling module including a plurality of alternate hot and cold thermoelectric junctions in electrical series relationship; power supply means connected to pass a direct electrical current through said junctions cooling means arranged to cool the hot junctions of said module; heat sink means of relatively high thermal capacity in thermal contact with the cold junctions of said module and electrically insulated therefrom; heat conducting probe means having a first portion in thermal contact with said sink means and a second portion arranged for application to animal tissue; and means for selectively warming said probe means.

3,289,750
HEAT EXCHANGER
Emery I. Valyi, Riverdale, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application June 14, 1962, Ser. No. 202,612, now Patent No. 3,201,858, dated Aug. 24, 1965. Divided and this application Sept. 21, 1964, Ser. No. 398,128
8 Claims. (Cl. 165—110)



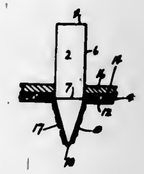
1. A heat exchanger comprising a sheet-like porous body metallurgically bonded to an imperforate sheet metal member substantially throughout the extent of said body, a first fluid circulating throughout said body, a first fluid circulating means inducing flow of said first fluid throughout said body, conduit means defined by a portion of said member juxtaposed said body, a second fluid circulating through said conduit means in heat exchange relationship with said first fluid substantially throughout said sheet-like porous body, with said member forming an imperforate separation between said first and said second fluids, means associated with at least one sheet to cause said first and second fluids to be in heat exchange relationship throughout the extent of said body, and a second fluid circulating means operatively connected to said conduit means to induce flow of said second fluid through said conduit means.

3,289,751
BASEBOARD RADIATION
Louis A. De Biase, 131 Main St., Warren, R.I.
Filed Oct. 26, 1964, Ser. No. 406,289
2 Claims. (Cl. 165—55)



1. In a baseboard radiator employing radiation means, a housing for the radiation means including a vertical wall section, means for attaching said radiation means to said wall section, pan means extending below said wall section, said pan means having a foot portion adapted to engage a subfloor of a building, said pan means being detachably secured to said wall portion of said baseboard radiation.

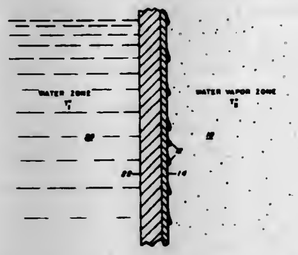
3,289,752
CONDENSING HEAT TRANSFER DEVICE
Fred W. Staub, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1964, Ser. No. 400,163
10 Claims. (Cl. 165—110)



1. A device for condensing a vapor and recovering the condensate comprising
a pin for condensing a vapor including a surface means tapered so that the condensate flows in a specific direction regardless of gravity forces, and
means adjacent the largest diameter of said tapered surface means for recovering condensate from said surface means.

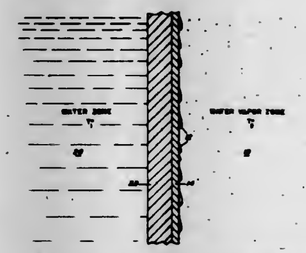
3,289,753
USE OF GOLD SURFACES TO PROMOTE DROPWISE CONDENSATION
Robert A. Erb, Valley Forge, Pa., assignor to the United States of America as represented by the Secretary of the Interior
Filed Nov. 2, 1964, Ser. No. 408,432
4 Claims. (Cl. 165—133)

1. In a heat transfer device comprising a liquid zone, a water vapor zone having a temperature greater than that of said liquid zone, means to conduct water vapor to said water vapor zone, and an impermeable partition disposed between said zones, whereby mass transfer between said zones is prevented, said partition having a first surface in contact with said liquid zone and a second surface in



contact with said water vapor zone, the improvement comprising employing metallic gold as said second surface.

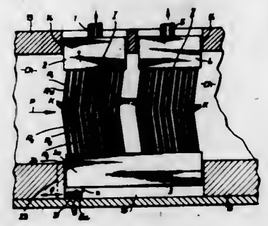
3,289,754
USE OF SILVER SURFACES TO PROMOTE DROPWISE CONDENSATION
Robert A. Erb, Valley Forge, and Edmund Thelen and Richard D. Varker, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Interior
Filed Nov. 2, 1964, Ser. No. 408,433
5 Claims. (Cl. 165—133)



1. In a heat transfer device comprising a liquid zone, a water vapor zone having a temperature greater than said liquid zone, means to conduct water vapor to said water vapor zone, and an impermeable partition disposed between said zones whereby mass transfer between said zones is prevented, said partition having a first surface in contact with said liquid zone and a second surface in contact with said water vapor zone, the improvement comprising utilizing silver as said second surface.

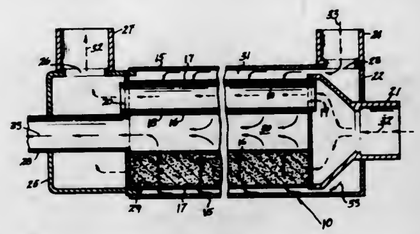
3,289,755
HANGING RECUPERATOR WITH ADJUSTABLE STOP FOR THERMAL EXPANSION
Heinz Jacobs, Geldern, Germany, assignor to Industrie-Compagnie Kleinwefers Konstruktions- und Handelsgesellschaft m.b.H., Krefeld, Germany, a corporation of Germany
Filed Jan. 29, 1965, Ser. No. 429,014
Claims priority, application Germany, Feb. 4, 1964, J 25,217
5 Claims. (Cl. 165—145)

1. In recuperator apparatus having a fuel gas channel through which flows heated gases, the invention comprising a plurality of spaced apart pipes suspended in said channel substantially perpendicularly of a path of flow of said gases in said channel, said pipes being disposed along a portion of said path of flow of said gases for traverse of said gases therebetween and therethrough, the ends of said pipes opening into upper distributor and collector boxes and into at least one lower connecting box, said pipes being suspended from said distributor and collector boxes and said connecting box being suspended from said pipes so that said pipes are expansible, said pipes conveying therethrough air to be warmed and being bent substantially longitudinally in one of a direction with and opposite to said path of flow of said gases, a stop member located in said channel below that portion of said connecting box adjacent those pipes on the entry



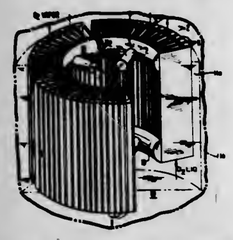
side of said flow of said gases therebetween and therethrough said pipes and at a position below said connecting box for limiting expansion of said those pipes by engagement with said connecting box upon a given amount of expansion of said those pipes, said stop member including a support surface for said connecting box, said support surface being disposed substantially perpendicular to the longitudinal axis of said suspended pipes.

3,289,756
HEAT EXCHANGER
Ulric R. Jaeger, Greenwich, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Oct. 15, 1964, Ser. No. 404,123
9 Claims. (Cl. 165—155)



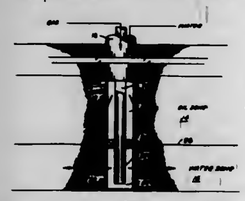
1. A heat exchanger for circulation of a plurality of heat exchange media, comprising
(A) a first conduit means for conveying a first heat exchange medium,
(B) a pervious body within said first conduit means defining a first void substantially centrally of said first conduit means, and
(C) a plurality of second conduit means within said first conduit means for conveying a second heat exchange medium isolated from said first heat exchange medium, said second conduit means being situated within said pervious body in heat exchange relationship therewith and arranged radially about said first void,
(D) a means to direct substantially all of said first heat exchange medium through said pervious body,
whereby said first heat exchange medium, in passing through said pervious body to said first void, passes around said plurality of second conduit means in a multitude of radial flow paths.

3,289,757
HEAT EXCHANGER
Joseph P. Rutledge, Indianapolis, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed June 24, 1964, Ser. No. 377,582
3 Claims. (Cl. 165—166)



1. A heat exchanger for use in a bath of a first liquid cryogenic fluid to provide heat transfer between said first cryogenic fluid and another cryogenic fluid, the improvement comprising: a plurality of closed sandwich elements each including a pair of spaced apart side walls having smooth planar outer surfaces and forming therebetween first axial flow passages, a pair of spaced separation strips extending axially along respective edges of opposed side walls of adjacent sandwich elements defining second axial flow passages, the strip of each pair being of different cross-sectional width and converging in the direction of a common axis, and a pair of axially spaced header structures connected to opposed ends of the heat exchanger and in fluid communication with said first axial passages for moving said second cryogenic fluid along a flow path parallel to the flow path of said first cryogenic fluid, said separation strips having smooth planar surfaces for defining, with said smooth planar outer surfaces of said closed sandwich elements a flow path of constant axial cross-section having smooth planar boundaries to minimize the deposit of contaminants upon submersion of said heat exchanger into said first cryogenic liquid bath.

3,289,758
METHOD FOR RECOVERING PETROLEUM
William L. Martin and Martin Felsenthal, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed July 11, 1962, Ser. No. 209,139
10 Claims. (Cl. 166—9)



3. A method of recovering oil from an oil-bearing subsurface stratum having a water-bearing stratum therebelow, comprising the steps of:
drilling an injection well through both the oil-bearing and water-bearing strata;
drilling at least one recovery well into the oil-bearing stratum at a distance from the injection well;
forcing gas through the injection well and into and through the water-bearing stratum to decrease the permeability of this stratum to water;
forcing water through the injection well and into and through the oil-bearing stratum to displace oil into the recovery well; and
recovering the oil from the recovery well.

3,289,759
PROCESS FOR TRANSPORTING SURFACTANTS THRU PERMEABLE STRATA
Henry B. Fisher, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,864
5 Claims. (Cl. 166—9)

1. A process for transporting a non-ionic surfactant thru a permeable subterranean stratum which comprises the steps of:
(1) injecting into said stratum thru a well therein, a solution of said surfactant in an aqueous medium selected from the group consisting of fresh water and an aqueous solution of sodium chloride, thereby causing sorption of said surfactant on the stratum;
(2) thereafter, injecting into said stratum thru said well, an aqueous solution of at least one alkaline earth metal halide so as to convert said surfactant to the corresponding surfactant-alkaline earth metal halide complex and desorb same;
(3) pushing the complex formed in step (2) deeper into said stratum by injection of fluid thru said well;
(4) thereafter, injecting into said stratum thru said well aqueous liquid selected from the group consisting of fresh water and a solution of sodium chloride so as to dilute the solution of complexed surfactant in the stratum and decompose same to free said surfactant, thereby again effecting sorption of said surfactant on the stratum more remote from said well.

3,289,760
METHOD AND APPARATUS FOR CEMENTING AND CONDITIONING BORE HOLES
Archer W. Kammerer, Fullerton, Calif., assignor of one-fifth to Archer W. Kammerer, Jr., Houston, Tex., and one-fifth to Jean K. Lamphere, Fullerton, Calif.
Filed Feb. 10, 1964, Ser. No. 343,625
15 Claims. (Cl. 166—21)



1. The method of conditioning a bore hole having a conduit therein, comprising lowering conduit cutting and fluid discharging apparatus in the bore hole on a tubular drill string, rotating the drill string and apparatus to cut the conduit away along a desired length in the bore hole to expose the surrounding wall of the bore hole, pumping cementitious material down the drill string and through the apparatus laterally against the exposed wall of the well bore while rotating the drill string and apparatus, pumping flushing fluid through the drill string and apparatus to clear the drill string and apparatus of cementitious material, and rotating and lowering the drill string and apparatus in the conduit above the exposed bore hole to scrape the wall of the conduit.

3,289,761
METHOD AND MEANS FOR SEALING WELLS
Robbie J. Smith, P.O. Box 1705, and Billy R. Watson, P.O. Box 756, both of Monahans, Tex.
Filed Apr. 15, 1964, Ser. No. 359,903
5 Claims. (Cl. 166—27)

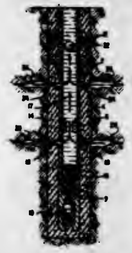


3. A device for sealing off intervals in wells leaving an open hole therethrough comprising in combination:
(a) a washout tube,
(b) means for attaching the top of said washout tube to a string of tubing extending upward from the bottom of the well,
(c) a retaining casing,
(d) means at the top of the retaining casing for detachably attaching the casing to the top of the washout tube,
(e) means on the bottom of the retaining casing for forming a releasable seal between the bottom of the washout tube and bottom of the retaining casing,
(f) the washout tube having holes therethrough,
(g) the retaining casing having holes therethrough,
(h) check valve means for permitting fluid to flow out of said retaining casing, but not to return, and
(j) a sac surrounding the retaining casing to prevent dispersement of cement therefrom.

5. The method of sealing off an interval in a well bore leaving an open hole therethrough comprising
(a) lowering a retaining casing into the well adjacent the interval to be sealed off,
(b) pumping cement between the retaining casing and the well bore,
(c) preventing the cement from dispersing into the well bore by pumping it into a sac,
(d) sealing the sac to the well bore by causing a small amount of cement to ooze through the sac,
(e) preventing any cement between the retaining casing and well bore from flowing into the retaining casing, and
(f) washing the cement within the retaining casing to the surface of the ground.

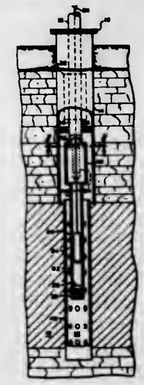
3,289,762
MULTIPLE FRACTURING IN A WELL
Dwight Schell, Irmal J. Wallen, and James E. Wilkes, Indiana, Pa., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,363
8 Claims. (Cl. 166—35)

1. A method for treating an upper formation and a lower formation in a well comprising lowering tubing in the well, said tubing having a baffle therein spaced above the lower end of the tubing, positioning the baffle between said upper and lower formations, cementing the tubing in the well, fracturing the lower formation, perforating the tubing opposite the upper formation, fracturing the upper formation with a free plug placed on the baffle to block fluid pressure communication to the lower formation, said plug having been placed after fracturing the



lower formation and before fracturing the upper formation, and reducing the fluid pressure in the tubing, whereby the free plug flows to the top of the tubing.

3,289,763
PROCESS AND APPARATUS FOR INJECTING FLUID INTO A WELL
William B. Belknap, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,254
13 Claims. (Cl. 166—40)



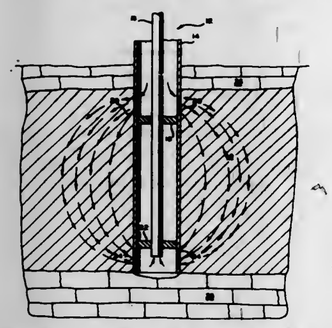
7. A process for injecting a fluid into a well thru a tubing string therein, having a sucker rod carrying pumping means removably sealed in the lower end of the tubing string, without pulling the rod and pumping means from the tubing, which comprises the steps of:
(1) providing an expanded section of tubing above said pumping means and near the lower end of said tubing, having an internal diameter and length substantially greater than the external diameter and length of said pumping means, so that when said pumping means is pulled into said section a flow path around same within said tubing is formed;
(2) retracting said pumping means into said section of tubing so as to form said flow path; and
(3) injecting a fluid thru said tubing into said well while said pumping means is in said expanded section.

10. Apparatus in an oil well having a casing and well head and penetrating an oil-bearing stratum comprising in combination:
(a) a tubing string extending thru said well head into said stratum;
(b) a section of tubing in the tubing string of (a) of substantially larger internal diameter than the adjacent tubing and substantially longer than the pump means of (c), said section being near the bottom end of said tubing string;

(c) a pump means in the tubing string of (a) attached to the lower end of a sucker rod extending from the well head to the lower end of the tubing string, said pump means being alternately movable into pumping position sealed with the wall of said tubing string below said section and then into said section to provide a passageway around said pump means and thru the lower end of said tubing for injecting fluid thru said tubing string and around said pump means into said stratum.

3,289,764
REMOVAL OF WATER BLOCKS FROM OIL AND GAS WELLS

Melcon Santourian, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,720
13 Claims. (Cl. 166—42)



1. A process for removing a water block in a hydrocarbon-bearing stratum adjacent a producing well containing a casing having a perforate section within said stratum and a production tubing extending to a lower level of said stratum, said stratum having natural pressure and said water block being formed by migration of interstitial water from deep in said stratum toward said well during oil production, which comprises the steps of:
(1) setting a first packer within said stratum between said tubing and said casing at a lower level thereof;
(2) setting a second packer within said stratum between said tubing and said casing at an upper level thereof;
(3) passing driving fluid, other than water, thru an annulus of said stratum containing said water block between the packed off annulus above said second packer and the well bore below said first packer so as to drive water from said water block into said well bore;
(4) producing from said well the water driven thereinto by step (3);
(5) thereafter, allowing natural reservoir pressure to produce hydrocarbons into said well; and
(6) recovering said hydrocarbons from said well.

3,289,765
METHOD AND APPARATUS FOR COMPLETING WELLS

Joseph H. Hynes, Sugar Land, Tex., assignor to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Jan. 7, 1963, Ser. No. 249,796
19 Claims. (Cl. 166—46)

1. Method of rapid well completion comprising the steps of: setting a well drive pipe; positioning a rotary table axially above the drive pipe and commencing drilling operations with drilling equipment driven from said rotary table lifting the drilling equipment from the well through the rotary table; passing a well casing into the well through the rotary table; connecting a casing head to the upper end of the well casing; connecting a lowering bushing to the casing head and lowering this assembly through the rotary table to support the casing head on the drive pipe.

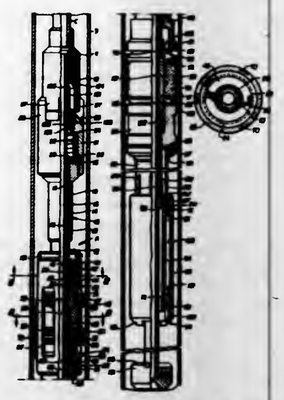
6. Well completion equipment comprising: a casing head having a central passage therethrough and including means at its lower end for receiving the upper end of a casing; a lowering bushing, means for removably joining the lower end of said bushing to the upper end of said casing head; and means carried by the upper end of said lowering bushing for removably receiving lowering equipment; a drive pipe; a supporting hub for mounting on said drive pipe, a casing secured at its upper end to said casing



head at the lower end thereof, a support plate surrounding said casing below said casing head to support the same on said supporting hub when lowered thereon, wherein said supporting hub includes a depending skirt at its lower end for engagement with said drive pipe, an outer flange at its upper end and an inwardly extending flange portion for receiving said supporting plate, and wherein said inwardly extending flange includes a tapered portion and said supporting plate includes a peripherally tapered portion for engagement therewith, said inwardly extending flange also having passages therethrough which are unobstructed by said supporting plate when the latter is positioned thereon.

3,289,766
RETRIEVABLE HIGH TEMPERATURE WELL PACKER APPARATUS

Herbert L. Bigelow, Whittier, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 15, 1963, Ser. No. 302,391
29 Claims. (Cl. 166—139)

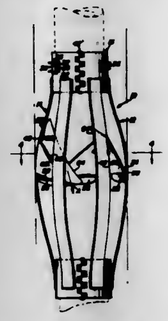


1. In a well packer adapted to be set in a conduit disposed in a well bore: a body; slip means on said body; expander means engageable with said slip means to expand said slip means against the conduit; packing

means on said body; abutment means on said body engaging said packing means; means for shifting said expander means and slip means with respect to each other to expand said slip means against the conduit; and means independent of said shifting means interconnecting said body and abutment means whereby rotation of said abutment means shifts said abutment means along said body to expand said packing means against the conduit.

3,289,767
WELL CENTERING AND CEMENTING DEVICE

Edwin R. Seward, New Orleans, La., and Sidney C. Myers, Laurel, Miss., assignors to B & W Incorporated, Torrance, Calif., a corporation of California
Filed Nov. 3, 1961, Ser. No. 150,033
17 Claims. (Cl. 166—177)



17. A device for centering a well casing in a well bore and for causing deflection of fluid flowing axially between the casing and the wall of a well bore containing the casing, said device comprising:
(a) a pair of axially spaced collars adapted to be mounted on said casing,
(b) a plurality of vertically extending, laterally resilient elements disposed in side-by-side circumferentially spaced relation about a vertical axis, and said elements being attached to said collars,
(c) said elements having each an intermediate, outwardly bowed portion for resiliently engaging the wall of a well bore,
(d) fluid deflector means disposed in the space between said elements and a well casing to which said device is attached,
(e) and positioned closely adjacent said bowed portions and being mounted upon said device,
(f) said deflector means including a plate-like member having edge portions resiliently and yieldably biased to a position extending substantially across the space between the elements and an associated casing,
(g) said member having a deflecting surface disposed obliquely to the casing axis and which is inclined to said vertical axis and adapted to divert the direction of flow of fluid through the well bore from a straight axial flow into a relatively tortuous and non-rectilinear path of travel.

3,289,768
TURBULENCE GENERATING CENTRALIZER

James R. Solum, Los Angeles, Calif., assignor to B & W Incorporated, Torrance, Calif., a corporation of California
Filed June 19, 1962, Ser. No. 203,610
6 Claims. (Cl. 166—177)

1. In a device adapted to be mounted on a well pipe for centering the well pipe in a well bore and conditioning the fluid contained within the well bore, the combination of: a pair of axially spaced and aligned collars adapted to be mounted on the well pipe, a plurality of circumferentially spaced spring bows extending longitudinally between said collars and having end portions secured to said collars, each said spring bow being bowed outwardly from said collars for engaging the well bore, a plurality of vanes, each vane having one end portion secured to the inside of one of said spring bows at least near the most outwardly bowed portion of that bow and having the



other end portion slidably positioned between the outer surface of one of said collars and that said spring bow, each vane projecting circumferentially and inwardly a substantial proportion of the distance toward the well pipe for imparting movement to the fluid having a circumferential component of direction upon relative longitudinal movement between the fluid and the device and each said vane being resilient for flexing upon flexing of the attached spring bow.

3,289,769
WELL FLOW CONTROL DEVICE

Wayne F. Nelson and Gil R. Boyd, Waxahachie, Tex., assignors to Koehring Company, Waxahachie, Tex., a corporation of Wisconsin
Filed May 15, 1964, Ser. No. 367,833
6 Claims. (Cl. 166—224)



1. A well device adapted for installation in a well string comprising,
a body having a flow-way therethrough and adapted to be made up in a well string,
an annular valve seat in said body surrounding said flow-way,
a flapper valve adapted to engage said annular valve seat and a close flow upwardly through said flow-way,

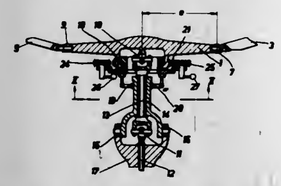
means urging said flapper valve toward said annular valve seat in said body,

an annular element positioned within said body and having a central bore therethrough,

said annular element including an upper sleeve portion which engages said flapper valve to hold said flapper valve in inactive position and a resilient seat portion defining an annular seat projecting into said bore through said element, and

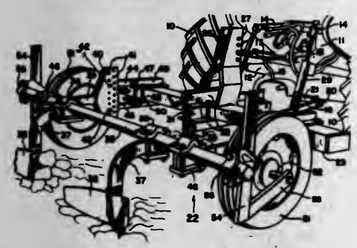
means releasably securing said annular element to said body whereby said element is releasably held in position to engage said flapper valve and upon release to allow said annular element to move to a lower position thereby activating said flapper valve.

3,289,770
HELICOPTER ROTOR SYSTEM
Hans Derschmidt, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Hamburg, Germany
Filed Aug. 3, 1964, Ser. No. 387,037
Claims priority, application Germany, Aug. 14, 1963, B 73,113
19 Claims. (Cl. 170—160.25)



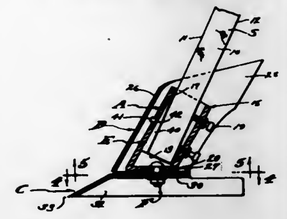
1. A helicopter rotor construction comprising a rotor rotatable about an axis which is substantially vertical, a plurality of rotor blades pivotally mounted on said rotor at a spaced location from the axis of rotation thereof and each being pivotal for movement in lead-lag directions about an axis substantially parallel to the axis of rotation of said rotor during the rotation of said rotor, and mass imbalance producing means operatively associated with said rotor by a transmission means, the transmission ratio of which effects a mass rotational speed of a multiple of the rotor speed in the direction of rotation of the rotor, said multiple corresponds to the number of rotor blades, for influencing the pivotal lead-lag movement of said rotor blades during rotation of said rotor.

3,289,771
PRECISION TILLAGE UNIT
James Frederick Bennett, Stockton, Calif., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 419,073
3 Claims. (Cl. 172—155)



1. In an earth-working implement for mounting on a tractor having vertically movable draft sensing hitch means thereon, a first rigid transverse tool carrier connected to said hitch means to be raised and lowered therewith and for automatic vertical adjustment of said tool carrier in response to changes in draft conditions, earth-working tools rigidly mounted on said tool carrier and extending downwardly therefrom to penetrate relatively deeply into the soil, a second rigid transverse tool carrier disposed rearwardly of said first tool carrier, earth-working tools rigidly mounted on said second carrier at locations laterally removed from the tools on said first tool carrier and extending downwardly therefrom to penetrate the soil at a relatively shallow depth, linkage extending between and pivotally connected at its ends to said first and second tool carriers to accommodate vertical floating movement of said second carrier relative to said first carrier, and a gauge wheel mounted on said second carrier and engageable with the ground to maintain a constant operating depth for the tools on said second carrier irrespective of the vertical movement of said first tool carrier.

3,289,772
PLOW WITH ADJUSTABLE AND REPLACEABLE ELEMENTS
Henson U. Blackwood, 830 S. Fairfax Road, Bakersfield, Calif.
Filed Nov. 16, 1964, Ser. No. 411,356
4 Claims. (Cl. 172—251)



1. An earth tilling implement in the form of a plow, and including:

(a) an upwardly extending shank,

(b) an adapter received on the shank and extending upwardly therealong and having a substantially flat foot

(c) a soil tilling implement engaged flat against the foot and extending upwardly along the adapter,

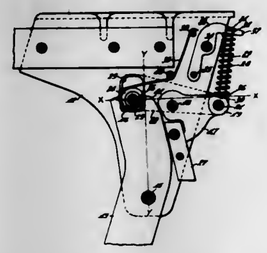
(d) a soil tilling implement engaged flat against the first mentioned soil tilling implement and depending away from the foot of the adapter,

(e) and means securing the two implements together and on the foot.

3,289,773
SPRING TRIP MECHANISM FOR PLOW BOTTOMS AND THE LIKE
Richard G. Moe, Waukesha, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 3, 1964, Ser. No. 394,229
7 Claims. (Cl. 172—269)

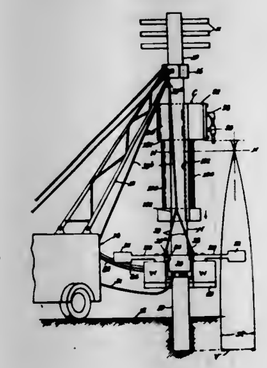
1. In a spring trip mechanism for plow bottoms and the like, the combination of a support, a tool standard mounted on said support for swinging movement between working and nonworking positions about a first pivot center and having a thrust transmitting abutment on a line of force tangential to an arc about said first pivot center; a first link pivotally mounted on said support at a second pivot center spaced from said first pivot center and in swingable relation to said tool standard; a second link pivotally mounted on said first link at a third pivot center spaced from said second pivot center; a trip roller cooperable with said abutment on said line of force; connecting means between said second link and roller presenting a fourth pivot center spaced from said third pivot center a fixed radial distance therefrom of

such length that operative engagement of said roller with said abutment on said line of force while said tool standard is in said working position establishes a toggle relation between said first and second links which places said third pivot center at one side of said line of force



and which causes said third pivot center to move to the other side of said line of force in response to movement of said tool standard from said operative toward said inoperative position; and resilient means operatively associated with said links so as to yieldingly oppose said movement of said third pivot center.

3,289,774
VIBRATION ISOLATOR FOR SONIC POLE DRIVING SYSTEM
Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed July 14, 1965, Ser. No. 471,888
14 Claims. (Cl. 175—19)



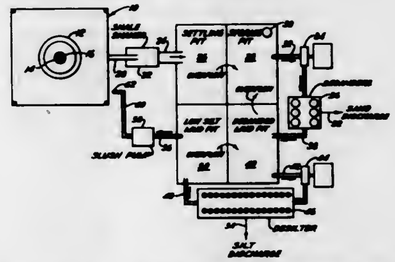
1. A system for planting a pole into the ground to a predetermined depth which is a minor fraction of its length, said pole being of an elastic material, so as to permit an elastic standing wave to be set up therein, characterized by a velocity antinode at its lower extremity, and at least one stress antinode thereabove, that comprises:

means for supporting the pole in a predetermined position with its butt end in engagement with the ground and forced thereagainst;

a sonic wave generator clamped to and supported by the pole at a point therealong spaced below said stress antinode and spaced above the point on the pole which is to be driven to ground level, said generator being adapted for setting up in the pole an elastic standing wave as aforesaid; and

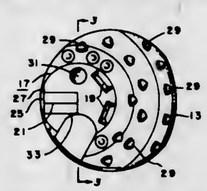
a mechanical sonic impedance element clamped to said pole in the region of said stress antinode.

3,289,775
APPARATUS AND METHOD FOR TREATING DRILLING MUD
Virgil D. Stone, Morgan City, La., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1963, Ser. No. 297,431
15 Claims. (Cl. 175—66)



15. A method of treating drilling mud containing clay solids used in a rotary process for drilling a well comprising passing all of the drilling mud returned from the well through means to remove substantially all sand and at least 85 percent of all solid particles having a particle size larger than 30 microns from the drilling mud to form a low silt drilling mud containing clay solids in which the median cut of solid particles is 10 to 20 microns and delivering only a low silt drilling mud containing clay solids in which the median cut of solid particles is 10 to 20 microns to the suction of a slush pump for circulating the drilling mud in the rotary drilling process.

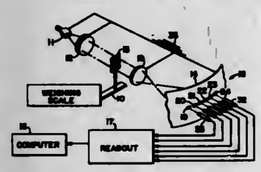
3,289,776
UNDERDRILLING BIT
James M. Cleary, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 24, 1964, Ser. No. 421,159
20 Claims. (Cl. 175—398)



1. In earth borehole drilling, an improved rotary percussive drill bit having a central longitudinal axis comprising an upper bit section having a first drilling fluid passage means therethrough, rotary pilot percussive drilling means extending downward from said upper bit section, said pilot drilling means having a maximum width which is smaller than the maximum width of said bit and having a central longitudinal axis which is offset from said central longitudinal axis of said bit, a sloping noncutting surface formed on the lower end at the side of said rotary pilot drilling means furthest from said axis of said bit, said noncutting surface sloping inwardly toward the axis of said bit and forwardly with respect to the direction of penetration of said bit and adapted during drilling to force said rotary pilot drilling means inwardly toward said axis of said bit, first percussive cutting means having cutting edges located on the lower part of said pilot drilling means and adapted to cut a cylindrical pilot hole having a substantially circular vertical wall whose circumference will accommodate said piot drilling means when the axis of said pilot drilling means coincides with the central axis of said

borehole, second rotary percussive cutting means located on said upper bit section above said first rotary percussive cutting means and adapted to cut an annular section of earth surrounding said pilot hole and trailing said pilot hole with respect to the direction of penetration of said bit, said first percussive cutting means leading said second percussive means by a distance of at least two inches, said pilot drilling means having a smooth cylindrical outer surface having substantially the same curvature as the wall of the pilot hole drilled by said first percussive cutting means and extending above said sloping noncutting surface for a distance of at least two inches above the cutting edges of said first percussive cutting means and located on the side of said pilot drilling means furthest from said central axis of said bit, said smooth cylindrical outer surface forming an angle with vertical of between zero and two degrees negative and forming an arc equal to at least 30 degrees of said pilot hole, second drilling fluid passage means extending through said pilot drilling means and adapted to conduct drilling fluid from said first drilling fluid passage means in said upper bit section to said pilot hole, and third drilling fluid passage means in said pilot drilling means and said upper bit section extending from the lower end of said pilot drilling means to a point above the top of said pilot hole drilled by said pilot drilling means and adapted to conduct drilling fluid from said pilot hole to said borehole.

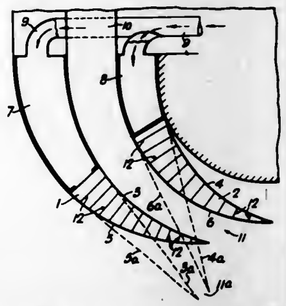
3,289,777
READING SYSTEM
Roger A. Willyard, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Dec. 7, 1964, Ser. No. 416,524
7 Claims. (Cl. 177—178)



1. A reading system comprising, in combination, a condition responsive chart bearing bits arranged according to a code, photosensitive means, projection lens means for projecting chart images onto the photosensitive means, whereby the photosensitive means provides a coded output indicative of the chart position, and slitted mask means between the projection lens means and the photosensitive means for restricting the chart images which are projected onto the photosensitive means to small and clearly defined portions of the projected images, the mask means being so located relative to the projection lens means and being so curved to about match the sagittal focal plane of the projection lens means that all of the chart bit images are approximately focused at the mask slits.

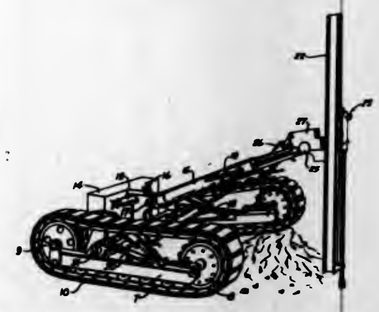
3,289,778
INFLATABLE NOZZLE STRUCTURE FOR SURFACE EFFECT DEVICES
Reginald Bannerman Page, Hythe, and Edward Gunston Tattersall, Wight, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed June 6, 1963, Ser. No. 285,999
Claims priority, application Great Britain, June 15, 1962, 23,210/62
5 Claims. (Cl. 180—7)

3. A vehicle for travelling over a surface and which in operation is supported above the surface by at least one cushion of pressurised gas formed beneath the vehicle in which the cushion is contained for at least part of its periphery by an inflatable structure, wherein the inflatable structure is constrained to form when inflated various shapes dependent upon the inflation pressure, said structure comprising a pair of inner and outer spaced apart gas-impervious walls, the inner wall being closer to the gas cushion than the outer wall, constraining means connecting said walls and constraining the latter to said spaced



apart relationship, at least the major part of the inner wall being of extensible material and at least the major part of the outer wall being of less easily extensible, flexible material, means carried by the vehicle for supplying gas under pressure to inflate said structure, and means operable while the vehicle is in operation for controlling and varying the pressure of said gas, whereby the shape of the structure can be varied by varying the inflation pressure.

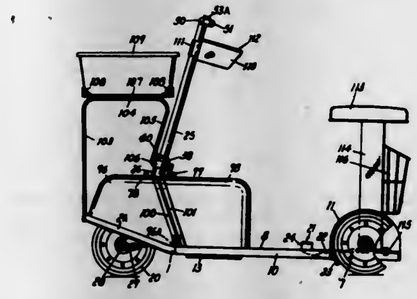
3,289,779
MOBILE ROCK DRILL CARRIER SUSPENSION SYSTEM
Jacob E. Feucht, Sidney, Ohio, assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Feb. 1, 1965, Ser. No. 429,246
4 Claims. (Cl. 180—9.5)



1. A rock drill carrier comprising, a pair of laterally spaced elongated frames each carrying an endless ground engaging track, motor means for independently driving each of said tracks, a support for each of said track driving motor means, means mounted intermediate the ends of each of said frames providing a pair of inwardlly projecting and coaxially alined pivot shafts, a chassis forming member spanning the space between said frames and pivotally supported at its opposite ends by said pivot shafts, an extensible hydraulic stabilizer secured between said chassis forming member and each of said frames, each of said hydraulic stabilizers having a piston reciprocable within a liquid filled cylinder and providing a piston displacement chamber, conduit means interconnecting the displacement chambers of said cylinders on corresponding sides of said pistons whereby said frames are

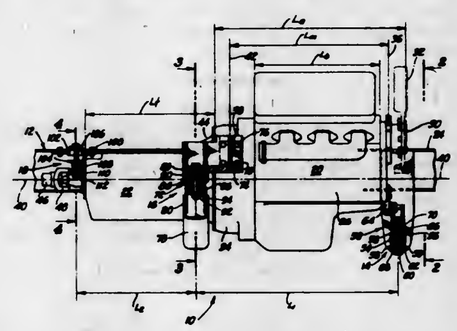
permitted to swing about the axis of said coaxial pivot shafts relative to each other and relative to said chassis forming member, a rock drill assemblage mounted on said chassis forming member for transportation by said tracks, and a reaction link pivotally interconnected between said chassis forming member and each of said motor supports for permitting relative movement thereof whenever said frames are swung relative to one another and relative to said chassis forming member.

3,289,780
THREE-WHEELED VEHICLE DRIVEN BY ELECTRIC MOTOR
David R. Ferris, Cadillac, Mich., assignor to Kysor Industrial Corporation, Cadillac, Mich.
Filed Mar. 3, 1965, Ser. No. 436,781
9 Claims. (Cl. 180—26)



5. In a vehicle having a passenger platform with laterally spaced rear wheels,
a frame to which said wheels are connected and extending forwardly of said platform,
an inverted U-shaped cross piece extending transversely between side portions of said frame forwardly of said platform,
a bearing sleeve connected in upwardly and rearwardly inclined position in the mid-section of said cross piece and opening therethrough,
a yoke having a hollow spindle projecting from its top and rotatably received in said sleeve,
means axially retaining said spindle in said sleeve,
a steerable drive wheel mounted within said yoke,
an electric motor with drive connections to said wheel mounted on said yoke,
means forming a cross wall and side walls connected to said yoke above said drive wheel and below said spindle,
a switch operating plate having a rotatable support on said cross wall coaxial with said spindle,
first and second switches mounted on one of said side walls and having actuating members positioned in the path of swinging motion of said switch plate, the actuating member of the first switch being located to be engaged and actuated first,
a third switch mounted on the other of said side walls and having an actuating member positioned in the path of opposite swinging motion of said switch plate,
a steering column connected to said spindle and projecting thereabove,
a handle bar on said column,
a control lever pivoted on said handle bar and having a control rod connected thereto and extending downwardly through said column and said spindle,
means connecting the lower end of said control rod to said switch plate to rotatably oscillate said switch plate by said rod,
a resistor and a warning signal carried by said yoke,
means for supporting a battery on said frame at the forward end of said platform,
and wiring adapted to be connected to a battery on said battery supporting means and connected to said switches to selectively connect said battery to said motor through said first switch and said resistor to said motor and through said second switch directly to said motor or to said warning signal through said third switch.

3,289,781
ENGINE MOUNTING SYSTEM
Kenneth F. Ferguson, Placentia, Calif., assignor to Hunt Foods and Industries, Inc., Fullerton, Calif., a corporation of Delaware
Filed Apr. 9, 1964, Ser. No. 358,467
15 Claims. (Cl. 180—64)

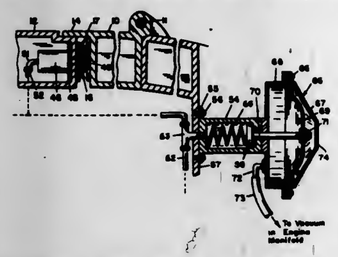


2. In combination:
(a) a frame;
(b) an engine and transmission assembly including an internal combustion engine of the reciprocating type and including a transmission connected to the rear end of said engine;
(c) resilient front mounting means connecting said assembly to said frame adjacent the front end of said engine;
(d) resilient intermediate mounting means connecting said assembly to said frame adjacent the rear end of said engine;
(e) the spacing of said front and intermediate mounting means being at least of the order of the overall length of said engine; and
(f) resilient rear mounting means connecting said assembly to said frame adjacent the rear end of said transmission and supporting a weight of the order of the weight of said transmission.

3,289,782
SAFETY AUTOMOBILE DOOR LOCKING DEVICE
Hollas K. Price, Box 701, Oak Hill, W. Va.
Application Dec. 31, 1964, Ser. No. 422,622, now Patent No. 3,247,924, dated May 26, 1966, which is a division of application Ser. No. 220,656, Aug. 31, 1962, now Patent No. 3,166,144, dated Jan. 19, 1965. Divided and this application Apr. 22, 1966, Ser. No. 544,521
6 Claims. (Cl. 180—82)

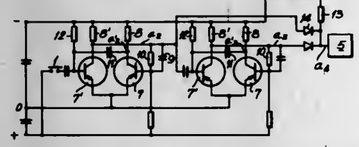
1. In an automotive vehicle, the combination of a door frame, a door, and a safety door locking device comprising a pair of keeper members interposed between said frame and said door and secured respectively thereto, one of said keeper members being provided with a slot, the other keeper member including a tongue receivable

in said slot when the door is closed, said keeper members being provided with registrable apertures having an axis intersecting said slot and said tongue, a projectable and retractable keeper pin slidable in said apertures, resilient



means for urging said pin to its retracted position, and means responsive to existence of subatmospheric pressure in an engine manifold for projecting said pin against the action of said resilient means.

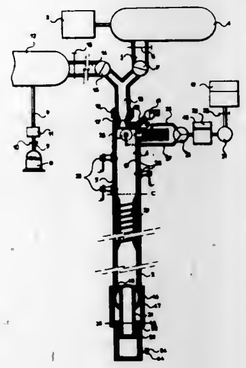
3,289,783
DEVICE FOR CONTROLLING THE SPEED OF RAIL TRAVELING VEHICLES
Hansruedi Bühler, Wallisellen, Zurich, Switzerland, assignor to Maschinenfabrik Oerlikon, Zurich, Switzerland
Filed Oct. 2, 1962, Ser. No. 227,910
Claims priority, application Switzerland, Oct. 4, 1961, 11,541/61
2 Claims. (Cl. 180—82.1)



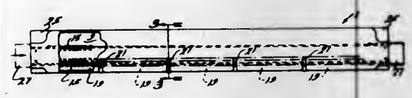
1. Apparatus for controlling the speed of a vehicle along a path of travel comprising, in combination, switch means carried by the vehicle; two detector means, one carried by the vehicle and the other fixedly positioned along said path; one detector means comprising a pair of actuator elements spaced apart a predetermined distance longitudinally of the path of travel, and the other detector means comprising a single actuator element sequentially cooperable with said spaced apart actuator elements to operate said switch means twice as the vehicle travels said predetermined distance; electronic timing means, including monostable multivibrator means, carried by the vehicle and responsive to operation of said switch means; actuating means on the vehicle controlling, when activated, a vehicle speed regulating means; and an AND gate providing an output signal to said actuating means to activate the latter, responsive to said switch means being so operated twice within a time interval determined the time characteristics of said monostable multivibrator means.

3,289,784
TRANSMITTING DEVICE FOR SOUND WAVES
Jean Cassand, Bezons, Gérard De Soete, Paris, and Jacques Cholet, Rueil-Malmaison, France, assignors to Institut Francais du Pétrole, des Carburants & Lubrifiants, Rueil-Malmaison (Seine et Oise), France
Filed July 6, 1964, Ser. No. 380,397
Claims priority, application France, July 11, 1963, 941,185; Jan. 23, 1964, 961,386
9 Claims. (Cl. 181—.5)

1. A transmitting device for sound waves of great energy comprising a tube, one end of which extends into a liquid, feeding means connected with said tube for injecting a combustible mixture under pressure into said tube, ignition means projecting into said tube for igniting the combustion mixture therein, thus causing a pressure wave within said tube and intermittent closing means for placing the end of said tube which extends into said liquid in intermittent communication therewith, caused by said pressure wave.

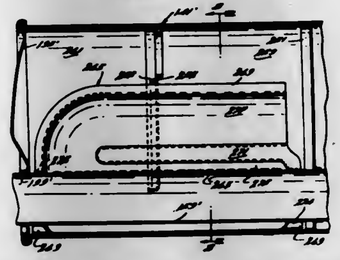


3,289,785
SILENCER WITH OUTER HOUSING CONTACTING INNER CONDUIT TO DEFINE RESONANCE CHAMBERS
John C. Walker, Jackson, Mich., assignor to Walker Manufacturing Company, a corporation of Delaware
Continuation of application Ser. No. 318,652, Oct. 24, 1963. This application Oct. 4, 1965, Ser. No. 496,240
23 Claims. (Cl. 181—48)



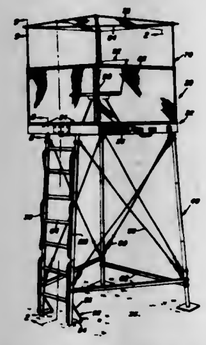
1. A gas silencing device for silencing a note having a predetermined frequency comprising an elongated housing, a conduit inside the housing and extending substantially the full length thereof, said conduit being substantially less in width than said housing, opposite sides of said conduit being in engagement with opposite sides of the housing to divide the housing into two longitudinal spaces separated by said conduit, the first of said spaces extending over a substantial part of the length of the housing, said conduit having a wall with a perforate portion opening into said first space and said first space being substantially one quarter the wave length of said note whereby said first space acts as a quarter wave length tuning chamber for said note, the side of said housing over the second of said spaces having inwardly extending portions at a plurality of sections in engagement with one side of said conduit to divide said second space into a series of separate chambers, said conduit having perforate areas opening into each of said series of separate chambers whereby said chambers act as a series of spit chambers to silence high frequencies and roughness in the gas.

3,289,786
MUFFLER WITH RETURN BEND TUNING PASSAGE
Walter H. Powers, Jackson, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Application Sept. 6, 1961, Ser. No. 136,287, which is a division of application Ser. No. 575,404, Apr. 2, 1956. Divided and this application May 17, 1965, Ser. No. 428,639
3 Claims. (Cl. 181—54)



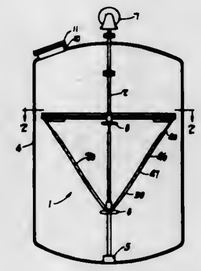
1. In an exhaust gas muffler, a casing having a closed end, a first transverse apertured partition spaced from the closed end and defining therewith a first chamber, a second imperforate partition spaced from the first and defining therewith a second chamber, a tube extending through said partitions and closed end and opening outside of the casing and having louvers in the portions thereof within each of said two chambers, and means defining a reverse bend passage surrounding said louvers and receiving all gas therefrom, said passage opening into the second of said chambers and constituting the only inlet and outlet for it and for the first chamber.

3,289,787
COLLAPSIBLE HUNTING SHELTER
Thad M. McSwain, 1912 S. Main St., Stuttgart, Ark.
Filed July 10, 1964, Ser. No. 381,747
11 Claims. (Cl. 182—20)



1. A collapsible elevated hunting shelter comprising a support platform, four support legs fixed to the platform and depending therefrom for engagement with the ground so as to support the platform thereabove, a plurality of vertically spaced horizontal ladder rungs extending between and fixed to a pair of adjoining support legs, thereby forming a means of access to the platform, and brace means engaged between said pair of legs and the remaining legs, said platform being rectangular in shape, said pair of legs being fixed to said platform along one edge thereof with the legs of said pair being spaced an equal distance outwardly on opposite sides of the center of said one edge, said legs of the pair of legs being spaced inwardly of the ends of said one edge, the other two legs being fixed to said platform adjacent the ends of the edge opposite said one edge, said platform being formed of two adjacent rectangular sections, each section having a depending peripheral wall thereabout, and hinge means connecting the adjacent sides of said sections so as to enable the sections to pivot into superimposed relation to each other with the edges of the peripheral walls abutting each other so as to form an enclosed space.

3,289,788
FOLDING SCAFFOLD WITH CENTRAL SUPPORT
Charles Eugene Evans, Charleston, William Anthony Kapella, Dunbar, and William Harold Hawley, Jr., St. Albans, W. Va., assignors to Goodrich-Gulf Chemicals, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 31, 1964, Ser. No. 422,742
17 Claims. (Cl. 182—128)

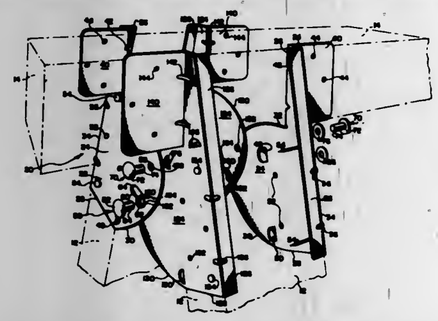


9. A folding collapsible scaffolding for mounting on a central pole or shaft comprising collar means, means for detachably fastening said collar means about said central pole or shaft, a plurality of horizontal strut means extending radially from and pivotally connected to said collar means, a plurality of vertical strut means, equal in number to the number of horizontal strut means, pivotally connected to the outer ends of said horizontal strut means, respectively, and pivotally connected to said collar means in vertically spaced relation with said connections of said horizontal strut means with said collar means, and platform means extending between and supported on adjacent horizontal strut means, respectively.

3,289,789
FOLDING SAWHORSE BRACKET
Charles O. Larson, Sterling, Ill., assignor to Chas. O. Larson Co., Sterling, Ill., a corporation of Illinois
Filed Sept. 5, 1963, Ser. No. 306,724
1 Claim. (Cl. 182—226)

A collapsible sawhorse bracket assembly for interconnecting a crosspiece and a pair of legs in converging relationship with each other and to the crosspiece, comprising a pair of separate and independent brackets, each bracket including a main wall adapted to be fixedly secured to one edge of an associated leg at one end thereof and a side flange formed integral with said wall and disposed substantially perpendicular thereto and along the outer face of the associated leg at the one end thereof, said main wall and said side flange extending beyond the adjacent end of the associated leg and said main wall having a cutout therein on the edge opposite said side flange for receiving a supporting crosspiece therein, an abutment flange integral with said main wall and disposed substantially perpendicular thereto and extending in the same direction as said side flange and being adapted to lie against the upper end of the associated leg, a guide flange integral with said main wall and disposed substantially perpendicular thereto and extending therefrom in

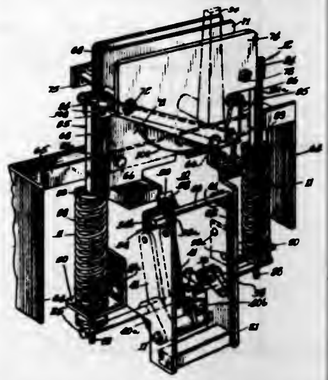
the same direction as said side flange and placed therefrom a distance to receive the associated leg therebetween, a plurality of openings in said main wall in the area thereof defined by said side flange and said abutment flange and said guide flange for receiving fasteners therethrough to secure said bracket to the associated leg, a crosspiece flange integral with one edge of said main wall defining said cutout and disposed substantially perpendicular thereto and extending therefrom in a direction opposite to said side flange and adapted to lie along the side of an associated crosspiece, said crosspiece flange having an opening therein for receiving a fastener therethrough to secure said bracket to the associated crosspiece, said brackets being overlapping and having aligned pivot apertures therethrough, a pivot pin disposed in said aligned pivot apertures and pivotally interconnecting said brackets to provide an axis for pivoting the legs with respect thereto between a folded position wherein the outer ends thereof are adjacent to each other and an



operative position wherein the outer ends thereof are spaced apart, each of said brackets having an L-shaped slot in the main wall thereof including first and second arms, the first arm of each of said L-shaped slots being arranged with the longitudinal axis thereof in alignment with said first arm of the other L-shaped slot when the legs are in the operative position thereof, the second arm of each of said L-shaped slots being arranged at the end of the associated first arm thereof disposed toward said pivot pin and extending therefrom outwardly toward the associated leg, and a lock pin disposed in said L-shaped slots and movable therealong in the aligned portions thereof between a lockng position and a non-locking position as the legs move between the operative and the folded positions thereof, said lock pin in said locking position being disposed at the ends of the aligned first arms disposed away from said pivot pin with the legs in the operative position thereof, said lock pin in said non-locking position being disposed in aligned portions of said second arms with the legs in the folded position thereof.

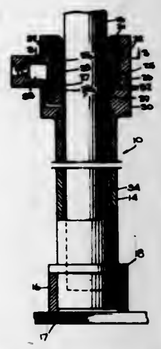
3,289,790
SPRING CHARGING MECHANISM FOR A CIRCUIT BREAKER
Herbert L. Ivins, Cleveland, Ohio, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed June 16, 1965, Ser. No. 464,338
5 Claims. (Cl. 185—39)

1. In a charging mechanism for a closing spring of a circuit breaker, means movable to compress the spring by engagement with an end thereof, a rotatable cam for moving said movable means, a first shaft fixed to said cam for rotating said cam, second and third shafts coaxial with said first shaft and extending respectively from opposite ends thereof, a first helical spring means surrounding at least a portion of each of said first and second shafts and a second helical spring means surrounding at least a portion of each of said first and third shafts, said first spring means being operative to permit rotation of said second shaft with respect to said first shaft in one direction and to prevent relative rotation



therebetween for the opposite direction of rotation, said third shaft being fixed against rotation, and said second spring means being operative to permit relative rotation between said first and third shafts in one direction only.

3,289,791
HYDRAULIC RAM FOR LIFT TRUCK
Bronislaus I. Ulinski, Flossmoor, Ill., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Nov. 1, 1963, Ser. No. 320,779
2 Claims. (Cl. 187—9)



1. In an industrial truck, stationary uprights, extendible uprights mounted for vertical movement on said stationary uprights, said extendible uprights tilting a limited amount in a lateral direction relatively to the truck due to the lateral force caused by the weight of a load supported on said extendible uprights, a load carriage mounted for vertical movement on said extendible uprights, a vertically extending hydraulic ram having a cylinder part and a piston part extendible by hydraulic pressure relatively to said cylinder part, means mounting one of said parts of said ram in position aligned with and fixed relative to said stationary uprights on said stationary uprights, connecting means operatively connecting the other of said parts to said extendible uprights and load carriage whereby relative extension of said parts effects extension of said extendible uprights and elevation of said load carriage, said lateral force being transmitted through said connecting means to tilt said other part of the ram in a lateral direction relatively to said one part when the extendible uprights tilt, said piston part of said ram being

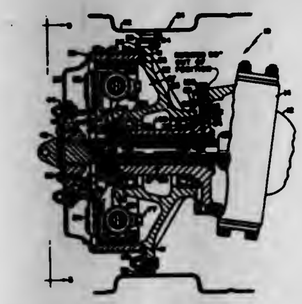
sufficiently spaced from the wall of said cylinder part whereby said piston part and cylinder wall will remain out of contact with each other while the extendible uprights tilt their limited amount, a seal member in fluid sealing relation to said piston part, and means on said cylinder part mounting said seal member for pivotal movement relatively to said cylinder part whereby said piston part and seal member may pivot together relatively to said cylinder part to allow lateral tilting of said piston part during extension of said ram.

3,289,792
APPARATUS FOR ABSORPTION OF ENERGY FROM A MOVING LOAD
Harald Anton Moberg, Svevagen 25, Uppsala, Sweden
Original application Mar. 25, 1963, Ser. No. 267,520, now Patent No. 3,232,383, dated Feb. 1, 1966. Divided and this application Oct. 21, 1965, Ser. No. 499,645
Claims priority, application Sweden, Mar. 26, 1962, 3,338/62
4 Claims. (Cl. 188—1)



1. An apparatus for absorption of energy from a moving load comprising a metal sheet in the shape of a coiled elongated band, means supporting said metal sheet, said metal sheet having one end secured in said means, a slide guided for movement along said metal sheet relative to the metal sheet and said supporting means, and means on said slide for continuously cutting through the entire thickness of said metal sheet to thereby sever at least one strip from the metal sheet and for continuous plastic deformation of the shorn-off metal strip when said slide is displaced relative to said metal sheet and said supporting means.

3,289,793
SEALED BRAKE
Leo Goldman, Windsor, Ontario, Canada, and James M. Prange, Dearborn Heights, Mich., assignors to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,485
3 Claims. (Cl. 188—18)



1. A wheel and brake assembly comprising a spindle, inner and outer bearing assemblies on said spindle, a wheel hub having a peripheral radial flange and a cylindrical outwardly facing pilot flange, a wheel rim assembly detachably secured to said radial flange, a sealed cover assembly detachably secured to said radial flange, said rim assembly and said cover assembly being independently removable from said flange, said cover assembly forming with said wheel hub a sealed enclosure, a brake drum rigid with said cover assembly, a portion of the inner surface of said drum being mounted on said pilot flange, a support member having a hub splined to said spindle and having a surface engageable with an inner race of said outer bearing assembly, a retainer plate detachably secured to the outer end of said spindle for retaining said support plate on said spindle, said retainer plate and said support member being movable axially of said spindle for adjustment of said bearing assemblies, brake assemblies carried by said support plate, and additional retainer means independent of said retainer plate for holding said wheel on said spindle whereby said cover assembly and said brake assemblies may be removed while said wheel hub and wheel are retained in place on said spindle.

3,289,794
WHEEL CHOCK
Ray P. Miles, 8575 N. Melody Lane, Northfield, Ohio
Filed Nov. 3, 1965, Ser. No. 506,221
10 Claims. (Cl. 188—32)

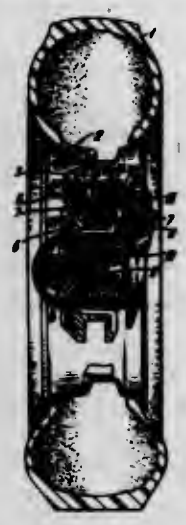


1. A wheel chock adapted to be used on either of two bottom sides comprising wheel engageable means, a pair of side wall means, intermediate reinforcing wall means, a pair of bottom wall means forming a juncture at an angle to each other, said wheel engageable means having a curved surface and a plurality of openings formed by the termination of said side and intermediate walls, said wheel engageable means forming a tapered juncture with each of said bottom wall means, wheel introducing means disposed at each tapered juncture whereby a wheel initially moving onto said chock applies its load substantially vertically to said wheel introducing means thereby preventing movement of said chock, and one of said bottom walls containing calk means adjacent said juncture.

3,289,795
DISK BRAKE
Hermann Klaue, Konstanz (Bodensee), Germany
Filed Oct. 23, 1964, Ser. No. 406,038
Claims priority, application Germany, Feb. 27, 1964, K 52,216; Mar. 24, 1964, K 52,483
7 Claims. (Cl. 188—72)

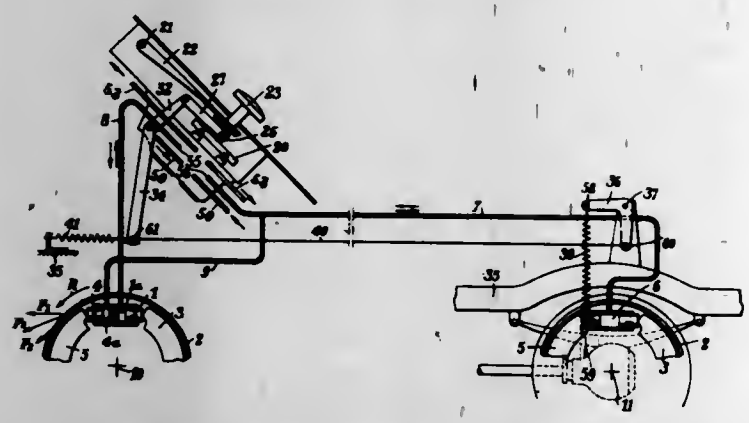
1. A disc brake, particularly for automotive vehicles, comprising, in combination, a brake housing rotatable with a vehicle wheel and having a substantially circular outer periphery, said brake housing having a radially outwardly facing channel cross section providing flanges forming opposed axially spaced braking surfaces extending transverse to the axis of rotation; a stationary brake carrier; a fixed support member mounting said brake carrier with at least its major portion radially outwardly of the outer periphery of said brake housing; a pair of brake shoes mounted on said carrier and extending inwardly of the outer periphery of said brake housing, and each engageable with a respective one of said braking surfaces to arrest rotation of said housing; a relatively elongated and substantially rectilinear brake operator supported on said carrier and extending between said shoes along a secant of the outer periphery of said brake housing;

means supported on said brake carrier for reciprocating said brake operator longitudinally of said secant relative to said brake shoes; cooperating wedge surface means on said brake operator and on said brake shoes effective, upon movement of said brake operator in one direction along said secant relative to said brake shoes, to force



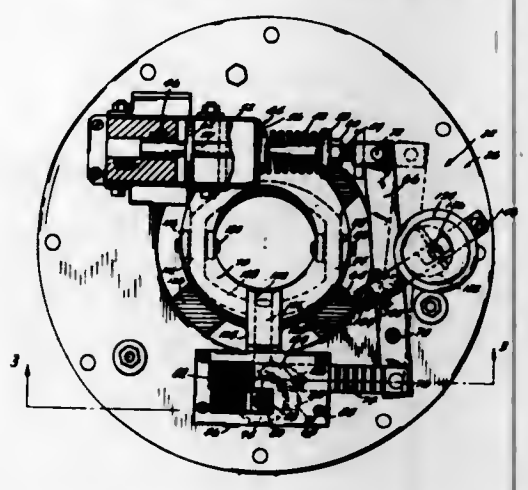
said shoes apart and into engagement with respective braking surfaces; and mounting means maintaining at least said brake shoes and said operator assembled as a unit; and disengageable means securing said unit to its supporting means for removal of said unit substantially radially outwardly past the circular outer periphery of said brake housing.

3,289,796
LOAD RESPONSIVE BRAKE SYSTEM
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris (Seine), France
Filed July 6, 1965, Ser. No. 469,738
4 Claims. (Cl. 188—152)



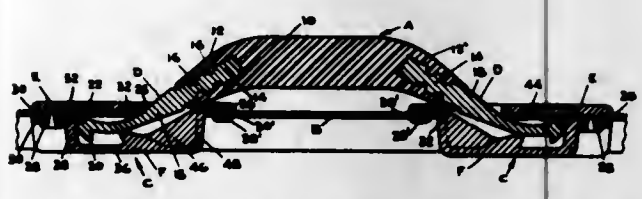
1. A hydraulic servo-action braking system wherein the braking fluid distribution is compensated as a function of the load distribution of the front and rear axles of the wheels of a vehicle, which comprises a pressure-fluid distributor unit, a pair of metering slide valves in said distributor supplied with pressure-fluid, said valves comprising a high-pressure slide valve and a low-pressure slide valve, a compensator lever regulating the force applied to said slide valves, means responsive to the load distribution on said front and rear axles and adapted to act accordingly on said compensator lever, a brake pedal acting upon said compensator lever to vary the fluid pressure in each slide valve, a brake cylinder for each axle, a piston sliding freely in said cylinder, a compressed brake shoe actuated by said piston, another brake cylinder, a piston sliding freely in said another cylinder, a tensioned brake shoe actuated by said last-named piston, a pipe line connecting said another cylinder to the high-pressure slide valve of said distributor, and another pipe line connecting the first mentioned cylinder to the low-pressure slide valve of said distributor.

3,289,797
ROTARY MOTION CONTROL DEVICE
Donald E. Brzezinski, Milwaukee, and Newton I. Potter, Waukesha, Wis., assignors to Wehr Steel Company, West Allis, Wis., a corporation of Wisconsin
Filed Sept. 10, 1962, Ser. No. 222,507
21 Claims. (Cl. 188—171)



14. In rotary motion control apparatus including an actuator and a plurality of alternately arranged normally stationary and rotatable disks, means for transmitting movement between said actuator and disks to alternately clamp said disks against and release said disks for relative rotational movement, said means comprising an elongated pressure arm connected to said actuator means connecting said pressure arm for pivotal movement about one of its ends and for rotational movement about its longitudinal axis, a pressure plate engageable with said disks to effectuate said alternate movement, and means connecting said pressure plate to said pressure arm for movement therewith and for pivotal movement relative thereto about an axis extending generally normal to said longitudinal axis.

3,289,798
HANDLE ASSEMBLY FOR LUGGAGE OR THE LIKE
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Oct. 14, 1964, Ser. No. 403,696
11 Claims. (Cl. 190—58)

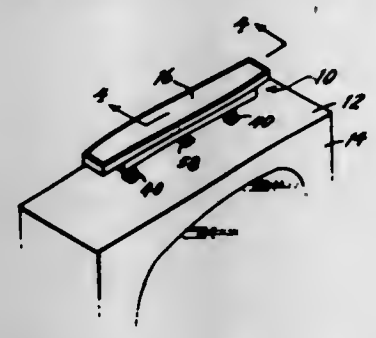


1. In combination with a luggage case or the like having a wall, a handle assembly comprising a handle member having a central grasping portion and opposite downwardly extending end portions, a pair of rigid, elongated connecting members respectively connected to said end portions, said connecting members projecting downwardly from the end portions and each terminating in a downwardly extending hook portion, a pair of longitudinally spaced apertures in the wall, said connecting members extending through said apertures, and a frame member positioned on the underside of the case wall at each aperture, each frame member being formed with an upwardly open recess defined on the inner side thereof by an upwardly projecting abutment, each of said hook portions being respectively positioned in a recess for linear movement, said abutments limiting the extent of movement of the handle member when a force is applied causing the handle to be raised, and means connecting the frame members to the wall.

3,289,799
COLLAPSIBLE HANDLE WITH HIDEAWAY LINKAGE

George W. Bush, Haddonfield, N.J., assignor to Philadelphia Handle Company, Inc., Camden, N.J., a corporation of New Jersey

Filed Apr. 18, 1966, Ser. No. 544,668
8 Claims. (Cl. 190—58)

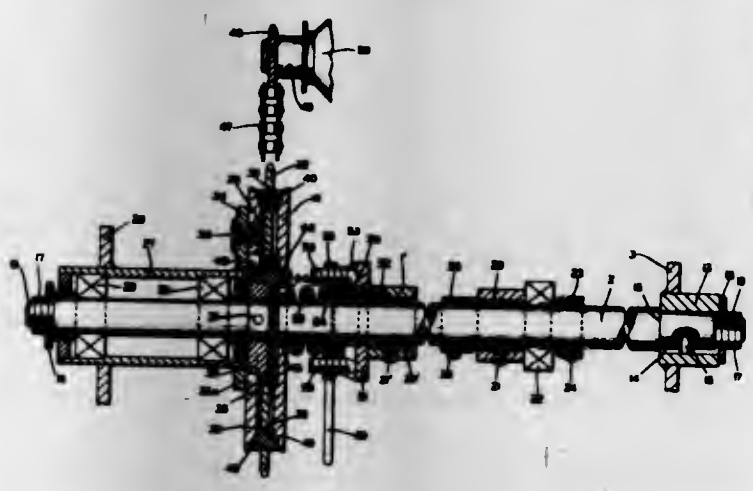


1. In combination with a carrying case having a wall, a collapsible handle comprising an elongated handgrip having a lower surface, a pair of spaced recesses in said handgrip opening through said surface, a pair of vertically spaced upper and lower links for each recess, a first means pivotally securing said upper link to said handgrip in said recess about a horizontal axis, a second means pivotally interconnecting said links about a horizontal axis and a third means pivotally securing said lower link to said wall about a horizontal axis, each recess being dimensioned to encompass said links when said handgrip is in a non-carrying position with its lower surface adjacent said wall and said links are in generally horizontal positions, catch means operative on said handgrip to releasably retain it in said non-carrying position, and spring means normally urging said links in generally vertical positions and said handgrip in a raised carrying position remote from said wall.

3,289,800
MULTIPLE CLUTCHES WITH FLOATING FRICTION BLOCKS

Basil P. Strong, Atwater, Ohio, assignor to Atwater-Strong Company, Atwater, Ohio, a corporation of Ohio

Filed Oct. 30, 1964, Ser. No. 407,819
6 Claims. (Cl. 192—49)

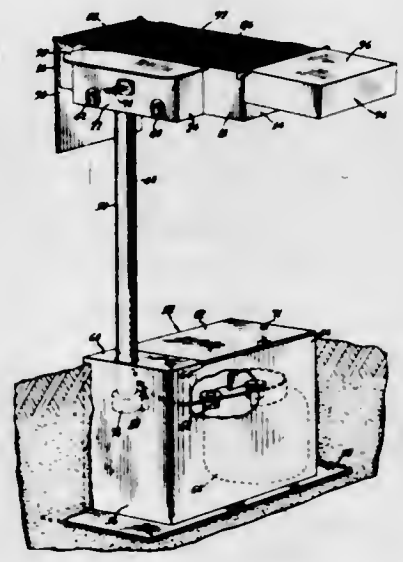


1. In combination with a rotatably mounted shaft and a hub rotatable thereon, clutch means comprising a clutch plate fixed upon said hub, a second clutch plate, means for mounting said second clutch plate for only longitudinal sliding movement on said shaft, opposed peripheral portions of the clutch plates being divergingly beveled, a sprocket wheel rotatably located between said clutch plates, there being spaced openings in said sprocket wheel, clutch blocks of friction material slidably located through said openings, opposite ends of said clutch blocks being beveled, and means for moving said second clutch plate toward the first named clutch plate for engaging the beveled ends of the clutch blocks between the beveled portions of the clutch plates and clamping said clutch blocks therebetween and thereby operatively connecting said shaft and said hub to said sprocket wheel.

3,289,801
GAS OPERATED COIN CONTROLLED OUTDOOR GRILL

Harold B. Jerkins, Tallahassee, Fla., assignor to Kamp Kooker, Inc., Tallahassee, Fla., a corporation of Florida

Filed Mar. 19, 1965, Ser. No. 441,137
13 Claims. (Cl. 194—3)



1. A coin controlled, camp stove comprising a frame, at least one heating element carried by the frame, means for supporting said frame above the ground including a hollow generally vertically extending support member, means for controlling the energizing of said heating element including coin receivable means carried by said frame, said coin receivable means having means for discharging a coin deposited therein, and means for collecting the coins discharged from said coin collecting means including said hollow support member, said coin collecting means including means closely adjacent the lower end of said hollow support member and adjacent the ground for removal of the collected coins therein.

3,289,802
COIN REJECTOR MECHANISM

Harry Greenwald, Whitestone, N.Y., Jack H. Malek, Parsippany, N.J., and George Avlon, New York, N.Y., assignors of one-third each to Harry Greenwald, Louis Wolff, and Harry Silberglait, Brooklyn, N.Y.

Filed Apr. 9, 1965, Ser. No. 446,802
19 Claims. (Cl. 194—99)

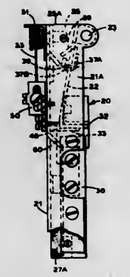
1. A coin rejector mechanism comprising

(a) means defining a coin chute having a fixed wall portion and an inclined movable wall portion pivotally connected to said fixed wall portion;

(b) said movable wall portion having its free end biased toward said fixed wall portion; said movable wall having an edge portion to define with said fixed wall a discharge opening for receiving acceptacle coins, said discharge opening being annularly disposed relative to said movable wall;

(c) a bottom ledge carried on said movable wall portion to define the bottom of said chute;

(d) said ledge having an angled surface inclined toward said fixed wall portion whereby coins rolling on said ledge normally lean toward said movable wall portion;



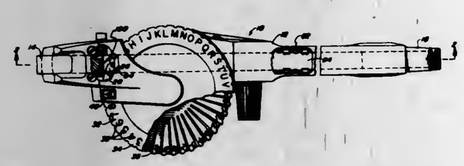
(e) and guide means cooperatively associated with said ledge for guiding a coin so that a coin is uprighted as said coin rolls along said bottom ledge to a line with said discharge opening for acceptable coins to discharge from said chute.

3,289,803

EMBOSSING TOOL FOR SELECTIVELY ACCOMMODATING MATERIAL OF DIFFERENT WIDTHS

Dane H. Pedersen, Moraga, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California

Filed May 28, 1965, Ser. No. 459,780
8 Claims. (Cl. 197—6.7)



1. In an embossing tool capable of establishing an embossment in elongated strip material of at least two different widths, the tool including a housing with an embossing station therein, embossing means capable of being located at said station for establishing the embossment, means for advancing the strip material from a supply of strip material through the housing to the embossing station in a longitudinal direction along a longitudinal path passing through an entrance to the embossing means and an exit therefrom, and fixed guide means between the supply and the embossing means for aligning the center line of the strip material with the entrance to the embossing means:

a strip guide in the housing at a location longitudinally beyond the exit from the embossing means and the embossing station in the direction away from the supply of strip material and juxtaposed with said exit, said station and the embossing means therein for selectively laterally aligning the center line of any one strip with a predetermined longitudinal line and selectively guiding a strip of one width along a fixed longitudinal path passing through said embossing station and positively aligning the strip laterally with the embossing means at said station; and

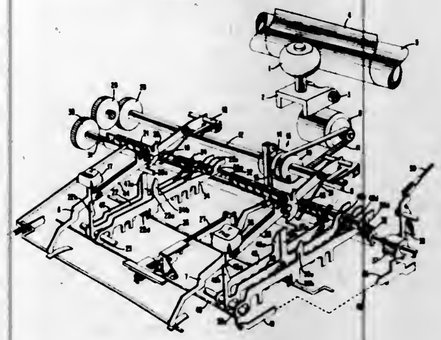
movable means in said housing juxtaposed with said path and said station at said location, said means being movable relative to said fixed path and cooperating with the strip guide juxtaposed with said station for changing the lateral width of said strip guide so as to selectively guide and positively align a strip of a second width laterally with the embossing means at said station while maintaining said lateral alignment of the center line of the strip along said predetermined longitudinal line.

3,289,804

AUTOMATIC SEQUENCE TYPING MECHANISM FOR PRINTING WORDS UPON DEPRESSION OF A SINGLE KEY

John O. Schaefer, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 14, 1963, Ser. No. 287,946
11 Claims. (Cl. 197—7)



1. Apparatus for typing single characters or sequences of characters, comprising:

character printing means;

control means, said control means being settable from a restored condition to a particular one of two operating conditions, and said control means having a common actuating member extending therefrom;

a selection mechanism for said printing means, said mechanism including a plurality of actuatable character selecting interposers, each of said interposers having a lug of predetermined configuration extending therefrom in proximity to and at a predetermined distance from said common actuating member;

and means controlled by said control means for actuating a single one of said interposers when said control means is in one of its operating conditions in order to select a particular character for printing, and for actuating a plurality of said interposers in turn when said control means is in its other operating condition in order to select a particular sequence of characters for printing.

3,289,805

TYPEWRITER HAVING TYPELEVERS MOUNTED ON A ROTATING MEMBER

Edward F. Kleinschmidt, Evanston, and Stewart E. Kleinschmidt, Prospect Heights, Ill., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Filed Nov. 27, 1964, Ser. No. 414,188
37 Claims. (Cl. 197—18)

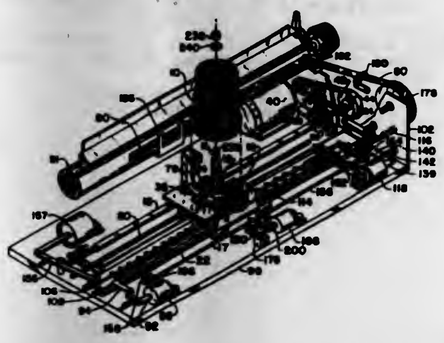
1. A power driven typewriter or the like machine comprising:

a frame structure;

a platen on said structure for providing backing for a record medium;

a carrier mounted on said structure and shiftable back and forth in front of said platen between start-of-line and end-of-line positions; means connected to said carrier to shift said carrier;

print mechanism mounted on said carrier; and



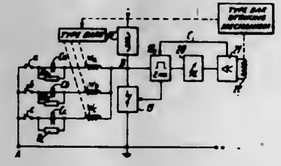
power means on said structure including a rotatable element on and shiftable with said carrier connected to at least a portion of said means to shift said carrier and to at least a portion of said print mechanism providing a power source for printing and for carrier shifting movement.

3,289,806

CONTROL SYSTEM FOR ELECTRIC TYPEWRITERS INCLUDING CURRENT LIMITING MEANS

George Mamos, Hammersborg Torg 1, Oslo, Norway

Filed Feb. 18, 1965, Ser. No. 433,609
Claims priority, application Norway, Feb. 29, 1964, 152,219
9 Claims. (Cl. 197—19)



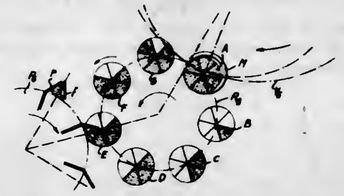
1. In a machine, such as a typewriter, including type bars and a striking mechanism controlling any selected bar, the provision of a control arrangement comprising selecting electromagnetic windings adapted to select the corresponding type bars, a common current-limiting device, charge storage circuits, a plurality of different parallel circuits, each of which comprises a said charge storage circuit and a said selecting winding in series, connected for insertion in series with said common current-limiting device, said device being adapted to limit the current passing through it to a value ranging between values above once and below twice that required for one of the said electromagnetic windings to be operative, electromagnetic means connected for controlling the striking mechanism, individual operating means connected in series with each charge storage circuit and selecting winding to energize selectively the said selecting electromagnetic windings with the current in the respective charge storage circuits to produce an energizing pulse in the latter and circuit means connected to said selecting windings and said current-limiting device to energize the electromagnetic means controlling the striking mechanism whereby upon consecutive operation of a first and second operating means without release of the first operating means corresponding selecting windings are consecutively energized by said charge storage circuits to select without delay corresponding type bars for control by said striking mechanism.

3,289,807

CLUSTERING APPARATUS, AND APPLICATIONS THEREOF

Robert Henri Jules Fievet, Paris (Seine), France, assignor to Fromageries Bel-La Vache Qui Rit, Paris, France

Filed June 23, 1965, Ser. No. 466,318
Claims priority, application France, June 30, 1964, 980,140, Patent 1,420,390
18 Claims. (Cl. 198—25)



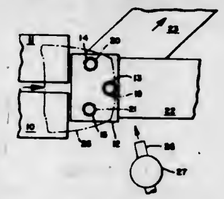
1. An apparatus for grouping objects of given geometrical shape into clusters inscribable in a closed perimeter having a center of symmetry, like prismatic cheese portions with a triangular base designed to be clustered into a circular perimeter the center of which coincides with the contiguous apices of said portions lying opposite the cylindrical sector-shaped faces of the latter, comprising in combination, a circular clustering barrel, means for rotating said clustering barrel about its axis, clustering plates shaped to said closed perimeter the number of which has no factors in common with the number of objects to be clustered and which are mounted on said clustering barrel at equal angular intervals along a circle the center of which lies on the axis of said clustering barrel, means for rotating said clustering plates about said center of symmetry at each revolution of said clustering barrel, through a step equal to their total travel divided by the number of objects to be clustered, a distributor, means for supplying each of said clustering plates with the objects one by one from said distributor and in a predetermined direction, a discharging device and means for delivering the objects one by one from said clustering barrel to said discharging device in a predetermined radial direction with respect to said clustering barrel.

3,289,808

APPARATUS FOR DETERMINING END ORIENTATION OF PRODUCE

Patrick M. L. Simmons, San Jose, Calif., assignor of one-half to Genevieve I. Magnuson, Saratoga, Calif., and one-half to Genevieve I. Magnuson, Robert Magnuson, Lois J. Fox, trustees of the estate of Roy M. Magnuson

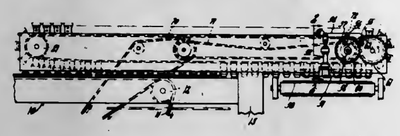
Filed June 1, 1965, Ser. No. 460,230
9 Claims. (Cl. 198—33)



1. In apparatus for determining the end orientation of elongated produce which is tapered at one end and blunt at the other, the combination of an array of light-sensitive cells arranged in a predetermined pattern, means

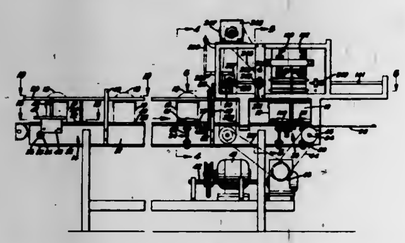
transmitting light to said cells, means moving elongated tapered articles in sequence between said light transmitting means and said cells, said articles each having a blunt end and a tapered end, electrical circuit means connected to said cells, said electrical circuit means producing an output signal indicating that said tapered article is presented to said array of cells in a predetermined orientation, and means responsive to said output signal to indicate the end orientation of the article corresponding thereto.

3,289,809
PRODUCT REARRANGING CONVEYOR SYSTEM
William H. Genich, Racine, Wis., assignor to J. W. Greer Company, Wilmington, Mass., a corporation of Massachusetts
Filed Dec. 11, 1964, Ser. No. 417,755
3 Claims. (Cl. 198—34)



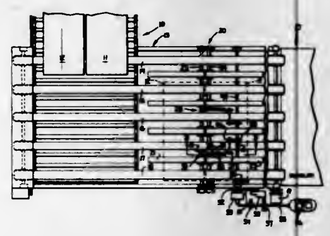
1. Apparatus for removing products advancing in rectilinear formation along an endless conveyor comprising a frame supporting said conveyor, an endless series of opposed gripping jaws mounted for movement along an endless path extending downwardly over, into parallelism with and beyond the end of said conveyor, said opposed jaws during their advance in parallelism with said conveyor being arranged in the same rectilinear formation as said advancing products, said jaws being normally closed, and cooperating cam means for initially opening and then permitting the gradual closing of said jaws as they move along said endless path, and means for simultaneously opening the jaws of a succession of grippers in said series after they have moved beyond the end of said conveyor.

3,289,810
MACHINE FOR ARRANGING UNITS FOR LOADING INTO CASES
Vincent A. Iannucci, Lincoln Park, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Apr. 1, 1965, Ser. No. 444,746
29 Claims. (Cl. 198—34)



8. In a machine for arranging cans for loading into cases, means for conveying a succession of said cans forwardly in each of a plurality of lanes, means for grouping a case load of said cans and for temporarily holding said cans stationary, means including a carriage having can holding means in overlying relationship to said cans while they are temporarily held stationary, means for moving said can holding means into contact with said cans, and means for moving said carriage and said can holding means forwardly to carry said cans into case loading position.

3,289,811
REGISTRY MAINTENANCE FOR STACKED-BOARD TRANSFER
Hugh D. Kelley, Enterprise, Kans., assignor to The J. B. Ehrsam & Sons Manufacturing Company, Enterprise, Kans., a corporation of Kansas
Filed Feb. 12, 1965, Ser. No. 432,314
10 Claims. (Cl. 198—35)



1. The combination with conveyor means, means for depositing on said conveyor means a plurality of similar articles in stacked relation, and means for rapidly accelerating said conveyor means, of follower means engageable with the trailing edges of all of the articles in a single stack and driving means independent of said accelerating means and operatively connected to drive said follower means in the line of acceleration of said conveyor means, during such acceleration, at a velocity equal to that of said conveyor means to maintain registry of said trailing article edges.

3,289,812
CONVEYOR SYSTEM
Joseph O. Poisson, Victoriaville, Quebec, Canada, assignor to Victoriaville Furniture Limited, Victoriaville, Quebec, Canada
Filed May 13, 1965, Ser. No. 455,483
10 Claims. (Cl. 198—45)



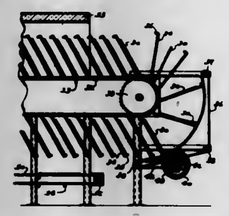
1. A conveyor system for the transportation of flat members, said system comprising:
(a) an inclined apron on which said members are received to be displaced in a predetermined direction generally along the inclination of said apron;
(b) a first conveyor disposed to travel longitudinally of said predetermined direction and having a receiving end at the bottom of said apron and a discharging end;
(c) a second conveyor disposed beneath said first conveyor at the discharging end thereof to travel at an angle to said first conveyor;
(d) a vertical hopper overlying said second conveyor and disposed to receive and guide said flat members from the discharge end of said first conveyor; said hopper of a width to force said members edgewise on said second conveyor, and;
(e) means, over said first conveyor, to cause any member standing on edge to fall flat thereover.

3,289,813
BUMPERS
Gordon David Holmes, Worksop, and William James Richmond, Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England
Filed Mar. 12, 1965, Ser. No. 439,321
Claims priority, application Great Britain, Mar. 16, 1964, 11,078/64
7 Claims. (Cl. 198—127)



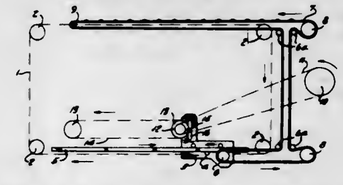
1. A bumper comprising a support, a plurality of flexible suspension members, an impact receiving plate secured to said flexible suspension members intermediate their ends, the upper ends of said flexible suspension members being secured to said support, a mass, connecting means for connecting the mass to the lower ends of said flexible suspension members such that movement of the impact receiving plate from a rest position moves the mass upward.

3,289,814
APPARATUS FOR DRYING COATED SHEET STOCK
Thomas J. Rosema, Grand Rapids, Mich., assignor to General Research, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Jan. 23, 1964, Ser. No. 339,788
6 Claims. (Cl. 198—134)



1. An endless conveyor for drying coated sheet stock, comprising:
means for driving said conveyor so that its upper reach advances from a receiving station to a transfer station while its lower reach returns from the transfer station to a delivery station;
a plurality of outwardly projecting sheet carriers mounted on said conveyor, each of said carriers having means for supporting coated sheets during the conveyor's advance trip and other means for supporting coated sheets during the conveyor's return trip, said carriers being rigidly affixed to said conveyor in such a manner that the angle between a specified carrier and the plane containing that segment of the conveyor to which said specified carrier is attached remains substantially constant throughout the traverse of said conveyor, whereby as each sheet arrives at the transfer station it falls from one carrier onto the next preceding carrier for the return trip such that said sheets are contacted by said carriers on the opposite side during the return trip from the side on which they were contacted by said carriers during the advance trip;
an endless tape means mounted at said transfer station on guide means so as to be simultaneously engaged by and span the ends of at least two adjacent carriers during the period in which a sheet is falling between them; and
means for moving said tape means in endless fashion at a lineal speed equivalent to the lineal speed at which the ends of said simultaneously engaging carriers are traveling whereby the coated sheets are retained on said conveyor during their fall from one carrier to the next preceding carrier at said transfer station.

3,289,815
DEVICE FOR AUTOMATIC FEEDING OF DOUGH FROM A CONVEYOR TO A RECEIVING STATION
Helmut Richter, Halle an der Saale, Peter Wohlfahrt, Leipzig, and Peter Fuchs and Arno Arndt, Halle an der Saale, Germany, assignors to Veb Vereinigte Bäckereimaschinenwerke, Halle an der Saale, Germany
Filed Aug. 9, 1965, Ser. No. 478,161
5 Claims. (Cl. 198—139)



1. Apparatus for transporting workpieces from a loading station to a receiving station, said apparatus comprising: an endless belt; drive roller means operatively connected to said endless belt; driven chain means; a set of guide sprocket means operatively coupled to said driven chain means; tension roller means secured to said driven chain means and operatively coupled to said endless belt; carriage means secured to said driven chain means and adapted to move along a predetermined path therewith; guide means formed on said carriage means; a pair of driven sprockets laterally disposed with respect to each other along the path of movement of said carriage means; endless driven chain means carried by said pair of driven sprocket means; pin means secured to said endless driven chain means and adapted to cooperate with said guide means; driving sprocket means operatively connected to one of said pair of driven sprocket means; and switching means operatively connected to said drive sprocket means for effecting intermittent operation of said drive sprocket means, whereby said carriage means is reciprocated between two positions on said path in response to said intermittent operation of said drive sprocket means, said tension roller means and said endless belt passing thereabout reciprocate between said loading and said receiving stations.

3,289,816
EXTENDIBLE CONVEYOR
George Baechli, New Philadelphia, Ohio, assignor to Lee-Norse Company, Charleroi, Pa., a corporation of Delaware
Filed Sept. 28, 1965, Ser. No. 490,785
13 Claims. (Cl. 198—139)

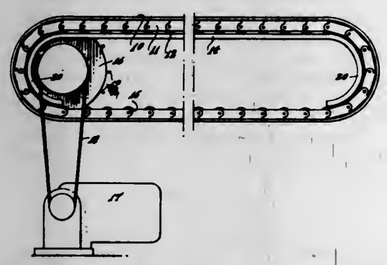
1. An extendible belt conveyor for conveying disintegrated mined material, said conveyor comprising:
a supporting frame having a head section and a tail section detachably connected to said head section for conjoined movement with said head section;

traction means supporting said head section for effecting movement of said head section;
guide means upon said head section and said tail section for guiding an endless belt longitudinally on said head section and said tail section;
storage means upon said head section for storing a portion of an endless belt and varying the effective length of the endless belt upon movement of said head section with said tail section detached therefrom;
an endless belt longitudinally on said head section and said tail section for longitudinal movement thereon guided by said guide means and on said storage means to be variable in effective length upon movement of said head section with said tail section detached therefrom;



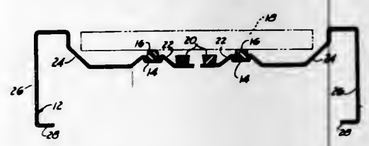
rope means extending longitudinally between said head section and said tail section connected to said head section and said tail section;
rope storage means carried by one of said head and tail sections for automatically adjusting the effective length of said rope means during movement of said head section with said tail section detached therefrom;
supporting means positioned by said rope means between said head and tail sections for supporting and guiding said endless belt intermediate said head section and said tail section when said head and tail sections are in spaced relationship;
drive means upon said head section for driving said traction means to move said head section and for driving said endless belt; and
anchor means connected to said tail section for restricting movement of said tail section when such is detached from said head section.

3,289,817
MOVABLE BED FOR BELT CONVEYOR
John J. McLaughlin, Chapel Road, R.D. 2, Ellwood City, Pa.
Filed July 22, 1965, Ser. No. 474,135
6 Claims. (Cl. 198—184)



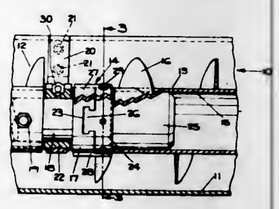
1. A movably supported passenger conveyor comprising in combination, an endless conveyor belt, a movable load supporting belt traveling with and beneath the conveyor and in frictional engagement therewith while firmly supporting the conveyor through its load carrying area, said supporting belt comprising a plurality of rigid carrier elements, each of said elements having a flat upper surface and being pivotally interconnected to form a load supporting belt providing a substantially flat and continuous load supporting surface for the conveyor, a fixed support extending along the load carrying area of the conveyor and roller means associated with said supporting belt for relatively frictionless movement of the supporting belt along the fixed support.

3,289,818
CONVEYOR FOR HANDLING UNIT LOADS
Gifford Kittredge, Wilmette, Ill., assignor, by mesne assignments, to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 298,330, July 29, 1963. This application July 16, 1965, Ser. No. 480,542
33 Claims. (Cl. 198—190)



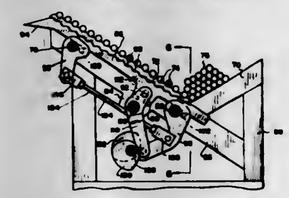
1. A conveyor for handling unit loads comprising a table extending along the desired path of travel and at substantially the desired height of the loads to be conveyed, means for supporting said table at said height, a pair of laterally spaced-apart endless narrow belts operating at substantially the same linear speed with the carrier and return runs of said belts both running above said table, means to elevate the carrier runs relative to the return runs, means at one end of the conveyor to drive said belts, and means at the other end of the conveyor to return the belts.

3,289,819
SPIRAL CONVEYOR COUPLING MEANS
Walter C. Steinmetz, Columbus, Ohio, assignor to Jeffrey Gallon Manufacturing Company, a corporation of Ohio
Filed Aug. 12, 1965, Ser. No. 479,233
6 Claims. (Cl. 198—213)



1. In a spiral conveyor, a first spiral conveyor section, a second spiral conveyor section, said first and second spiral conveyor sections being disposed in adjacent axial alignment to successively convey material, means mounting said first and second spiral conveyor sections for rotation, a first coupling element for said first spiral conveyor section, a second coupling element for said second spiral conveyor section, said first and second coupling elements including complementally formed portions to interengage one with the other for connecting said first and second spiral conveyor sections, a partial collar for said first and second coupling elements, said partial collar being affixed to one of said coupling elements, another partial collar for said first and second coupling elements, means to releasably secure said another partial collar to one of said coupling elements, said first and second spiral conveyor sections being connected to each other by interengagement of said complementally formed portions of said coupling elements to be rotatable together and being separable by removal of said releasable securing means and disengagement of said complementally formed portions of said coupling elements.

3,289,820
BUNDLE FEED AND ORIENTATION SYSTEM
Otis V. Jones, Jr., Dearborn, Mich. (18533 Weaver, Detroit, Mich.)
Filed Sept. 21, 1964, Ser. No. 397,942
4 Claims. (Cl. 198—219)



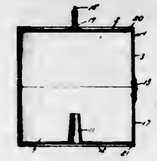
1. A feed and orientation system for a plurality of elongated members, comprising:
a frame;
a pair of inclined feed tables in said frame, said elongated members being normally stored in lateral abutment with said table at a location below the uppermost end thereof;
a fixed plate on each of said tables between said stored members and said uppermost end, having spaced grooves thereon adapted to receive said members;
power means in said frame;
a pair of cams actuated by said power means;
a lift lever on each of said tables, the lever on one of said tables being actuated by the first cam;
a shift lever on each of said tables, the lever on one of said tables being actuated by the second cam;
separate rod means connecting said lift levers and connecting said shift levers, whereby said cams actuate the levers on both tables simultaneously and in similar fashion;
and a feed plate in each of said tables having grooves corresponding to those of said fixed plate and adapted to be moved in the direction perpendicular to the inclination of said table by the adjacent lift lever and in the direction parallel to said inclination by the adjacent shift lever, and adapted thereby to move said elongated members from storage position to a successively higher groove in said fixed plate with each actuation of said levers and to thereby feed the elongated member in the the uppermost groove in said fixed plate to a point external of the system.

3,289,821
RAM-TYPE PUSHER CONVEYOR
Ralph W. Bome, Howard Werle, and Albert W. Dixon, Cincinnati, Ohio, assignors to The Alvey-Ferguson Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 6, 1964, Ser. No. 409,530
24 Claims. (Cl. 198—221)



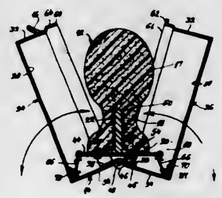
1. A conveyor comprising longitudinally-extending supports for receiving and supporting articles to be moved therealong, means for moving the articles along said supports, said means comprising a ram extending along said supports in cooperative relationship therewith, means for reciprocating the ram relative to said supports, article-engaging members carried by said ram and movable thereon between article-engaging and nonengaging positions, and means cooperating with said ram and actuated by movement thereof to move said article-engaging members between said positions, said means for reciprocating said ram comprising a yoke rigidly connected to said ram and crank means for engaging said yoke, said yoke having a cam slot therein which extends generally transversely relative to said ram, said crank means comprising a crank pin engaging said slot and carried by means for moving it in a closed path in a plane extending in the same general direction as the plane of the yoke, said crank slot having an offset section to cooperate with said pin to decrease the speed of movement of the ram at the time of engagement of said article-engaging members with the articles.

3,289,822
WIG OR WIGLET CARRYING CASE
Louis Schumer, 5402 Beverly Road, and Solomon Kramer, 543 E. 95th St., both of Brooklyn, N.Y.
Filed July 28, 1965, Ser. No. 475,468
5 Claims. (Cl. 206—8)



1. A rigid, unbreakable molded plastic wig and wiglet carrying case comprising two open containers meeting at their open rims and secured to each other by a closure means, said containers being reinforced at their open rims by means of individually outer encircling integral beads, integral positioning means situated within each bead, wherein each bead contains a continuous semi-circular slot and a continuous semi-circular rigid projection adapted to engage the semi-circular projection and semi-circular slot respectively of adjacent bead, and a *rigid* head stand formed integral with and protruding upwardly from the inner surface of the bottom wall of said carrying case.

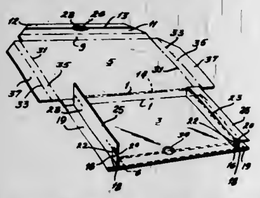
3,289,823
WIG CONTAINER
Simon Weiser, 899 Montgomery St., Brooklyn, N.Y., and Maurice D. Gottlieb, 66 Country Village Lane, New Hyde Park, Long Island, N.Y.
Filed Jan. 20, 1966, Ser. No. 521,959
2 Claims. (Cl. 206—8)



1. In combination, a support for a display head or manikin form for use in supporting a wig, a sectional box-like container for a display head or manikin form, said support including a plastic plate, the sections of the box-like container having abutting edges, means for fastening the abutting edges to each other, means for detachably fastening the sections to each other, in closed position,

means for hingedly mounting the plate on the abutting edges, the means for fastening the abutting edges of the sections to each other constituted by a hinge structure interposed between the abutting edges, said hinge structure including hinge leaves secured to the abutting edges, said leaves carrying interlocking aligned knuckles and a hinge pin extending through the aligned knuckles, the means for hingedly mounting the plate on the abutting edges including a hinge structure carried on the bottom surface of the plate including hinge leaves, interlocking aligned knuckles carried by the leaves and a hinge pin extending through the aligned knuckles, and an operative connection between the hinge structure interposed between the abutting edges and the hinge structure on the bottom of the plate, said connection including a tubular bearing member around the hinge pin of the hinge structure of the abutting edges, and tubular bearing members around the hinge pin of the hinge structure on the plate, said tubular bearing members being in alignment and fastened to each other by solder.

3,289,824
PACKAGE FOR BOOKS
Arwed C. Bottel, Evanston, Ill., assignor to Alton Box Board Company, Alton, Ill., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,408
14 Claims. (Cl. 206—46)



1. A package comprising, an article such as a book or the like enveloped in a wrapper comprising a corrugated paperboard sheet scored to define a top panel, a bottom panel, side panels and end panels, said bottom panel having opposite end flaps extending for the full width thereof and foldably connected thereto at parallel fold lines spaced apart a distance substantially greater than the maximum dimension of said article, each of said end flaps being divided by fold lines into first, second and third sub-panels, said last-mentioned fold lines being parallel with each other and parallel with said first-mentioned fold lines, in which:

(1) the first sub-panels being immediately adjacent the first-mentioned fold lines, of a dimension perpendicular to said fold line which is substantially

$$\frac{PL - AL}{2}$$

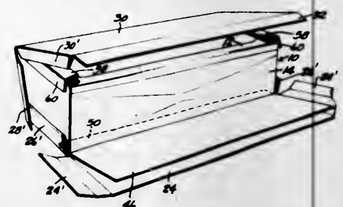
where PL is the distance between said first-mentioned fold lines and AL is said maximum dimension of said article, and folded flat against said bottom panel to provide a double thickness,

(2) the second sub-panel being foldably connected to the first sub-panel, of a dimension perpendicular to said fold lines which is substantially the same as the inside minor dimension of said side panels, and folded to extend in a direction perpendicular to the first sub-panel, and

(3) the third sub-panel being foldably connected to the second sub-panel and of substantially the same dimensions as the first sub-panel and folded flat against the top panel to provide a double thickness in the area of the top panel which corresponds in location to the double thickness area in the bottom panel,

said top panel having opposite end flaps, divided by fold lines into an end panel and a glue flap, said glue flap being adhered to the exterior of the bottom panel on the opposite surface thereof from said first sub-panel, and said second sub-panel having at one end thereof a tab severed from said first and third panels, said tab being cantilevered from said second sub-panel and readily yieldable with relation thereto about an axis therein perpendicular to the parallel fold lines delineating it, and the combined length of said second sub-panel and said tab being not in excess of the width of said bottom panel.

3,289,825
SHIPPING WRAPPER FOR BATHTUBS
Richard K. Smith, Benton Harbor, Mich., assignor to Twin Cities Container Corporation, Coloma, Mich., a corporation of Michigan
Filed Dec. 8, 1964, Ser. No. 416,708
6 Claims. (Cl. 206—46)



1. A shipping wrapper for bathtubs having finished marginal upper portions and a front apron, comprising a substantially rectangular paperboard blank scored longitudinally and transversely to define front, bottom, rear and top panels and flanges at one end and at both sides of said blank, said blank being adapted to encircle a bathtub with its ends stapled at said end flange, said side flanges being divided by slots extending from the ends of transverse scores to define flange portions folded inwardly from said panels with their ends overlapping and secured together, whereby said flanges constitute hand grip portions surrounding end openings spaced from the finished portions of a bathtub within the wrapper, and a front paperboard apron blank within said wrapper and having a flange underlying the bottom edge of said front tub apron.

3,289,826
DEVICE FOR TREATING PERIANAL AREAS
Jeanette E. J. Mosier and Jack M. Mosier, both of 606 Ocean Blvd., Seal Beach, Calif.
Filed May 27, 1964, Ser. No. 370,579
2 Claims. (Cl. 206—47)



2. A dispensing device for use in dispensing a substance for the treatment of perianal areas comprising an

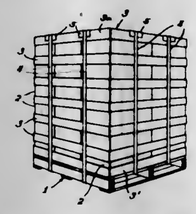
elongated plastic bag of flexible plastic material, said bag having a front face and a rear face, adhesive on said rear face extending the length thereof for securing said bag to a wall, a pull strip covering said adhesive, said bag having an opening in the front face thereof adjacent but spaced from one end thereof, an adhesive strip adhered to said front face and covering said opening and having a pull tab, and a flowable substance partially filling said bag.

3,289,827
CONTAINER FOR USE IN SPACE SHIPS
Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Nov. 6, 1962, Ser. No. 235,687, now Patent No. 3,227,308, dated Jan. 4, 1966. Divided and this application Oct. 14, 1964, Ser. No. 403,870
10 Claims. (Cl. 206—47)



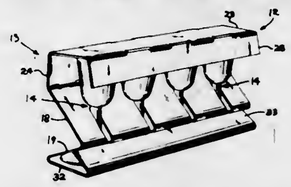
2. The combination of an assembled container, a folded extensible tube, and a protector sleeve adapted for disassembly and reassembly to form a dispensing device; said container being defined by a body of a predetermined diameter and having two closed ends, said protector sleeve being disposed entirely exteriorly of and secured to the exterior of one of said closed ends, said folded extensible tube being also disposed entirely exteriorly and secured to the exterior of one of said closed ends, and said extensible tube being of a size sufficient to interiorly receive said body whereby upon the removal of said two closed ends, the protector sleeve overlies a portion of the container to preclude rupture of the extensible tube upon its insertion through an open end of the container.

3,289,828
UNITIZED CARTON LOADS
Lloyd C. Dick, Frank C. McNutt, and Gene C. Bahls, Kalamazoo, Mich., assignors to KVP Sutherland Paper Company, Kalamazoo, Mich., a corporation of Delaware
Filed May 5, 1964, Ser. No. 365,054
13 Claims. (Cl. 206—65)



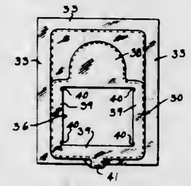
1. A palletized load comprising a pallet base and a plurality of layers secured thereto by strap means, each of said layers comprising a plurality of paperboard trays arranged in a substantially rectangular pattern, each of said trays containing a plurality of knocked-down folding paperboard cartons arranged in a vertical plane and a vertical reinforcing member formed of corrugated board and comprising a body member having at least a portion extending along the width dimension of said tray and at least one end member disposed at right angles thereto, and a unitary paperboard cover having a peripheral depending flange disposed over and encircling the trays of said entire layer.

3,289,829
PACKING ELEMENT FOR STEMWARE ARTICLE
Gary M. Donahue, Nitro, W. Va., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed June 7, 1965, Ser. No. 461,697
19 Claims. (Cl. 206—65)



1. In combination: a stemware article of fragile material comprising a bowl, a base, and a narrow stem connecting the bowl and base and integral therewith; and a packing element protectively engaging such article and formed from a unitary sheet of generally rigid impact-absorbent material, said packing element comprising first and second panels disposed at an angle to one another and foldably connected to one another at their juncture; a narrow slot extending from a locus in the first panel to a locus in the second panel through the juncture, the stemware article being so disposed with respect to the packing element that the stem is disposed in the slot and is engaged by the first and second panels; panel means foldably connected to the first panel and having a spanning panel member extending transversely across the bowl of the stemware article and closely adjacent thereto, said panel means serving to envelop at least a portion of said bowl; a third panel foldably connected to the second panel and extending transversely across the base of the stemware article and disposed closely adjacent thereto; and a fourth panel foldably connected to the third panel and extending therefrom to abut against the second panel at an angle and forming, with the second and third panels, a triangularly shaped portion of the packing element circumposing the base of the stemware article.

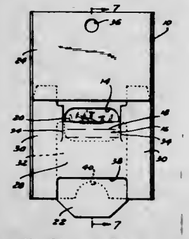
3,289,830
DISPLAY CARD MOUNTED RETAINER AND PACKAGING DEVICE
Daniel J. Foote, Wauwatosa, Wis., assignor to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 24, 1966, Ser. No. 522,735
9 Claims. (Cl. 206—78)



7. A package-forming display card assemblage, comprising a flat card, a hollow retainer mounted on a lower face portion of the card and projecting outwardly therefrom, said retainer having a front face with a portion thereof having an enlarged opening therein edge portions of the front face of the retainer surrounding said opening

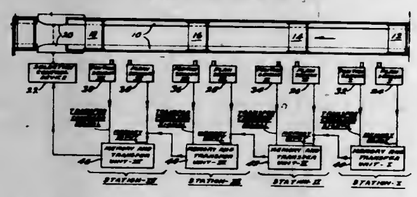
being formed as yieldable lips, and an article of merchandise carried by the retainer and having a portion thereof extending through said opening in an exposed manner and being yieldingly engaged by said lips.

3,289,831
DISPENSING DISPLAY PACKAGE
Martin Keating, Jr., Dumont, N.J., assignor to Universal Folding Box Co., Inc., Hoboken, N.J., a corporation of New York
Filed Feb. 2, 1966, Ser. No. 524,414
7 Claims. (Cl. 206—78)



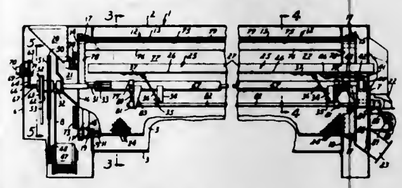
1. A dispensing display package comprising a support body, a merchandise container fixedly attached to the front of said body, said body being formed with a dispensing window located at, and within the confines of, the rear of said container, and a push-pull dispensing device fixedly mounted on the back of said support body, said device comprising a flap normally overlying and closing said window, said flap being movable in one direction upon being pulled to open said window to dispense merchandise in said container and being movable in the opposite direction upon being pushed to reclose said window, and a push-pull tab attached to said flap for moving the same.

3,289,832
SELECTOR SYSTEM
Joseph D. Ramsay, Audubon, N.J., assignor to Campbell Soup Company, Camden, N.J., a corporation of New Jersey
Filed Sept. 24, 1963, Ser. No. 311,060
12 Claims. (Cl. 209—75)



1. Apparatus for selecting from a train of objects moving along a predetermined path those objects having a particular identifying characteristic, comprising:
means for monitoring said objects at a first plurality of spaced locations along said path to produce at said locations a plurality of separate sequential signals indicative of the presence of said identifying characteristic in certain of said objects;
means for sensing the positions of said objects at a second plurality of locations along said path and for producing separate sequential signals indicative of the attainment of said positions by said objects;
selector means having a control element responsive to control signals applied thereto for selecting objects from said train at a location along said path situated beyond said first and second plurality of locations in the direction of motion of said objects;
means for delaying said signals indicative of the presence of said identifying characteristic, and for applying said delayed signals to said control element of said selector means; and
means responsive to said position-indicating signals for independently varying said delay of each of said signals indicative of said identifying characteristic, in accordance with the rate of movement along said path of the object producing said last-named signal, thereby to operate said selector means when said last-named object reaches it.

3,289,833
ROTARY MATERIAL SEPARATOR HAVING ADJUSTABLE BAFFLE MEANS
Robert K. MacGillivray, Hopkins, Minn., assignor to Daffin Corporation, Hopkins, Minn., a corporation of Delaware
Filed May 21, 1964, Ser. No. 369,157
10 Claims. (Cl. 209—75)

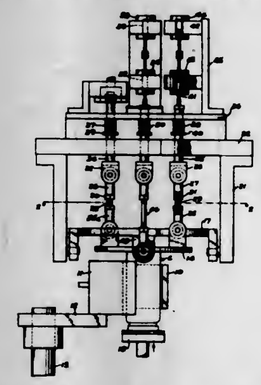


1. A material size grader comprising:
(a) a generally horizontal cylinder mounted for rotation on its axis and adapted to receive material at one end, elevate a portion of said material by its rotary movement, and discharge a portion of said material from its other end,
(b) guiding and conveying means in said cylinder for material elevated by rotary movement of said cylinder and comprising:
(1) a vibratory conveyor portion extending substantially the length of said cylinder and mounted therein for vibratory movements in directions to urge material thereon toward the discharge end of said cylinder,
(2) and a longitudinally extending divider portion adjustably movable circumferentially of said cylinder and having a surface for guiding elevated material toward said conveyor portion and a longitudinal dividing edge radially inwardly spaced from the inner surface of said cylinder and describing an arc concentric to said cylinder during circumferential movement of said divider portion,
(c) means for adjustably moving said divider portion selectively in opposite directions of said circumferential movement thereof,
(d) and means for imparting rotary movement to said cylinder and vibratory movements to said conveyor portion.

3,289,834
INSPECTING CONTAINERS FOR SLANT BOTTOM CONDITION
Benny B. Mathias, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Sept. 23, 1963, Ser. No. 310,601
8 Claims. (Cl. 209—80)

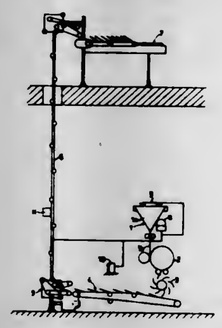
1. The method of inspecting containers such as ampules and the like which have a generally tubular body and a transverse end wall to determine the alignment of the end wall with the axis of the tubular body which comprises the steps of
positioning the container with its axis in a predetermined position,

simultaneously sensing the relative positions of a plurality of points on the end wall sufficient to define the plane of the end wall, creating a signal corresponding to the angle of the plane thus defined,
comparing the angle of the plane thus defined by said



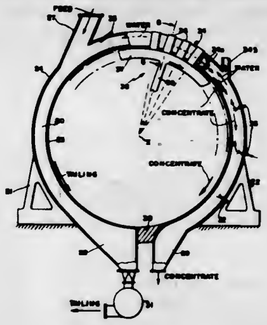
signal with a predetermined angular relation to the axis of the container,
and creating a reject signal in response to any deviation of the plane thus defined from said predetermined angular relation.

3,289,835
METHOD OF SORTING OUT DEFECTIVE PRINTED MATTER ARRIVING FROM ROTARY PRINTING MACHINES, PARTICULARLY NEWSPAPER PRINTING MACHINES, AND DEVICE FOR CARRYING THE METHOD INTO EFFECT
Gustav Birtil Dalin, Stockholm, Sweden, assignor to Dagens Nyheters Aktiebolag, a corporation of Sweden
Filed June 29, 1964, Ser. No. 378,732
Claims priority, application Sweden, July 5, 1963, 7,499/63
10 Claims. (Cl. 209—125)



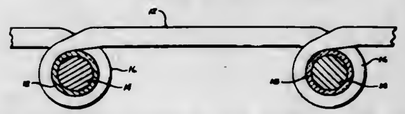
1. A method of sorting out defective printed matter arriving from rotary printing machines, particularly newspaper printing machines, wherein the newspapers leaving the machine are fed onto a delivery table and by means of a conveyor are further passed to a distribution station for packing and circulation, characterized by applying, in case of failure in the machine, a defect indicating ink or paint to portions of defective copies of newspapers or the like which have been printed prior to the elimination of the failure and are passing from the last impression cylinder or cylinders to the conveyor, which portions are clearly visible in the positions which the newspapers assume at the discharge end of the conveyor, and sorting out the inked or painted copies as the newspapers delivered by the conveyor to the distribution station are taken charge of.

3,289,836
METHOD AND APPARATUS FOR THE MAGNETIC SEPARATION OF PARTICULATE MATERIALS
David Weston, 129 Adelaide St. W., Toronto, Ontario, Canada
Filed Oct. 14, 1964, Ser. No. 403,796
27 Claims. (Cl. 209—214)



2. A method for the magnetic separation of particulate material characterized by different magnetic susceptibilities which comprises feeding said material into an elongated columnar pathway, subjecting substantially the entire cross-section of said columnar pathway throughout at least the material recovery length to an externally produced magnetic flux characterized by magnetic gradients along at least said material recovery length and which magnetic flux across substantially said entire cross section is of an intensity selective of a material of particular magnetic susceptibility whereby to magnetize substantially all of said material of said particular magnetic susceptibility, confining at least said material recovery length of said pathway between a plurality of pairs of poles of opposite polarity producing said flux, said magnetic poles being spaced with their poles alternating in polarity along one side of the pathway and similarly alternating along the other side of the pathway, with north and south poles opposite each other across the pathway, the distance between alternating poles along each side of the pathway being at least sufficient to provide a series of flux gradients therealong, moving said poles lengthwise of the pathway to perform concentration lengthwise along at least said material recovery length, whereby a magnetic concentrate and tailing are formed longitudinally remote from each other along said material recovery length, and collecting said concentrate and collecting said tailing.

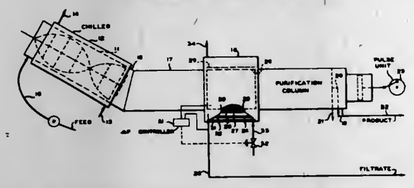
3,289,837
SCREEN PANEL
Wallace E. Bixby, Gas St. at Nickel Plate Railroad, Wellington, Ohio
Filed Apr. 27, 1964, Ser. No. 362,663
5 Claims. (Cl. 209—395)



2. A screen panel including: a plurality of longitudinal wire elements; a plurality of parallel cross rods disposed beneath and transversely to said wire elements; said wire

elements having portions looped downwardly about at least some of said cross rods; means connected to at least some of said cross rods confining the wire elements thereon; a plurality of vibration dampener members, there being one vibration dampener member encircling each of at least some of said cross rods and extending the entire length thereof, said vibration dampener members engaging portions of each of the looped portions in said wire elements.

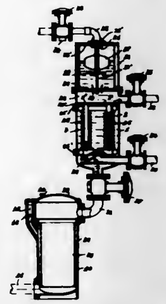
3,289,838
CRYSTAL PURIFICATION APPARATUS
Samuel L. Garrett, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,279
1 Claim. (Cl. 210—97)



In a separation system that includes a chiller to freeze a portion of a fluid mixture to be separated, an elongated purification column, conduit means communicating between said chiller and the first end of said column to pass a slurry of crystals and mother liquor from said chiller into said column, first outlet conduit means communicating with an intermediate region of said column to remove mother liquor, a filter positioned between the interior region of said column and said first outlet conduit means to permit flow of mother liquor into said first outlet conduit means while blocking the flow of crystals, means to melt crystals in the second end of said column, and second outlet conduit means communicating with the second end of said column to remove crystal melt from said column; improved apparatus for preventing clogging of said filter by said crystals, which apparatus comprises a heating element surrounding said filter to impart heat directly to said filter, means to sense the pressure drop across said filter, and means responsive to said means to sense to control said heating element to regulate the amount of heat imparted to said filter, the heat imparted to said filter serving to melt crystals and thereby preventing clogging of said filter.

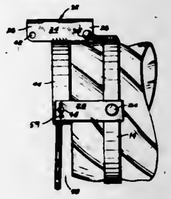
3,289,839
FILTERING EQUIPMENT FOR FLUIDS
Jacques Muller, 123 Ave. du General de Gaulle, La Garenne-Colombes, France
Filed Sept. 26, 1963, Ser. No. 311,761
1 Claim. (Cl. 210—126)

Equipment for filtering particles from fluids, comprising a container having an inlet adjacent its lower end for unfiltered fluids, and an outlet at its lower end, a chamber positioned above the container to receive filtered fluid, a second chamber positioned above said first chamber, a passageway provided between said two chambers, said first chamber having an outlet, a first pair of valves controlling said container inlet and first chamber outlet respectively, a filter column in said container having a central bore in communication at its upper end with said first chamber, said filter column permitting flow of fluid therethrough from the outer surface thereof into said bore but restraining passage of such particles, a valve controlling said container outlet, a particle collecting chamber beneath said container and in communication therewith through said container outlet, and valve controlled means to apply gas under pressure to react against the contents of said first and second chamber, said valve controlled means comprising a port leading into the upper end of said second chamber, a gas pressure line connected to said port and a valve controlling said line, a float slidably mounted for vertical movement in said second chamber, a pair of valves carried by said float on the bottom and top thereof respectively, said valves respectively closing the passageway between said first and second chambers when the float is in its lowermost position and closing the port leading into the upper end of said second chamber when the float is in its uppermost position, whereby in normal operation of said equipment with said first pair of valves in open position and said container outlet valve and said valve



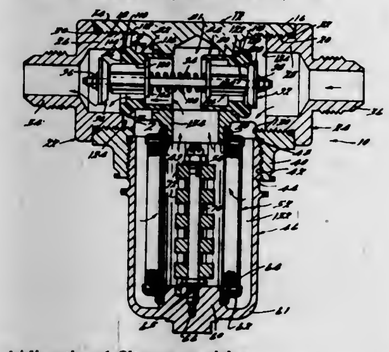
controlled means in closed position, fluid forced under pressure into said container will be filtered by said filter column and the filtered fluid will be discharged through said first chamber outlet and with said first pair of valves in closed position and said container outlet valve and said valve controlled means in open position, the gas under pressure reacting against the contents of said first and second chamber will force the fluid in said first chamber in reverse direction through said filter column to dislodge the particles clogging the outer surface thereof for discharge through said open container outlet valve into said collecting chamber.

3,289,840
COVER FOR DRAINAGE TILES
Nell W. Kahn, New Hampton, Iowa
Filed Mar. 30, 1964, Ser. No. 355,965
8 Claims. (Cl. 210—131)



1. A gate assembly for drainage tiles, comprising,
a cylindrical clamp member adapted to embrace a cylindrical tile,
an arm pivotally connected to said clamp member,
a gate unit having a frame member connected to said arm, at a point spaced from said pivotal connection to said clamp member, and a plurality of spaced apart finger members connected to said frame member,
said gate unit adapted to pivot to an open position at an angle to the end plane of a tile, and to a closed position adjacent the end of a tile, said fingers having a length sufficient to extend substantially across the open end of a tile, and
said fingers being disposed in a plane at an angle to a normal transverse plane to said arm when said gate unit is in said closed position, said arm having pivotal means on the opposite side of said finger members from the point of said first mentioned pivotal connection to said clamp member, whereby said gate unit may be reversed and pivotally connected to said clamp member by said pivotal means thereby positioning said finger members at an angle in the opposite direction from said normal plane.

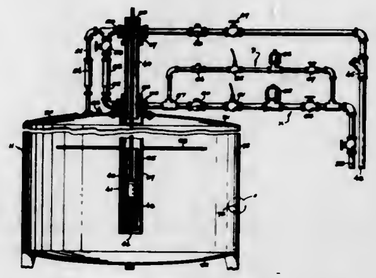
3,289,841
BIDIRECTIONAL FILTER
Franz R. Quisting, Clawson, Mich., assignor, by mesne assignments, to Michigan-Dynamics, Inc., Detroit, Mich., a corporation of Michigan
Filed Dec. 26, 1962, Ser. No. 247,120
6 Claims. (Cl. 210—134)



2. A bidirectional filter comprising
a housing having first and second openings therein operable in function alternatively as inlets and outlets,
a filter element in said housing having an inlet side and a discharge side,
first and second passages connecting first and second openings, respectively, to the inlet side of said filter element,
third and fourth passages connecting said first and second openings, respectively, to the discharge side of said filter element,
a differential pressure responsive valve assembly operable in one position to open said first and fourth passages and close said second and third passages, said valve assembly having
first and second pairs of coaxial valve elements, the valve elements of said first pair having openings therethrough forming parts of the passages connecting one side of said filter element to said housing openings, and a valve seat formed on each of the valve elements of said first pair engageable by said second pair valve elements to close said valve element openings,
said first and second pairs of valve elements being automatically axially shiftable in response to a change in direction of flow between said housing openings to close said first and fourth passage and open said second and third passages,
the automatic shifting of said valve elements in response to a change in direction of flow being operable to cause fluid to flow through said filter element in the same direction.

3,289,842
FEEDING OF SLURRY
John A. Richards, Seattle, Wash., assignor to Cascade Corporation, a corporation of Oregon
Filed Feb. 12, 1963, Ser. No. 258,845
13 Claims. (Cl. 210—138)

1. In combination with a filter system having a filter tank and an ingress pipe through which a stream of liquid to be filtered is fed under the pressure influence of a pump to filter septums which are contained in the filter tank and are coated by the solid content of a slurry, a slurry tank containing a supply of said solid content, a side outlet leading to the slurry tank from the ingress pipe at a point thereon placed upstream from the filter tank and at the pressure side of the pump, a return connection leading from the slurry tank back to the ingress pipe at a point on the latter placed upstream from the filter tank and on the suction side of the pump, means within the slurry tank operating when liquid is supplied through the side outlet into the slurry tank to channel the supplied liquid into the return connection while causing said channeled liquid to continuously erode and entrain from within the slurry tank a sufficient quantity of said solid content to produce



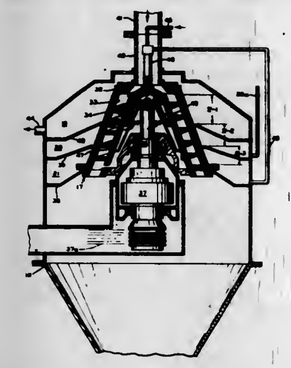
a thick slurry, a pipe operatively associated with the return connection for supplying into the latter a slurry-diluting stream of liquid drawn from the side outlet, normally closed valve means operable when open to prescribe for said return connection either a major or a minor flow capacity, selectively, and control means for said flow-prescribing means acting initially to open the return connection to its major flow capacity for a moderately short time interval so as to charge pre-coating slurry through the return connection and then automatically at periodic intervals opening the return connection to its minor flow capacity so as to charge run-coating slurry through the return connection, the liquid within the ingress pipe and into which said diluted stream is fed being charged by the pump into the filter tank without interruption of its flow.

3,289,843
APPARATUS FOR CENTRIFUGAL SCREENING
Per Nyrop, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, a corporation of Delaware
Filed Mar. 19, 1964, Ser. No. 353,136
1 Claim. (Cl. 210—196)

A continuous screening centrifuge for separating solids from pulps or slurries comprising:
(a) a rotatable screen having a feed end and a discharge end;
(b) first, intermediate, and last stationary annular receiving chambers surrounding said screen and functionally dividing said screen into respective first, intermediate, and last treatment zones;
(c) a spiral conveying element positioned coaxially within said screen and rotatable at a speed differential relative thereto to move slurry solids on said screen from said feed end to said discharge end;
(d) first conduit means arranged to admit feed slurry into the first treatment zone for centrifugal separation of slurry solids from slurry liquor, the latter passing through the screen into said first receiving chamber;
(e) last conduit means arranged to admit wash liquid

into the last treatment zone for centrifugal washing of the slurry solids therein, the wash liquor from from the last treatment zone passing through said screen into said last receiving chamber;

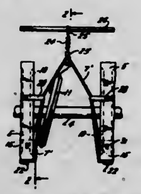
(f) intermediate conduit means arranged to admit at least a portion of the wash liquor from said last receiving chamber to the intermediate treatment zone



for centrifugal washing of the slurry solids therein, the wash liquor from the intermediate treatment zone passing through said screen into said intermediate receiving chamber;

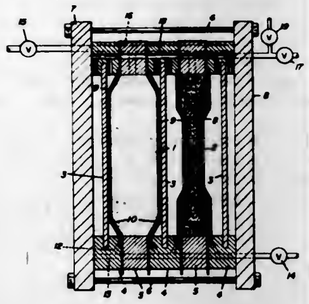
(g) said last and sail intermediate conduit means comprising respective separate ducts provided in said conveying element.

3,289,844
FILTER PRESS WITH MEANS FOR AUTOMATIC DETACHMENT OF THE FILTER CAKES
Otto Emele, Tettnangerstrasse 39, Kressbronn (Bodensee), Germany
Filed June 12, 1963, Ser. No. 287,306
Claims priority, application Germany, June 13, 1962, E 23,025
9 Claims. (Cl. 210—225)



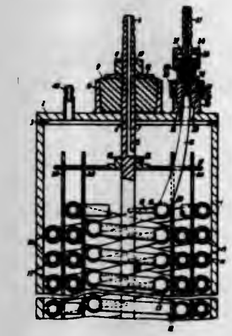
1. In a filter press, in combination, support means; a plurality of rigid press plates mounted on said support means movable with respect to each other between a closed position in which adjacent plates form between themselves chambers respectively defined by surfaces of adjacent plates facing each other, and an open position; flexible filter sheet means having in each of said chambers a pair of opposite filter sheet parts respectively engaging said surfaces and defining between themselves a free space forming a filter cell, each of said filter sheet parts being connected along one edge portion thereof to one edge portion of the respective plate, each of said filter sheet parts having an extended edge portion opposite said one edge portion and extending beyond the respective press plate; first passage means for feeding a medium to be filtered into said filter cells so that filter cakes will form between said filter sheet parts while the filtrate will pass therethrough; second passage means for feeding the filtrate out of said chambers; elongated guide means carried by said support means and extending in direction of movement of said plates adjacent said extended edge portions of said filter sheet parts; a plurality of elongated flexible means respectively connecting filter sheet parts to each other at portions thereof distant from said one edge portion thereof; and a plurality of resilient connecting means mounted on said guide means for movement in longitudinal direction thereof and respectively attached to said extended edge portions of pairs of opposite filter sheet parts and each including an elongated member extending along and connected to said extended edge portions of pairs of opposite filter sheet parts, respectively, fastening means slidably mounted on said elongated guide means, and resilient means extending between and connecting said fastening means with said elongated member for disengaging each of said filter sheet parts with the exception of the connected edge portion thereof from said surface of the respective rigid press plate and for causing, in cooperation with said elongated flexible means, said opposite filter sheet parts of each filter cell to assume positions inclined to each other and to said surfaces of the respective plates when said plates are moved from said closed to said open position to assure detachment of the filter cake forming between each pair of opposite filter sheet parts when said plates are moved to said open position.

3,289,845
FILTER PRESSES
Oscar Weber, Reinach, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
Filed May 27, 1963, Ser. No. 283,316
Claims priority, application Switzerland, May 28, 1962, 6,458/62
1 Claim. (Cl. 210—231)



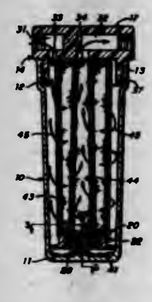
A filter press having a plurality of filter chambers each being bounded on each of two opposite sides by a flexible membrane capable of being bent in order to increase or decrease the volume of the filter chamber, each membrane having a layer of filter medium on the chamber side in contact with ridges between a plurality of grooves formed in its inner surface for leading away downwardly the filtrate which, in operation, passes through the filter medium; said filter press comprising a fixed rigid plate directly opposite the outer surface of each membrane, each fixed plate being mounted in a mounting frame; the membranes between which a filter chamber is formed being separated by means of a spacing frame; the mounting frames and the spacing frames being provided with means for withdrawing the filtrate from the filter chamber communicating with the said grooves of the membranes; each membrane, the fixed rigid plate directly opposite thereto, and the part of the mounting frame between said membrane and said fixed rigid plate forming the walls of a pressure chamber into which a fluid under pressure can be introduced.

3,289,846
FILTRATION OR DIALYSIS SUPPORT APPARATUS
Bert Warrington, Rockland, Sandy Rise, Chalfont St. Peter, England; Leonard William Jerome Bishop, "Greenways" Pennington Road, Beaconsfield, England; and Frank William Wood, 159 Langley Road, Slough, England
Filed Feb. 24, 1964, Ser. No. 346,737
Claims priority, application Great Britain, Mar. 4, 1963, 8,533/63
15 Claims. (Cl. 210—232)



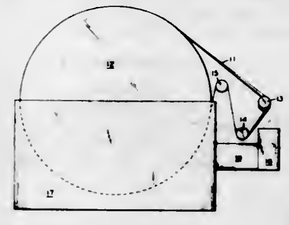
1. A former for supporting a tubular semi-permeable flexible membrane in filtration or dialysis apparatus, including a plurality of unitary ring-like supports arranged to externally embrace and support said membrane therein at intervals along its length in a compact predetermined coiled configuration free from sharp transitions in direction, each ring-like support having a peripheral gap through which the membrane, when in a flattened condition, can be passed laterally into the support.

3,289,847
FLUID FILTERING AND TREATING APPARATUS
Paul W. Rothemund, 143 S. Walnut St., Yellow Springs, Ohio
Filed Mar. 26, 1963, Ser. No. 268,022
8 Claims. (Cl. 210—266)



1. A fluid treatment apparatus comprising a substantially cylindrical sump housing, a substantially cylindrical cartridge within said housing comprising concentrically positioned inner and outer rigid tubular members, a substantial portion of the walls of which are perforated and which define an annular chamber between said tubular members and an axial chamber within the inner tubular member, a flexible and elastic filtering wrapper against and about the outer surface of at least the outer of said tubular members, and means associated with said housing and said cartridge for causing a fluid flow to enter said housing exteriorly of said outer tubular member and to pass through said wrapper, said tubular members and said chambers before departing therefrom wherein the perforations in at least the outer of said tubular members are at least within the range of from .20 to .50 inch in the smaller of their transverse dimensions and the margins of the perforations opening upon the tubular wall about which the filtering wrapper is applied are sharply defined whereby the intermittent starting and stopping of the fluid flow entering said housing will cause the sedimentatious material accumulating upon said wrapper to be loosened and flecked free thereof in a self-cleaning manner.

3,289,848
APPARATUS FOR UTILIZING A TRAVELING FILTER BELT
Harry V. Miles, Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,964
3 Claims. (Cl. 210—391)

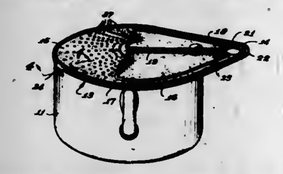


1. In a rotary drum filter apparatus having: support structure means; a filter drum mounted on said support structure means rotatable about a horizontal axis with the lower portion immersed in a bath of slurry; an endless traveling filter belt of porous filter material surrounding and engaging a major portion of the circumference of said drum so that the belt is moved by the rotation of said drum, said belt being effective to collect and hold a layer of solids from said bath to be removed from said belt in the operating cycle of said drum, said belt extending over a system of rotatable guide rolls mounted on said support structure means and rotated by said belt for guiding the belt away from the upper portion of the drum and back onto the lower portion of the drum at which said layer of solids is collected from the slurry bath, said system of guide rolls including a bowed discharge roll for discharging said layer of solids from said belt, said bowed roll extending transversely of said belt, and over which said belt makes a sharp bend longitudinally of the belt, the bow of said roll being bowed outwardly into the bend of said belt and extending substantially the width of the belt simultaneously to break up said layer of solids and to open said pores both longitudinally and transversely of the belt to release said solids and clear said pores.

3,289,849
ADJUSTABLE STRAINER
Elmer R. Livingston, 5101 Sherbourne Drive, and Rex Taylor, 4446 Finley Ave., both of Los Angeles, Calif.
Filed Jan. 13, 1964, Ser. No. 337,411
10 Claims. (Cl. 210—469)

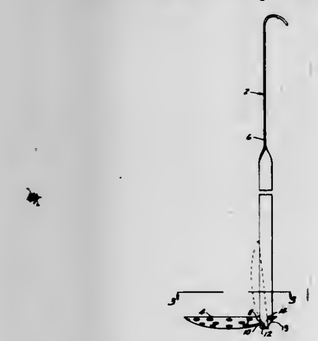
1. An adjustable strainer for attachment to the top of a container comprising: a substantially flat sheet metal plate of a size to completely cover a container top in substantial engagement with substantially the entire top

edge thereof; a slot in said plate directed toward the forward and back portions thereof and disposed generally centrally between the opposite sides of the plate; means on the forward end of the strainer plate adapted to releasably interlock with the top edge of a container; means slidably mounted in said slot adapted to releasably interlock with the top edge of the container at the side opposite to the side engaged by said forward end means, the



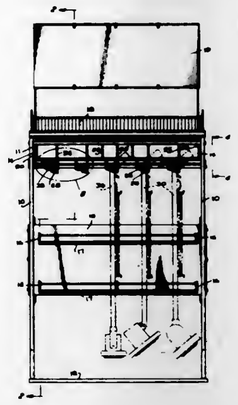
interlock between the slidable means and the container not extending beyond the strainer edge; means biasing said slidable means forwardly of the strainer plate; and a plurality of straining perforations through at least the forward portion of said strainer plate, said strainer plate being mountable to entirely cover a container top by being clamped thereon between the means interlocking with the top edge at opposite sides thereof, under the bias of said slidable means.

3,289,850
ICE SKIMMER
Peter J. Gubash, 76 Fairfield Ave. W., St. Paul, Minn.
Filed Feb. 7, 1964, Ser. No. 343,258
2 Claims. (Cl. 210—470)



1. An ice skimmer for removing ice chips from holes bored into the ice on frozen-over lakes and streams, said skimmer comprising an elongate handle member and a perforated concave disk, said disk being attached near a peripheral edge thereof to a distal portion of said handle member by hinge means whereby said disk may be moved between a closed position in which the disk is folded against the handle member and an open position in which the plane of the disk is at substantially a right angle to the axis of said handle member, said disk having a radially oriented slot closely adjacent the peripheral edge of the disk and shaped to accommodate the distal portion of said handle member, said handle member extending through said slot and having two stop pins extending approximately equidistantly from each side of said handle and transverse thereto, one of said stop pins being positioned anterior to the midline of said handle member and below the inferior surface of said disk, the other of said stop pins being positioned posterior to the midline of said handle member and above the superior surface of said disk whereby an articulated joint having limited movement is provided.

3,289,851
SUPPORTING RACK FOR FLOOR CLEANING EQUIPMENT AND THE LIKE
Murray Federman, Brooklyn, N.Y., assignor to Glamorene, Inc., Clifton, N.J., a corporation of New York
Filed Apr. 16 1965, Ser. No. 448,617
11 Claims. (Cl. 211—4)



4. In a display rack for a plurality of household rental units and the like each having an operating head and an elongated manipulating handle, said handles being each characterized by the provision therein adjacent the outer end grip portion thereof of a socket extending substantially at right angles to the handle axis, said rack comprising a main frame having a base portion and a pair of side supports rigidly secured together to provide a substantial expanse of open space therebetween, and suspension means in said frame for releasably supporting therein a plurality of units in transversely spaced relation, said means including a plurality of support elements carried by said frame and disposed in fixed spaced relation within said open space of the frame, each of said support elements having a freely extending stem presenting toward the same one side of the frame for detachably receiving thereon the socketed portion of a handle of a unit to be suspended in said frame, and locking means shiftable on said frame relatively to said fixedly spaced stems, said locking means including a plurality of elements respectively adapted, when said locking means is shifted in direction opposite the direction of projection of said stems, to respectively embrace and confine handles of suspended units between said shiftable elements and their respectively associated fixed stems from which units are suspended.

3,289,852
FLEXIBLE PRINTED CIRCUIT CHASSIS
Nathaniel L. Kahn, Glen Rock, N.J., assignor, by mesne assignments, to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,177
10 Claims. (Cl. 211—13)

1. Modular means for housing printed circuit modules and the like comprising;

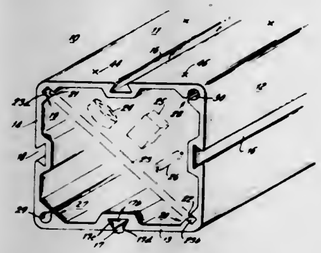
a hollow, substantially rectangular shaped elongated housing;

at least one outer face of said housing having an elongated groove substantially parallel to the longitudinal axis of said housing;

said groove having a double undercut cross-sectional configuration;

opposite interior corners of said housing each being provided with a substantially U-shaped groove for receiving the opposing marginal edges of a printed circuit assembly;

at least one of the remaining interior corners being provided with an elongated substantially circular



shaped groove for threadably engaging a fastened member;

means frictionally engaged by said groove for joining said housing to adjacent supporting structure.

3,289,853
JEWELRY DISPLAY HOLDER
Reinhold Eichhorn, Joshua Green Bldg., and Fred A. Frost, 200 Shafer Bldg., both of Seattle, Wash.
Filed Apr. 11, 1966, Ser. No. 541,719
9 Claims. (Cl. 211—13)



1. A display holder comprising, a wall having a display face and a back face with an opening extending therebetween, a U-clip having a center bight spaced behind the wall and a pair of arms extending forwardly from said bight through said opening and terminating at a pair of oppositely extending gripping fingers at the front of the wall, and compression spring means compressed between said bight and said wall to yieldingly urge said fingers toward said display face.

3,289,854
ARTICLE RETAINING DEVICE
Melvin R. Kauffman, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Nov. 27, 1963, Ser. No. 326,606
3 Claims. (Cl. 211—41)



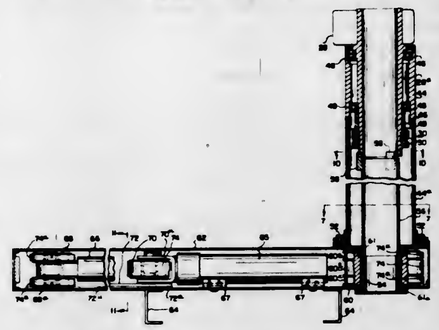
1. In an automatic dishwasher having a dish supporting rack with at least one upwardly projecting element, an article retaining device comprising:

(a) a base having an opening therethrough receiving said upwardly projecting element,

(b) retainer means extending from said base in a direction generally parallel to the axis of said opening,

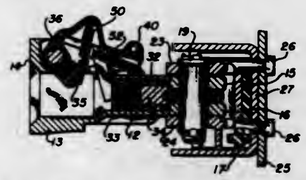
(c) said retainer means being adapted to gently bear against said upwardly projecting element to retain an article therebetween.

3,289,855
DERRICK
Paul D. Gernhardt, Overland Park, Kans., and Curtis W. Verrell, Fairview Park, Ohio, assignors to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Original application Jan. 6, 1965, Ser. No. 423,898. Divided and this application Dec. 8, 1965, Ser. No. 512,288
11 Claims. (Cl. 212—67)



1. A derrick assembly for mounting on a vehicle comprising, bearing means adapted for mounting on the floor of a vehicle, a lower hollow stem section rotatably mounted on said bearing means, an upper hollow stem section flexibly secured to said lower stem section to provide for predetermined movement therebetween, a superstructure frame secured to said upper stem section, a boom pivotally mounted on said superstructure, annular means adjacent the bottom of said lower stem section, flexible means operably connected to said annular means, a pair of reciprocal fluid powered motor units mounted generally horizontally adjacent said annular means and operably connected to said flexible means, whereby said flexible means rotate said stem means upon actuation of said fluid power motor units, and a stationary hollow pedestal adapted to be mounted on said vehicle above said annular means and being disposed in spaced relationship about the remainder of said stem section.

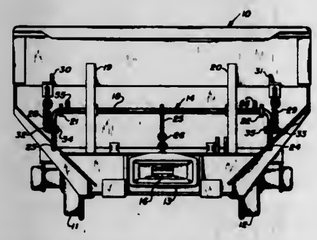
3,289,856
CAR COUPLER WITH SLACK RELEASE
Donald L. Herbert, Lexington, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Mar. 31, 1965, Ser. No. 444,132
6 Claims. (Cl. 213—159)



1. In a coupling apparatus in which there is a first coupler constituted by a housing having a coupling head and means for receiving a knuckle of a cooperating second coupler in the head, a movable cam on the first coupler supporting the cam on the head of the first coupler for movement into a locking position in locking engagement with a cam face of the knuckle or an unlocking position away from the knuckle, that improvement in the first coupler which comprises a release lever separate from the cam, means supporting the release lever on the head for movement from a locking position adjacent the cam

to an unlocking position away from the cam or from the unlocking position to the locking position, all independent of the movement of the cam, spring means connected between the cam and the release lever for moving the cam to the unlocking position in response to tension of the spring means when the release lever is in the unlocking position, and means for holding the release lever in the unlocking position to tension the spring means against the cam when the cam is engaged by the knuckle and all for moving the cam to the unlocking position when engagement of the knuckle with the cam is relieved by relative movement of the couplers.

3,289,857
METHOD AND MEANS FOR SEPARATING CARS AND CAR COUPLERS
Donald L. Herbert, Lexington, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Apr. 30, 1965, Ser. No. 452,168
6 Claims. (Cl. 213—166)



1. In coupler apparatus for a car in which there is a movable locking cam engaged with a coupler part of an associated car and in which uncoupling movement of the locking cam is prevented by tractive forces between the cars, in combination with the first-named car, operating mechanism comprising a shaft rotatably mounted on stanchion members on the said car, an operating lever on the shaft, link means connected between the operating lever and a cam lever on the locking cam, a radially directed part on the shaft, elongate spring means connected to the shaft and to a fixed attachment member on the car for transverse movement of the spring means past the shaft upon rotation of the shaft and the said radially directed part, the spring means being extensively connected between the attachment member and the radially directed part to determine a center position of the shaft and operating lever in a maximally extended condition of the spring in alignment with the shaft, and two over-center positions, one in each direction from the said center position, comprising a coupling position in which the locking cam is free to move into locking engagement with the coupler of the associated car and an uncoupling position in which the force of the spring is exerted upon the cam lever for moving the locking cam out of locking engagement thereof when holding forces between the couplers are relieved upon relatively together movement of the cars.

3,289,858
ARTICLE TRANSFER APPARATUS
Harry K. Naumann, Wernersville, Pa., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 9, 1965, Ser. No. 431,363
8 Claims. (Cl. 214—1)

1. Apparatus for transferring an article from one work holder to another in an oriented and inverted position, the article having a projecting portion to be oriented, which apparatus comprises:

a shaft;

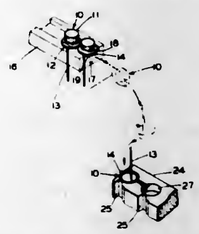
a pair of opposed jaws slidably mounted on the shaft for gripping the article therebetween;

means for sliding the jaws on the shaft to grip an article located on a first one of the work holders;

cam means on the jaws for engaging the projecting portion of the article as the jaws close to orient the article in a predetermined manner between the jaws;

means for rotating the shaft to move the jaws as a unit, while closed, to remove the article from the first work holder and invert it;

an auxiliary article holder adjacent to the position of the jaws after inversion of the article for receiving



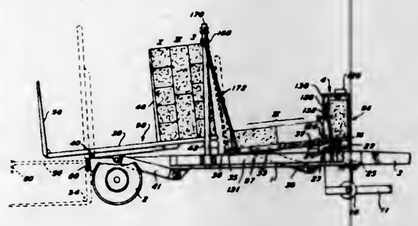
the article from the jaws and maintaining the orientation thereof;

means for mounting the auxiliary holder for vertical and horizontal sliding movement;

means for opening the jaws to release the article to the auxiliary article holder; and

means rendered effective upon the auxiliary holder receiving the article for simultaneously, horizontally and vertically moving the auxiliary article holder into aligned relationship with the second work holder to deposit the oriented article on the second work holder.

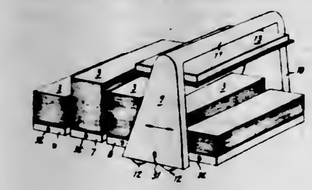
3,289,859
BALE WAGON
John Preston Tarbox, Philadelphia, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,851
3 Claims. (Cl. 214—6)



1. A machine of the character described comprising in a bale progressing series four bale handling and progressing mechanisms adapted to progress bales from preceding to succeeding mechanisms of the series: the first mechanism being for individual bales, the second mechanism being for rows of bales, the third mechanism being for layers of bales comprised of a plural number of rows, and the fourth mechanism being for stacks of bales comprised of multiple layers; said first mechanism including means for selectively upending bales to two different heights, means for turning bales on side from the lower height to on side positions, means for pushing bales from the upper height over to the second mechanism without changing their up ended attitude, and means for freeing

bales from said up ending means before movement to the second mechanism; said second mechanism including two separate means for preventing the toppling over of bales on end, the one from toppling toward its front and the other from toppling toward the rear, conveying means for on sides bales, and means to progress rows to said third mechanism; the third mechanism including a row pushing device adapted to push a row of bales rearwardly to accumulate a layer of rows of bales, means to progress layers to the fourth mechanism, a layer counting device which counts layers progressed to the fourth mechanism by the third, and means activated by said layer counting device controlling (a) means for preventing action of said conveying means of the second mechanism, (b) said turning means and said pushing means of the first mechanism, (c) said row pushing device of the third mechanism, and (d) said row and layer progressing means of the second and third mechanisms respectively.

3,289,860
SYSTEM FOR HANDLING STACKED SHEETS
George A. Dean, Mission, Kans., assignor to Dean Research Corporation, Kansas City, Mo., a corporation of Missouri
Filed June 9, 1964, Ser. No. 373,800
28 Claims. (Cl. 214—8.5)



1. A system for handling stacked sheets comprising a support, a stack of sheets thereon, a chassis having a pair of spaced legs and a housing connecting the upper ends of said legs, said chassis adapted to bridge said stack, a vertically movable head in said chassis having rigid depending sides adapted to embrace the upper part of said stack, means for positioning said chassis over said stack, means for lowering said head onto said stack, a seal in the lower inner portion of said depending sides adapted to be moved inwardly to contact at least one of said sheets of said stack, and means in said head for raising at least a portion of said stack from said support for removing said portion.

3,289,861
APPARATUS AND PROCESS FOR HANDLING STACKED AND NESTED MEMBERS
Robert A. Carle and James D. Williams, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,074
7 Claims. (Cl. 214—8.5)

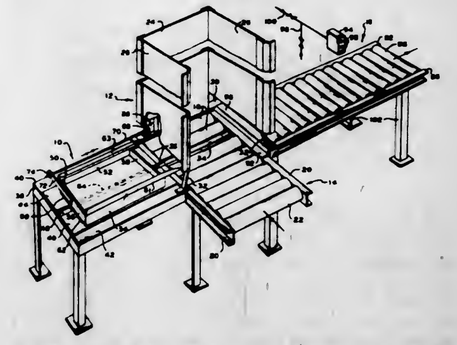
1. Apparatus for feeding individual members from the lowermost position of a series of stacked and nested members comprising in combination:

(a) support means for holding said series of stacked members in upright position including a bottom support and a rectangular four-sided stacking bin having an open front side, a closed fixed back side and fixed wings on the other two sides, the bottom edges of said two sides being spaced above said bottom support more than the height of one member but less than twice said height;

(b) first conveyor means for delivering said series of stacked member to the support means of (a) from the open side of the stacking bin;

(c) second conveyor means leading away from a side of the support means of (a) under one of said wings for receiving individual members from said support means and passing same to a processing station;

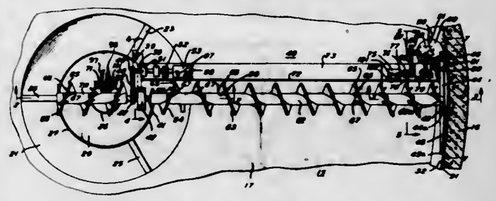
(d) lifter and feeder means positioned outside of the other of said wings movable into said support means under said other of said wings in line with the second conveyor of (c), said lifter and feeder means



being provided with fingers for entering between the lowermost and the adjacent member and raising the members of said series above the lowermost member out of nesting position therewith and thereafter moving said lowermost member out of the support means of (a) onto the second conveyor of (c); and

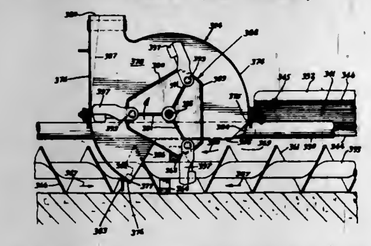
(e) means for moving the lifter and feeder means of (d) into and out of lifting and feeding position.

3,289,862
SILO UNLOADER
Richard L. Weaver, R.D. 5, Lebanon, Pa., and Benjamin K. Smoker, R.D. 3, Myerstown, Pa.
Filed Feb. 10 1965, Ser. No. 431,571
3 Claims. (Cl. 214—17)



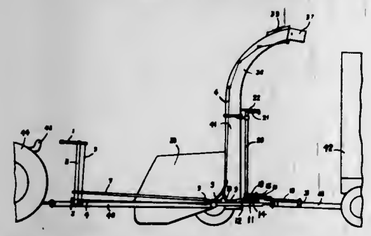
1. A silo unloader for a silo having an upright wall and a bottom floor with an opening comprising, for bottom unloading of the silo, an auger means including an inner portion extending across said opening in a substantially unobstructed flow path of the silage thereabove and an outer portion extending toward said wall, rotating means for rotating said auger means about its own axis, advancing means for advancing said auger means in a path around said bottom floor to feed silage to said opening, said inner portion of said auger means being moved by said advancing means over said opening in a path which substantially completely encompasses the entire opening while maintaining the inner portion in a substantially unobstructed flow path of the silage thereabove to enable the movement of the silage by said inner portion into said opening, said inner portion extending across said opening at least beyond the vertical axis about which the auger means is advanced to insure the removal of silage.

3,289,863
CONVEYING MEANS
Floyd E. Buschbom, Long Lake, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota
Application May 22, 1963, Ser. No. 282,475, now Patent No. 3,232,456, dated Feb. 1, 1966 which is a division of application Ser. No. 27,435, May 6, 1960. Divided and this application Dec. 1, 1965, Ser. No. 510,907
10 Claims. (Cl. 214—17)



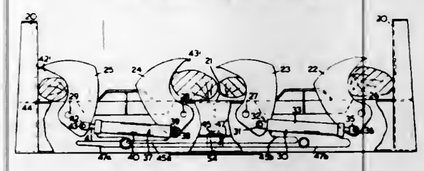
3. In a material handling apparatus a generally upright impeller housing having a leading side wall and an opening for discharging material from said housing, said side wall having a lower side opening for receiving material, an impeller rotatably mounted on the housing for rotation about a generally horizontal axis to move material through the housing, conveying and cutting means including an elongated rotary means for collecting and moving material in a general linear direction toward said housing generally normal to the axis of rotation of the impeller, said rotary means having an inner end section located forwardly adjacent the lower opening in said leading side wall, planar projected means secured to said inner end section for assisting in moving material through the opening in the leading side wall, said planar means located generally in the upright plane passing through the axis of rotation of the impeller, and drive means for swinging said rotary means and housing in a general circular path about a generally upright axis simultaneously with rotation of said rotary means whereby material is gathered and conveyed by the rotary means toward said impeller housing and moved into said housing in the path of rotation of the impeller which moves the material through the housing.

3,289,864
BLOWER PIPE CONTROL
Joseph W. Hochsmith, Musselshell County, Mont. (Box 22, Roundup, Mont.)
Filed Dec. 30, 1963, Ser. No. 334,269
1 Claim. (Cl. 214—42)



In combination, a mobile blower unit and trailing wagon drafted by means of a tractor coupled to the forward end of the blower unit, a swivellable blower pipe on the blower unit and a pivotal deflector at the discharge end of the blower pipe, a single control means for said blower pipe and deflector comprising; a manual lever, means mounting the lever on the forward end of the blower unit accessible to the operator, a cable or wire connected between the manual lever and deflector, a universal coupling, a push rod pivotally connecting the manual lever mounting means to the universal coupling, a swinging link, a sliding shaft extending through a friction drag and pivotally connecting the universal coupling to the swinging link, a guide bar, an arm pivotally mounted on the guide bar having an inverted U-shaped member that slidable straddles a tongue on the trailing wagon or is swung up and secured by a wedge lock, a vertically extending shaft pivotally mounted at its lower end to a stub shaft on the guide bar and rotatably mounted at its upper end to the blower pipe by hinged connecting link means, a curved adjusting arm with a curved adjusting slot secured to the lower end of the vertically extending shaft, a block slidable on the guide bar and a bushing secured to the block and slidably engaging the curved adjusting slot whereby the blower pipe is operated laterally of the trailing wagon by a back and forth movement of the manual lever and the pivotal deflector is operated to deflect the flow of material from the blower by an up and down movement of the manual lever.

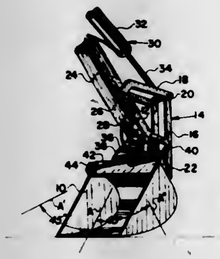
3,289,865
VEHICLE LOG BUNK
Douglas D. Hamilton, Mount Royal, Quebec, Raoul Ranzenhofer, Pointe Claire, Quebec, and Robert Boivin, Montreal, Quebec, Canada, assignors of one-third each to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada; Quebec North Shore Paper Company, Montreal, Quebec, Canada, a corporation of Quebec; and Abitibi St. Anne Paper Limited, Beaupre, Quebec, Canada, a corporation of Quebec
Filed Dec. 15, 1964, Ser. No. 418,516
Claims priority, application Canada, Mar. 19, 1964, 898,252
10 Claims. (Cl. 214—85)



1. Article retaining means comprising a chassis consisting of a generally horizontally disposed elongate member; a pair of retaining arms pivotally secured to said chassis respectively at points spaced longitudinally along said member, the pivot axis being substantially normal to the length of said member, and prime mover means pivotally secured to and interconnecting said arms for interrelating the motion of said arms to compensate for variations in the article to be separately retained by said arms, and abutment means consisting of a pair of vertically disposed, horizontally spaced, rigid posts secured to said chassis in spaced relation with respect to said arms and cooperating with respective ones thereof to provide a plurality of article engaging positions horizontally along said chassis.

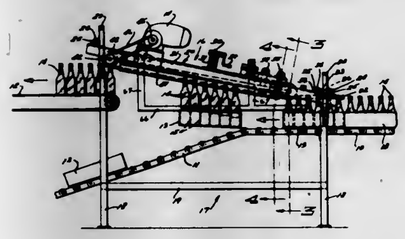
3,289,866
BACK HOE DIPPER ATTACHMENT FOR DIGGING LATERALLY SLOPED EXCAVATIONS
Norman B. Emery, 14106 Columbia Road, Burtonsville, Md.
Filed Feb. 23, 1965, Ser. No. 434,238
1 Claim. (Cl. 214—138)

In an excavating machine, a dipper arm and dipper assembly, comprising
a dipper arm,
a wrist action linkage at the lower end of said dipper arm, including a bracket link transversely pivoted on a horizontal axis to the end of said dipper arm,
a dipper hinged on said bracket link axially along the back of the dipper and substantially parallel thereto, providing tilting of the dipper laterally out of the vertical plane of its hinge, and
power means for controlling the amount of said tilting,



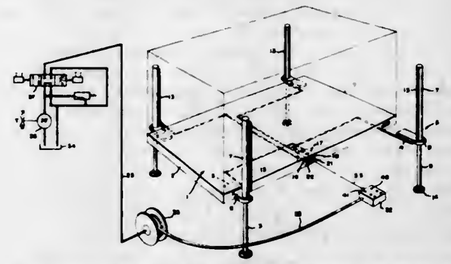
said power control means comprising an arm extending laterally from said bracket link, a hydraulic cylinder pivoted at its outer end to said arm and a plunger rod extending from said cylinder and pivoted at its outer end to a point on said dipper suitably spaced from its hinge for hydraulically controlling said tilting.

3,289,867
CASE UNLOADER
Kenneth O. Burke, San Leandro, Calif., assignor to Owens-Illinois Inc., a corporation of Ohio
Filed July 8, 1965, Ser. No. 470,529
7 Claims. (Cl. 214—309)



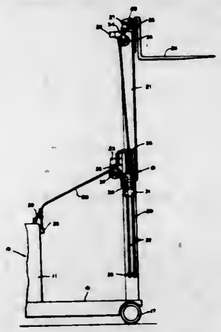
1. In a case unloader for removing upright bottles arranged in parallel rows in a case with neck portions protruding above the case, the combination of a horizontal conveyor for bringing bottle containing cases to the unloader, an inclined chute extension of said conveyor beneath the unloader, a horizontal conveyor beyond the unloader upon which the latter places uncased bottles upright in longitudinal rows, driven endless pairs of bottle neck grasping belts having working reaches moving along inclined paths to elevate bottles from the case, striping means for positively separating the case from the bottles being elevated and causing the case to be deposited by gravity upon said inclined chute extension, an elongated inclined arm supporting each pair of said belts, each arm pivoted near its upper end for lateral movement about such pivot relative to the conveyor, and means at the lower end of the arms for supporting and moving them on their pivots thereby to vary the lateral spaced relationship of their lower ends.

3,289,868
LIFT SYSTEM FOR CARGO CONTAINERS
Edward D. Miller and Harold T. Klein, Bellevue, and Ronald R. Anderson, Everett, Wash., assignors, by mesne assignments, to Jack Neun, Portland, Oreg., and Edward D. Miller, Seattle, Wash.
Filed Dec. 16, 1964, Ser. No. 418,779
9 Claims. (Cl. 214—515)



7. In combination with a cargo container adapted for mounting on a movable vehicle, a lifting system comprising; a plurality of lift rams, means for detachably connecting said rams to the container for raising and lowering the same, a source of fluid pressure, conduit means for connecting said source to each of said rams, a plurality of ram valves in said conduit means, each ram valve being associated with a respective ram for controlling the flow of pressure fluid thereto, a main control valve in said conduit means between said source and said ram valves, said main valve having a closed position and first and second open positions for admitting or exhausting pressure fluid from said rams, electrical circuit means for controlling said valves, selector switch means serving to open said ram valves when said main valve is in either of the open positions, mercury switch means in said circuit for controlling each individual ram valve, and means for mounting said mercury switches on said container whereby said switches are normally closed when said container is level and selected ones are opened when said container is inclined to cause closing of an associated ram valve in such a manner as to cause said container to remain in a level condition during raising and lowering, and manual override switch means in said circuit for operating each ram independently.

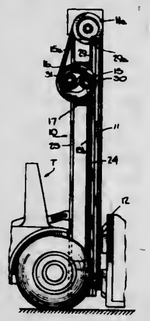
3,289,869
HOSE MOUNTING
Deryl R. Hoyt, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Mar. 9, 1964, Ser. No. 350,382
3 Claims. (Cl. 214—670)



3. In a lift truck having an upwardly extensible mast projectable and retractable horizontally in a substantially

vertical position and comprising base upright means and movable upright means slidable vertically on said base upright means, a source of power on the truck, load engaging means slidable vertically on said mast and movable to an uppermost position at the top of the fully extended mast, first, second, and third sheaves mounted on the mast, each rotatable on a horizontal axis, said first sheave being mounted on said movable upright means, said third sheave being vertically slidable on the mast below said first sheave, and said second sheave being spaced from the third sheave in the general direction of the power source, a flexible power-transmitting line connecting said power source and said slidable means extending over said second sheave, under the third sheave, and over the first sheave and having a length sufficient to extend from the power source to the slidable means in all positions thereof on the mast and all positions of the mast, said sheaves maintaining said length of line substantially taut in all said positions of the slidable means and during movements of the slidable means between positions.

3,289,870
POWER LINE REEL FOR A LIFT TRUCK
George F. Quayle, Jenkintown, Pa., assignor to Eaton Yale & Towne Inc., New York, N.Y., a corporation of Ohio
Filed Dec. 24, 1964, Ser. No. 421,010
9 Claims. (Cl. 214—672)



1. In a truck, uprights mounted on said lift truck, a load carriage mounted for vertical movement relatively to said uprights, a storage reel mounted for rotation relatively to said uprights and having a continuous helical groove, a power source on said truck, a power actuated device on said load carriage, a flexible power line extending from said power source to said device, means whereby the medial portion of said power line is secured at said storage reel with both lengths thereof extending from said medial portion lying in juxtaposed relation in said helical groove whereby said lengths of the power line are wound onto said reel when said reel is rotated in one direction and both of said lengths of said power line are unwound from said reel when said reel is rotated in the opposed direction.

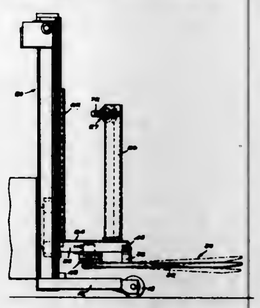
3,289,871
METHOD AND MEANS PROVIDING OVERHEAD PROTECTION AND ACCESS TO INDUSTRIAL TRUCKS
Howard C. La Tourneau, Battle Creek, and David A. Willis, Bellevue, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 9, 1963, Ser. No. 328,937
11 Claims. (Cl. 214—674)

1. A method of manipulating overhead guard structure for industrial trucks and the like having an upright mast mounted forwardly of the truck and wherein the guard is of generally U-shaped configuration and is invertedly mounted on the truck independently of the mast for pivotal movement in a forward direction, comprising the steps of tilting the mast of the truck relative to the guard from a substantially vertical to a forwardly inclined position, conditioning the guard structure for forward pivotal movement including disconnection of a portion of the guard structure from the rear portion of the truck, and pivoting the U-shaped guard structure about a horizontal axis in a forward direction into the space formerly occupied by the mast and into abutment with the mast structure providing an unobstructed space above the rear portion of the truck to facilitate the removal therefrom of equipment therein.



4. A method of removing equipment from the rear portion of industrial lift trucks, and the like, having an upright pivotable mast mounted forwardly of the truck and overhead guard structure pivotally mounted adjacent the forward end of the truck extending over and connected to the rear portion of the truck, comprising the steps of disconnecting the guard structure from the rear portion of the truck, actuating the rear portion of the guard structure toward the mast, actuating the mast to a rearwardly tilted position, thereafter temporarily connecting the guard structure to the mast, actuating the mast and connected guard structure together to a forwardly tilted position to provide unobstructed vertical air space above the rear portion of the truck, and utilizing equipment above the rear portion of the truck for removing from the rear portion of the truck by way of said vertical air space component devices thereof.

3,289,872
ORDER PICKING AND STACKING TRUCK
Carlo Peratoner, Watertown, and Lorntz B. Nilsen, West Gloucester, Mass., assignors to Lewis-Shepard Company, Watertown, Mass., a corporation of Massachusetts
Filed Apr. 20, 1964, Ser. No. 361,116
3 Claims. (Cl. 214—701)



1. A combination order picking and stacking truck comprising a mobile base, a mast assembly extending upwardly from said base at a fixed angle thereto, a substantially horizontal platform movable vertically on said mast assembly, a tilting fork attached at an intermediate pivot point to the underside of said platform, the back portion of said fork to the rear of said intermediate pivot point positioned beneath said platform with the remaining front portion of said fork forward of said intermediate pivot point extending outwardly from said platform, pivotal means operatively connected intermediate the undersurface of said platform and the back portion of said fork, said pivotal means operative to pivot said fork about said intermediate pivot point in order to cause tilting of said front portion in relation to said platform, and control means mounted on said operating platform for controlling the vertical movement thereof as well as the movement of said mobile base and the pivotal displacement of said fork.

3,289,873
LATERALLY MOVABLE ARTICLE SUPPORT ASSEMBLY
Elmer K. Hansen, 801 S. Martha, Sioux City, Iowa
Filed May 25, 1964, Ser. No. 369,880
1 Claim. (Cl. 214—730)



An article support assembly for a truck having an extendable upright mast comprising:

(a) a carriage movable up and down on said mast, said carriage including a pair of vertically spaced flat upright transverse members having the rear sides thereof adjacent the front side of the mast,

(b) a transversely shiftable upright frame positioned about said flat transverse members with the rear side thereof located rearwardly of the rear sides of said flat transverse members, said shiftable frame having an upright flat transverse plate means arranged forwardly of and in a back-to-back relation with the lower one of said flat transverse members,

(c) rollers on said lower flat transverse member engageable with the rear side of said transverse plate means,

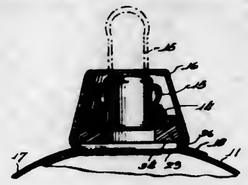
(d) a pair of transverse rod means secured to said shiftable frame adjacent the upper end and within the lateral confines thereof, with a first one of said rod means located downwardly and rearwardly from the second one of said rod means,

(e) means on the upper one of said transverse members mounted on the first rod means to support the shiftable frame for transverse movement relative to said carriage and for up and down movement with said carriage,

(f) a pair of fork means, each of which has an upright section with a forwardly extended section at the lower end thereof, said upright sections pivoted at the upper ends thereof on said second rod means to provide for relative pivotal and transverse movement of said fork means, with the rearward pivotal movement of said fork means limited by the engagement of said upright sections with the front side of said transverse plate means when the upright sections are in pendant vertical positions, and

(g) motor means connected to said shiftable frame and carriage to move said shiftable frame in opposite transverse directions relative to said carriage.

3,289,874
NURSING CONTAINER
Donald E. Dailey and Anton F. Eilers, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed May 18, 1959, Ser. No. 814,110
5 Claims. (Cl. 215—11)



1. A disposable, plastic infant nursing container of the character described, comprising: a container body of plastic material having a nipple receiving opening therein defined by an upstanding neck, the container surface surrounding said nipple opening extending outwardly from the base of said neck and having a generally spherical configuration with a locking rib formed therein at the base of said neck; a nipple received in said opening; and a removable cover having a body extending over said nipple, and having a flange of generally spherical configuration which conforms with the surface of the container overlying the surface adjacent said nipple, said removable cover having an indented rib formed therein adjacent the juncture of said flange and body, said indented rib engaging the locking rib on the container body, forming a seal between the cover and the container.

3,289,875
SEWER PIPE PLUG
William B. Delamater, 9114 Valley View, Whittier, Calif.
Filed July 28, 1965, Ser. No. 475,426
2 Claims. (Cl. 220—24.5)

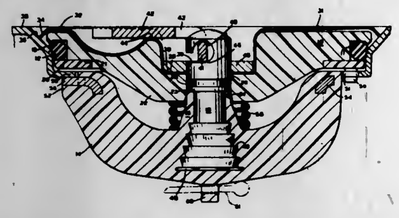


1. A sewer pipe plug adapted to be received within the end of sewer pipe for plugging said sewer pipe to test for fluid leakage in the pipe, including: an annular side wall of expansible material adapted when expanded to be received within an end of the sewer pipe, said side wall having one end capped, the opposite end being open, a flange extending outwardly from the open end of the side wall for limiting inward movement of the side wall within the sewer pipe, a coil spring within the side wall secured at one end to the cap and a bridging piece secured to the spring and adapted to be positioned diametrically of the flange and to expand the spring to move the side wall into tight engagement with the interior of the sewer pipe.

3,289,876
INSULATED FILLER CAP
Chester C. De Pew, Farmingdale, N.Y., assignor to Chester Corporation, Wilton, Conn.
Filed Feb. 9, 1965, Ser. No. 431,326
3 Claims. (Cl. 220—25)

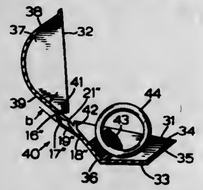
1. A closure cap assembly to be received in a slotted adapter ring in a fuel tank, said assembly including a base plate and a pressure plate, both formed of molded plastic material, the base plate having an annular pe-

ripheral groove and an O ring in the groove, the pressure plate having a plurality of clamping lugs extending therefrom and adapted to pass through the slots in the adapter ring, hardened wear surfaces on the upper faces of the lugs, a stud formed with annular projections embedded



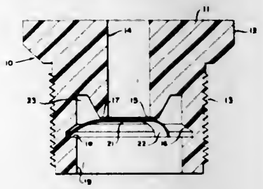
in the center of the pressure plate and extending up through the base plate, a handle pivoted at the upper end of the stud and having a cam to draw the pressure plate upwardly as the handle is moved downwardly to a horizontal position, and a wear plate in the central recess engaged by the cam.

3,289,877
UNITARY HINGE
Hans Wolf, Deggendorf (Danube), Germany, assignor to Westhem Corporation Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Mar. 21, 1966, Ser. No. 536,117
Claims priority, application Germany, Mar. 20, 1963, W 34,224; Nov. 22, 1965, W 36,137
22 Claims. (Cl. 220—31)



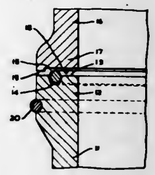
1. A unitary hinge of a thermoplastic material comprising; two plate members; a first flexible portion formed integral with said plate members and joining said plate members together for pivoting movement with respect to each other; a resilient member formed integral with one of said plate members and resiliently movable with respect thereto; and a connecting arm formed integral with the other of said plate members and with a part of said resilient member remote from said one plate member and extending between said part of said resilient member and said other plate member, said connecting arm being provided with second and third spaced apart flexible portions disposed to enable said connecting arm to pivot about said second flexible portion relative to said other plate member and about said third flexible portion relative to said resilient member, said first, second and third flexible portions constituting first, second and third flexible bending lines respectively with said second flexible bending line being positioned closer to said other plate member than to said resilient member and said third flexible bending line being positioned closer to said resilient member than to said other plate member, said first and third flexible bending lines being offset with respect to each other in such a manner that movement in one direction of one of said plate members relative to the other of said plate members from at least one position to another position thereof causes pivoting of said connecting arm about said second and third flexible bending lines and a deflection of said resilient member sufficient to create a restoring force tending to return said plate members to said one position.

3,289,878
VENT PLUG
Joseph J. Davenport, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 412,971
2 Claims. (Cl. 220—44)



1. A vented closure for a container comprising:
(a) an externally threaded body member adapted to be threadably secured in an aperture provided in the top of said container;
(b) a circular bore extending longitudinally through the center of said body member; said bore having an enlarged diameter portion at one end;
(c) a circumferential groove around said enlarged diameter portion of said bore;
(d) annular seat means in said enlarged portion and surrounding the smaller diameter portion of said bore;
(e) fluorocarbon disk means having a central portion and a plurality of pliably resilient leg members extending from said central portion into said groove, said leg members centrally positioning said central portion in said bore for limited axial movement from a normal position of disengagement from said seat means whereby the container enclosure is in constant communication with the atmosphere surrounding said container to an engaged position with said seat means whereby the escape of the contents of said container through said bore is prevented.

3,289,879
DESICCATORS
Claude Hubert Williams, Chalfont St. Peter, England, assignor to Jencons (Scientific) Limited, Hertfordshire, England, a British company
Filed Jan. 26, 1965, Ser. No. 428,145
Claims priority, application Great Britain, Jan. 27, 1964, 3,362/64
1 Claim. (Cl. 220—46)
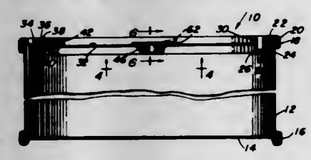


A desiccator to be evacuated of air comprising a bowl and a cover having cooperating annular flanges, one of said flanges being provided with an annular groove having inwardly tapered walls, a resilient O-ring seated in said groove and projecting above the surface of said flange, the other flange being provided around its outer periphery with a projecting stepped portion for abutting with the surface of said one flange when said desiccator is evacuated, said stepped portion being of such a height as to limit the deformation of said O-ring whereby said O-ring is evenly compressed between said other flange and said tapered walls to form an airtight seal.

3,289,880
CONTAINER WITH INTEGRAL OPENER
John Wilkich, 136 Forest St., Kearny, N.J.
Filed Sept. 30, 1964, Ser. No. 400,448
10 Claims. (Cl. 220—48)



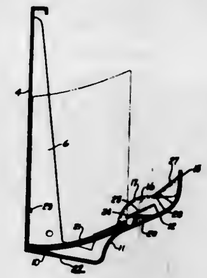
1. An opener to be affixed to a container comprising:
(a) a lever means having a plurality of legs formed thereon,
(b) each of said legs having a puncturing means at the end remote from the lever means,
(c) said opener affixed to the container at a point adjacent each puncturing means,
(d) means on each leg between each of said puncturing means and the lever means including a pair of co-acting angular surfaces on the side of the point where the opener is affixed to the container remote from the puncturing means to increase the force exerted in one direction by the lever means during operation of the opener,
(e) and means operatively associated with said force increasing means to provide a point of weakness whereby said lever means can be bent into operative position and after operation returned to a non-obstructing position relative the punctured opening in the container.

3,289,881
CAN WITH DUAL CLOSURE SYSTEM
Robert B. Gansung, Glen Ellyn, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,033
5 Claims. (Cl. 220—60)



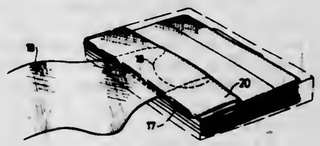
1. A container of the type described, including,
(a) a cylindrical main body portion, and, fixedly attached to one end thereof in liquid-tight relation,
(b) an imperforate end member, and, fixedly attached to the other end of said cylinder in liquid-tight relation,
(c) a relatively rigid, plug-supporting ring member, said ring member including a plurality of concentrically disposed axially extending sealing surfaces, and, removably attached to said ring member in liquid-tight relation,
(d) a relatively rigid plug member with radially inwardly extending sealing surfaces defining an opening therein and including a plurality of axially extending, sealing surfaces adapted to mate in complementary relation with said sealing surfaces on said ring member, and, removably disposed in said opening in said cap member,
(e) a removable, relatively flexible grommet unit having sealing surfaces thereon adapted to mate in complementary liquid-tight sealing relation with said radially inwardly extending sealing surfaces in said plug member.

3,289,882
DISPENSER WITH CONCURRENT SEPARATION AND DISTORTION OF FLEXIBLE ARTICLE
Edwin A. Filipowicz, Greenfield, Wis., assignor to Griffith-Hope Company, a corporation of Wisconsin
Filed Oct. 24, 1965, Ser. No. 504,878
11 Claims. (Cl. 221—44)



1. A dispensing unit for stacked flexible folded sheets, comprising a support member to support the stack of sheets, and a closure member removably secured to the support member and adapted to enclose the stack of sheets, said support member including a substantially vertical rear wall, a bottom wall extending forwardly from said rear wall at a downward acute angle to the horizontal, an upwardly convex curved wall extending upwardly from the forward edge of the bottom wall, an upwardly concave wall extending forwardly from the forward edge of the upwardly convex wall, opening means in said bottom wall and said upwardly convex wall through which the sheets are dispensed, said upwardly concave wall having a lesser width in a lateral direction than said bottom wall, an abutment projecting upwardly from each lateral extremity of said upwardly concave wall in position to support the side edges of a first type of folded sheet, a series of laterally aligned lips disposed upwardly of said concave wall and positioned to engage the forward edges of a second type of folded sheets, and a second series of laterally aligned lips disposed upwardly of said concave wall and located forwardly of said first series of lips, said second series of lips positioned to engage the forward edges of a third type of folded sheet.

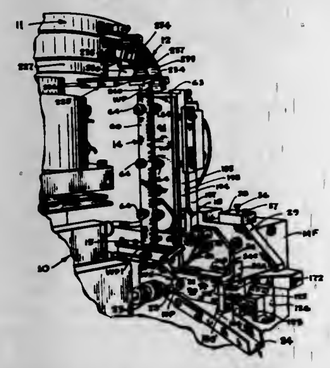
3,289,883
PACKAGING AND DISTRIBUTING BOX, STOCKING DISPENSER OR THE LIKE
Björn Björklund, Bjarred, near Malmo, Sweden, assignor to Aktiebolaget Malmo Strumpfabrik, Malmo, Sweden
Filed Mar. 8, 1965, Ser. No. 437,651
Claims priority, application Sweden, Mar. 11, 1964, 3,009/64
4 Claims. (Cl. 221—48)



1. A foldable dispensing box for ladies hosiery or like interleaved articles comprising; a blank folded to provide a walled tray and hinged cover, the front side wall of the tray being of hollow section and the hinged cover being folded to provide a double thickness relatively rigid cover, the cover including side flaps for locking the cover

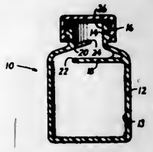
to the tray with the cover in closed condition, the closed cover and front side wall of the tray defining a smooth edge dispensing opening over the top of the front side wall and beneath the surface of the front edge of the cover, and a plurality of layers of stockings, the top stocking having one end detachably attached to an opposite end of the next lower stocking in the layer, so that removal of the top stocking by drawing it out through the dispensing opening will draw the next lower attached stocking from the dispensing opening.

3,289,884
VIBRATORY HOPPER WITH ATTACHED ARTICLE GUIDE MEANS POSITIONABLE ADJACENT A VERTICAL MAGAZINE MEANS
Adolph V. Klancnik, 1020 Glenview Road, Glenview, Ill.
Filed Sept. 29, 1964, Ser. No. 400,126
1 Claim. (Cl. 221—178)



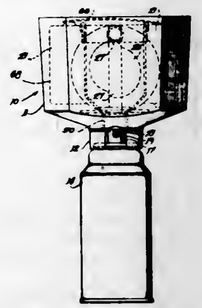
In a machine tool capable of orienting various sizes and configurations of workpieces each having a head and a shank to be aligned at a work station with the axis of the shank in a horizontal disposition, a vibratory hopper supported in an elevated position above a work station in the machine tool and adapted to receive a supply of such workpieces, a separate vertical magazine below said hopper and having a vertical slot therein for receiving the workpieces one atop another and guiding said workpieces downward toward the work station with the axes of the workpieces each in a horizontal disposition, a separate detachable curved guide means having a downwardly curved guide slot communicating at one end with said hopper to receive workpieces fed therefrom and communicating at the other end with the vertical guide slot in said magazine to feed workpieces thereto, the slot in said guide means curving downward from said hopper along a substantially constant radius to the vertical slot in said magazine along substantially a 90° arc, said guide means being secured to said hopper for vibration therewith, whereby a workpiece moving from said hopper when vibrated into the slot in the guide means is initially aligned substantially vertically and radially in the curved guide slot and thereafter is turned through substantially 90° while descending the curved guide means in such radial disposition relative thereto and eventually aligned on a horizontal axis as it enters the vertical guide slot, the workpieces when in the hopper moving therein toward said downwardly curved guide slot along a generally circular path of given direction and entering the curved guide slot from one side of said hopper, a support detachably supporting said hopper, and movable relative to the magazine to enable an alternate hopper to be detachably supported thereby and in which workpieces move in the alternate hopper in a direction opposite said given direction.

3,289,885
TAMPER PROOF TABLET DISPENSER
James W. Villaveces, 1532 Prospect, San Gabriel, Calif.
Filed Aug. 10, 1964, Ser. No. 388,527
1 Claim. (Cl. 221—288)



A tamper proof tablet dispenser comprising a hollow medicine bottle having a main bottom housing, a vertical upper hollow neck open at its throat, shoulder means connecting said housing to said neck, said neck and housing being integral, a cap detachably securable to the throat of said neck for detachably sealing same, a first horizontal baffle plate in the top of said housing and sealing a major portion of said housing from said neck while leaving a small first horizontal opening through which a pill positioned in said housing can fall toward said neck when said dispenser is inverted, and a second upwardly inclined baffle plate inserted in the bottom of said neck and extending over said first opening, said second plate sealing a major portion of said neck while leaving a small second horizontal opening above said first plate, said second plate being vertically separated from the first plate and positioned thereabove, said second opening permitting said pill to fall therethrough after falling through said first opening and guided by said second plate to said second opening when said dispenser is inverted.

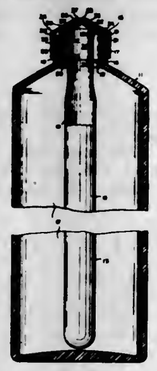
3,289,886
TIMING DEVICE AND METHOD
Morton Goldsholl, 800 Kimballwood Lane, Highland Park, Ill., and James E. Logan, 637 Brummel St., Evanston, Ill.
Filed Feb. 24, 1964, Ser. No. 346,603
11 Claims. (Cl. 222—1)



1. The method of intermittently dispensing an aerosol product comprising the steps of connecting an aerosol dispenser to an operator, connecting a gravity type switch to the operator, and connecting a battery-motor to the gravity switch and operator, energizing the motor responsive to the cycling of the gravity switch and deenergizing the same upon the completion of the cycle, and linking the gravity switch and the operator so that the operator dispenses the aerosol product only when the battery-motor is energized.

8. An aerosol dispensing timing device comprising, in combination, a housing adapted to engage an aerosol container, a dispensing head on the container, battery-motor means secured to the housing, operator means within the housing adapted to operatively engage the dispensing head, gravity activated timer means, switching cam means engaging the operator and timer means, and drive means coupling the battery-motor means with the switching cam means whereby the battery-motor inverts the gravity timer intermittently to recycle the same while the switching cam means simultaneously activates the operator to provide a predetermined interval between dispensing of the aerosol product.

3,289,887
DISPENSING OF REACTIVE CLEANSING MATERIALS
Richard E. Farrar, Winston-Salem, N.C., and James J. Russett, Wood-Ridge, and Barney J. Zmoda, Bridgewater Township, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Original application July 31, 1962, Ser. No. 213,666, now Patent No. 3,217,931, dated Nov. 16, 1965. Divided and this application Sept. 17, 1965, Ser. No. 488,001
7 Claims. (Cl. 222—1)



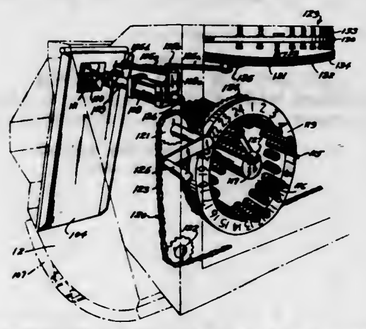
1. A method of cleansing a surface comprising the steps of providing a plurality of confined, segregated liquid storage regions, providing in one of said regions a bleaching solution that is capable of liberating chlorine, providing in another of said regions a solution containing a detergent that is capable of so chemically reacting with chlorine liberated from the bleaching solution as to render it ineffective for bleaching only a predetermined period after mixture therewith, discharging said bleaching solution and said detergent containing solution from their respective storage regions in separate streams, combining said streams to provide an admixture of said bleaching solution and said detergent containing solution, causing said detergent to react with chlorine released from said bleaching solution in said admixture, and so dispensing said admixture in a single stream onto said surface that flow of said bleaching solution and said detergent containing solution from said storage regions to said surface is continuous and at such a rate that said predetermined period terminates after application of said admixture to said surface, whereby said chlorine is rendered ineffective for bleaching after it is applied to said surface.

3,289,888
CONTROL MECHANISM FOR VOLUMETRIC MEASURING OF AGGREGATE MATERIALS
Ralph L. Oltman, North Aurora, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Filed Jan. 28, 1965, Ser. No. 428,764
13 Claims. (Cl. 222—43)

1. In a batch type asphalt plant including an aggregate weigh hopper having aggregate compartments therein and a weigh tank for common distribution of aggregate and bitumen to a pug mill,

the improvement combination comprising a weigh hopper presetting device operatively associated with each compartment of the weigh hopper for enabling variable selectable volumes of aggregate to be loaded in the aggregate weigh hopper, and

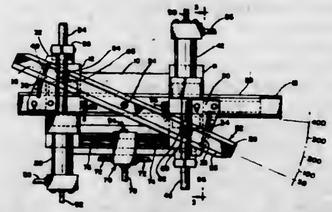
an asphalt weigh tank presetting device associated with the weigh hopper for enabling variable selectable



volumes of asphalt to be loaded in the aggregate weigh hopper,

each of said devices having correspondingly numbered aggregate and bitumen stop blocks enabling variable selectable volumes of aggregates and bitumen to be properly proportioned by correlating appropriately numbered aggregate stop blocks with the appropriately numbered bitumen stop block after the devices have been once calibrated.

3,289,889
PROPORTIONING MACHINE AND METHOD
John T. Schwieger, 1605 8th NE., Auburn, Wash.
Filed Jan. 3, 1964, Ser. No. 335,523
3 Claims. (Cl. 222—57)



1. A proportioning and dispensing machine, comprising: (*a*) an actuating main carrier cylinder having a reciprocating first piston therein and a first piston rod means connected to said piston extending out of one end of said carrier cylinder, (*b*) an elongated reciprocating slide bar means rigidly attached by connector means at one end to the outer end of said first piston rod and being disposed generally horizontally above and parallel to said piston rod on the outside of said cylinder for movement with said piston and piston rod, (*c*) a pair of smaller admixture fluid cylinder means fixed to supporting structure on said carrier cylinder, said admixture cylinders having reciprocating second pistons and second piston rods connected to said pistons which extend out of said admixture cylinders generally at right angles to and above said slide bar, (*d*) track means releasably pivotally mounted on said slide bar generally between said admixture cylinders, said slide bar having adjustment slot and clamp-

ing means thereon for adjustment of the angular relationship between said slide bar and track means, (*e*) guide means secured to each of said second piston rod means and slidably engaging said track means so that movement of said first piston transfers movement thereof proportionally to each of said second piston means, and (*f*) means for selectively introducing and dispensing pressurized carrier fluid into and from said carrier cylinder into a discharge line, and including means for selectively introducing and dispensing admixture fluid into and from each of said admixture cylinders into said discharge line.

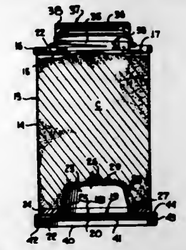
3,289,890
CAN OPENER AND DISPENSER
Charles William Schild, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 12, 1964, Ser. No. 410,548
6 Claims. (Cl. 222—85)



1. A container opening and pouring attachment adapted to open a container end closure attached to a tubular container body by a seam, comprising:
- an open ended hollow tubular spout having a container contacting means at one end and pouring means at the opposite end;
- fulcruming means for positioning, aligning and pivoting said attachment on said container seam, said fulcruming means being the only portion of the container contacting end of said spout lying outside the periphery of said container seam when said attachment is in pouring position on said container;
- a curved relatively flat V-shaped closure cutting member located adjacent said fulcruming means and adapted to sever a drain passage within said end closure as said attachment is pivoted;
- and a substantially planar spear-shaped combined punching and retaining element having barbed outwardly turned locking ears, said element being smaller than said closure cutting member, located on said container contacting means end opposite to and having substantially the same orientation as said closure cutting member at said container contacting end of said spout, said element adapted to puncture said closure and releasably secure said attachment thereto upon complete pivoting of said spout.

3,289,891
FOOD CONTAINERS FOR MANNED SPACE SHIPS
Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Nov. 6, 1962, Ser. No. 235,668. Divided and this application Sept. 7, 1965, Ser. No. 485,433
11 Claims. (Cl. 222—92)

1. A container comprising a body having opposite end portions, a closure at each of said end portions, one of said end portions terminating in an inwardly directed reinforced peripheral edge, an expelling plate normally housed in said body adjacent said one end portion, said expelling plate and body being substantially circular in cross-section, said expelling plate including an enlarged



portion and a reduced portion, said reduced portion being telescopically received within said reinforced peripheral edge and said enlarged portion including a peripheral portion in overlying relationship to said reinforced peripheral edge.

3,289,892
COLLAPSIBLE TUBE DISPENSER
Dwight M. Sencabaugh, 15319 Edgewater Drive, Lakewood, Ohio
Filed Jan. 18, 1965, Ser. No. 426,143
3 Claims. (Cl. 222—95)



1. In a device for assisting in dispensing paste-like material from a collapsible tube, a base member against which a tube of material is adapted to be pressed, a securing member having one side thereof opposed to and spaced from one side of said base member to define a slot therebetween arranged to receive the tube, a flange means connecting said members along aligned sides of said members and projecting normal thereto and above the plane of said members to provide an abutment for a portion of the tube when it is inserted in the slot and in which position the tube is adapted to be secured by pinching action of said members to prevent the flow of material into the collapsed portion of the tube upon application of pressure to the tube.

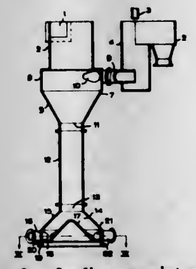
3,289,893
DISPENSING DEVICE FOR TUBULAR CONTAINERS
Russell K. Vance, 3817 Piedmont Road, and Ralph W. McMickle, 3813 Piedmont Road, both of Fort Worth, Tex.
Filed Apr. 30, 1965, Ser. No. 452,270
2 Claims. (Cl. 222—102)



1. A dispensing device for a collapsible tube having a threaded dispensing end and a crimped closure on the other end, said device comprising: an elongate case of a size to receive said tube, an end member in said case having an opening therein of a size and location to slidably receive the threaded end of said tube, and a traveling

squeezer within said case, said squeezer being comprised of parallel sides and spacers therebetween, parallel shafts journaled in said sides, rollers on said shafts between said sides, a knob outwardly of said case and mounted on a projecting end of one of said shafts and wherein said traveling squeezer is comprised of two portions hingedly connected at one end and each supporting one of said rollers.

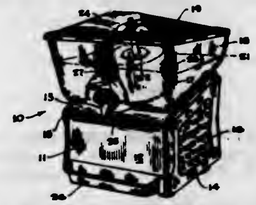
3,289,894
FEEDING DEVICE FOR CYCLONE SEPARATORS
Jan N. J. Leeman, Brunssum, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed Oct. 21, 1963, Ser. No. 317,694
Claims priority, application Netherlands, Oct. 22, 1962, 284,596
3 Claims. (Cl. 222—145)



1. In a device for feeding a mixture of particles to be separated and a separatory liquid to a plurality of hydro-cyclones under a constant pressure wherein first and second vessels are mounted above the cyclones and include first conduit means communicating with the first vessel for supplying a first portion of the separatory liquid to the device from exteriorly of the first vessel, second conduit means communicating with the first vessel for directing an overflow from the first vessel and third conduit means communicating between said first vessel and said second vessel for delivering separatory liquid from the first vessel to the second vessel, and further including fourth conduit means communicating with the second vessel for supplying the particles to be separated and a second portion of the separatory liquid to the device from exteriorly of the second vessel, and a discharge conduit communicating at one end thereof with the second vessel and in open communication at the other end thereof with the plurality of hydro-cyclones for directing the first and second portions of the separatory liquid and the particles to be separated, combined, to the plurality of hydro-cyclones, the improvement comprising: said third conduit means being arranged to discharge material tangentially into said second vessel; said discharge conduit other end opening into and in communication with means defining a radially symmetrical vortex chamber; and means defining a plurality of angularly spaced tangentially directed outlet pipes communicating at the radially inner ends thereof with said vortex chamber at the periphery thereof; said outlet pipes projecting in the same tangential sense as said third conduit means, the outlet pipes being constructed and arranged for connection to the plurality of hydro-cyclones as the inlet means thereto.

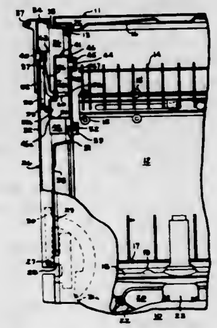
3,289,895
BEVERAGE DISPENSERS
Joseph J. Yuza, Chicago, Ill., assignor to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 27, 1964, Ser. No. 355,274
6 Claims. (Cl. 222—146)

1. A beverage dispenser for dispensing natural and artificial fruit beverages and the like comprising:
- a base including a refrigerating apparatus;
- a thermally conductive dome mounted on said base and containing a cooling coil connected to said refrigerating apparatus, said dome being filled with a material comprising an epoxy resin mixed with silica as a thermally conductive filler and with a bulk aggregate material;
- a beverage storage bowl mounted on said base in encompassing relation to said dome, said dome projecting upwardly into said bowl;



- a fixed hollow bearing shaft extending from said base upwardly through and above said dome, said bearing shaft being peripherally sealed to said dome;
- an agitator rotatably mounted on said fixed bearing shaft above said dome and including at least one paddle arm extending downwardly into said bowl immediately adjacent said dome and substantially parallel to the side of said dome;
- and means for rotating said agitator around said dome to circulate beverage within said bowl immediately adjacent said dome and to prevent ice formation on said dome.

3,289,896
DOOR STRUCTURE FOR WASHING APPLIANCE
Donald S. Cushing, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 18, 1965, Ser. No. 496,948
8 Claims. (Cl. 222—154)

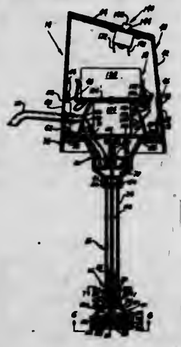


1. A door structure for the wash chamber of a washing appliance comprising:
- (a) a door pivotal about a horizontal axis between closed and open positions,
- (b) dispenser means carried by said door and including a liquid storage chamber, and
- (c) hollow indicator means communicating with said storage chamber and having a transparent portion disposed above a predetermined supply depletion level in said storage chamber when said door is in said closed position but below said storage chamber when said door is in said open position,
- (d) said transparent portion being visible from outside the washing appliance when said door is in said closed position,
- (e) said indicator means and said storage chamber

having at least one point of communication in the lower portion of said storage chamber when said door is in said open position whereby said indicator means is adapted to be substantially filled with liquid from said storage chamber when said door is in said open position,

(f) said indicator means and said storage chamber having a point of communication at said supply depletion level when said door is in said closed position whereby substantially all the liquid in said indicator means is free to flow into said storage chamber when the level of the liquid in said storage chamber drops below said predetermined supply depletion level.

3,289,897
COMBINED AGITATOR AND FLUID MOVER
Arthur Ginsberg, New York, N.Y., assignor to Royal London, Ltd., New York, N.Y., a corporation of New York
Filed Mar. 15, 1966, Ser. No. 534,384
10 Claims. (Cl. 222—239)



1. A combined agitator and fluid lifting device comprising

a frame adapted to be positioned adjacent a fluid containing receptacle;

a conduit extending away from the frame for immersion in the fluid;

a housing, rotatably mounted on the conduit adjacent the terminus thereof, having an inlet opening in communication with the conduit;

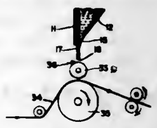
a liquid lifting mechanism rotatably mounted in the housing for moving a liquid through the inlet opening and into the conduit;

means for selectively rotating the liquid lifting mechanism independently of the housing to propel liquid into the conduit; and

means for selectively rotating the housing to agitate the liquid in the receptacle.

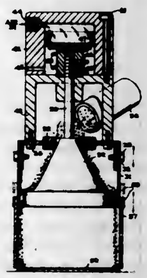
3,289,898
METERING AND DISPENSING DEVICE FOR VISCOUS LIQUIDS
Walter H. Herman, South Hadley, Mass., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1966, Ser. No. 532,743
8 Claims. (Cl. 222—263)

1. A viscous liquid metering and dispensing device which comprises a housing having a front wall and a converging wall and defining a chamber for containing a supply of viscous liquid, said converging wall being arranged to intersect said front wall along a line of intersection of the plane of said converging wall with the plane of said front wall and at an angle of less than 90°, said converging wall having a gate portion adjoining said front wall and disposed in sealing engagement therewith when in a closed position but movable out of contact with said front wall; a tongue member disposed within said chamber and along said front wall, said tongue member having a bottom edge surface substantially parallel to said line of intersection, at least a portion of which surface is in a plane angularly disposed to both the plane of said front wall and the plane of said converging wall, said tongue member being arranged for movement adjacent said front wall so that said bottom edge surface is reciprocally mov-



able from a first position wherein said surface is disposed within said chamber and spaced from and out of contact with said converging wall, through a second position wherein the boundaries of said surface are in contact with said front wall and said converging wall thereby defining a cavity which contains a metered amount of viscous liquid, to a third position wherein said surface is disposed outside of said chamber upon deflection of said gate portion and carries thereupon said metered amount of viscous liquid; and actuation means operably connected to said tongue member.

3,289,899
GLASS SPHERE DISPENSER SPREADER FOR HIGHWAY MARKING
Frank E. Miller, Huntingdon, and James M. Carruthers, Homer City, Pa., assignors to Wald Industries, Inc., Huntingdon, Pa., a corporation of Pennsylvania
Filed Feb. 25, 1965, Ser. No. 435,211
4 Claims. (Cl. 222—459)



4. A glass sphere dispenser spreader for highway marking comprising

a housing having upper and lower chambers formed therein,

a sphere confining shroud secured to said housing and depending therefrom,

said lower chamber communicating with a source of glass spheres and having a bottom plate having an opening therethrough and defining a wall between said lower chamber and the interior of said shroud,

a valve normally seated in said opening in said bottom plate restricting communication between said lower chamber and the interior of said shroud through said opening,

and means to control the opening and closing of said valve operatively connected to said valve,

said valve including

a frustro-conical portion,

an outward flaring lower cylindrical flange portion on the base of said frustro-conical portion,

said cylindrical flange having a cylindric surface depending substantially parallel to the interior surface of said shroud and adjacent thereto spaced from said interior surface so as to allow passage of glass spheres therebetween with rebound of the spheres between said interior surface of said shroud and said cylindric surface with said two surfaces shaped to direct glass spheres in a downward direction substantially perpendicular to the surface of the highway being marked.

3,289,900
BOW MAKING APPARATUS
Morris W. Mashburn, Jr., 5124 Overton Road, and William Allison Buntin, 3500 Franklin Road, both of Nashville, Tenn.
Filed Jan. 21, 1965, Ser. No. 426,945
3 Claims. (Cl. 223—46)



1. Apparatus for use with a standard consumer ribbon roll of the type having ribbon wound on a cylindrical core supported between a pair of axially spaced annular end plates of relatively deformable cardboard or the like which have aligned center spindle openings to make bows of the rosette type from a strip of the ribbon, comprising a rigid integral bow retaining pin onto which successive loops of the ribbon are to be impaled and held at the center of the bow having an elongated shank terminating at one end in an enlarged sharpened head and at the other end in an enlarged rectangular base flange having a bottom surface and two pairs of parallel side edges, a holder fixture for releasably holding said pin in upwardly pointing relation in alignment with the center axis of said ribbon roll when the ribbon roll is positioned with its end plates in horizontal planes including an integral one piece molded spindle member and an elongated integral one piece molded pin-supporting sleeve member, said spindle member including an elongated post portion and a lower mounting base portion at one end thereof having frictional coupling formations to be inserted into the spindle opening of the uppermost end plate, for releasably supporting said post portion in upwardly projecting relation on said ribbon roll with its longitudinal axis aligned with said center axis, said sleeve member being formed of deformable plastic and including a hollow cylindrical body portion having a downwardly opening bore sized to slidably and rotatably nest over said post portion with confronting surfaces of said post portion and bore in rotative and sliding engagement with each other over the major portion of the axial length of the bore to support said sleeve member for rotation and axial movement relative to said post portion and stabilize said sleeve member in concentric relation to said center axis, said sleeve member including an upper end wall having a central aperture therethrough and a pair of diametrically oppositely spaced jaw members projecting in upwardly inclined, converging relation therefrom flanking said aperture defining flat inwardly facing surfaces for receiving edge portions of said pin base flange between said inwardly facing surfaces and said upper end wall upon sliding of said base flange along said upper end wall and radially of said center axis to releasably clamp the same against said upper end wall, said spindle member having a plunger of slightly greater axial length than the thickness of said end wall projectable through said end wall aperture into abutment with said base flange to force said bow pin axially of said center axis to spread said jaw members and release said base flange from clamped relation by said jaw members upon axial movement of said sleeve member toward the ribbon roll, said upper end wall of said sleeve member including diametrically opposite ramp formations in quadrature relation to said jaw members having vertical shoulders spaced radially of the center axis a distance corresponding to the distance between a pair of said parallel side edges of said base flange to engage said edges and position the bow pin with its shank aligned with said center axis.

3,289,901
GARMENT HANGER WITH ANTI-SLIPPING SURFACES
William Zwanzig, 623 Columbus St., Ottawa, Ill.
Filed Dec. 22, 1965, Ser. No. 515,590
3 Claims. (Cl. 223—88)

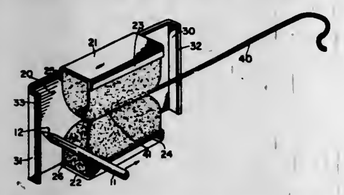


1. A garment hanger of the class described comprising: a one-piece frame substantially triangular in elevation and comparable in size and character to common rod-type hangers formed from a single length of wire, said frame embodying a horizontal bottom member circular and solid in cross-sectional dimension and constituting and providing a crossbar adapted to balance and hang trousers, skirts and the like, the upwardly disposed convex garment folding, draping and supporting surface of said crossbar having a plurality of straight parallel individual closely spaced grooves formed in said surface and commensurate in length with the overall length of said crossbar, each groove providing an elongated channel-like indentation bordered by relatively sharp lengthwise marginal edges defining and providing a pair of friction-gripping anti-slipping ridges, the thus paired ridges of the respective grooves being expressly designed and adapted to guard against forward or rearward slippage or, alternatively, displacement of the draped and supported garment, said supporting surface being further provided with additional self-contained transverse groove means comprising a multiplicity of endless annular grooves circumferentially encircling said crossbar, said annular grooves being disposed at right angles to and intersecting said longitudinal grooves, said annular grooves also being spaced apart longitudinally and the encompassing marginal edges of each groove providing opposed coacting anti-slipping ridges capable of resisting left-to-right slippage of the given position of the supported garment.

3,289,902
METHOD AND DEVICE FOR THREADING A SEWING NEEDLE
Russell A. Fritts, Cranford, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 10, 1965, Ser. No. 434,173
10 Claims. (Cl. 223—99)

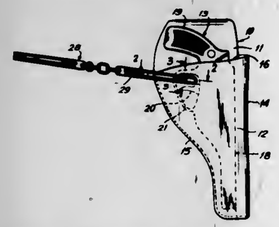
5. A device for threading a needle of substantially cylindrical exterior and formed with a transverse eye of which the sidewalls extend to a juncture with the needle exterior at the mouth of the eye, comprising a pair of resilient thread gripping members, means supporting said thread gripping members with surfaces on each member urged into engagement, means for defining a linear thread path between said surfaces, means for sustaining a needle

to be threaded with the eye of said needle in alignment with said thread path, said sustained needle and said supported thread gripping members being relatively movable in the direction of said thread path with said needle in engagement with said surfaces of each said thread



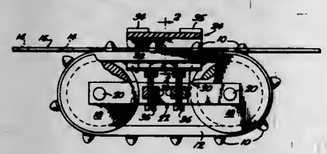
gripping members, and said supported thread gripping members each having sufficient resiliency so as to engage on the leading edge of said needle at the juncture of said needle eye sidewall with said needle exterior during said movement of said sustained needle relatively to said supported thread gripping members.

3,289,903
SAFETY GUN HOLSTER
Peter J. Taormina, 101 E. Maujer St., Valley Stream, Long Island, N.Y.
Filed Dec. 23, 1965, Ser. No. 516,057
6 Claims. (Cl. 224—2)



1. A gun holster comprising a container of tapering configuration for conformably receiving a gun, said container having its larger end open for insertion and withdrawal therethrough of a gun, said container being formed in opposite wall portions thereof with a pair of aligned thru openings located for registry with the trigger guard of an inserted gun behind the trigger thereof, whereby an elongate retainer in engagement through said openings and through the trigger guard of an inserted gun behind the trigger thereof positively holds the gun in the holster and prevents firing.

3,289,904
WEB FEEDING DEVICE HAVING MAGNETIC HOLD DOWN MEANS
Thomas P. Foley, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed June 1, 1965, Ser. No. 460,277
8 Claims. (Cl. 226—74)

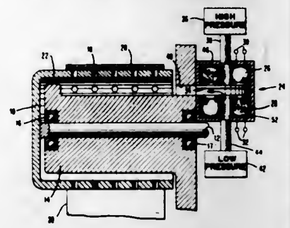


1. In a web feeding device for feeding sheet material, said device being of the type having a plurality of pins spaced to register with similarly spaced apertures in sheet material to be fed and projecting from a pin carrier member, a hold-down device comprising:

a channel member of low friction material having a pair of walls spaced apart by a distance slightly greater than the lateral dimension of the pins; and

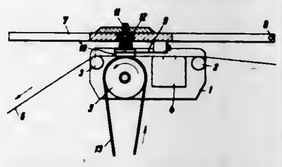
magnetic means for retaining said channel member in a position wherein the walls straddle the pins and hold the sheet material against the pin carrier member.

3,289,905
PNEUMATIC CAPSTAN HAVING A HIGH SPEED ELECTRO-MAGNETIC VALVE
Solomon H. Pitt, Norristown, and Trevor D. Reader, King of Prussia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 23, 1964, Ser. No. 398,619
6 Claims. (Cl. 226—95)



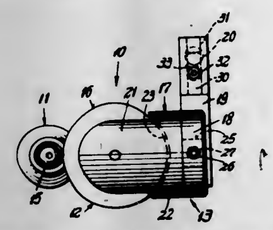
4. In combination with a tape drive mechanism including a pneumatic capstan, a valve arrangement for selectively causing said tape to engage or disengage said capstan comprising a housing having a chamber, means for directing fluid from said chamber to said capstan, a pair of electro-magnets disposed within said housing, sources of high and low fluid pressure leading into said chamber, a movable metallic disc disposed within said chamber for selectively blocking one or the other of said sources of fluid pressure to prevent or permit fluid pressure from entering said chamber, said metallic disc including concentric magnetized areas in opposite polarity, and means for selectively applying an electrical signal to said electro-magnets to cause said disc to be moved to block one or the other of said sources.

3,289,906
CAPSTAN AND PRESSURE SHOE
Eduard Schüller, Wedel, Holstein, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Feb. 13, 1964, Ser. No. 344,696
Claims priority, application Germany, Feb. 13, 1963, T 23,463
7 Claims. (Cl. 226—168)



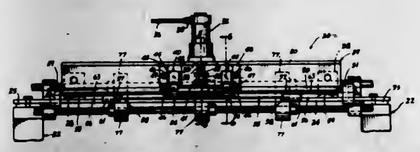
1. In a tape recorder, a drive arrangement for a magnetic tape having a front whereat the magnetic layer is provided and a back, said drive arrangement comprising a capstan and a non-rotatable shoe for pressing the tape against said capstan, said shoe engaging the back of the tape and said capstan engaging the front of the tape, said shoe being made of a material which, with reference to the back of the tape, has a low coefficient of friction, thereby to exert a low drag on the tape, and said capstan having a peripheral surface which, with reference to the front of the tape, has a high coefficient of friction, thereby to ensure that, when the tape is pressed against said capstan by said shoe, the tape is moved at a speed equal to the peripheral speed of said capstan, and a driving belt for rotating said capstan, said driving belt looping about said capstan at the same level as that at which said capstan is engaged by the tape, said belt constituting said peripheral surface of high coefficient of friction.

3,289,907
TAPE DRIVE ASSEMBLY
William Horberg, Trumbull, Conn., assignor to Horberg Grinding Industries, Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Sept. 11, 1964, Ser. No. 395,774
7 Claims. (Cl. 226—181)



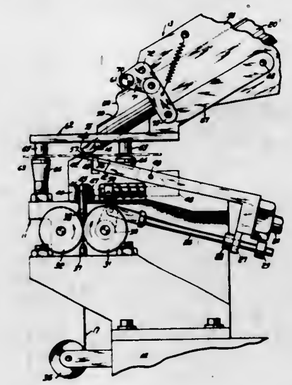
1. A tape drive assembly comprising a rotatable capstan having a surface for carrying said tape, a pinch-roller for pressing said tape into engagement with said surface of said capstan and means for rotatably mounting said pinch-roller in a predetermined manner relative to said capstan, said mounting means including adjustable block means for tilting the axis of rotation of said pinch-roller relative of the axis of rotation of said capstan in at least two transverse directions, whereby the relationship between the tape engaging surfaces and the planes of rotation respectively of said capstan and pinch-roller may be adjusted.

3,289,908
PNEUMATIC PRESSURE APPARATUS
Donald W. Eagle, Sherman Oaks, Calif., assignor to U.S. Partition & Packaging Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 28, 1964, Ser. No. 371,050
5 Claims. (Cl. 226—195)



4. In combination, pressure apparatus for maintaining desired constant tension on a continuous web of paperboard material, and the like, being fed to a partition assembling machine comprising a support for mounting said pressure apparatus in operative relation to a partition assembling machine, said support including an area over which a web passes in fully supported relation therewith, a pressure unit mounted on said support in spaced relation thereabove, said pressure unit including a reciprocatable depending rod and means for maintaining said rod in a position of rest when said pressure unit is not under pressure, means for supplying pressurized air to said pressure unit under a selected constant pressure, means for varying said supplied pressure, a presser foot suspended from said rod for reciprocation therewith and adapted to apply pressure to a web of material, runners of resilient material mounted on said support and adjustable laterally of a web of paperboard, said runners being adapted to engage a paperboard web in holddown relation, said runners being selectively positionable for engagement by said presser foot and laterally of the latter for engagement of a web of paperboard directly by the presser foot and by the runners.

3,289,909
APPARATUS FOR FORMING AND CLINCHING CONNECTORS
Edward T. Stocker, Groveland, Mass., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 16, 1965, Ser. No. 448,817
9 Claims. (Cl. 227—80)



1. Apparatus for forming and clinching connectors to preselected areas disposed on opposite sides of an article, which comprises:

means for supporting an article,

means for supplying a predetermined length of conducting strand material to the article supporting means such that one end of the strand material extends beyond one side of the article,

means operable for engaging and bending said one end of the strand material against a preselected area on said one side of the article,

means for severing the strand material extending from the other side of the article and bending the cut end of said severed strand material against a preselected area on said other side so as to form a connector which interconnects the preselected areas, and

means connected to the severing means for clamping the strand of material during the severing and bending thereof, the clamping of the wire taking place at a point remote from the article supporting means.

3,289,910
STAPLING MACHINE OF LARGE CAPACITY
Robert Lescure, Maisons-Alfort, France, assignor to J. Herbin Etablissements, Paris, France, a French body corporate
Continuation of application Ser. No. 204,718, June 25, 1962. This application Oct. 1, 1965, Ser. No. 496,237
4 Claims. (Cl. 227—135)

1. A staple driver assembly for receiving a multiple supply of staple clips comprising:

(a) a housing frame having front, bottom and side walls including a magazine for receiving a plurality of staple clips,

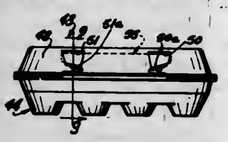
(b) a staple guide track mounted in the bottom wall of said housing,

(c) a staple pusher member slidably movable on said guide track,
(d) a staple driver,
(e) an operating handle pivotally mounted to said frame and connected to said staple driver,
(f) spring means connected to said pusher member and to said head constantly urging said pusher member in a forward direction,
(g) a magazine drawer member slidably mounted above said guide track and said pusher member and disposed to be the bottom of said magazine and to support the staple clips stored herein,
(h) means connecting said drawer member to said handle,
(i) cooperating latching means on said pusher and drawer members including nose means normally projecting forward of the end of said pusher member,



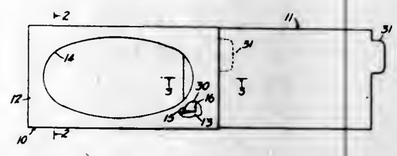
(j) said cooperating latching means including means for maintaining said latching means in separate disconnect and connect positions,
(k) one of said members including cam means for disconnecting said latching means and positioning said latching means in disconnect position when said drawer member is moved forwardly,
(l) whereby, when the last staple of a clip is used, said driver hits said nose means causing said latching means to be positioned for connection, whereby when said handle means is pivoted rearwardly said drawer member will travel rearwardly and latch said latching means so as to also cause said pusher member to be moved rearwardly with said drawer member, thereby permitting a new clip of staples to drop into position on said track for feed to said staple driver.

3,289,911
CARTON CONSTRUCTION
James William Boyd, Crown Point, Ind., and Dick Leroy Thaldorf, Calumet City, Ill., assignors, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,446
3 Claims. (Cl. 229—2.5)



1. A molded carton for use in accommodating a plurality of fragile articles, comprising an open top tray having a bottom and sides delimiting and extending upwardly from said bottom, said bottom and sides cooperating to form a plurality of article-accommodating pockets; a cover having a top and walls delimiting and depending from said top, one wall being hingedly connected to a side of said tray whereby said cover may assume a closed, overlying, superimposed position with respect to said tray open top, a second wall opposite said one wall being provided with a pair of laterally spaced apertures, each aperture having a perimetric portion thereof offset inwardly from the exposed surface of said second wall when said cover is in said closed position; and a latching flap hingedly connected to the tray side opposite the tray side connected to said cover, said flap having a pair of flexible laterally extending shoulders disposed in substantial alignment with the spacing between adjacent pockets of said tray, said flap, when in one position of hinged adjustment, being disposed behind the concealed surface of said cover second wall when said cover is in said closed position and the aperture offset perimetric portions of said cover interlockingly engaging the undersides of said flap shoulders.

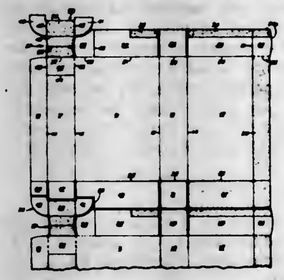
3,289,912
CONTAINER WITH CHECKED SLIDE PANEL CONTROLLING MERCHANDISE DISPLAY
Henry N. Rouder, New York, N.Y., and Harry B. Sooy, Emerson, N.J., assignors to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York
Filed May 5, 1964, Ser. No. 364,927
1 Claim. (Cl. 229—17)



A device of the character defined comprising a merchandise supporting container and a panel movable relatively to the container, the container having side, bottom and end walls and inner and outer top walls, the inner and outer top walls having registering elongated openings extending the major portion of the length of the container, the opening in the outer top wall having rounded ends, one end of the elongated opening in the inner top wall having a rounded end in alinement with one rounded end of the opening in the outer top wall, the other end of the opening in the inner top wall having a transversely straight stop edge extending a major portion of the width of said inner top wall and spaced inwardly of the other rounded end of the outer top wall and concealed by said outer top wall, said panel being positioned between said inner and outer top walls and having a width extending to the side walls of said container, the inner end portion of said panel having a flange of a transverse width less than the width of the panel and similar to said stop edge, said flange being folded downwardly and inwardly and secured to the lower surface of said panel to form a stop flange, and said stop flange engaging said stop edge of the inner top wall in checking opening movement of said panel part.

3,289,913
DISPENSING CARTON WITH RECLOSEABLE POURING SPOUT
Soldan A. Svensson, Cincinnati, Ohio, assignor to Gulf States Paper Corporation, Tuscaloosa, Ala., a corporation of Delaware
Filed Feb. 16, 1965, Ser. No. 433,118
7 Claims. (Cl. 229—17)

1. In a rectangular carton having side walls and respectively overlapping top and bottom end flaps formed from a common blank of paperboard or the like, a recloseable pouring spout comprising a partially severable base panel formed at the upper extremity of one of said side walls and transversely hinged thereto for outward swinging movement, right angularly disposed arcuate guide wings connected to opposite side edges of said base panel and directed inwardly therefrom in sliding engagement with adjacent side walls of said carton, the upper extremity of said base panel terminating in a combined pull tab and inwardly foldable top end flap, one top end flap of an adjoining side wall overlapping said combined pull tab and inwardly foldable top end flap, and a partially severable closure flap formed from the end of said



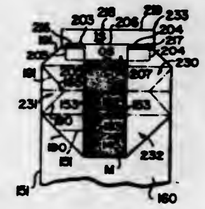
one top end flap, overlying said combined pull tab and end flap, said closure flap being hingedly connected to said one end flap and upwardly swingable to expose said pull tab for the projection of said pouring spout.

3,289,914
BLANK FOR PRODUCING CARTONS
Ferdinand Lange-Wiehe, Minden, Westphalia, Germany, assignor to Werner Bahlsen, Hannover, Germany
Filed Jan. 29, 1962, Ser. No. 169,354
3 Claims. (Cl. 229—31)

1. A blank for the production of a carton comprising, a sheet scored to divide it into a bottom wall, a pair of side walls and a pair of end walls, the end walls and side walls being joined by corner pieces, each of the corner pieces being diagonally foldable to cause it to assume a two-ply triangle shape, the blank being provided at each of its opposite ends with a continuous strip extending along edges of the end walls and edges of the corner pieces, said strips being scored at the score lines which divide the blank into walls, said strips being further provided with diagonal score lines extending from the intersection of said strips and said wall dividing score lines to provide the strip with a plurality of triangular gussets having apices at said intersections, the corner pieces being each provided at one edge with a strip member disposed at right angles to the strips on the edges of the blank, and the side walls having attached cover flaps, said cover flaps having strips at their opposite ends, said strips being joined to the strip members that are located on the corner pieces.

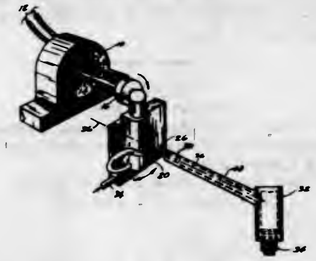
3,289,915
APPARATUS FOR AND METHOD OF MANUFACTURING MULTI-PLY BAGS
Anthony J. Civitello, Malvern, Pa., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 19, 1965, Ser. No. 441,175
16 Claims. (Cl. 229—59)

1. A web assembly for forming a blank assembly from which is formed bags of the type including an inner tube, an outer tube and a bottom wherein the bottom has an outer tube outer flap portion secured to an outer tube inner flap portion through a slot of the inner tube whereby a seal is perfected irrespective of the sealing characteristics of the inner tube comprising inner and outer superimposed webs of sheet material adapted to form respective inner and outer tubes of a multi-ply bag, said webs having opposite longitudinal edge portions, at least a single pair



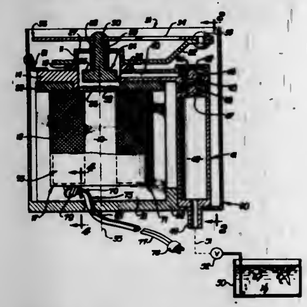
of slits in one of said webs generally parallel to the longitudinal edge portions thereof, a slit between the pair of slits and defining therewith a foldable flap of said one web, and said foldable flap being folded to a position generally overlying a portion of said one web thereby forming a slot through which a portion of the other of said webs is exposed.

3,289,916
VARIABLE PRESSURE PUMP FOR MANOMETRIC METERING DEVICE
Walter R. Hogg, Hialeah, and Kenneth D. Cooley, Fort Lauderdale, Fla., assignors to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Filed Nov. 16, 1964, Ser. No. 411,532
5 Claims. (Cl. 230—21)



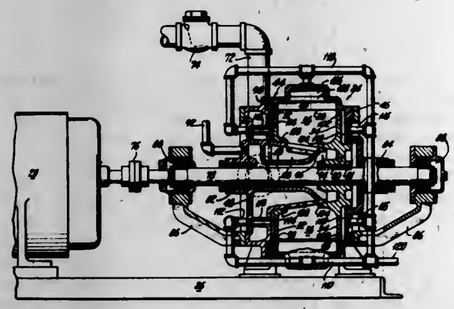
1. In a small capacity vacuum pump of the fluid compression type for use in applying vacuum to a manometric metering device wherein said pump includes a vessel for containing the fluid to be compressed, said vessel having a clearance volume and also communicating with a hollow ported block and check valve means included within the block at each port constructed and arranged alternatively to open and to close serially, and a first conduit member communicating with the interior of the block and leading to said manometric metering device; the improvement consisting of means defining a volumetric extension of the clearance volume of said vessel comprising, a second conduit member secured at one end to the vessel at the vicinity of the clearance volume and communicating thereto, an elongate tubing member having a flexible portion connected with the other end of said second conduit and leading therefrom to a location remote from said vessel, means for closing the other end of said tubing at said remote location, and, means for reducing selectively the effective internal volume of said tubing a predetermined amount to vary the effective volume of said extension within defined limits thereby to vary the compression ratio of the pump and in that manner, vary the percentage vacuum output thereof delivered to the manometric metering device.

3,289,917
ELECTRICAL LEAD PULL TAKEOUT
Beverly J. Buchanan, 3915 Bouton Drive, Lakewood, Calif.
Filed Dec. 28, 1964, Ser. No. 421,490
2 Claims. (Cl. 230—55)



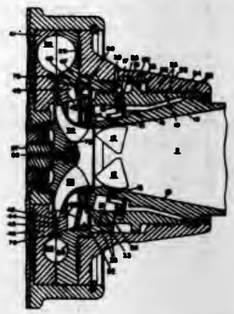
1. In combination, an electromagnet having a core and a coil, an insulation covered electrical lead connected to said coil, a holder attached to the core to transfer loading to the core and forming an aperture, the lead passing through said aperture apd forming a knot that is oversized in relation to said aperture so that movement of the knot through said aperture is blocked, pumping mechanism driven by said electromagnet, a housing containing said electromagnet along with said holder and knot, the housing having a thin wall portion containing an opening to pass the lead, said knot being located along the lead between the coil and the aperture, whereby pulling force exerted on the lead to pull said knot against said holder is transmitted thereby to said core and is not transmitted back to the coil.

3,289,918
PUMP DEVICE
Harold E. Adams, South Norwalk, Conn., assignor to The Nash Engineering Company, Norwalk, Conn., a corporation of Connecticut
Filed May 20, 1964, Ser. No. 368,967
20 Claims. (Cl. 230—79)



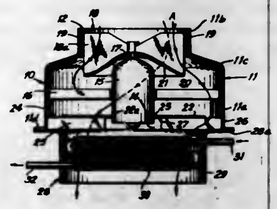
1. In combination, a liquid ring compressor having a ring of liquid circulating therein and a recirculating seal liquid supply system, said compressor including; a casing, an annular rotor having a plurality of radially extending displacement chambers rotatably mounted within said casing to form at least one pumping lobe therebetween and a stationary central port member having inlet and discharge passageways cooperative with the inside diameter of said rotor, said recirculating seal liquid supply system comprising; a seal liquid bleed chamber in said casing in direct communication with each lobe and conduit means connecting each chamber with a radially inward portion of said casing adjacent the end of said rotor for recirculating seal liquid from the lobe to the area adjacent the rotor ends to seal the operating clearances between said rotor and said casing and between said rotor and said central port member, said conduit means having a terminal portion adapted to communicate said compressor with a pressure responsive means for supplying excessive cooling liquid to said compressor when said compressor operates above the normal operating discharge pressures thereof and for permitting egress of cooling liquid when said compressor is operating at pressures below said normal discharge pressures thereof.

3,289,919
CENTRIFUGAL GAS COMPRESSORS
Gary R. Wood, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 16, 1964, Ser. No. 411,496
5 Claims. (Cl. 230—114)



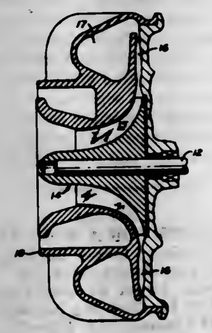
1. A centrifugal gas compressor having an axial inlet passage, having spin vanes supported for rotation in said passage, having a bladed rotor, having an axial diffuser around said rotor, said diffuser having a wall movable to vary the width of said diffuser, means for rotating said vanes towards closed positions, and leverage means movable by said rotating means for moving said wall to narrow said diffuser when said vanes are rotated towards closed positions at a rate less than the rate at which said vanes are rotated.

3,289,920
AXIAL FLOW FAN
Jean Ivan Ragnar Bolvie, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed June 21, 1965, Ser. No. 465,310
Claims priority, application Sweden, June 23, 1964, 7,651/64
11 Claims. (Cl. 230—117)



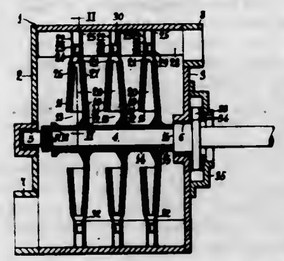
1. An axial flow fan comprising
(a) a casing having top and bottom air inlet and outlet openings, respectively, the casing including a bottom casing section extending upward from the outlet and a top casing section extending downward from the inlet and in intermediate casing section therebetween having a downward sloping wall which flares radially outward from the axis of the casing and extends axially thereof, the intermediate casing section extending outward from the top casing section which is of one diameter to the bottom casing section which is of larger diameter, the intermediate casing section being of conical form,
(b) an electric motor, means for supporting the motor within the casing, the motor having a rotatable shaft which extends upward therefrom,
(c) a fan fixed to the shaft, the fan comprising a plurality of circumferentially spaced blades extending outward from the shaft, at least the top parts of the blades being disposed in the top casing section with their outer peripheral edges spaced from the top casing section to provide gaps therebetween,
(d) a dished member having a top convex side facing the inlet and a bottom concave side facing the outlet, the bottom edges of the blades conforming to the shape of the top convex side of the dished member and being fixed thereto,
(e) the fan blades and dished member being vertically disposed with respect to the casing to draw air into the top casing section at the inlet and propel air from the top casing section through the intermediate and bottom casing sections,
(f) an apertured plate which is disposed in the casing and substantially perpendincular to its axis, means for mounting the apertured plate within the casing at a region intermediate the top and bottom ends of the bottom casing section, the apertured plate having a central opening into which the lower end of the motor extends,
(g) the diameter of the apertured plate being less than that of the bottom casing section to provide a gap of annular form between the outer peripheral edge of the plate and the wall of the bottom casing section, and
(h) circumferentially spaced vanes which extend across the last-mentioned gap and function to guide air flowing past the vanes, the vanes being formed to impart axial flow to air passing from the gap to the outlet.

3,289,921
VANELESS DIFFUSER
Shao L. Soo, Urbana, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Oct. 8, 1965, Ser. No. 494,225
3 Claims. (Cl. 230—127)



1. A vaneless diffuser for a radial flow turbomachine, said diffuser comprising a pair of axially spaced annular walls about the periphery of an impeller and defining a vaneless diffuser flow passage thereabout, the radially inner portion of the axially spaced walls defining an entry portion for pumped fluid to said diffuser passage, the radially outer portion defining a discharge point wherein said pumped fluid enters a surrounding collector in an unrestricted manner, said walls of said entry portion defining a first converging area to a throat for accelerating fluid and reducing turbulence in the fluid flow, said axially spaced walls defining a diverging second portion of said flow passage to define an area of increasing cross-section to a point in the downstream flow where boundary layer separation is imminent from said axially spaced walls in said second portion of said flow passage, said axially spaced walls defining a third portion of said flow passage in communication with said second portion and extending downstream of said second portion of said flow passage to the point of discharge therefrom, said axially spaced walls of said third portion defining a means for maintaining the condition of imminent boundary layer separation from said walls throughout the third portion of said flow passage.

3,289,922
AIR COMPRESSOR
James G. Sawyer, Snyder, N.Y., assignor, by mesne assignments, to Utah Construction & Mining Co., San Francisco, Calif.
Filed Oct. 30, 1964, Ser. No. 422,871
6 Claims. (Cl. 230—127)



1. A centrifugal compressor comprising a shaft mounted for rotation about its lengthwise axis, a rotor having a pair of sheet metal plates spaced apart in the direction of said axis, one of said plates being connected to said shaft and mounting said rotor on said shaft for rotation therewith, the other of said plates having a generally central air inlet opening therethrough into said rotor, said rotor having a peripheral air outlet opening between said plates, a stator encircling said rotor, said stator having a pair of substantially parallel sheet metal members spaced apart in the direction of said axis, an air inlet opening between said members in radial alinement with said rotor air outlet opening, an air outlet opening from said stator adjacent the outer periphery thereof, and a series of rectilinear decelerating vanes between said members in spaced apart relation around said axis, said vanes defining air passages therebetween of continuously increasing cross-sectional area from said stator air inlet opening to said stator outlet opening, wherein said stator members extend radially inwardly across said rotor plates in axially spaced relation thereto, and wherein both said rotor plates and the portions of said stator members extending across said rotor plates are of shallow, frustoconical form converging toward the periphery of said rotor.

3,289,923
MULTI-STAGE PUMP
William V. Millman, Moline, Ill., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Oct. 30, 1964, Ser. No. 407,764
6 Claims. (Cl. 230—130)

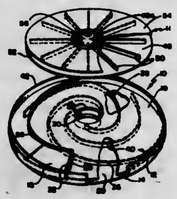
1. A multi-stage pumping device comprising:
a right cylindrical outer casing;

at least one fluid conducting stage in said casing, each stage including means defining an upstream pumping chamber and a downstream diffusing chamber;

each pumping chamber including a fluid impeller cooperatively mounted for rotation in said pumping chamber, a central fluid inlet disposed to conduct fluid to said impeller and a vane spiralling radially outward about a portion of the periphery of said impeller and forming a volute between said vane and said outer casing, said vane terminating in a generally tangentially directed pumping chamber outlet adjacent the periphery of said impeller;

means defining an unobstructed transfer duct communicating with said pumping chamber outlet and forming a substantial continuation of said volute around the periphery of said stage but progressing gradually in an axial direction to a generally tangentially directed fluid outlet from said transfer duct in said diffusing chamber; and

each diffusing chamber having a series of inwardly spiralling vanes disposed to provide first passage of expanding cross section area between one of said vanes and the outer casing of said chamber and then forming passages of uniform cross-sectional area between adjacent vanes, said vanes terminating in an outlet from said diffusing chamber which forms a cooperative intake for the next stage.

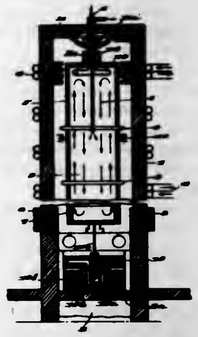


3,289,924
FLEXIBLE BLADE FAN
Thomas J. Weir, Indianapolis, Ind., assignor to William Wallace Corporation, Wilmington, Del., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,458
2 Claims. (Cl. 230—134)



1. A fan structure including a spider having arms extending radially outward from a central hub portion, clamp members overlying one face of each of said arms and extending beyond the ends of said arms, each of said clamp members having its marginal portion adjacent the leading edge of its respective arm folded upon itself to provide a generally U-shaped configuration, a flexible fan blade extending into each of said clamp members, a backing plate overlying each of said blades and extending into said clamp member and substantially to the trailing edge of the arm, and fastening means spaced along the length of each arm to rigidly join the arm, clamp member, blade and backing plate, whereby stress in the blades to flexing of the blades and the backing plates is more evenly distributed across the width of the blade and stress concentration at said fastening means is avoided.

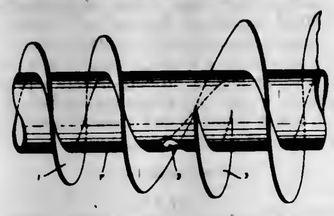
3,289,925
CENTRIFUGAL SEPARATORS
Gernot Zippe, Charlottesville, Va., and Rudolf Scheffel, Frankfurt am Main, Romerstadt, and Max Steenbeck, Jena, Germany; said Zippe and said Scheffel assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed Nov. 14, 1958, Ser. No. 845,584
Claims priority, application Germany, Nov. 14, 1957, D 26,831; Dec. 28, 1957, D 27,109; Austria, Nov. 28, 1957, A 7,728/57
(Filed under Rule 47(a) and 35 U.S.C. 116)
6 Claims. (Cl. 233—1)



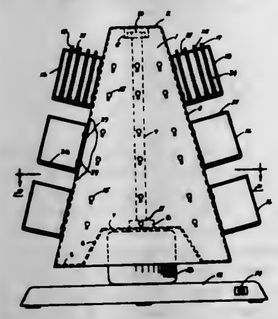
1. In a centrifugal separator for gaseous mixtures comprising a vacuum chamber, and an elongated thin-walled hollow rotor, means for mounting the rotor in the chamber to turn about a substantially vertical axis, said mounting means in normal operation being located at the lower end only of the rotor and including means positively positioning the lower end of the rotor at all times during rotation thereof while permitting tilting of the upper part of the rotor about its vertical axis, said rotor and said chamber including at the upper end of the rotor adjacent but non-contiguous bodies one of which is magnetized while the other is magnetic, said bodies being symmetrical about the vertical axis of the rotor and maintaining the rotor axis substantially vertical, said bodies being annular rings, and means forming three separate passages for the introduction of the gaseous mixture and the removal of the separated components respectively extending from the outside of the rotor through said rings into the rotor.

3,289,926
SCREW CONVEYOR FOR A BOWL CENTRIFUGE
Georg Hiller, Vilsbiburg, Lower Bavaria, Germany, assignor to Flottweg-Motorenwerk Dr. Georg Bruckmayer, Vilsbiburg, Lower Bavaria, Germany
Filed Oct. 14, 1964, Ser. No. 403,799
15 Claims. (Cl. 233—7)

1. A screw conveyor, comprising a rotatable hollow shaft having an inlet opening in its walls, a substantially helical conveying screw secured for rotation with said shaft, said inlet opening being located between adjacent turns of said conveying screw, a generally radially extending deflector plate means secured for rotation to said shaft axially spaced from said inlet opening between said inlet opening and an adjacent turn of said conveying screw, and said deflector plate means being operable to deflect the conveyed material away from said inlet opening.

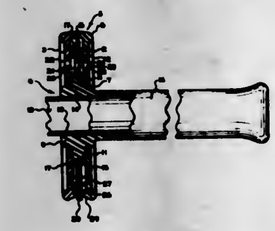


3,289,927
HOSPITAL THERMOMETER SHAKER
Josephine Nelson, 626 11th St. S., Lethbridge, Alberta, Canada
Filed Oct. 21, 1964, Ser. No. 405,476
4 Claims. (Cl. 233—26)



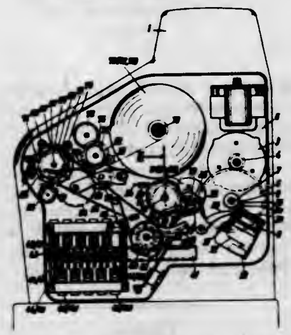
1. A hospital thermometer shaker comprising a base, a hollow conically shaped member, a vertical axle on which said conically shaped member is mounted for rotation, means mounted on said base below said conically shaped member for rotating said axle, thermometer holding cages detachably connected to the said conically shaped member, and means for mounting supports for the thermometer in said cages.

3,289,928
GOLF CART ACCESSORY
Richard J. Gould, 1850 Leonar, Saginaw, Mich.
Filed Sept. 27, 1965, Ser. No. 495,755
4 Claims. (Cl. 235—1)



1. An accessory adapted to be mounted on the handle of a golf cart, said accessory comprising: a yieldable, resilient sleeve member which may be slipped axially on the handle, a rigid casing mounted on said sleeve in generally surrounding relation therewith, said casing comprising opposite side wall sections with aligned passages providing an opening to receive said sleeve member and there being a radially extending recess between said casing wall sections leading outwardly from the said opening in the casing; said sleeve member having a radially projecting resilient flange portion of reduced axial extent relative to the overall axial extent of said sleeve member received in said recess and sandwiched between said side wall sections; at least one of the side wall sections of the rigid casing and said flange portion of the resilient mounting member having aligned tee receiving openings, the openings in said flange portion being of a size to frictionally retain the tees and the openings in said wall section of the casing being greater in size than the openings in said flange portion to facilitate ready insertion of the tees.

3,289,929
TRADING-STAMP DISPENSING APPARATUS
Alfred Hecker and Gerhard Becker, Bielefeld, Germany, assignors to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Feb. 14, 1964, Ser. No. 344,986
Claims priority, application Germany, Feb. 22, 1963, A 42,397
17 Claims. (Cl. 235—7)

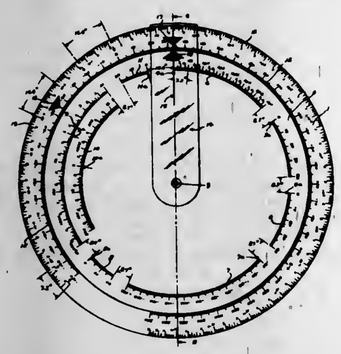


1. A trading-stamp dispensing apparatus, comprising stamp-tape supply means, stamp outlet means, feed means defining a tape travel path from said supply means to said outlet means, said feed means having tape drive means for positively advancing the tape and drive control means connectable to a registering business machine for controlling said feed means to issue a number of stamps varying in accordance with an amount registered by said machine, a printing device having means for imprinting a value-modifying overprint onto the stamps being issued, said printing device being disposed at said travel path and having means for selectively setting said device to active and inactive conditions independently of the advancement of the tape by said tape drive means, and drive motor means for operating said tape drive means and said stamp imprinting means in synchronism.

3,289,930
INTERFERENCE PREDICTION CALCULATOR
Julius Widrewitz, Utica, and Hollie J. Hewitt, Rome, N.Y.; said Hewitt assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 4, 1966, Ser. No. 518,741
9 Claims. (Cl. 235—88)

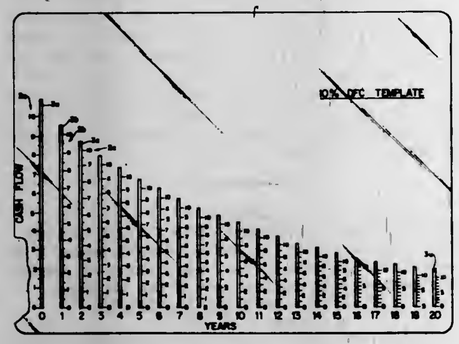
1. A radio interference prediction calculator comprising first and second relatively adjustable interference prediction indicia members having adjacent edges with cooperating interference prediction indicia thereon, a cursor movable thereon having a hairline for simultaneous regis-

tration with predetermined selected indicia on both of said relatively adjustable members, said second member having a plurality of different interference parameter value indicia scales disposed thereon in successively spaced relation along the edge thereof adjacent the edge of said first member, said first member having a correlated power density (dbm/m.²) and interference margin (db) value indicia scale thereon extending continuously along the edge thereof adjacent all of said successively spaced different interference parameter value indicia scales of



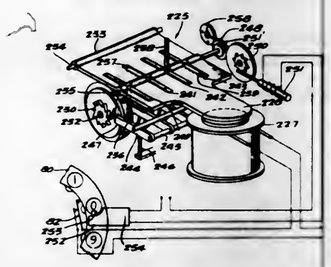
said second member, whereby predetermined interference values on said interference perimeter indicia scales are combined by predetermined alternate cooperative adjustments between said first and second indicia scales and said cursor to indicate the radio interference and power density prediction on said power density and interference margin indicia scale on the first member under said hairline in alignment with the final successively selected interference parameter value indicia on said successively spaced interference perimeter scales on said second member.

3,289,931
DISCOUNTED CASH FLOW RETURN RATE TEMPLATE
Jack F. Bennett, Riverside, Conn., Ralph L. Brown, Jr., New York, N.Y., Alfred T. Heron, Old Greenwich, Conn., and Robert E. Lienhard, Coral Gables, Fla., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,420
7 Claims. (Cl. 235—89)



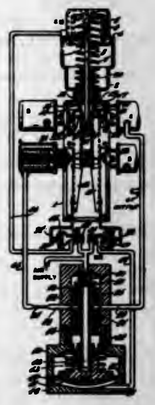
1. A device for calculating graphical solutions to problems involving cash outflow in terms of investment dollars and cash inflow dollars in terms of return on a given investment project, comprising template means, a plurality of scalar forms on said template means each linearly representing cash outflow and inflow at a predetermined compound fixed percentage discount with respect to each other for a predetermined period within a span measured from the initial year to a terminal date of said investment project, and scalar indicia proportionately marking fractional segments of said cash inflow and outflow dollars on each of said scalar forms at said predetermined fixed percentage of cash outflow in said initial year.

3,289,932
ELECTROMAGNETIC COMPUTER
Edward C. Walsh, Los Angeles, Calif.
(9465 Wilshire Blvd., Beverly Hills, Calif.)
Filed Oct. 6, 1965, Ser. No. 493,428
6 Claims. (Cl. 235—91)



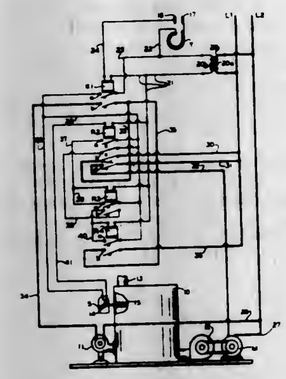
1. A device having a plurality of circular elements having numerical indicia thereon, said elements being mounted to rotate about a common axis, electromagnetic means arranged for individually imparting movement to desired selected circular elements, and drive means for the electromagnetic means for producing electrical pulses comprising a rotor and contact means operated by the rotor and operable to produce numbers of pulses depending upon the degree of rotation of the rotor, the rotor having equally angularly spaced configurations adapted to be engaged for driving the rotor.

3,289,933
WEIGHBEAM CONTROL SYSTEM
Johannes Sorteberg, Darien, Conn.
(540 Connecticut Ave., South Norwalk, Conn.)
Filed Apr. 7, 1965, Ser. No. 446,154
1 Claim. (Cl. 235—200)



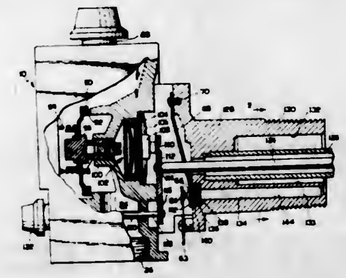
An automatically balanced weighbeam control system comprising two weighbeams, means for transmitting a force to each end fulcrum point of said weighbeams, a movable fulcrum for each weighbeam, latter fulcrums to be in fixed relationship to each other to move in unison along their weighbeams, means for balancing the moments on said weighbeams, a pilot valve with pneumatic output signal, feedback of said output signal to at least two of said force transmitting means, and means for varying the force transmitting means' speed of response to said signal.

3,289,934
WARM AIR HEATING SYSTEM CONTROL
Abraham R. Baroody, 7 Sherrill St., Geneva, N.Y.
Filed May 6, 1965, Ser. No. 453,718
4 Claims. (Cl. 236—9)



1. A temperature control system for a warm air furnace having a bonnet switch responsive to the temperature of the furnace and an electrically controlled furnace and an electrically operated blower, comprising: a thermostat switch responsive to the temperature of the space to be heated; and a plurality of electrically operated switching devices, including: a first device actuated by the closing of the thermostat switch and deactivated by the opening thereof, said first device when actuated having switch means controlling all circuits to the burner and to the other devices; a second device actuated by joint actuation of the first device and the closing of the bonnet switch, said second device when activated having switch means to activate a third device, the second device also having switch means to activate the blower when the second device is activated and to deactivate the blower when the second device is deactivated, and the second device also having switch means to activate the burner when the first and second devices are both actuated; said third device having switch means for establishing a holding circuit to the third device for holding the same activated so long as the first device remains activated, and the third device also having switch means for actuating a fourth device when the second device is deactivated; said fourth device having switch means for establishing a holding circuit to the same for holding the fourth device actuated thereafter so long as the first device remains activated, the fourth device also having switch means for actuating the burner so long as the first and fourth devices remain activated; whereby when the thermostat switch first closes the burner operates until the bonnet switch closes to deactivate the burner and operate the blower, and thereafter so long as the thermostat switch remains closed when the bonnet switch opens the blower is deactivated and when the bonnet switch closes the blower is activated while the burner continues activated until the thermostat switch opens.

3,289,935
THERMOSTATIC CONTROL DEVICE
Douglas Rex Scott, Santa Ana, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Aug. 6, 1964, Ser. No. 387,915
13 Claims. (Cl. 236—21)

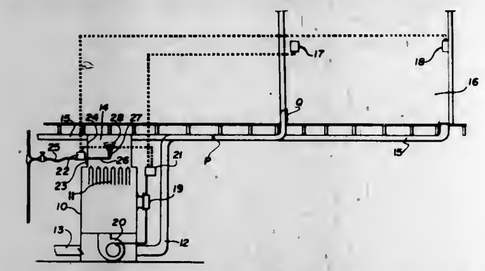


1. In a control device, the combination comprising
a casing,
control means in said casing movable between controlling positions,
operating means for moving said control means,
first temperature responsive means actuating said operating means between controlling positions corresponding to first and second temperature conditions,
means including interrupting means operative to exercise supervisory control over said control means,
a mounting shank attaching said first temperature responsive means to said casing,
means defining a blind bore in said mounting shank disposed in spaced relation to said first temperature responsive means,
second temperature responsive means including a charge of thermally expandable material in said bore adapted to expand at a predetermined third temperature condition,
sealing means for said bore including an element movable by the expandable material when the same is expanded, and
means defining an operative connection between said movable element and said interrupting means for operating the same upon occurrence of the third temperature condition.

3,289,936
HUMIDIFICATION APPARATUS FOR FORCED AIR HEATING SYSTEM
Wallace A. Coburn, deceased, late of Brandon, Manitoba, Canada, by Clare W. Coburn, 19 Creighton Blvd.; James H. Coburn, 235 18th St.; and Clara M. Coburn, 310 21st St., executors, all of Brandon, Manitoba, Canada
Filed June 28, 1965, Ser. No. 470,328
10 Claims. (Cl. 236—44)

1. An apparatus for controlling the humidification in a forced hot air heating system including a nozzle for injecting water into said system and control means for controlling the rate of injection; said control means including a liquid flow control valve; an interrupter device for opening and closing said valve at predetermined intervals; and a pressure sensing device for interrupting the supply of water to said nozzle when the water pressure falls below a selected minimum value, wherein the nozzle is posi-

tioned to spray water against the sides of the ducts of the hot air heating system, and the selected minimum value is



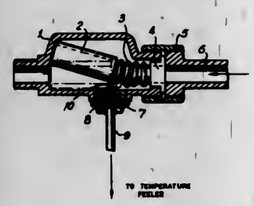
the water pressure which will effect contact between the spray and the sides of the ducts.

3,289,937

DEVICE FOR AUTOMATICALLY REGULATING THE FLOW OF THE HEAT CARRIER IN A HEATING INSTALLATION

Arthur Meier-Schenk, Oleanderstrasse 8, Zurich, Switzerland

Filed Aug. 18, 1964, Ser. No. 390,347
Claims priority, application Switzerland, Aug. 22, 1963, 10,393/63
5 Claims. (Cl. 236—99)



1. A fluid control device comprising a housing having a fluid discharge opening and a blocking wall inside said housing aligned alongside the opening, an inlet conduit extending into said housing having a displaceable end portion terminating in a fluid flow opening which may be selectively aligned with said fluid discharge opening for full fluid flow through said conduit and through said discharge opening and aligned with at least a portion of said blocking wall to cause restriction of the fluid flow opening for reduced fluid flow, and temperature sensing means mounted on said housing including a movable member adjacent said displaceable end portion of said inlet conduit and movable upon changes in temperature to displace said end portion relative to said fluid discharge opening and said blocking wall for regulating the amount of fluid flow through said discharge opening.

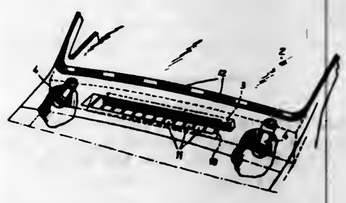
3,289,938

AIR-CONDITIONING OF AUTOMOBILE VEHICLES

Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Nov. 30, 1964, Ser. No. 414,773
Claims priority, application France, Dec. 2, 1963, 955,736, Patent 1,387,145
2 Claims. (Cl. 237—34)

1. An air-conditioning device for vehicles having a transverse girder disposed under a windscreen and having a chamber formed therein comprising a heating radiator disposed within said chamber, at least one air intake orifice for feeding outside air to said chamber, shutter means for selectively opening and closing said orifice, at least one lateral tubular unit connecting said chamber to a passenger compartment of said vehicle, a double direction helicoidal fan driven by a bidirectional axial air gap electric motor, both of which are mounted in said tubular



unit whereby selective operation of said motor and said shutter means allows drawing in external air and delivering it to the passenger compartment and allows withdrawing air from said passenger compartment for recycling said air through said radiator.

3,289,939

COMBINATION TRACTION AID AND WARNING DEVICE FOR VEHICLES

Melvin Martinov, 2698 Blue Spruce Drive, Salt Lake City, Utah

Filed Oct. 2, 1963, Ser. No. 313,359
5 Claims. (Cl. 238—14)



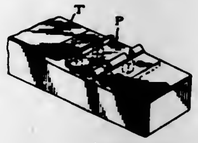
1. A traction device for use with vehicles, said traction device including, in combination, a longitudinally oriented, rigid, elongate traction member having top and bottom, roughened traction surfaces; and a flexible traction tongue secured to one extremity of said traction member, said flexible traction tongue having a roughened, upper traction surface, and wherein said bottom of said traction member is provided with light responsive reflector means.

3,289,940

SYNTHETIC RAILWAY TIE

Emory L. Groff, Pompano Beach, Fla., assignor to Poor & Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 10, 1965, Ser. No. 486,273
2 Claims. (Cl. 238—29)



1. A pre-plated tie for embedment in the ballast of a track-bed for rails, comprising,

a homogeneous elongated monolithic body of synthetic resinous material capable of being molded and having an upper rail supporting face impervious to fluids and dust and adapted to support the base portions of railway rails weighing in the range of 75# to 165# per yard,

and a metal tie plate having vertically extending openings filled with the material of the tie during molding of the tie to secure the plate against movement in both horizontal and longitudinal directions in relation to the exposed surface of the tie.

3,289,941

RAILWAY TRACK WITHOUT BALLAST

Roger Paul Sonnerville, Saint-Cloud, France, assignor to Societe d'Etudes Ferroviaires, a French body corporate, Paris, Seine, France

Filed Dec. 7, 1964, Ser. No. 416,286
Claims priority, application France, Dec. 12, 1963, 956,997
11 Claims. (Cl. 238—116)



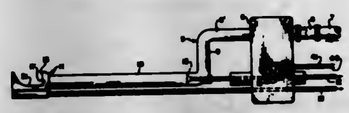
1. Railway track without ballast comprising a continuous platform overlying the substructure of the track, blocks supporting rails which are fastened to the top face of the blocks by rail fasteners, a sheath of elastomer material covering the lower part of each block, and cavities in the platform in which the blocks are respectively inserted, and sheaths being interposed between the faces of the blocks and the faces of the cavities, the sheaths having a bottom wall which is in contact with the base of the cavity and has a closed cellular structure, each sheath having lateral walls which are fixed to the bottom wall in a fluidtight manner, the dimensions of the sheath being such that the walls of the sheath mounted on the block are in an elastically stretched condition.

3,289,942

CLEANING APPARATUS

Kurt J. Heinicke, Robert Lawrence III, and William J. Langevin, Jr., Hollywood, Fla., assignors to Heinicke Instruments Co., Hollywood, Fla., a corporation of Florida

Filed May 17, 1965, Ser. No. 456,293
6 Claims. (Cl. 239—101)



1. A washing apparatus that includes a rigid wand having a head portion at one end and a spray nozzle at the opposite end, a source of washing fluid extending through the head and connected to the nozzle, a source of pressurized air also extending through the head and into the line of flow of the water and a pressurized detergent extending through the head and terminating at the nozzle, an impulse device located within the water line adjacent its point of passing through the head and an impulse device located within the head and connected to the source of pressurized air whereby to impart a pulsation to the air that is discharged into the water line between the head and the nozzle and means for energizing the second named impulse device within the head.

3,289,943

THERMAL BARRIER FOR THRUST VEHICLE NOZZLE

Donald E. Thomas, Mount Lebanon Township, Allegheny County, and Raymond W. Buchanan, Jr., Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 17, 1962, Ser. No. 217,698
4 Claims. (Cl. 239—127.1)



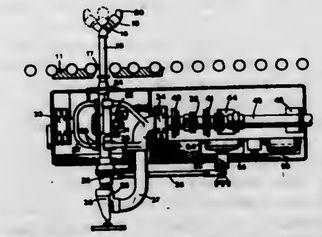
1. A nozzle for a thrust vehicle, said nozzle comprising an elongated hollow member suitably contoured in longitudinal section and in cross section to channel an expanding high temperature gas therethrough for efficient thrust of said vehicle, a layer of thermally insulative material located in contiguous relation with at least a peripheral portion of the outer surface of said member, said peripheral surface portion of said member being so located and sized longitudinally of said member as to be correlated thermally with at least the relatively highest temperature portion of the interior surface of said member, said liner portion having a continuous surface thereon to prevent exposure of said layer to the interior of said nozzle, and cooling wall means secured relative to said member outer surface and over said insulative layer, said wall means being positioned to captivate completely said insulative layer against dislocation and, in heat transfer relation therewith for cooling said member during operation said wall means including a plurality of coolant tubes secured to an inner end of said member and extending longitudinally of said member and adjacently of each other, said wall means also including a length of wire wound helically against said coolant tubes about said member with the helical axis extending longitudinally of said member, said wire and said tubes being so located and so bonded together as to form conjunctively a substantially solid barrier against dislocation of said insulative layer and in addition to provide substantial nozzle strength against internal gas pressure.

3,289,944

SPRAY NOZZLE MOUNTING AND OSCILLATING MECHANISM

Merle M. Clark, Barberton, and William T. Bennett, Wadsworth, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 20, 1964, Ser. No. 390,853
1 Claim. (Cl. 239—227)



In combination with a spray nozzle arranged to discharge a substantially flat semicircular spray of liquor, a frame supporting spaced bearings defining a horizontal axis, a liquor supply conduit rigidly attached to said frame in axial alignment with the horizontal axis of

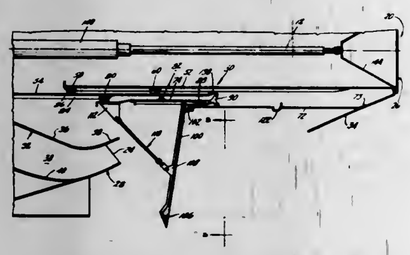
said bearings, a yoke mounted in said bearings for oscillation about said horizontal axis, pipe means forming part of said yoke and connecting with said liquor supply conduit through a swivel joint for flow of liquor therethrough, a cradle mounted on said yoke for oscillation about a transverse axis normal to and substantially intersecting said horizontal axis, pipe means clamped in said cradle to support said spray nozzle at one end thereof and connected with said pipe means at its opposite end through a swivel joint, means for positively oscillating said yoke about said horizontal axis through a selected angle in a vertical plane normal to said horizontal axis, means for positively oscillating said cradle about said transverse axis through a selected angle, said oscillating means including a motor driven speed reducer having oppositely extending output shafts, adjustable length eccentric crank arms attached to each of said shafts, spaced bell-cranks pivotally attached to said frame beneath said yoke, adjustable length rods connecting one end of said output shaft eccentric crank arm to said cradle through one of said bell-cranks adjacent the intersection of said horizontal axis and said vertical plane, and separate adjustable length rods connecting the other end of said shaft eccentric crank arm to said yoke through the other of said bell-cranks.

3,289,945

THRUST REVERSER FOR PLUG NOZZLE

Hilmer K. Noren, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,482
6 Claims. (Cl. 239—265.19)



2. A thrust reverser for a flight vehicle having an axis and which generates thrust by discharging exhaust gases to atmosphere comprising a center plug having an axially translatable after end, an outer duct enveloping said center plug to define an exhaust gas passage therebetween and an exhaust gas outlet therewith, thrust reverser mechanism enveloped within said center plug when in a stowed position and comprising first axially translatable means attached to said center plug after end, second axially translatable means normally engaged to said first axially translatable means through mechanical locking means, at least one thrust reverser flap pivotally attached to said first and second axially translatable means so that said flaps pivot radially as relative translation occurs between said first and second means, and means to axially translate said center plug after end and said first and second axially translatable means rearwardly to a first position at which said locking means automatically disengages and then to axially translate said center plug after end and said first means rearwardly to a thrust reverser operative position whereby said flap pivots radially outward to extend across said exhaust gas passage rearward of said exhaust gas outlet to block and redirect exhaust gases.

3,289,946

ANNULAR CONVERGENT-DIVERGENT EXHAUST NOZZLE

Dean J. Lennard, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Aug. 7, 1963, Ser. No. 300,434
4 Claims. (Cl. 239—265.39)



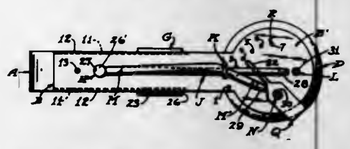
2. An annular convergent-divergent exhaust nozzle for an axial flow jet engine including:
an outer nacelle;
a generally cylindrical support structure within said nacelle;
a generally conical plug member mounted centrally of said support structure and cooperating therewith to define the nozzle throat and form a convergent portion of said nozzle;
a cylindrical shroud member mounted for relative axial movement on said support structure and defining an external boundary wall for said nozzle in combination with said nacelle;
a single set of flaps comprising a plurality of axially-extending members pivotally mounted intermediate the ends thereof on the downstream end of said shroud member, each of said flap members having forwardly divergent exterior and interior surfaces, whereby in a first position said exterior surfaces form a relatively low boattail angle for said nozzle in combination with a downstream portion of said support structure and in a second position said exterior surfaces form a generally cylindrical extension of said shroud member and said nacelle for minimizing aerodynamic drag; and
means translating said shroud member axially to locate said set of flaps in either of said first and second positions.

3,289,947

SPRAY GUN

Earl K. Hughes, 1436 Olivina Ave., Livermore, Calif.

Filed Oct. 15, 1965, Ser. No. 496,514
5 Claims. (Cl. 239—348)



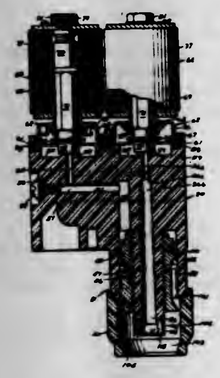
1. A spray gun comprising:
(a) a body having a portion adapted to be gripped by the hand;
(b) a container cap carried by said body;
(c) a liquid container removably secured to said cap;
(d) a fluid discharge tube extending through said cap and being receivable in said container when the latter is secured to said cap;
(e) said body having an air passage therein for receiving air under pressure;
(f) an air nozzle communicating with said air passage and positioned adjacent to the outlet end of said fluid discharge tube for spraying any liquid discharged from said tube;
(g) adjustable air conveying means communicating with said air passage and with the top interior of said liquid container for delivering air under pressure into the container top for forcing liquid from the container and out through said discharge tube, said means being adjustable for varying the quantity of air entering the container top and thus varying the quantity of liquid discharged from said tube; and
(h) an air exhaust branch communicating with said air passage and having an outlet opening into the atmosphere so that when said exhaust branch is open, all of the air flowing through said air passage will escape to the atmosphere and no liquid will be discharged from said tube, said outlet opening being closed by the operator's finger for preventing any escape of air to the atmosphere;
(i) whereby liquid will be sprayed that is discharged from said tube.

3,289,948

ELECTRIC REMOTE DISPENSER VALVE

William R. Fuerst, Skokie, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Dec. 23, 1964, Ser. No. 420,521
5 Claims. (Cl. 239—406)



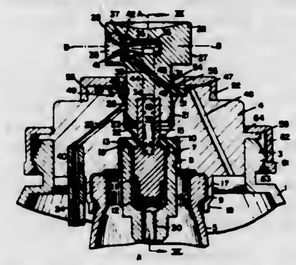
2. A liquid dispenser comprising:
a dispenser body having at least two liquid inlets connected to separate fluid sources,
separate flow passageways formed within said dispenser body and connecting to said inlets,
a first valve means disposed within one of said separate flow passageways,
a second valve means dsposed within another of said separate flow passageways,
valve controls for operating said first valve means and second valve means,
concentric outlets at said dispenser body,
concentric passageways within said dispenser body connecting said separate flow passageways and said concentric outlets,
an effervescent adaptor formed generally as a cylindrical shell and having a first and second end face and having an inner and outer diameter substantially equal to the respective corresponding diameters of the outer of said concentric passageways,
said adaptor having a recess extending from said first end face to said second end face and being removably positioned within the outer of said concentric passageways and forming together therewith a new passageway extending from said first end face to said second end face.

3,289,949

PUSHBUTTON DISPENSER FOR PRODUCTS IN THE FLUID STATE

Willy Roth, Aarau, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

Filed Sept. 8, 1964, Ser. No. 394,685
Claims priority, application Switzerland, July 9, 1964, 8,990/64; July 29, 1964, 9,913/64
18 Claims. (Cl. 239—579)



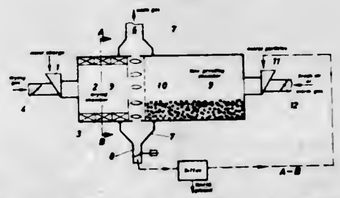
1. An atomizer-dispenser for fluids, comprising an outer receptacle having at least one space therein for at least one fluid to be dispensed, an inner reservoir for a propellant gas under pressure and positioned within said outer receptacle, a stopper closing said outer receptacle and having said inner reservoir secured thereto, a pushbutton movably mounted in said stopper, a discharge nozzle forming part of said atomizer-dispenser, a high pressure obturator means coupled to said pushbutton and located between said propellant reservoir and said discharge nozzle and movable by said pushbutton for passing propellant gas from said reservoir through said discharge nozzle, and at least one low pressure obturator means coupled to said pushbutton and located between said one space in said outer receptacle and said discharge nozzle and between said one space in said outer receptacle and the outside of said dispenser and movable by said pushbutton for placing the interior of said at least one space in said receptacle in communication with said discharge nozzle and placing the interior of said one space in said receptacle in communication with the space outside the dispenser.

3,289,950

METHOD OF AND APPARATUS FOR GRINDING MOIST MATERIAL

Bernd Helming, Neubeckum, Westphalia, and Heinrich Henne, Ennigerloh, Westphalia, Germany, assignors to Polysius G.m.b.H., Westphalia, Germany

Filed Oct. 28, 1963, Ser. No. 319,934
Claims priority, application Germany, Dec. 12, 1962, P 30,758
12 Claims. (Cl. 241—18)



1. A method of grinding moist material in a tube mill having drying chamber means and separate grinding chamber means, which includes the steps of: charging moist material to be ground into said drying chamber means, passing a first flow of gas in the form of a drying gas into and through said drying chamber means while withdrawing the gas having passed through said drying chamber means so as to bypass and grinding chamber

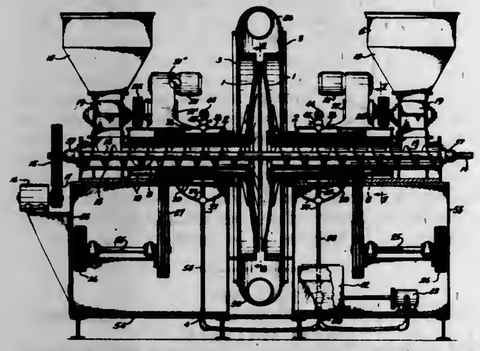
means, conveying predried material into said grinding chamber means for grinding therein while independently of said first flow of gas passing a second flow of gas through said grinding chamber means.

7. A mill for separately drying and grinding material, which includes: a tubular housing having a first section adapted to be connected to a source of drying gas and forming a drying chamber only, said tubular housing also having a second section separated from said drying chamber and forming a grinding chamber for grinding material received by and dried in said drying chamber, said tubular housing furthermore having a third section located between said first and said second section and comprising apertures for communication with said drying chamber and said grinding chamber, first conduit means in flow communication with said third section and bypassing said second section for withdrawing gas passed through said first section and causing said drying gas to bypass said second section, and second conduit means independent of said first conduit means and in flow communication with said second section for conveying a flow of gas thereinto.

3,289,951
COUNTERROTATING DISK COHESIVE MATERIAL DISINTEGRATOR

Samuel V. Cravens, West Vancouver, British Columbia, Canada, assignor to Maruma Enterprises Ltd., Vancouver, British Columbia, Canada, a corporation of Canada

Filed July 26, 1963, Ser. No. 297,753
10 Claims. (Cl. 241—39)



1. A material disintegrator comprising a pair of dished disks disposed in adjacent relationship and having their hollow sides facing each other, means supplying pieces of material between said disks, driving means operatively connected to said disks and effecting rotation thereof in opposite directions at speeds such that the peripheral speed of each disk at least approaches the speed of sound, and means supporting said disks while rotating spaced apart at all locations a distance sufficiently great as to avoid grinding engagement with the pieces of material supplied between said disks.

3,289,952
PULVERIZER WITH BASKET-TYPE ROTOR

Herbert Alfred Merges, 2 Werkstrasse, Wolfgang, Germany, Hans Georg Krestin, 3 Feldstrasse, Ostheim, Germany, and Egon Becker, Frankfurter Ldstr., Hanau, Germany

Filed Apr. 21, 1964, Ser. No. 361,359
Claims priority, application Germany, Apr. 26, 1963, C 29,772
4 Claims. (Cl. 241—49)

1. A mill comprising

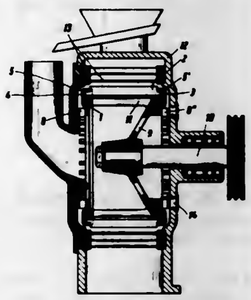
(1) a housing having a back wall and a front wall, the walls defining a grinding chamber therebetween;

(2) a rotor mounted in said grinding chamber and rotatable about an axis extending between said walls, the rotor including

(a) a disk having an annular rim,

(b) a supporting ring spaced from the disk rim and coaxial therewith, the disk rim and ring constituting end faces of the rotor, and

(c) a plurality of axially extending, parallel spacing rods connecting the disk and the ring along the periphery of the rotor;



(3) a plurality of grinding elements supported on the disk rim and supporting ring over the periphery of the rotor; and

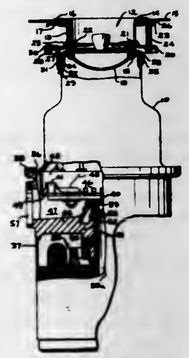
(4) clamping rings mounted over the disk rim and supporting ring to hold the grinding elements in place, annular spaces being defined between end faces of the clamping rings and the walls of the housing,

(d) spaced bosses being arranged on the end face of at least one of the clamping rings defining therebetween radially extending recesses.

3,289,953
LUBRICATED SHAFT AND SHAFT SEAL

Norman W. Johnson and Robert P. Farrell, Jr., Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Apr. 20, 1964, Ser. No. 361,143
8 Claims. (Cl. 241—257)



1. For use in a food waste disposer having a stationary shredding member and a cooperating rotatable member, a rotary seal including:

(a) a shaft connected to the rotatable member for driving said member,

(b) a stationary sealing member formed of resilient material and contacting said shaft with a sealing fit,

(c) the portion of said shaft engaged by said stationary member being formed from a sintered metal impregnated with a temperature-sensitive lubricant so that at a predetermined temperature said lubricant flows to the surface of said portion of said shaft and the temperature of said stationary member is maintained at an optimum operating level.

3,289,954
DISK REFINER

Dwight E. Jones, Pittsfield, Mass., assignor to E. D. Jones Corporation, Pittsfield, Mass., a corporation of Delaware

Filed Mar. 17, 1964, Ser. No. 352,946
4 Claims. (Cl. 241—298)

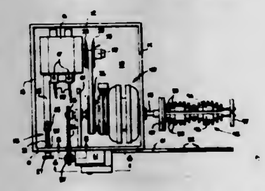


1. A refiner comprising a backing disk, refining segments distributed around one side of the disk, and means to hold the segments on the disk, said means including pairs of interlocking dovetail faces on the disk and segments, the faces extending transversely of radii of the disk, one pair of said faces being straight so as to prevent relative rotation of the segments relative to the disk.

3,289,955
COIL WINDING APPARATUS

Frederrick McBroom and Hilton McBroom, Indianapolis, Ind., assignors to McBroom Electric Co., Inc., Indianapolis, Ind., a corporation of Indiana

Filed July 29, 1963, Ser. No. 298,112
1 Claim. (Cl. 242—9)

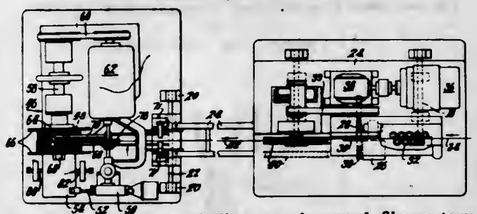


Coil winding apparatus comprising a frame, a multiple coil winding form rotatably mounted on said frame, a drive motor mounted on said frame, an electromagnetic clutch brake coupled to said winding form, a belt and variable speed pulley arrangement coupling said motor and said electromagnetic clutch brake, a sensing head mounted on said frame and including a rotatably mounted sprocket coupled positively to said winding form for rotation therewith, said positive coupling including a spindle having an abutment fixed thereto, a nut threadedly received on said abutment and locking said sprocket against said abutment, said nut being unthreadable to adjust the position of said sprocket relative to said winding form, a film tape sprocket, a closed loop of tape received on said sprocket and having a first set of apertures at equally spaced intervals meshing with the teeth of said sprocket, a microswitch having an actuating arm with a rounded portion positioned to bear against said tape as it moves with said sprocket, said tape having further apertures spaced transversely of said tape relative to said first set of apertures and located at predetermined spaced intervals along the length of said tape, a power source for said motor and electromagnetic clutch brake, a circuit controlled by said microswitch and coupling said electromagnetic clutch brake to said power source, said microswitch being arranged to actuate said circuit to open said clutch and operate said brake whenever said actuating arm drops into one of said further apertures, and manually operable means for actuating said circuit to close said clutch and disengage said brake.

3,289,956
APPARATUS FOR SPOOLING

Walter O. Sjogren, Auburn, Mass., assignor to Sjogren Tool & Machine Co., Inc., Auburn, Mass., a corporation of Massachusetts

Filed Jan. 18, 1965, Ser. No. 426,272
9 Claims. (Cl. 242—25)



1. The method of winding an elongated filamentary material onto a spool in close, even convolutions including leading the filamentary material along a substantially straight-line path to the spool, inclining the axis of the spool slightly with respect to the direction of motion of the filamentary material so that as the latter is cast on, it tends to rise with respect to said axis to be cast on the spool in winds that progress along the spool, the material also tightening relative to the spool, bodily moving the on-coming filamentary material relative to the spool in a direction transverse to the direction of travel of the filamentary material and in accord with the progressive windings on the spool so that the material is cast straight onto the spool at all times at the point that the filamentary material is in the act of being cast onto the spool, and controlling the degree of transverse travel of the filamentary material according to the position of the latter relative to its cast-on position on the spool.

3,289,957
METHOD AND APPARATUS FOR CONTROLLING A YARN-WINDING MACHINE HAVING AN AUTOMATIC KNOTTING DEVICE

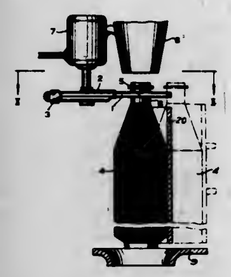
Hans-Günter Wilms, Heinrich Kamp, and Walter Gith, Monchen-Gladbach, Germany, assignors to Walter Reiners, Monchen-Gladbach, Germany

Filed June 1, 1964, Ser. No. 371,697
Claims priority, application Germany, June 14, 1963, R 35,420
14 Claims. (Cl. 242—35.6)



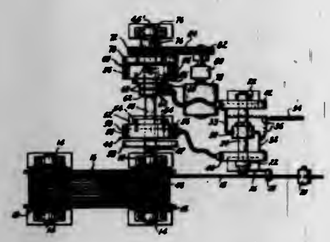
4. In a yarn winding machine having a knotting device for tying a knot with a pair of yarn ends, means for measuring a dimension of a knot tied by the knotting device, means for momentarily placing the tied textile yarn in a position in which it is subjected to said measuring means, and means actuated by said measuring means for separating the yarn ends when the measured dimension deviates from a predetermined value.

3,289,958
METHOD AND APPARATUS FOR REMOVING THE RESERVE WINDING OF YARN COILS
Wilhelm Kupper, Rickelrath, Kreis Erkelenz, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed July 9, 1964, Ser. No. 381,340
Claims priority, application Germany, July 15, 1963, R 35,750
12 Claims. (Cl. 242—35.6)



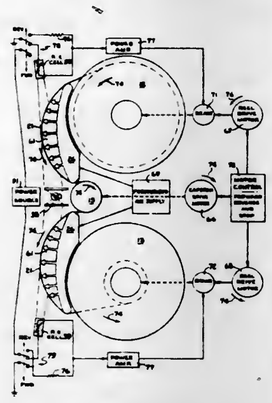
3. Apparatus for removing from yarn coils having a core the reserve winding located on an end of the core and axially spaced along the core from a main winding thereon, comprising a mechanical gripper having pincer-like arms, means for moving said gripper, and a yarn coil relative to each other in a direction radial to the coil core to a position in which a portion of the coil core intermediate the reserve winding and the main winding of the yarn coil is located between the gripper arms, and means for moving said gripper and the yarn coil relative to each other substantially in the axial direction of the coil core so that the reserve winding is entrained by said gripper arms and is stripped off the core.

3,289,959
MATERIAL FEED CONTROL DEVICE
Joseph William Scher, Short Hills, N.J., assignor to Weber & Scher Mfg. Co., Inc., a corporation of New Jersey
Filed May 4, 1964, Ser. No. 364,495
8 Claims. (Cl. 242—45)



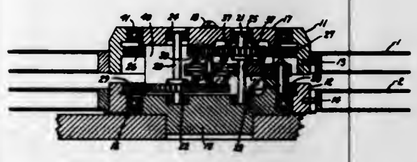
2. A feed control device for feeding a running length of material, said device including a drive mechanism for paying off said material from a reel and a sensing device for sensing the tension of the material as it leaves the reel, said mechanism including shafting mounting a magnetic brake and a magnetic drive means, said sensing device including a pair of rheostats connected respectively with said brake and drive means, a pair of rheostat arms operative to increase the resistance of one rheostat simultaneously with a decrease of resistance of the other rheostat, and means rigidly connecting said arms with said sensing device.

3,289,960
TAPE GUIDE AND STORAGE DEVICE
Jack K. Willis, San Bruno, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 19, 1964, Ser. No. 390,667
19 Claims. (Cl. 242—55.12)



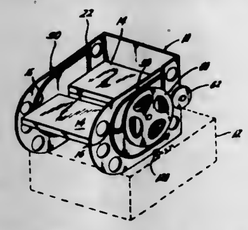
1. In a tape guide and storage device for use in the feeding of tape between a reel and a capstan and head assembly, the combination comprising:
means for establishing different air pressures on the two sides of said tape throughout substantially the entire length of the tape segment between said reel and said assembly so that said segment is bowed in a circuate arc throughout said length;
means for sensing said length of tape in said segment and for controlling the rotation of said reel to maintain said length within a predetermined range.

3,289,961
TENSION MAINTAINING DEVICE FOR TAPE RECORDERS
William E. Glenn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 3, 1964, Ser. No. 415,709
8 Claims. (Cl. 242—55.12)



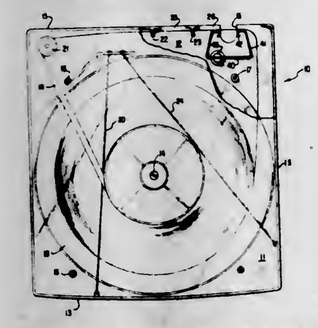
1. In a tape transporting apparatus for reeling a length of material, first and second adjacent rotatable hub means for carrying first and second reels rotatable on substantially the same axis, first and second rotatable discs located between said hub means having parallel facing portions between the axes thereof, the axes of said discs being parallel to the axes of said hub means and located within said hub means, each of said hub means internally engaging the periphery of one of said discs in driving relation thereto, and an idler wheel rotatable on an axis perpendicular to the axis of said discs frictionally engaging both of said discs where said discs face one another.

3,289,962
APPARATUS FOR AND METHOD OF AUTOMATICALLY CHANGING TAPE CARTRIDGES
Carl O. Gellenthin, Jr., Houston, Tex., assignor, by direct and mesne assignments, of ninety-five percent to E. H. Hurst, Beaumont, Tex., and five percent to L. M. Keating, Houston, Tex.
Filed Jan. 28, 1963, Ser. No. 254,216
25 Claims. (Cl. 242—55.13)



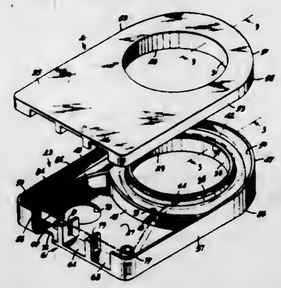
1. An apparatus for automatically changing a plurality of tape cartridges on a cartridge player comprising,
a cartridge supporting track having an arcuate portion, a gravity feed portion, and a player feeder portion,
supports on each side of said cartridge and positioned for movement in said track,
rotatable means adjacent said track,
means connected to said rotatable means to move the individual cartridges around said arcuate portion of said track and into said gravity feed portion when moved in one direction, and to move the lowest cartridge in said gravity feed portion when moved in the other direction, and
power means for moving said rotatable means first in one direction and then the other direction.

3,289,963
TAPE CARTRIDGE
David W. Taylor, Valley Forge, Richard T. Hobson, Newton Square, and Robert B. Graham, Broomal, Pa., assignors, by mesne assignments, to Transportation Musitime, Inc., Upper Darby, Pa., a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 449,146
12 Claims. (Cl. 242—55.19)



1. A cartridge for magnetic tape adapted for use with a recording play-back instrument having a rotatable drive capstan and a transducer head arranged in proximity to each other, said cartridge comprising a housing closed on all sides except for openings to receive said capstan and said tranducer head, a supply of tape within said housing, means to guide said tape linearly across said openings, resilient non-rotatable capstan engaging means comprising a spring clip mounted in said housing adjacent said capstan opening and behind said linear tape portion, said capstan engaging means adapted to resiliently hold said tape in contact with a portion of the periphery of said capstan when the cartridge is placed in position on said instrument.

3,289,964
ENDLESS TAPE HOLDER ASSEMBLY
Joseph T. Vito, West Caldwell, N.J., assignor to Unireel, Inc., Montclair, N.J., a corporation of New Jersey
Filed May 27, 1965, Ser. No. 459,180
10 Claims. (Cl. 242—55.19)



5. An endless tape holder assembly comprising:
a housing formed from a first portion and a second portion, said first portion including a first cover and said second portion including a second cover, said first cover and said second cover being in spaced relationship;
a hub in the form of a cylinder rigidly mounted within said housing between said first cover and said second cover and in position to be within the inner convolution of an endless coil of tape, said hub being formed from a first section and a second section, said first section being integrally formed with said first cover and said second section being integrally formed with said second cover; and
guide means rigidly mounted within said housing across which the tape is pulled from the inner convolution in sliding relationship with said hub and returned to the outer convolution.

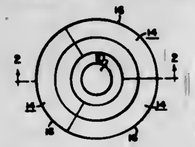
3,289,965
TAPE REEL
Angelo C. Cuva, Santa Clara, Calif. (1024 Sumac Drive, Sunnyvale, Calif.)
Original application Aug. 16, 1963, Ser. No. 302,547, now Patent No. 3,232,550, dated Feb. 1, 1966. Divided and this application Oct. 22, 1965, Ser. No. 509,470
9 Claims. (Cl. 242—71.8)



1. A tape reel comprising:
a cylindrically shaped hub rotatable about an axis, said hub being comprised of a first material and having a first groove in one of its end faces;
a flange comprised of a second material electrolytically neutral with respect to said first material, said flange being mounted concentrically with said hub adjacent the one end face, said flange having a second groove in registry with said first groove; and
a fastener material contained in said aligned first and

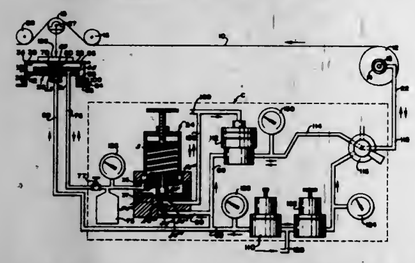
second grooves for securing said flange to said hub, said fastener material being electrolytically neutral with respect to said first and second material.

3,289,966
COIL SUPPORT DEVICE
John C. Richel, Leechburg, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed May 12, 1965, Ser. No. 455,288
2 Claims. (Cl. 242—72)



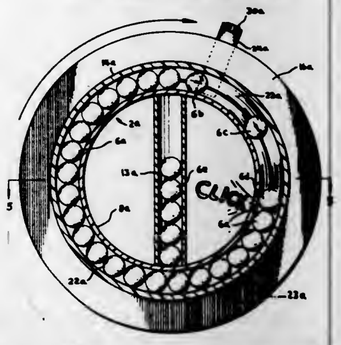
1. A reel block for supporting a coiled strip of material comprising, a hollow central shaft, a cylindrical shell concentric to said shaft, said shell including a plurality of arcuate segments having outer surfaces which form the entire outer surface of the shell and defining coil engaging means, means mounting said segments for movement radially with respect to said shaft, said mounting means including means to slidably connect at least one of said segments to said shaft, a plurality of inflatable elastomer tubes concentrically located on said shaft and positioned between said shaft and said segments within the axial limits of said shell and disposed to move the segments outwardly radially in unison when pressurized with pressure fluid to cause said coil engaging means to engage the inner surface defining the eye of the coil and permit the segments to move inwardly toward the shaft when exhausted of pressure fluid to permit movement of the coil on and off the coil engaging means, spring means circumferentially disposed about said cylindrical shell and positioned in grooves located therein for normally urging said segments towards said shaft, and fluid conducting means extending into said shaft and communicating with said elastomer tubes to selectively provide and exhaust pressure fluid to and from said elastomer tubes.

3,289,967
TENSION REGULATOR
Art I. Robinson, P.O. Box 606, Wichita Falls, Tex.
Filed June 1, 1964, Ser. No. 371,605
5 Claims. (Cl. 242—75.43)



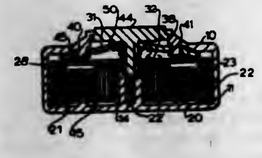
2. In an apparatus for controlling the tension on a traveling web of sheet material comprising:
(a) a roll supported in journaled relation,
(b) fluid actuated means to control the rotation of said roll,
(c) a tension responsive member,
(d) a support member mounting said tension responsive member,
(e) a base,
(f) a hinge means hingeably connecting said support member with said base,
(g) fluid outlet means on said support member,
(h) diaphragm means mounted on said base,
(i) said base having a fluid chamber formed therein,
(j) an inlet conduit connected with said chamber,
(k) an outlet conduit leading from said chamber,
(l) a further outlet within said support member connected to the fluid outlet means on said support member,
(m) a unitary valve within said inlet conduit and valving said last mentioned outlet,
(n) said unitary valve seating in the same direction to close said inlet of said conduit and said outlet of said last mentioned outlet,
(o) said outlet conduit connected with a first fluid responsive valve means,
(p) a second source of fluid supply connected to said first fluid responsive valve means,
(q) a unitary valve means in said first fluid valve responsive valve means,
(r) a further unitary valve member within said first valve means having two valve members thereon,
(s) a further fluid inlet and a fluid outlet within said first valve means,
(t) a valve seat within said fluid inlet and a valve seat in said fluid outlet,
(u) a diaphragm responsive member mounting the seat of said fluid outlet,
(v) a member forming a seat for said fluid inlet,
(w) a further outlet to bleed air pressure from said fluid outlet line,
(x) a booster relay connected in fluid responsive relation to said air outlet line, and
(y) a further air supply line connected to said booster line to boost the pressure a predetermined amount to control the discharge of said air supply pressure into a conduit leading to said fluid actuated means to control the rotation of said roll in response to the load applied to said load support member by said tension responsive member.

3,289,968
KITE REEL
Henry Allen Wilson, 1000 Eldorado Ave., Clearwater Beach, Fla.
Filed Oct. 7, 1965, Ser. No. 498,200
13 Claims. (Cl. 242—96)



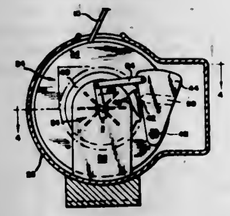
1. In a kite flying reel and noise making device comprising a pair of concentric members, facing channels in said members defining a circumferential space therebetween, and a plurality of roller elements freely mounted in and incompletely filling the circumferential extent of said space by at least the diameter of several rollers for producing successive noise making function on rotation of said members.

3,289,969
FLEXIBLE TAPE RULE
Claude W. Purbaugh, Monrovia, Calif., assignor to H. K. Porter Company, Inc., Monrovia, Calif., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 435,879
4 Claims. (Cl. 242—107.3)



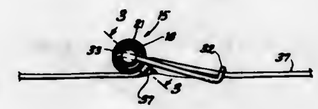
1. In a flexible tape rule the combination of a case including a tape slot; post means fixedly mounted within said case and extending from one side thereof; a tape retracting spring coiled in said case around said post means and having one end fixed thereto; a measuring tape coiled around said retracting spring and having one end connected directly to said retracting spring and the other end extending through said slot, said tape having one edge in frictional engagement with the said one side of said case to which said post means is fixed and the other edge laterally spaced from the other side of said case; a thin disc loosely mounted in said case and engaging said other edge; lever means pivotedly mounted within said case adjacent said other side; a coil spring centrally mounted within said case and having one end bearing on said post means and another end bearing on said lever means whereby to cause said lever means to engage said disc and brake said tape; and push button means movably mounted in said case opposite said disc and having a portion engaging said lever means, inwardly movement of said push button means being effective to pivot said lever means out of engagement with said disc whereby to release said tape.

3,289,970
RETRACTABLE SAFETY BELTS
Richard G. Board, Bethesda, Md. (3000 Connecticut Ave., Washington, D.C.), and Nelson H. Shapiro, Hyattsville, Md. (640 Washington Bldg., Washington, D.C.)
Filed June 23, 1964, Ser. No. 377,344
5 Claims. (Cl. 242—107.4)



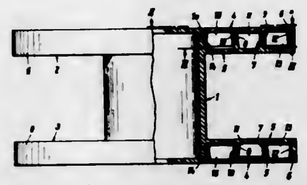
1. A retractable seat belt comprising a strap, means movable in a retracting direction for retracting said strap and movable in an extending direction for permitting extension of said strap, means for preventing extension of said strap when said strap has been extended to any selected length within a wide range of lengths, and automatic means for rendering said extension-preventing means ineffective during extensile movement of said strap to said selected length and thereafter, in response to cessation of said extensile movement of said strap, for rendering said preventing means effective.

3,289,971
AUTOMATIC RETRACTING MEANS FOR SAFETY BELTS AND THE LIKE
Stanley P. Turek, 4439 S. Knox Ave., and Wilbur C. Lincoln, 11146 S. Green St., both of Chicago, Ill.
Filed Mar. 20, 1964, Ser. No. 353,437
8 Claims. (Cl. 242—107.11)



1. A belt retractor comprising
(a) an elongated casing,
(b) means on said casing for attaching said casing to a belt intermediate the ends thereof,
(c) a spindle extending through said casing and journalled for rotation relative thereto, the ends of said spindle extending beyond said casing,
(d) a coiled torsion spring circumposed about said spindle within said casing and having one end connected to said casing and the other end connected to said spindle, and
(e) a generally U-shaped wire bail connected to said spindle in rigid relation thereto and arranged to engage the belt,
(f) said spring being effective to rotate said casing to roll-up said belt on said casing.

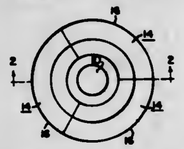
3,289,972
REEL WITH REINFORCED FLANGES
Erich Häfner, Leopoldshohe, Lippe, Germany
Filed Sept. 24, 1963, Ser. No. 311,028
Claims priority, application Germany, Sept. 25, 1962, H 46,996
14 Claims. (Cl. 242—118.7)



1. In a reel, in combination, a core arranged to support a supply of convoluted wire-like material and having an end portion; and a flange comprising a first disk rigid with said end portion and having a peripheral wall portion and a side provided with a pair of spaced ribs, a second disk having a peripheral wall portion abutting the peripheral wall portion of said first disk, a side adjacent to but spaced from the side of said first disk and a pair of ribs extending from said side thereof, said first and second disk, said peripheral wall portions and said core defining a box-shaped annular body, said ribs being located within the confines of said annular body, each of said ribs having a side face extending substantially in the direction of said core and the said side faces of one pair of ribs abutting against the side faces of the other pair of ribs, the abutting side faces of said ribs and abutting peripheral wall portions being bonded to each other to stiffen said flange.

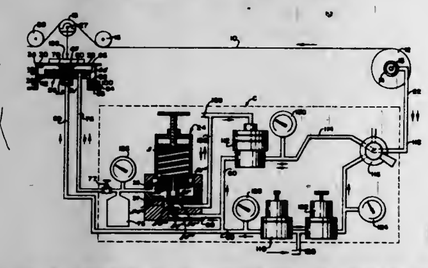
second grooves for securing said flange to said hub, said fastener material being electrolytically neutral with respect to said first and second material.

3,289,966
COIL SUPPORT DEVICE
John C. Richel, Leechburg, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed May 12, 1965, Ser. No. 455,288
2 Claims. (Cl. 242—72)



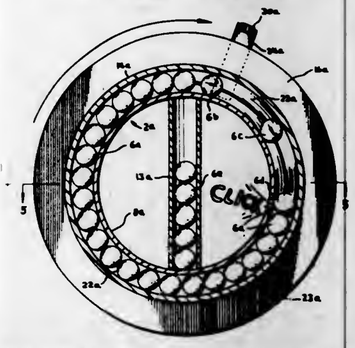
1. A reel block for supporting a coiled strip of material comprising, a hollow central shaft, a cylindrical shell concentric to said shaft, said shell including a plurality of arcuate segments having outer surfaces which form the entire outer surface of the shell and defining coil engaging means, means mounting said segments for movement radially with respect to said shaft, said mounting means including means to slidably connect at least one of said segments to said shaft, a plurality of inflatable elastomer tubes concentrically located on said shaft and positioned between said shaft and said segments within the axial limits of said shell and disposed to move the segments outwardly radially in unison when pressurized with pressure fluid to cause said coil engaging means to engage the inner surface defining the eye of the coil and permit the segments to move inwardly toward the shaft when exhausted of pressure fluid to permit movement of the coil on and off the coil engaging means, spring means circumferentially disposed about said cylindrical shell and positioned in grooves located therein for normally urging said segments towards said shaft, and fluid conducting means extending into said shaft and communicating with said elastomer tubes to selectively provide and exhaust pressure fluid to and from said elastomer tubes.

3,289,967
TENSION REGULATOR
Art I. Robinson, P.O. Box 606, Wichita Falls, Tex.
Filed June 1, 1964, Ser. No. 371,605
5 Claims. (Cl. 242—75.43)



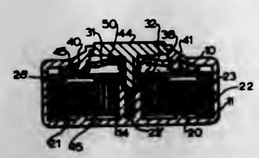
2. In an apparatus for controlling the tension on a traveling web of sheet material comprising:
(a) a roll supported in journaled relation,
(b) fluid actuated means to control the rotation of said roll,
(c) a tension responsive member,
(d) a support member mounting said tension responsive member,
(e) a base,
(f) a hinge means hingeably connecting said support member with said base,
(g) fluid outlet means on said support member,
(h) diaphragm means mounted on said base,
(i) said base having a fluid chamber formed therein,
(j) an inlet conduit connected with said chamber,
(k) an outlet conduit leading from said chamber,
(l) a further outlet within said support member connected to the fluid outlet means on said support member,
(m) a unitary valve within said inlet conduit and valving said last mentioned outlet,
(n) said unitary valve seating in the same direction to close said inlet of said conduit and said outlet of said last mentioned outlet,
(o) said outlet conduit connected with a first fluid responsive valve means,
(p) a second source of fluid supply connected to said first fluid responsive valve means,
(q) a unitary valve means in said first fluid valve responsive valve means,
(r) a further unitary valve member within said first valve means having two valve members thereon,
(s) a further fluid inlet and a fluid outlet within said first valve means,
(t) a valve seat within said fluid inlet and a valve seat in said fluid outlet,
(u) a diaphragm responsive member mounting the seat of said fluid outlet,
(v) a member forming a seat for said fluid inlet,
(w) a further outlet to bleed air pressure from said fluid outlet line,
(x) a booster relay connected in fluid responsive relation to said air outlet line, and
(y) a further air supply line connected to said booster line to boost the pressure a predetermined amount to control the discharge of said air supply pressure into a conduit leading to said fluid actuated means to control the rotation of said roll in response to the load applied to said load support member by said tension responsive member.

3,289,968
KITE REEL
Henry Allen Wilson, 1000 Eldorado Ave., Clearwater Beach, Fla.
Filed Oct. 7, 1965, Ser. No. 498,200
13 Claims. (Cl. 242—96)



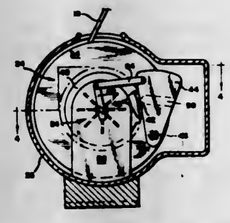
1. In a kite flying reel and noise making device comprising a pair of concentric members, facing channels in said members defining a circumferential space therebetween, and a plurality of roller elements freely mounted in and incompletely filling the circumferential extent of said space by at least the diameter of several rollers for producing successive noise making function on rotation of said members.

3,289,969
FLEXIBLE TAPE RULE
Claude W. Purbaugh, Monrovia, Calif., assignor to H. K. Porter Company, Inc., Monrovia, Calif., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 435,879
4 Claims. (Cl. 242—107.3)



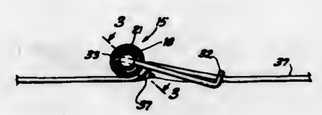
1. In a flexible tape rule the combination of a case including a tape slot; post means fixedly mounted within said case and extending from one side thereof; a tape retracting spring coiled in said case around said post means and having one end fixed thereto; a measuring tape coiled around said retracting spring and having one end connected directly to said retracting spring and the other end extending through said slot, said tape having one edge in frictional engagement with the said one side of said case to which said post means is fixed and the other edge laterally spaced from the other side of said case; a thin disc loosely mounted in said case and engaging said other edge; lever means pivotedly mounted within said case adjacent said other side; a coil spring centrally mounted within said case and having one end bearing on said post means and another end bearing on said lever means whereby to cause said lever means to engage said disc and brake said tape; and push button means movably mounted in said case opposite said disc and having a portion engaging said lever means, inwardly movement of said push button means being effective to pivot said lever means out of engagement with said disc whereby to release said tape.

3,289,970
RETRACTABLE SAFETY BELTS
Richard G. Beard, Bethesda, Md. (3000 Connecticut Ave., Washington, D.C.), and Nelson H. Shapiro, Hyattsville, Md. (640 Washington Bldg., Washington, D.C.)
Filed June 23, 1964, Ser. No. 377,344
5 Claims. (Cl. 242—107.4)



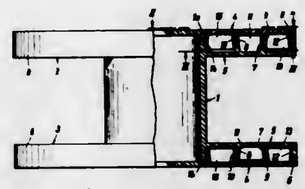
1. A retractable seat belt comprising a strap, means movable in a retracting direction for retracting said strap and movable in an extending direction for permitting extension of said strap, means for preventing extension of said strap when said strap has been extended to any selected length within a wide range of lengths, and automatic means for rendering said extension-preventing means ineffective during extensile movement of said strap to said selected length and thereafter, in response to cessation of said extensile movement of said strap, for rendering said preventing means effective.

3,289,971
AUTOMATIC RETRACTING MEANS FOR SAFETY BELTS AND THE LIKE
Stanley P. Turek, 4439 S. Knox Ave., and Wilbur C. Lincoln, 11146 S. Green St., both of Chicago, Ill.
Filed Mar. 20, 1964, Ser. No. 353,437
8 Claims. (Cl. 242—107.11)



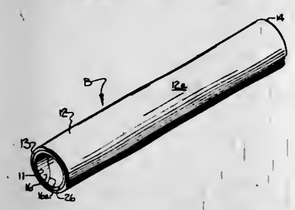
1. A belt retractor comprising
(a) an elongated casing,
(b) means on said casing for attaching said casing to a belt intermediate the ends thereof,
(c) a spindle extending through said casing and journalled for rotation relative thereto, the ends of said spindle extending beyond said casing,
(d) a coiled torsion spring circumposed about said spindle within said casing and having one end connected to said casing and the other end connected to said spindle, and
(e) a generally U-shaped wire bail connected to said spindle in rigid relation thereto and arranged to engage the belt,
(f) said spring being effective to rotate said casing to roll-up said belt on said casing.

3,289,972
REEL WITH REINFORCED FLANGES
Erich Höfner, Leopoldshohe, Lippe, Germany
Filed Sept. 24, 1963, Ser. No. 311,928
Claims priority, application Germany, Sept. 25, 1962, H 46,996
14 Claims. (Cl. 242—118.7)



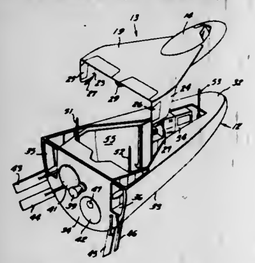
1. In a reel, in combination, a core arranged to support a supply of convoluted wire-like material and having an end portion; and a flange comprising a first disk rigid with said end portion and having a peripheral wall portion and a side provided with a pair of spaced ribs, a second disk having a peripheral wall portion abutting the peripheral wall portion of said first disk, a side adjacent to but spaced from the side of said first disk and a pair of ribs extending from said side thereof, said first and second disk, said peripheral wall portions and said core defining a box-shaped annular body, said ribs being located within the confines of said annular body, each of said ribs having a side face extending substantially in the direction of said core and the said side faces of one pair of ribs abutting against the side faces of the other pair of ribs, the abutting side faces of said ribs and abutting peripheral wall portions being bonded to each other to stiffen said flange.

3,289,973
TEXTILE CARRIER AND METHOD OF MAKING SAME
James R. Spencer, Romiley, England, assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina, and T.P.T. Limited, Oakwood Mills, Romiley, near Stockport, England
Filed Mar. 4, 1964, Ser. No. 349,229
19 Claims. (Cl. 242—118.32)



3. A textile carrier comprising, in combination, a paper tube having an annular wall at each end, a tubular sleeve of plastic material telescopically positioned on said paper tube with the inner surface of said plastic sleeve in engagement with the outer surface of said paper tube, an inwardly directed annular flange at each end of said plastic sleeve in overlying relationship with said paper tube annular end wall and in engagement therewith, said paper tube outer surface being maintained in frictional gripping engagement with said plastic sleeve inner surface by the expansion of the material of said paper tube resulting from the presence of moisture within said paper tube under ambient moisture conditions to prevent relative movement between said paper tube and plastic sleeve.

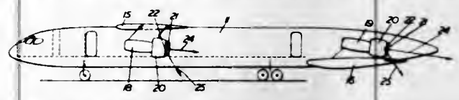
3,289,974
MANNED SPACECRAFT WITH STAGED RE-ENTRY
Clarence B. Cohen, Redondo Beach, Julius D. Schetzer, Palos Verdes Estates, and John R. Sellars, Redondo Beach, Calif., assignors to TRW Inc., a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 335,333
7 Claims. (Cl. 244—1)



1. A spacecraft with staged re-entry comprising:
A. a bluff re-entry body;
B. a fixed wing airplane including means for self propulsion the body of which is substantially nested within said bluff body; and
C. means for separating said body and said airplane.

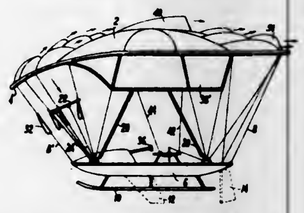
3,289,975
AIRCRAFT
Leslie James Hall, Hatfield, England, assignor to Hawker Siddeley Aviation Limited, London, England, a British company
Filed Sept. 21, 1964, Ser. No. 397,712
Claims priority, application Great Britain, Sept. 23, 1963, 37,347/63
8 Claims. (Cl. 244—12)

1. An aircraft with conventional take off and landing capability, comprising, in combination: a fuselage, a main plane mounted aft on said fuselage, a fore plane mounted forward on said fuselage having an area in the range of about 0.5 to 1.0 of the area of said main plane, the total wing area of said main plane and fore plane together being equal to substantially the minimum area necessary to fulfill the aircraft lift requirement during normal cruising flight but insufficient for take-off and



landing, a first group of jet propulsion engines mounted forward, a second group of jet propulsion engines mounted aft, and thrust-deflecting means on engines of at least one of said groups selectively operable to deflect the engine effluxes downwardly, the additional lift needed for flight at speeds below cruising speed being obtained by operation of said thrust deflecting means.

3,289,976
AIRCRAFT
Pierre Marcel Lemoigne, 103 Ave. Verdier, Montrouge, Seine, France
Filed Oct. 28, 1964, Ser. No. 407,092
Claims priority, application France, Oct. 29, 1963, 952,108; Mar. 6, 1964, 966,343; Oct. 12, 1964, 991,086
10 Claims. (Cl. 244—16)

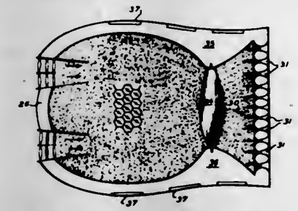


1. An aircraft comprising a sustaining element having relatively fixed and movable concavo-convex surface sections, a plurality of air nozzle means in said sustaining element for directing the air from the concave lower surface to the convex upper surface in a direction substantially tangentially of the convex surface for producing a reacting propulsion component as well as a lift increasing suction effect at said convex surface of the sustaining element, and means for deflecting the movable surface section relative to the fixed surface section in a downward direction for producing an additional propulsion effect by accelerating the entry of air into the nozzle means of the movable surface section during the downward deflecting movement thereof.

3,289,977
AIRCRAFT DEVICE
Francis Lloyd Staats, River Road, Belle Mead, N.J.
Filed Jan. 11, 1965, Ser. No. 424,521
10 Claims. (Cl. 244—23)

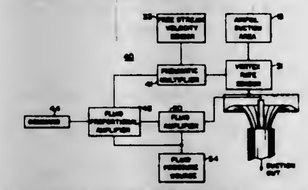
1. An aircraft comprising: an elongated body member having at least front and bottom portions opening to the ambient air; air compressor means in the aircraft including an inlet connected to the ambient air and a pressure outlet for delivering air under pressure; a set of valves disposed at least in the bottom portion of the aircraft and opening onto the ambient air, each of said valves comprising a truncated hollow substantially conical outlet member and a hollow conical inlet member including an apex orifice, said outlet and inlet members being substantially coaxially aligned with the apex of said inlet member extending via the truncated end of said outlet

member to within said outlet member so that said members are disposed in spaced interfitting relationship, said member being connected to said air compressor means so that compressed air flows from said inlet member to said outlet member; and means in said aircraft for guiding ambient air from the front portion thereof around



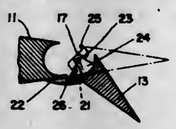
and between the so spaced and interfitting regions of the inlet and outlet members of said valves, whereby the flow of compressed air from said inlet members to and through said outlet members of said valves induces a venturi flow of ambient air through said regions and said outlet members to the atmosphere beneath the aircraft, for lift and propulsion.

3,289,978
CONTROL APPARATUS
Lloyd J. Bonaszak, Wayzata, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 315,109
14 Claims. (Cl. 244—42)



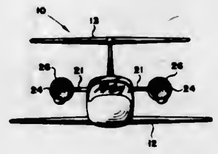
1. In a moment producing arrangement for an airfoil having an aperture in the surface thereof and means for applying suction to such aperture, in combination a vortex flow responsive sensor associated with the flow through said aperture and thus responsive to chord-wise flow and cross-flow of the air relative to said airfoil surface, and control means controlled by the vortex responsive sensor controlling the suction rate of said suction applying means.

3,289,979
HIGH LIFT WING AND FLAP STRUCTURE FOR AIRCRAFT
James E. Brunk, 1266 Coast Village Road, Santa Barbara, Calif.
Filed May 24, 1965, Ser. No. 458,182
4 Claims. (Cl. 244—42)



1. A high lift wing and flap structure for aircraft comprising, in combination: a wing; a flap coupled to said wing adjacent to the trailing edge of said wing; and an auto-rotating means mounted between said flap and wing for rotation about an axis generally parallel to the trailing edge of said wing, said auto-rotating means having surface portions at different radial distances from its axis of rotation such that certain surface portions extend up through the plane of the boundary layer of air on said wing over a major portion of the span of said wing into higher velocity air flow and other surface portions lie beneath the plane of the boundary layer, said auto-rotating means being responsive to said higher velocity air flow over the top surfaces of said wing and flap to rotate and thereby modify the flow conditions at the intersection of said wing and flap in a manner to maintain a continuity in said air flow from said wing surface to said flap surface.

3,289,980
THRUST SYSTEM FOR VTOL AIRCRAFT
Thomas Gardner Hill, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 7, 1964, Ser. No. 416,257
9 Claims. (Cl. 244—56)



1. A thrust system for VTOL aircraft comprising a lift-producing device mounted on said aircraft for unrestricted movement relative thereto in multiple degrees of freedom and disposed above the center of gravity of the aircraft when the aircraft is in a substantially horizontal position with the vector sum of the forces produced thereby passing vertically through the center of gravity of the aircraft, including releasable engagement means, operative on said device, to hold it in a selected, fixed position relative to the aircraft, whereby said vector sum of the forces are directed aft of said aircraft.

3,289,981
LAND AND AIR TRANSPORTATION SYSTEM
Joseph H. Meyer, 56 Dogwood Lane, Rockville Centre, N.Y.
Filed Oct. 5, 1964, Ser. No. 401,347
3 Claims. (Cl. 244—137)

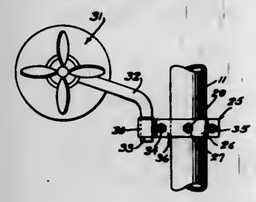


1. In a system of land and air transportation, a capsule means adapted to carry cargo in combination with a land transportation device and an airplane having a shell-like fuselage that can be opened at the tail end thereof, said capsule having roller means adapted to support it from above for movement on a monorail, said fuselage shell having monorail means suspended from the top portion thereof whereby said capsule can be moved into said fuselage shell, additional roller means mounted on the lower portion of said capsule, and track means corresponding to said additional roller means extending along said fuselage shell to further guide said capsule in its movement into said fuselage shell,
said land transportation device having a shell portion of a length and cross sectional size adapted to surround said capsule, monorail track means attached to the top portion of said shell of the land transportation device and additional track means on the lower portion of said shell whereby said capsule may be transferred from one of the fuselage shells and the land device shell to the other.

ERRATUM

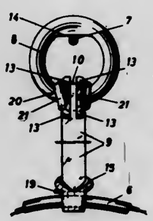
For Class 248—28 see:
Patent No. 3,290,131

3,289,982
FAN MOUNTING
John Freeman Hart, Jr., 340 College St., Macon, Ga.
Original application Sept. 11, 1961, Ser. No. 137,323, now Patent No. 3,200,731, dated Aug. 17, 1965. Divided and this application June 30, 1965, Ser. No. 468,456
1 Claim. (Cl. 248—41)



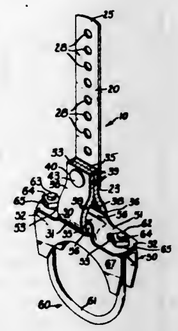
In an immediate family funeral tent, the combination of tent poles and a series of fan apparatus including a fan each having its base mounted on one of the tent poles for circulating air within the tent, each of said fan apparatus including a clamp having a looped portion wrapped about the perimeter of the pole, means connected to said looped portion joining said clamp to said pole, and fan mounting means secured to said clamp for mounting said fan on said clamp, said fan mounting means including a second looped portion joined with said first looped portion at one end defining a socket and a pivot pin on said base journalled therein, said mounting means further including a fastener, affixed at the joining area of said first and second looped portions, and adjustable for varying the tension on said journaled pin.

3,289,983
DEVICE FOR CARRYING AN ELECTRIC CABLE
Carl Erling Mennerdahl, Ladspikaregatan 6, Goteborg, Sweden
Filed Mar. 11, 1966, Ser. No. 533,580
Claims priority, application Sweden, Mar. 19, 1965, 3,561/65
4 Claims. (Cl. 248—60)



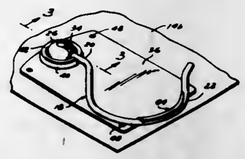
1. Slidable ring for suspending a flexible electric cable on a rope, said ring being manufactured from a hard material with a high resistance to wearing and having a transverse slot, for enabling the ring to be put onto said rope, abutments extending on either side of said slot essentially radially inwards, said abutments being adapted to retain the upper end of a strap to said ring.

3,289,984
AUTOMOTIVE EXHAUST PIPE SUPPORT
Warren A. Clemons and Donald A. Schwenn, Columbia City, Ind., assignors to Viking Auto Products, Inc., Columbia City, Ind., a corporation of Indiana
Filed Mar. 11, 1966, Ser. No. 533,599
8 Claims. (Cl. 248—60)



1. A pipe support comprising an anchor strap suitable for a fixed placement thereof; a resilient yoke member provided by a band of resilient material doubled back to form a loop; a single fastener through said strap and ends of said band of material, thereby closing said loop and fastening said yoke to said strap, said single fastener to provide a pivot allowing said yoke to be turned to various dispositions; and a pipe clamp passing through said loop and being held at a desired disposition thereby, said yoke member providing an insulating junction to dampen vibration between said strap and clamp.

3,289,985
EXTERNAL HANGER FOR GARMENT CARRYING BAG
Julius Shelman, North Woodmere, N.Y., assignor to Crest Lock Co., Inc., New York, N.Y., a corporation of New York
Filed Apr. 1, 1966, Ser. No. 539,486
8 Claims. (Cl. 248—95)



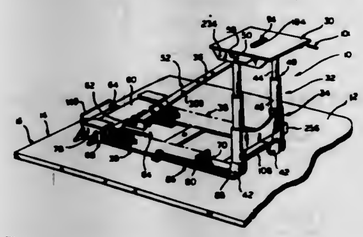
1. In combination with a foldable garment bag having an outer end wall, a unitary external hanger assembly mounted on said wall, said assembly including a metal base, a bag hook for enabling the bag to be hung in outstretched full length condition from a support, a swivel joint carried by said base and located between the hook and said outer end wall, said swivel joint including means allowing the hook to be swung between an operative positive in which it projects away from the outer end wall and an idle position in which it lies adjacent and substantially parallel to said outer end wall, means frictionally binding one end of the hook in the joint in an erect position of the bag hook and yet allowing said bag hook to be swung manually to idle position, and said hanger assembly further including means unitary with the base for manually releasably retaining the hook in the idle position thereof.

3,289,986
HOLDER FOR NURSING BOTTLES, PACIFIERS AND TEETHING ELEMENTS
Joseph P. Martin, Kensington, Md. (10707 Montrose Ave., Garrett Park, Md.)
Filed Dec. 4, 1964, Ser. No. 416,083
5 Claims. (Cl. 248—103)



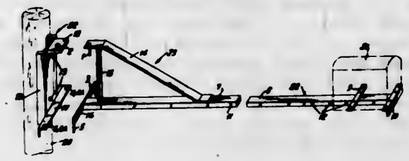
1. A milk bottle supporting device of the character described adapted to be mounted upon a crib or other carrier for infants, said device comprising a fixed member, means for securing the lower end of the fixed member to an upstanding portion of an infant carrier, a head removably mounted on the upper end of the support, said head comprising an annular body having an opening formed therethrough, which opening is dimensioned to receive a conventional infant's milk bottle, an elastic band within the head of a size to embrace the milk bottle, said head carrying a pacifier, said pacifier including a nipple, the removability of the head from its support permitting the turning of the head with respect to the support to such positions as to direct the nipple of the pacifier or the nipple of the nursing bottle toward the mouth of an infant reclining in said carrier.

3,289,987
FIFTH WHEEL STAND FOR RAILROAD CARS
James E. Candlin, Jr., deceased, late of Lansing, Ill., by First National Bank of Lansing, Lansing, Ill., administrator, and William Van Der Sluys, Homewood, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Original applications May 4, 1960, Ser. No. 26,884, now Patent No. 3,183,854, dated May 18, 1965, and Oct. 8, 1963, Ser. No. 317,864. Divided and this application Nov. 3, 1965, Ser. No. 506,451
The portion of the term of the patent subsequent to May 18, 1982, has been disclaimed
11 Claims. (Cl. 248—119)



1. A fifth wheel stand for railroad cars comprising a vertical strut pivotally mounted at one end thereof for movement about a generally horizontal axis, means for maintaining said axis against movement laterally thereof, a diagonal strut, means for pivotally mounting one end of said diagonal strut at a position spaced from said vertical strut one end for movement about a generally horizontal axis that is parallel to and lies in a horizontal plane that is at least adjacent to the horizontal plane of said first axis, means for pivotally connecting said struts together for movement about a horizontal pivotal axis that parallels the first mentioned axes, and a fifth wheel plate structure operatively secured to at least one of said struts, said diagonal strut one end pivotal mounting means including cushioning means for resiliently restraining movement of said diagonal strut one end in a horizontal plane paralleling said planes.

3,289,988
MAILBOX STAND
George F. McKenney R.F.D. 3, Box 225, Auburn, Maine, and Armand E. Anctil, 520 East Ave., Lewiston, Maine
Filed Sept. 11, 1964, Ser. No. 395,755
6 Claims. (Cl. 248—145)



1. A mailbox support comprising a mounting portion including a pivot block having an opening therethrough; a horizontal arm including two spaced apart slots; said slots approximately equidistant from said pivot block; and said pivot block and slots adapted to be mounted in vertical relationship, an arm, a pivot, means on said arm adapted to hold said pivot spaced apart from said arm, said pivot adapted to be disposed through the opening in said pivot block, support means on said arm spaced apart from said pivot, said support means extending horizontally from said arm, a pin depending from each end of said support means, and said two pivot pins on said support means adapted to fit within said pivot slots and spaced to correspond with said slots, said arm adapted to pivot on the pivot and one of said pins in an upward direction upon application of lateral pressure, the pivot pivoting in said pivot block and one pin pivoting in its corresponding slot.

3,289,989
FLUSH WALL FLORAL HANGER
Arthur L. Ferenz, 1690 Tacoma Way, Redwood City, Calif.
Filed Apr. 16, 1965, Ser. No. 448,767
2 Claims. (Cl. 248—205)



1. A retractable hook assembly mounted in a wall construction which includes an interior structure and facing material secured over the interior structure, the facing material having an outer surface and having a vertically extending slot formed therein, the hook assembly comprising:

a housing including a back wall and side walls;

the side walls having outer end portions and top and bottom ends;

flange means on the side walls, the flanges each having a plurality of openings formed therein;

means extending through the flange openings connecting the flanges to the interior structure of the wall, with the flanges located between the interior structure and the facing material thereof;

a cross pin extended between the side walls of the housing intermediate the top and bottom ends thereof and adjacent the back wall;

a pivot pin extending between the side walls of the

housing forwardly and below the location of the cross pin;

a hook member pivotally secured on the pivot pin and swingable through the slot, the hook member including a substantially straight outer end edge, an outer hook substantially perpendicular to the outer end edge, an inner edge sloping upwardly away from the hook, an interior support abutment edge, a storage abutment edge substantially perpendicular to the support abutment edge; and

the hook member being pivoted from a storage position wherein its outer end edge is recessed with respect to the outer surface of the facing material and the storage abutment edge contacts the cross pin, to an operational extended position wherein the outer end edge is substantially perpendicular to the facing material outer surface and the support abutment edge contacts the cross pin.

3,289,990
APPARATUS FOR MAGNETICALLY SUPPORTING A NON-MAGNETICALLY ATTRACTABLE ARTICLE
Curtis O. Grantham, 7127 Fenton Drive, Dallas, Tex.
Filed May 3, 1965, Ser. No. 452,749
10 Claims. (Cl. 248—206)

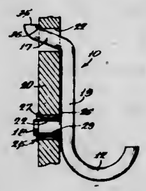


1. In a bar of soap for use with a magnetic soap supporting bracket;

(a) a magnetically attractable, arcuate wire member extending into each end of the bar of soap in anchored relation, and

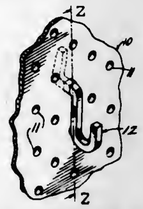
(1) a portion of the arc of said magnetically attractable, arcuate wire member extending outwardly from each end of said bar of soap for engagement with said magnetic soap supporting bracket.

3,289,991
SUPPORT FIXTURE
Thomas L. Kalahar, % T. L. Kalahar & Associates, 1717 Greendale Ave., Park Ridge, Ill.
Filed Oct. 21, 1965, Ser. No. 499,852
10 Claims. (Cl. 248—225)



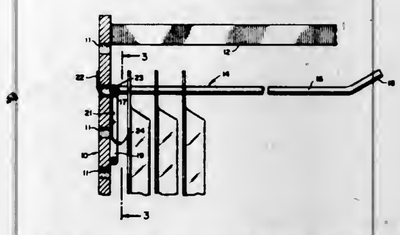
1. A supporting fixture adapted to be mounted in two different sized perforated boards, the larger board having a thickness of approximately one quarter inch and perforations of approximately one quarter inch and the smaller board having a thickness of approximately one eighth inch and perforations of approximately one eighth inch, comprising: an article supporting member, a projection extending from said member and adapted to be mounted centrally in a perforation of either the smaller or the larger board, said projection having a width approximately that of the smaller sized perforations, a removable adapter surrounding said projection for increasing the effective width thereof so that said projection fits snugly within a perforation of the larger board, and a second projection extending from said supporting member adapted to be fitted within a perforation in either the smaller or the larger board, said second projection being angularly disposed with respect to the perforations so that it snugly fits in either the smaller or larger perforations.

3,289,992
HOOK STRUCTURE FOR PERFORATED BOARDS
James P. Brooks, Toledo, Ohio, assignor of one-third to William P. Hickey, Lambertville, Mich.
Filed Nov. 8, 1965, Ser. No. 506,741
6 Claims. (Cl. 248—225)



1. An adjustable support structure comprising: a board of uniform predetermined thickness having a hole of predetermined size extending between its front and back surfaces, a hook structure having a vertical portion a lower end portion of which bears against the front face of said board, a backwardly turned portion on the upper end of said vertical portion and extending through said opening in said board, and an upwardly turned portion on the back end of said backwardly turned portion, at least said backwardly turned portion of said hook structure being of a substantially square cross section, said hole being deformed by said substantially square cross section to provide an interference fit with the hole of said board.

3,289,993
SUPPORT ELEMENT OR THE LIKE FOR PERFORATED PANELS
David R. Thalenfeld, 39—11 220th St., Bayside, N.Y.
Filed Nov. 24, 1965, Ser. No. 509,562
10 Claims. (Cl. 248—225)



1. A support element for use with a perforated display panel or the like, comprising

(a) a base member including at least one upturned locking lug,

(b) a supporting member connected to said base member for pivotal movement of the base member,

(c) said supporting member being connected to said base member on a horizontal pivot axis and having a stabilizing portion extending below said axis,

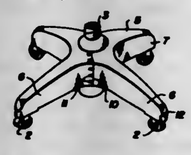
(d) said base member being pivotable relative to said supporting member from a locking position, in which said locking lug is upright, to a release position, in which said lug is adapted to be substantially at right angles to the display panel.

3,289,994
DISPLAY SUPPORTS
Henry Burmeister, 5915 Boulevard E., West New York, N.J.
Filed May 16, 1966, Ser. No. 550,252
4 Claims. (Cl. 248—225)



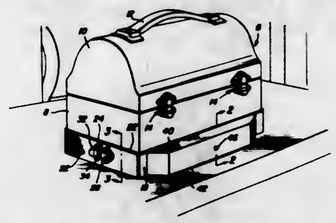
1. A support adapted to be mounted on an upright panel having a multiplicity of equidistantly horizontally and vertically spaced rows and columns of holes therethrough, said support consisting of a base and a separable forwardly extending hanger member, said base comprising a flat vertical body adapted to lie flush against the front surface of said panel, said body having L-shaped fingers extending rearwardly and upwardly from opposite sides of the top edge thereof, said body having a tongue extending forwardly from said top edge thereof between said fingers at right angles to said body, said body having a lip extending forwardly from the bottom edge thereof at right angles thereto, said tongue and said lip having substantially the same dimensions and being mutually in vertical alignment, said tongue and said lip each having a rectangular hole therethrough, at least the forward edges and the side edges of said rectangular holes lying in common vertical planes, at least said rectangular hole in said lip being square in outline, said hanger member having depending vertical means at the rear end thereof, said means being square in cross-section complementary to said square hole in said lip and registering releasably in said rectangular holes, the portions of said fingers which extend rearward as aforesaid having a length substantially equal to the thickness of said panel, said fingers being spaced apart a distance equal to the horizontal distance between two holes in the panel, said fingers being insertible in said last-named two holes with said rearwardly extending portions thereof positioned in the holes and the upwardly extending portions thereof engaging the back wall of the panel.

3,289,995
CHAIR LEG COVER
Isabel Taylor, 371 Gilmour St., Apt. 704, Ottawa, Ontario, Canada
Filed Mar. 4, 1965, Ser. No. 437,199
Claims priority, application Canada, Jan. 6, 1965, 920,160
10 Claims. (Cl. 248—345.1)



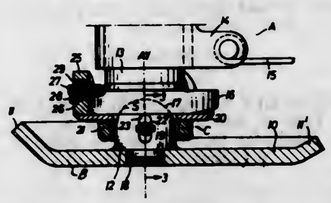
1. For use on a set of chair legs, a manually attachable cover for protecting the chair user's apparel from damage resulting from said chair legs, comprising a central portion provided with an aperture and an outside edge, at least one pair of top portions extending outwardly from said central portion, each of said top portions being provided with side portions and an end portion extending substantially at right angles to said top portion, means joining said side portions, a slit traversing said joining means and forming a continuation of said first mentioned slit, and fastening means preventing opening of said slit.

3,289,996
LUNCH BOX HOLDER
Bert L. Inman, General Delivery, Pistol River, Oreg.
Filed Oct. 12, 1965, Ser. No. 495,248
6 Claims. (Cl. 248—346)



1. In combination, a portable lunch box, a receiver in which a lower basal portion of said box is telescopingly and detachably mounted and provided with readily applicable and removable clamping and retaining means, and also provided with permanent magnet means arranged and designed to be mounted on a relatively stationary magnetizable surface.

3,289,997
MINE PROP AND SHOE ARRANGEMENT
Franz Beulker, Lunen, Westphalia, Kunibert Becker, Werl, Westphalia, and Manfred Floter, Lunen, Westphalia, Germany, assignors to Gewertschaft Eisenhutte Westfalia, Lunen, Westphalia, Germany, a corporation of Germany
Filed May 3, 1965, Ser. No. 452,936
Claims priority, application Germany, May 5, 1964, G 40,527
8 Claims. (Cl. 248—357)



1. A mine prop and shoe arrangement which comprises a first element operatively connectable in fixed relation to a mine prop, said first element having a concavely curved surface, a second element having a convexly curved surface disposed in operative slidable engagement with the concavely curved surface of said first element to permit limited articulate movement of said second element relative to said first element, a shoe member fixedly connected to said second element, and means operatively connecting said first and second elements for a limited relative articulate movement in each of two selected paths for positioning said shoe member relative to the mine prop in corresponding paths, said connecting means including a means defining a passage extending through said second element, a pin member extending through said passage means, and a collar member opera-

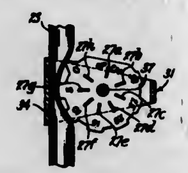
tively connected in fixed relation to said first element, said collar member being operatively connected to the end portions of said pin member, and being disposed in spaced-apart relation to said second element to limit the relative articulate movement of said first and second elements in one of said selected paths, and said passage being bounded in relation to said pin member to limit the relative articulate movement of said first and second elements in the other of said selected paths.

3,289,998
ALL-DIRECTIONAL SHOCK MOUNT
Paul Baratoff, Jackson Heights, N.Y., assignor to Korfund Dynamics Corporation, Long Island City, N.Y., a corporation of New York
Original application Nov. 15, 1963, Ser. No. 323,978, now Patent No. 3,245,646, dated Apr. 12, 1966. Divided and this application Oct. 11, 1965, Ser. No. 494,752
2 Claims. (Cl. 248—358)



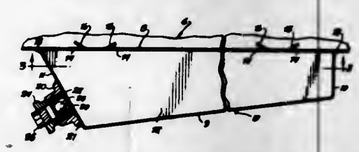
1. A shock mount comprising a housing including a tubular member and a pair of plates having openings therein, said plates being fixed to said tubular member in spaced apart, substantially parallel relation, a support plate, a shaft extending from the support plate through said openings in both of said plates, a first shock absorbing ring interposed between and engaging the support plate and one of said parallel plates to attenuate by compression thereof vertical forces tending to urge the support plate towards the housing, a flange on the lower end of the shaft, a second resilient shock absorbing ring interposed between and engaging the flange and the other of said parallel plates to attenuate by compression thereof of vertical loads tending to urge the support plate away from the housing and a third shock absorbing ring between said parallel plates and interposed between and engaging the shaft and said tubular member to attenuate by compression of said third ring all horizontal shock loads between the shaft and the housing.

3,289,999
FLOW REGULATOR FOR FLEXIBLE TUBES
Peter A. Konzak, Briesmade, N. Dak.
Filed May 16, 1963, Ser. No. 280,955
6 Claims. (Cl. 251—6)



1. In apparatus for administering fluid parenterally, a length of elastic tubing and a flow regulator comprising a rotatable wheel member, the periphery of said wheel member being provided with a series of elevations of respectively graduated height as measured from the axis of said wheel member, said elevations being separated by intervening recesses on the periphery of said wheel member, a frame member supporting said wheel, said frame member being provided with a tube engaging portion, said elevations being adapted for direct contact with said tubing, whereby each elevation forms a positive constriction in the opening of said tube.

3,290,000
DRAIN VALVE FOR REMOVING SETTLING MATERIAL
Gerald J. Snyder, 7213 Old Lakeshore Road, Lake View, N.Y.
Filed Apr. 8, 1964, Ser. No. 358,209
1 Claim. (Cl. 251—144)



Valve means for removing water and foreign material from the bottom 9 of the fuel tank 6 of an automotive vehicle, which comprises a sump 8 in said bottom 9 having a wall 11 at the rear end thereof with reference to the line of travel of said vehicle, a tubular valve body 20, 24 having a coaxial through bore 23 and having coaxial threads 29 at one end, means 21 securing the other end of said valve body 20, 24 across an opening 22 in said rear end wall 11 with its threaded end 29 extending axially generally perpendicularly outwardly therefrom so as to be protected by said sump 8 from stones thrown upwardly from the roadway in front of said fuel tank 6, one end 26 of said through bore being in communication with the interior of said tank 6 and the other end forming a drain opening, means 30, 31 providing a valve seat in said through bore 23 facing said interior of said tank 6 and surrounding a valve opening 32 providing communication from said one end 26 of said through bore 23 to said drain opening, a valve ball 33, means 34 loosely retaining said ball in the region of said seat 31 to be free to engage and disengage said seat, and a threaded closure member 35 adapted to be manually screwed on said threads to seal the drain opening of said through bore 23 whereby upon manual removal of said threaded closure member 35 an elongated thin instrument 36 can be inserted into the drain opening of said through bore 23 and against said ball 33 to unseat said ball and drain said water and foreign material from the bottom of the tank following which said instrument 36 can be withdrawn to permit said ball to reseat by the velocity of the fluid moving toward said valve opening 32 and thereby to permit replacement of said threaded closure member 35 without the impedance of a stream of fluid flowing from said drain opening.

3,290,001
FLUID PRESSURE VALVE HAVING DIVERSE MATERIAL SEAL
Joseph W. Taylor, Houston, Tex., assignor, by mesne assignments, to Daniel Industries, Inc., Houston, Tex., a corporation of Texas
Filed Jan. 22, 1964, Ser. No. 339,441
1 Claim. (Cl. 251—175)

A valve comprising,
a valve body having a passageway therethrough, said body having an annular recess about said passageway,
an annular resilient sealing member positioned in said recess, said recess and sealing member being trapezoidally shaped in cross-section,
a metal valve member rotatably supported in said passageway on the high-pressure side of said sealing member for closing said passageway,

said valve member being dish-shaped and positioned in its closed position with the concave side directed toward the sealing member,
an annular metal shoulder adjacent to the sealing member on the low pressure side for supporting said sealing member and contacting the valve member when in the closed position to provide a load bearing metal to metal seal and which supports the sealing member and prevents it from being extruded downstream,



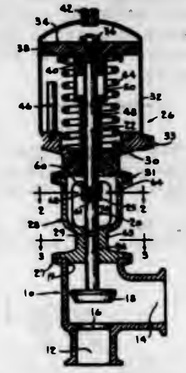
a seating surface on said valve member being shaped in cross-section as a segment of a sphere with the convex face position to contact the sealing member and metal shoulder, and
the recess and sealing member being in a plane perpendicular to the body with the vertical axis of the cross-section of the recess and sealing member being at an angle to the body and generally perpendicular to the valve member seating surface.

3,290,002
FLOW CONTROL VALVE
Richard E. Self, 3221 Brimhall Drive, Los Alamitos, Calif.
Filed Nov. 19, 1963, Ser. No. 324,646
4 Claims. (Cl. 251—210)



1. A sealing joint having a surface intersected by a passage,
a spindle member having a head portion and being movable axially into and out of said passage,
said spindle member having a reduced section forming an annular recess axially inwardly of said head portion,
a ring-shaped volume of highly viscous, flowable, compressible material filling all of said recess and in sufficient excess to project radially outwardly of said recess,
said head portion having a radial shoulder at one end of said recess,
a sleeve encapsulating and filled by said ring-shaped volume and including a wall forming a cylinder for said ring-shaped volume, and
an end wall extending radially inwardly to a smaller diameter cylindrical bore,
said bore and said head portion having confronting axially extending concentric surfaces sized to have a sliding fit with one another,
whereby said ring-shaped volume is protected against erosion by any fluids flowing through said passage,
said bore terminating in a flat radial end face on said sleeve overlying and engageable with said surface,
and shoulder means on said spindle member forming a piston head overlying said ring-shaped volume and having an effective area greater than the corresponding oppositely disposed radial shoulder,
said piston head being relatively movable axially after said end face engages said surface to compress said ring-shaped volume,
thereby separating said axially extending confronting surfaces while translating said spindle member into said passage,
the compression of said ring-shaped volume building up contact pressure between said end face and said surface and carrying said ring-shaped volume into said passage.

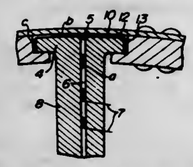
3,290,003
VALVE CONSTRUCTION FACILITATING REMOVAL OF PARTS
Joseph S. Kessler, Kenosha, Wis., assignor to G & H Products Corporation, Kenosha, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 848,402, Oct. 23, 1959. This application Oct. 29, 1962, Ser. No. 233,967
1 Claim. (Cl. 251—318)



A valve comprising, a valve body having an inlet and an outlet, a valve seat in said housing, a valve member movable within said housing and adapted for cooperation with said valve seat to control flow between said inlet and said outlet, a cage member removably mounted on said housing and having a base portion and a plurality of upstanding legs, a valve actuator removably mounted on said cage member, a two-piece stem comprising first and second stem sections joined end-to-end, said two-piece stem operatively connecting said actuator and said valve member with the first section of said two-piece stem slidably mounted in said base and extending through said base into said valve housing, said second stem section operatively connected to said actuator, said first stem section having a groove in the portion extending through said base and sealing means contained in said groove to provide a seal between said first stem section and said base, and connector means for said two-piece stem adapted for readily connecting and disconnecting said stem sections, said connector means including a collar fastened to the end of said second stem section and adapted for telescopic engagement with the end of the said first stem section, said connector means further including a locking member mounted in said collar and a second groove in said first stem section, said locking member adapted for removable engagement with said second groove in said first stem section to readily disconnect said stem sections upon ac-

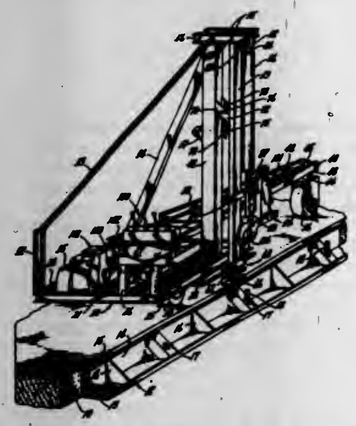
tuation of said locking member and to permit slidable removal from said base of said first stem section and sealing means, said cage member removably mounted on said housing and said valve actuator removably mounted on said cage member by two-piece clamping members pivotally connected together at one end and releasably connected at the other end.

3,290,004
DEVICE FOR DAMPING VIBRATION OF LONG STEAM-TURBINE BLADES
Eiichi Ishibashi, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 7, 1966, Ser. No. 540,973
Claims priority, application Japan, Apr. 9, 1965, 40/20,544
1 Claim. (Cl. 253—77)



A device for damping vibration of shrouded long steam-turbine blades comprising a spacing provided between the extreme end portion of the blade and the associated shroud structure and means for directing steam drain into said spacing.

3,290,005
PIN EXTRACTOR
Simon B. Beemsterboer, 14720 Dearborn St., Dolton, Ill., and Marcell Vander Heyden, 1716 Sheffield Ave., Dyer, Ind.
Filed Mar. 16, 1965, Ser. No. 440,190
17 Claims. (Cl. 254—18)



1. A mobile pin extractor, comprising a carriage mounted on a plurality of wheels, a mast mounted on said carriage and projecting upwardly therefrom, first power means operatively interconnected to said mast and to a first jaw for effecting vertical movement of said jaw, a second jaw connected to said first jaw for movement with and with respect to said first jaw, second power means connected to said second jaw for moving said second jaw with respect to said first jaw for bindingly gripping a pin therebetween, means for selectively actuating said first and second power means, stabilizer means operatively interconnected to said carriage and engageable with the ground adjacent said pin, biasing means interconnecting said stabilizer means and said carriage for urging said stabilizer means upwardly out of engagement with the ground and means for propelling and guiding said carriage.

3,290,006
PIPE PULLING DEVICE
Walter H. Dubberke, Box 314, Hubbard, Iowa
Filed Dec. 23, 1964, Ser. No. 420,614
11 Claims. (Cl. 254—31)

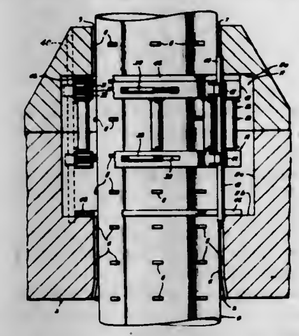


1. In a pipe puller, comprising,
an upstanding support means,
vertical movable means mounted on said support means adapted to grip a pipe when said vertical movable means moves upwardly on said support means,
a first hydraulic cylinder operatively connected to said vertical movable means to move said vertical movable means upwardly and downwardly on said support means,
a brake means operatively engaging said pipe at times; said brake means gripping said pipe to prevent the downward movement thereof when said vertical movable means moves downwardly on said support means and adapted to release said pipe when said vertical movable means moves upwardly on said support means,
a second hydraulic cylinder operatively connected to said brake means to move said brake means into and out of gripping engagement with said pipe,
a valve means operatively fluidly connected to each end of said first and second hydraulic cylinders,
a hydraulic power source operatively fluidly connected to said valve means adapted to supply fluid under pressure to said valve means,
means on said valve for selectively directing said fluid under pressure to one end or the other of said first hydraulic cylinder,
and means on said valve for selectively directing said fluid under pressure to one end or the other of said second hydraulic cylinder simultaneously with the directing of said fluid under pressure to one end or the other of said first hydraulic cylinder.

3,290,007
JACK ARRANGEMENT FOR A PLATFORM STRUCTURE
Ralph D. Yelding, Houston, Tex., assignor to Hydraulic Engineers, Inc., a corporation of Texas
Filed June 28, 1965, Ser. No. 467,641
12 Claims. (Cl. 254—106)

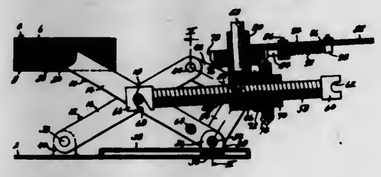
1. A jack assembly for selectively effecting movement between a structure and a support leg for the structure comprising,

(a) spaced rink-like members adapted to surround the leg,
(b) hydraulic jack means connecting said spaced rings,
(c) means supported by each of said rings for movement circumferentially of the leg,
(d) means mounted on each of said rings and engaged to move said circumferentially movable means,



(e) said circumferentially movable means having circumferentially spaced projections thereon for engagement with mating circumferential projections on the leg, and
(f) said hydraulic jack means movable longitudinally relative to the leg to effect relative movement between the leg and the structure.

3,290,008
SCREW OPERATED SCISSORS JACK
Gaylord L. White, 717 2nd St., Belton, Mo.
Filed May 24, 1965, Ser. No. 457,982
5 Claims. (Cl. 254—122)



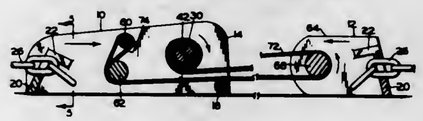
1. A jack comprising:
(a) a base plate,
(b) a load platform disposed above said base plate,
(c) a pair of levers pivotally joined together intermediate their ends by a horizontal pivot pin and extending horizontally in both directions from said pin, a first pair of corresponding ends of said levers being pivotally connected respectively to said base plate and said platform on axes parallel to said pivot pin,
(d) a slide member carried by said base plate for horizontal movement at right angles to said pivots,
(e) a second pivot pin parallel to said first pivot pin and connecting the opposite end of the lever connected to said platform to said slide member,
(f) a link pivoted at one end to the opposite end of the lever connected to said base plate on an axis parallel to said first pivot pin,
(g) a block pivoted to the opposite end of said link on an axis parallel to said first pivot pin,
(h) a second link pivoted at one end to said block coaxially with said first link and being detachably engageable at its opposite end with said second pivot pin,
(i) a screw slidably engaged in said block and extending at right angles to the pivotal axis of said block, said screw being selectively engageable at an end thereof either with said first pivot pin or with the lever connected to said slide member at a point adjacent said slide member, and
(j) operating means for advancing said screw longitudinally in either direction with respect to said block.

3,290,009
APPARATUS FOR CONVEYING A HEAVY LINE DOWN A STEEP HILLSIDE
Darrell E. Carper and Arthur B. Caldwell, both of Halfway, Oreg.
Filed Oct. 1, 1965, Ser. No. 492,144
2 Claims. (Cl. 254—147)



1. An apparatus for conveying the end of a cable down a hillside including a heavy ball composed of two identical semi-spherical portions, said portions being rotatably mounted on a common axial shaft and spaced a slight distance apart, a tongue connected to said common axial shaft at the longitudinal center of said shaft between said semi-spherical portions, said tongue extending out beyond the outer faces of said portions, and means connecting the outer end of said tongue with the end of the cable being conveyed by said ball.

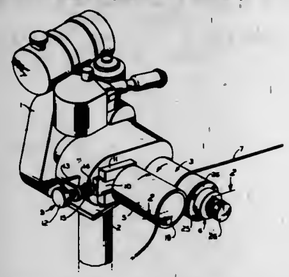
3,290,010
LOAD BINDER
Ralph A. Holmes, % Halmac Manufacturing, 1212 NE. 63rd, Portland, Oreg.
Filed Feb. 1, 1965, Ser. No. 429,302
2 Claims. (Cl. 254—161)



1. A load binding apparatus comprising a belt, a winch housing having forward and rearward ends and having a pair of parallel side walls spaced apart a distance greater than the width of said belt whereby the latter can extend freely in a flatwise position in said housing, an anchor pin mounted in said side walls crosswise of said housing intermediate the forward and rearward ends of the latter, a guide pin also mounted in said side walls crosswise of said housing intermediate the forward and rearward ends of the latter, said belt being secured at one of its ends to said anchor pin and then extending around said guide pin to lead out the forward end of said housing, a pulley housing, a pulley in said pulley housing, said belt being reeved over said pulley, a winch drum in said winch housing, the other end of said belt leading from said pulley and being secured to said winch drum whereby upon

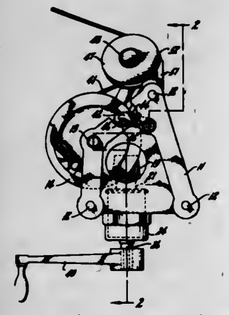
selected operation of said winch drum the belt is tightened to draw said winch housing and said pulley housing together, and means on each end of said winch housing for attachment thereto of a load binding element.

3,290,011
LINE PULLING APPARATUS
Charles L. Medeiros, 2547 Iao Road, Wailuku, Maui, Hawaii, and Robert L. Cordeiro, 208 Molokai Hema St., Kahului, Maui, Hawaii
Filed Aug. 21, 1964, Ser. No. 391,121
2 Claims. (Cl. 254—175.5)



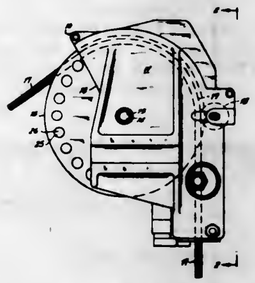
1. A line pulling apparatus comprising a rigid frame; a drive shaft rotatably mounted on said frame; drive means for unidirectionally rotating said drive shaft; a drive roller rotatable upon said drive shaft in either direction about the axis of said drive shaft; axial disk clutch means selectively frictionally interconnecting said drive shaft and said drive roller; means for adjustably controlling the amount of frictional interconnection between said drive shaft and said drive roller; an idler roller in rolling contact with said drive roller; means resiliently biasing said idler roller into rolling contact with said drive roller and means carried by said rigid frame for rotatably mounting said drive shaft, drive roller and idler roller at one end thereof, so that the ends of said rollers remote from said rigid frame are free for insertion and removal of the line to be pulled.

3,290,012
MINIATURE HOIST
Edwin E. Matthews, St. Louis, and Arnold E. Pryhuber, St. Charles, Mo., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 5, 1965, Ser. No. 477,626
1 Claim. (Cl. 254—187)



A hoist comprising:
a frame,
a cable drum rotatably mounted to said frame, said cable drum having a hole therein and having a spiroid gear on one flange thereof,
a cable having one end attached to said cable drum and being windable thereon whereby a portion of a first turn of said cable upon said cable drum covers said hole in said cable drum,
a spiroid pinion gear having a shaft with a splined bore therein, said pinion gear being rotatably mounted to said frame and being in mesh with said spiroid gear,
an input shaft having an enlarged diameter portion having first and second grooves on the face thereof,
an output shaft having a splined portion on one end slidably engaging said splined bore in said pinion gear and an enlarged diameter portion having a plurality of slots therein on the other end,
a plurality of balls positioned on each in each said slot, said balls being engageable in said grooves on said input shaft,
a spring surrounding said spline portion of said output shaft for biasing said balls against said face of said input shaft,
a latch pivotally connected to said frame and engageable with said hole in said cable drum when said hole is uncovered, and
spring means for biasing said latch against said cable when said cable covers said hole, and into said hole when said hole is uncovered.

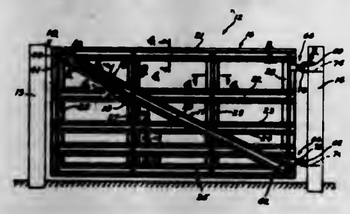
3,290,013
POWERED REEL DEVICE FOR HANDLING CABLE
Ralph E. Walsh, Long Branch, and Winfield A. Lakin, Cranford, N.J., assignors to Breeze Corporations, Inc., Union, N.J., a corporation of New Jersey
Filed Apr. 8, 1964, Ser. No. 358,211
1 Claim. (Cl. 254—190)



A powered reel device for handling cable coming from a storage drum comprising, a housing having an opening therein, a sheave journaled within the housing, a pin carried by the housing to support the sheave, said pin being axially slideable with respect to the housing to release the sheave whereby the sheave and cable can be removed from the housing through the opening, a pressure wheel adjacent the sheave to keep the cable in contact with the sheave, a cable guide carried by the housing below the pressure wheel, a bell shaped bore in said cable guide, a lateral slot in the cable guide in communication with said bore whereby the cable can be slipped into the bore at any point along the cable length, a roller adjacent the lateral slot to keep the cable within the bell shaped bore power means to drive the sheave, and a clutch between the sheave and the power means.

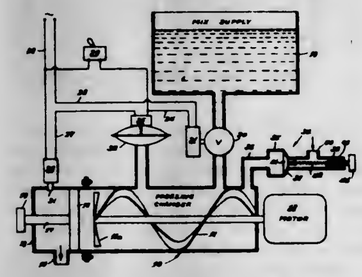
3,290,014
ADJUSTABLE GATE APPARATUS
Mathew H. Stapleton, Box 458, Jefferson, Iowa
Filed Apr. 13, 1964, Ser. No. 359,138
1 Claim. (Cl. 256—73)

A gate apparatus comprising in combination:
a normally right angular frame including a quartet of members having identical cross sections, said members pivotally interconnected at their ends whereby the frame is movable in a vertical plane into any one of a plurality of parallelogram formations;
each member including in cross section a straight base portion and a pair of straight inner portions diverging from the ends of the base portion at equal angles;
means including a pair of telescopically connected elements adjustable longitudinally as to each other for changing their overall length, said elements having a cross section substantially identical to the cross section of said members, the opposite ends of the elements secured to and interconnected between diagonally opposite junctions of the ends of said members and capable of selectively supporting said frame in any one of said formations;



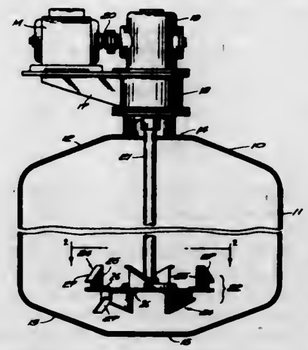
said pivotal interconnections each comprising a U-shaped bracket having a pair of legs placed respectively against the base portions of one of said members and said element adjacent thereto, a tubular spacer disposed between said base portions, a joint clip placed against the base portion of the other member on a side thereof opposite said other base portion side, and a fastener inserted through and interconnecting said legs, spacer and clip; and
removable means releasably locking said elements in any one of a plurality of longitudinally related positions.

3,290,015
FEED CONTROL FOR WHIPPED FOOD FREEZERS
Harold R. Gastschow, R.F.D. 1, Box 138, South Beloit, Ill.
Filed June 24, 1964, Ser. No. 377,720
13 Claims. (Cl. 259—9)



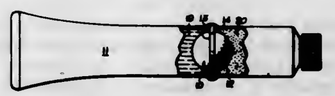
1. In the method of preparing a whipped food product wherein a mix is introduced into a closed mixing chamber in which the mix is chilled and worked to incorporate air therein and from which chamber the food product is withdrawn as required, the improvement comprising: prior to replenishing said chamber with mix after a draw-off of product, limiting the amount of vacuum produced by a draw-off by the admission of air as required to achieve said limiting, and thereafter adding mix until the pressure in said chamber increases to a predetermined extent.

3,290,016
MIXER MEANS AND IMPELLER THEREFOR
John J. Lennon, Winchester, and Victor M. MacNulty, Topsfield, Mass., assignors to Nettco Corporation, Everett, Mass., a corporation of Massachusetts
Filed Jan. 8, 1965, Ser. No. 424,256
7 Claims. (Cl. 259—108)



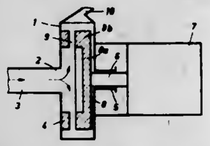
1. A shearing impeller for a dispersing apparatus comprising a generally circular plate, means mounting the plate transversely of and for rotation with an impeller shaft, centrally perpendicular thereto, and at least one compression unit, wholly inboard of the plate at the marginal zone thereof, said unit comprising a laterally projective vane in a plane paralleling the shaft axis and oriented at a pumping angle to the direction of rotation of the plate, and an overhanging shroud out-turned at right angles to the vane at the outer edge thereof and inclined at a compression angle to the plane of the plate, said shroud defining with said vane and the opposing region of the plate an elongate passage deviating from the direction of rotary movement and reducing from the inlet to the outlet, whereby the compression unit accelerates the ambient material to be mixed both by pumping and by compressing said material subject to said passage and causing it to discharge from the passage outlet at relatively high velocity and so as to impinge upon the encompassing material with a violet shear and augmented dispersing action.

3,290,017
BARRIER-MIXER FOR TUBULAR CONTAINERS
Henry K. Davies, 203 Heights Road, Ridgewood, N.J., and Donald M. Storms, 371 Dorothy Lane, Wyckoff, N.J.
Filed Oct. 1, 1964, Ser. No. 400,646
6 Claims. (Cl. 259—114)



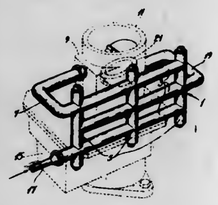
1. A barrier-mixer device comprising, in combination, a spherical body portion, an annulus integrally formed with said body portion and providing a continuous peripheral edge surrounding said body portion, and a tubular container, said container having a resilient wall structure, the peripheral length along the inside wall of said container at a transverse section thereof being somewhat lesser than the peripheral length along the edge of said annulus, said annulus being transversely positioned in said tubular container.

3,290,018
METHOD OF PRODUCING CONCRETE
Gerhard Stapelfeldt, Berlin, Germany, assignor to Spezialbaustoff-Vertrieb Nordwest G.m.b.H., Dusseldorf, Germany
Filed Aug. 4, 1965, Ser. No. 477,675
Claims priority, application Germany, Aug. 5, 1964, S 92,479
11 Claims. (Cl. 259—146)



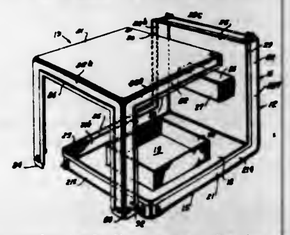
1. In a method of producing concrete, the steps of introducing between substantially parallel, annular surfaces rotating relative to each other at a predetermined peripheral speed and being spaced from each other at a predetermined distance so as to form an annular space of predetermined width therebetween, in the vicinity of the inner edges of said annular surfaces, a flowable mass including an aqueous liquid and a pulverulent hydrating binder, said predetermined width being equal to up to 10 times the average maximum particle size of said pulverulent hydrating binder, and said predetermined peripheral speed of said annular surfaces relative to each other being equal to between about 30,000 and 200,000 times said predetermined distance per second, said flowable mass passing, under the influence of centrifugal force, outwardly through said annular space while simultaneously the particles of said hydrating binder are subjected to shearing forces between said annular surfaces rotating relative to each other; and withdrawing the thus-treated flowable mass in the vicinity of the outer edges of said annular surfaces.

3,290,019
LIQUID FUEL AND AIR MIXING DEVICE FOR INTERNAL COMBUSTION ENGINE
Jean Ducharme, 136 Notre Dame, St. Pie de Bagot, Bagot, Quebec, Canada
Filed Apr. 24, 1964, Ser. No. 362,269
5 Claims. (Cl. 261—23)



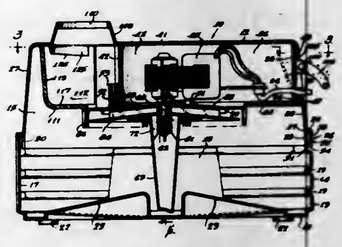
1. A liquid fuel and air mixing device for an internal combustion engine having a carburator provided with a generally tubular throttling section into which a throttling valve is operatively mounted and a partially filled fuel reservoir, said device comprising:
(a) a network of criss-cross interconnected tubes, said network having opposed ends;
(b) an air inlet, at one end of said network, connected to said reservoir, above the fuel therein;
(c) a liquid fuel inlet, at the said one end of said network and separate from said air inlet, connected to said reservoir into said fuel, and
(d) an air and liquid fuel mixture outlet at the other end of said network and connected to said carburator to open below said throttling valve.

3,290,020
AIR COOLERS
Clark A. Findley, 419 S. Britain (% P.O. Box 154), Irving, Tex.
Filed Oct. 4, 1963, Ser. No. 313,976
14 Claims. (Cl. 261—29)



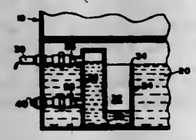
1. An air cooler including: a case having a top section and a pan section, said pan section having means forming a pair of pan portions extending perpendicularly relative to each other and each providing a watertight open topped receptacle when positioned in a lower horizontal position, one of said pan portions having an aperture; a blower assembly disposed in said case and having an outlet duct extending through said aperture, said top section being so constructed as to have a single top wall capable of being positioned in an upper horizontal position parallel to and spaced above either of said pan portions when such pan portion is in said lower horizontal position; pad assemblies comprising sides of said case; and a pump for delivering water from a pan portion in said lower horizontal position to said pad assemblies.

3,290,021
PORTABLE HUMIDIFIER
Donald L. Blachly and James R. Prengel, Milwaukee, Wis., assignors to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 29, 1963, Ser. No. 326,919
12 Claims. (Cl. 261—29)



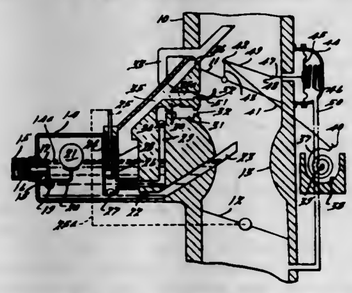
9. A humidifier for dispersing a fine water spray into the surrounding air including a cup-shaped bottom having an upwardly facing opening, a removable cover adapted to close said housing opening to form a water receiving chamber, sealing means provided between said bottom and cover to prevent water spray egressing therebetween, a dividing wall horizontally disposed within said housing and cover and defining an air inlet opening, a motor positioned over said inlet opening with a vertical drive shaft depending therethrough, an elongated hollow member having an interior surface inclined upwardly and outwardly centrally associated with said shaft, said member being provided with spiral ledge means positioned near the bottom of said interior surface and said member having an inclined bottom surface to cooperate with said ledge means so that the leading edge of said ledge means is exposed to assist the feeding of water upwardly through said member, a horizontally disposed slinger of greater diameter than said air inlet opening being positioned at the top of said member and a fan integrally formed on the top of said slinger of larger diameter than said opening and being disposed immediately below said opening, a barrier depending from said dividing wall around said fan and opening and disposed within the outside diameter of said slinger in order to prevent water spray from dropping from said wall onto said fan.

3,290,022
TRAP DEVICES
Nestor Brown, Jr., Manlius, and Jack F. Schmidt, De Witt, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 29, 1964, Ser. No. 371,213
2 Claims. (Cl. 261—29)



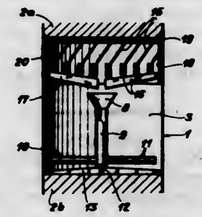
1. In combination with a liquid spray device for use in air treating systems, said device including a casing, a sump, spray means and a pump to forward liquid from the sump to the spray means for discharge into an air stream directed through the casing, an overflow trap device disposed in said sump, said device including an open compartment having a wall thereof serving as a weir to maintain a desired liquid level in the sump, means forming a chamber in said compartment open toward and spaced from the bottom of the compartment, a first drain line communicating the chamber with the exterior of the casing and adapted to cooperate with the chamber to form a liquid seal in the chamber, a second drain line communicating the chamber with the exterior of the casing and adapted to cooperate with the chamber to form a liquid seal in the chamber, said first drain line being spaced a greater distance from the open end of said chamber than the second drain line whereby said first drain line is utilized for overflow liquid when pressure in casing is greater than ambient pressure and said second drain line is utilized for overflow liquid when ambient pressure is greater than pressure in the casing, and means for sealing the drain line not utilized during operation.

3,290,023
BACK BLEED CHOKE MIXTURE CONTROL
Jorma O. Sarto, Orchard Lake, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,193
7 Claims. (Cl. 261—34)



1. In a fuel charging system for an internal combustion engine, an air intake passage, a butterfly type choke valve pivotally mounted off-center in said passage to be urged from its closed position in response to the air flow in said passage, a throttle valve operably mounted in said passage downstream of said choke valve, a fuel bowl, means for maintaining a predetermined fuel level in said bowl, a venturi restriction in an intermediate portion of said passage between said valves, a fuel metering duct connecting said bowl with said intermediate portion of said passage to discharge metered fuel thereinto, means for maintaining a predetermined pressure relationship in said intermediate portion with respect to temperature when said engine is idling or operating under load comprising thermostatic means responsive to an engine operating temperature for urging said choke valve toward its closed position with increasing force as said temperature decreases, means for predetermining the pressure differential between the fuel pressure in said bowl and at said discharge end of said fuel metering duct when said choke valve is closed during cranking of said engine including duct means in communication with said fuel bowl and having first and second restricted portions venting said bowl respectively to the atmosphere and to said intermediate portion of said passage, an air chamber comprising part of said duct means and having said second restricted portion opening therefrom into said passage, an acceleration fuel pump operatively connected with said bowl to receive fuel therefrom and having a restricted outlet opening into said chamber in alignment with said second restricted portion for discharging fuel thereinto upon operation of said pump, said chamber being in communication with the atmosphere through said first restricted portion.

3,290,024
MATERIAL EXCHANGE COLUMN
Max Huber, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Mar. 10, 1965, Ser. No. 438,681
Claims priority, application Switzerland, Mar. 19, 1964, 3,518/64
9 Claims. (Cl. 261—88)



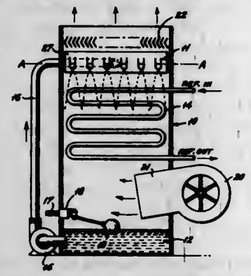
1. In a material exchange column for effecting contact between a liquid and a gaseous medium flowing countercurrent therethrough, the column being subdivided into at least two material exchange sections which are separated vertically from one another by an intervening space, liquid collecting means being provided in said space for collecting liquid descending from the upper material exchange section and for conveying the liquid to distributor means for distributing the liquid onto the material exchange section disposed immediately below, the improvement which comprises providing liquid collecting means adapted to collect all of the liquid descending from the upper material exchange section, said collecting means comprising a plurality of downwardly extending plate-like guide elements disposed in horizontally spaced relationship with respect to each other over the cross-section of the material exchange section so that at any single horizontal plane extending through the horizontally spaced guide elements the guide elements physically block only a relatively small proportion of the total cross-section area of the column whereby an upwardly flowing gaseous medium can pass freely through the open passages between the guide elements, said horizontally spaced guide elements being inclined with respect to vertical so that

the elements cover in vertical projection the entire free cross-section of the column, each guide element being provided with a liquid collecting trough adjacent the bottom edge thereof, said collecting troughs being adapted to collect the descending liquid flowing down the plate-like guide elements and to deliver said liquid to said distributor means which is adapted to distribute the liquid uniformly over the upper surface of the material exchange section located immediately below.

3,290,025
TROUGH SYSTEM FOR EVAPORATIVE HEAT EXCHANGERS

John Engalitcheff, Jr., Gibson Island, Md., assignor to Baltimore Aircoil Company, Inc., Baltimore, Md., a corporation of Maryland

Filed Nov. 19, 1965, Ser. No. 508,815
12 Claims. (Cl. 261—140)

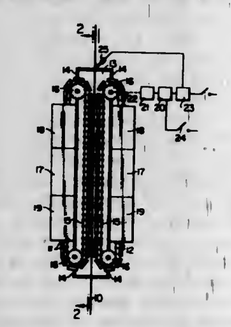


1. A trough for supplying water to an evaporative heat exchanger comprising an integral sheet metal structure having parallel side walls mutually spaced and interconnected by a regularly curved portion extending for 180°, said side walls presenting two free edges, said side walls each defining regularly spaced deep V notches therein, the mouths of said notches coinciding with the free edges of the side walls, the depth of the side wall between the beginning of the curved portion and the bottom of the notches being about equal to the space between the side walls.

3,290,026
HEATING MEANS FOR STRIP MATERIAL

Alexander V. Alexeff, Cleveland, Ohio, assignor to Industrial Ovens, Incorporated, Cleveland, Ohio, a corporation of Ohio

Original application May 26, 1961, Ser. No. 116,645. Divided and this application Dec. 9, 1963, Ser. No. 345,546
8 Claims. (Cl. 263—3)

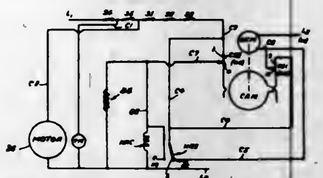


8. Heating apparatus for treating a strip comprising first means supporting said strip and moving it along a path, at least one endless train of heating elements having a reach extending parallel to and spaced from said strip to define an area of presentation of said heating elements to said strip, said heating elements having a length in a direction lateral with respect to said strip at least equal to the lateral width of said strip, and second means moving said endless train in a direction parallel to said path at a rate producing relative longitudinal movement between said elements and said strip so that each longitudinal portion of said strip is sequentially in heat exchange relationship with more than one element during its passage through said presentation area.

3,290,027
CONTROL ARRANGEMENT FOR GAS FIRED DRYER

Eugene L. Alumbaugh, Watson, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed May 18, 1964, Ser. No. 368,065
8 Claims. (Cl. 263—33)



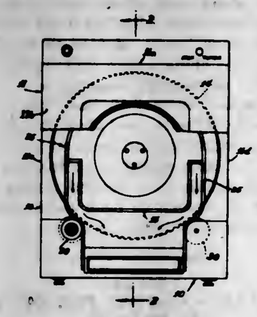
1. In a gas heated dryer, a rotatable drum adapted to contain articles to be dried; means for circulating air through said drum including a blower; electric motor means for rotating said drum and operating said blower; a gas burner for heating the circulated air; a normally closed valve controlling the supply of gas to said burner; a solenoid energizable to open said valve; and control circuits for said motor means and said solenoid and including a safety switch having thermostatic means normally closing said switch and responsive to a predetermined temperature of the heated air circulating through said drum to open said switch, switch means in said solenoid circuit and in series circuit relation with said safety switch and controlling energization of said solenoid, and electrically-controlled means for delaying operation of said switch means to energize said solenoid for a predetermined time interval subsequent to operation of said thermostatic means to close said safety switch.

3,290,028
GAS FIRED CLOTHES DRYER

Albert W. Kruzan, Fort Madison, Iowa, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed June 9, 1964, Ser. No. 373,813
5 Claims. (Cl. 263—33)

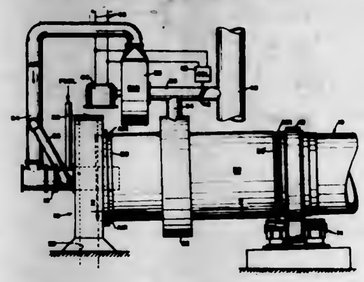
1. In an air heating system for a gas dryer of the type customarily used for drying clothes, the combination comprising: a cabinet having a top and sides; a framework within said cabinet; a container for receiving articles to be dried rotatably mounted on said framework; a duct system having an input for directing air into said container and an output for carrying air out of the container; a burner box mounted on said framework below said cabinet top and having an air input for receiving fresh air from outside the cabinet and an air output for directing heated air into the input of said duct system; a burner mounted in said box having at least one opening in its underside for feeding gas to a downwardly projecting flame having a tip; and a deflector in said box disposed below said burner and having a longitudinal opening through which said gas flame projects, said burner box air input directing the entering fresh air downward carrying the heat of the flame away from said cabinet top and sides and into said duct system input and maintaining said flame tip below said burner, preventing overheating of said cabinet top and sides.



3,290,029
RECOVERY OF RADIANT HEAT LOSSES FROM SHELLS OF ROTARY KILNS

Gerhard Nicolin, Bronx, N.Y., assignor to Kennedy Van Saun Mfg. & Eng. Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 13, 1964, Ser. No. 359,065
7 Claims. (Cl. 263—44)



7. In the method of recovering heat from the steel shells of rotary kilns and protecting such shells from overheating particularly by the calcined product therein, in which cooling air is passed in a confined zone in contact with the outer surface of the discharge end portion of the steel shell to be protected, collecting the resulting heated air passed over the exterior surface of the kiln shell in said zone and conducting it into the discharge end portion of the kiln with fuel for heating the kiln, the improvement comprising passing the calcined product produced in the kiln through a cooler, passing the cooling air in heat exchange with said cooler and then into said confined zone in contact with the steel shell of the kiln.

3,290,030
APPARATUS FOR THE GENERATION OF A FURNACE ATMOSPHERE FOR THE HEAT TREATMENT OF METALS, ESPECIALLY OF STEEL

Werner Goeburg, Schneiderweg 63, 7051 Neustadt, Kreis Waiblingen, Germany

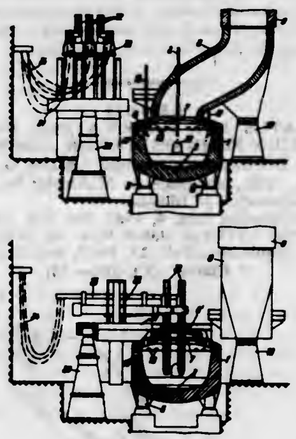
Filed Sept. 16, 1964, Ser. No. 396,980
Claims priority, application Germany, Sept. 21, 1963, G 38,746
2 Claims. (Cl. 266—5)

1. A furnace comprising a heating chamber and a cooling chamber and means for conveying the material to be treated through the heating chamber to the cooling chamber, a combustion chamber and a preheater supported in the heating chamber, said preheater being connected to the combustion chamber, means for conducting a combustible mixture of hydrocarbon fuel and air to the combustion chamber, and means for conducting the products of combustion from the combustion chamber to the heating chamber and the cooling chamber of the furnace, by which oxidation during annealing and subsequent cooling of the workpieces is prevented or workpieces are controlled carburized by measuring of a single combustion gas component.

3,290,031
SMELTING-FURNACE, PARTICULARLY FOR THE PRODUCTION OF STEEL

Jürgen Mastoch, Essen-Haarzopf, Kurt Berqwald, Essen-Süd, and Fritz Justus Hofmann and Walter Hess, Essen-Bredeney, and Gustav-Adolf Stral, Duesseldorf-Kaiserswerth, Germany, assignors to Beteiligungs- und Patentverwaltungs-Gesellschaft mit beschraenkter Haftung, Essen, Germany, a corporation of Germany

Filed July 16, 1963, Ser. No. 295,491
Claims priority, application Germany, Nov. 29, 1962, B 69,790
10 Claims. (Cl. 266—11)



1. A smelting furnace, particularly for the production of steel, comprising

a furnace vessel,

an arch having an opening supported by said furnace vessel,

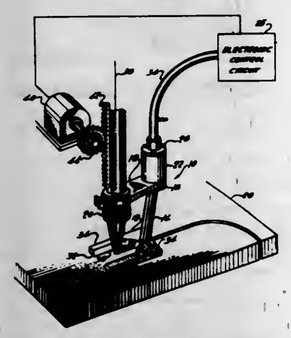
said opening in said arch being adapted to discharge gases from said furnace vessel,

burner means disposed in the upper portion of said furnace vessel for heating the latter,

a flue movably disposed on top of said arch,

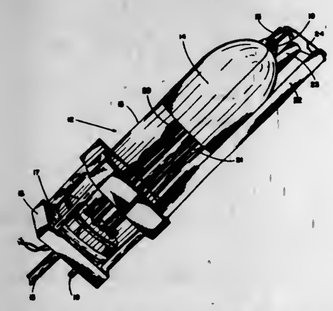
said burner comprising fuel burners and electrode burners, the latter including a transformer, to be used selectively and exchangeably, and said electrode burners extending through said opening in said arch.

3,290,032
HEIGHT CONTROL TRANSDUCER
Frans Brouwer, Glencoe, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Sept. 13, 1961, Ser. No. 137,770
6 Claims. (Cl. 266—23)



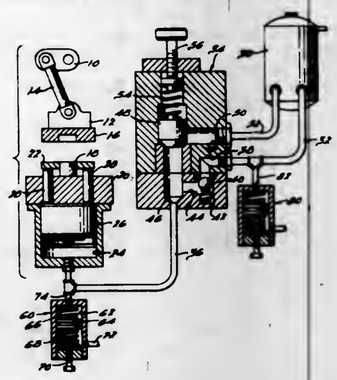
2. A transducer for a height control for use with a movable gas torch having a flame tip positioned adjacent a work piece, said transducer comprising a U-shaped member having a flat surface, said member having projecting leg portions with mutually facing surfaces extending from a base portion, the mutually facing surfaces being beveled divergently in a direction away from said flat surface, a post having one end secured to said member on the side opposite said flat surface, a platform at the opposite end of said post, means attached to said platform for securing the assembly comprising said member, said post and said platform to said torch, said member being positioned having its flat surface parallel to and adjacent the work piece and the beveled surfaces of said legs flanking the flame tip of the gas torch.

3,290,033
APPARATUS FOR FABRICATING ALLOYED JUNCTION SEMICONDUCTOR ASSEMBLIES
Donald S. Boyer, Scottsdale, and Charles G. Thornton, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Original application Aug. 4, 1961, Ser. No. 129,381, now Patent No. 3,173,816, dated Mar. 16, 1965. Divided and this application Feb. 23, 1965, Ser. No. 439,125
1 Claim. (Cl. 266—24)



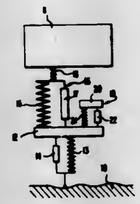
Apparatus for use in fabricating alloyed junction semiconductor assemblies, which apparatus includes in combination a quartz tube forming an enclosure with an inlet and an outlet, a chute extending downwardly through said enclosure adapted to permit a semiconductor crystal element having impurity material therewith to slide freely downwardly on said chute through said enclosure, a gas inlet adjacent to the outlet of said enclosure and a gas outlet adjacent to the inlet of said enclosure for establishing and maintaining a selected gaseous atmosphere within said enclosure about said chute, and electrical heating means in association with a heating block disposed within a portion of said enclosure adapted to establish a temperature about said chute within said enclosure sufficient to cause alloying of impurity material with a crystal element upon exposure thereof to heat from said heating block within said enclosure, said chute having a predetermined slope for regulating the speed of a crystal element passing down the same and thus controlling the time to less than a few tenths of a second during which said crystal element is exposed to heat within said enclosure during an alloying operation.

3,290,034
HYDRAULIC CONTROL FOR DIE PADS IN PRESSES
Floyd M. Williamson, Detroit, Mich., assignor to Di-Dro Engineering Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 31, 1964, Ser. No. 422,783
5 Claims. (Cl. 267—1)



1. In a crank type press having a ram and a movable die and in which the die is contacted by the ram during that portion of its stroke in which its velocity is relatively high and is decelerating, and a hydraulic cushion for the die including a hydraulic cylinder having a piston therein reacting against said die, a tank of hydraulic fluid under relatively low pressure, a hydraulic connection between said tank and said cylinder for supplying hydraulic fluid under tank pressure to said cylinder to bias said die to its extended position, means preventing return flow through said connection, a second hydraulic connection between said tank and cylinder through which hydraulic fluid flows from said cylinder to said tank as said die is retracted upon closing of the press, a pressure relief valve in said second connection to provide a predetermined resistance to displacement of hydraulic fluid from said cylinder upon closing of the press, a hydraulic shock absorber communicating directly with said cylinder to allow displacement of hydraulic fluid from said cylinder into said shock absorber prior to opening of said pressure relief valve to reduce shock in said connection caused by the impact of the ram on the die at said high velocity, and a hydraulic shock absorber in said first connection into which hydraulic fluid flowing from said tank to said cylinder upon opening of the press may be discharged to reduce the shock in said connections caused by the momentum of the hydraulic fluid flowing through said first connection and the abrupt stoppage of flow of fluid when said die reaches its fully extended position.

3,290,035
VEHICLE SPRING SYSTEM
Kurt Eake, Fellbach, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Aug. 13, 1964, Ser. No. 389,277
Claims priority, application Germany, Aug. 17, 1963, D 42,273
3 Claims. (Cl. 267—3)



1. A spring system for vehicles, especially motor vehicles, comprising:
main spring means connecting a vehicle body and supporting wheel,
relaxation damping means serving for damping said main spring means and including a damping device and relatively soft spring means connected in series therewith,
and vibration annihilator means operatively connected with said main spring means and including further spring means, further damping means, and a damping mass,
the damping device of the relaxation damping means being connected in parallel with said main spring means, and said soft spring means of said relaxation damping means being connected in series with the main spring means.

3,290,036
DEVICE FOR SUSPENSION AND SHOCK ABSORPTION IN VEHICLES
Walter Ruf, Bottighofen, Landhaus am See, Kanton Thurgau, Switzerland
Filed July 1, 1964, Ser. No. 379,489
Claims priority, application Germany, July 5, 1963, R 35,605, R 35,607, R 35,608
13 Claims. (Cl. 267—15)



1. Device for the spring suspension and shock absorption of the wheels of vehicles, said device comprising a closed housing which is adapted to be connected with a wheel of the vehicle and which is filled with a damping liquid, spring elements which are arranged in the housing and the damping liquid, a ram member one end of which acts on the spring elements and the other end of which is adapted to be rigidly connected with the vehicle, said housing including an opening which divides the housing into two compartments and which, upon the inward and outward spring action of the spring elements, permits a flow therethrough of the damping liquid, means for regulating the flow cross-section of said opening, and means for blocking said opening.

3,290,037
MULTIPLE ORIFICE OLEO-PNEUMATIC SHOCK/STRUT
Samuel W. Robinson, Jr., Marietta, and George K. Williams, Atlanta, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Nov. 13, 1964, Ser. No. 410,860
6 Claims. (Cl. 267—64)

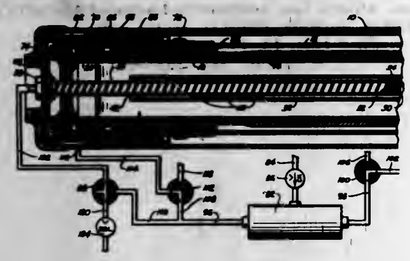


1. A telescoping shock absorber strut for a vehicle comprising: an outer cylinder adapted for attachment to a vehicle and having a concentric inner cylinder therein containing at least one sidewall aperture therethrough, said inner and outer cylinders being closed at one end and defining an annular area therebetween; an intermediate cylinder for attachment to the vehicle ground contacting members, said intermediate cylinder being associated with said outer and inner cylinders so as to be telescopically received therebetween and making said annular area an annular chamber; orificed end closure means at the other end of said inner cylinder; a bulkhead located within said inner cylinder dividing said inner cylinder into first and second chambers with said inner cylinder sidewall aperture located in the second chamber intermediate said bulkhead and said end closure means; and a third chamber defined by said inner cylinder end closure means and said intermediate cylinder, said third chamber being filled with liquid whereupon when said intermediate cylinder is telescopically inserted into an annular area the liquid in said third chamber is forced through said orifice into said second chamber against said bulkhead and through said sidewall aperture into said annular chamber.

3,290,038
EXTENSIBLE SHOCK ABSORBER
Raymond P. Tollar, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,437
5 Claims. (Cl. 267—64)

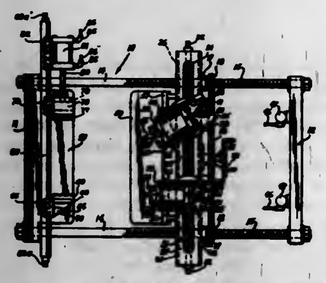
1. A shock absorber comprising:
an outer barrel;
an intermediate barrel slidably supported in said outer barrel;
an inner barrel slidably supported in said intermediate barrel;
a means metering fluid transfer between said inner and said intermediate barrels;
a means to extend said intermediate barrel from said outer barrel; and

a means operable after extension of said intermediate barrel from said outer barrel to valve said means metering fluid transfer between said inner and said



intermediate barrels creating a fluid block between said inner and said intermediate barrels to limit reciprocatory movement between said barrels.

3,290,039
UPHOLSTERED CHAIR FRAME CLAMPING MACHINE
Neal R. Lancaster, % J. M. Lancaster, Inc., P.O. Box 2462, Greensboro, N.C.
Filed July 23, 1964, Ser. No. 384,693
11 Claims. (Cl. 269—25)



1. A chair frame clamping machine comprising, in combination, a front plate, a rear plate, side bars connecting said front and rear plates, threaded rods above said side bars extending between said front and rear plates, a clamp carrying plate mounted for linear movement on said threaded rods, means for linearly moving said clamp carrying plate, a pair of transversely spaced chair frame clamping members on said clamp carrying plate, means for moving said chair frame clamping members transversely toward and away from each other, additional chair frame clamping members on said front plate, air operated means for moving said first mentioned clamping members into and out of engagement with a chair frame adapted to be positioned between said first mentioned clamping members and said additional clamping members, and remote means for actuating said air operated means.

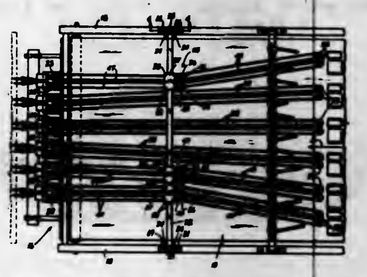
3,290,040
CLAMP
Robert M. Kerr, 220 N. Main St., Winter Garden, Fla.
Filed Apr. 6, 1964, Ser. No. 357,537
3 Claims. (Cl. 269—95)

1. A clamp for the lower unit casing of an outboard motor, for use in a vise or the like, the clamp comprising:
an upstanding arm member including a bottom portion and an upper portion angularly related thereto, the bottom portion being mounted in the vise;
an elongated, tubular sleeve member having opposite ends, upper and lower side portions, and inner and outer walls, one of the ends being fixedly secured to the upper portion of the arm;
a pair of fixed arm members secured on the sleeve outer wall adjacent the other end thereof, each arm having an outwardly angled inner portion and an outer portion substantially parallel to the wall, the fixed arms being arranged adjacent one side of the sleeve;



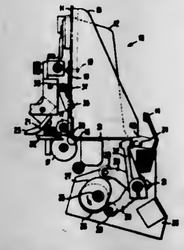
a substantially U-shaped bracket having a bight portion and a pair of side arms, the arms being secured to the sleeve outer wall intermediate the ends thereof on the upper portion;
the bight portion having a threaded opening therein;
a clamping screw mounted in the threaded opening; and
a movable clamping arm, including a central section and outwardly angled end portions, the central section being clamped between the screw and the sleeve outer wall with the end portions engaging the unit casing.

3,290,041
INTERMEDIATE SPINDLE CONSTRUCTION FOR GUIDE BELTS FOR PARTITION STRIP FEEDER CONSTRUCTION
Donald F. Cunningham, Milwaukee, Wis., assignor to U.S. Partition & Packaging Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 30, 1964, Ser. No. 379,283
6 Claims. (Cl. 271—9)



1. In combination, a partition strip feeder mechanism including a conveyor belt for edgewise disposed partition strips, longitudinally opposed spaced pairs of spindles mounted on the feeder mechanism, flexible cords trained around selected pairs of said opposed spindles for guiding and maintaining in vertical positions conveyed aligned partition strips for a predetermined segment of travel, a pair of supplemental spindles disposed between at least one opposed pair of spindles offset transversely inwardly towards the longitudinal centerline of said feeder mechanism from straight lines between said opposed spindles, a pair of vertically spaced flexible cords trained around each intermediate spindle and one opposed end spindle, said cord reaches being substantially parallel to the path of movement of said conveyor belt, and a pair of vertically spaced flexible cords trained around each intermediate spindle and the other opposed spindle.

3,290,042
CARD FEEDING MECHANISM
Oliver D. Johnson, Vestal, and David W. Leach, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1964, Ser. No. 420,987
3 Claims. (Cl. 271—44)



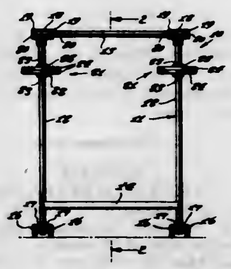
1. A form feeding mechanism comprising:
a hopper for supporting superposed forms;
a knife blade co-operating with one end of the hopper to define a throat for normally allowing the passage of only a single form;
picker means at the opposite end of said hopper for successively picking forms from the hopper during successive feeding strokes and advancing them past said throat; said picker means being effective to pick and advance only one form during each feeding stroke;
feed rollers adjacent the exit side of said throat for advancing said forms out of said throat and hopper;
means for operating said picker means at a faster rate than said feed rollers to successively advance a form before a form leaves said throat and hopper whereby the trailing and leading edges of successive forms will overlap a predetermined amount prior to leaving the hopper; and
camming means reciprocating said knife blade for successively varying said throat to allow the successive passage of the overlapped portions of said forms.

3,290,043
EXERCISING DEVICE
Walter H. Sorensen, Rte. 11, Box 160H, San Antonio, Tex.
Filed Oct. 21, 1963, Ser. No. 317,731
8 Claims. (Cl. 272—68)



1. An exercising device for bowlers comprising thumb engaging means, finger engaging means, support means rotatably secured to both said thumb and finger engaging means maintaining said thumb and finger engaging means in an angular relationship simulating the relationship of the thumb and finger engaging apertures of a conventional bowling ball, and resilient means including divergent spring arms operatively connected to said support means to normally bias said thumb and finger engaging means away from each other, said thumb and finger engaging means comprising plate members over the ends of which the fingers and thumb are adapted to engage, said plate members being squeezable toward each other against the force of said resilient means, and stop means including oppositely disposed loop portions engaging each of the spring arms to limit their angular displacement relative to each other.

3,290,044
MOBILE EXERCISE BAR
John K. Krodson, Pueblo, Colo. (4512 Alcott St., Denver, Colo.), and Walter J. Slamec, 978 Logan St., Denver, Colo.
Filed July 8, 1963, Ser. No. 293,323
4 Claims. (Cl. 272—81)

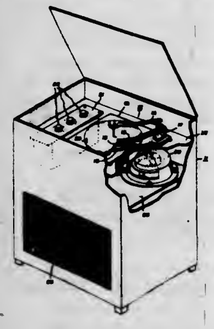


1. In a mobile exerciser the combination of a generally flat frame comprised of a transverse portion and an upright portion having an upper end and a lower end, shaft means on said frame at said lower end in a transverse direction to said frame, a plurality of wheels in axial alignment with each other and mounted on said shaft means for rotary movement with respect to said frame, a hand grasping means extending in a transverse direction to said frame disposed at the upper end of said frame, a weight adjustably mounted on said upright frame portion, said weight being slideable between the upper and lower ends of said frame, and means for selectively securing said weight at various elevations between the upper and lower ends of said upright frame portion, said weight comprising a flat disc having a central opening therethrough for receiving said upright frame portion.

3,290,045
DUST REMOVER FOR PHONOGRAPHS
Harwood B. Moore, Sasquoit, N.Y., and John A. Stein, Decatur, Ill., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 116,327, June 12, 1961. This application July 26, 1965, Ser. No. 477,642
3 Claims. (Cl. 274—67)

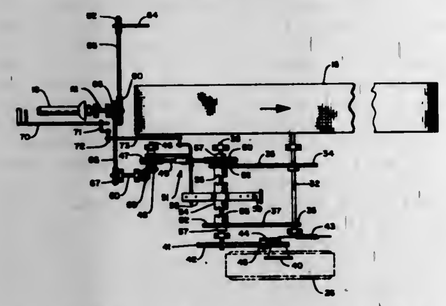
1. Apparatus for removing dust from phonograph records of the type having preformed sound grooves therein, comprising a record player turntable having an elongated sound reproducing tone arm mounted in association therewith, said tone arm having a recess formed on the underside thereof, a pick-up cartridge carried in said tone arm recess by said tone arm at the free end thereof, a playback needle carried by said pick-up cartridge, said needle extending downwardly from said cartridge and being engageable with said preformed record grooves for reproducing sound therefrom, a vacuum nozzle located on said tone arm adjacent the free end thereof, said nozzle being positioned substantially within the recess of said tone arm thereby to provide substantial concealment for said nozzle, said vacuum nozzle being positioned over said car-

tridge and extending downwardly in front of said cartridge to terminate near said needle and adjacent thereto, a portion of said nozzle extending sideways in front of said cartridge with respect to said needle in a direction



so as to apply a vacuum to the groove revolutions of phonograph records ahead of the playing position of the needle, and means to create a vacuum at said nozzle thereby to remove dust from a record as sound is being reproduced therefrom.

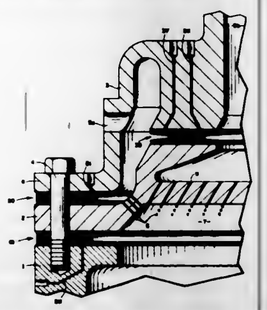
3,290,046
FERTILIZER SPREADER
James S. Bell and Kenneth E. Nelson, Willmar, Minn., assignors to Willmar Manufacturing, Inc., Willmar, Minn., a corporation of Minnesota
Filed Mar. 30, 1964, Ser. No. 355,572
11 Claims. (Cl. 275—6)



8. In apparatus of the nature described having a conveyor belt in the bottom of a wheel-mounted hopper for discharging material out the back end of the hopper and means driven by a forwardly located external power takeoff shaft for distributing the discharged material: roller means coupled to the conveyor belt intermediate the ends thereof for driving said belt, said roller means being normally powered by one of the mounting wheels; and means for selectively coupling the power takeoff shaft to said roller means while disengaging the mounting wheel power therefrom.

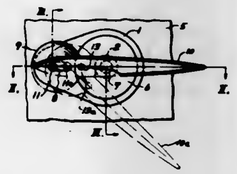
3,290,047
RELIEF SEAL WITH DUAL SEALING SURFACES
John F. Mayer, Woodland Hills, Calif., assignor to North American Aviation, Inc.
Filed Feb. 11, 1963, Ser. No. 257,588
4 Claims. (Cl. 277—2)

1. A seal comprising:
an annular member having a continuous ring base portion,
a first flexible side wall integral with and extending from said ring base portion, said side wall having a first sealing surface on the outer side of said side wall and a second sealing surface on said ring base portion,
a second flexible side wall integral with and extending from said ring base portion, said second side wall having a third sealing surface on the outer side of said second side wall and a fourth sealing surface on said ring portion opposite said second sealing surface, all of said sealing surfaces being of a relatively softer material than said ring portion and side walls, said side walls forming a U-shaped channel and being pressure actuatable in a direction toward the respective side wall sealing surface,



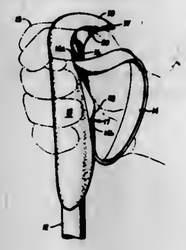
annular groove means in said member on each side thereof between the sealing surfaces on said ring base portion and the sealing surfaces on said walls, and
aperture means extending between the respective groove means and being located offset from the bottom of said U-shaped channel and toward said ring base portion to allow flow of fluid from between said first and second sealing surfaces to between said third and fourth sealing surfaces.

3,290,048
RUDDER FOR SKIS
Masami Tokuda, 56 Senjubigashimachi, Adachi, Tokyo, Japan
Filed Mar. 12, 1964, Ser. No. 351,696
Claims priority, application Japan, Mar. 18, 1963, 38/14,605
9 Claims. (Cl. 280—11.13)



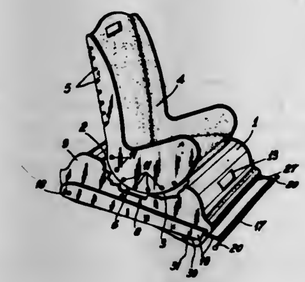
1. A rudder for a ski comprising a base plate adapted to be rigidly mounted on the underside of the ski, an elongated slot in said plate disposed axially of said ski, a rudder mounted on said plate to depend therebelow and normally disposed with its centerline axial of said ski, a main shaft projected upwardly from said rudder adjacent its forward end and slidable longitudinally in said slot upon longitudinal displacement of said rudder, a rear shaft projecting upwardly from said rudder, and guide means slidably mounting said rear shaft for lateral displacement in said base plate, whereby upon application of a lateral force against said rudder said rear shaft is displaced laterally effecting displacement of said rudder both angularly about said main shaft and longitudinally within said slot.

3,290,049
HANDLES FOR SKI POLES AND THE LIKE
Robert J. McDonald, 3229 Ardley Ave., Oakland, Calif.
Filed Feb. 14, 1964, Ser. No. 344,998
10 Claims. (Cl. 280—11.37)



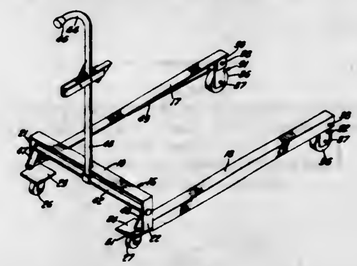
9. A ski pole, comprising a shaft, a handle of elongated form mounted on the upper end of the shaft, and a flexible retaining strap having its ends extending through the handle and secured directly to said shaft at longitudinally and circumferentially spaced locations therealong, said strap cooperating with said handle to provide a loop adapted for engaging and restraining a hand in gripping position relative to said handle.

3,290,050
VEHICLE FOR TRANSPORTING A BABY
Raymond Z. Esquerra, Tours, France, assignor to Oregon Merchandisers, Inc., a corporation of California
Filed Dec. 1, 1964, Ser. No. 415,007
3 Claims. (Cl. 280—30)



1. A device for transporting a baby, comprising a stand for baby's seat consisting of a hollow body open at its lower portion and carrying at its upper portion means for securing a baby's seat, said hollow body incorporating four wheels mounted in supports pivotally mounted on said body and adapted to be set in different positions, namely a position in which said wheels are retracted inside said stand and another position in which said wheels are released and project from the lower portion of said stand to engage the floor, said stand constituting in this other position of said wheel supports a kind of cart adapted to constitute a perambulator for transporting the baby sitting in the seat secured on said stand the upper portion of said stand comprising a relatively large aperture adapted to receive the lower end of a baby seat, said means for securing said seat on said stand consisting of detachable spindles adapted to engage corresponding holes formed in said body and in the lower portion of said seat.

3,290,051
PALLET BIN CARRIER
Michael O'Brien, Davis, and Dennis Leary, Jr., Ryde, Calif., assignors to The Regents of the University of California, Berkeley, Calif.
Filed Oct. 15, 1964, Ser. No. 404,065
3 Claims. (Cl. 280—43.12)



1. A pallet bin carrier comprising a carrier frame having a pair of side rails and a frame bar extending between the rear ends of said side rails, a pair of rear wheel plates secured respectively to the opposite rear corners of said carrier frame, a pair of caster wheel turntables, means for mounting said turntables to pivot about substantially vertical axes on said rear wheel plates, caster wheels on said turntables, a pair of wheel frames, means for mounting said respective wheel frames on said side rails at the opposite front corners of said carrier frame to pivot about a first transverse axis adjacent the upper end of said wheel frames, wheels mounted on said wheel frames to rotate about a second transverse axis adjacent the other end of said wheel frames, a cross shaft journalled on said frame bar, a pair of arms respectively fixed on and depending from the opposite end portions of said cross shaft, a pair of rods each at one end pivotally engaging the depending end of one of said arms and at the other end pivotally engaging one of said wheel frames at a point thereon between said first and second transverse axes, a handle fixed on and upstanding from said cross shaft in substantially a vertical attitude when said wheel frames are in substantially a vertical attitude, and a latch lever, means for pivoting said latch lever on the upper portion of said handle to project forwardly therefrom, and a latch on the forward portion of said lever and depending therefrom.

3,290,052
MULTI-AXLE TRAILERS
Geoffrey M. Stanley, Brighton, South Australia, Australia, assignor to Stanley Steel Company Limited, Brighton, South Australia, Australia
Filed June 16, 1964, Ser. No. 375,559
Claims priority, application Australia, June 18, 1963, 32,016/63
2 Claims. (Cl. 280—104.5)



1. Improvements in multiple-axle trailer vehicles in which at least a pair of trailer axles are positioned remote from the steering point of the trailer axles, characterised by steering means for the said axles operated by endwise thrust on the said axles due to the vehicle turning action, the mechanism for effecting said steering comprising, a pair of springs for said axles towards the ends of said axles, means joining the springs to the said

axles, brackets secured to said vehicle engaging said springs to allow movement of said springs in said brackets to permit sideways or endwise movement of said axles, a radius rod adjacent each said spring having one end coupled to said axle and the other end coupled to an offset portion of one of said brackets forwardly of the axle whereby the radius rods are angled one in relation to the other so that when the relevant axle is moved endwise the axle is also given a steering action.

3,290,053
EQUALIZING VEHICLE SUSPENSION STRUCTURE
Elwood H. Willetts, 320 Kenmore Road, Douglaston, Long Island, N.Y.
Filed June 17, 1965, Ser. No. 464,815
5 Claims. (Cl. 280—104.5)



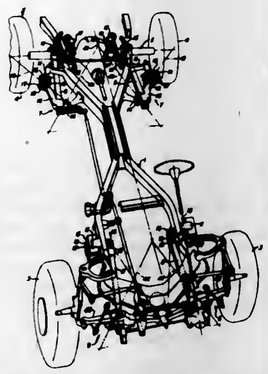
1. The combination of a vehicle frame structure, a crossed lever having a shaft, an opposing cross lever having a hollow shaft surrounding said shaft of the first lever, an elastomer bushing stressed in torsional shear bondedly interconnecting said shaft and said hollow shaft, connection means for connecting the upper ends of said crossed levers to the respective opposite sides of said frame, the lower ends of said crossed levers provided with wheel connection means whereby torsional shear strains in said elastomer bushing provides uniform vertical deflections between said frame and said wheel connection means, said frame connection means comprising a hinge connection for one lever and a shackle for the opposing lever.

3,290,054
VEHICLE SUSPENSION
Paul Alexander Emil Reinis Prieditis, 86 Sagamore Ave., Winthrop, Mass.
Filed July 27, 1964, Ser. No. 385,374
3 Claims. (Cl. 280—106.5)



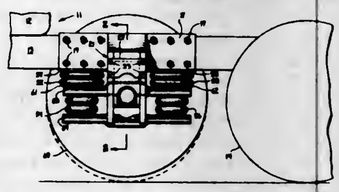
1. In a vehicle suspension, the combination of a rigid hollow tube having a longitudinal axis, an elongated torsion spring member in the hollow of said tube and having two ends and a longitudinal axis coincident with said tube axis, a pair of rotary motion transmitting tubes mounted on said rigid tube to rotate about said tube axis, a motion reversing gear train fixed to said rotary motion transmitting tubes to cause said rotary motion transmitting tubes to rotate in opposite directions about said axis, a first lever coupled to one end of said torsion spring member and one of said rotary motion transmitting tubes for integral rotation therewith and adapted for support coupling to a vehicle body structure, a second lever coupled to the other end of said torsion spring member and the other of said rotary motion transmitting tubes for integral rotation therewith and adapted for support coupling to a vehicle wheel, a third lever and a second motion reversing gear train with the third lever being mounted on said other rotary motion transmitting tube to rotate about said axis and adapted for coupling to said body support structure, said second motion reversing gear train being coupled to said third lever and said other rotary motion transmitting tube for causing said third lever to rotate in opposite direction to said second lever.

3,290,055
VEHICLE SUSPENSION SYSTEM
Joachim Kolbe, 5126 Haskell Ave., Encino, Calif.
Filed June 17, 1964, Ser. No. 375,736
6 Claims. (Cl. 280—112)



1. In a vehicle suspension system of the class described, a roll banking arm comprising a torsion spring and connected at one end to a member of the vehicle superstructure and at the other end to a member of the effective road support for the vehicle, at least one of said connections comprising a universally movable joint between the torsion spring and the corresponding member, a laterally disposed lever arm connected to the end of the torsion spring, and a rubber block retained under compression between said lever arm and said corresponding member to control the torsional load on said spring while relieving the spring of undesirable bending stresses, said rubber block being confined between a support plate carried by said lever arm and a support plate carried by said corresponding member and having the intermediate portion of the block of reduced dimensions.

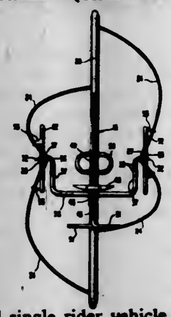
3,290,056
AIR OPERATED SUSPENSION FOR TANDEM TRUCK AXLES
Otho W. Smith, 33 Oolitic Road, Bedford, Ind.
Filed June 8, 1964, Ser. No. 373,270
7 Claims. (Cl. 280—124)



6. In a wheel borne vehicle normally supported by a set of wheels for rolling operation on a ground surface, the combination comprising:
vehicle frame means;
a pair of road wheels;
axle means connected to said road wheels, said road wheels being rotatable on said axle means;

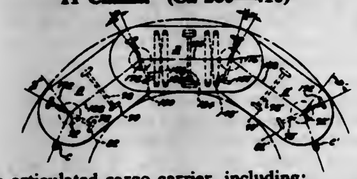
first fluid operated adjustable support means connected to said axle means and said frame means and expandable to increase the proportion of vehicle weight supported on said axle means;
second fluid operated adjustable support means connected to said axle means and said frame means and expandable to reduce the proportion of vehicle weight supported by said axle means and raise said road wheels from the ground surface;
an inflation valve assembly connected to one of said support means and projecting outwardly therefrom and exposed to receive an air chuck for inflation of said first support means by a compressed air source separate from the vehicle.

3,290,057
ONE WHEEL SINGLE RIDER VEHICLE OF THE AMUSEMENT TYPE
Hoyt E. Turner, 802B Georgia St., Amarillo, Tex.
Filed Oct. 15, 1964, Ser. No. 403,992
3 Claims. (Cl. 280—206)



1. A one wheel single rider vehicle comprising a large ground-engaging wheel, a pair of hub units coaxial with the wheel and arranged equidistantly from opposite sides of the wheel in spaced relation, outwardly bowed spokes interconnecting the hub units and wheel substantially rigidly, said spokes staggered circumferentially on opposite sides of the wheel and forming a protective cage around the rider of the vehicle, a substantially U-shaped transverse seat suspension bar suspended freely from the hub units and having axially aligned journals rotatable in the hub units, a single rider seat on said suspension bar, said seat comprising an adjustable clamp structure on said suspension bar, a bicycle type seat on the clamp structure, and additional bar means on the clamp structure forming a back rest rearwardly of the suspension bar and a foot rest forwardly thereof so that the feet of the rider may be entirely elevated when the vehicle is in motion, and a pair of relatively large annular substantially axially aligned handle bars secured to the spokes on opposite sides of the vehicle adjacent said seat.

3,290,058
MODIFIED ARTICULATED VEHICLE
Charles J. Ellard, 1669 Chester Ave., Bakersfield, Calif.
Filed Sept. 24, 1965, Ser. No. 490,034
11 Claims. (Cl. 280—410)



1. An articulated cargo carrier, including:
(*a*) first and second horizontal, longitudinally spaced end platforms having adjacently disposed concave edges;
(*b*) an intermediate horizontal platform having convex curved edges interposed between said first and second platforms, which platforms define a substantially continuous cargo-supporting surface;
(*c*) first, second and third pneumatic-tired wheel assemblies rigidly secured under said first and second end platforms and said intermediate platform at substantially the centers thereof;
(*d*) first, second, third and fourth gear means, which first and second gear means are rigidly affixed to the under sides of said first and second platforms, respectively, adjacent the free ends thereof, with said third and fourth gear means being affixed to the under side of said intermediate platform adjacent said convex ends thereof;
(*e*) first, second, third and fourth elongate stud bolts that project downwardly from the centers of said first, second, third and fourth gear means;
(*f*) fifth, sixth, seventh and eighth gear means rotatably supported on said stud bolts below said first, second, third and fourth gear means;
(*g*) first, second, third and fourth gears disposed between said first, second, third and fourth gear means and said fifth, sixth, seventh and eighth gear means in toothed engagement therewith;
(*h*) first, second, third and fourth horizontal plates rotatably supported on said first, second, third and fourth stud bolts below said fifth, sixth, seventh and eighth gear means;
(*i*) first, second, third and fourth uprights secured to said first, second, third and fourth plates, that rotatably support said first, second, third and fourth gears;
(*j*) fourth and fifth pneumatic-tired wheel assemblies rigidly secured under said first and second plates;
(*k*) sixth and seventh pneumatic-tired wheel assemblies disposed under said third and fourth plates and rotatably supported on said third and fourth stud bolts;
(*l*) a first tow bar projecting from the free end of said first end platform and rigidly connected to said fifth gear means, which first tow bar when pulled and moved sidewise pivots said fifth gear means relative to said first gear to rotate the same, with said first gear as it rotates moving relative to said first gear means to pivot said first plate and fourth wheel assembly in the direction in which said sidewise force is applied to said first tow bar to urge said first end platform to pivot on said first wheel assembly to a first angle relative to said intermediate platform as said carrier is drawn in the direction in which said first tow bar projects from said first end platform;
(*m*) first and second means operated by rotation of said third and fourth gear means relative to said third and fourth gears as said intermediate platform pivots on said third wheel assembly to follow said first end platform for pivoting said sixth and seventh wheel assemblies to second angles that are substantially one-half of said first angle, at which second angles said sixth and seventh wheel assemblies track with said fourth wheel assembly, with said intermediate platform as it so pivots forcing said second end platform to pivot on said second wheel assembly, and with said second gear means as said second platform so pivots moving relative to said second gear to rotate the same, which second gear as it moves relative to said sixth gear means pivots said second plate and fifth wheel assembly to said first angle where said fifth wheel assembly tracks with said fourth wheel assembly;
(*n*) third means for holding said sixth gear means in a non-rotatable position relative to said second end platform;

(*o*) a plurality of longitudinally extending tow bar members under said platforms that are pivotally connected to said stud bolts; and

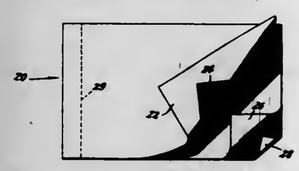
(*p*) fourth means for pivotally connecting said first tow bar to said first stud bolt to permit transfer of the drawing force exerted on said first tow bar throughout the length of said vehicle only by said tow bar members.

3,290,059
REMINDER ARRANGEMENT
Samuel Newman, 10 Gainsborough Terrace, River Edge, N.J.
Filed July 6, 1965, Ser. No. 469,602
5 Claims. (Cl. 281—3)



1. A reminder arrangement including in combination a book containing a plurality of pages, and a plurality of labels adapted to be removably affixed to the pages of said book, each of said plurality of labels comprising a flexible strip having a writing surface on one face thereof for the reception of a message, and a re-usable pressure-sensitive adhesive coating on each of said strips for removably affixing said strips to desired ones of said pages, said coating being applied to the face of each of said strips opposite to the one face, whereby a different message may be written on said one face of each of said plurality of labels and each of said plurality of labels may be affixed to said book by placing the coated face against a page and applying pressure thereto, said coating providing for the separation of preselected ones of said plurality of labels from their associated pages and the mounting of said preselected ones of said plurality of labels on different pages.

3,290,060
FORM SET AND METHOD UTILIZING SAME
William F. Ruddock, Springdale, and Ernest A. Di Pasquantonio, South Norwalk, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,955
3 Claims. (Cl. 282—22)



2. A form set comprising:

(a) a first transfer sheet having transfer material incorporating a magnetizable constituent at one of its opposite faces,

(b) a document to be printed upon, superimposed upon said first transfer sheet with said one face of said first transfer sheet opposing said document,

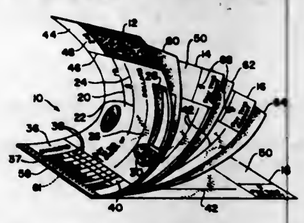
(c) a second transfer sheet having transfer material at both of its opposite faces,

(d) said second transfer sheet being superimposed on said document, and

(e) a translucent sheet superimposed on said second transfer sheet,

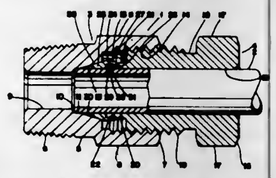
(f) said first transfer sheet being at the bottom of said form set and adapted to be impressed directly with a raised letter printing element.

3,290,061
MANIFOLDING DEVICE
Barnett Glassman, New York, N.Y., assignor to Nationwide Financial Corporation, New York, N.Y., a corporation of New York
Filed Mar. 31, 1965, Ser. No. 444,163
5 Claims. (Cl. 282—23)



1. In a manifolding device adapted for writing a check simultaneously reproducing the check data on a plurality of non-negotiable record slips superimposed and in registry, the combination comprising, a top slip and a second slip comprising a check, a signature line on the check, a cutout in the top slip disposed to provide access to the signature line, a keytop outline disposed on the top slip adjacent said cutout, a platen-like key adapted to be superimposed on said outline, said key including an elongated shank having a signature embossed thereon and extending over the area adjacent the signature line on the check to provide a comparison upon the operation of signing the check through said cutout with the signature embossed on said key.

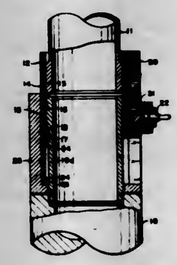
3,290,062
COMPRESSION FITTING
Frank A. Ziherl, Richmond Heights, and Arthur S. Kish, Lyndhurst, Ohio, assignors to Z & W Manufacturing Corp., Wickliffe, Ohio, a corporation of Ohio
Filed Mar. 18, 1964, Ser. No. 352,776
3 Claims. (Cl. 285—3)



1. In a compression fitting of the character described, a body member having an internal abutment for one end of a tube which is adapted to be secured to said body member and which tube is initially in engagement with said abutment, said body member having a conical inner surface adjacent said abutment, and a nut member threadedly secured to said body member, said nut member having a forward portion embracing said tube, and a sleeve integrally connected to said forward portion, said sleeve comprising a rear section having its inner surface in spaced relation to the outer wall of said tube whereby to provide a space adapted to receive said forward portion of the nut member, and a front section in engagement with said tube and having an outer surface in engagement with said conical inner surface of said body member, said forward portion of the nut member being joined to the rear section of the sleeve by a rupturable connection extending from the rear section of said sleeve to the radially outer face of said forward portion of the nut

member and rupturable upon movement of said nut member towards said body member and said forward portion of the nut member being of a length greater than the length of said sleeve rear section whereby continuing movement of the nut member relatively to said body member causes said forward portion of the nut member to enter said space and exert pressure on the front section of the sleeve of the nut member, whereby said front section is moved forwardly to be contracted in diameter by said concial inner surface to lock said front section to said tube.

3,290,063
POWER-OPERATED PIPE COUPLING
John A. Hasbar, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,530
4 Claims. (Cl. 285—18)



1. A pipe connector carried at one end of a pipe section and adapted to be extended axially to connect to a second pipe section, said pipe connector comprising:

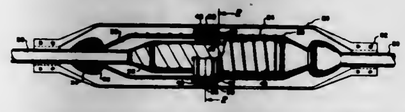
an outer concentrically mounted tubular sleeve sealingly carried outwardly at the end of said pipe section and slidably mounted for limited axial movement to a position extending beyond the normal end of said pipe section, said pipe section end having an axially-extending slot therein,

a first gear carried outwardly on said sliding tubular sleeve, said first gear comprising a rack fixedly secured to and arranged longitudinally of said sleeve and slidable in said pipe section slot to thereby restrain said sleeve to axial movement,

a second gear carried near the end of said pipe section in engagement with said first gear, said second gear including a pinion fixedly mounted on said pipe section and in rotatable engagement with said rack, and

drive shaft means operatively connected to one of said gears and extending outwardly therefrom for engagement with means for actuating said one gear to move said sliding tubular sleeve axially, the outer end of said sleeve being adapted to sealingly mate telescopically with the terminal end of a second pipe.

3,290,064
CABLE COUPLING SHIELD
Edwin H. Bush, 770 Hamilton St., El Centro, Calif.
Filed Aug. 8, 1963, Ser. No. 300,827
1 Claim. (Cl. 285—45)



An airtight, flexible cable coupling shield, comprising in combination:

(A) a two piece flexible covering sleeve made of an air impervious material, each piece having substantially the same cross-sectional shape, and having a radially extending flange on one end;

(B) joining means for joining together the flanged ends of the sleeves, said joining means comprising:

(1) an element having:

(a) a hole which is axially aligned with the sleeve, and has substantially the same cross-sectional shape as the transverse cross-sectional shaped defined by the sleeve;

(b) two side surfaces which are engagable with said flanges;

(c) continuous ridge means disposed on each of said side surfaces;

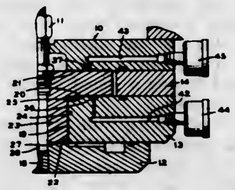
(d) two lips, each lip being adjacent said hole, one of said lips extending laterally from each of said side surfaces such that each lip extends into a sleeve when said flanges engage said side surfaces;

(2) pressing means for pressing each of said flanges against said side surfaces and said ridge means, said pressing means comprising two surfaces, each one of said latter surfaces being contiguous with the outer surface of a sleeve and opposing one of said lips;

(C) clamping means for clamping the opposite ends of the sleeve to the cable;

(D) sealing means for sealing said opposite sleeve ends to the cable, said sealing means effectuating an airtight seal between the sleeve ends and the cable prohibiting the ingress or egress of fluid into or from the interior of the shield.

3,290,065
ROTARY HYDRAULIC FITTING
Gordon H. Porath, 6101 Concord, Detroit, Mich.
Filed Mar. 19, 1965, Ser. No. 441,230
5 Claims. (Cl. 285—94)



1. In a rotary hydraulic fitting, the combination comprising

a body having an annular generally axial inwardly facing surface and opposed generally radial surfaces,

one of said radial surfaces intersecting the axial surface,

said body having a third radial surface spaced axially from each of said radial surfaces and intersecting the axial surface,

a rotary member having substantially complementary axial and radial surfaces positioned in said body,

said rotary member having a generally axial wall extending between the radial surfaces thereof,

said body having a generally axial wall spaced from said last mentioned wall,

said body having an axial fluid passage therethrough,

said body having drain openings therein,

said passage having one end thereof extending through said third radial surface of said body and the other end thereof extending to the exterior of said body,

said rotary member having an axial fluid opening therethrough,

said opening in said rotary member extending through one of said opposed radial surfaces and said third radial surface of said rotary member and having one end thereof aligned and communicating with said one end of said passage in said body,

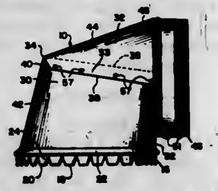
a plurality of diametrically opposed circumferentially spaced pressure pads on each of said axial and opposed radial surfaces of said body,

an orifice associated with each said pad for supplying liquid under predetermined pressure to said pad,

a gauge associated with each said pad for indicating the pressure of said pad,

the relative dimensions of said body and said rotary member being such that a pressurized film of liquid flows continuously at low velocity from each of said pressure pads between said axial and opposed radial surfaces and from said opening in said rotary member between said third radial surfaces of said rotary member and said body to drain openings in said body providing a permanent separation of the surfaces and retaining the rotary member in stable, accurate, frictionless relation to the body without the use of seals between said body and said rotary member.

3,290,066
SHEET METAL PIPE FITTING
Theodore Primich and Howard R. Nichols, Gary, Ind., assignors to Gary Steel Products Corp., Gary, Ind., a corporation of Indiana
Filed Sept. 12, 1963, Ser. No. 308,403
14 Claims. (Cl. 285—183)



1. A sheet-metal elbow fitting comprising

(a) a generally tubular short sheet-metal conduit formed from a unitary sheet with opposed edges joined to form a single longitudinal seam and having a wall with forward and rearward portions and an outer end having a round mouth adapted to be connected to a duct,

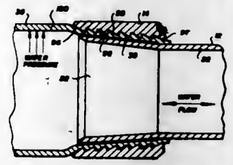
(b) the inner end of the wall of the conduit having the forward portion thereof notched to form a substantially semicircular opening facing in the forward direction and having the rearward portion thereof rearwardly opposite the opening,

(c) a hood portion covering the inner end of the conduit and having its rearward end integral with the rearward portion of the inner end of the conduit and having its forward end formed to substantially semicircular shape and opposed to said semicircular opening to form therewith a substantially circular opening in the forward direction, and

(d) fastening means securing the sides of the hood portion to the sides of the inner end of the conduit.

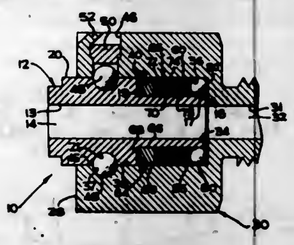
3,290,067
COUPLING DEVICE
Cecil H. Buckle, North Vancouver, British Columbia, Canada, assignor to Goodall Rubber Company, Trenton, N.J.
Filed Aug. 2, 1963, Ser. No. 303,197
2 Claims. (Cl. 285—247)

1. A joint including a coupling device and a length of hose connected to said coupling device; said coupling device comprising a thin and smooth tubular sleeve member having a central portion of slightly less diameter than the inside diameter of said hose length and having an end portion flaring outwardly continuously to an end of a diameter the same as said inside diameter, an outer surface of said flared end portion being smooth and unbroken, the flare on said end portion being constant and lying within the range of 3° to 7°, and a cap member inseparably mounted on the sleeve member and movable therealong, said cap member having an inner surface tapered in the same direction and at substantially the same angle as the taper of the flared end portion over which said cap member fits, said cap member having a minimum internal diameter which is less than the outside diameter of said end of said tubular sleeve member, said cap member being internally threaded and having a deep convolution of said threads located in a deep threaded section proximate to its smaller diameter end and a shallow threaded section with shallow threads located adjacent said deep threaded section and extending toward the larger diameter end of said cap member, said deep convolution having its crest lying closer to said sleeve member than do the threads in the shallow threaded section, said crest extending inwardly from said inner surface of



said cap member a distance which is greater than the distance to which said shallow threads extend; said central portion of said sleeve having an outside diameter which differs from the inside diameter of said cap member taken across the crest of said deep convolutions by a distance which is less than twice the uncompressed wall thickness of said hose; whereby the deep threaded section of said cap member will cause said hose to seal more firmly against said sleeve than will said shallow threaded section, thus permitting the entry of fluid within the hose into the interface between said sleeve and the inner portion of said hose located within the shallow threaded section in order to lubricate and pressurize said interface to force said hose member more firmly into contact with the threaded portion of the cap member and to permit sliding movement of said hose together with said cap member on said sleeve upon the application of fluid pressure to the interior of said sleeve and length of hose.

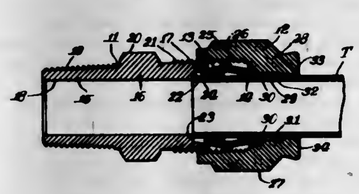
3,290,068
FLUID COUPLING
Donald M. Jackson, Whittier, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,586
6 Claims. (Cl. 285—276)



1. In a fluid point including a female conduit having an internal circumferential wall terminating in an end, and a shoulder projecting inward from said wall; a male conduit projecting into the female conduit and having an end edge adjacent to said shoulder and an external

circumferential wall spaced inward from said internal wall, said internal and external walls and said shoulder defining a chamber, said conduits having an annular raceway therebetween; rollable members in said raceway, said female conduit having means for removing said rollable members from said raceway, said male conduit being freely slidable into and out of said female conduit when said rollable members are out of said raceway; the combination of a resiliently diametrically contractible ring releasably mounted in said internal wall and projecting from said internal wall into the chamber; packing means in said chamber between the ring and the shoulder, said packing means including a substantially diametrically rigid annular seal having an outside diameter greater than the inside diameter of the ring, said packing means being urged by fluid pressure internally of the conduits against said ring; and a plurality of rollable members in the chamber releasably positioned between said shoulder of the female conduit and the packing means, said last-mentioned members engaging said shoulder of the female conduit, said packing means and said internal and external walls.

3,290,069
TUBE FITTING
Robert F. Davis, Morton Grove, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Sept. 3, 1964, Ser. No. 394,262
4 Claims. (Cl. 285—341)



1. A fitting for use with straight-ended tubing, comprising:

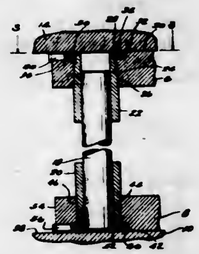
a body member having an inner end, a bore having an opening through said inner end, an annular tube stop on said inner end concentrically about said bore opening, and an axially inwardly widening annular first cam surface concentrically about said bore opening, radially outwardly of said tube stop;

a nut member having a bore defining a second cam surface including an axially outer, axially inwardly narrowing frusto-conical portion and a contiguous axially inner cylindrical portion;

cooperating means on said body member and nut member for forcibly advancing said second cam surface toward said inner end of the body member; and

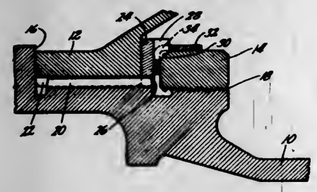
an annular sleeve member having an axially outer portion, a mid-portion, an axially inner portion, and an axial bore therethrough, said axially outer portion of the sleeve member including a radially outer, inwardly widening third cam surface for engagement with said first cam surface of the body to constrict said axially outer portion of the sleeve member radially inwardly as a result of advancement of the sleeve member toward said inner end of the body and an inner cylindrical surface arranged to have facial engagement with the tube as a result of constriction of said axially outer portion of the sleeve member by said first cam surface, said axially outer portion further including an axially outer, radially inner annular recess defining an annular, sharp edge for biting into the wall of a tube end extending coaxially through said nut member and sleeve member bores into engagement with said tube stop of the body member, said mid-portion of the sleeve member including a radially inner, axially inwardly narrowing annular surface provided with radially inwardly projecting means for biting into the wall of the tube end, said mid-portion further including a radially outer, axially inwardly narrowing fourth cam surface for engagement with said second cam surface of the nut member to constrict said mid-portion and axially inner portion of the sleeve member radially inwardly as a result of advancement of the nut member toward said inner end of the body member, and said axially inner portion of the sleeve member including a radially inner, cylindrical surface for facial engagement with the tube, an axially outer radial surface intersecting said cylindrical surface and defining therewith a sharp edge for biting into the wall of the tube end, and a radially outer, axially inwardly narrowing fifth cam surface comprising an extension of said fourth cam surface for engagement with said second cam surface of the nut member to constrict said axially inner portion of the nut member radially inwardly as a result of the advancement of the nut member toward said inner end of the body member.

3,290,070
MEANS FOR RELEASABLY MOUNTING BEARING MEMBERS ON THE PLATENS OF A DIE SET
Kazimir Jankowski, 5426 Andover Road, Milwaukee, Wis.
Filed May 14, 1964, Ser. No. 367,341
3 Claims. (Cl. 287—20.3)



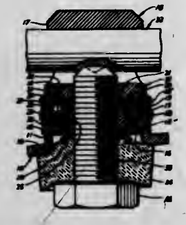
1. In a die set having die shoe and punch carrier members adapted to be mounted between the upper and lower platens of a press and having bearing means for guiding the punch carrier with respect to the die shoe during relative reciprocation of said platens, the improvement which comprises the combination with at least one of said members which has a tapered socket and a recess opening therefrom to an adjacent side surface of said member, of a bearing element having a tapered external surface portion mounted in said socket and provided beyond said tapered portion with external threads disposed within the recess, a nut screwed onto said threads and disposed within the recess in close proximity to the member surface which, in use, engages a press platen, said nut being in engagement with portions of the recess of the member laterally adjacent the socket and having an operating lever projecting through the recess to a position in which an end of said lever is exposed beyond the side surface of said member, said lever having a width substantially less than the width of the portion of the recess extending through the sidewall of said member, said nut being rotatable in the recess to develop thrust for drawing the bearing element tightly into binding engagement in the tapered socket and being oppositely rotatable in abutment with a press platen to release the bearing element from binding engagement in said socket.

3,290,071
LOCKING DEVICE-SPANNER NUT
Edward H. Kusiak, Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,488
5 Claims. (Cl. 287—53)



1. A locking device for securing a thrust nut to a shaft against rotation relative thereto comprising a locking ring secured to the shaft against rotation and having a rigid lug on one face thereof, a locking cup on the shaft having its bottom abutting said face of said ring and having a locking slot in both the bottom and the side wall of said cup at the corner where they intersect in which said lug is receivable, and a nut threaded onto the end of said shaft and projecting into said cup with the sidewall of said cup closely overlying the external surface of said nut, said nut having an axial groove in its external surface into which a portion of the rim of said cup is adapted to be indented for locking said nut against rotation relative to said shaft.

3,290,072
SWIVEL JOINTS
Ho Chow, 115 Bennett Ave., Yonkers, N.Y.
Filed May 6, 1963, Ser. No. 278,003
8 Claims. (Cl. 287—87)



1. A swivel joint comprising a stud member having a tubular body portion with a cylindrical outer surface, a flange having a flat surface, a rivet-like expanded bottom flange portion, and a transverse opening in its top portion;
a shaft secured within the body portion, and a head attached to the end of the shaft; said shaft protruding perpendicularly into the transverse opening in the stud member;
a tubular bushing having a round inner surface and a curved outer bearing surface, the bushing surrounding the tubular portion of the stud member, said rivet-like flange portion extending radially outward beneath said bushing, said bushing thereby being held in position by the rivet-like portion;
a ball member having an internal segmental spherical concave bearing surface and an external segmental spherical convex bearing surface, the said inner surface being in bearing relationship with the curved outer bearing surface of the bushing, and having an end hole through which the shaft and stud tubular portion protrude; and
a ring-like retainer having an internal bearing surface in bearing contact with the external surface of the ball and a top flat surface in operative bearing contact with the flange of the stud; said retainer having a free floating movement along said flat surface.

3,290,073
BALL AND SOCKET JOINTS
Rudolf Gottschald, Osterath, Germany, assignor to Viktor Langen, Dusseldorf-Oberkassel, Germany, sole responsible partner of the firm, A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany
Filed July 12, 1963, Ser. No. 294,694
Claims priority, application Germany, July 14, 1962, E 23,205
3 Claims. (Cl. 287—90)

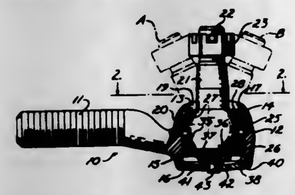


1. A ball and socket joint comprising in combination
a hollow housing having a bore extending therethrough, said housing having an inturned segmental spherical wall portion at one end of said bore defining a restricted opening,
closure means at the other end of said bore,
a first ball part having a segmental spherical outer surface, a flat end and a bore extending therethrough,
said segmental spherical outer surface of said first ball part engaging said segment spherical wall portion of said housing,
a joint stud having a shaft extending through said bore of said first ball part,
a second segmental spherical ball part at the end of said joint stud disposed in said housing and having a flat surface engaging said flat end of said first ball part,
said first ball part having an extension including a bore slidably receiving said stud and being substantially contiguous with said bore of said first ball part, said extension projecting beyond said opening outwardly of said housing, said extension having an annular recess therein adjacent said stud.
a flexible sealing means having one end secured to said extension and the other end secured to the outer edge of said housing adjacent said one end of said bore,
an O-ring sealing means between said joint stud and said extension on said first ball part permitting rotary motion of said stud around its axis, said O-ring sealing means being located within said recess.

3,290,074
BALL JOINT ASSEMBLIES
Allan J. Korecky, Mayfield Heights, Ohio, assignor to Barmatic Machines, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 3, 1964, Ser. No. 349,860
1 Claim. (Cl. 287—90)

A ball joint assembly, comprising a hollow housing having openings at the upper and lower ends thereof; said housing comprising successively from said upper to said lower end of said housing an elliptical opening, an upwardly converging frusto-conical housing bore portion, a coaxial cylindrical housing bore portion, and a diametrically outwardly formed annular step; an annular externally tapered seating member complementarily interfitting said frusto-conical housing bore portion and having an elliptical opening in its upper end in registry with the

elliptical opening of the housing; an outwardly projecting axially tapered lug externally carried by the external tapered surface of said tapered seating member at one end of the elliptical opening thereof and interlocked with an axial slot in said frusto-conical housing bore portion to thereby prevent relative rotation of said tapered seating member and said housing, said lug extending substantially the major portion of the axial length of said seating member with its outer surface being parallel with and in contiguous axial alignment with the cylindrical bore portion; an externally cylindrical seating member disposed within and spaced from said cylindrical housing bore



portion; a ball member to which the inner surfaces of said tapered and cylindrical seating members conform and which inner surfaces of said seating members rotatably and tiltably receive said ball member; said ball member having a stud projecting through said tapered seating member and outwardly through the upper elliptical housing opening; a disk member seated upon the step of said housing; means for securing said disk member and said housing seat in assembled relation; and a coiled spring cooperatively disposed between said disk member and said cylindrical seating member and biasing said cylindrical seating member toward said tapered seating member.

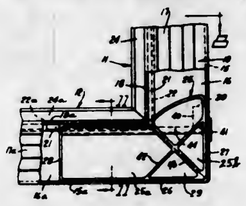
3,290,075
INTERLOCKING RUNNER CONNECTION
Martin D. Jahn, Chicago, Ill., assignor to Chicago Metallic Sash Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 20, 1964, Ser. No. 338,858
12 Claims. (Cl. 287—189.36)



8. A runner constructed for interlocking with a pair of cooperable runners, comprising a body portion terminating at one longitudinal edge in oppositely disposed flange portions and at its opposite longitudinal edge in a reinforcing member, said body portion having an opening therein of a size to receive respective tongues formed on such cooperable runners with said tongues in side-by-side relation, said opening being formed with an inwardly directed projection of generally triangular shape at each side of said opening, each projection having a bottom edge extending substantially parallel to the plane of said flange portions and having a side edge which is inclined with respect to such plane.

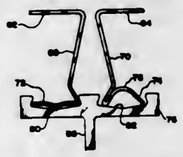
3,290,076
FRAME CORNER CONSTRUCTION
Frank Le Tarte, Wales Township, St. Clair County, Mich., assignor to Le Tarte Enterprises, Smith Creek, Mich., a co-partnership of Michigan
Filed Feb. 24, 1964, Ser. No. 346,813
10 Claims. (Cl. 287—189.36)

9. In a wrap around frame corner construction in which a first and a second hollow corner member connected by an integral wall are formed by notching an elongated workpiece, and are secured by a gusset and a fastener, said gusset comprising a first and a second flange connected to define the frame corner angle and a first and a second integral angularly depending portion connected together in a planar flange member substantially bisecting the



frame corner angle, each depending portion including one of said angle defining flanges, one of said depending portions having an arcuate periphery, the radius of which is less than the length of one edge of one of said corner members, measured along the inside of said hollow member.

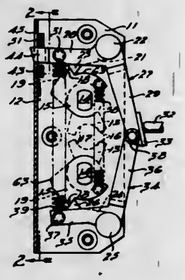
3,290,077
JOINING AND JOINTED STRUCTURES
Robert L. La Berge, Murrysville, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 15, 1964, Ser. No. 382,698
9 Claims. (Cl. 287—189.36)



1. A swedged joint structure between a member having an offset connecting flange exhibiting resilient plastic permanently deformable properties and a rigid substantially non-deformable supporting member therefor, said connecting flange being initially transversely configurated to provide a substantially centrally raised portion terminating in laterally oppositely disposed subtending marginal edges contiguous therewith, said rigid supporting member having a channel-shaped recess in a face thereof defined by opposite lateral side walls diverging towards an inner bottom web surface contiguous with said diverging side walls and uninterferingly receiving said initially configurated connecting flange through the facial entrance thereto, said bottom web surface of the recess being depressed below the plane of the maximum transverse width dimension between the diverging side walls of the recess, said transverse contiguous width of the initially configurated offset connecting flange between the subtending marginal edges thereof being 3 to 10 percent in excess of the maximum transverse width dimension between the diverging side walls of the recess, said initially configurated offset connecting flange on permanent deformation and transformation within said recess providing tight interlocking lateral frictional engagement of the opposite subtending marginal edges thereof against the diverging side walls of the recess in internally stressed transverse columnar loaded condition of the permanently deformed and tranformed connecting flange within said recess, said so permanently deformed and transformed columnar loaded condition of the connecting flange being located within a transverse rectangular band substantially bisected by the maximum width dimension of the recess in parallel disposition to the transverse long sides of the rectangular band, and said so deformed and transformed offset con-

necting flange having an underside area facing and spaced from the depressed inner bottom web surface of the recess.

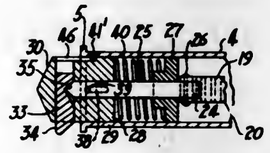
3,290,078
DOOR LOCK
John H. Roethel, South Miami, Fla.
(5455 SW. 87th St., Miami, Fla.)
Filed Aug. 17, 1964, Ser. No. 390,046
2 Claims. (Cl. 292—53)



1. In a latch mechanism for a swinging door,
a support having a plate portion for disposition at a free edge wall of the door,
a pair of jaw elements pivotally mounted on said plate portion for counter-swinging movement from an unlatched position to a latched position in which said jaw elements are adapted to engage a striker pin therebetween,
a pair of control plates mounted on said plate portion, each of which is fixedly coupled to one of said jaw elements for pivotal movement therewith, each control plate being provided with detent means engageable portions,
a pair of detent means each pivotally mounted on said plate portion and engageable with the detent means engageable portions on the respective control plates to hold said jaw elements in door latched position,
spring means biasing said jaw elements toward unlatched position,
manually operable means comprising a pair of levers each fixedly coupled to one of said detent means for moving the latter out of engagement with the respective control plate engaged thereby,
said levers having coacting parts thereon through which movement of one of the levers in detent means disengaging direction simultaneously results in movement of the other lever in detent means disengaging direction,
and tension spring means extending between said detent means yieldably holding the latter in engagement with the respective control plates.

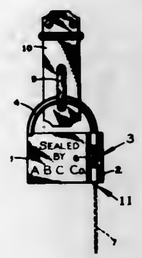
3,290,079
DOOR LOCK AND KEEPER
Samuel B. McKenzie, Calgary, Alberta, Canada, assignor to John M. Jamison, James T. Smith, and William G. Fyfe, all of Calgary, Alberta, Canada
Filed Mar. 22, 1965, Ser. No. 441,742
3 Claims. (Cl. 292—172)

1. A door lock and keeper comprising in combination a containing chamber adapted to be inserted in the edge of a door, a spring loaded bolt slidable in the chamber and adapted to extend and retract from one end thereof, a bolt draw bar having opposite ends mounted for longitudinal sliding movement in said chamber and being operatively connected adjacent one end thereof to said bolt, a rack secured to the other end of said bolt draw bar, a pinion journalled for rotation within said chamber and engaging said rack, handle means mounted at right angles to said chamber and externally thereof, a spindle secured to said pinion and extending through said chamber to mount said handle, means in said chamber cooperating between said bolt and draw bar for maintaining said bolt in either the extended or retracted position, a dead lock cross bar, said bolt having a transverse bore in which



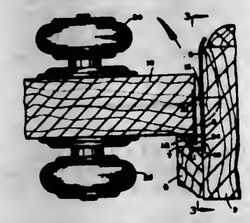
said dead lock cross bar is mounted for movement, the inner end of said bolt having a longitudinal bore communicating with said transverse bore, said dead lock cross bar having a conical aperture, and said one end of the draw bar being of conical configuration and engaging the longitudinal bore in the bolt, said conical end selectively engaging the conical aperture thereby being adapted to eject said dead lock cross bar by said engagement.

3,290,080
BREAKABLE SEAL
Douglas M. Dawson, Miami Springs, Fla., assignor to Industrial Plastic Molders, Inc., Hialeah, Fla., a corporation of Florida
Filed Dec. 2, 1964, Ser. No. 415,530
1 Claim. (Cl. 292—322)



In a seal of the character described a body member having parallel opposite sides,
a lock portion integral with and along one edge of said body member,
said lock portion having a central bore therethrough,
a flexible shaft having one end thereof integral with said body member with the outer end portion thereof adapted and constructed for locking engagement with said lock portion within said bore,
a tab having one end integral with and colinear to the opposite end of said shaft and having a diameter less than the said end portion,
the said end portion in the form of a shaft of uniform circular cross section and said bore having a circular cross section with a diameter less than that of said end portion,
a bore in said body having projections axially extending along the wall integral therewith for indenting said end portion when the latter is engaged in said bore whereby said shaft will form a closed sealing loop when said tab is threaded through said bore and the outer end portion is drawn into said bore by said tab.

3,290,081
DOOR LOCKING GUARDS
Frank M. Seaman, 922 S. Federal Highway, Dania, Fla.
Filed Jan. 30, 1964, Ser. No. 341,315
2 Claims. (Cl. 292—346)



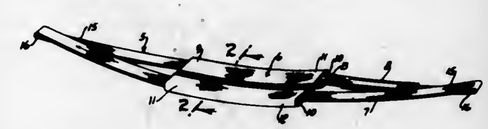
1. A door guard for use with a swinging door and a door jamb to limit the swing of the door, a stop included with the jamb, a plate fixed to the door jamb and to the stop thereof and apertured to permit the passage through it of the bolt of a lock carried by the door, the plate being formed along one of its edges with a channel which is recessed into the jamb and is covered and concealed from view and rendered inaccessible from the outside of the door by being mounted in the recess, a plate fixed to the edge of the door, the latter plate having a forward edge part projecting forwardly of the front face of the door, said projecting portion of said plate entering into the channel and being rendered inaccessible from the outside of the door when the door is closed, the channel thereby forming an enclosure around said projecting part of the door-attached plate.

3,290,082
RESILIENT ELONGATED BUFFER AND COEXTENSIVE MOUNTING MEANS
Walter Fritsch, Zell am Neckar, Germany, assignor to PEBRA G.m.b.H. Paul Braun, Esslingen, Germany
Filed Dec. 9, 1964, Ser. No. 416,999
Claims priority, application Germany, Dec. 12, 1963, P 22,620
11 Claims. (Cl. 293—1)



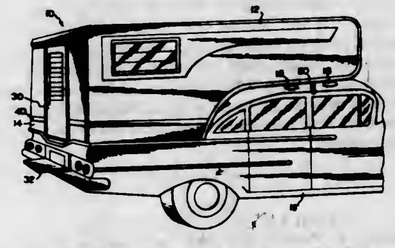
1. As a novel article of manufacture, a decorative strip for use on automobile frames and the like, comprising an elongated rail having a rear face and a front face provided with a longitudinally extending groove; a partition wall forming the bottom of said longitudinally extending groove and being spaced from said rear face so as to form together with the same a hollow space within said elongated rail rearwardly of said longitudinally extending groove, said elongated rail being open at both ends thereof so that said hollow space as well as said groove each have open ends; an elongated liner having a shock-absorbent portion extending forwardly beyond said front face and a retaining portion received and secured in said groove to anchor the liner therein, said liner having opposite ends respectively located at said open ends of said groove; and a pair of caps each having a head integrally bonded to an end of said liner at the respective open ends of said groove so as to firmly secure said caps to said decorative strip, and said caps each having a projection extending beyond the respective head into said open ends of said hollow space within said rail, so as to prevent turning of the respective caps relative to said rail about the respective heads which are each integrally connected to said opposite ends of said liner.

3,290,083
FABRIC LOAD LIFTING SLING
Roy Norton, Milwaukee, Wis., assignor to The Wear-Flex Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 19, 1965, Ser. No. 457,086
13 Claims. (Cl. 294—74)



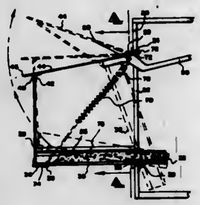
1. A load lifting sling comprising:
separate load bearing and load contacting parts, so assembled that regardless of how the sling is used to lift a load, the load bearing part is never subjected to abrasion or wear resulting from relative movement between it and the load, and the load contacting part is never subjected to tensile stress,
the load bearing part comprising an endless band of fabric webbing having high tensile strengh; and
the load contacting part comprising an elongated member of relatively flexible material having good abrasion and wear resisting properties, substantially parallel top and bottom surfaces and parallel side edges, and having laterally adjacent tunnel means along the length thereof;
the endless band of fabric webbing which forms the load bearing part having opposite stretches thereof slidably received in said laterally adjacent tunnel means and having looped end portions projecting beyond the ends of the load contacting part and forming eyes by which the sling may be attached to a crane hook while the load contacting part engages a load to be lifted.

3,290,084
CAMPER BODY INTERCHANGEABLE BETWEEN SEDAN AUTOMOBILES
Randall McPherson, P.O. Box 575, Burkesville, Ky.
Filed May 11, 1964, Ser. No. 366,331
8 Claims. (Cl. 296—23)



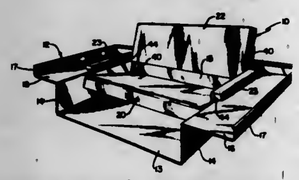
1. A composite camper body for use with automobiles having rearwardly extending rear deck portions,
said body comprising a first major portion providing enclosed passenger accommodations, and having means for detachably affixing the forward part thereof to an automobile,
and a second minor portion disposed between the lower rear part of said major body portion and the upper surface of the rear trunk deck of an automobile,
means detachably securing said major portion to said minor portion,
means for detachably securing said minor portion to the automobile,
said minor portion having a lower surface configuration substantially complementary to the surface configuration of the automobile rear deck area.

3,290,085
CAMPER BED
John H. Damiani, 425 Sierra St., El Segundo, Calif.
Filed June 29, 1964, Ser. No. 378,756
2 Claims. (Cl. 296—23)



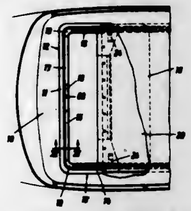
1. In a foldable vehicle body and bed construction the combination of: a substantially box shaped vehicle body; a side wall of said body having an opening therein; a bed mattress support hinged to said side wall on a substantially horizontal axis disposed near a lower extremity of said opening; a first hinge connecting said mattress support and said side wall and disposed on said substantially horizontal axis; a second hinge connected to said bed mattress support; said second hinge having an axis disposed generally horizontally and spaced relative to the axis of said first hinge; an extendable side wall; a first portion of said extendable side wall pivotally connected to said bed mattress support by said second hinge and extending upwardly therefrom; a third hinge connected to an upper portions of said extendable side wall; said third hinge having an axis disposed substantially laterally above the axis of said second hinge; an extendable bed roof member pivotally connected to said extendable side wall member by said third hinge; and a fourth hinge having a pivotal axis spaced laterally of that of said third hinge; said fourth hinge pivotally connecting said roof member to said vehicle body near an upper extremity of said opening in said side wall of said vehicle body; fifth and sixth hinges having substantially horizontal axis and connected to opposite end of said bed and mattress support, said axes of said fifth and sixth hinges also disposed at substantially right angles to axes of said first and second hinges; and first and second end walls pivotally connected to opposite ends of said bed and mattress support by said fifth and sixth hinges; said end walls thus adapted to fold downward in position adjacent to said bed and mattress support and alternately to be disposed in substantially vertical position with respect to opposite ends of said bed and mattress support.

3,290,086
VEHICLE SEAT STRUCTURE
Harry A. Petrak, 209 29th St., Boulder, Colo.
Filed June 11, 1964, Ser. No. 374,312
9 Claims. (Cl. 296—63)



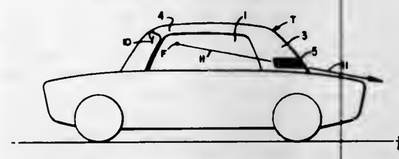
1. In combination with a vehicle having a seat-receiving compartment therein provided with spaced vertical sides, a vehicle seat comprising seat and back members, side frame assemblies along opposite sides of said seat and back members for supporting said members in adjacent spaced relation to the vertical sides in said compartment with said seat member inclining downwardly and rearwardly and said back member inclining rearwardly and upwardly in spaced relation above said seat member, and compressible wedging strips disposed between said side frame assemblies and the vertical sides of said vehicle compartment for wedging said vehicle seat within said vehicle compartment.

3,290,087
SLIDING ROOF CONSTRUCTION FOR VEHICLES
Johannes Werner, Offenbach (Main), Germany, assignor to H. T. Golde G.m.b.H. & Co. K.G., Frankfurt am Main, Germany
Filed Sept. 24, 1963, Ser. No. 311,190
Claims priority, application Germany, Sept. 26, 1962, G 36,005
17 Claims. (Cl. 296—137)



1. A sliding roof construction for a motor vehicle having a roof frame bounding an opening in the roof of the vehicle and a sliding roof movable between open and closed positions, said construction comprising lateral guide rails on the roof frame guidably supporting the sliding roof for movement, means for displacing the sliding roof also guidably supported by the guide rails, each guide rail including a section having an upwardly open channel and inwardly directed free ends above said channel, and slides secured to the sliding roof and accommodated in respective guide rails with the ends of the guide rails extending over the slides to hold the same in the respective rail, said means for displacing the sliding roof, being connected to said slides and being supported by the guide rails substantially in the same plane as the slides.

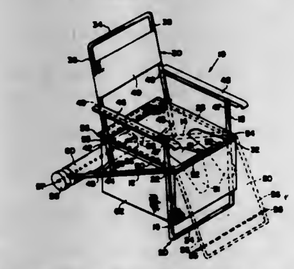
3,290,088
VEHICLE CONSTRUCTION
Karl Wilfert, Gerlingen-Waldstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft
Filed Jan. 16, 1964, Ser. No. 339,270
Claims priority, application Germany, Jan. 16, 1963, D 40,694
6 Claims. (Cl. 296—137)



1. A motor vehicle, especially a passenger motor vehicle, comprising:
a vehicle top including roof columns and a roof supported by said columns,
said vehicle top including substantially rigid non-transparent material obstructing the vision of the driver and transparent window means which are relatively small including generally longitudinally extending side windows and a generally transversely extending centrally located rear window to leave relatively large

wide non-transparent rear roof corner columns and therewith provide a high degree of roof rigidity,
and means forming separating fields of vision substantially smaller than each of said rear and side windows provided in those parts of the non-transparent vehicle top which otherwise would restrict the angle vision out of the vehicle interior space in a detrimental manner to the traffic,
the fields of vision being arranged in the roof columns within the area between two adjacent window means, the geometric center of said fields of vision being vertically spaced from the geometric center of said rear window a substantial distance, the lowermost portions of said fields of vision extending below the lowermost portion of said rear window, the uppermost portions of said fields of vision being substantially below the geometric center of said rear window, and each of said roof columns above said fields of vision essentially consisting of non-transparent rigid material.

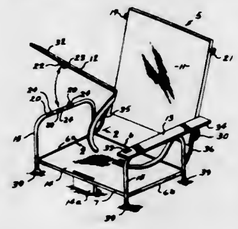
3,290,089
FOLDABLE CHAIR
Edward E. Farrell, 504 Avon Place, West Islip, N.Y.
Filed July 19, 1965, Ser. No. 472,865
11 Claims. (Cl. 297—39)



1. In a chair foldable between an open position and a closed position,
a back rest structure,
a front leg structure,
connecting means pivotally connecting said back and front for simultaneous folding movement of said front leg and back rest structures, said connecting means including a seat frame support pivotally connecting said back rest and front leg structures,
a bar structure pivotally connected to said front leg structure and against which said back rest structure is supported when the chair is in its open position,
a linkage connecting said back rest and said bar structure for movement to and from its position supported by said bar structure,
a seat pivotally mounted on said support frame to and from a seating position,
and means on said seat engaging said back above said seat frame pivotal connection to lock the same from movement to its closed position.

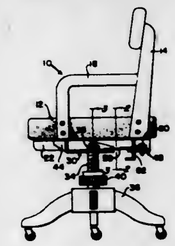
3,290,090
BATH CHAIR
Russell F. Ford, 227 N. Winton Ave., La Puente, Calif.
Filed Sept. 13, 1965, Ser. No. 486,955
7 Claims. (Cl. 297—118)

1. A bath chair convertible to a stool, said chair comprising: frame means; arm rest support means secured perpendicularly to said frame means; a rigid seat in said frame means; a rigid back and an arm rest means articulatingly assembled together and having links depending from said back, said links articulating on said back and being engaged in said arm rest support means and slidable therein to couple said back and arm rests and said arm rest support means together; and belt means attached to said back for securing by the waist an individual seated in said chair; said back being articulatable on said arm rests to a first position forming a seat-back with said seat and thereby a chair configuration thereof, and said back being



articulatable to a second position on a common plane with said arm rests to form a stool configuration thereof supported on said arm rest supports as the legs therefor, said belt means in said stool configuration being adapted thereby for securing the individual seated thereon to the stool by his thighs.

3,290,091
CHAIRS WITH TILTABLE PORTIONS
Robert Goodman, 5325 Westminster Ave., Philadelphia, Pa.
Filed Jan. 14, 1966, Ser. No. 520,721
9 Claims. (Cl. 297—302)

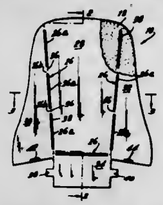


1. A chair comprising a base, a spindle on said base, a first bracket mounted on said spindle, a seat portion mounted on said first bracket, a second bracket pivotally connected to the underside of said seat portion, said brackets being spaced from each other from front to rear of said seat portion, a flat spring means extending between said first and second brackets, an adjusting means to adjust the biasing tension of said spring means.

3,290,092
PORTABLE INFANT'S SEAT
Howard S. Howard, New Rochelle, N.Y., assignor to Howe Plastics and Chemical Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 20, 1966, Ser. No. 521,781
4 Claims. (Cl. 297—377)

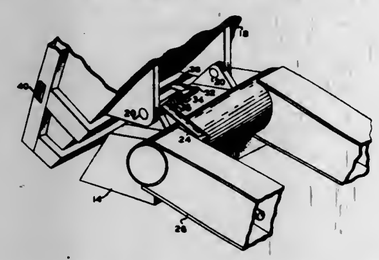
1. A portable infant's seat having a body fabricated of at least one superposed sheet of cardboard and of foam, each of said sheets being divided by fold lines into a back-rest panel, a pair of side panels attached along opposite sides of said back-rest panel, and a bottom panel attached along the bottom edge of said back-rest panel, said body having a cover thereabout formed by a pair of plastic panels heat sealed to each other along their respective peripheral edges and also along said fold lines of said body, each of said fold lines being formed throughout a majority of its length by aligned elongated slots provided

in said sheets of cardboard and foam to provide access through said body for heat sealing said plastic panels together, and the remaining portions of length of each



fold line being defined by score lines provided in said cardboard sheet to facilitate the bending thereof along said fold line.

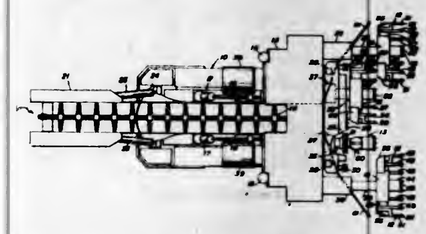
3,290,093
DUMP TRUCK
Lyle E. Eaton, Pekin, Ill., assignor to LeTourneau-Westinghouse Company, Peoria, Ill., a corporation of Illinois
Filed Oct. 13, 1964, Ser. No. 403,569
10 Claims. (Cl. 298—17)



1. In a dump truck having a frame and a body pivotally mounted thereon for pivoting about a horizontal axis, the body being of the type capable of being heated by gases from the truck engine, the improvement comprising:
an exhaust conduit associated with said frame and connected to said engine to receive the hot gases expelled therefrom,
duct means on said body for conducting exhaust gases about said body, and
rotatable joint means having a horizontal rotational axis, said joint means connecting said exhaust conduit and said duct means, said rotation axis in axial alignment with the horizontal pivot axis of said body to said frame,
whereby exhaust gases are permitted to enter said duct means on said body irrespective of the position of said body relative to said frame.

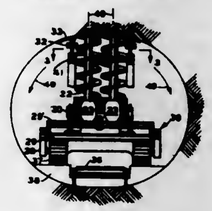
3,290,094
CONTINUOUS MINING MACHINE
Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 27, 1964, Ser. No. 340,361
2 Claims. (Cl. 299—57)

1. In a continuous mining machine,
a main frame,
a cutter frame structure mounted on said main frame,
a conveyor extending along said main frame from a position adjacent the ground in advance of the forward end of said main frame,
upper and lower trimmer bars mounted on said cutter frame and having a cutter chain movable therealong and guiding said cutter chain to cut along the floor and roof of a mine,
two laterally spaced rotary boring heads mounted on said cutter frame in advance of said trimmer bars and on opposite sides of the conveyor and having cutter supports thereon and projecting forwardly therefrom, and carrying cutter bits for cutting from the roof to the floor of a mine,
a separate rotary boring head on each outer side of said first mentioned boring heads and spaced forwardly therefrom substantial distances in advance of the cutting paths of the cutter bits carried by said first mentioned boring heads and including a shaft hav-



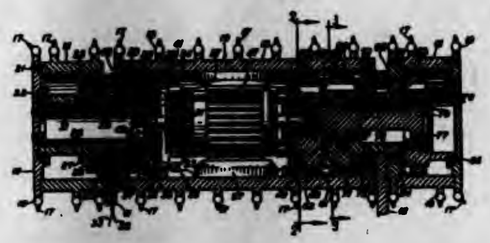
ing a diametral arm extending therefrom having cutter bits carried thereby and cutting in paths overlapped by the cutting paths of said first mentioned boring heads,
cuttings confining means extending from said last mentioned boring heads to said conveyor,
and all of said boring heads rotating in directions to progress the mined material along the floor toward the center of the machine to be confined by said cuttings confining means to be loaded onto said conveyor.

3,290,095
MINING MACHINE WITH PIVOTALLY MOUNTED AND OPPOSED ELONGATED CUTTERS
Raymond O. Bredthauer, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,802
7 Claims. (Cl. 299—57)



1. A mining or tunneling machine for removing incremental layers of rock from a working face of a tunnel or the like, said machine comprising:
(a) a mobile carriage,
(b) means for propelling the carriage along the tunnel axis into the tunnel face,
(c) a pair of elongated cutters rotatable about their longitudinal axes and mounted upon the forward end of the carriage to pivot about axes substantially parallel to one another and to the tunnel axis, said elongated cutters being disposed with their longitudinal axes transverse the tunnel axis and being provided with peripheral cutting structure over substantially their full axial lengths, and
(d) drive means supported by the carriage and connected to the elongated cutters for rotating them about their longitudinal axes and also for pivoting them in opposite directions about said substantially parallel axes which are parallel to the tunnel axis.

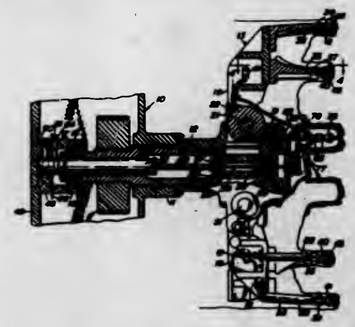
3,290,096
MOTORIZED MULTIPLE DRUMS FOR MINING MACHINE
Kenneth W. Stalker, Western Springs, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1963, Ser. No. 332,129
5 Claims. (Cl. 299—78)



1. In a cutting machine:
a pair of spaced frame members;
a hollow cutter drum extending between said frame members and journaled on said frame members for rotation about the central axis of said drum, the outer surface of said drum having cutting bits extending radially outward therefrom;
a pair of axially adjacent, internally toothed ring gears disposed within said drum and connected thereto for rotation therewith;
an electric motor disposed within said drum having an outer field portion connected to said drum for rotation therewith and having an inner armature portion rotatable about the central axis of said drum;
a plurality of slip ring and brush sets secured to said drum and to one of said frame members, effective to conduct current to rotating field coils on the outer portion of said electric motor;
additional brush rigging adapted to conduct current from the outer field portion of said motor to a commutator on the armature thereof;
a first pinion gear connected to the armature portion of said motor;
a planetary carrier having an axis of rotation coinciding with the axis of said drum;
a first intermediate gear journaled on said carrier for meshing engagement with said first pinion gear and one of said pair of ring gears, effective to rotate said carrier about its axis of rotation while said first intermediate gear is revolving around said first pinion gear;
a second pinion gear connected to said carrier for rotation about said axis of rotation; and
a second intermediate gear journaled on one of said frame members for meshing engagement with said second pinion gear and the other of said pair of ring gears.

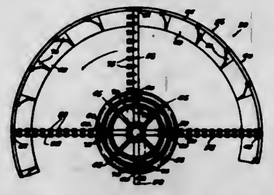
3,290,097
DUST LAYING SYSTEM FOR CONTINUOUS MINING MACHINE
Emil J. Hlinsky, La Grange Park, and Richard C. Lundquist, Palos Heights, Ill., assignors, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 24, 1964, Ser. No. 340,001
8 Claims. (Cl. 299—80)

1. In a continuous mining machine,
a rotary boring head supported for rotation about a horizontal axis and having at least one boring arm extending radially of the axis of rotation thereof and mounted for movement into a radially extended cutting position and a contracted tramming position,
at least one cutter support extending forwardly of said boring arm,
a power member coaxial with and movable along the axis of rotation of said boring head,
linkage means connecting said power member with said boring arm for extensibly and retractibly moving said boring arm, the improvements comprising:
dust laying apparatus including a distributor rotatable with said boring arm about the axis of rotation thereof,
a manifold extending along the front of said cutter support and having cutter blocks mounted thereon and projecting forwardly therefrom,



forwardly projecting cutter bits mounted in said cutter blocks,
a series of spray nozzles mounted on and extending forwardly of said manifold,
one spray nozzle being in advance of each cutter block and bit,
a fluid conductor from said distributor to said manifold and spray nozzles,
a stationary tube extending along said power member and beyond opposite ends thereof,
means supplying said tube with dust laying liquid under pressure at one end thereof,
and means sealing the opposite end of said tube to said rotatable distributor for supplying dust laying liquid thereto for distribution through said spray nozzles.

3,290,098
TUNNELING WHEEL
Loren F. Scott, Clinton, Mich., assignor to Terra-Form Footing Co., Chicago, Ill., a corporation of Illinois
Original application Dec. 27, 1960, Ser. No. 78,487. Divided and this application July 6, 1965, Ser. No. 469,754
5 Claims. (Cl. 299—90)



1. An excavating wheel for tunneling machines comprising an annular shell, a concentric circular disc and a plurality of generally radial arms extending between and secured to said disc and said shell, some of said arms carrying narrow cutter teeth and the other of said arms carrying excavating blades, said blades on said other arms being staggered relative to one another and collectively spanning the entire radial distance between said

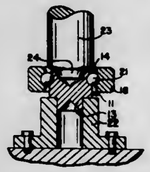
disc and said shell without duplication or significant overlap, said cutter teeth being located one each at the same radial distance from said disc as the inside edge of one blade and the outside edge of another blade and projecting further outward in the axial direction than said blades.

3,290,099
CORE CUTTERS FOR RIPPER TYPE MINERS
Richard C. Lundquist, Palos Heights, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 22, 1963, Ser. No. 325,616
6 Claims. (Cl. 299—85)



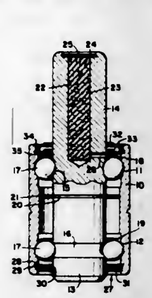
1. In a continuous mining machine, a sectional rotary cutter drum supported for rotation about a horizontal axis and having at least one outer drum section and an aligned inner drum section spaced therefrom, and also having a support member supporting said drum in the space between said drum sections and extending rearwardly of said drum, said drum sections each having rows of cutter bits extending thereabout and projecting radially therefrom, and means for removing the core left in front of said support member between said rows of cutter bits comprising a cluster of cutter bits movably mounted on at least one of said drum sections for movement about an axis spaced outwardly of said drum section and parallel to a line extending generally tangentially of said drum section and spaced closer to said support member at its leading end than its trailing end, whereby said clusters of cutter bits are pivotally supported to be moved in front of said support member at the start of the upward cycle of rotation of said cutter drum by contact with the coal and are thereby supported to cut the core ahead of said support member, and camming means camming said cluster of cutter bits away from said support member as said cluster of cutter bits approaches said support member.

3,290,100
BEARING DEVICES
Anthony G. Leciejewski, Cleveland, Ohio, assignor to Freeway Washer & Stamping Company, a corporation of Ohio
Original application Feb. 2, 1962, Ser. No. 170,708. Divided and this application Apr. 24, 1964, Ser. No. 374,218
9 Claims. (Cl. 308—6)



1. A bearing assembly comprising in combination an outer race member having a cylindrical bore extending therethrough, the wall of said bore having a first annular groove formed therein intermediate the ends of said bore, an integral metal inner race member centrally disposed in said bore and concentric with the said outer race member, said inner race member having a recess provided at a first axial end and an extension portion extending from the opposite end for engagement with a mounting element, said inner race member having an annular shoulder extending therearound and facing toward said first axial end, the inner race member adjacent said first axial end having an outer wall portion surrounding said recess and inclined radially outwardly in a gradual curve to substantially the outer radial extent of said shoulder so as to define with said annular shoulder a second annular groove radially inward of the maximum diameter of said inner race member, said second annular groove having substantially the same depth as the first annular groove and facing and disposed radially inward of said first annular groove to provide an annular raceway, said recess having a closed bottom wall and side walls extending axially and radially outwardly in a curve complementing the curve of said outer wall portion, and a plurality of balls arranged in a circle positioned in the raceway defined by said grooves, said outer wall portion being of substantially uniform thickness from approximately a transverse plane passing through the centers of said balls to said first axial end.

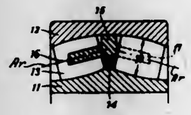
3,290,101
ANTIFRICTION BEARING ASSEMBLY
Frederick W. Recknagel, Verbank, N.Y., assignor to The Federal Bearings Co., Inc., Poughkeepsie, N.Y., a corporation of New York
Filed Apr. 2, 1964, Ser. No. 356,902
4 Claims. (Cl. 308—187)



1. An antifriction bearing assembly for use with its axis of rotation transverse to a normal horizontal position, a shaft passing through an outer annular bearing member and having a portion extending and terminating beyond one end of said annular bearing member, a pair of spaced annular raceways on said shaft, a pair of spaced annular raceways on the inner wall of said annular bearing member aligned with the raceways of said shaft, a complement of rolling elements extending into each of the aligned raceways and interlocking the shaft and annular bearing member together, a cylindrical bore axially located in the extending portion of said shaft and having a wick therein for holding a lubricant, a closure element at the terminal end portion of said extending shaft fitted in an annular groove at the opening of said bore for confining the wick in said bore, said closure element having an opening therein through which lubricant can be added to the confined wick, the bore having at its opposite end a lubricant-passing orifice communicating with an annular space containing one of the complements of rolling elements, an annular groove on the surface of said shaft intermediate the raceways, a lubricant barrier comprising a resilient annular washer coaxially fixed in said annular groove and extending radially to the wall of said cylindrical member, said barrier inhibiting the lubricant associated

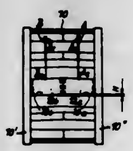
with one complement of rolling elements from gravimetrically flowing to the other, and means associated with each end of the annular bearing member for substantially closing the space occupied by the rolling elements against the intrusion from the environment of dirt, moisture, corrosive fluids and the like.

3,290,102
SPHERICAL ROLLER BEARING WITH BARREL-SHAPED ROLLERS
Erik Edvin Eriksson and Viktor Synek, Goteborg, Sweden, assignors to Aktiebolaget Svenska Kullagerfabriken, Goteborg, Sweden, a corporation of Sweden
Filed Feb. 24, 1964, Ser. No. 347,338
Claims priority, application Sweden, Mar. 5, 1960, 2,260/60
5 Claims. (Cl. 308—213)



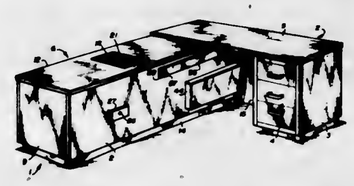
1. In a spherical roller bearing having an outer race ring, an inner race ring without side flanges, a plurality of barrel-shaped rollers in the annular space between the inner and outer race rings, a massive, one-piece cage machined from a solid blank comprising an annular portion, a plurality of fingers projecting generally axially from said annular portion and circumferentially spaced apart to define pocket openings therebetween for the rollers and having a portion thereof located radially outside of the pitch surface of the set of rollers, said fingers having surfaces facing the rollers which conform to and engage along a major portion of the length of the surface of the rollers, and being of a length greater than one-half the axial length of the rollers whereby the rollers are retained against radial outward movement with respect to the cage and limited axial movement with respect to the cage.

3,290,103
CAGE FOR ROLLER BEARINGS
Erwin Samitz, Bad Fussing, Germany, assignor to Motorenfabrik Hatz G.m.b.H., Passau, Germany
Filed June 18, 1964, Ser. No. 376,100
Claims priority, application Germany, July 15, 1963, M 57,499
3 Claims. (Cl. 308—217)



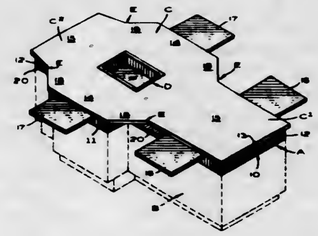
1. A roller bearing comprising a cage of annular cross section which is provided with guide slots arranged around the cage and extending in the general axial direction of the cage, and at least one roller disposed in each of said guide slots, in which the axis of each roller is inclined to a radial plane of the cage in a plane perpendicular to this radial plane such that the maximum distance of the axis of each roller from the said radial plane is 0.1 mm., a number of the rollers in the cage being so inclined in one direction and a substantially equal number of rollers in the cage being so inclined in the opposite direction.

3,290,104
STORAGE AND RETRIEVAL APPARATUS
John J. Brautovich, Monta Vista, Calif., assignor to Powerfile, Mountain View, Calif., a corporation of California
Filed Feb. 15, 1965, Ser. No. 432,731
6 Claims. (Cl. 312—194)



1. A storage and retrieval apparatus of substantially L-shaped configuration including at least one desk of standard desk height and a work-containing cabinet including a top, said desk comprising perpendicular support means at one end thereof, a top extending horizontally therefrom and having its opposite free end associated with the top of the work-containing cabinet, the overall height of the latter not exceeding the height of the desk top, at least one of holder members adapted to travel through a fixed path in said cabinet, the latter having a depth to accommodate standard width office files extending in a vertical plane and complemental to their path of travel through the cabinet so as to be stored and retrieved therefrom, means defining at least one opening in said cabinet top dimensioned to allow removal and return thereto of the vertically positioned files and means for automatically moving said holder means under the opening in a horizontal line of travel.

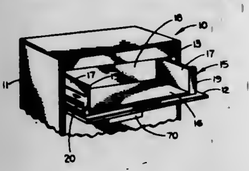
3,290,105
LABORATORY TABLE UNIT WITH PULL-OUT BOARDS
Clive Nall, Redwood City, Calif., assignor to B & G Holsinger, Inc., Burlingame, Calif., a corporation of California
Filed June 2, 1965, Ser. No. 460,630
6 Claims. (Cl. 312—209)



2. In a laboratory table unit with pull-out boards:
(a) an under-frame of cruciform outline having an unobstructed lower surface adapted to be positioned on tops of cabinets of various shapes, thus permitting different arrangements of cabinets to be obtained, the under-frame defining transverse cross-arm portions projecting from opposite sides of a main longitudinal stem of the cross provided by the under-frame;
(b) a table top of cruciform outline mounted on an upper surface of the under-frame to provide a covering thereover, the table top defining transverse cross-arm portions projecting from opposite sides of a main longitudinal stem of the cross defined by the table top;

(c) the cross-arm portions and the main stem of the table top overlying the cross-arm portions and the main stem of the under-frame, respectively;
(d) a pair of pull-out boards slidably carried by the under-frame and being arranged to be extended from opposite sides of the under-frame and the latter providing ample support for the extended pull-out boards;
(e) and these pull-out boards being disposed at different elevations so that their inner ends will pass one another when they are pushed inwardly relative to the under-frame.

3,290,106
FILE CABINET
Durward D. Wilson and Tom Walhout, Muskegon, Mich., assignors to Browne-Morse Company, Muskegon, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 506,433
8 Claims. (Cl. 312—222)



1. In a file cabinet the combination comprising:
a case having an open-ended storage chamber;
a tray having a back, two sides, a bottom and an open front;
means mounting said tray for horizontal travel into and out of said storage chamber;
a biasing means urging said tray outwardly from said storage chamber;
a latch having keeper and striker components, one of said components being mounted on one side of the tray and the other being mounted on the inside of said case adjacent the open end of the storage chamber, said keeper having a cam surface for shifting said striker when said tray is moved into said storage chamber to permit the striker and keeper to engage and thus restrain outward movement of said tray;
a door pivotably mounted for downward and outward movement, said door closing off said open end of said storage chamber when it is in closed position;
an arcuate arm extending towards said storage chamber from each end of said door, said arm having a stop for limiting the downward and outward movement of said door when said door is pivoted to horizontal open position;
an actuating lever for said latch interposed in the path of movement of the inner end of said arm and moved by said arm when said door is opened, said lever disengaging said latch when so moved; and
means for biasing said lever into the path of movement of said arm, said lever being yieldable to shift out of the path of movement of said arm when said door is closed.

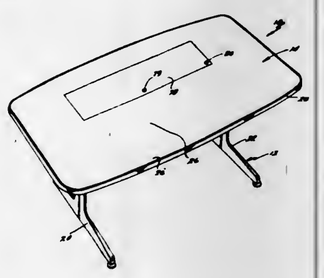
3,290,107
DISPLAY CASE
Harvey L. Kolster, Independence, Mo., assignor to Hallmark Cards, Incorporated, Kansas City, Mo., a corporation of Missouri
Filed June 28, 1965, Ser. No. 467,426
5 Claims. (Cl. 312—234.1)

2. A display case comprised of:
(a) a housing means including at least two opposed side supports and a front portion,
(b) a series of shelf elements connected to said housing and extending between said side supports at spaced elevations,
(c) a closure means hingedly connected to each of said shelf elements on said front portion for closing the open space between adjacent shelf elements, said closure means having an exteriorly exposed surface, said surface having means thereon for display of merchandise assemblies to demonstrate the utilization of the merchandise contained behind said closure means and in said display means,



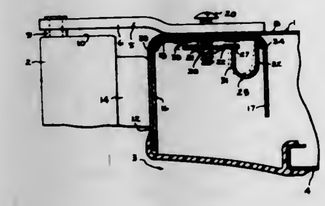
(d) means in the space between adjacent shelf elements for the support of gift wrapping material in roll form,
(e) means in the space between adjacent shelf elements for retaining ribbon and cards for use with the gift wrapping material.

3,290,108
CONFERENCE-DESK WITH CONCEALED STORAGE
Ronald H. Beckman and George H. Nelson, New York, N.Y., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Nov. 27, 1964, Ser. No. 414,289
3 Claims. (Cl. 312—281)



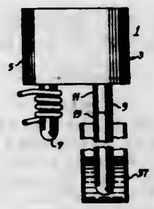
1. A conference table with concealed and conveniently accessible storage comprising: pedestal means including spaced pedestals having upper support beams, support columns to said beams, and floor contacting feet at the base of said columns; a table top mounted to and extending out beyond said pedestals, providing open space beneath said top around the perimeter of said table top, allowing perimetral access to said table top by conferees; an elongated opening in said top, between said pedestals, spaced from the edge portions of said table top within arm's length reach thereof; a storage pod suspended beneath said top and specifically beneath said opening, away from said edge portions to present no obstacle to conferees around said table; and cover means over said opening shiftable from a closed protective position with its upper surface flush with said table top, and an open position allowing access to said storage pod from perimetral edge portions of said table.

3,290,109
REFRIGERATOR CABINET INCLUDING ADJUSTABLE HINGE MOUNTING
Guillermo J. Venegas, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed July 30, 1965, Ser. No. 476,648
3 Claims. (Cl. 312—326)



1. In combination:
a cabinet having a top wall and a front wall and an access opening in the front wall thereof,
a door for closing said access opening,
said top wall having a slot therein adjacent one front corner thereof,
hinge means for supporting said door on said cabinet for pivotal movement about an axis adjacent one side edge thereof,
said hinge means comprising a hinge leaf overlying the slot in said top wall of said cabinet and a pivot pin carried by said plate and pivotally engaging an upper edge portion of said door,
means for adjustably securing said hinge leaf to said top wall for in-and-out adjustment of said door relative to the front of said cabinet comprising a screw extending downwardly through said hinge leaf and said slot,
a nut strip composed of sheet metal and comprising a base portion having an aperture therein,
a screw receiving portion overlying and normally spaced from said base portion and a U-shaped connecting portion connecting adjacent edges of said base and screw receiving portions and extending generally perpendicular to said base and screw receiving portions,
means for anchoring said base portion to the lower surface of said top wall with said aperture aligned with said slot,
said connecting portion being sufficiently flexible to permit relative movement of said base and screw receiving portions for limited adjustment of said door.

3,290,110
PROCESSING METAL VAPOR TUBES
Fred M. Johnson, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 26, 1962, Ser. No. 247,059
12 Claims. (Cl. 316—3)



1. A method of processing a sealed electron tube envelope containing a desired gas and an undesired gas having a lower condensing temperature than said desired gas and comprising a main body portion and two appendages, comprising the steps of:
(a) selectively condensing most of said desired gas in one of said appendages at a temperature at least as low as the condensing temperature of said desired gas and higher than the condensing temperature of said undesired gas; and
(b) condensing most of said undesired gas in the other appendage only at a temperature lower than said predetermined temperature.

CHEMICAL

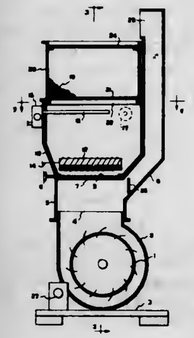
3,290,111
PROCESS FOR IMPROVING THE FASTNESS PROPERTIES OF DYEINGS
Walter Hess, Cologne-Hoechenberg, Rudolf Fiugado, Leverkusen, Ernst-Robert Fritze, Cologne-Flittard, and Hellmuth Fuerst, Leichlingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Sept. 10, 1963, Ser. No. 307,793
Claims priority, application Germany, Sept. 18, 1962, F 37,828
5 Claims. (Cl. 8—74)

1. A process for improving the wet fastness properties of dyeings produced with acid dyestuffs on polyamide articles inclusive of at least one of ε-caprolactam, hexamethylene diamine adipate and ω-amino undecanoic acid, comprising after-treating the dyed polyamide with an aqueous solution containing an active amount of a member selected from the group consisting of the alkali metal salt and ammonium salt of a condensation product of a lower aliphatic aldehyde and sulphonic acid of dihydroxydiphenyl sulphone.

3,290,112
APPARATUS FOR DISPENSING INSECTICIDES
Hagen B. Gilleawater, Phillip K. Harein, and Gerald Eason, Savannah, Ga., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Mar. 9, 1965, Ser. No. 438,433
3 Claims. (Cl. 21—110)

1. Apparatus for dispensing fumigant vapors comprising:
(a) a blower for providing a stream of air;
(b) means defining an air-heating chamber connected to and in communication with the blower;
(c) air-flow regulating means disposed between the blower and the air-heating chamber;
(d) air-heating means mounted within the air-heating chamber;
(e) means connected to and in communication with the air-heating chamber for holding a volatile fumigant, the blower, air-heating chamber, and fumigant-holding means being so dispersed that air

from said blower flows through said air-heating to said fumigant-holding means; and



(f) a duct connected to the blower for separately conducting a stream of air over the fumigant-holding means.

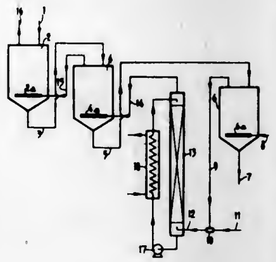
3,290,113
PROCESS FOR THE MANUFACTURE OF ALKALI METAL FLUOBORATES
Simha Harel, Kiryat Motzkin, Georg Stern, Haifa, Zevulun Pessahovitz, Kvutzath Maagan Michael, and Gidon Budman, Kiryat Motzkin, Israel, assignors to Chemical & Phosphates Limited, a company of Israel
No Drawing. Filed Feb. 27, 1963, Ser. No. 261,474
Claims priority, application Israel, May 15, 1962, 17,294
7 Claims. (Cl. 23—59)

1. A process for the production of a fluoborate selected from the group consisting of sodium fluoborate and potassium fluoborate which comprises the steps of reacting an aqueous solution obtained by the reaction of a solution of fluosilicic acid with boric acid and separation of the silica formed, with at least the stoichiometric amount of a water-soluble source of sodium ions and the stoichiometric amount of a water-soluble source of fluoride ions, whereby unreacted fluosilicic acid in said aqueous solution is converted to insoluble sodium fluosilicate and unreacted boric acid in said aqueous solution is converted to fluoboric acid, removing said insoluble sodium fluosilicate from the aqueous acidic solution of fluoborate ions, reacting said acidic solution of fluoborate ions with the stoichiometric amount of an alkali metal salt selected from the group consisting of a water-soluble potassium salt and a water-soluble basic sodium salt, and recovering said fluoborate.

3,290,114
PROCESS FOR THE PREPARATION OF POTASSIUM FLUOBORATE
Simha Harel, Kiryat Motzkin, Georg Stern, Haifa, and Charles Chaim Klein, Acco, Israel, assignors to Chemical & Phosphates Limited, a company of Israel
No Drawing. Filed Feb. 27, 1963, Ser. No. 261,475
Claims priority, application Israel, May 15, 1962, 17,293
14 Claims. (Cl. 23—59)

1. A process for the prepartion of potassium fluoborate comprising the steps of adding at least the stoichiometric amount of boric acid to a fluoride selected from the group consisting of alkali metal fluorides, ammonium fluoride and mixtures thereof, in an aqueous medium, adding sufficient strong mineral acid to the resulting aqueous mixture of boric acid and fluorides to give an acid reaction to said aqueous mixture, adding sufficient water-soluble potassium salt other than a fluoride to stoichiometrically react with the fluorine values present in said acidulated mixture and to precipitate potassium fluoborate and recover said potassium fluoborate.

3,290,115
PROCESS FOR PRODUCING NITROSYL CHLORIDE
Franco Smai and Angelo Mari, Milan, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy
Filed Dec. 24, 1962, Ser. No. 246,762
Claims priority, application Italy, Dec. 22, 1961, 23,108/61
1 Claim. (Cl. 23—203)



A process for continuously producing chlorine free nitrosyl chloride by the reaction involving three zones in sequence of a gas comprising nitrogen dioxide and aqueous hydrogen chloride comprising

(a) intimately contacting said gas counter-currently in a first reaction zone with an aqueous acid solution containing 5% by weight hydrochloric acid and about 50% by weight nitric acid at a temperature in the range of from 20° to 70° C.;

(b) oxidizing the gaseous reaction products from the first reaction zone comprising nitrosyl chloride, nitric oxide and unreacted nitrogen dioxide at a temperature of 20° to 70° C., to convert the nitric oxide to nitrogen dioxide while concurrently

(c) cooling said gaseous reaction products during oxidation by contact with an aqueous nitric acid solution containing about 60% by weight HNO_3;

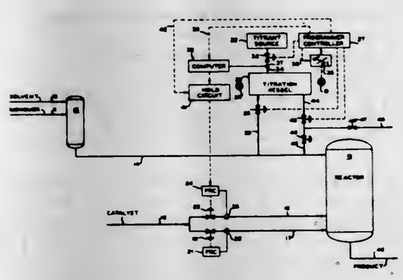
(d) separately collecting from said first reaction zone a liquid reaction product consisting essentially of aqueous nitric acid having a concentration of about 50% by weight;

(e) then intimately contacting the oxidized gaseous reaction product in a second reaction zone with aqueous hydrochloric acid having an intermediate concentration between that in said first reaction zone and the third reaction zone, at a temperature in the range of from 20° C. to 70° C. to obtain nitrosyl chloride as a gaseous product and conducting the liquid product from said second reaction zone which comprises aqueous hydrochloric acid having a concentration of about 5% for reaction with said gas in the first reaction zone

(f) then contacting said gaseous reaction products from said second reaction zone which mainly consist of nitrosyl chloride and unreacted nitrogen dioxide countercurrently with aqueous hydrochloric acid having a concentration between 20% and 37% in a third reaction zone at a temperature in the range of from 20° C. to 70° C., thereby increasing the proportion of nitrosyl chloride in the gaseous product; and

(g) recovering from said third reaction zone the gaseous product thus enriched with nitrosyl chloride.

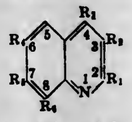
3,290,116
CALORIMETRIC ANALYSIS FOR CONTROL OF CATALYTIC POLYMERIZATION REACTIONS
James H. Carroll, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 27, 1963, Ser. No. 261,450
9 Claims. (Cl. 23—230)



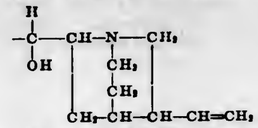
1. A method for the introduction into a catalytic reaction zone of the amount of catalyst necessary to obtain desired properties of a product of the reaction comprising passing a feed stream into said reaction zone, withdrawing a sample from said feed stream, passing the thus withdrawn sample into an analyzing zone, introducing into said sample in said analyzing zone in the presence of at least one terminal acetylenic hydrocarbon a material which reacts with catalyst poisons contained in said sample, said material consisting essentially of an organolithium compound of the formula $R(Li)_x$, where R is a hydrocarbon radical selected from the group consisting of aliphatic, cycloaliphatic, and aromatic radicals and contains from 1 to 20, inclusive, carbon atoms, and x is an integer from 1 to 4, inclusive, detecting a change in color of the sample resulting from the reaction of said material with said terminal acetylenic hydrocarbon, which signifies the substantially complete reaction of the catalyst poisons contained therein, and introducing catalyst into said reaction zone at a rate responsive to the amount of said material added to said sample prior to the detection of said change in color.

3,290,117
OCCULT BLOOD DIAGNOSTIC COMPOSITION WITH COLOR ENHANCING AGENT
Ernest Clarence Adams, Jr., and Cornelia Theodora Haitsma, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed June 24, 1963, Ser. No. 290,253
18 Claims. (Cl. 23—253)

11. A test indicator for detecting occult blood in body fluids and excreta comprising a bibulous material containing therein the dried residue resulting from the deposition on said material of a mixture comprising a first aqueous solution of an organic hydroperoxide, a buffer capable of maintaining the pH of the material being tested within the range of about 4 to 7, gelatin and as a fixative for said gelatin a dialdehyde polysaccharide, and a second solution of an indicator capable of being oxidized by the hydroperoxide in the presence of the prosthetic group of hemoglobin with an accompanying color change, a potentiating agent of the formula

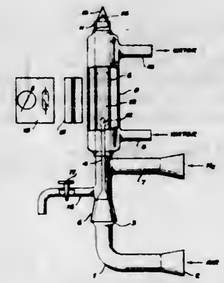


wherein R_1 is a member selected from the group consisting of hydrogen, methyl and hydroxy; R_2 is a member selected from the group consisting of hydrogen, methyl and thiophenyl; R_3 is a member selected from the group consisting of hydrogen, methyl and the radical



R_4 is a member selected from the group consisting of hydrogen, methyl and methoxy; R_5 is a member selected from the group consisting of hydrogen and methyl; and R_6 is a member selected from the group consisting of hydrogen, hydroxy, methyl and amino and an organic solvent.

3,290,118
APPARATUS FOR DETECTING PHOSPHORUS AND/OR SULPHUR IN GASES
Carl Ernst van der Smissen, Hamburg-Rahlstedt, Germany, assignor to Otto Heinrich Drager, Lubeck, Germany
Original application Jan. 10, 1962, Ser. No. 165,543, now Patent No. 3,213,747, dated Oct. 26, 1965. Divided and this application June 2, 1965, Ser. No. 474,195
Claims priority application Germany, Jan. 19, 1961, D 35,201
4 Claims. (Cl. 23—253)

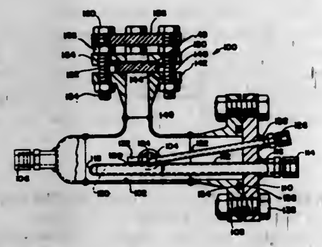


1. An apparatus for detecting the presence of phosphorus or sulphur compounds in a gas comprising a high temperature-resistant transparent cylinder for containing gas, a fine bore glass burner tube partially telescoped within said cylinder through an opening in said cylinder sealed against the entry of air, means for introducing the gas into said burner tube and directly into said cylinder, and means for introducing hydrogen directly into said cylinder as a fuel for mixing with said gas and forming a glow zone in said cylinder from the flame produced thereby.

3,290,119
INSPECTION UNIT
Harold A. Ohlgren and John G. Lewis, Ann Arbor, Mich., assignors, by mesne assignments, to Nuclear Technical Services Corporation, Ann Arbor, Mich., a corporation of Michigan
Original application May 14, 1959, Ser. No. 813,228, now Patent No. 3,141,739, dated July 21 1964. Divided and this application Dec. 4, 1962, Ser. No. 242,134
10 Claims. (Cl. 23—254)

1. An inspection unit for use in a gas purifier for detecting the presence of impurities in the gas comprising a hermetically sealed compartment having gas inlet and outlet ducts, a first tube closed at its inner end extending into said compartment into the normal path of flow between said inlet and outlet ducts, a pad mounted on said tube at a posi-

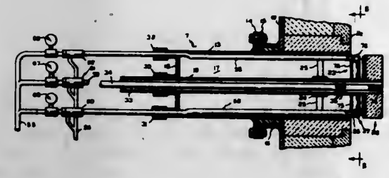
tion so as to be in said path of flow and adapted to support in heat transfer relationship a polished metal sample, a heating element in said tube in heat transfer relationship to said pad for maintaining said pad and thereby said polished metal sample at a predetermined temperature, a second tube closed at its inner end extending into said compartment and adapted to carry a thermocouple therein, the inner end of said second tube being positioned adjacent to said pad so that a thermocouple in said second tube will indicate the temperature of said sample, and a sight glass mounted on one wall of said compartment and aligned for observing said sample.



3,290,120
APPARATUS FOR THE PRODUCTION OF CARBON BLACK

William R. Wright, Rockport, and Travis S. Whitsel and David C. Williams, Houston, and John A. Gentry, Aransas Pass, Tex., assignors to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

Filed Mar. 2, 1964, Ser. No. 348,429
18 Claims. (Cl. 23—259.5)

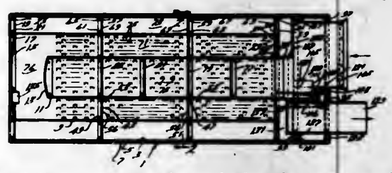


1. A furnace-type carbon black reactor having a generally tubular chamber including an enlarged combustion zone at the upstream end thereof, an axially-disposed feedstock inlet adapted to discharge a feedstock into said combustion zone, a combustion-supporting gas inlet annularly-disposed about said feedstock inlet and adapted to introduce a combustion-supporting gas into said combustion zone, and fuel introduction means leading from a source of liquid fuel and a source of atomizing gas to said combustion zone; including a distributing ring annularly-disposed about said feedstock inlet immediately adjacent said combustion-supporting gas inlet, having a plurality of discharge outlets disposed at spaced points about said ring adapted to discharge a generally-radial stream of atomized liquid fuel into the path of said introduced combustion-supporting gas, and fuel atomizer means in said fuel introduction means between said liquid fuel and atomizing gas supplies and said discharge outlets adapted to intimately mix liquid fuel and atomizing gas and produce an atomized liquid fuel comprising a finely-divided mist of liquid fuel in atomizing gas.

3,290,121
CATALYTIC MUFFLER EMBODYING INTERNAL RESERVOIR

Wladyslaw F. Malkiewicz, Jackson, Mich., assignor to Walker Manufacturing Company, a corporation of Delaware

Filed Aug. 22, 1963, Ser. No. 303,785
6 Claims. (Cl. 23—288)



1. A catalyst convertor for reducing the smog producing constituents of the exhaust gases of an internal combustion engine comprising a catalyst bed defined at least in part by a catalyst bed outer shell, a perforate catalyst bed inner shell extending within said catalyst bed outer shell and having one end thereof terminating at a longitudinally spaced distance from one end of said catalyst bed outer shell, means forming an imperforate closure for said one end of said catalyst bed inner shell and means forming closures for the opposite ends of said catalyst bed, an outer housing for said catalyst convertor for containing said catalyst bed and defining a space therebetween, said outer housing including means defining an exhaust gas inlet and an exhaust gas outlet for said catalyst convertor, one of said exhaust gas inlet and said exhaust gas outlet being in fluid communication with said catalyst bed inner shell, the other of said exhaust gas inlet and said exhaust gas outlet means being in communication with the space between said catalyst bed outer shell and said outer housing, and a plurality of perforations in said catalyst bed outer shell for radial exhaust gas flow through the catalyst bed defined by said catalyst bed inner and outer shells and said closure means, said catalyst convertor being positioned in use in a substantially vertical position, the volume between said one end of said catalyst bed inner shell and the adjacent closure means of said catalyst bed outer shell functioning as a catalyst reservoir for gravity flow of catalyst from said reservoir into the volume between the perforate portions of said catalyst bed inner and outer shells, the catalyst bed components defining said volume being imperforate.

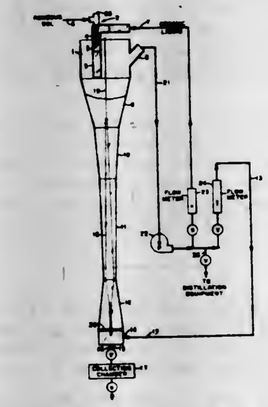
3,290,122
PROCESS FOR PREPARING OXIDE GEL MICROSPHERES FROM SOLS

Sam D. Clinton, Oak Ridge, and Paul A. Haas, Knoxville, Tenn., Leo J. Hirth, Boulder, Colo., and Alfred T. Kleinsteuber, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 28, 1964, Ser. No. 385,813
15 Claims. (Cl. 23—345)

1. The process for preparing oxide gel microspheres from a stable hydrous oxide sol which comprises forming said sol into droplets in an organic liquid having a water solubility of 0.3 to 10 volume percent and a solubility in water less than 1 volume percent and containing a surface-active agent, maintaining the resulting droplets in contact with said liquid until said droplets are congealed and recovering the resulting congealed spherical particles.

8. The process for preparing actinide carbide microspheres of a controlled size in the range of 50 to 1000 microns in diameter from a stable hydrous actinide oxide sol which comprises intimately mixing said sol with finely divided carbon, concurrently introducing a fine stream of the resulting carbon-containing sol and a surrounding stream of an organic liquid having a water solubility of 0.3 to 10 volume percent and a solubility in water less than 1 volume percent and containing a surface-active agent into a droplet-forming zone, the flow rate of said organic liquid being substantially higher than the flow rate of said carbon-containing sol and adjusted to a predetermined value in relation to said sol flow rate whereby carbon-containing sol droplets of a predetermined size are formed, passing the resulting droplets downward through a vertically extending congealing zone, countercurrently passing a second stream of said organic liquid upward through said congealing zone, the dimensions of said congealing zone and the flow rate of said second stream being adjusted to maintain the resulting congealing microspheres in suspension until the



density of said microspheres increase to a predetermined value, whereby the resulting fully congealed microspheres settle, recovering said fully congealed microspheres, and firing said congealed microspheres at an elevated temperature in a non-oxidizing atmosphere whereby actinide carbide microspheres are formed.

14. A process for making inorganic microspheres from a stable hydrosol comprising forming said hydrosol into droplets in an organic liquid having a water solubility of 0.3 to 10 volume percent and a solubility in water less than 1 volume percent and containing a surface-active agent, maintaining the resulting droplets in contact with said liquid until said droplets are congealed and recovering the resulting congealed spherical particles.

3,290,123
METHOD FOR PREPARING SODIUM ALUMINUM HYDRIDE

Frank P. Del Giudice, Beverly, and Robert C. Wade, Ipswich, Mass., assignors to Metal Hydrides Incorporated, Beverly, Mass., a company of Massachusetts

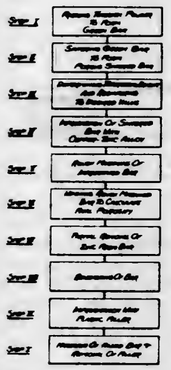
No Drawing. Filed Apr. 6, 1960, Ser. No. 20,248
5 Claims. (Cl. 23—365)

1. The method for preparing sodium aluminum hydride which comprises heating in a confined reaction zone a material selected from the group consisting of sodium metal and sodium hydride with a finely divided alloy of aluminum with another metal selected from the group consisting of nickel and lead in an inert liquid carrier at a temperature between 100° C. and 200° C. in the presence of hydrogen under a pressure between 2500 and 5000 p.s.i. while agitating the mixture until reaction between said selected material, aluminum and hydrogen is substantially complete, said alloy of aluminum containing an amount of said other selected metal from about 0.1 to 25 percent by weight based upon the weight of said selected material used.

3,290,124
POROUS ELECTRICAL DISCHARGE MACHINE ELECTRODES

John Sam Holtaclaw, Jr., Clermont, Fla., assignor to Ramsco, Inc., Clermont, Fla.

Filed Oct. 29 1964, Ser. No. 407,459
10 Claims. (Cl. 29—182.1)



1. An electrical discharge machine electrode having a porous structure to permit the flow therethrough of a dielectric cleaning fluid, comprising a porous sintered body of refractory metal selected from the class consisting of tungsten, molybdenum, tantalum and columbium, the pores of said body being lined with an intermetallic alloy, one component of said alloy being partially removed to open said pores to permit flow therethrough of said fluid.

5. The method of fabricating an electrical discharge machine electrode, comprising the steps of compacting particles of a refractory metal to form a green compact, sintering said green compact to form a porous skeleton, impregnating said skeleton with a molton intermetallic alloy to fill all pores therein, and partially removing one component of said alloy to reopen said pores whereby said pores are lined with said intermetallic alloy.

3,290,125
COMPOSITE SHEET METAL ARTICLE

Michael J. Pryor, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Nov. 13, 1963, Ser. No. 323,216
3 Claims. (Cl. 29—183)

2. A composite sheet metal article comprising:

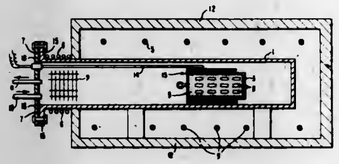
(A) a first and second component sheet having a pattern of stop weld material therebetween, said sheets being integrally unified except in the area of the stop weld material;

(B) said first component sheet consisting essentially of an aluminum base alloy with Fe+Si 1.0% maximum and Al 99.00% to 99.75%, said sheet having a coarse particle size dispersion of α-AlFeSi as an insoluble intermetallic compound present therein;

(C) said second component sheet consisting essentially of substantially the same aluminum base alloy as the first component sheet and having a fine particle size dispersion of said insoluble intermediate compound present therein;

(D) said first component sheet being relatively soft with yield strength values in the order of 5,000 p.s.i. minimum and said second component sheet being relatively hard with yield strength values in the order of 18,000 p.s.i. maximum, with distensions raised from the first component sheet corresponding to the pattern of stop weld material.

3,290,126
PROTECTIVELY COATED NICKEL OR COBALT ARTICLES AND PROCESS OF MAKING
Leon A. Monson, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,823
7 Claims. (Cl. 29—194)



2. An article comprising (1) a body of a metal matrix selected from the group consisting of (a) at least one metal of atomic number from 27 to 28, inclusive, and (b) alloys in which there is at least 50% by weight of at least one metal of atomic number from 27 to 28, inclusive, alloyed with at least one Group VI–B metal of atomic number below 75, said matrix metal being dispersion-strengthened with a particulate refractory metal oxide having a free energy of formation at 1000° C. greater than 100 kilocalories per gram atom of oxygen, (2) a triplex coating adherently bonded to and integral with said first body, said coating comprising (a) an inner diffusion zone comprising an alloy of said matrix metal with an increasing concentration of chromium up to about 50% by weight in the outwardly direction, (b) a second zone, outward of zone (a), comprising an alloy of said matrix with about 50 to 95% by weight of chromium and up to 10% by weight of aluminum and having said particulate refractory oxide dispersed therein, and (c) an outer zone comprising an alloy of at least one metal of atomic number from 27 to 28, inclusive, containing, by weight, about from 10 to 50% of aluminum and 2 to 30% of chromium.

3,290,127
BARRIER DIODE WITH METAL CONTACT AND METHOD OF MAKING
Dawon Kahng, Somerville, and Martin P. Lepselter, Franklin Park, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,663
11 Claims. (Cl. 29—195)



1. A surface barrier diode comprising a wafer of silicon semiconductor material, a thin layer of relatively small extent of a metal silicide in surface barrier relation on one surface of said silicon wafer, said metal being one selected from the group consisting of palladium, nickel, copper, rhodium, platinum, tungsten and molybdenum, a layer of silicon dioxide on the balance of said one surface of said wafer, a film of a sealing metal selected from the group consisting of chromium, titanium, vanadium and zirconium overlying at least the peripheral portions of said oxide coating adjoining said contact layer, and a layer of said metal overlying said contact area and said sealing metal area.

3,290,128
STEEL WELDMENTS
Samuel J. Manganello, Penn Hills Township, Allegheny County, and Allan M. Rathbone, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Feb. 21, 1966, Ser. No. 528,821
3 Claims. (Cl. 29—196.1)

1. A weldment comprising a metal article having a steel weld therein, said metal consisting essentially of 0.05 to 0.2% carbon, 0.1 to 1% manganese, 3 to 6% nickel, 0.3 to 1% chromium, 0.3 to 0.7% molybdenum, and the balance substatnally iron, said steel weld consisting essentially of 0.05 to 0.12% carbon, 0.4 to 1.0% manganese, 4 to 6% nickel, 0.4 to 0.9% chromium, 0.4 to 0.7% molybdenum, up to 0.08% vanadium, 0.01 to 0.04% aluminum, 0.16 to 0.4% silicon, up to 0.30% titanium, up to 5% cobalt, up to 0.15% nitrogen and up to 0.010% each of sulfur and phosphorus, and the balance substantially iron, the silicon, aluminum and titanium being present in the following minimum amounts:

	Percent
Si+Al	0.2
Si+Ti	0.2
Ti+Al	0.04
Si+Ti+Al	0.23

said weldment having a yield strength of at least 120K s.i. and a notch toughness of at least 30 ft.-lb. energy absorption at 0° F.

3,290,129
FERROUS SHEET FACED WITH ALUMINUM
Joseph A. Nock, Jr., Natrona Heights, and John E. Vruggink, Lower Burrell, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 10, 1965, Ser. No. 507,220
2 Claims. (Cl. 29—196.2)

1. A unitary laminate consisting of a layer of ferrous sheet, a layer of wrought aluminum base alloy containing at least 85% of aluminum and between 0.4 and 10% of magnesium as an essential added element, and a wrought layer of aluminum, containing not more than 0.1% magnesium and less than 0.5% silicon, intermediate the said ferrous sheet layer and the said aluminum base alloy layer, the said intermediate layer being integrally bonded to the said ferrous sheet layer and to the said aluminum base alloy layer.

3,290,130
LUBRICANT FOR TWO-STROKE ENGINES
Horst Assmann, Hamburg-Harburg, Germany, assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 7, 1964, Ser. No. 416,590
Claims priority, application Germany, Dec. 6, 1963, E 25,971
9 Claims. (Cl. 44—58)

1. A combined lubricant and fuel composition for the lubrication of a two-stroke-cycle gasoline engine which comprises a gasoline to which have been added, per 100 parts of gasoline:

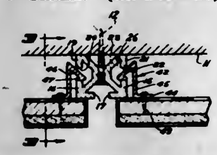
(a) from about 0.001 to about 0.03 part of an alkaline earth metal salt of an organic sulfonic acid,

(b) from about 0.00005 to about 0.02 part of additional sulfur imparted by a sulfur compound selected from the class consisting of sulfurized fatty oils having from 5 to 40 percent sulfur, unsaturated hydrocarbons that have been phosphosulfurized with from 5 to 30 weight percent of a sulfide of phosphorus, and surfurized unsaturated hydrocarbons having from 5 to 40 weight percent of sulfur, and

(c) from about 0.5 to about 1 part of a higly refined petroleum lubricating oil having a viscosity in the range of from 45 to 85 SSU at 210° F.,

the percentage ratio of said sulfonate to said lubricating oil in said composition being in the range of about 0.2 to 3 weight percent, and the percentage ratio of said additional sulfur to said lubricating oil in said composition being in the range of about 0.01 to 2 weight percent.

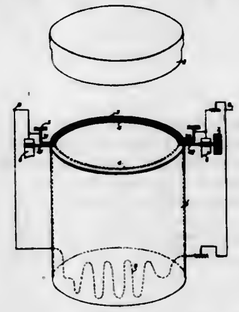
3,290,131
CHALKBOARD MOUNTING APPARATUS
Wallace E. Neal, Jr., Minneapolis, Minn., assignor to W. E. Neal Slate Co., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 13, 1964, Ser. No. 410,986
9 Claims. (Cl. 248—28)



1. Apparatus for mounting chalkboards and the like comprising a first and a second elongated standard, each standard having elongated flanges and web portions to form at least one channel and a slot opening into each channel, means attached to each standard for mounting the standards to extend in a generally vertical direction with the slots facing one another, a pair of generally right angle hanger supports each having a first leg and a second leg, means for each standard slidably extended through the slot and into the channel of the respective standard for releasably clamping the first leg of one hanger support to each standard with the second legs extending toward one another and at generally right angles to the standard, a first and a second spring clip each having an upper end portion, means for attaching the spring clip upper portions to opposite upper corner positions of a chalkboard with the remaining spring clip portions being in depending relation thereto, said spring clips respectively being extendable over the adjacent hanger support second leg and adapted to act in conjunction with a chalkboard when attached thereto for supportingly retaining a chalkboard on the hanger supports, resilient retainer means for each lower corner portion of a chalkboard and mountable thereon for releasably holding a lower corner portion of the chalkboard in abutting engagement with the adjacent standard, each retainer means including a web portion extending outwardly from a chalkboard when mounted thereon and a reversely bent portion joined to the outer end of the web portion and extendable into the adjacent standard slot to bear against a flange for releasably holding a chalkboard lower corner portion adjacent the respective standard.

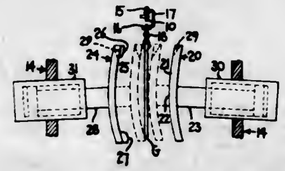
3,290,132
METHOD AND APPARATUS FOR MANUFACTURING THIN GLASS FILMS
Peter Baldwin Banks, Rawreth, England, assignor to English Electric Valve Company Limited, London, England, a British company
Filed Nov. 26, 1962, Ser. No. 240,039
Claims priority, application Great Britain, Oct. 23, 1962, 12,952/62
9 Claims. (Cl. 65—32)

1. Apparatus for forming a thin glass film having a geometric configuration which is symmetrical about one axis thereof, said apparatus comprising a first length of wire formed in the shape of one-half of said geometric configuration with respect to said one axis thereof, said first length of wire being rigidly attached to a base member, a second length of wire formed in the shape of the other half of said geometric configuration with respect to said one axis thereof, said second length of wire being rotatably attached to said base member adjacent to said first wire and being movable between a first position in which said two wires are adjacent to each other substantially throughout the entire lengths thereof and a second position which is approximately 180° displaced from said first position, and means for rotating said second wire from said first to said second position thereof, whereby a strip of molten glass, when placed between said two wires in the first position of said second wire, will be stretched into a thin film having the desired geometric configuration when said second wire is rotated from said first to said second position thereof.



7. A method of manufacturing thin glass films comprising the steps of (A) placing a strip of glass between two electrically conductive wires which are in side-by-side relationship to each other, (B) passing an electrical current through said two wires to heat them to a temperature within the range of approximately 800° C. to 1,800° C., thereby melting said strip of glass, (C) heating the atmosphere in the neighborhood of said glass to a temperature within the range of approximately 200° C. to 600° C., (D) spreading said two wires apart by a predetermined amount and simultaneously reducing the flow of current through said wires to progressively reduce the temperature of said wires, thereby stretching said glass into a relatively uniform film and simultaneously cooling said glass below its melting temperature.

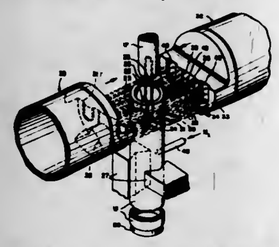
3,290,133
METHOD AND APPARATUS FOR PRESS BENDING GLASS SHEETS
Dean L. Thomas, Crestline, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Mar. 2, 1964, Ser. No. 348,373. Divided and this application Feb. 15, 1966, Ser. No. 527,680
7 Claims. (Cl. 65—106)



1. The art of bending glass sheets wherein a flat glass sheet is hung from glass gripping tongs that grip the glass at tong gripping points near its upper edge, heated to its softening point in a relatively hot atmosphere and its major surfaces sandwiched between a pair of glass shaping members having complementary convex and concave shaping surfaces opposing one another to bend the glass sheet into a shape conforming to said complementary shaping surfaces in a relatively cool atmosphere wherein the vertical distance normally between the tong gripping

points and the initial line of contact between the convex shaping surface and the glass sheet changes upon bending the latter thereby tending to pull the glass sheet out of gripping engagement by the glass gripping tongs when the complementary shaping surfaces engage the opposite major surfaces of the flat glass sheet, the improvement comprising simultaneously moving the opposing glass shaping members toward one another in paths that have a slight upward inclination whose vertical component of motion is substantially equal to the change of the normal vertical distance of the gripped glass sheet between the portion thereof gripped by tongs and the portion thereof that first comes into contact with the outermost portion of the convex shaping surface of said shaping member having said convex shaping surface.

3,290,134
PRESS SEALING APPARATUS
Frank J. Camarata, Upper Montclair, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application Feb. 18, 1960, Ser. No. 9,638, now Patent No. 3,025,426, dated Mar. 13 1962. Divided and this application June 19, 1961, Ser. No. 118,163
15 Claims. (Cl. 65—140)



1. In apparatus for forming a press seal across a vitreous tube,

a pair of press jaws having opposed work faces that are spaced to receive therebetween the heated segment of a tube across which the seal is to be formed and have

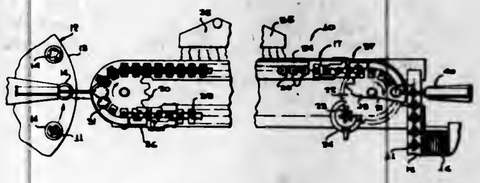
an arcuate groove therein that extends partly across the respective work faces from an edge thereof, and

a pair of elongated marginal depressions disposed on either side of and beyond said groove,

the portions of said work faces between said grooves and the respective marginal depressions comprising lands that define matching generally Y-shaped pressing surfaces which, when said press jaws are in a closed position, are adapted to tightly compress only preselected portions of the interposed heated tube segment and form a seal thereacross.

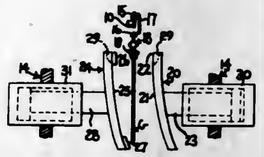
3,290,135
GLASSWARE ORIENTING DEVICE ON GLAZING MACHINE
Rade Jurich, Oak Lawn, Ill., assignor, by mesne assignments, to Brockway Glass Company, Inc., Brockway, Pa., a corporation of New York
Filed Dec. 14, 1962, Ser. No. 244,697
16 Claims. (Cl. 65—181)

1. An orientation assembly comprising a lug unit adapted to be attached to a moving member to be oriented and a guide unit positioned along a path of movement of the moving member, said lug unit including a first lug adapted to be oriented in a first direction and a second lug adapted to be oriented in a second direction which is angularly related relative to said first direction, said second lug lying in a plane disposed adjacent to and out of the plane of the first lug and being positioned relative to said first lug in the same relation as said second direction is to said first direction, said guide unit including a first guide assembly means lying in the plane of said first lug for engaging said first lug and turning said lug unit to position said first lug in said first direction, a second guide assembly means lying in the plane of said second lug for engaging said second lug in



all positions thereof as determined by said first guide assembly means and turning said lug unit to a second position with said first lug in said second direction, and a third guide assembly means lying in the plane of said first lug for engaging said first lug to rotate said lug unit to a third position with said first lug oriented in the first direction and the second lug in the second direction.

3,290,136
APPARATUS FOR PRESS BENDING GLASS SHEETS
Donn L. Thomas, Crestline, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 8, 1965, Ser. No. 512,500
4 Claims. (Cl. 65—275)



1. In apparatus for shaping glass sheets by press bending, comprising a pair of opposed glass shaping members having continuous complementary convex and concave shaping surfaces of substantially continuous extent defining a shape having a component of curvature about a horizontal axis of curvature, tong means for gripping a heat-softened glass sheet between said glass shaping members in position to be sandwiched between said glass shaping members, means operatively connected to said glass shaping members to provide relative movement between said glass shaping members between a retracted position spaced from one another and a glass sandwiching position, the improvement wherein each of said shaping surfaces is tilted so that the portion of each of said complementary shaping surfaces that is tangent to a vertical plane is substantially above the horizontal plane occupied by the center of the vertical dimension of said shaping surface.

3,290,137
MOLD APPARATUS FOR FORMING GLASS LINED VESSELS
George F. Tisinai, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Original application Feb. 1, 1960, Ser. No. 5,906. Divided and this application Dec. 8, 1965, Ser. No. 521,476
1 Claim. (Cl. 65—299)

An apparatus for forming a glass lining within a vessel comprising a vessel having an outlet therein, a fold ring attached to said outlet forming a continuous surface with said outlet, a sealed glass envelope within said vessel, and a cap attached to said vessel, said cap having a



greater internal diameter than the outer diameter of the fold ring to surround said fold ring and confine said envelope.

3,290,138
PROCESS FOR SLOW RELEASE FERTILIZERS COMPRISING UREA, PARAFFIN WAX, AND ADDUCT-INHIBITING CHLORINATED WAX
John J. Melchiore, Wallingford, and Wilmer E. McCorquodale, Jr., Havertown, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,354
7 Claims. (Cl. 71—28)

1. Method of forming a slow release fertilizer comprising a dispersion of solid urea in a solid paraffin wax which when in molten state normally reacts with solid urea to form an adduct which comprises (1) heating said paraffin wax to above its melting point whereby molten paraffin wax normally susceptible to adduction is obtained, (2) dissolving a chlorinated wax containing 10–80% chlorine in the resulting molten paraffin wax as an adduct inhibitor, the amount of said chlorinated wax being at least 0.5% by weight of said molten paraffin wax and being sufficient to inhibit adduction of said molten paraffin wax, (3) dispersing solid urea in the molten paraffin wax containing said adduct inhibitor, and (4) cooling the resulting dispersion to below the melting point of the wax whereby a slow release fertilizer comprising a dispersion of solid urea in solid paraffin wax is obtained.

3,290,139
PROCESS FOR SLOW RELEASE FERTILIZER COMPRISING UREA, PARAFFIN WAX, AND UREA-WAX ADDUCT INHIBITOR
Robert H. Campbell, Brookhaven, Pa., and Ivor W. Mills, Claymont, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Sept. 11, 1963, Ser. No. 308,061
7 Claims. (Cl. 71—30)

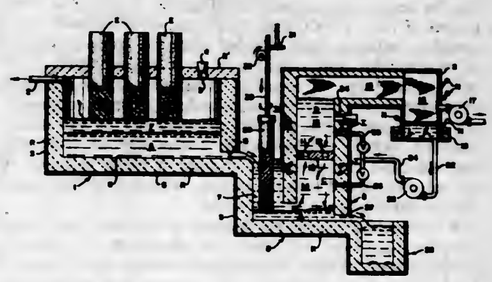
1. Method of forming a slow release fertilizer comprising a dispersion of solid urea in a solid paraffin wax which when in molten state normally reacts with solid urea to form an adduct which comprises (1) heating said paraffin wax to above its melting point whereby molten paraffin wax normally susceptible to adduction is obtained, (2) dissolving in the resulting molten paraffin wax an adduct inhibitor selected from the group consisting of (a) fatty amines characterized by the presence of an RN group wherein R contains 10–30 carbon atoms in a straight chain, (b) fatty amides characterized by the presence of an RCON group wherein R contains 9–29 carbon atoms in a straight chain, (c) fatty nitriles having the formula RCN wherein R contains 9–29 carbon atoms in a straight chain, (d) alkanol amines containing at least 2 carbon atoms per alkanol group, and (e) fatty substituted heterocyclic nitrogen compounds characterized by the presence of an R substituted heterocyclic nitrogen ring wherein R contains 10–30 carbon atoms in a straight chain, the amount of said adduct inhibitor being at least 0.1% by weight of said molten paraffin wax, (3) dispersing solid urea in the molten paraffin wax containing said adduct inhibitor, and (4) cooling the resulting dispersion to below the melting point of the wax whereby a slow release fertilizer comprising a dispersion of solid urea in solid paraffin wax is obtained.

3,290,140
METHOD OF MIXING AND STORING SOLUTIONS COMPRISING AMMONIUM PHOSPHATE
Donald C. Young, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,056
9 Claims. (Cl. 71—34)

1. In a method for storing and handling of an ammonium phosphate solution having an initial pH between about 5.5 and 10.0 and containing metallic cations that normally form insoluble orthophosphate salts in solution but that are retarded from forming such insoluble salts by chelation with polyphosphate anions, the improved method for preventing the formation of insoluble salts of metallic cations during said storing and handling that comprises adding to said solution, during the storage of said solution and upon the admixture of said solution with other ammonium salt solutions, betwen about 0.5 and 40 weight percent ammonia in an amount sufficient to prevent the pH of said solution from declining to less than said initial value.

6. The method for preparing stable, mixed blends comprising an aqueous solution of a first ammonium salt selected from the class consisting of ammonium nitrate, ammonium sulfate, ammonium chloride, ammonium bisulfite and mixtures thereof with an aqueous solution of ammonium phosphate that has a pH between about 5.5 and 10.0 and that contains metallic cations comprising iron and aluminum cations and a sufficient amount of polyphosphate anions to chelate said iron and aluminum, said method comprising adding said aqueous solution of said first ammonium salt to said aqueous solution of ammonium phosphate while simultaneously adding between about 0.5 and 40 weight percent ammonia thereto in an amount controlled to maintain the pH of said solution of ammonium phosphate between about 5.5 and 10.0 and thereby prevent the formation of insoluble salts of said iron and aluminum cations and recovering a clear, aqueous ammoniacal blend of said first ammonium salt and said ammonium that is phosphate free of precipitates.

3,290,141
ALUMINUM PRODUCTION
Arthur F. Johnson, Suite 22W, 5700 Arlington Ave., Riverdale, N.Y.
Original application Aug. 16, 1962, Ser. No. 217,448, now Patent No. 3,251,676, dated May 17 1966. Divided and this application Apr. 26, 1966, Ser. No. 545,322
6 Claims. (Cl. 75—10)



1. The improved process for the production of aluminum which comprises charging into an electric arc reduction furnace a mixture of oxidic aluminum and carbonaceous reducing agent, providing in the reduction furnace a heavy metal alloy of aluminum and a metal of the group consisting of iron, silicon, molybdenum, chromium, vanadium, titanium, cobalt, tungsten and zir-

conium (fusing the oxidic material and floating it over the heavy metal alloy, reducing aluminum from the fusion into the heavy metal alloy, flowing the heavy metal alloy into another furnace which is under a vacuum and at a lower temperature than the reduction furnace, adding magnesium to the heavy metal alloy, separating an aluminum-magnesium alloy from the heavy metal alloy, returning the heavy metal alloy thus depleted in aluminum and magnesium to the reduction furnace, and volatilizing magnesium from the aluminum in the vacuum chamber leaving commercially pure aluminum.

3,290,142

PROCESS OF PREPARING A REACTIVE IRON ADDITIVE

Chauncey C. Loomis, Stockbridge, Mass., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 10, 1964, Ser. No. 336,866
8 Claims. (Cl. 75—58)

1. A process for the preparation of a reactive iron additive of enhanced stability under storage conditions, said process comprising the steps of

forming a dry blend comprising pulverized calcined dolomitic limestone consisting essentially of magnesium oxide and calcium oxide and sufficient ferrosilicon of about 50–95 weight percent silicon content to provide from about 0.5 to about 1.5 equivalent of silicon per magnesium equivalent,

pressing said blend into a coherent mass,

roasting said mass in the substantial absence of oxygen at a temperature of at least about 1000° F. for a period of time sufficient to substantially reduce the lime and silicon content of said mass without substantially altering the magnesia content thereof,

and cooling said mass in the substantial absence of oxygen.

3,290,143

PRODUCTION OF URANIUM METAL

Donald Duxbury, Lea, Preston, England, assignor to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,052
Claims priority, application Great Britain, Mar. 6, 1964, 9,737/64
11 Claims. (Cl. 75—122.7)

1. A method for the production of uranium metal containing alloying additions of iron and aluminum by heating the reactants, uranium tetrafluoride, a reducible compound of iron, a reducible compound of aluminum and a metallic reducing agent selected from the group consisting of magnesium and calcium in a reaction vessel, comprising the steps of forming a mixture of the uranium tetrafluoride and the metallic reducing agent, compacting the mixture into pellets, charging the pellets into a reaction vessel, the reducible compound of iron and the reducible compound of aluminum being included in the reaction vessel with the pellets, followed by heating of the reactants in the reaction vessel.

8. A method for the production of uranium containing alloying additions of iron and aluminum by heating uranium tetrafluoride, a metallic reducing agent selected from the group consisting of calcium and magnesium and iron and aluminum in uncombined metallic form in a reaction vessel, comprising the steps of forming a mixture of the reactants uranium tetrafluoride and the metallic reducing agent, compacting the mixture into pellets, charging the pellets into a reaction vessel, iron and aluminum in uncombined metallic form being included in the reaction vessel with the pellets, followed by heating of the reaction vessel to bring about reduction of the uranium tetrafluoride by the metallic reducing agent.

3,290,144

PROCESS FOR IMPROVING THE MECHANICAL PROPERTIES OF COPPER USING A REFRACTORY DISPERSED FILLER

Ralph K. Iler, Wilmington, Del., William H. Pasfield, Sayville, N.Y., and Paul C. Yates, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application May 7, 1957, Ser. No. 657,586. Divided and this application Mar. 28, 1963, Ser. No. 268,556
11 Claims. (Cl. 75—206)

1. In a process for producing copper having improved high-temperature strength the steps comprising depositing a hydrous, oxygen-containing copper compound upon a water-insoluble refractory filler, the filler being in the form of particles, insoluble in copper, having an average size below 1000 millimicrons anda melting point above 1000° C. and being a metal oxide having a free energy of formation at 1000° C. of from 30 to 150 kcal. per mole per oxygen atom in the oxide, and the volume loading of filler being about from 0.05% to 20% calculated on the amount of copper in the deposited oxide, and thereafter reducing the deposited coating to metallic copper while maintaining the temperature in the range from 200 to 500° C. throughout the entire mass, and compacting the reduced product to a dense mass of metal having the filler dispersed therein and having an apparent density which is from 90 to 100% of the absolute density.

3,290,145

METHOD OF PRODUCING MULTITEXTURAL FLAT STOCK

T. Stevens Daugherty, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Original application Mar. 9, 1962, Ser. No. 180,401. Divided and this application June 17, 1964, Ser. No. 375,792
7 Claims. (Cl. 75—214)

1. The method of producing self-supporting flat stock which comprises preparing a particulate mixture of at least two different materials, including particles of aluminous metal substantially all of which are coarser than 200 mesh size, preheating the particles to a temperature in the range from about 450° F. to the incipient melting point thereof, said particles being in free-flowing condition at the preheat temperature, and rolling the preheated mixture under pressure between a pair of rolls to form said flat stock.

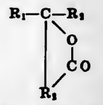
3,290,146

ELECTROPHOTOGRAPHIC MATERIAL AND PROCESS

Martha Tomanek, Wiesbaden-Biebrich, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Jan. 10, 1963, Ser. No. 250,494
Claims priority, application Germany, Jan. 13, 1962, K 45,645
21 Claims. (Cl. 96—1)

1. An electrophotographic material comprising a conductive support layer and a homogeneous photoconductive insulating layer thereon, the latter comprising a condensation product of an aromatic orthodicarboxylic anhydride and an aromatic amine, the condensation product having the formula



in which R_1 and R_2 are phenyl groups which are substitute in the para position to the central carbon atom by a member selected from the group consisting of an amino group and the residue of a primary or secondary amine, and R_3 is a phenyl group.

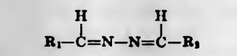
3,290,147

ELECTROPHOTOGRAPHIC ORGANIC PHOTOCONDUCTORS

John Alan Matter, Gorham, Dumont Biglar Henderson, Portland, and Ben Millard, Windham, Maine, assignors to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,617
5 Claims. (Cl. 96—1)

1. An electrophotographic copy sheet comprising a photoconductive insulating layer on a conductive support, the photoconductive layer containing a photoconductive compound selected from the class of compounds known as arylideneazines and having the general formula:



wherein R_1 and R_2 are N-disubstituted aryl radicals.

3,290,148

NOVEL PHOTOGRAPHIC PRODUCTS, PROCESSES AND COMPOSITIONS

Jerome L. Reid, Watertown, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Nov. 28, 1962, Ser. No. 240,584
12 Claims. (Cl. 96—3)

8. In a multicolor diffusion transfer process which comprises the steps of developing an exposed photosensitive element comprising a plurality of layers including blue-sensitive, green-sensitive and red-sensitive silver halide gelatin emulsion layers mounted on a common support, said blue-sensitive, green-sensitive and red-sensitive silver halide gelatin emulsion layers having positioned contiguous, respectively, yellow, magenta and cyan dyes, each of said yellow, magenta and cyan dyes being a silver halide developing agent, by permeating said photosensitive element with an aqueous alkaline processing composition, immobilizing said yellow, magenta and cyan dyes in exposed areas, as a result of development, forming thereby an imagewise distribution of mobile yellow, magenta and cyan dye, as a function of the point-to-point degree of exposure of said element, and transferring, by imbibition, at least a portion of each of said imagewise distributions of mobile dye to a superposed image-receiving layer to provide thereto a multicolor positive dye image, the improvement which comprises conducting said process in the presence of lithium nitrate.

3,290,149

PROCESS FOR INCREASING OPTICAL DENSITIES

Edward Terry Cline, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 1, 1962, Ser. No. 176,814
9 Claims. (Cl. 96—27)

1. A process which comprises:

(a) treating with an aqueous solution the entire surface of an opaque, pressure-sensitive layer of an organic polymer said layer having clear, dense image areas and porous, opaque areas, said solution containing

(1) a dye having a molecular weight of 300 or more, being soluble in water to the extent of and present in a concentration of at least 5% by weight and being capable of forming a precipitate with a dye-insolubilizing agent,

(2) a compatible surface-active agent having wetting and detergent properties, and

(3) a water-miscible organic liquid; said liquid having a surface tension less than 65 dynes per square centimeter at 25° C. in the form of a 5% by weight aqueous solution and said organic liquid being present in such a concentration that it does not attack the polymer and cause partial or complete loss of porosity;

(b) physically removing excess dye from the surface of the layer; and

(c) removing additional dye from the surface of the layer by treating said surface with an aqueous solution containing about 0.05 to 5.0% concentration of a dye insolubilizing agent.

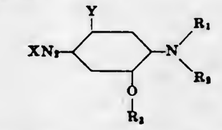
3,290,150

LIGHT-SENSITIVE DIAZOTYPE MATERIAL AND DIAZO COMPOUNDS

Jan Eenshuistra, Bernardus Hubertus Huibers, and Leo Hubertus Joseph Van Helden, all of Venlo, Netherlands, assignors to Chemische Fabriek L. van der Grinten N.V., Venlo, Netherlands, a corporation of the Netherlands

No Drawing. Filed Feb. 19, 1963, Ser. No. 259,731
Claims priority, application Netherlands, Nov. 10, 1958, 233,965
18 Claims. (Cl. 96—49)

1. A diazotype material that gives a positive diazo-type copy of a positive original comprising a support sensitized with a light-sensitive composition comprising a compound having the structure



in which:

R_1 is an alkyl group containing at most 3 carbon atoms,

R_2 comprises a cyclohexyl radical,

R_3 is an alkyl group containing at most 4 carbon atoms,

X is an anion, and

Y is selected from the class consisting of hydrogen and halogen atoms, a methyl group and alkoxy groups containing at most 4 carbon atoms.

9. A positive process for the production of a diazotype print which comprises imagewise exposing to actinic light a diazotype material as defined in claim 1 and developing the exposed material by applying to it a film of a liquid developer containing phloroglucinol.

3,290,151

COATED ALUMINUM LITHOPLATE AND METHOD

Walter G. Zelley, New Kensington, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 10, 1963, Ser. No. 286,463
3 Claims. (Cl. 96—75)

1. An aluminum lithoplate with a light-sensitive diazo resin coating comprising

an aluminum sheet,

a surface of said sheet being provided with an adsorbent alkali metal salicylate-aluminate conversion coating comprising aluminum oxide,

alkali metal dichromate adsorbed by said conversion coating, and

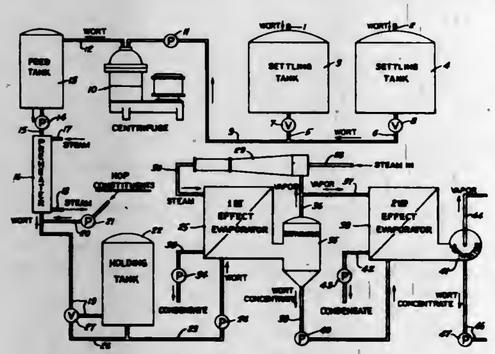
a light-sensitive diazo resin coating adhering to said conversion coating,

said lithoplate being characterized by water-wettability of non-image areas of said conversion coating following exposure and development, and by adhesion between said diazo resin coating and said conversion coating without exhibiting deleterious reaction between such resin coating and either the conversion coating or the underlying aluminum.

3,290,152
METHOD OF MAKING REHYDRATED GLUTEN PRODUCTS
Warren E. Hartman, Worthington, Ohio, assignor to Worthington Foods, Inc., Worthington, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 20, 1965, Ser. No. 499,083
19 Claims. (Cl. 99—17)

1. In the manufacture of gluten base, high protein, uniform synthetic food products from a mixture comprising finely divided dehydrated vital gum gluten, and water in an amount producing the desired consistency of the gluten mass when finished, the improvement which consists of putting the ingredients together and substantially simultaneously rapidly cutting the mixture at high speed to keep the water and vital gum gluten particles in intimate mixture while the latter absorbs and adsorbs water, said high speed being about 1750 r.p.m.

3,290,153
PROCESS AND APPARATUS FOR CONCENTRATING WORT
Peter D. Bayne, Milwaukee, Wis., and John L. Pahlow, Granada Hills, Calif., assignors to Jos. Schlitz Brewing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 18, 1964, Ser. No. 397,391
19 Claims. (Cl. 99—52)



8. In a continuous process of concentrated brewers' wort, the steps comprising continuously preheating a stream of clear wort to a temperature in the range of 185° to 230° F., evaporating the preheated wort by passing the wort through a series of evaporative effects in the form of a substantially continuous film in heat exchange relation with a heating medium to concentrate the wort to a solids content greater than 78% by weight and provide a vaporized component, separating the concentrated wort from the vaporized component after each step of evaporation, cooling the concentrated wort to a temperature below 105° F., and maintaining the flow of wort through said system at a rate sufficient to perform said steps of preheating, evaporating, separating and cooling in a period less than 10 minutes.

3,290,154
EDIBLE BAKED CUP-SHAPED PRODUCT AND METHOD FOR MAKING SAME
Wesley Turner, Albany, Calif., assignor, by mesne assignments, to Wesley Turner and Florence E. Turner
Filed May 13, 1964, Ser. No. 367,032
7 Claims. (Cl. 99—88)

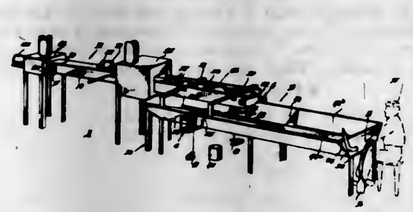
1. The method of producing an edible baked cup-shaped product having a height at least equal to its base diameter in an enclosed mold which consists in depositing a predetermined quantity of leavened dough in the bottom of a female mold cavity having upwardly diverging sides, inserting a cup-shaped male mold axially into said cavity to form therewith a cup-shaped chamber for confining said dough therein and having a chamber bottom at least about 7/16 inch and a contiguous upstanding annular upwardly diverging chamber side wall having a substantially constant thickness at least about 5/16 inch, said male mold being formed with a hollow interior and open top, and including openings for an upward circulation of heated air during baking of the product from around the exterior of said female mold to the open top interior of said male mold for baking the interior wall of said product, selecting said predetermined dough quantity to fill substantially only said chamber bottom, including in said dough a chemical leavening agent to provide raising of said dough during baking to fill said chamber side wall, placing said molds and dough in a baking environment to provide a baking of said dough and an extrusion of said dough in said bottom chamber laterally and upwardly into said side wall chamber and a rising thereof in said chamber side wall, and forming said chamber bottom with a thickness greater than the thickness of said side wall chamber and sufficient in relation to the height and thickness of said chamber side wall so as to provide during baking a relatively prolonged flow of dough from said bottom into said side wall to augment the rising action of the dough therein and to fill all cracks and fissures formed in said chamber side walls.

3,290,155
PROCESS FOR PREPARING DEBITTERED FULL-FAT SOYBEAN MATERIALS
Gus C. Mustakas and Edward L. Griffin, Jr., Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 19, 1963, Ser. No. 303,186
1 Claim. (Cl. 99—98)

A process for preparing debittered, food-grade, essentially undenatured, trypsin inhibitor-free, full-fat soybean material that can be milled to a water-dispersible 100 mesh flour suitable for the preparation of soy milk, comprising heating dehulled full-fat soybean flakes having an initial moisture content of 9 percent to 12 percent in a closed container with sparge steam for 2.5–3.0 minutes to bring the flakes to a temperature not exceeding about 95° C., rapidly mixing the partially heated flakes for 5–10 seconds while admitting steam to provide a flake temperature of 99°–102° C. and a moisture content of 16–21 percent, directly admitting the hot, moist flakes to a steam-jacketed screw-type extruder equipped with air-lock dies and perforated final extrusion die, indirectly heating to 115°–145° C. during a total residence ttime of from 60 seconds to 90 seconds while exerting a screw-provided dynamic pressure on the flakes of about 375–400 p.s.i., the pressure being such as to expel from the soybean flakes only the amount of soybean oil that can be immediately resorbed by the said flakes on their being released from pressure, extruding the oil-covered hot soybean material into the atmosphere whereby the soybean cells are exploded and the surface oil resorbed, and drying the resulting agglomerates to a moisture content of 3–4 percent, whereby said agglomerates are storage-stable and can be milled.

3,290,156
METHOD FOR HANDLING EGGS
Herschel R. Ilsley, Golden, Ill.
Filed Oct. 12, 1961, Ser. No. 147,404
2 Claims. (Cl. 99—113)

1. In an egg-handling process, the steps of chilling freshly-laid eggs and within about 36 hours thereafter and while said eggs are at a temperature of less than about 60° F., cleansing the exteriors thereof, cracking said eggs to remove shells therefrom, flowing said eggs over a stepwise



path to test the yolk integrity, introducing a plurality of eggs into a container, and sealing said container.

3,290,157
CANDY SUCKER CONSTRUCTION
Marina M. Schwartz, 28225 Stansbury, and Arthur Kotler, 20200 St. Mary's, both of Detroit, Mich.
Filed Sept. 4, 1964, Ser. No. 394,421
3 Claims. (Cl. 99—138)



1. In a candy sucker having a cylindrical injection-molded rod and candy mounted at one end thereof, the improvement comprising a spiral groove extending along the peripheral surface of said rod, a collar rotatably mounted at the end of said rod opposite to said candy, a nut mounted on said rod engaging said groove, and flattened surfaces on the periphery of said rod at each intersection of said groove with the parting lines created by said injection-molding.

3,290,158
PROCESS OF PRODUCING FREE FLOWING SODIUM CHLORIDE
Ralph O. Treat, Havre de Grace, Md., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 27, 1963, Ser. No. 268,477
5 Claims. (Cl. 99—143)

1. The process of producing a stable, free flowing, cake resistant sodium chloride composition which consists essentially of mixing a sufficient amount of an aqueous slurry containing 1% to 60% by weight of an insoluble finely divided conditioner selected from the group consisting of siliceous conditioners, magnesium carbonate, tricalcium phosphate, and mixtures thereof with briney sodium chloride crystals to coat said sodium chloride crystals with from 0.1% to 5% of said conditioner, based upon the weight of dry sodium chloride, and subsequently drying the mixture.

3,290,159
DEHYDRATED PRECOOKED BEAN PROCESS
William R. Dorsey, Orinda, and Sumner I. Strachan, El Cerrito, Calif., assignors to Vacu-Dry Company, Emeryville, Calif., a corporation of California
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,319
2 Claims. (Cl. 99—204)

1. In a process for dehydrating dry type beans wherein said beans are rehydrated to a moisture content of approximately 55%, then pre-cooked and dehydrated to a final moisture content within the range of 6–10%, the improvement comprising dehydrating said beans in two air drying stages including a first dehydration at a slow drying rate including exposure for a half-hour to drying air at about 70° F., followed by exposure for a half-hour at 120° F. drying air temperature, and then one hour at 130° F. drying air temperature; and a second stage at a higher dehydration rate by exposure to drying air at 150–160° F.

3,290,160
METHOD OF IN SITU FABRICATION OF A MONOLITH REFRACTORY LINING OR THE LIKE
Thomas William Smoot, Bethel Park, Pa., and Maurice D. Cook, Richmond, Va., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 3, 1963, Ser. No. 306,293
8 Claims. (Cl. 106—38.5)

1. In a method of gunning refractory material on its situs of use to form a refractory monolith, which method include the steps of preparing a refractory batch and tempering it, the improvement consisting essentially of mixing from 0.2 to 5 parts, by weight, of burnable, water absorbent, shredded, cellulose pellicle with each about 100 parts, by weight, of the refractory batch, and gunning the resulting batch.

3,290,161
CLAY BLEACHING
Fred R. Sheldon, Princeton, and William H. Kibbel, Jr., and James E. Kreesbach, Pennington, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 4, 1963, Ser. No. 313,763
5 Claims. (Cl. 106—72)

1. Method of brightening clay in which the clay is slurried in an aqueous medium, an alkali bisulfite is added to the slurry with stirring in the amount of about 0.7 to 5.6 pounds per ton of said clay, an alkali borohydride is added to the resulting slurry in the amount of 0.125 to 1 pound per ton of said clay, the temperature of the reaction system being held at about 40° to 200° F., and the pH being maintained at 2.5 to 5, and the clay is washed free of residual bleaching agents and reaction products.

3,290,162
WATERPROOFING LEATHER
Heinz Röhling and Eva Schlinsberi, Leverkusen, and Gustav Matthe, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Oct. 31, 1962, Ser. No. 234,546
Claims priority, application Germany, Nov. 3, 1961, F 35,279
9 Claims. (Cl. 106—287)

6. An aqueous emulsion of an organic isocyanate suitable for waterproofing tanned leather which comprises a major proportion of a mixture of water, an organic isocyanate containing at least one lipophilic radical contain-

ing at least 10 carbon atoms in a chain and from about 10 to about 100 percent by weight of the amount of said organic isocyanate of an emulsifier containing groups selected from the class consisting of sulphamido and sulphimido groups bonded to an aliphatic radical having 10 to 22 carbon atoms.

3,290,163

FREE FLOWING TREATMENT OF GLASS BEADS

Charles H. Elbreder, Frontenac, Mo., assignor to Chas. Elbreder & Company, Inc., St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,938
18 Claims. (Cl. 106—288)

10. Substantially dry glass beads of an average particle size not greater than approximately 900 microns in diameter normally subject to adsorption of moisture and having improved free-flow characteristics imparted thereto under conditions of moisture, said beads having intermixed therewith between 0.01% and 0.1% by weight, based upon the weight of the glass beads, of a nonhygroscopic, inorganic material having a slurry pH of less than approximately 9.0 and an average particle size of less than approximately 15 microns in diameter, said material being selected from the group consisting of magnesium aluminum silicate, silicon dioxide, barium sulfate, magnesium trisilicate, aluminum silicate, titanium dioxide, calcium silicate, tricalcium phosphate and mixtures thereof.

3,290,164

CLAY COATED WITH HALOALKYL PHOSPHORUS ESTER AND POLYESTER RESINS CONTAINING THE SAME

Thomas H. Ferrigno, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

No Drawing. Filed Feb. 15, 1962, Ser. No. 173,363
11 Claims. (Cl. 106—308)

1. Kaolin clay, the particles of which are uniformly coated with a small amount of a phosphorus ester material selected from the group consisting of a tri-chloroalkyl ester of phosphoric acid in which said alkyl group contains from 2 to 3 carbon atoms and a tri-chloroalkyl ester of phosphorus acid in which said alkyl group contains from 2 to 3 carbon atoms.

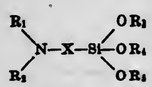
3,290,165

SURFACE MODIFIED PIGMENTS

Joseph Iannicelli, Macon, Ga., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,695
8 Claims. (Cl. 106—308)

1. A finely divided particulate inorganic pigment surface modified with from about 1% to 15%, based on the weight of the dry pigment, of an amino organosilane of the formula



wherein R_1 is selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, and alkylaryl, R_2 is selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl and alkylaryl, R_3 is selected from the group consisting of hydrogen, lower alkyl, aryl, lower alkylaryl, and lower arylalkyl, R_4 is selected from the group consisting of hydrogen, lower alkyl, aryl, lower alkylaryl, and lower arylalkyl, R_5 is selected from the group consisting of hydrogen, lower alkyl, aryl, lower alkylaryl, and lower arylalkyl, X is selected from the group consisting of alkylene, arylene, alkylarylene, arylalkylene, cycloalkylene containing secondary amino nitrogen, and cycloalkylene containing tertiary amino nitrogen.

3,290,166

METHOD FOR THE DECORATIVE COLORING OF POLYOLEFINS

John O. Sharp, George R. Greear, and John W. Tamblyn, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,823
6 Claims. (Cl. 117—37)

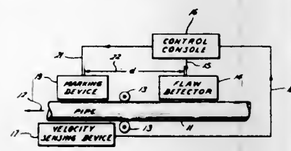
1. A process for permanently marking a polyolefin article comprising applying to the surface of said article a polyolefin wax having a molecular weight within the range of about 1,000 to about 15,000 and containing coloring material, and thereafter heating said wax material until fusion thereof and penetration into said article occurs.

3,290,167

MOTION RESPONSIVE FLAW MARKING APPARATUS AND METHOD

Fenton M. Wood, Sugarland, and Alfred E. Crouch Houston, Tex., assignors, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed July 1, 1963, Ser. No. 291,636
6 Claims. (Cl. 117—37)



1. The method of detecting flaws in an elongate member and placing discernible markings on said member at the position of said flaws comprising the steps of:

effecting relative axial movement of said elongate member with a flaw detecting means positioned adjacent thereto,

producing electrical flaw signals in response to said flaws detected during said movement,

storing said flaw signals in a first electrical pulse storage position in an electrical pulse storage means,

producing electrical transfer signals as an incident of the relative velocity of said relative movement,

applying said transfer signals to said electrical pulse storage means and thereby transferring said stored flaw signals to a second electrical pulse storage position, and

subsequently applying said stored flaw signals to effect markings on said elongate member at a position spaced axially apart from said flaw detecting means which markings indicate the location of defects in said member.

3,290,168

BINDING AID FOR GOLD TRIM ON GLASS

Samuel Sterman, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,644
13 Claims. (Cl. 117—71)

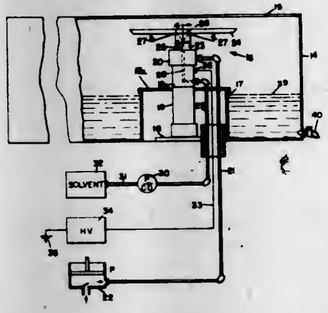
1. In a process for applying gold trim to a glass surface which comprises applying a solution of a gold-organic compound to said glass surface and reducing the gold to a metallic layer on the glass surface, the improvement which comprises having an aminoalkylalkoxysilane present at the surface of the glass at the time the solution of gold-organic compound is applied to said surface.

3,290,169

PROCESS AND APPARATUS FOR ELECTROSTATIC DETEARING

John Sedlacsik, Jr., Garfield, N.J., assignor to Interplanetary Research & Development Corp., Garfield, N.J., a corporation of New Jersey

Filed Sept. 10, 1962, Ser. No. 222,417
18 Claims. (Cl. 117—93.41)



1. The method of detearing paint and the like from freshly coated articles comprising providing an electrode adjacent said articles, establishing an electrostatic field between said articles and said electrode of sufficient intensity to remove excess paint from said articles and deposit said excess paint on said electrode, periodically feeding solvent to the central portion of said electrode, and periodically moving said electrode sufficiently to distribute said solvent over the surface thereof whereby to dissolve and remove coating electrostatically deposited from said articles upon said electrode.

3,290,170

OXIDATION-RESISTANT COATING METHOD AND COATED ARTICLE

John M. Houston, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 20, 1962, Ser. No. 246,168
1 Claim. (Cl. 117—131)



A method of rendering a copper body oxidation-resistant comprising coating said copper body with a thin layer of gallium alloy having approximately the composition in weight percent of 62.5% gallium, 21.5% indium, and 16% tin, and heating said copper body to a temperature for forming a thin solid gallium-indium-tin copper alloy on the surface of said copper body.

3,290,171

METHOD AND MATERIALS FOR METALLIZING CERAMICS

James A. Zollman and Morris Berg, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware

No Drawing. Filed Dec. 5, 1962, Ser. No. 242,367
6 Claims. (Cl. 117—160)

3. A method of meallizing ceramics comprising over 90 weight percent of an oxide selected from the group consisting of aluminum oxide, beryllium oxide, and zirconium oxide, comprising the steps of:

(a) mixing powdered molybdenum and powdered steatite in the proportion 70–95 weight percent powdered molybdenum and 30–5 weight percent powdered steatite;

(b) adding an organic binder and an organic vehicle in amount sufficient to form a fluid mixture;

(c) applying the fluid mixture to the portion of the ceramic which is to be metallized; and,

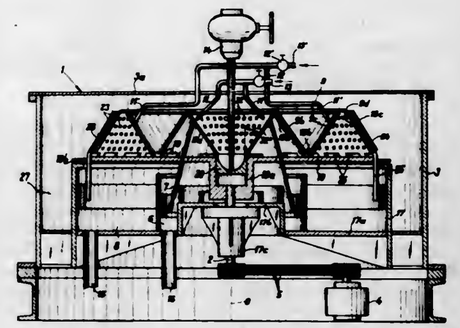
(d) firing the ceramic in a reducing atmosphere for about one hour at a temperature of about 1450° C. to 1700° C.

3,290,172

SUGAR-RECOVERY CENTRIFUGE

Walter Dietzel, Braunschweig, and Heinrich Hillebrand, Supplingen, Germany, assignors to Braunschweigische Maschinenbauanstalt, Braunschweig, Germany, a corporation of Germany

Filed June 16, 1965, Ser. No. 464,532
Claims priority, application Germany, Oct. 2, 1962, B 69,045; Mar. 3, 1964, B 75,697
5 Claims. (Cl. 127—19)



1. A sugar-recovery centrifuge for the separation of solids from a liquid in a fluent mixture, comprising:

a housing;

a centrifuge drum in said housing composed of a plurality of nested and alternately inverted funnels centered on a common vertical axis and including an upwardly diverging innermost funnel and a downwardly diverging outermost funnel, each of said funnels except at most said outermost funnel having a frustoconical wall with generatrices inclined to the said axis at an angle ranging between substantially 30 and 35°, each funnel other than said outermost funnel having a wide end separated from an adjoining narrow end of the next-outer funnel by an annular gap enabling the migration of solids from its own inner wall surface to the inner wall surface of said next-outer funnel, at least said innermost and outermost funnels being provided with peripheral perforations for the outward passage of liquid separated from the migrating solids, the length of said generatrices ranging between substantially 180 and 250 mm.;

fluid supply means opening into at least said innermost funnel for delivering a treatment liquid to the inner wall surface thereof at an intermediate level between the wide and narrow ends of said innermost funnel;

wall means spacedly surrounding said innermost and outermost funnels for intercepting liquid issuing from said perforations;

and drive means for rotating said drum about said axis.

3,290,173

PROCESS FOR REFINING UNWASHED RAW CANE SUGAR

Santino Paul Marino, Tarrytown, N.Y., assignor to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,294
14 Claims. (Cl. 127—63)

1. A process for refining unwashed raw cane sugar, wherein the affination step is eliminated, which comprises:
(1) dissolving unwashed raw cane sugar in water to provide an aqueous solution having a Brix between about 30° and about 65°,
(2) treating the raw cane sugar aqueous solution to substantially remove the organic non-sugar substances,
(3) decolorizing the treated sugar solution, and
(4) demineralizing the decolorized sugar solution by passing said solution through an electrodialyzer cell.

3,290,174

TWO-STAGE PROCESS FOR DERUSTING AND PROTECTING THE SURFACES OF FERROUS MATERIALS

Earl W. Kendall, San Diego, Calif., assignor to Rohr Corporation, a corporation of California

No Drawing. Original application Oct. 9, 1961, Ser. No. 143,524. Divided and this application Dec. 28, 1964, Ser. No. 430,785
1 Claim. (Cl. 134—3)

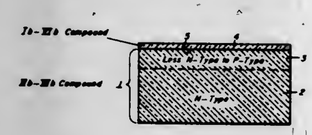
A two-stage process for derusting and leaving a protective citric acid film on ferrous materials consisting of the steps of immersing the materials for from 5 to 25 minutes in a first aqueous solution operated at from 175° to 185° F. and consisting of about 20% by volume of a citric acid-ammonium bifluoride concentrate and the balance water, rinsing in water, and immersing the material for from 0.5 to 1.0 minute in a second aqueous solution operated at ambient temperature and consisting of about 5% by volume of said concentrate and the balance water, said concentrate consisting per milliliter of concentrate of about .0348 gram ammonium bifluoride, about .557 gram of citric acid, and about .632 ml. of water.

3,290,175

SEMICONDUCTOR PHOTOVOLTAIC DEVICES

Dominic A. Cusano, Schenectady, and Richard L. Sormberger, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York

Filed July 6, 1962, Ser. No. 208,081
10 Claims. (Cl. 136—89)



1. A P-N junction structure comprising: first and second contiguous regions of a Group II*b*–VI*b* compound, said first region having N-type conductivity and said second region having a conductivity type in the range from less N-type than said first region to slightly P-type; and a third P-type conductivity region of a I*b*–VI*b* compound contiguous with said second region to establish a smooth P-N junction region between said II*b*–VI*b* compound regions and said I*b*–VI*b* compound region so that the electrical and thermal characteristics of the junction correspond to a P-N heterojunction between said II*b*–VI*b* and I*b*–VI*b* compounds and the optical characteristics of the junction correspond to a true homojunction in the II*b*–VI*b* compound.

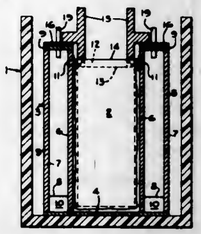
5. A semiconductor photovoltaic device comprising: first and second contiguous regions of a II*b*–VI*b* compound, said first region having N-type conductivity and said second region having a conductivity type in the range from less N-type than said first region to slightly P-type; a third region of a I*b*–VI*b* compound of a P-type conductivity contiguous with said second region; a P-N junction region between said II*b*–VI*b* compound and said I*b*–VI*b* compound; and first and second electrically conductive layers in direct non-rectifying contact with said first N-type conductivity Group II*b*–VI*b* region and said third P-type conductivity I*b*–VI*b* region, respectively.

3,290,176

ELECTRIC STORAGE BATTERY ELECTROLYTE CIRCULATOR DEVICE

Klaus K. Berju and Elmer M. Strohlein, both of Philadelphia, Pa., assignors to The Electric Storage Battery Company, a corporation of New Jersey

Filed May 16, 1966, Ser. No. 550,505
9 Claims. (Cl. 136—160)



1. A metallic electrolyte circulator device for use in an electric storage battery which comprises a U-shaped structure having a flat bottom, two upstanding sides perpendicular to the bottom, both upstanding sides having an interior wall and an exterior wall and being divided into three compartments by two partitions extending from a top cover plate which covers each upstanding side to near the bottom of the upstanding sides, a small space beneath each partition which interconnects the compartments, an aperture located in the interior wall near the top of the middle compartment of both upstanding sides, and gas inlet means projecting through the top cover plate into the outer compartments of both upstanding sides.

3,290,177

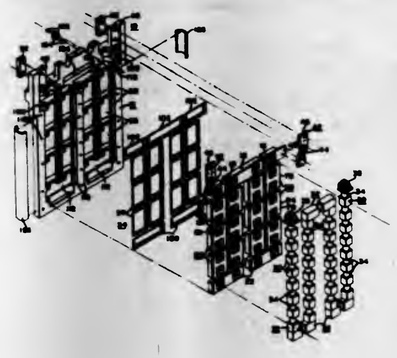
THERMOELECTRIC HEAT EXCHANGE APPARATUS

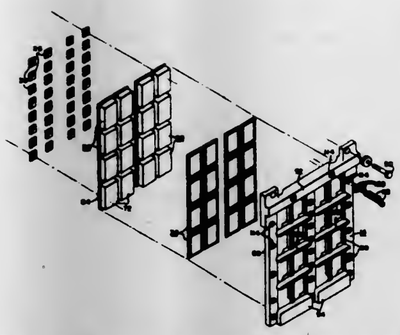
Cecil J. Mole, Monroeville, and Uhle F. Cassidy, Chesswick, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 30, 1963, Ser. No. 334,241
11 Claims. (Cl. 136—204)

1. In a thermoelectric heat exchange apparatus, a pair of spaced block members formed from thermally and electrically conductive material, a layer of thermoelectric material mounted on one of said block members, an electrically conductive heat exchange structure including a base member and a plurality of spaced laterally extending fins, said base being secured to said thermoelectric layer, means including said base an electrically conductive path between said thermoelecric layer and the other

of said block members, a grid structure having at least one opening therein and fixedly positioning said blocks





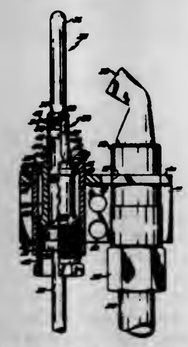
relative to one another, and said spaced fins projecting through said opening in said grid structure.

3,290,178

THERMOCOUPLE SUPPORTING MEANS

Roger S. Loveland, Torrance, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 8, 1964, Ser. No. 418,593
8 Claims. (Cl. 136—242)



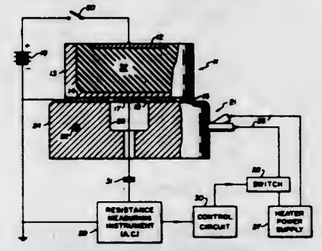
6. A temperature responsive control unit comprising an elongated member having a sensing portion and a supporting portion, said supporting portion having a first abutment near one end thereof and a second abutment near a second end thereof, a removable adaptor surrounding said supporting portion with one end of the adaptor engaging said second abutment and with a second end thereof spaced from said first abutment, spring clip means having a radially deflectable abutment means resiliently engaging said first abutment and disengageable from said first abutment by relative axial movement between said spring clip means and said elongated member, said spring clip means also having abutment means engaging said second end of said adaptor.

3,290,179

METHOD AND APPARATUS FOR DETERMINING DRIFT DEPTH OF IMPURITIES IN SEMICONDUCTORS

Frederick S. Goulding, Lafayette, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 14, 1964, Ser. No. 337,689
5 Claims. (Cl. 148—1.5)



1. In apparatus for determining the optimum time for terminating a lithium drifting process in the manufacture of a semiconductor of the type having a positive region and a negative region, the combination comprising a first electrode disposed on a surface of said positive region, an annular second electrode disposed on the surface of said positive region and encircling said first electrode, said first electrode and said second electrode being separated by a gap, means to apply a reverse negative voltage bias between said negative region and said second electrode, means to heat said semi-conductor whereby upon application of said bias and heat, lithium drifting is effected, a resistance measuring instrument connected from said first electrode to said second electrode, a control circuit connected to the output of said instrument and providing an output signal in response to a predetermined high resistance measurement by said instrument, means operatively coupled to said control circuit to cut off operation of said means to heat in response to said output signal from said control circuit, thereby terminating said drifting and whereby a lithium drifted region is formed within a predetermined zone between said negative region and said surface.

3,290,180

METHOD OF TREATING SILICON AND DEVICES CONTAINING PN JUNCTIONS

Stephen S. Baird, Richardson, and Clyde R. Fuller, Plano, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 178,583, Mar. 9, 1962. This application Apr. 5, 1965, Ser. No. 445,767
6 Claims. (Cl. 148—1.5)

1. The method of preparing a protected silicon PN junction which comprises the steps of degreasing the silicon slice in trichloroethylene, rinsing it in methyl alcohol and water, boiling it for 20 minutes at 100° C. in nitric acid, rinsing it in deionized water for 5 minutes, heating it in concentrated sulfuric acid at 200° C. for 20 minutes and rinsing in deionized running water for 5 minutes, soaking in hydrofluoric acid for 30 minutes and rinsing in water 5 minutes, boiling in deionized water twice for 15 minutes and rinsing in water 5 minutes, boil-

ing in nitric acid 30 minutes and rinsing in deionized running water for 30 minutes, oxidizing about five and one-half hours in steam at atmospheric pressure at 1200° C., drying in helium for one hour and cooling to room temperature.

3,290,181
METHOD OF PRODUCING PURE SEMICONDUCTOR MATERIAL BY CHEMICAL TRANSPORT REACTION USING H_2S/H_2 SYSTEM
Erhard Sirtl, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed July 30, 1964, Ser. No. 386,258
Claims priority, application Germany, Aug. 1, 1963, S 86,488
7 Claims. (Cl. 148—1.6)

1. In the method for producing pure semiconductor material in crystalline form by means of chemical transport reactions in which solid semiconductor material is converted by heating into a gaseous compound thereof and by utilization of a temperature gradient is dissociated to precipitate semiconductor material at a different location, the improvement which comprises using the system H_2S/H_2 as the transporting medium and adjusting the reaction conditions so that the transport takes place via a volatile sulfide, of the semiconductor material.

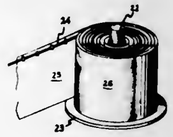
3,290,182
METHOD OF MAKING ALUMINUM BRONZE ARTICLES
George H. Eichelman, Jr., Cheshire, Conn., and Irwin Broverman, San Jose, Calif., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 25, 1965, Ser. No. 458,740
10 Claims. (Cl. 148—11.5)

1. The method of preparing a high strength joined article which comprises: (1) providing aluminum bronze alloy surfaces to be joined in the rolled condition, said alloy containing from 9.0 to 11.8 percent aluminum and the balance essentially copper; (2) applying a brazing flux and filler metal to the surfaces to be joined, said filler metal having a melting point above about 1049° F. but below the melting point of said aluminum bronze alloy said brazing flux having a melting point lower than the filler metal; (3) forming an assembly by placing the surfaces to be joined with interposed brazing flux and filler metal into intimate contacting relationship; (4) heating said assembly to a temperature above the melting point of the filler metal but below the melting point of said aluminum bronze alloy, and (5) rapidly cooling said assembly to a temperature of at least below 1000° F. at a rate greater than 300° F. per minute.

3,290,183
METHOD OF PRODUCING ANTICORROSION HIGH TENSILE STRENGTH RAIL
Tadashi Ohtake, Tobata, Fukuoka; Koichi Aoki, Yawata, Fukuoka, and Isao Kimura, Tobata, Fukuoka, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Claims priority, application Japan, Aug. 29, 1961, 36/31,225
No Drawing. Filed Aug. 21, 1962, Ser. No. 218,429
3 Claims. (Cl. 148—12)

1. A method of manufacturing steel rail which is high in tensile strength and anti-corrosiveness which comprises subjecting a steel containing from 0.05 to 0.25% carbon, from 2.0 to 6.0% chromium, from about 0.10% to less than 1.0% molybdenum, less than 1.0 silicon, and less than 1.5% manganese to a blooming rolling, cooling the rolled steel down to a temperature below the A_1 transformation point of the steel, again heating said steel up to a rolling temperature, at which temperature said steel is rolled in rail, and then gradually cooling said rail from a temperature above 500 to 700° C. down to 150° C., over a period in excess of 7 hours.

3,290,184
ANNEALING METAL IN COILS
William H. Minck, Chautauqua, Miamisburg, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Continuation of application Ser. No. 76,572, Dec. 19, 1960. This application Aug. 13, 1965, Ser. No. 487,953
7 Claims. (Cl. 148—16)



1. In a method of annealing coils of strip in an open coil annealing operation, which comprises coiling a length of metallic strip and simultaneously during the formation of the coil winding a separator between the convolutions thereof, and thereafter passing an annealing atmosphere between the separated convolutions of the coil while the separator is maintained between the said convolutions, the improvement which comprises utilizing a separator comprising a longitudinally flexible metallic wire strand having spacing means juxtaposed thereto throughout the effective length of the strand, the said spacing means being formed from metal and coacting with the said strand to define spaced apart, laterally rigid and non-collapsible spacers which separate adjoining convolutions of the coil by a distance of at least about 0.030 inch greater than the thickness of the said strand, thereby providing sufficient space between said strand and the adjoining convolutions of the coil for the flow of the annealing atmosphere therebetween.

3,290,185
ALLOY STEEL
Ariel Taub, 37 Disraeli St., Haifa, Israel, and Abraham Rosen, Hagalil St., Naveh Shaanan, Haifa, Israel
No Drawing. Filed Mar. 21, 1962, Ser. No. 181,450
1 Claim. (Cl. 148—36)

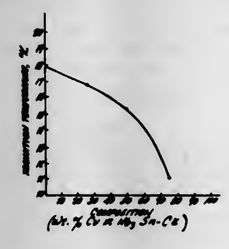
An alloy steel in the substantially full graphitized state containing by weight about 0.6 to 1.0% carbon; 0.2 to 0.5% aluminium, 0.2 to 0.35% silicon and the remainder all iron and impurities, and being substantially free from carbide stabilizers.

3,290,186
SUPERCONDUCTING MATERIALS AND METHOD OF MAKING THEM
Fred D. Rosi, Princeton, and Joseph J. Hanak, Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,560
13 Claims. (Cl. 148—126)

10. A method of making a body of superconducting material comprising a compacted mixture of Nb_3Sn and Cu powders whose transition temperature is within a range of temperatures depending upon the weight percent of Cu and the weight percent of Nb_3Sn in said body, said method comprising

(a) mixing a powder of Nb_3Sn of about 260 mesh with a power of Cu of about 260 mesh to provide a mixture thereof, the proportion of Cu to Nb_3Sn being in the range from 2 weight percent of Cu and 98 weight percent of Nb_3Sn to 75 weight percent of Cu and 25 weight percent of Nb_3Sn,

(b) compacting said mixture of powders with a pressure of about 8,000 p.s.i. to form a substantially solid body, and

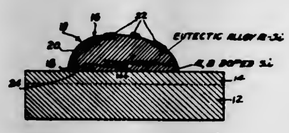


(c) annealing said solid body at about 700° C. for 2 hours in vacuo.

3,290,187
METALLURGY
Dorsey A. Paul, Walnut Creek, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 838,072, Sept. 4, 1959. This application June 1, 1964, Ser. No. 371,818
3 Claims. (Cl. 148—159)

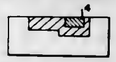
2. In a method of treating an aluminum alloy consisting essentially of not more than 0.30% silicon and 0.40% iron, from 0.40 to 0.8% copper, from 0.10 to 0.30% manganese, from 2.9 to 3.7% magnesium, from 0.10 to 0.25% chromium, from 3.8 to 4.8% zinc, and not more than 0.10% titanium, balance aluminum, wherein said method comprises the steps of solution heat treating and quenching a body of said aluminum alloy, pre-aging said body and finally aging said body by heating to a temperature of from about 235 to 250° F. and maintaining said body at said temperature for a period of from about 35 to 60 hours, the improvement wherein said pre-aging is accomplished by heating said body to a temperature of from about 115 to 125° F. and maintaining said body at said temperature for a period of from about 4 to 8 hours.

3,290,188
EPITAXIAL ALLOY SEMICONDUCTOR DEVICES AND PROCESS FOR MAKING THEM
Bernd Ross, Arcadia, Calif., assignor to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed Jan. 10, 1964, Ser. No. 337,013
19 Claims. (Cl. 148—177)



1. A process of forming a semiconductor device, comprising: forming a prealloy of a semiconductor and a dopant material, disposing a portion of said prealloy on a body of semiconductor material, heating said prealloy portion disposed on said body to a temperature above the eutectic temperature of said prealloy, and cooling said prealloy to deposit an epitaxial layer of the semiconductor material precipitated from said prealloy onto said body of semiconductor material.

3,290,189
METHOD OF SELECTIVE DIFFUSION FROM IMPURITY SOURCE
Masatoshi Migitaka, Kitatama-gun, Tokyo, Hiroshi Kodera, Ota-ku, Tokyo, Hiroshi Ueda, Suginami-ku, Tokyo, and Hirokazu Kimura, Nukitamagawa-cho, Kogamei-shi, Tokyo, Japan, assignors to Hitachi, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan
Filed Aug. 20, 1963, Ser. No. 303,287
Claims priority, application Japan, Aug. 31, 1962, 37/37,138
2 Claims. (Cl. 148—188)



1. The process for making a P-type silicon semi-conductor comprising

(i) coating a surface of the base of a silicon crystal with a solution of ether, metaboric acid and phosphorus pentoxide;

(ii) heating an area of said coated surface to a temperature of about 1000° C. for a sufficient time to convert a portion of the surface of said crystal into an N-type conductivity zone wherein the phosphorus donor element predominates; and

(iii) then heating a portion of said converted surface to a temperature of about 1200° C. for a sufficient time to convert a portion of said N-type conductivity zone into a P-type conductivity zone wherein boron atoms predominate as the impurity, and concomitantly causing said portion of said N-type conductivity zone formally at the surface to diffuse deeper into the original crystal beneath the subsequently formed P-type conductivity zone.

3,290,190
PLASTISOL PROPELLANT PROCESS WITH IMPROVED DISPERSION STABILITY
John N. Godfrey, Alexandria, and Bruno J. Macri, Fairfax County, Va., assignors to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
No Drawing. Filed July 6, 1965, Ser. No. 469,938
15 Claims. (Cl. 149—18)

1. In a process for making a plastisol propellant composition comprising dispersing a finely-divided dispersion- or plastisol-grade organic polymer and a finely-divided, insoluble oxidizer in an organic liquid plasticizer which dissolves the polymer readily only at elevated temperature, the improvement comprising dissolving a portion of the said polymer in said plasticizer to form a gel of fluid to semisolid consistency and then admixing said oxidizer and the remainder of the polymer with said gel at a temperature below the solution temperature of the polymer in the plasticizer.

2. The process of claim 1 in which a finely-divided, insoluble solid fuel is also admixed with said gel.

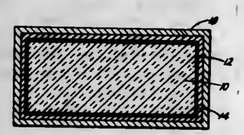
3. The process of claim 2 in which the solid fuel is a metal, metal hydride, Si, B, boron hydride, or C.

15. The process of claim 3 in which the polymer is nitrocellulose.

3,290,191
ETCHING PROCESS
Jesse Davis, 196 S. Kilburn Road, Garden City, N.Y.
Filed July 18, 1963, Ser. No. 295,948
1 Claim. (Cl. 156—3)

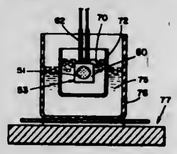
A method comprising nickel plating a ceramic body to eliminate the porosity of said body, applying a layer of gold to the thusly plated body, coating the gold with a layer of acid resist adapted for resisting aqua regia, covering a portion of the layer of acid resist with a layer of abrasive resist and leaving exposed a portion of the layer of acid resist corresponding to a portion of gold therebeneath which is to be removed from the plated ceramic

body, propelling an abrasive at the thusly prepared body to erode the exposed acid resist thereform, and applying aqua regia to the thusly exposed gold to remove the same from said body; the covering of the acid resist with abrasive resist being effected by: etching in a metal tool a pat-



tern which is the negative of the pattern of gold which is to be removed, filling said pattern with said abrasive resist, curing the thusly formed abrasive resist to adapt the same for transfer, and removing the thusly cured abrasive resist, and transferring it onto the layer of acid resist.

3,290,192
METHOD OF ETCHING SEMICONDUCTORS
Dale T. Kelley, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 9, 1965, Ser. No. 470,693
5 Claims. (Cl. 156—17)

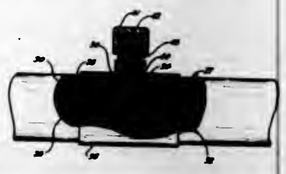


1. A method of etching, including the steps of mounting a silicon work piece having a surface masked with an etch resistant material on holding means, immersing said work piece and holding means in an etchant to expose said masked surface thereto, maintaining said work piece at a temperature different from that of said etchant during at least a part of said immersion, and agitating said etchant during immersion.

3,290,193
METHOD OF POLISHING CRYSTAL GLASS AND LEAD CRYSTAL GLASS ARTICLES
Erich Silzle, Regensburg, Germany
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,048
Claims priority, application Germany, Nov. 10, 1962, S 82,407; Mar. 26, 1963, S 84,367
6 Claims. (Cl. 156—24)

1. A method of polishing glass articles, made in particular of crystal glass, comprising the steps of packing the glass articles into a wide-meshed container, immersing and moving the container filled with the articles to be polished in a vessel containing a polishing bath until a deposit of salt-like reaction products has been formed on the surfaces of the articles to be polished, the polishing bath consisting of a solution of sulphuric acid of a concentration of from 50% to 60% by weight which contains hydrofluoric acid in an amount of from 5 to 10% by weight and is maintained at a temperature in the range between 40° and 60° C. thereafter removing the container with the articles to be polished from the polishing bath as soon as said articles have been coated with a salt deposit on their surfaces, immersing and moving said container in a vessel containing a salt removing bath until the salt deposit has separated from the surfaces of the articles, said salt removing bath consisting of a solution of sulphuric acid of a concentration of at least 66% by weight which is maintained at a temperature of at least 60° C., whereby the salt removing bath is maintained at a temperature in a range about 10 to 20° C. higher than the temperature of the polishing bath, removing the container with the articles to be polished from the salt removing bath as soon as said articles have been freed of the salt deposit, and repeating the alternating treatment in the polishing bath and in the salt removing bath until the desired polish has been obtained, whereupon the finally polished articles contained in the wide-meshed container are washed with water after the final treatment in the salt removing bath and dried.

3,290,194
PROCESS AND APPARATUS FOR INJECTING FLUIDS INTO A SHEATHED CABLE
George W. Gillemot, Venice, Calif., assignor to GFC Engineering and Sales Corporation, Los Angeles, Calif., a corporation of California
Filed June 28, 1965, Ser. No. 467,541
8 Claims. (Cl. 156—48)



1. The method of injecting fluid into the interior of a sheathed cable, said cable having in the interior thereof a bundle of filaments, said bundle of filaments being contained within an exterior sheath which method comprises:

forming an opening in said exterior sheath by removing a portion of said exterior sheath from said cable;

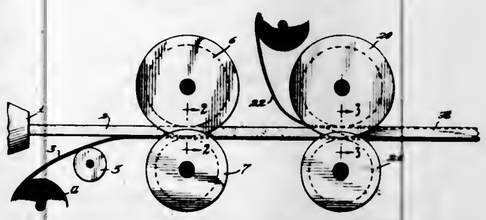
inserting an elongated injection nozzle through said opening and at least part way into the interior of said bundle of filaments, said injection nozzle being affixed to a flexible sheet-shaped flap;

wrapping said flap around said cable in operative association with said opening;

securing said flap to the exterior of said sheath to form a substantially fluid-tight seal around said opening; and

injecting fluid through said nozzle directly into the interior of said cable, said fluid being injected from said nozzle at a point within the interior of said bundle of filaments.

3,290,195
METHOD OF MAKING A V-BELT
Edwin S. Davis, Hopewell Junction, N.Y., assignor to Chemical Rubber Products, Inc., Beacon, N.Y.
Original application Nov. 4, 1963, Ser. No. 321,043. Divided and this application June 11, 1965, Ser. No. 463,181
4 Claims. (Cl. 156—139)



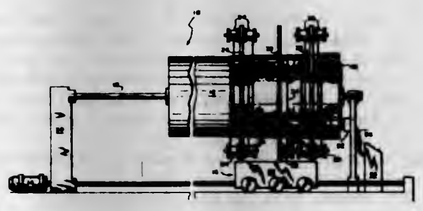
1. A method of making a belt which comprises continuously advancing a rib and ribbon-like base in longitudinal alignment wherein the rib is supported by the base and the base has a width greater than that of the rib, said rib and base being composed of a heat-curable composition, uniting said rib and base as a preliminary assembly, applying a fabric to at least the exposed surface of said rib in a longitudinal direction and subjecting the preliminary assembly to a molding operation under heat and pressure whereby said composition is cured and said assembly formed as an interal unit.

3,290,196
METHOD OF MAKING AN EXTENSIBLE REINFORCED HOSE
Jack E. Duff, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Original application Aug. 28, 1956, Ser. No. 606,606, now Patent No. 3,008,891, dated Mar. 12, 1963. Divided and this application Nov. 19, 1958, Ser. No. 774,922
14 Claims. (Cl. 156—144)



1. The method of forming a hose comprising, coiling a reinforcing element into a cylindrical spiral coil, applying a tube of thermoplastic material of smaller diameter than said coil over said coil to form a corrugated carcass and bonding the corrugations of the wall of said tube to the outer periphery of the turns of said coil over an arc substantially less than 180° of the circumference of said element.

3,290,197
METHOD OF MAKING FILAMENT WOUND PLASTIC CONTAINERS
Robert J. Carmody, 501 Edgemont Drive NW., Huntsville, Ala.
Filed Mar. 27, 1963, Ser. No. 268,502
15 Claims. (Cl. 156—171)



14. The method of fabricating a filament wound container comprising:

(a) winding a first layer of resinous impregnated roving material around a form;

(b) winding an electrical current conductive element over said first layer of roving material;

(c) winding a second layer of resinous impregnated roving material around said form;

(d) placing a layer of honeycomb material around said second layer or roving material;

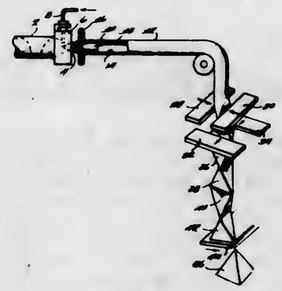
(e) winding a third layer of resinous impregnated roving material around said honeycomb material; and

(f) applying an electrical current to said current conductive element to heat and cure said first and second layers of roving material into a unitary structure,

(1) said third layer of roving material being cured about said honeycomb material by the heat produced by said current conductive element thereby forming a filament wound container; and

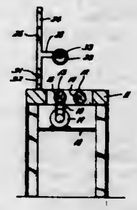
(g) removing said filament wound container from said form.

3,290,198
METHOD OF FORMING A SERIES OF UNFILLED CONTAINERS FROM THERMOPLASTIC TUBING
John H. Lux, Charlestown, Md., and Ernest O. Oheol, Wilmington, Del., assignors, by mesne assignments, to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,386
1 Claim. (Cl. 156—198)



A method of continuously forming a series of unfilled containers from a hollow tubing of a foamed thermoplastic resin having at least one surface thereof nonporous unfoamed tough skin of said thermoplastic resin consisting of continuously moving the tube while simultaneously clamping and sealing the tubing between a first pair of opposed sealing means and between a second pair of opposed sealing means substantially perpendicular to said first pair of sealing means and spaced apart a predetermined distance along the axis of the tube from said first sealing means whereby there is formed a series of tetrahedron-shaped containers.

3,290,199
METHOD OF AND APPARATUS FOR COATING PIPE COUPLINGS
Ernie Dean Willhoite, Houston, Tex., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed May 31, 1963, Ser. No. 284,446
12 Claims. (Cl. 156—215)



1. In a method of providing a pipe coupling with an internal coating comprising the steps of:

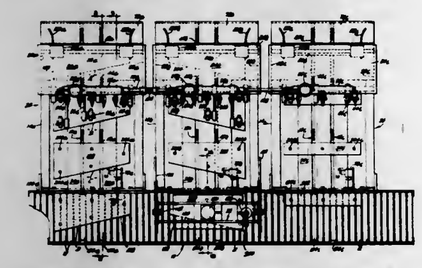
inserting a sleeve of thermoplastic material in said coupling,

applying heat to said sleeve,

positioning a roller inside said sleeve,

pressing said sleeve radially outward into the internal threads of said coupling by applying said roller thereagainst.

3,290,200
UNIVERSAL BRICK PLATING MACHINE
Robert M. Focht, Lansdale, Pa., assignor to E. J. Lavino and Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 9, 1963, Ser. No. 301,105
12 Claims. (Cl. 156—363)

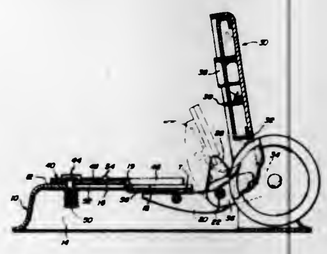


1. Apparatus for applying plates to refractory bricks comprising a frame, a horizontal conveyor on said frame, a plurality of plate stations extending transversely on said frame from said conveyor and having horizontal surfaces along which plates may be advanced through said plate stations to said conveyor, a plate advance mechanism in each of said plate stations for intermittently advancing plates through said plate stations and onto said conveyor, each said plate advance mechanism comprising a pneumatic cylinder secured to said frame, each said pneumatic cylinder being operatively connected to a plurality of plate pusher tabs supported for horizontal movement through said plate stations and adapted to advance plates thereacross on the forward stroke of said pneumatic cylinder and to retract beneath the plane of the plates on the return stroke of the cylinder, means in said plate stations for applying a mastic adhesive in special local deposits to the plates including a plurality of adhesive applying guns mounted in spaced disposition adjacent said plate advance mechanisms, means for actuating said adhesive applying guns upon positioning of plates therebeneath by said plate advance mechanisms, means on said conveyor for aligning bricks on the plates upon assembly thereof, and press means on said conveyor for biasing the plates against the bricks thereby distributing the mastic adhesive in a substanially uniform manner between the brick and plate surfaces.

3,290,201
MOTION PICTURE FILM SPLICING DEVICE
Leif G. Jorgensen, 517 W. St. Charles Road, Lombard, Ill.
Filed Dec. 18, 1963, Ser. No. 331,575
14 Claims. (Cl. 156—505)

1. A device for splicing adjacent ends of a pair of motion picture film strips, having at one side thereof a line of longitudinally spaced sprocket holes, by wrapping them with a band of transparent, adhesive tape from roll stock, having longitudinally spaced, transversely extending rows each including a plurality of elongated slots extending lengthwise of the tape and spaced from each other transversely of the tape a distance equal to the spacing of the film sprocket holes, comprising:

(a) a base including:
  (i) a stationary member having a deck with a slot therein; and
  (ii) a movable member pivotally connected to said stationary member and having means for rotatably supporting a roll of transparent, adhesive tape thereon adjacent said deck;
(b) said deck including:
  (i) a fixed section lying in a horizontal plane adjacent one side of said slot; and
  (ii) a pivotal section hinged adjacent one side for movement between a closed position, wherein it is in a horizontal position substantially coplanar with said fixed section and another side is disposed adjacent the opposite side of said slot, and an open position, wherein it is inclined upwardly adjacent said fixed section to provide an opening of substantially greater dimension than the slot between said deck sections and thereby afford access to said tape;
(c) a film holding carriage movably mounted on the fixed section of said deck for transporting said film strips between one position located on the side of the deck slot remote from said roll of tape, and another position located on the side of the deck slot adjacent said roll of tape;
(d) means for positioning said film strip ends on said carriage in end-to-end, abutting relation with the side of the film having the sprocket holes being nearest to the roll of tape;

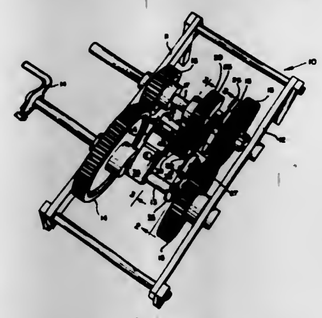


(e) means for feeding a free end of the tape from said roll up through said deck opening when said pivotal section is in open position across said film strip ends, when the film strips are in said one position, with portions of the tape slots of one row overlying related film sprocket holes in said film strip ends;
(f) means for moving said film strips across said deck slot when said pivotal section is in closed position, so that as the film strips move from said one position to said other position the tape will be wrapped around said film strip ends with the remaining portions of the tape slots of said one row underlying the related film sprocket holes; and
(g) cutting means mounted in said base movable member for trimming the excess tape from the side of the film remote from the line of sprocket holes.

3,290,202
APPARATUS FOR PRODUCING A PROLONGED RELATIVELY STRAIGHT-LINE RADIAL ENGAGEMENT WITH ROTARY MOTION
Robert H. Pratt, Milwaukee, Wis., assignor to Pratt Manufacturing Corp., Milwaukee, Wis., a corporation of Wisconsin
Filed July 23, 1963, Ser. No. 297,103
14 Claims. (Cl. 156—583)

1. Apparatus for producing a prolonged straight-line radial engagement comprising a frame, a first rotatable member rotatably mounted in said frame and having a die element thereon, a second rotatable member rotatably mounted in said frame and having a cooperating die element thereon, said rotatable members being so positioned relative to each other in said frames that the die element of one rotatable member rotates into a center position of straight-line radial engagement with the die element of the other rotatable member during rotation of said members, common driving means for said rotatable members, means

including a lost motion member for supporting the die element of one rotatable members so as to provide for relative rotatable movement between it and its rotatable member whereby there is prolonged straight-line radial



engagement between said die elements, and means on the other rotatable member engageable with said lost motion member for causing said relative movement at a predetermined time in the cycle of operation.

3,290,203
TRANSPARENT AND REFLECTING ARTICLES
David L. Antonson, Woodbury Township, Washington County, and Gerald A. Berger, Maplewood, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,833
10 Claims. (Cl. 161—4)

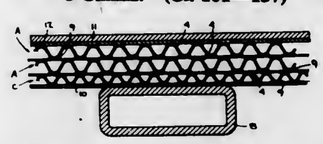
1. A heat-reflective, rigid, transparent laminated windowpane comprising a glass panel forming the outermost surface of the windowpane, a flexible sheet material forming the innermost surface of the windowpane, and a water-activatable adhesive uniformly joining the panel and sheet material throughout their coextensive areas, said sheet material comprising a thin flexible transparent polymeric film having on the side adjacent the glass panel a transparent reflective aluminum deposit which is contacted and protectively covered by a thin, transparent water-insoluble moisture-transmitting coating, whereby at least about half of the sun's rays in the infrared and ultraviolet regions are reflected by the metal deposit and the ability to see through the windowpane from the side looking toward the area of greatest light intensity is only slightly impaired.

3,290,204
LAMINATED PANELS AND THEIR METHOD OF PRODUCTION
Stephen Anthony D'Alessio, 209—02 43rd Ave., and Philip A. D'Alessio, 4019 207th St., both of Bayside, Queens, N.Y.
Filed Apr. 23, 1963, Ser. No. 275,029
10 Claims. (Cl. 161—43)



1. An article of manufacture comprising a central core panel formed with at least one convex, smoothly rounded edge and having an upper substantially flat surface and a lower substantially flat surface, the said rounded edge being tangential to the said upper and lower surfaces, and a continuous sheet of decorative lamination bonded to the lower surface, to the rounded edge and to the upper surface of the said core panel.

3,290,205
METHOD OF MAKING CORRUGATED FIBRE BOARD AND PRODUCTS OBTAINED THEREBY
Abraham Goldstein, Plainview, and Murray Wolf, Key Gardens, N.Y., assignors to Tri-Wall Containers, Inc., New York, N.Y., a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,508
5 Claims. (Cl. 161—137)



4. Triple wall corrugated paper board which is flat and adapted for scoring and bending to form a shipping container comprising four paper liners, the outermost liners weighing about 90 pounds per 1000 square feet and being from about .023 to about .030 of an inch thick, two intermediate liners weighing about 42 pounds per 1000 square feet and being from about .013 to about .016 of an inch thick, three corrugated paper mediums, the mediums being interposed between the liners in each instance with the corrugations of the medium being parallel to each other throughout said board, two of said mediums being made with deep corrugations of the A-type having a flute depth of about 3/16 of an inch with about 36 flutes per lineal foot, and a third of said mediums on the outside of the central one being made with less deep corrugations of the C-type having a flute depth of about 5/32 of an inch with about 42 flutes per lineal foot, the weight and caliper of the mediums being in a range from 30 pounds to about 52 pounds per 1000 square feet and from about .011 to about .018 of an inch, respectively, first and second adhesives applied to the ridges of the mediums' corrugations for intimately and rigidly bonding the mediums and liners together, said first adhesive bonding each of the corrugated mediums at one side thereof to a different one of the liners, to form a single face corrugated paper board sheet, said first adhesive having a first predetermined setting temperature and being one of a sodium silicate mix added with about 12% clay and a starch mixture containing 40 pounds in a 666 gallon batch and giving a caustic content of about 3.3%, said second adhesive being applied to the ridges at the opposite side of the medium of each of said single face sheets and having a second setting temperature which is lower than said first setting temperature of said first adhesive, said second adhesive being of a sodium silicate formula containing about 70% sodium silicate, 6% starch, 18% clay, and 6% borax on a dry weight basis and a starch formula modified to contain about 20% of a polyvinyl acetate emulsion, the lower setting temperature of said second adhesive enabling said second adhesive to be set by said additional heating at a temperature which safeguards said first adhesive from overheating.

3,290,206
CURL RESISTANT LAMINATE
Bruce E. Johnson, White Bear Lake, and James V. Erwin, North St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,790
7 Claims. (Cl. 161—164)

1. A decorative sheet assembly wherein a decorated pressure-sensitive adhesive sheet is removably adhered to a liner having substantially higher total hygroexpansion than said sheet, which assembly remains substantially flat at widely varying humidities and temperatures, comprising in combination: a decorated sheet having low total hygroexpansion coated over one surface with a firmly adhered pressure-sensitive adhesive, a readily strippable

paper based liner having a low energy release surface in contact with and protectively covering the entire surface of said adhesive, the adhesion of pressure-sensitive adhesive tape to the low adhesion surface of said liner being in the range of 3–10 grams per inch of width when measured as defined herein, the exposed surface of said liner being provided with a substantially continuous moisture vapor retardant polymeric skin so that said liner has a



moisture vapor transmission rate as defined herein of not more than about 100 grams per square meter per 24 hours, the moisture vapor transmission rate of said liner in the absence of said skin being on the order of 350 grams per square meter per 24 hours, the surface portion of said pressure-sensitive adhesive which is in contact with said liner having a constant stress modulus as defined herein in the range of 0.1 to 0.3 megadyne per square centimeter.

3,290,207
FIBRILLATED FIBER
Eugene Edward Magat and David Tanner, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 22, 1962, Ser. No. 220,119
1 Claim. (Cl. 161—178)



A graft copolymer, flash-spun plexifilament comprising (a) a substrate of a yarn-like strand of a three-dimensional fibrous integral plexus of linear polyethylene and graft copolymerized thereto, (b) from about 10% to about 120% by weight, based on polyethylene, of acrylic acid.

3,290,208
ADHESIVE COMPOSITION FOR METAL TO METAL STRUCTURAL APPLICATIONS COMPRISING A POLYURETHANE RESIN AND A MONOMERIC GLYCIDYL ESTER
Armand Francis Lewis, Fairfield, and Wallace Burton Ramsey, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,911
10 Claims. (Cl. 161—190)

1. An adhesive composition comprising a uniform mixture of

(A) a polyurethane resin,

(B) about 60% to about 130%, of the stoichiometric equivalent weight of (A), of a diamine curing agent, and

(C) a monomeric compound selected from the group consisting of glycidyl methacrylate and glycidyl acrylate, the ratio of (C) to (A) ranging from about 1:2 to 1:11, respectively.

3,290,209
APPARATUS FOR COMPACTING A PAPER WEB
Carl Bertil Andreas Ihrman, Saffle, Sweden, assignor to Billeruds Aktiebolag, Saffle, Sweden, a company of Sweden
Filed July 16, 1964, Ser. No. 383,170
1 Claim. (Cl. 162—361)



In a device for compacting a web of paper wherein the device includes a pressure nip in which the web of paper is supported by an elastic surface layer which presses the web against the surface of a hard roll while the web is sliding relative to the surface of the hard roll, the improvement comprising:

equidistant grooves circumferentially around the surface of said hard roll for reducing friction between the hard roll surface and the web of paper which is sliding on said surface, said grooves being formed in the running direction of the web of paper and being of such configuration that equidistant ridges are formed on the hard roll surface between each of the grooves, said grooves at a spacing of about 75 grooves per inch of the axial length of the surface of the hard roll,

said elastic layer having a Shore durometer hardness of at least 50°, which layer cooperates with said ridges to prevent the paper web from being pressed down into the grooves.

3,290,210
METHOD OF MAKING A DRY WATER DISPERSIBLE BORDEAUX COMPOSITION
Lester F. Engle and Howard E. Day, Calumet, Mich., assignors to Calumet & Hecla, Inc., a corporation of Michigan
No Drawing. Filed June 21, 1965, Ser. No. 465,708
4 Claims. (Cl. 167—16)

1. The method of making a dry particulate Bordeaux composition capable of being dispersed in water to form a stable fungicidal dispersion, comprising: forming a dispersion of said Bordeaux composition in water containing about 1–20% by weight of the total solids in said dispersion of a water soluble dispersing-stabilizing agent; and spray drying said dispersion in a heated gaseous fluid to a fluent powder dry to the touch.

3,290,211
METHOD FOR REPELLING INSECTS WITH DIMETHYLACRYLAMIDES AND DERIVATIVES
Paul D. Schickedantz, Parma, Ohio, assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 29, 1963, Ser. No. 269,166
16 Claims. (Cl. 167—22)

4. A method for protecting a locus from insects, which method comprises applying to said locus an insect-repelling amount of N-alkyl-β,β-dimethylacrylamide wherein the N-alkyl moiety contains from 4 to 20 carbons inclusive.

3,290,212
ANTITUSSIVE COMPOSITION
Emilio Testa, Ticino, Switzerland, and Giulio Maffii, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy
No Drawing. Filed Oct. 23, 1961, Ser. No. 147,034
6 Claims. (Cl. 167—55)

1. An antitussive pharmaceutical composition whose active ingredient consists essentially of an effective proportion of a compound of the class consisting of 4-[2-(N-methylpyrrolidino)] - methoxy - N-(3,4,5-trimethoxyben-

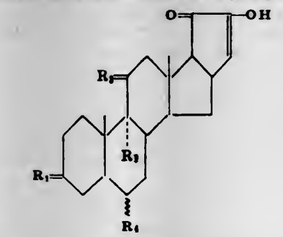
zoyl)-benzylamine and its non-toxic mineral acid addition salts, together with a pharmaceutically acceptable carrier.

3,290,213
ANTIBACTERIAL NITROFURFURYLIDENE DERIVATIVES AND METHODS OF USING SAME
Maurice Claude Ernest Carron, Levallois-Perret, France, assignor to Societe Anonyme des Laboratoires Robert et Carriere, Paris, France, a company of France
No Drawing. Filed July 9, 1962, Ser. No. 208,575
Claims priority, application France, July 12, 1961, 867,239
6 Claims. (Cl. 167—55)

3. A method of treating a subject having an infection caused by a microorganism selected from the group consisting of *E. coli, B. typhosum, B. dysenteriae,* and *Staphylococcus aureous,* which comprises administering to the infected subject an amount of 5-nitrofurfurylidene hydrazide of 4-hydroxybenzoic acid sufficient to control the infection, but in an amount insufficient to cause toxic symptoms in said infected subject.

3,290,214
DIURETIC COMPOSITIONS CONTAINING 3'-OXO-4' - HYDROXY - 4' - CYCLOPENTENO-(1',2'-16,17)-ANDROSTENE COMPOUNDS
Fritz V. Werder and Klaus Irmscher, Darmstadt, Klaus Brückner, Darmstadt-Eberstadt, Fritz Reiff and Herbert Nowak, Darmstadt, and Bruno Hampel, Nieder-Ramstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany
No Drawing. Filed Mar. 19, 1964, Ser. No. 353,255
Claims priority, application Germany, Apr. 1, 1963, M 56,328
22 Claims. (Cl. 167—65)

3. A compound selected from the group consisting of



wherein

R_1 is selected from the group consisting of H, OH and =O;

R_2 is selected from the group consisting of H and F;

R_3 is selected from the group consisting of H, H; OH and =O;

R_4 is selected from the group consisting of H, F, Cl and CH_3;

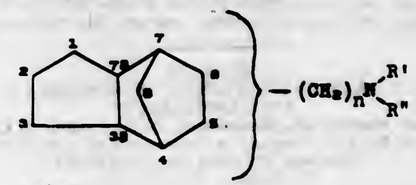
and the Δ^5, Δ^1, Δ^4, Δ^6, $\Delta^{1,4}$, $\Delta^{1,6}$, and $\Delta^{1,4,6}$ derivatives thereof, and 19-nor-analogs thereof.

17. A pharmaceutical composition in dosage unit form comprising a pharmaceutical carrier and 0.5 to 100 mg. of a steroid as defined in claim 3.

3,290,215
USE OF METHANOINDANAMINES AS ANTIVIRAL AGENTS
George Levitt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 7, 1964, Ser. No. 402,326
10 Claims. (Cl. 167—65)

1. A method of controlling virus infection in a warm-blooded animal comprising administering to said warm-blooded animal from 1 to 200 milligrams per kilogram per day of body weight of a compound selected from the group consisting of

(a) compounds of the formula



where

R′ is selected from the group consisting of hydrogen; alkyl of 1 through 4 carbon atoms; alkenyl of 3 through 4 carbon atoms, having unsaturated bonding in other than the 1-position of said alkenyl; and alkynyl of 3 through 4 carbon atoms, having unsaturated bonding in other than the 1-position of said alkynyl group;

R′ is selected from the group consisting of hyformyl; and

n is an integer from 0 to 1; and

(b) non-toxic salts of the compounds of (a).

3,290,216
PURIFICATION AND DE-PYROGENATION OF CHORIONIC GONADOTROPIN
Nazzareno Toccacelli and Enzo Salvioni, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Filed Nov. 23, 1960, Ser. No. 71,139
Claims priority, application Italy, Aug. 8, 1960, 14,073/60
2 Claims. (Cl. 167—74)

1. The method for the purification and depyrogenation of chorionic gonadotropin hormone which comprises percolating a sodium acetate solution of chorionic gonadotropin buffered to a pH to 6.0 through a suspension of a member selected from the group consisting of DEAE cellulose and ECTEOLA cellulose, wherein the weight ratio of said member to chorionic gonadotropin to be treated is in the range of from 3:1 to 15:1, in an aqueous solution of sodium acetate controlled and maintained at a pH of about 6.0, at a temperature in the range of from 0 to 4° C. for a period of time sufficient to remove pyrogens, separating a percolate therefrom and treating with a member of the group consisting of acetone and ethyl alcohol to precipitate a purified, depyrogenated chorionic gonadotropin.

3,290,217
METHOD OF TREATING PROTEIC ANABOLISM
Genevieve Azadian, Paris, France, assignor to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,755
Claims priority, application France, Mar. 5, 1963, 926,872
2 Claims. (Cl. 167—74)

1. A method of treating proteic anabolism in warm blooded animals which comprises administering daily an effective amount of 17α-methyl-$\Delta^{3,5}$-androstadiene-17β-ol.

3,290,218
STABLE PHARMACEUTICAL AND COSMETIC DISPERSIONS
Elkan Joachim de Jong, Rotterdam, Netherlands
No Drawing. Filed May 9, 1963, Ser. No. 279,312
Claims priority, application Netherlands, July 30, 1959, 241,825
6 Claims. (Cl. 167—82)

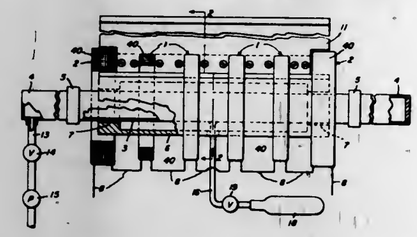
1. A dispersion of a pharmaceutically or cosmetically active solid material in a carrier liquid therefor, said solid material being finely divided and substantially insoluble in said liquid, said dispersion containing less than, 40% by weight of a suspending agent consisting of a dispersed solid phase of ethyl cellulose being insoluble

in said liquid and having an ethoxy content of at least 43 percent, at least a major portion of said ethyl cellulose having a particle size between one and five microns.

3,290,219
PLASMA CONTAINMENT METHOD AND APPARATUS

Henry Hurwitz, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 19, 1963, Ser. No. 310,096
16 Claims. (Cl. 176—3)

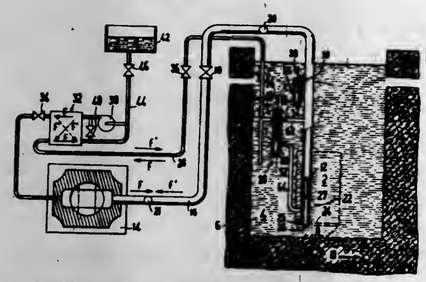


1. A plasma containment apparatus comprising a plasma discharge tube for supporting an axial plasma discharge therein, first magnetic means for producing a first magnetic field about said plasma discharge in compressive relation to said discharge, and second magnetic means for producing a second magnetic field about said plasma discharge also in compressive relation to said discharge, said second magnetic field being of short duration and having a rapid rise and fall time in comparison to said first magnetic field, wherein the means for producing said second magnetic field produces said field in opposition to said first field to substantially cancel said first field for the short duration of said second field whereby the net compressing field rises rapidly at the conclusion of said second field.

3,290,220
FACILITY FOR THE HYDRAULIC TRANSFER OF IRRADIATION CONTAINERS

Gerard Mitault, Grenoble, and Jean Puychevrier, Wissous, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed June 8, 1964, Ser. No. 373,474
Claims priority, application France, June 20, 1963, 938,833
4 Claims. (Cl. 176—15)

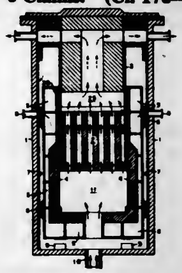


1. Facility for the hydraulic transfer of irradiation containers between an irradiation station located within a body of water and a charge and discharge station located externally of said body of water, comprising a transit tube for transferring irradiation containers and connecting said charge station to a first extremity of said irradiation station, a circulating tube permanently connected to said charge station, a distributor providing communication between said first extremity of said irradiation station and said body of water and for isolating said first extremity from said body of water and for connecting said circulating tube to either extremity of said irradiation station, a circulating pump for causing water to circulate in either direction within said circulating tube and a compensating reservoir-tank supplying said tubes with a quantity of purified water which corresponds to said quantity delivered from said body of water through said distributor into said transit tube.

3,290,221
BOILING WATER NUCLEAR REACTOR WITH BUOYANT FUEL OR REFLECTOR CONTROL ASSEMBLY

George E. Gorker, Cincinnati, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 15, 1965, Ser. No. 487,643
6 Claims. (Cl. 176—28)

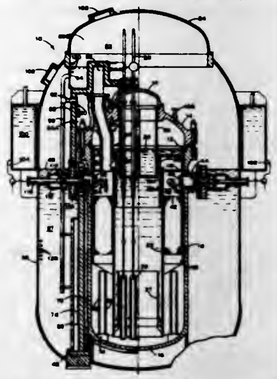


1. In a boiling water neutronic reactor comprising a containment vessel, fuel and reflector assemblies disposed within said containment vessel, and water entering said containment vessel and passing through said fuel assembly where it is transformed into steam; the improved control system wherein at least part of one of said assemblies is buoyant in water so as to effect a change in its vertical position with changes in the water level in said containment vessel, said change in vertical position of said assembly causing a change in the reactivity of said reactor, and means for varying the flow rate of water entering said containment vessel in proportion to changes in steam load demand on the reactor.

3,290,222
COMPACT NUCLEAR STEAM GENERATOR

Earl E. Schoessow, James R. Aldrich, David C. Purdy, and George A. Sawyer, Lynchburg, Va., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 15, 1963, Ser. No. 324,087
11 Claims. (Cl. 176—37)

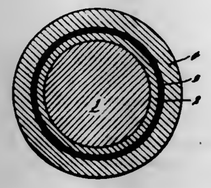


1. A compact nuclear reactor plant comprising:
(A) a vertically elongated pressure vessel,
(B) a body of primary coolant contained within said pressure vessel and forming a liquid level therein,
(C) an open-ended vertically disposed cylinder spaced inwardly from said vessel and having its upper end located below said liquid level,
(D) a plurality of fuel elements arranged in a regular lattice and positioned within the lower end of said cylinder,
(E) a vertically disposed shroud positioned within said vessel and spaced from and encircling said cylinder, said shroud situated below said liquid level and combining with said cylinder to form an annular flow space,
(F) a wall section extending between and attached to upper ends of said cylinder and shroud and forming a closure for the upper end of said flow space sealing it against the admission of primary coolant from within said cylinder,
(G) a bank of vertically extending vapor generating tubes disposed in said flow space and located above said core,
(H) means located below said liquid level for supplying feed fluid to and for removing vaporized fluid from said bank of tubes,
(I) partitions in combination with said wall forming a chamber located above said flow space in communication with the body of primary coolant within said cylinder,
(J) baffle means connected to said partitions and combining with the upper end of said cylinder to form a passageway for flowing primary coolant into said chamber from the upper end of said cylinder,
(K) a primary coolant pump located exteriorly of and mounted on the upper end of said pressure vessel,
(L) a vertically extending first conduit means communicating between said chamber and the inlet to said pump for flowing primary coolant to said pumps, and
(M) vertically extending second conduit means communicating between the outlet from said pumps and the upper end of said flow space for delivering primary coolant into said flow space.

3,290,223
COATED NUCLEAR REACTOR FUEL PARTICLE OF UO_2 AND METHOD OF MAKING THE SAME

John M. Blocher, Jr., Melvin F. Browning, and Russell W. Dayton, Columbus, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 12, 1963, Ser. No. 323,183
5 Claims. (Cl. 176—67)

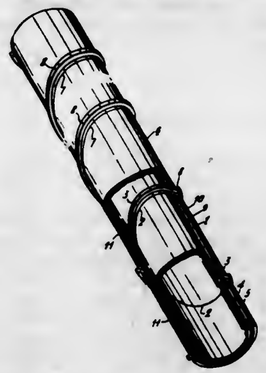


1. A fission-product-restraining nuclear reactor fuel particle consisting of a core of UO_2, a layer of BeO on the core, a layer of laminar pyrolytic carbon on the layer of BeO, and a layer of Al_2O_3 on the layer of pyrolytic carbon.

3,290,224
NUCLEAR REACTOR FUEL ELEMENTS

James Martin Robertson, Thurso, Caithness, Scotland, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 1, 1965, Ser. No. 436,015
Claims priority, application Great Britain, Mar. 20, 1964, 11,970/64
6 Claims. (Cl. 176—81)



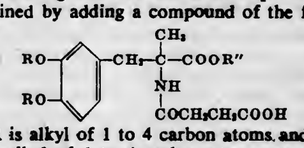
1. A nuclear reactor fuel element comprising a helically wound strip of protectively clad nuclear fuel material, said protective cladding extending beyond the lateral edges of the nuclear fuel material, adjacent edges of the wound strip being joined together so as to form a tube.

3,290,225
PROCESS FOR THE RESOLUTION OF D,L-α-METHYL-β-(3,4-DIHYDROXYPHENYL)-ALANINE INTO ITS OPTICAL ANTIPODES

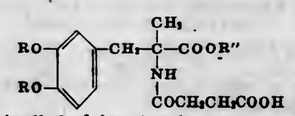
Erich Rauenbusch and Werner Frommer, Wuppertal-Elberfeld, Germany, assignors, by mesne assignments to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,276
Claims priority, application Germany, Apr. 26, 1963, F 39,591
3 Claims. (Cl. 195—29)

1. A process for the resolution of D,L-α-methyl-β-(3,4-dihydroxyphenyl)-alanine into its optical antipodes which comprises causing bacteria and extracts produced therefrom obtained by adding a compound of the formula



wherein R is alkyl of 1 to 4 carbon atoms and R″ is hydrogen or alkyl of 1 to 4 carbon atoms, as sole carbon source to aqueous culture solutions which, in addition to a nitrogen source, contain necessary salts, suspending therein soil samples containing micro-organisms, and enriching the bacteria which develop therein by repeated passages in the same culture solution, and isolating them to act in an aqueous medium upon a derivative of the formula



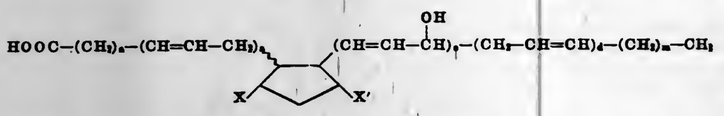
wherein R is alkyl of 1 to 4 carbon atoms, and R″ is hydrogen or alkyl of 1 to 4 carbon atoms, separating free L- and D-amine thus formed from remaining D- and L-acylamine, respectively, and splitting off any R″ groups present.

3,290,226
MICROBIOLOGICAL CONVERSION OF UNSATURATED FATTY ACIDS

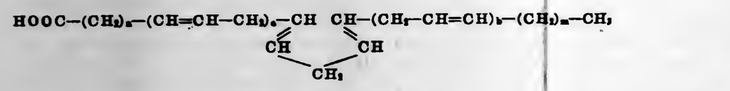
Philip F. Beal III, Kalamazoo, Gunther S. Fonken, Charleston Township, Kalamazoo County, and John E. Pike, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 19, 1964, Ser. No. 345,870
15 Claims. (Cl. 195—30)

1. A process for the preparation of a compound having the formula:



wherein X and X' are selected from the class consisting of keto and α-hydroxy, n is an integer from 1 to 8, inclusive, a and d are integers from 0 to 2, inclusive, c is an integer from 0 to 1, inclusive, and m is an integer from 1 to 12 inclusive, provided that the sum of $3a+n$ is from 1 to 8, inclusive, and the sum of $3c+3d+m$ is from 1 to 12, inclusive, which comprises subjecting an unsaturated fatty acid having the formula:



wherein n, m and a are as hereinbefore defined, and b is an integer from 0 to 2, inclusive, provided that the sum of $3b+m$ is from 1 to 12, inclusive, to the oxygenating activity of a species of Subphylum 2 of Phylum III, and isolating said compound.

3,290,227
PROCESS FOR PRODUCTION OF CITRIC ACID

Mario Alexander Batti, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed June 11, 1964, Ser. No. 374,254
7 Claims. (Cl. 195—36)

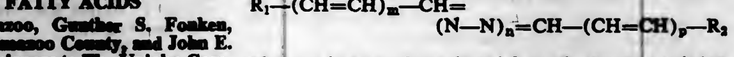
1. A process for producing citric acid which comprises contacting a citric acid-producing fermentation medium in which citric acid has begun to form resulting in a pH of less than about 2.0 and to which aeration has been interrupted for at least about two minutes subsequent to the beginning of citric acid formation with an alkaline material to increase the pH of said medium to a value of at least about 2.0, thereby promoting the citric acid-producing activity of said medium.

3,290,228
TEST COMPOSITION AND DEVICE FOR DETECTING GLUCOSE

Neil Butters Clissold Gretton, Welwyn Garden City, England, and James T. Rees, Porthcawl, Glamorgan, Wales, assignors to Miles Laboratories Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed July 29, 1964, Ser. No. 386,064
7 Claims. (Cl. 195—127)

1. A composition for detecting glucose in body fluids which comprises glucose oxidase; a substance having peroxidative activity; a compound of the formula

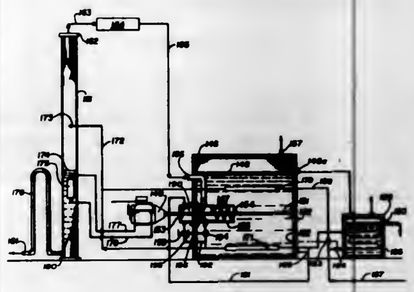


where m is a member selected from the group consisting of zero and one, n is a member selected from the group consisting of zero and one, p is a member selected from the group consisting of zero and one, and each of R_1 and R_2 is a member selected from the group consisting of —OH substituted phenyl groups and —OCH_3 and —OH substituted phenyl groups; and an aldehyde compound selected from the group consisting of syringicaldehyde, benzaldehyde, 3,4,5-trimethoxy benzaldehyde, 4-ethoxy-3-methoxy benzaldehyde, 3-methoxy benzaldehyde, 5-hydroxy pentanal, 3-methoxy butyraldehyde, 3-hydroxy benzaldehyde and 3-methoxy-4-hydroxy benzaldehyde.

3,290,229
APPARATUS FOR DIRECT CONTACT CONDENSATION OF VAPORS

Kenard D. Brown, 1227 S. Willow St., Casper, Wyo.

Original application Jan. 25, 1962, Ser. No. 168,675, now Patent No. 3,204,861, dated Sept. 7, 1965. Divided and this application Dec. 14, 1964, Ser. No. 418,112
11 Claims. (Cl. 202—177)

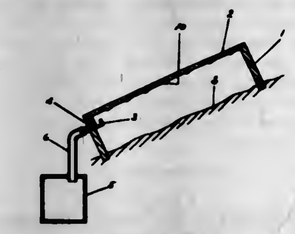


1. A liquid evaporation system comprising means providing an evaporating chamber, a tank for containing a body of liquid substantially free of impurities means including a combined liquid and vapor pump arranged in said tank and having a liquid inlet and a vapor inlet for circulating liquid in said tank and for withdrawing and condensing vapor from said chamber, means for driving said pump, flow control means for adjusting the flow of liquid through said pump, means for removing liquid from said tank, means for supplying liquid for evaporation to said chamber, means utilizing heat resulting from the operation of said pump for heating the liquid in said chamber, and means for removing concentrate from said chamber.

3,290,230
SOLAR STILL APPARATUS FOR EXTRACTING AND COLLECTING WATER FROM SOIL

Gunji Kobayashi, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan

Filed Aug. 1, 1962, Ser. No. 214,119
Claims priority, application Japan, Aug. 9, 1961, 36/28,694
11 Claims. (Cl. 202—234)



1. An apparatus for extracting and collecting water from soil, comprising a frame, a top member placed airtightly on the frame, said top member being of a material which is impervious to air and at least a part of said top member being of a material pervious to solar radiation, said frame and said top member jointly constituting a receptacle having an open orifice surrounded by said frame, said frame including means for airtightly engaging a soil surface in a position in which said surface closes said orifice, a cooling means spaced from the orifice and having a surface in said receptacle for condensing water vapor thereon, collecting means within said receptacle for collecting the condensed water vapor from said surface, a water sump installed outside said receptacle and conduit means connecting the collecting means with said water sump.

3,290,231
METHOD OF INCREASING THE EVAPORATION OF WATER IN THE RECOVERY OF FRESH WATER AND SALT

Herman E. Rice, Jr., Chicago, Ill., and Joseph Gabor, Whiting, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed May 11, 1962, Ser. No. 194,189
12 Claims. (Cl. 203—10)

1. The method of accelerating the evaporation of water from a body of an aqueous liquid medium undergoing evaporation in an evaporating zone which comprises: covering the evaporating surface of a body of said medium with a thin floating layer of discrete, imperforate particles of an inert solid non-absorbent material having the surface thereof wettable by water, which particles have an average diameter of less than one centimeter and a density less than said liquid medium, whereby the rate of vaporization of said water is accelerated at a given temperature over the rate of vaporization in the absence of said layer.

3,290,232
MULTICOLOR ANODIZING OF ALUMINUM

Noel E. Dunning, Charlotte, Mich., assignor to Austin A. Webb, Kalamazoo, Mich.

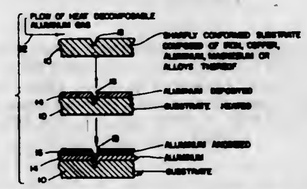
Filed Sept. 17, 1964, Ser. No. 397,332
34 Claims. (Cl. 204—35)

1. The process of coloring an aluminum surface which consists of anodizing the surface to provide a clean porous surface, providing a water paste made up of solids taken from the class consisting of water soluble gums and starches which are relatively soluble in cold water and relatively insoluble in hot water, mixing a dye solvent which is miscible in water in said paste, mixing different colored dyes soluble in said solvent in separate batches of said paste and solvent mixture, applying coatings of said colored batches to different portions of said surface with one coating overlapping another in selected areas, allowing said coatings to dry to the touch, applying a protective coating of said uncolored paste over said colored coatings, immersing the surface so coated in a bath of water heated to between 130° and 190° F. for a period of between 5 and 30 minutes to cause the colored dyes in said pastes to be transferred to the subadjacent areas of said surface and mixed into a new color blend where the coatings overlap, immersing said surface in a bath of water wtih nickel acetate therein at a temperature 200° and 212° F. to seal said porous surface, and mechanically removing said coatings from said surface.

3,290,233
VAPOR DEPOSITION PROCESS

Donald A. Hay, Wellesley, and Benjamin L. Averbach, Belmont, Mass., assignors, by mesne assignments, to Contemporary Research, Inc., Waltham, Mass., a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 317,922
1 Claim. (Cl. 204—38)



A fabricating process involving applying a protective aluminum oxide coating to a metallic substrate characterized by a sharp conformation and composed of a member of the class consisting of iron, copper, aluminum, magnesium and alloys thereof, said process comprising the steps of subjecting said substrate while at a predetermined temperature to a heat decomposable aluminum containing compound for a predetermined time, said heat decomposable aluminum containing compound being an aluminum hydride amine complex characterized by less than five carbon atoms, said predetermined temperature ranging from 115 to 180° C., said predetermined time being sufficient to enable the deposition on said substrate of a pore free aluminum coat ranging in thickness from 30 to 70 microinches, and anodizing the outer region of said pore free aluminum coat to provide an electrically insulating and chemically protective barrier of aluminum oxide at least 1 microinch in thickness, said heat decomposable aluminum containing compound being applied in the form of a vapor, said vapor being mixed with an inert gas, the total vapor pressure being less than 120 mm. Hg.

3,290,234
ELECTRODEPOSITION OF PALLADIUM

Edward A. Parker, Cranston, R.I., and Alfred M. Weisberg, Chicago, Ill., assignors to Technic, Inc., Cranston, R.I., a corporation of Rhode Island

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,661
4 Claims. (Cl. 204—47)

4. A method of electro-plating palladium to form heavy, clean, stress-free, bright plates which comprises providing an aqueous solution of palladium in the form of a chelate stable under plating conditions, the said chelate consisting essentially of palladium chelates of cyclic aliphatic N,N¹-diamine tetraacetic compounds in the presence of anions in said solution suitable for precipitating contaminating metals but insufficient to precipitate the palladium, said solution being maintained at a pH in the range from 4–12, and passing an electric current through said solution from an anode to a cathode to be coated.

3,290,235
ELECTRODEPOSITION OF ACIDIC RESIN WITH SUBSEQUENT ANODIC ELECTROLYSIS IN DISPERSION CONTAINING METAL TREATING OXYANIONS
Allan E. Gilchrist, Westlake, Ohio, assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,222
9 Claims. (Cl. 204—181)

1. In a process for painting metal wherein a paint composition containing acidic resin is deposited from aqueous dispersion in the absence of a substantial amount of metal treating oxyanion solute onto a metal object of anodic polarity under the influence of direct electric current to form an object at least partially coated with curable resinous film, the improvement which comprises subjecting said coated object to a separate stage of direct current anodic electrolysis in contact with an aqueous dispersion containing at least one metal treating oxyanion solute before curing said film, said metal treating oxyanion solute being selected from the group consisting of an oxyanion of phosphorus, boron, arsenic, silicon, an amphoteric metal, the oxalate anion, and mixtures of same.

3,290,236
ELECTROLYTIC MARKING APPARATUS INCLUDING STENCIL HOLDER
Bruce W. Mayer, Cleveland Heights, Ohio, assignor to The Electromark Corporation, a corporation of Ohio
Filed Feb. 7, 1963, Ser. No. 256,952
6 Claims. (Cl. 204—224)



1. An electrolytic marking tool combination including a holding device for holding a stencil in position relative to a reciprocal electrolytic marking head to engage a workpiece to be marked upon movement of the head downwardly to marking position adjacent the workpiece, comprising in combination a crosspiece carried by said marking head, said stencil having a body of relatively flexible material displaceable from the plane common to the opposite edge portion thereof upon the said marking head moving against the body of the stencil toward the workpiece, said cross-piece having an open space extending therethrough for accommodating said marking head and guiding reciprocal movement thereof relative to the cross-piece, spaced dependent pieces carried by said crosspiece and extending downwardly therefrom to accommodate the lower end of said head between said dependent pieces, said dependent pieces having oppositely disposed grooves, respectively, for accommodating opposite edge portions of a said stencil extending between said dependent pieces, said grooves being non-circular in cross-section and complementing the shape of non-circular edge portions of the stencil to limit rotation of the edge portions in the respective grooves upon displacement of the body of the stencil by the marking head moving toward the workpiece, said grooves being inclined upwardly and inwardly toward each other to hold said edge portions of the stencil angularly to a horizontal plane extending between the openings of the said grooves whereby said stencil is restrained against withdrawal from said grooves by downwardly exerted force on the stencil intermediate of said grooves by said head moving toward said workpiece, said grooves being open at one end of said dependent pieces, respectively, to permit the stencil to be moved in and out of position between the dependent pieces by sliding the edge portions, respectively, longitudinally of said grooves, said grooves being closed at the opposite end of said dependent pieces, respectively, to limit the movement of said edge portions in said grooves and to fix the position of the stencil between said dependent pieces, said holding device being movable upwardly relative to the said head upon said stencil meeting the resistance of a said workpiece in the downward movement of said head toward the workpiece.

3,290,237
ELECTROLYTIC MATERIAL REMOVAL ELECTRODE
Ronald C. Abt, Cincinnati, and William L. Elsberg, Jr., Wyoming, Ohio, assignors to General Electric Company, a corporation of New York
Filed Aug. 7, 1963, Ser. No. 300,456
2 Claims. (Cl. 204—224)



1. In an apparatus for use in electrolytic machining a metal workpiece the apparatus including: means for connecting said workpiece to make said workpiece predominantly anodic, a hollow electrode for machining said workpiece, means connected to said electrode for making said electrode predominantly cathodic relative to said workpiece and means for circulating electrolyte through said electrode, the improvement wherein said electrode comprises:

a hollow electrically conductive member including
- (a) a tip end portion;
- (b) an electrolyte inlet portion; and
- (c) an electrically conductive side wall connected between the tip end portion and the electrolyte inlet portion;

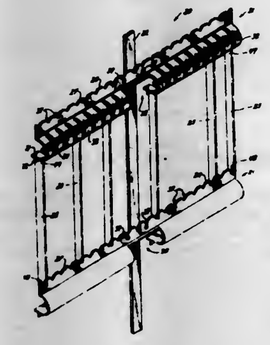
the side wall, tip end portion and electrolyte inlet portion together defining an electrolyte chamber;

the outer surface of the side wall and the tip portion being a dielectric material; and

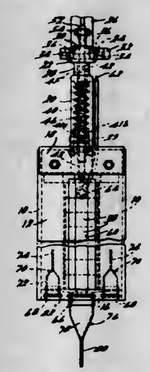
an opening through the side wall and the dielectric material communicating with the electrolyte chamber.

3,290,238
ANODIZING RACK CONSTRUCTION
Robert K. Wierwille, Louisville, Ky., assignor to Reynolds Metal Company, Richmond, Va., a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,115
5 Claims. (Cl. 204—297)

1. An anodizing rack construction comprising an elongated contact member, and a pair of like rack members secured in spaced relation to said contact member and disposed transversely relative thereto, each rack member having an elongated web portion provided with opposed edges, one of said edges of each rack member having a plurality of V-shaped notches formed therein and spaced from each other, the other of said edges of each rack member having a plurality of arcuate and resilient fingers extending outwardly therefrom, each finger having an outwardly directed flange at the free end thereof and provided with a V-shaped notch, said rack members being so arranged that each notch in the flanges of one of said rack members faces a notch in the web portion of the other rack member.

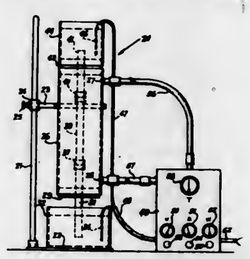


3,290,239
BOX PLATING RACK
Ferdinand W. Anderson, Greenville, and James H. Lake, Whitmore Lake, Mich., assignors to Federal-Mogul Corporation, a corporation of Michigan
Filed July 12, 1963, Ser. No. 294,490
8 Claims. (Cl. 204—297)



1. A plating rack for plating the concave surfaces of workpieces comprising an enclosure including a face panel provided with a longitudinally extending aperture therealong, means for supporting said enclosure at a liquid treating station, means for clamping a plurality of workpieces in said enclosure against said face panel with said concave surfaces disposed centrally of and in communication with said aperture, and normally closed valve means in said enclosure operable in response to a pressure differential between the interior of said rack and the exterior thereof to open communication with the interior thereof for permitting liquid flow into and out of the interior of said enclosure during the downward and upward movement of said rack in a liquid and for closing communication with the interior of said enclosure when said rack is disposed at a constant level in the liquid.

3,290,240
VERTICAL ELECTROPHORESIS APPARATUS WITH ADJUSTABLE MEDIA TUBE
Edward J. Neren, 603 Wolf St., Philadelphia, Pa.
Filed Mar. 14, 1962, Ser. No. 179,577
9 Claims. (Cl. 204—299)

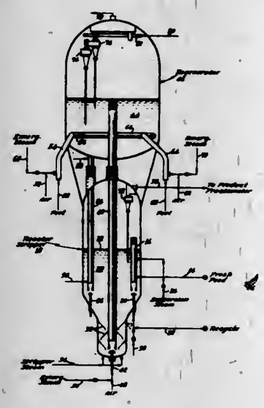


1. A vertical electrophoresis apparatus comprising a support, an open ended temperature regulating tube carried by said support, a plug means having an aperture therein closing an upper end of said temperature regulating tube, a media tube means including media sample retaining material means therein, an electrolytic cell means connected to the outer end of said plug means, an adjustable connecting tube means extending through the aperture in said plug means and into said electrolytic cell means for pipette sample filling thereof, a connecting sleeve means extending on said connecting tube means to sealably engage said media tube means, a second apertured plug means closing the lower end of said temperature regulating tube, a second adjustable connecting tube means extending through the aperture in said second plug means to connect to the lower end of said media tube means and extend into an oppositely disposed second electrolytic cell means, a second sleeve means extending on the upper end of said second connecting tube means to sealably and adjustably engage the lower end of said media tube means, said connecting tube means with extending sleeve means being slidably adjustable to permit vertical adjustment of said media tube means within said temperature regulating tube maens and removal of said media tube means therefrom, upper and lower conduit means communicating with the upper and lower portions of said temperature regulating tube to permit circulating temperature regulating fluid through said temperature regulating tube, and electrode means for applying an electric potential to said electrolyte cells and through said supporting media tube.

3,290,241
CATALYTIC HYDROCARBON CONVERSION AND STRIPPING PROCESS
Henry P. Wickham, Glen Head, N.Y., and Louis F. Rice, Barrancabermeja, Colombia, assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,064
9 Claims. (Cl. 208—147)

1. A method for catalytically converting relatively high boiling hydrocarbons to lower boiling products in a heat balanced conversion system which comprises: maintaining a first relatively dense fluidized bed of catalyst undergoing regeneration in a regeneration zone superimposed vertically above a second relatively dense bed of catalyst participating in conversion in a reaction zone, flowing regenerated catalyst downwardly from said regeneration zone exclusively into the second dense bed to provide a catalyst mixture having reduced activity and a temperature which is substantially lower than that of the freshly regenerated catalyst, contacting a relatively high boiling liquid hydrocarbon oil and solid material consisting of

said catalyst mixture to vaporize at least a portion of such liquid and to produce an upflowing confined suspension of catalyst and hydrocarbon material, and maintaining hydrocarbon conversion conditions within the said suspension, discharging said suspension adjacent the upper level



of said second dense bed under conditions to separate vaporous material which is withdrawn overhead and catalyst containing adsorbed residual oil material which is returned directly to said dense bed, stripping said catalyst mixture and passing such stripped catalyst upwardly into said regeneration zone.

3,290,242

METAL ANTIOXIDANTS FOR FLUOROESTERS

Harold Ravner, Accokeek, and Carter O. Timmons, Oxon Hill, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Apr. 18, 1963, Ser. No. 274,064
4 Claims. (Cl. 252—26)

1. A composition comprising a fluid neutral ester of a fluoroalcohol of the general formula:

$$H(CF_2CF_2)_nCH_2OH$$

wherein *n* is an integer from 2 to 5 and an aliphatic polycarboxylic acid of the general formula:

$$R—(COOH)_n$$

wherein *n* is an integer from 2 to 4 and R is a saturated aliphatic hydrocarbon group having from 3 to 9 carbon atoms and a metal of the group consisting of barium, tin and zinc present therein in amount sufficient to improve the oxidation stability of the fluid neutral ester at temperatures in the range of from about 400° to 500° F.

3,290,243

BODYING ORGANIC LIQUIDS WITH COLLOIDAL CLAY AND CLAY COMPOSITION THEREFOR

Edgar W. Sawyer, Jr., Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Woodbridge, N.J., a corporation of Maryland

No Drawing. Filed July 20, 1964, Ser. No. 383,948
14 Claims. (Cl. 252—28)

1. An organic liquid selected from the group consisting of mineral oil, kerosene, mineral spirits, ester-type oil, alkyld oil, xylene, toluene, alcohol, ketone, ether, chlorohydrocarbon, glycol, glycol ether, and glycol ether ester, said liquid being thickened as a result of having dispersed therein from 5 percent to 25 percent by weight of colloidal clay selected from the group consisting of attapulgite, sepiolite, hectorite and sodium montmorillonite and a tertiary amine oxide in amount from 5 percent to 50 percent, based on the weight of said clay, said tertiary amine oxide having the formula:



wherein R is selected from the group consisting of alkyl and alkenyl having 8 to 20 carbon atoms, and R_1 is selected from the group consisting of methyl, ethyl, propyl and hydroxyethyl.

3,290,244

GREASE COMPOSITIONS CONTAINING ATACTIC POLYPROPYLENE

Arthur T. Polichuk and Herbert L. Johnson, Media, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 11, 1963, Ser. No. 294,267
13 Claims. (Cl. 252—32)

1. A grease composition comprising as a first component a major proportion of mineral lubricating oil thickened to grease consistency with a minor proportion of a thickening agent and as a second component, in an amount sufficient to improve the water washoff of the composition, a material selected from the group consisting of 2–10% oil-soluble atactic polypropylene as the only propylene homopolymer in said composition and 0.3–5% oil-soluble atactic ethylene-propylene copolymer, all percentages and proportions being by weight of the total composition.

2. A grease composition according to claim 1 wherein said oil-soluble atactic polypropylene has a molecular weight of 10,000 to 50,000 and said oil-soluble atactic ethylene-propylene copolymer has an intrinsic viscosity in the range of 0.3 to 4.0.

3. A grease composition according to claim 2 wherein said thickening agent is a fatty acid metallic soap.

3,290,245

LUBRICATING COMPOSITIONS CONTAINING AMINE TUNGSTATES

John Scotchford Elliott and Eric Descamp Edwards, London, England, assignors to Castrol Limited, a British company

No Drawing. Filed June 3, 1960, Ser. No. 33,618
Claims priority, application Great Britain, June 5, 1959, 19,370/59; Apr. 14, 1960, 13,454/60
11 Claims. (Cl. 252—32.7)

1. A lubricating composition comprising a major proportion of a mineral oil of lubricating viscosity and dissolved in said oil a salt of tungstic acid an amine having the general formula



where R^1 and R^2 are both straight chain alkyl radicals having up to four carbon atoms in the radical and R is an alkyl radical, the radicals R, R^1 and R^2 being such that the total number of carbon atoms in the amine is from 16 to 50, said salt being present in an amount to provide a tungsten content of from 0.005 to 0.5 percent by weight on the total weight of the composition.

5. A composition as claimed in claim 1 which composition comprises a major proportion of a mineral oil of lubricating viscosity and a minor proportion of a combination of two additives, the first being a salt having the stated general formula, the second additive being selected from the group consisting of elementary sulphur and an organic sulphur compound containing divalent sulphur, said second additive being soluble in the oil and capable of reacting with the first additive at temperatures produced locally by friction under boundary lubricating conditions at metal surfaces, so as to form a friction-reducing sulphur-containing tungsten compound, said second additive being present in an amount to provide a sulphur content of from 0.06 to 5 percent by weight on the total weight of the composition.

8. A composition as claimed in claim 5 wherein the sulphur compound is a zinc dialkyl dithiophosphate.

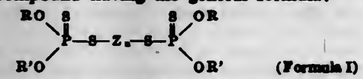
3,290,246

LUBRICANTS CONTAINING ZINC DITHIOPHOSPHATES

Emilio Perrotti, San Donato Milanese, and Sergio Del Ross, Milan, Italy, assignors to SNAM S.p.A., Milan, Italy, a company of Italy

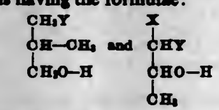
No Drawing. Filed Sept. 4, 1963, Ser. No. 306,630
Claims priority, application Italy, Sept. 7, 1962, Patent 692,797
10 Claims. (Cl. 252—32.7)

1. A lubricant composition comprising a major amount of a mineral oil and a minor amount, sufficient to improve the antioxidant, antiwear and antirust properties of the oil, of a compound having the general formula:

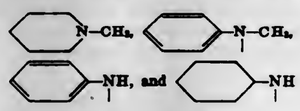


(Formula I)

where R'O is a secondary alcohol radical, and RO is selected from the group consisting of amino phenols having the structural formula HO—R_1—Z, where R_1 is selected from the group consisting of phenylene and alkylphenylene, and Z is piperidinomethyl, and of primary and secondary alcohols having the formulae:



where X is selected from the group consisting of hydrogen and lower alkyls and Y is a nitrogen-containing radical in which the nitrogen is present as amine nitrogen or as a heteroatom, and is selected from the group consisting of



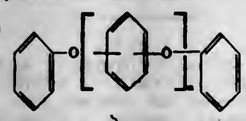
3,290,247

POLYPHENYL ETHER COMPOSITIONS USEFUL AS FUNCTIONAL FLUIDS

Glenn R. Wilson, Cambridge, and John R. Stoutsfield, Swampscott, Mass., and Kenneth L. McHugh, Kirkwood, Mo., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 14, 1962, Ser. No. 194,650
18 Claims. (Cl. 252—42.7)

1. A functional fluid composition consisting essentially of a polyphenyl ether of the formula



wherein *n* is a whole number from 2 to 5 and from 0.1% to 10.0% by weight of the ether, of an organotin compound having a formula selected from the class consisting of

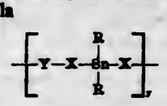
(I) $$R_nSn(XR')_m$$

where *n* is a number of from 2 to 3, *m* is a number of 1 to 2 and the total of $m+n$ is 4, R is selected from the class consisting alkyl radicals of from 1 to 12 carbon atoms, benzenoid hydrocarbon radicals which are free of olefinic and acetylenic unsaturation and contain from 6 to 12 carbon atoms and such radicals carrying halogen substitution at the benzenoid nucleus, and aryloxyaryl radicals of from 12 to 24 carbon atoms; R' is selected from the class consisting of R, paraffinic and haloparaffinic acyl radicals of from 2 to 12 carbon atoms, the radical



wherein Z denotes the necessary members to complete a saturated heterocyclic radical of from 6 to 10 members, the radicals —SnR_3 and —arylene—O—SnR_3; and X is a chalcogen element having an atomic weight of less than 33; and the formula

(II)



where Y is selected from the class consisting of arylene radicals of from 6 to 12 carbon atoms, arylenealkylene-arylene radicals and alkylenearylenealkylene radicals having from 1 to 4 carbon atoms in the alkylene radical and from 6 to 12 carbon atoms in the arylene radical, R and X are as above defined, and *y* is a number of 10 to 1000.

3,290,248

SILOXANE ESTER LUBRICANTS

Peter Michael Blanchard, Sunbury-on-Thames, Middlesex, England, assignor to The British Petroleum Company Limited, London, England, a joint-stock corporation of Great Britain

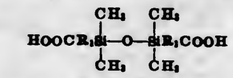
No Drawing. Filed Mar. 3, 1964, Ser. No. 349,136
Claims priority, application Great Britain, Mar. 5, 1963, 8,697/63, 8,698/63
8 Claims. (Cl. 252—49.6)

1. A liquid complex ester product prepared by reacting together under esterification conditions in at least one stage:

(a) a monocarboxylic alkanoic acid having 7–10 carbon atoms per molecule,

(b) 1:1:1-trimethylolpropane, and

(c) an organo siloxane dicarboxylic acid of the formula



in which the R_1's are straight chain alkylene groups having 2–5 carbon atoms,

the relative molecular proportions of (a):(b):(c) being 2.2–2.8:1:0.4–0.1.

5. A lubricating oil composition which consists essentially of a blend of at least 25% by weight of liquid neutral complex ester products according to claim 1 and at least one simple neutral ester prepared by reacting together a monocarboxylic alkanoic acid having 7–10 carbon atoms and 1:1:1-trimethylolpropane.

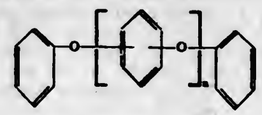
3,290,249

POLYPHENYL ETHER COMPOSITIONS USEFUL AS FUNCTIONAL FLUIDS

Glenn R. Wilson, Cambridge, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,222
3 Claims. (Cl. 252—49.7)

1. A functional fluid composition consisting essentially of a polyphenyl ether of the formula



wherein *n* is a whole number of 2 to 5 and from 0.01% to 1.0% by weight of a copper compound selected from the class consisting of cupric oxide and cuprous oxide.

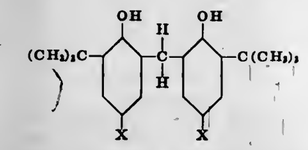
3,290,250

STABILIZATION OF ORGANIC MATERIAL WITH 2,2' - METHYLENEBIS(4 - HALO-6-TERT-BUTYLPHENOL)

Harold D. Orloff, Oak Park, and John P. Napolitano, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation of application Ser. No. 211,846, July 23, 1962, which is a division of application Ser. No. 45,784, July 28, 1960. This application Oct. 21, 1965, Ser. No. 500,183
10 Claims. (Cl. 252—54)

1. Organic material normally tending to undergo oxidative deterioration protected against such deterioration by the inclusion therein of a small antioxidant quantity, up to 5 percent, of a compound having the formula:



wherein X is a halogen selected from the class consisting of chlorine, bromine and iodine.

4. Hydrocarbon mineral lubricating oil containing as an antioxidant therefor up to 5 percent of 2,2'-methylenebis(4-chloro-6-tert-butylphenol).

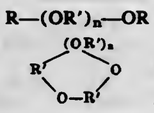
3,290,251

ELECTROSTATIC LATENT IMAGE DEVELOPING COMPOSITIONS CONTAINING AN ETHER

George R. Nelson, Holliston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,597
7 Claims. (Cl. 252—62.1)

1. For developing an electrostatic image, a liquid developer consisting essentially of an insulating liquid having suspended therein finely-divided toner particles with an average size less than about 40 microns, said developer being characterized by having dissolved in said insulating liquid as charge modifier and in an amount sufficient to provide a positive charge on said toner particles and not more than about 15% by weight of said insulating liquid, an organic ether selected from the group consisting of furan, 4 methyl, 2 vinyl 1,3-dioxolane, and ethers having one of the following structures:



wherein each R, taken individually, is a phenyl, benzyl, or lower alkyl radical, each R', taken individually, is a phenylene, benzylene or lower alkylene divalent radical, and *n* is zero or a lower positive integer, said ether having a dielectric constant less than about 8.0, said solution of liquid and ether having a dielectric constant less than about 3.4 said toner particles in said insulating liquid, absent said ether, having inadequate positive charge to develop a positive print from a negatively charged image.

3,290,252

COBALT CONCENTRATION FROM COBALT SOL BY EXTRACTION

Orvis V. Larsen, Richmond, and Joe B. Lavigne, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed July 16, 1963, Ser. No. 295,502
7 Claims. (Cl. 252—62.5)

1. A method for increasing the metal to polymer weight ratio of a dispersion of ferromagnetic particles of metals of atomic number 26 to 28, wherein the metal is present as particles of a size in the range from about 10 to 1,000 A. and encapsulated in a polymeric envelope, said particles being dispersed in an inert hydrocarbon medium, wherein the combined weight of metal and polymer is in the range from about 1 to 10% of the total composition, which comprises concentrating said dispersion to a composition wherein the total weight percent of metal and polymer is in the range of about 10 to 50%, by contacting said dispersion with at least 10 times by weight of polymer of a solvent selected from the group consisting of ketones of from 3 to 8 carbons and aliphatic halohydrocarbons of from 1 to 4 carbons having a plurality of halogens, sedimenting the resulting composition and removing the supernatant liquid and recovering the concentrated ferromagnetic dispersion.

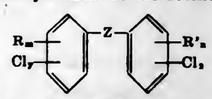
3,290,253

CHLORINE-SUBSTITUTED DIARYLALKANES AS HYDRAULIC FLUIDS

Edward S. Blake, Ralph E. De Brunner, and George A. Richardson, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Oct. 21, 1963, Ser. No. 317,734
16 Claims. (Cl. 252—78)

9. In the method of operating a hydraulic pressure device wherein a displacing force is transmitted to a displaceable member by means of a hydraulic fluid, the improvement which comprises employing as the hydraulic fluid a composition having a kinematic viscosity of 50 to 15,000 centistokes at 25° F. and consisting essentially of a chlorine-substituted diarylalkane of the formula



wherein Z is an alkylene radical having from 3 to 10 carbon atoms in the chain which bridges the two benzene rings and a total of from 3 to 12 carbon atoms, R and R' are alkyl radicals of from 1 to 4 carbon atoms, the total number of carbon atoms in $Z+R_m+R'_n$ is from 3 to 16, *m* and *n* are numbers of 0 to 3, *y* is a number of from 1 to 5–*m*, *z* is a number of 0 to 5–*n*, and the sum of $y+z$ is at least one-third of but not more than the total number of aliphatic carbon atoms present in the molecule.

3,290,254

METHYL-β-HYDROXYDODECYL SULFOXIDE CONTAINING DETERGENT COMPOSITIONS

Donald J. Anderson, San Anselmo, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Original application Oct. 25, 1961, Ser. No. 147,465, now Patent No. 3,247,258, dated Apr. 19, 1966. Divided and this application Apr. 29, 1965, Ser. No. 451,975
1 Claim. (Cl. 252—138)

A detergent composition consisting essentially by weight of 5 to 40 parts of methyl-β-hydroxydodecyl sulfoxide and 60 to 95 parts of water-soluble detergent builder salt selected from the class consisting of alkali metal sulfates, carbonates, silicates, phosphates, borates and mixtures thereof.

3,290,255

WHITE ELECTROLUMINESCENT PHOSPHOR

Ivie Lee Smith, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,293
8 Claims. (Cl. 252—301.6)

1. The method of preparing a single component white electroluminescent zinc sulfide phosphor which comprises making a mixture of ZnS with from 0.05 to 0.20% by weight CuCl; from 0.2 to 0.5% by weight $MnCO_3$; and from 0.002 to 0.01% by weight of a compound from the group consisting of Sb_2O_3, As_2O_3 and Bi_2O_3 as a fluxing agent; and firing in a loosely closed container which allows any gases to be expelled and substantially prevents air from diffusing back, at a temperature in the range of 850 to 950° C. for a minimum period of time of about one hour.

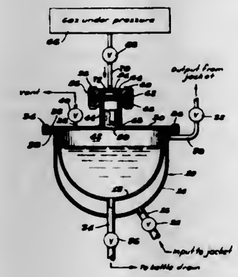
8. An improved single component white electroluminescent zinc sulfide phosphor being the reaction product of firing a mixture of ZnS with from 0.05 to 0.20% by weight CuCl; from 0.2 to 0.5% by weight $MnCO_3$; and from 0.002 to 0.01% by weight of a compound from the group consisting of Sb_2O_3, As_2O_3 and Bi_2O_3 as a fluxing agent in a loosely closed container which allows any gases to be expelled and substantially prevents air from diffusing back, at a temperature in the range of 850 to 950° C. for a minimum period of time of about one hour.

3,290,256

FOAM BREAKING APPARATUS

John Karpovich, Caro, and Willard F. Clark, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 2, 1964, Ser. No. 393,850
5 Claims. (Cl. 252—361)



1. In a reaction vessel having walls and a cover defining a chamber wherein a chemical reaction takes place in which foaming of the reacting materials tends to occur, the improvement comprising a tubular element having end parts, one end part of said tubular element being secured and sealed to said cover and communicating with the interior of said vessel, a frangible disc, means for sealing said frangible disc across said tubular element adjacent to the other end part, said means for sealing comprising a flange, a pair of annular shaped gaskets, and a closure element having a dished part therein, said flange being sealed to said other end of said tubular element, said disc being placed across said flange and sandwiched between said gaskets, and said closure member is sealed against the side of said disc which is remote from said vessel, the dished part of said closure member facing said disc, and means for pressurizing said disc on the side thereof which is remote from said vessel to burst said disc, thereby forming a shock wave in said tubular element.

3,290,257

CURING LIQUID FOR HARDENING MONOMERIC POLYMERIZABLE ORGANIC COMPOUNDS

Erich Bäder and Hans Landsfeld, Hanau am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,668
Claims priority, application Germany, Oct. 19, 1961, D 37,261
9 Claims. (Cl. 252—426)

1. A curing liquid for hardening monomeric polymerizable ethylenically unsaturated organic compounds essentially consisting of a solution of about 20 to 60% by weight of at least one methyl substituted benzoyl peroxide in a liquid plasticizer having a boiling point over 140° C., said liquid plasticizer being an ester of an aliphatic alcohol with a polybasic carboxylic acid.

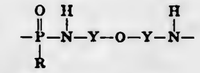
3,290,258

POLYMERIC ORGANOPHOSPHORUS COMPOUNDS

Morris L. Nielsen, Dayton, Ohio, and Darrel M. Harris, Glendale, Mo., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,586
4 Claims. (Cl. 260—2)

1. A polymeric phosphonamide consisting essentially of the repeating unit



wherein R is aromatic hydrocarbon which is free of olefinic and acetylenic unsaturation and contains from 6 to 12 carbon atoms, and Y is alkylene of from 2 to 6 carbon atoms.

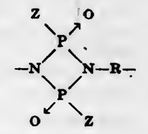
3,290,259

HETEROCYCLIC POLYMERS OF DIAZADIPHOSPHETIDINE DIOXIDE UNITS

Leo P. Parts and Morris L. Nielsen, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,232
13 Claims. (Cl. 260—2)

1. A solid, resinous polymer consisting essentially of the repeating unit



in which Z is an aromatic hydrocarbyl radical which is free of olefinic and acetylenic unsaturation, contains from 6 to 12 carbon atoms, and is linked through nuclear carbon to the remainder of the molecule, and R is selected from the class consisting of (1) arylene, aryleneoxyarylene and polyaryleneoxyarylene radicals of from 2 to 6 oxygen ether linkages, wherein each arylene radical is hydrocarbon, is free of olefinic and acetylenic unsaturation, contains from 6 to 12 carbon atoms and is linked through nonadjacent, nuclear carbon to the remainder of the molecule and (2) heterocyclic radicals having from 3 to 18 carbon atoms, from 5 to 6 members in a ring and from 1 to 3 nuclear, tertiary nitrogen atoms with the rest of the nuclear members being aromatic carbon, and being free of olefinic and acetylenic unsaturation and linked through non-adjacent, nuclear carbon to the remainder of the molecule.

3,290,260
METHOD FOR MAKING POROUS RESIN STRUCTURES
Henry L. Bucciarone, West Roxbury, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 16, 1963, Ser. No. 302,579
1 Claim. (Cl. 260—2.5)

A method of forming a resin structure, comprising the steps of

(a) mechanically extending an aqueous solution of urea-formaldehyde resin, having a resin concentration between 10 and 50 percent by weight and containing a surfactant, with air thereby to form a stable foam;
(b) blending into said foam an acid catalyst capable of curing said urea-formaldehyde resin at room temperature, said blending being effected without any appreciable decrease in foam volume;
(c) introducing said foam into a mold form capable of defining at least one side of a porous resin structure;
(d) neutralizing said acid catalyst after said foam has acquired sufficient strength to be structurally intact but before said urea-formaldehyde has been dried and cured, said neutralizing consisting of treating said foam with an externally applied base until substantially all of the acid catalyst has been reacted;
(e) removing the residual liquid from the neutralized foam structure;
(f) drying the resulting neutralized foam structure;
(g) immersing the resulting dry, neutralized resin foam structure in a liquid containing a material which can be deposited in solid form and selected from the group consisting of a solution of a copolymer of vinyl chloride and vinyl acetate and molten wax; and
(h) withdrawing said foam structure from said liquid and solidifying said material within said structure.

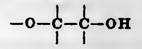
3,290,261
FOAMED RESIN COMPRISING AROMATIC POLYCARBONATE AND OXYMETHYLENE POLYMER
Kenneth B. Goldblum, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 22, 1963, Ser. No. 303,941
6 Claims. (Cl. 260—2.5)

6. A foamed resin which comprises the product of heating to above about 350° F. a mixture comprising (1) an aromatic polycarbonate resin of a dihydric phenol and a carbonate precursor and (2) about 0.1 to about 20.0 weight percent of an oxymethylene polymer based on the weight of the resin mixture.

3,290,262
METHODS OF PRODUCING RIGID CELLULAR MATERIALS AND PRODUCTS OBTAINED THEREBY
André Alexandre Leclercq, Triport, France, assignor to Pneumatiques, Caoutchouc Manufacture & Plastiques Kleber Colombes, Colombes, France, a corporation of France
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,513
Claims priority, application France, Feb. 2, 1960, 817,511, Patent 1,256,549
14 Claims. (Cl. 260—2.5)

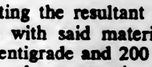
1. A method of preparing rigid cellular materials having closed cells and containing polyvinyl chloride as a major constituent by weight, which consists in the successive steps of mixing in a homogeneous manner polyvinyl chloride, a heat-decomposable blowing agent, a polyisocyanate and a bitumen consisting of a solid or semi-solid natural or synthetic hydrocarbon, soluble in carbon disulfide and having a softening point between 80° C. and 200° C., the amount of the polyvinyl chloride being from 2.5 to 100 times the weight of bitumen, heating the mixture under pressure in a mould to decompose the blowing agent and to gell the polyvinyl chloride, cooling the expanded material under pressure and removing it from the mould, and placing the expanded material in contact with hot water or water vapour to effect further expansion of the material.

3,290,263
PROCESS OF REACTING SUGARS WITH REAGENTS WHEREIN THE SUGAR IS DISSOLVED IN MONOHYDRIC ALCOHOLS CONTAINING GROUPING



Bruce M. Smythe, Balgowlah, New South Wales, and Clarence J. Moye, Forestville, New South Wales, Australia, assignors to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of New South Wales, Australia
No Drawing. Original application Aug. 2, 1962, Ser. No. 214,216, now Patent No. 3,219,484, dated Nov. 23, 1965. Divided and this application Sept. 8, 1965, Ser. No. 485,921
Claims priority, application Australia, Aug. 7, 1961, 7,764/61
29 Claims. (Cl. 260—17.2)

1. A process for carrying out reactions involving a material selected from the group consisting of sugars and sugar derivatives, said process consisting of dissolving said material at temperatures between 50 degrees centigrade and 200 degrees centigrade in a substantially anhydrous water-miscible high-boiling monohydric alcohol containing the structural grouping

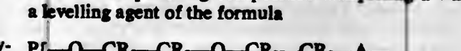


and thereafter reacting the resultant solution with a reagent which reacts with said material at temperatures beween 0 degrees centigrade and 200 degrees centigrade.

25. A process for the preparation of sucrose/phenol-formaldehyde resin consisting of reacting sodium with phenol dissolved in a solvent selected from the group consisting of tetrahydrofurfuryl alcohol and diethylene glycol monomethyl ether, adding thereto with stirring at elevated temperature an intimate mixture of sucrose and paraformaldehyde, acidifying the reaction mixture, extracting the precipitate with ether, evaporating ether from the extract and solidifying the residue.

3,290,264
IMPROVED COATING COMPOSITIONS CONTAINING AS A LEVELING AGENT AN ORGANO PHOSPHITE COMPOSITION
Charles F. Baranauckas, Niagara Falls, and James J. Hoban, Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Aug. 16, 1963, Ser. No. 302,711
10 Claims. (Cl. 260—28.5)

1. A wax polishing composition comprising a wax and a levelling agent of the formula



wherein each R is independently selected from the group consisting of H and lower alkyl containing 1 to 3 carbon atoms, A is selected from the group consisting of O and CR_2 and n is an integer from 1 to 5, said composition having a pH of at least 7.

3,290,265
THREE STAGE POLYMERIZATION PROCESS FOR THE PRODUCTION OF POLYVINYL CHLORIDE RESINS
Akira Kaneko, Nakoso, Fukushima, Japan, assignor to Kureha Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 15, 1963, Ser. No. 323,902
Claims priority, application Japan, Nov. 17, 1962, 37/51,564
4 Claims. (Cl. 260—29.6)

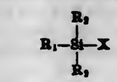
1. A method for the production of vinyl resins which comprises suspension-polymerizing a monomeric material (A) selected from the group consisting of vinyl chloride and mixtures of vinyl chloride with a minor amount of a monomer copolymerizable therewith in the presence of an oil soluble catalyst in a first stage, then, in a second stage, adding an alkyl acrylate monomer having 4 to 12 atoms in the alkyl group to the suspension polymerization mixture when the polymerization yield of said suspension polymerization in the first stage has reached 50 to 90% and, in a third stage, adding a further quantity of said monomeric material (A) to the suspension polymerization mixture when the polymerization yield of the monomer mixture present in the second stage has reached 50 to 90% and, continuing the polymerization, wherein the first feeding of monomeric material (A) is within the range of 10% to 50%, based on the total composition; the second feeding of acrylic acid ester monomer is within the range of 2% to 30% and the third feeding of further monomeric material (A) is within the range of 88% to 20%, whereby a graft polymer particle structure is obtained in which the particles of the polymer of monomeric material (A) produced in the first stage are penetrated and copolymerized with the alkyl acrylate in the second stage and the resulting particles are coated with the copolymer of monomeric material (A) produced in the third stage.

3,290,266
COMPOSITIONS CONTAINING ELEMENTAL SULPHUR
Marion D. Barnes, Washington, D.C., and Arthur V. Tobolsky, Princeton, N.J., assignors, by mesne assignments, to Research Corporation, New York, N.Y., a non-profit corporation of New York
No Drawing. Filed Apr. 15, 1963, Ser. No. 272,836
5 Claims. (Cl. 260—30.8)

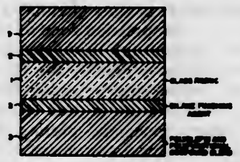
1. A composition consisting essentially of sulphur modified with from about 5 to about 20% by weight of a polymer, based on the weight of the sulphur, said polymer being selected from the group consisting of polymers and copolymers of olefins, lower alkyl esters of acrylic acids, lower alkyl esters of methacrylic acids, vinyl monomers, vinylidene monomers and urethanes, said polymer having a weight pickup of at least 2% when immersed in molten sulphur at 140° C. for ten hours.

3,290,267
REINFORCED THERMOPLASTIC COMPOSITIONS AND PROCESS OF PRODUCING SAME
Byron M. Vanderbilt and Robert E. Clayton, Westfield, Union, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,546
11 Claims. (Cl. 260—41)

7. Rubbery copolymer-coated glass fibers comprising:
(A) glass fibers whose surfaces are initially treated with an organo silane having the general formula:

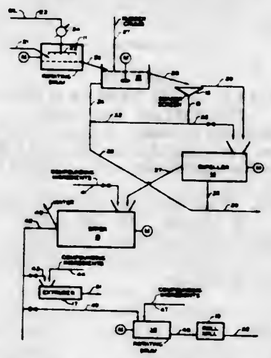


wherein:
R_1 is selected from the group consisting of alkenyl, aminoalkyl, epoxyalkyl, epoxyaryl, epoxyaralkyl, epoxycycloalkyl, mercaptoalkyl, acryloxyalkyl and methacryloxyalkyl,
R_2 and R_3 are each independently selected from the group consisting or R_1, X, and methyl, and
X is selected from the group consisting of halogen, hydroxyl, and alkoxy; and
(B) whose so-treated surfaces are coated with a mixture of a saturated rubbery copolymer of ethylene and C_2–C_{12} alpha alkene and 3 to 10 wt. percent, based on said rubbery copolymer, of a polyfunctional compound selected from the group consisting of polyvinyl aryl monomers, acrylic acid esters of polyhydric alcohols, methacrylic acid esters of polyhydric alcohols, unsaturated polyesters of unsaturated



dicarboxylic acids and anhydrides with polyhydric alcohols, normally liquid and solid hydrocarbon polymers, obtained by the 1,2 polymerization of C_4 to C_8 conjugated diolefins and normally liquid and solid hydrocarbon copolymers obtained by the 1,2 copolymerization of C_4–C_8 conjugated diolefin with a monovinyl substituted mononuclear aromatic compound said hydrocarbon polymers and hydrocarbon copolymers having a molecular weight of 15,000 and below and containing at least 50% of the 1,2-type (vinyl) unsaturation therein; and
(C) said coated glass fibers thereafter cured in the presence of 0.5 to 10 wt. percent, based on said rubbery copolymer, of at least one organic peroxide at a temperature of 250 to 400° F. and a pressure of 50 to 1500 p.s.i. for from 0.5 to 180 minutes.

3,290,268
RUBBER MASTERBATCHING
Raymond C. Scofield, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,468
3 Claims. (Cl. 260—41.5)

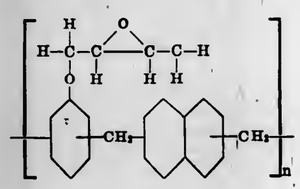


1. A method for the production of an oil-filler-rubber mixture comprising providing first and second mixing zones, said second mixing zone containing a liquid which has substantially no solvent power for other materials introduced thereinto; introducing a solid filler for rubber into said first mixing zone; adding a liquid additive for rubber in liquid form to said first mixing zone thereby forming a filler-liquid additive mixture; passing the resulting filler-

liquid mixture to said second mixing zone; introducing rubber crumb into said second mixing zone; removing filler-liquid additive mixture, rubber crumb, and non-solvent liquid from said second mixing zone and passing same to a liquid-solid separation zone, recovering (1) a filler-liquid additive-rubber wet with non-solvent liquid, and (2) a separate non-solvent liquid containing fines from said liquid-solid separation zone; passing stream (1) and a portion of stream (2) to a compression zone to remove the major portion of the non-solvent liquid from the filler-liquid additive-rubber mixture; passing the rest of stream (2) to said second mixing zone; passing non-solvent liquid removed from said mixture in said compression zone to said second mixing zone; and passing filler-liquid additive-rubber mixture containing a small amount of non-solvent liquid to a closed milling zone wherein said filler-liquid additive-rubber mixture is heated to a temperature sufficiently high that non-solvent liquid vaporizes therefrom upon release of said mixture from said milling zone thereby providing a substantially dry filler-liquid additive-rubber mixture.

3,290,269
NAPHTHYLDIMETHYLENE SPACED PHENYL GLYCIDYL ETHERS
John O'Brochta, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,779
2 Claims. (Cl. 260—47)

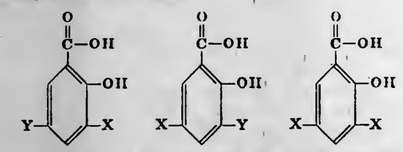
1. The novel epoxy resin:



where n=3–8.

3,290,270
SALICYLIC ACID DERIVATIVES AND POLYMERS THEREOF
Albert I. Goldberg, Berkeley Heights, N.J., and Joseph Fertig, New York, and Martin Skoultchi, Bronx, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y.
No Drawing. Filed May 23, 1963, Ser. No. 282,593
15 Claims. (Cl. 260—47)

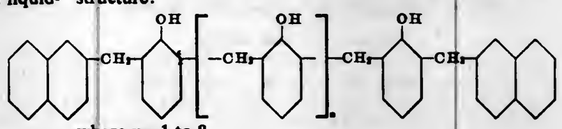
3. A composition comprising a polymer of at least one ethylenically unsaturated salicylic acid derivative corresponding to the formulae:



wherein X represents an ethylenically unsaturated radical selected from the group consisting of the acrylyloxymethyl and methacrylyloxymethyl radicals and Y represents a radical selected from the group consisting of the methyl and hydrogen radicals.

3,290,271
NAPHTHYL CONDENSED NOVOLAK
John O'Brochta, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,802
3 Claims. (Cl. 260—59)

1. A naphthalene modified novolak resin having the structure:



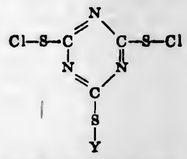
where n=1 to 8.

3,290,272
POLYSULFONES
Floyd L. Ramp, West Richfield, and Louis E. Trapasso, Maple Heights, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 7, 1962, Ser. No. 242,926
4 Claims. (Cl. 260—79.3)

1. The process of forming an alkali insensitive sulfone polymer by thermal initiation at 100°–200° C. of polymerization between about 1 mol of monomeric bicyclo [2,2,1]-2,5-heptadiene and about 1–4 mols of monomeric sulfur dioxide, said polymerization being continued for a period of 3–18 hours.

3,290,273
CURING OF UNSATURATED POLYMERS WITH TRIAZINE TRI(SULFENYL CHLORIDE) AND DERIVATIVES THEREOF
Morris B. Berenbaum and Riad H. Gobran, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Original application Sept. 14, 1960, Ser. No. 55,859, now Patent No. 3,128,271, dated Apr. 7, 1964. Divided and this application July 11, 1963, Ser. No. 305,906
10 Claims. (Cl. 260—79.5)

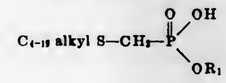
1. A vulcanizable composition comprising a soft hydrocarbon polymer selected from the group consisting of polybutadiene, polyisoprene and isobutylene-isoprene copolymers and a curing agent for said polymer of the formula



wherein Y is selected from the group consisting of —Cl and —R—Cl in which R is an alkylene group of 2 to 8 carbon atoms.

3,290,274
POLYMERIC AMINE SALTS OF THIOALKYL-PHOSPHONO COMPOUNDS
Ralph Lutwack, Garden Grove, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application Feb. 26, 1960, Ser. No. 11,146, now Patent No. 3,159,578. Divided and this application June 8, 1964, Ser. No. 373,513
13 Claims. (Cl. 260—79.5)

1. An oil-soluble salt of a copolymer of a polymerizable basic heterocyclic nitrogen-containing compound selected from the group consisting of vinyl pyridine and N-vinyl pyrrolidone and a long-chain alkyl acrylate ester having a molecular weight ranging from about 75,000 to about 1,000,000 and a thiomethylphosphono compound having the formula:



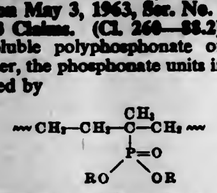
wherein R_1 is a radical selected from the group consisting of hydrogen and a C_{1-8} alkyl radical.

3,290,275
PRODUCTION OF POLYMERIC COMPOSITIONS FROM PETROLEUM FRACTION
Preston L. Brandt, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed July 26, 1965, Ser. No. 475,013
4 Claims. (Cl. 260—82)

1. A process for the thermal production of a light colored, vegetable oil-soluble polymeric composition which comprises heating a mixture in the liquid phase at a temperature above 300 and below 330° C., and at a pressure of more than 250 pounds per square inch in a substantially oxygen free atmosphere, said mixture consisting substantially of from about 70% to about 85% by weight of dimers of isoprene, cis-piperylene and trans-piperylene, and codimers, trimers and cotrimers of isoprene, cis-piperylene, trans-piperylene and cyclopentadiene and from about 15% to about 30% by weight of higher polymers of isoprene, cis-piperylene, trans-piperylene and cyclopentadiene and having an initial boiling point range of from about 90° C. to about 150° C. and a final boiling point range of from about 330° C. to about 380° C.; and distilling the mixture to recover the said composition.

3,290,276
OIL-SOLUBLE PHOSPHO-HALO-CONTAINING ETHYLENE/PROPYLENE COPOLYMERS
William S. Anderson, Oakland, Calif., assignor to Shell Oil Company, a corporation of Delaware
No Drawing. Original application Dec. 21, 1959, Ser. No. 860,716, now Patent No. 3,185,819. Divided and this application May 3, 1963, Ser. No. 277,705
3 Claims. (Cl. 260—88.2)

1. An oil-soluble polyphosphonate of ethylene/propylene copolymer, the phosphonate units in the copolymer being represented by



where R is an alkyl selected from the group consisting of lauryl and stearyl radicals and the number of such units comprise from 10% to 40% of the ethylene/propylene copolymer, said copolymer having a molecular weight of from 5000 to 1,000,000.

3,290,277
AMINO-CONTAINING BLOCK POLYMERS OF ETHYLENE AND α-ALKYL STYRENE
William S. Anderson, Oakland, and Stephen H. Levin, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 20, 1963, Ser. No. 281,818
19 Claims. (Cl. 260—88.2)

8. A process for producing high molecular weight amino-containing block copolymers of alpha-C_{1-4} alkyl styrene and ethylene having in the center of the macromolecule a block containing 50–100 mol percent of alpha-C_{1-4} alkyl styrene units and at the ends of the macromolecule a block containing 50–100 mol percent of ethylene such block polymers being prepared by copolymerizing ethylene and alpha-C_{1-4} alkyl styrene in a mol ratio between 1:10 and 10:1 in a tertiary amine solvent-coreactant and with an organo lithium catalyst at a temperature between —100 and 0° C. and at a pressure below 5,000 p.s.i. then increasing the temperature to between 0 and 50° C. and a pressure between 5,000 and 100,000 p.s.i., the resulting amino-containing block polymer having a molecular weight of from 6,000 to 500,000.

3,290,278
RECOVERY OF POLY(BUTENE-1)
Billy D. Rice, Pasadena, and Thomas G. Reed, Jr., La Porte, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 1, 1963, Ser. No. 312,862
4 Claims. (Cl. 260—93.7)

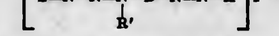
1. A process for separating a butene-1 polymer in particulate form from a solution of butene-1 polymer in a hydrocarbon solvent which comprises passing the polymer solution in which the butene-1 polymer is present in amounts of less than 20 percent by weight of polymer solution through a heated elongated tube expander having an inlet and outlet end in which the cross sectional area of the outlet end of the expander is at least three times that of the inlet end of the expander and maintaining a pressure change of less than 10 p.s.i.g. per linear foot of expander while maintaining a vapor-polymer velocity of between 35 to 400 feet per second therethrough.

3,290,279
POLYMERIZATION OF ISOPRENE WITH A VCl_3-$Al(C_2H_5)_3$-DIISOPROPYL ETHER CATALYST
Eric Catterall, Yardley, Birmingham, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed Jan. 15, 1963, Ser. No. 251,569
Claims priority, application Great Britain, Jan. 31, 1962, 3,579/62
10 Claims. (Cl. 260—94.3)

1. A process for the preparation of trans-polyisoprene having a high trans-1,4 content comprising forming a heterogeneous surface-active catalyst by mixing together vanadium trichloride, aluminium triethyl, and diisopropyl ether, and contacting isoprene with said surface-active catalyst in a liquid hydrocarbon reaction medium which is chemically inert to the isoprene and the surface-active catalyst, the amount of diisopropyl ether added being sufficient to increase the rate of polymerization of isoprene.

3,290,280
QUATERNARY SALTS OF TRIAZENE AZO DYESTUFFS
Jacques Voltz, Basel, and Werner Bonse'tt, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed Aug. 2, 1963, Ser. No. 299,477
Claims priority, application Switzerland, Aug. 15, 1962, 9,766/62
6 Claims. (Cl. 260—140)

1. A water-soluble cationic dyestuff of the formula



wherein

A is a member selected from the group consisting of phenyl, lower alkyl-phenyl, chloro-phenyl, bromo-phenyl, trifluoromethyl-phenyl, mono-hydroxy-phenyl, lower alkoxy-phenyl, lower alkanoylamino-phenyl, nitro-phenyl, cyano-phenyl, lower alkyl-sulfonyl-phenyl, sulfamyl-phenyl, N-lower alkyl-substituted sulfamyl-phenyl, N-hydroxy-lower alkyl-substituted sulfamyl-phenyl, N-lower alkoxy-lower alkyl-substituted sulfamyl-phenyl, lower alkoxy-carbonyl-phenyl, carbamyl-phenyl, N-lower alkyl-substituted carbamyl-phenyl, N-hydroxy-lower alkyl-substituted carbamyl-phenyl, and N-lower alkoxy-lower alkyl-substituted carbamyl-phenyl;

B is a divalent radical selected from the group consisting of phenylene, lower alkylphenylene, lower alkoxy-phenylene, chloro-phenylene and bromo-phenylene;

Z is an N-lower alkyl-substituted cycloammonium radical, the cycloammonium moiety of which is a member selected from the group consisting of 1,2-thiazolyl-(3), 1,3-thiazolyl-(2), 1,3,4-thiadiazolyl-(2),

indazolyl-(3), imidazolyl-(2), benzimidazolyl-(2), pyridyl-(2), pyridyl-(4), benzthiazolyl-(2), quinolyl-(2), quinolyl-(4), iso-quinolyl-(1), and pyrimidinyl-(2), and wherein the N-substituent

R' is lower alkyl, and

Y represents an uncoloured anion, the triazene group of said dyestuff being linked to B in one of the positions meta and para to the azo bridge,

said dyestuff being free from salt-forming groups which dissociate acid in water.

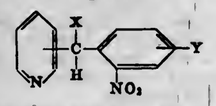
3,290,281

PHOTOCHROMIC NITROBENZYLPYRIDINES

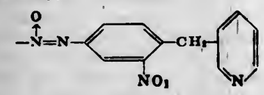
Julius Weinstein, Framingham, Aaron L. Bluhm, Canton, and John A. Sousa, Framingham, Mass., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed July 18, 1963, Ser. No. 296,136
9 Claims. (Cl. 260—143)

1. A photochromic compound of the following formula



wherein X is a member selected from the group consisting of hydrogen and hydroxy and Y is a member selected from the group consisting of cyano, carbo-lower alkoxy, carboxamido, carboxy,



and

nitro with the proviso that when Y is nitro, X is hydroxy.

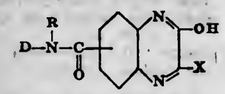
3,290,282

FIBER-REACTIVE DYES

Erik Kissa, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 21, 1963, Ser. No. 282,174
7 Claims. (Cl. 260—146)

1. Fiber-reactive dye of the formula



where X is selected from the group consisting of chlorine and bromine; R is selected from the group consisting of hydrogen and C_1–C_4 alkyl radicals, and D is the radical of a water soluble dye chromophore selected from the group consisting of azo, metallized azo, anthraquinone and phthalocyanine dye chromophores.

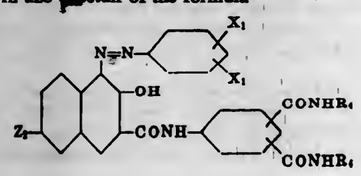
3,290,283

CARBOXYLIC ACID AMIDE MONO AZO-DYESTUFFS

Karl Ronco, Muttenz, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,642
Claims priority, application Switzerland, Aug. 17, 1962, 9,849/62; June 28, 1963, 8,078/63
4 Claims. (Cl. 260—204)

1. An azo-dyestuff of the formula



in which R_4 represents a benzene radical, X_1 is a member selected from the group consisting of chlorine, nitro and trifluoromethyl, Y_1 is trifluoromethyl, and Z_2 is a member selected from the group consisting of hydrogen and bromine.

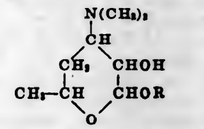
3,290,284

NOVEL GLYCOSIDES OF DESOSAMINE

Howard Newman, Spring Valley, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 5, 1965, Ser. No. 423,589
9 Claims. (Cl. 260—210)

1. A compound selected from the group consisting of glycosides of desosamine of the formula:



wherein R is selected from the group consisting of β-naphthyl, β-anthraquinonyl, cyclododecyl, cholesteryl, 2-digitogeninyl and 3-digitogeninyl; the acid-addition salts thereof; and the quaternary ammonium salts thereof with lower alkyl halides.

3,290,285

METHOD OF PRODUCTION OF 5'-GUANYLIC ACID

Saburo Senoo and Nobumitsu Yano, Tokyo, and Toshio Kato, Omiya-shi, and Hiroshi Hayashi, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 19, 1964, Ser. No. 345,839
Claims priority, application Japan, Feb. 21, 1963, 38/7,579
2 Claims. (Cl. 260—211.5)

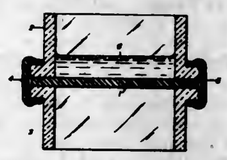
1. A process for producing 5'-guanylic acid comprising adding to a solution containing 5'-guanylic acid and at least one impurity substance, and alkali hydroxide, adjusting the pH of said solution to a value between 1.0 and 5.0, cooling the said solution, and filtering guanylic acid and its alkali metal salt which crystallizes.

3,290,286

PARTIALLY HYDROLYZED CELLULOSIC REVERSE OSMOSIS MEMBRANES AND METHODS OF PREPARING THE SAME

Robert E. Kesting, Mount Baldy, Calif., assignor, by direct and mesne assignments, of one-half to Aerojet-General Corporation, Sacramento, Calif., and one-half to the United States of America as represented by the Secretary of the Interior

Filed Oct. 18, 1965, Ser. No. 497,565
6 Claims. (Cl. 260—230)



2. In the preparation of cellulosic ester reverse osmosis membranes, the improvement which comprises reacting the membrane with an alkali solution to partially convert ester groups to hydroxyl groups.

3. A reverse osmosis membrane prepared using the method of claim 2.

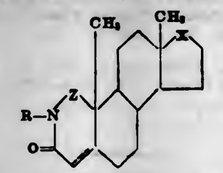
3,290,287

17-OXYGENATED (OPTIONALLY N-ALKYLATED) 2-AZAANDROSTAN-3-ONES, 4-DEHYDRO DERIVATIVES THEREOF, AND A-HOMO COMPOUNDS CORRESPONDING

Robert H. Mazur, Deerfield, and Raphael Pappo, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

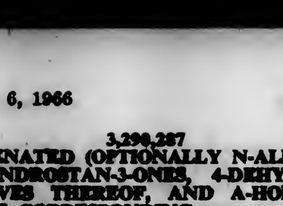
No Drawing. Filed Feb. 17, 1964, Ser. No. 345,085
20 Claims. (Cl. 260—239.3)

1. A compound of the formula



wherein Z is selected from the group of bivalent radicals consisting of methylene and ethylene, R is a member of the class selected from hydrogen and radicals of the group consisting of lower alkyl and alkanoyl, the dotted line indicates that the linkage between carbon atoms 4 and 5 is selected from the group consisting of a single bond and a double bond, X is selected from the group of radicals consisting of carbonyl, β-hydroxymethylene, α-(lower alkyl) - β - hydroxymethylene, β - (lower alkanoyl) oxymethylene and α - (lower alkyl) - β - (lower alkanoyl)-oxymethylene when Z is methylene, X is selected from the group of radicals consisting of carbonyl, β-hydroxymethylene, α-(lower alkyl) - β - hydroxymethylene, β-(lower alkanoyl)oxymethylene and α - (lower alkyl) - β-(lower alkanoyl)oxymethylene when the linkage between carbon atoms 4 and 5 is a double bond, and X is selected from the group consisting of α-(lower alkyl)-β-hydroxymethylene and α - (lower alkyl) - β - (lower alkanoyl) oxymethylene when Z is ethylene and the linkage between carbon atoms 4 and 5 is a single bond.

7. A compound of the formula



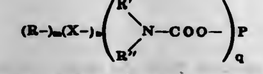
3,290,288

PROCESS FOR THE DIMERIZATION OF AROMATIC ISOCYANATES

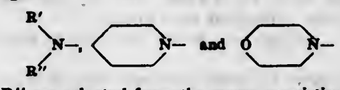
Gunter Oertel, Cologne-Flittard, and Hans Holtschmidt, Cologne-Stammheim an der Ruthen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Dec. 5, 1963, Ser. No. 328,161
Claims priority, application Germany, Dec. 19, 1962, F 38,596
8 Claims. (Cl. 260—239)

1. A process for the dimerization of aromatic isocyanate having at least one NCO group bonded to an aromatic ring which has only hydrogen atoms on ortho carbon atoms which comprises contacting said aromatic isocyanate with a catalytic amount of a compound having the formula



where R is selected from the group consisting of alkyl, alkenyl, cycloalkyl, aralkyl, aryl, O-alkyl, O-alkenyl, O-cycloalkyl, O-aralkyl, O-aryl, S-alkyl, S-alkenyl, S-cycloalkyl, S-aralkyl and S-aryl; X is selected from the group consisting of



R' and R'' are selected from the group consisting of alkyl, alkenyl, and cycloalkyl; *m* and *q* are cardinal numbers from 0 to 2 and *n* is a cardinal number from 0 to 3, the sum of *m*, *n* and *q* being 3.

3,290,289

PREPARATION OF 3,3-DISUBSTITUTED DIAZIRIDINES AND CERTAIN PRODUCTS THEREOF

Julius J. Fuchs, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,268
9 Claims. (Cl. 260—239)

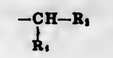
1. A process for the preparation of diaziridines of the following formula:

(1) 

wherein

R_1 is phenyl, alkyl of 1 to 16 carbon atoms or alkyl of 1 to 16 carbon atoms substituted with a substituent selected from the group consisting of cyano, hydroxy, and lower alkoxy;

R_2 is selected from the group consisting of hydrogen and

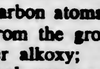


wherein

R_3 is hydrogen, alkyl of from 1 to 15 carbon atoms or alkyl of 1 to 15 carbon atoms substituted with a substituent selected from the group consisting of cyano, hydroxy and lower alkoxy;

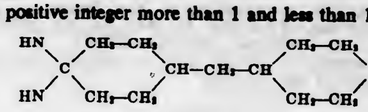
R_4 is hydrogen, methyl, cyanomethyl, hydroxymethyl or lower alkoxymethyl;

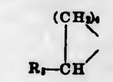
provided that R_1 and R_2 can be taken together and are of the following formulae:

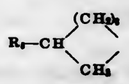
(2) 

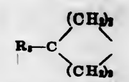
wherein

n is a positive integer more than 1 and less than 15;

(3) 

(4) 

(5) 

(6) 

wherein

R_5 is selected from the group consisting of alkyl of 1 to 4 carbon atoms, hydroxy, and alkoxy of 1 to 4 carbon atoms,

with the limitation that there will be no more than a total of 18 carbon atoms in the diaziridine; said process comprising reacting a compound selected from the group

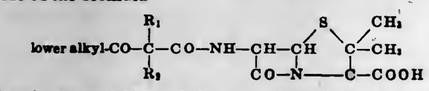
consisting of the corresponding N-chloroketimine and N-N-dichloroamine with ammonia at a temperature of from about —25° C. to about 100° C. and recovering the diaziridine compound thus formed.

3. 3',3' - methylene - bis-(3,3-pentamethylene-diaziridine).

4. 3'-methoxy-3,3-pentamethylene-diaziridine.

3,290,290
ALIPHATIC KETO PENICILLINS
Leon John Heuser, Princeton, and Carl Francis Anderson, Milltown, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,441
9 Claims. (Cl. 260—239.1)

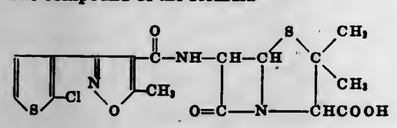
1. A compound selected from the group consisting of acids of the formula



wherein R_1 and R_2 each is a member of the group consisting of hydrogen and lower alkyl, and salts of said acids with bases.

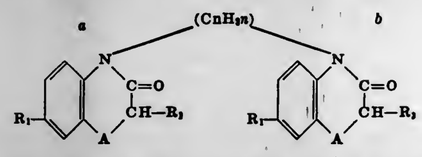
3,290,291
5 - METHYL-3-(2'-CHLORO - 3' - THIENYL)-4-ISOXAZOLYLPENICILLIN AND SALTS THEREOF
Leonard Bruce Crast, Jr., North Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 22, 1964, Ser. No. 369,626
2 Claims. (Cl. 260—239.1)

1. The compound of the formula

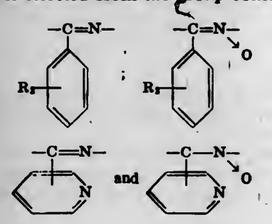


3,290,292
1,1'-LOWER ALKYLENE-BIS-(5-AROMATIC-1,4-BENZODIAZEPIN-2-ONES)
James Valentine Earley, Cedar Grove, Rodney Ian Fryer, West Orange, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 17, 1964, Ser. No. 352,640
7 Claims. (Cl. 260—239.3)

1. A compound selected from the group consisting of compounds of the formula



and pharmaceutically acceptable acid addition salts thereof wherein A is selected from the group consisting of

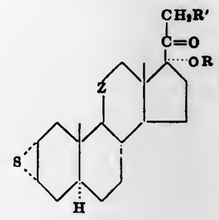


3,290,293
4-ANDROSTENO-[3,2-c]PYRAZOLES
Ralph F. Hirschmann, Scotch Plains, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 1, 1961, Ser. No. 156,468
5 Claims. (Cl. 260—239.5)

1. 17α-haloethynyl-2'-(p-fluorophenyl)-17β-hydroxy - 4-androsteno-[3,2-c]pyrazole.

3,290,294
17α-OXYGENATED 2,3-EPITHIO-5α-PREGNANES AND PRODUCTION THEREOF
Taichiro Komeno, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed Mar. 24, 1966, Ser. No. 537,026
Claims priority, application Japan, Dec. 19, 1961, 36/46,266
28 Claims. (Cl. 260—239.5)

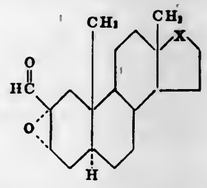
1. A 2,3-epithio-steroid of the formula:



wherein R is a hydrogen atom or a lower alkanoyl group, R' is a hydrogen atom, a hydroxy group or a lower alkanoyloxy group and Z is a methylene group, a carbonyl group, a hydroxymethylene group or a lower alkanoyloxymethylene group.

3,290,295
17-OXYGENATED 2α,3α-EPOXY-2β-FORMYL-5α-ANDROSTANES AND INTERMEDIATES THERETO
Paul D. Klimstra, Northbrook, and Raymond E. Counsell, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 14, 1963, Ser. No. 265,282
6 Claims. (Cl. 260—239.55)

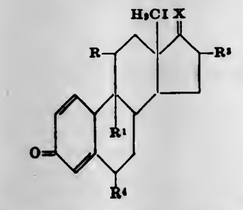
1. A compound of the formula



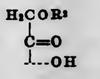
wherein X is selected from the group consisting of carbonyl, β-hydroxymethylene, and β-(lower alkanoyl)oxymethylene radicals.

3,290,296
PROCESS FOR THE PRODUCTION OF IODOHYDRINS OR OF CYCLIC ETHERS DERIVED THEREFROM
Derek Harold Richard Barton, Cambridge, Mass., assignor to Research Institute for Medicine and Chemistry Inc., Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Mar. 4, 1964, Ser. No. 349,478
Claims priority, application Great Britain, Mar. 11, 1963, 9,559/63
16 Claims. (Cl. 260—239.55)

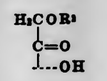
16. A compound selected from the group consisting of a compound of the formula



where X is a member selected from the group consisting of keto and the grouping

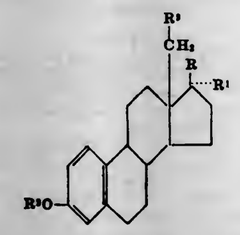


R is a member selected from the group consisting of keto and β-hydroxy, R^1 is a member selected from the group consisting of hydrogen and α-halo, R^3 is a member selected from the group consisting of hydrogen and lower alkanoyl, R^3 is a member selected from the group consisting of hydrogen, α-methyl, β-methyl, and α-hydroxy and R^4 is a member selected from the group consisting of hydrogen, α-methyl and α-halo; and bis-lower alkylenedioxy derivatives of said compound in which X is



3,290,297
TETRAHYDROFURANYL ETHERS OF $\Delta^{1,3,5(10)}$-ESTRATRIENE
Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Feb. 11, 1965, Ser. No. 432,015
20 Claims. (Cl. 260—239.55)

1. A compound of the general formula:



wherein R is selected from the group consisting of a hydroxyl group, an acyloxy group derived from a hydrocarbon carboxylic acid containing less than 12 carbon atoms, and a tetrahydrofuranyloxy group, R^1 is selected from the group consisting of hydrogen, a lower alkyl group, a lower alkenyl group and a lower alkynyl group, R and R^1 taken together represent a keto group, R^2 is selected from the group consisting of hydrogen, an acyl group containing less than 12 carbon atoms, a hydrocarbon group containing from 1 to 8 carbon atoms, inclusive, and a tetrahydrofuranyl group, with at least one of R and OR^2 being a tetrahydrofuranyloxy group, and R^3 is selected from the group consisting of hydrogen and a lower alkyl group.

3,290,298
THE LACTONE OF 3'-[4-FLUORO-4-ANDROSTENE-17 - OL - 3 - ONE-17-YL]-PROPIONIC ACID AND PROCESS UTILIZED IN THE PREPARATION THEREOF
Robert Joly, Montmorency, Julien Warnant, Neuilly sur-Seine, and Roland Bardoneschi, Le Vert Galant, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,764
Claims priority, application France, Jan. 30, 1961, 851,139
11 Claims. (Cl. 260—239.57)

1. A process for the preparation of 3-keto-4-fluoro-Δ^4-steroids which comprises reacting the 3-enamine of a 3-keto-Δ^4-steroid wherein the enamine group is selected from the group consisting of N-dilower alkyl amino-pyrrolidyl, piperidyl and morpholino with perchloryl fluoride in an aqueous organic polar solvent under basic conditions at temperature below —25° C. to form the corresponding 3-keto-4-fluoro-Δ^5-steroid, isomerizing the latter by heating in an alkaline medium to form the corresponding 3-keto-4-fluoro-Δ^4-steroid and recovering the latter.

11. The lactone of 3'-[4-fluoro-$\Delta^{1,4}$-androstadiene-17β-ol-3-one-17α-yl]-propionic acid.

3,290,299
COPPER CHELATE PIGMENTS AND PROCESS OF MAKING THEM
Charles A. Kumins, Chappaqua, and Edmund N. Harvey, Jr., Scarsdale, N.Y., and George A. Weber, North Bergen, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed June 26, 1963, Ser. No. 290,595
3 Claims. (Cl. 260—240)

1. A colorant consisting essentially of the reaction product of 2 moles of 2,4-diamino-6-phenyl-s-triazine, 3 moles of a neutral cupric salt soluble in the reaction medium, and 2 moles of salicylaldehyde, when heated together to about 145–300° C. for a period of from about 1 hour to about 20 hours, the separated and dried colorant having a chemical composition of about 23.8 parts copper, 2.8 parts hydrogen, 17.5 parts nitrogen, 48 parts carbon, and 7.9 parts oxygen, the parts being parts by weight.

3,290,300
HYDRAZONES OF 1-AMINO-4-DIBENZO-CYCLOHEPTENYLPIPERAZINES
John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Apr. 27, 1964, Ser. No. 362,929
1 Claim. (Cl. 260—240)

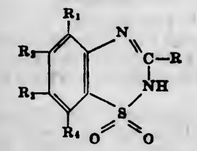
1 - (10,11 - dihydro - 5H - dibenzo[a,d]cyclohepten-5-yl)-4-ferrocenylmethyleneaminopiperazine.

3,290,301
CERTAIN 3-AMINOALKYL-5-ALKYLISOXAZOLES
Hideo Kano, Kyoto-shi, Kyoto, and Ikuo Adachi, Toyonakashi, Osaka, Japan, assignors to Shionogi & Co., Ltd., Osaka-shi, Japan
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,543
11 Claims. (Cl. 260—243)

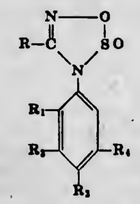
1. 3-piperidino(lower)alkyl-5-lower alkylisoxazole.

3,290,302
PROCESS FOR THE PREPARATION OF BENZOTHIADIAZINE-DIOXIDES
Fernand G. F. Eloy, Rhode-Saint-Genese, Belgium, assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 4, 1964, Ser. No. 387,523
10 Claims. (Cl. 260—243)

1. A process for the preparation of 1,2,4-benzothiadiazine-1,1-dioxides of the formula:



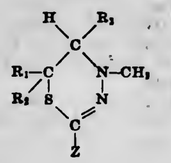
which comprises heating a 4-substituted 3-phenyl-1,2,3,5-oxathiadiazole-2-oxide of the formula:



wherein R represents a member selected from the group consisting of hydrocarbon, nitrohydrocarbon, and halohydrocarbon groups of from 1 to 12 carbon atoms; R_1–R_4 represent a member selected from the group consisting of hydrogen, halogen, sulfamyl, nitro, and hydrocarbon, halohydrocarbon, hydrocarbyloxy, and hydrocarbyloxycarbonyl groups of from 1 to 12 carbon atoms, with the proviso that two adjacent R_1–R_4 groups when taken together can form a six membered aromatic ring with the carbon atoms to which they are attached; to a temperature of from about 50° C. to about 250° C. to cause thermal rearrangement of said 3-phenyl-1,2,3,5-oxathiadiazole-2-oxide to the 1,2,4-benzothiadiazine-1,1-dioxide.

3,290,303
SUBSTITUTED DIHYDRO-THIADIAZINES
Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 4, 1964, Ser. No. 394,624
11 Claims. (Cl. 260—243)

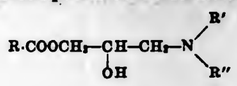
1. A compound selected from the group consisting of 5,6-dihydro-4H-1,3,4-thiadiazines having the formula



wherein R_1 is selected from the group consisting of phenyl, methyl, and hydrogen, R_2 and R_3 are independently selected from hydrogen and methyl and Z is selected from the group consisting of cyclohexyl, benzyl, phenyl and substituted phenyl wherein said substituted phenyl bears from one to two substituents selected from the group consisting of halogens, hydroxy lower alkyl, lower alkoxy and nitro, and the mineral acid salts thereof.

3,290,304
QUATERNARY AMMONIUM COMPOUNDS, THEIR PREPARATION AND THEIR USE
Gregoire Kalopissis, Paris, and Guy Vanlerberghe, Villiers Le Bel, France, assignors to L'Oreal, a corporation of France
No Drawing. Original application Oct. 29, 1962, Ser. No. 233,909. Divided and this application June 22, 1965, Ser. No. 485,135
Claims priority, application France, Nov. 2, 1961, 877,753
6 Claims. (Cl. 260—247.2)

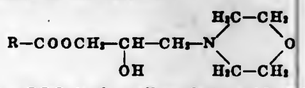
1. An amine compound of the formula:



wherein

(a) R represents hydrocarbon of 10 to 18 carbon atoms and
(b) R′ and R″ are selected from the group consisting of alkyl of 1 to 4 carbon atoms, hydroxy alkyl of 1 to 4 carbon atoms and together with the nitrogen atom form a member selected from the group consisting of morpholine, piperidine and pyrrolidine.

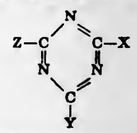
6. An amine of the formula:



in which R—COO is the tallow fatty acid residue.

3,290,305
CHLORO-s-TRIAZINYL-AMINOACIDS
Adolf Schmitz, Essen, Germany, assignor to Th. Goldschmidt A.G., Essen, Germany
No Drawing. Filed Jan. 24, 1964, Ser. No. 339,852
Claims priority, application Germany, Feb. 5, 1963, G 36,988
9 Claims. (Cl. 260—249.5)

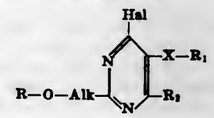
1. A compound of the formula



wherein Z is chlorine;
X is an alkyl amino acid group of not more than 20 carbon atoms or an aromatic amino acid group, wherein the aromatic group is phenyl;
Y is selected from the group consisting of chlorine, amino, amino acid groups as represented by X and amino acid groups different from the amino acid groups of X, at least one of said amino acid groups and amino being linked to a higher aliphatic substituent.

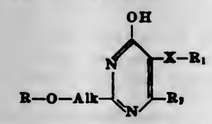
3,290,306
CERTAIN 2-OXYALKYL-4-HALOGENOPYRIMIDINES AND INTERMEDIATES THEREFOR
Paul Schmidt, Therwil, and Ernst Schweizer, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,506
Claims priority, application Switzerland, Mar. 25, 1964, 3,834/64
45 Claims. (Cl. 260—247.5)

1. A compound of the formula



in which Hal presents halogen, Alk represents lower alkylene, R represents a member selected from the group consisting of lower alkyl, lower alkenyl, cyclo-lower alkyl, cyclo-lower alkenyl, cyclo-lower alkyl-lower alkyl and cyclo-lower alkenyl-lower alkyl, X represents a member selected from the group consisting of a direct bond and lower alkylene, R_1 represents a member selected from the group consisting of phenyl and phenyl substituted by at least one member selected from the group consisting of halogen, lower alkyl, lower alkoxy, lower alkenyloxy, methylenedioxy, amino and trifluoromethyl and R_2 represents a member selected from the group consisting of hydrogen, lower alkyl, hydroxy, lower alkoxy, halogen, amino, amino substituted by 1 to 2 members selected from the group consisting of lower alkyl, cyclo-lower alkyl, cyclo-lower alkyl-lower alkyl, oxa-lower alkyl, oxacyclo-lower akyl and oxacyclo-lower alkyl-lower alkyl, lower alkyleneamino and oxa-lower alkyleneamino.

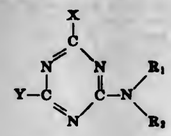
40. A compound of the formula



in which Alk represents lower alkylene, R represents a member selected from the group consisting of lower alkyl, lower alkenyl, cyclo-lower alkyl, cyclo-lower alkenyl, cyclo-lower alkyl-lower alkyl and cyclo-lower alkenyl-lower alkyl, X represents a member selected from the group consisting of a direct bond and lower alkylene, R_1 represents a member selected from the group consisting of phenyl and phenyl substituted by at least one member selected from the group consisting of halogen, lower alkyl, lower alkoxy, lower alkenyloxy, methylenedioxy, amino and trifluoromethyl and R_2 represents a member selected from the group consisting of hydrogen, lower alkyl, hydroxy, lower alkoxy, halogen, amino, amino substituted by 1 to 2 members selected from the group consisting of lower alkyl, cyclo-lower alkyl, cyclo-lower alkyl-lower alkyl, oxa-lower alkyl, oxacyclo-lower alkyl and oxacyclo-lower alkyl-lower alkyl, lower alkyleneamino and oxa-lower alkyleneamino.

3,290,307
N-SUBSTITUTED MELAMINES
Ernst Keller, Binningen, near Basel, and Joachim Dazzi, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed Jan. 3, 1963, Ser. No. 249,120
Claims priority, application Switzerland, July 7, 1961, 8,130/61
8 Claims. (Cl. 260—249.6)

1. A compound of the formula



wherein

X is a di (lower alkyl) amino in which each alkyl radical has from 1 to 4 carbon atoms,
Y is a di (lower alkyl) amino in which each alkyl radical has from 1 to 4 carbon atoms,
R_1 is a member selected from the group consisting of hydrogen and alkyl of maximally 14 carbon atoms,
R_2 is a member selected from the group consisting of alkyl of at least 6 and maximally 18 carbon atoms and cyclohexyl, the sum of the total number of alkyl carbon atoms in R_1 and R_2 being at least 8 and not more than 28 when R_2 is alkyl, and
R_1 and R_2 taken together can be a member selected from the group consisting of $—(CH_2)_5—$ and $—(CH_2)_6—$.

3,290,308
SYNTHESIS OF PURE MELAMINE
Jerome H. Marten, Nixon, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 11, 1964, Ser. No. 344,020
12 Claims. (Cl. 260—249.7)

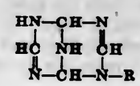
1. In the process of melamine synthesis from urea wherein vaporized urea is catalytically converted at elevated temperature to form a gaseous mixture of melamine, ammonia and carbon dioxide, said gaseous mixture is cooled by contact with a cold aqueous liquor stream whereby solid melamine is condensed from the gas phase, residual mixed off-gas comprising ammonia and carbon dioxide is separated from the liquid slurry comprising solid melamine in warmed aqueous liquor, said liquid slurry is separated into product solid melamine and warmed aqueous liquor, and said warmed aqueous liquor is cooled and recycled to said contact with gaseous mixture, the improved method of quench-cooling said gaseous mixture to form pure solid melamine which comprises diverting said gaseous mixture into a downwardly restricted flow path by means of a gas baffle, thereby accelerating said gaseous mixture, said gas baffle being at a temperature above 610° F. whereby said gas stream is maintained at a temperature above 610° F. and condensation of solid melamine is prevented, and transversely projecting said cold aqueous liquor stream into said gaseous mixture below said gas baffle thereby condensing all of the melamine into the liquid phase as solid melamine without deposition of solid melamine on said gas baffle.

3,290,309
SYNTHESIS OF MELAMINE
Jerome H. Marten, Nixon, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 11, 1964, Ser. No. 344,102
10 Claims. (Cl. 260—249.7)

1. In the process for the synthesis of melamine from urea in which a gas stream principally containing vaporized urea, melamine precursors and ammonia is passed through a catalytic bed containing solid catalyst particles, a product gas streams comprising melamine, ammonia and carbon dioxide is withdrawn from said catalyst bed, said product gas stream is cooled to a temperature below 610° F. to condense solid melamine, and product solid melamine is separated from residual mixed off-gas comprising ammonia and carbon dioxide, the improvement which comprises providing activated alumina particles having an internal surface area in the range of 10 to 80 square meters per gram as said solid catalyst particles in said catalyst bed.

3,290,310
2,4,6,8,9 - PENTAAZA - BICYCLO - [3,3,1]-NONA-2,6-DIENES AND PROCESS FOR THEIR MANUFACTURE
Max Morf, Riehen, and Werner Heinzer, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,191
Claims priority, application Switzerland, Jan. 17, 1964, 522/64
6 Claims. (Cl. 260—249.9)

1. A process for the manufacture of 2,4,6,8,9-pentaazabicyclo-[3,3,1]-nona-2,6-dienes of the formula



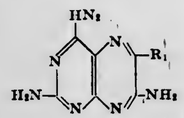
where R represents a member selected from the group consisting of hydrogen, alkyl, alkenyl, cycloalkyl, hydroxyalkyl, dialkylaminoalkyl, phenyl, hydroxyphenyl, (N-morpholyl)alkyl and pyridyl, wherein (1) a salt from an acid and a nitrogen base of the formula R—NH_2 (where R has the same meaning as above) is reacted in an acid aqueous solution with (2) dicyandiamide and (3) formaldehyde at a temperature above 65° C., the molecular ratio of dicyandiamide to the salt of the compound of the formula R—NH_2 ranging from 1:0.8 to 1:1.3 and the molecular ratio of dicyandiamide to formaldehyde ranging from 1:1.8 to 1:2.3.

3,290,311
DERIVATIVES OF 3,5-DIAMINO-6-CHLOROPYRAZINOIC ACID ESTERS AND A PROCESS FOR MAKING THEM
Edward J. Cragoe, Jr., Lansdale, and James H. Jones, Blue Bell, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 31, 1964, Ser. No. 356,038
6 Claims. (Cl. 260—250)

1. Lower alkyl 3,5-diamino-6-chloropyrazinoate.

3,290,312
TRIAMINO PTERIDINE COMPOUNDS
Rudolf Tschesche, Rottgen, near Bonn, and Gerhard Sturm, Ippendorf, near Bonn, Germany, assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 26, 1963, Ser. No. 311,654
9 Claims. (Cl. 260—251.5)

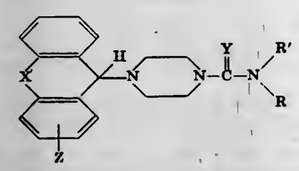
1. A member selected from the group consisting of a compound of the formula



wherein R_1 is a member of the group consisting of pyridyl, lower alkylpyridyl, thiazolyl and lower alkylthiazolyl,
and physiologically acceptable acid addition salts thereof.

3,290,313
1-CARBAMOYL-4-XANTHENYLPIPERAZINES
John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 29, 1964, Ser. No. 422,009
9 Claims. (Cl. 260—268)

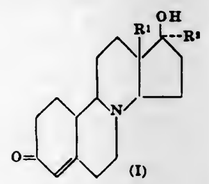
1. A compound of the formula



wherein X is selected from the group consisting of O and S; Y is selected from the group consisting of O and S; Z is selected from the group consisting of hydrogen and chlorine; R is selected from the group consisting of lower alkyl, cyclohexyl, phenyl, tolyl, halophenyl, methoxyphenyl, biphenylyl, and napthyl; and R′ is selected from the group consisting of hydrogen, lower alkyl, and phenyl.

3,290,314
(±)-8-AZAOESTR-OR-8-AZAGONA-4-EN-17β-OL-3-ONES
Richard Clarkson, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 21, 1964, Ser. No. 361,535
Claims priority, application Great Britain, May 10, 1963, 18,625/63
4 Claims. (Cl. 260—286)

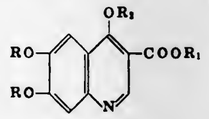
1. A heterocyclic ketone of the formula:



wherein R^1 stands for methyl, ethyl and n-propyl alkyl and R^2 stands for hydrogen, methyl, ethyl, n-propyl, ethynyl, vinyl or allyl, and the non toxic, acid addition salts thereof.

3,290,315
ESTERS OF 6,7-DI(LOWER)ALKOXY-4-HYDROXY-3-QUINOLINECARBOXYLIC ACID
Edward John Watson, Jr., New Orleans, La., assignor to The Norwich Pharmacal Company, a corporation of New York
No Drawing. Filed Mar. 17, 1965, Ser. No. 440,621
6 Claims. (Cl. 260—287)

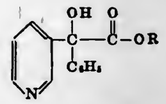
1. A compound of the formula:



wherein:
R is a member of the group consisting of ethyl isopropyl, isobutyl and methallyl;
R_1 is a member of the group consisting of methyl, ethyl and allyl;
R_2 is a member of the group consisting of hydrogen and acetyl; and when R_2 is hydrogen at least one of R and R_1 is the aforesaid alkenyl radical.

3,290,316
α-3-PYRIDYLMANDELIC ACID AND DERIVATIVES THEREOF
Arthur Stempel, Teaneck, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 3, 1962, Ser. No. 214,498
15 Claims. (Cl. 260—292)

1. An ester of α-3-pyridylmandelic acid having the formula:



in which R is a member selected from the group consisting of lower alkyl, halogen-substituted lower alkyl, di-lower alkylamino-lower alkyl ethyl trimethylammonium halide and a nitrogen-containing heterocyclic radical selected from the group consisting of quinuclidinyl, 3-tropyl, hydroxy pyridyl and hydroxy piperidyl.

12. α-3-pyridylmandelic acid ester of tropine.

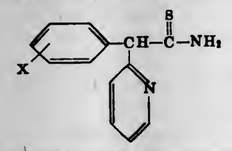
3,290,317
1-(N-ARYL-N-ALKANOYLAMINOALKYL)-4-ARYL-4-PIPERIDINOLS AND THEIR ESTERS
Philip M. Carabateas, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 7, 1960, Ser. No. 12,909
21 Claims. (Cl. 260—293.4)

8. An acid-addition salt of 4-phenyl-1-[2-(N-phenylacetamido)ethyl]-4-piperidinol.

21. A composition of matter selected from the group consisting of 1-[N-(mono- and bi-cyclic aromatic)-N-(lower - carboxylic - acyl)amino - (polycarbon - lower-alkyl)]-4-(monocarbocyclic-aryl having six ring-carbon atoms and naphthyl)-4-piperidinol, lower-caboxylic-acyl esters thereof, and acid-addition and alkyl, alkenyl, and aralkyl quaternary-ammonium salts of said 4-piperidinol and esters.

3,290,318
PHENYL - 2 - PYRIDYLTHIOACETAMIDE COMPOUNDS POSSESSING ANTI-ULCER ACTIVITY
Henry William Sause, Deerfield, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Sept. 3, 1964, Ser. No. 394,343
4 Claims. (Cl. 260—294.8)

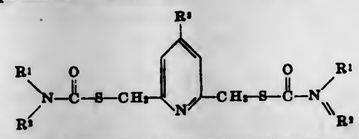
1. A compound of the formula



wherein X is selected from the group consisting of hydrogen, halogen, methyl, and methoxy.

3,290,319
SUBSTITUTED CARBAMATES OF PYRIDINE 2,6-DIMETHANETHIOLS
Richard A. Partyka, Liverpool, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 26, 1965, Ser. No. 435,708
7 Claims. (Cl. 260—294.8)

1. A member selected from the group consisting of a compound of the formula

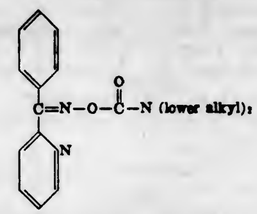


wherein R^1 is a member selected from the group consisting of hydrogen and lower alkyl, R^2 is a member selected from the group consisting of lower cycloalkyl and lower alkyl and R^2 is a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, lower alkyl and lower alkoxy; and nontoxic, pharmaceutical acceptable acid addition salts thereof.

3,290,320
BENZOYL PYRIDINE OXIMINO ETHERS AND METHODS FOR THEIR MANUFACTURE
Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed June 12, 1963, Ser. No. 287,205
10 Claims. (Cl. 260—295)

1. A compound of the group consisting of di-lower alkylamino lower alkyl ethers and di-lower alkyl carbamyl esters of benzoyl pyridine oxime and the non-toxic pharmaceutically acceptable acid addition salts thereof.

7. A compound of claim 1 of the formula:

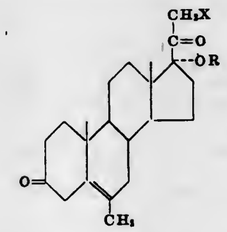


3,290,321
PROCESS FOR THE PREPARATION OF 2:2′-DIPYRIDYLS
George Henry Lang, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed June 5, 1964, Ser. No. 373,112
Claims priority, application Great Britain, June 19, 1963, 24,466/63
10 Claims. (Cl. 260—296)

1. An improved process for the manufacture of 2:2′-dipyridyl and alkyl derivatives thereof which comprises heating pyridine oxide or an alkylpyridine oxide at a temperature above 150° C. with a noble metal or rhenium catalyst.

3,290,322
OXIDATION OF STEROIDS
Bjarte Lökea, Shrewsbury, Mass., and Irving V. Sollins, Rye, N.Y., assignors to Phytogen Products, Inc., Mamaroneck, N.Y., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,381
8 Claims. (Cl. 260—397.4)

1. A compound of the structural formula:



wherein: X is a member of the group consisting of H and F; and R is a member of the group consisting of H and lower acyl.

3,290,323
ALLANTOIN GLYCYRRHETINIC ACID COMPLEXES
Irwin I. Lubowe, 667 Madison Ave., New York, N.Y.
No Drawing. Filed Apr. 16, 1965, Ser. No. 448,864
3 Claims. (Cl. 260—299)

1. Allantoin glycyrrhetinic acid.

3,290,324
ALLANTOIN BIOTIN COMPOSITIONS
Irwin I. Lubowe, 667 Madison Ave., New York, N.Y.
No Drawing. Filed Apr. 16, 1965, Ser. No. 448,870
3 Claims. (Cl. 260—299)

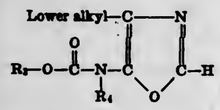
1. Allantoin biotin.

3,290,325
SOLUBLE ALKANOL AMMONIUM THIAZOLIDINE CARBOXYLATES
Francois Bertrand, Geneva, Switzerland, assignor to Sequepar, S.A., Fribourg, Switzerland
No Drawing. Filed Apr. 7, 1965, Ser. No. 446,399
Claims priority, application Switzerland, Apr. 7, 1964, 4,372/64
6 Claims. (Cl. 260—306.7)

1. A 2-amino-2-loweralkyl-1-propanol salt of thiazolidine carboxy acid.

3,290,326
ESTERS OF 4-LOWER ALKYL-5-OXAZOLE-CARBAMIC ACID AND INTERMEDIATES THEREFOR
Max Hoffer, Nutley, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 17, 1964, Ser. No. 389,829
16 Claims. (Cl. 260—307)

1. A compound selected from the group consisting of compounds of the formula

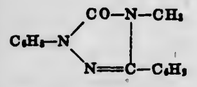


and acid addition salts thereof with pharmaceutically acceptable acids

wherein R_3 is selected from the group consisting of lower alkyl, halo-lower alkyl, lower alkenyl, halo-lower alkenyl, C_5–C_6 cycloalkyl, phenyl-lower alkyl, substituted phenyl-lower alkyl, naphthyl, unsubstituted phenyl, mono-substituted phenyl, di-substituted phenyl and trisubstituted phenyl wherein the substituents are selected from the group consisting of halogen, lower alkyl and lower alkoxy; thienyl-lower alkyl, furfuryl, pyrrolyl-lower alkyl, pyridyl-lower alkyl, pyrrolyl and pyridyl and R_4 is selected from the group consisting of hydrogen, lower alkyl, halo-lower alkyl, lower alkenyl and benzyl.

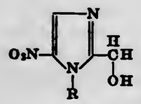
3,290,327
1-PHENYL-3-BUTYL-4-METHYL-TRIAZOLONE-(5)
Giuseppe Palazzo, Rome, Italy, assignor to Aziende Chimiche Riunite Angelini Francesco, a corporation of Italy
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,680
Claims priority, application Italy, Oct. 15, 1963, 21,279/63
1 Claim. (Cl. 260—308)

A compound of the formula:



3,290,328
2-HYDROXYMETHYL-5-NITROIMIDAZOLES AND PROCESS
James Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 9, 1965, Ser. No. 507,064
9 Claims. (Cl. 260—309)

1. The process for preparing a 5-nitroimidazole of the formula

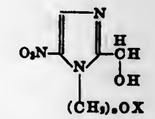


where R is selected from the class consisting of lower alkyl and $-(CH_2)_nOX$, wherein n has a value of 1–3 and X represents a member of the class consisting of hydrogen and lower alkanoyl, that comprises treating a 5-nitroimidazole of the formula



with formaldehyde where R is as defined above, said reaction being carried out at an elevated temperature and in a substantially anhydrous diloweralkylsulfoxide reaction medium.

7. A compound having the formula



where n is 1–3 and X is selected from the class consisting of hydrogen and loweralkanoyl.

3,290,329
PURIFICATION OF PYRROLIDONE-(2)
Helmut Doerfel, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Nov. 25, 1964, Ser. No. 413,985
Claims priority, application Germany, Nov. 30, 1963, B 74,478
12 Claims. (Cl. 260—326.5)

1. A process for purifying technical grade pyrrolidone intended for polymerization which comprises recrystallizing the pyrrolidone at from −70° to +20° C. from a member selected from the group consisting of an alkanol having one to six carbon atoms, an alkanone having three to seven carbon atoms and mixtures thereof.

3,290,330
ALKYL-SUBSTITUTED N-METHYLPYRROLIDINE-N-OXIDES
Maximilian I. Fremery, Oakland, and George A. Gillies, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,965
7 Claims. (Cl. 260—326.8)

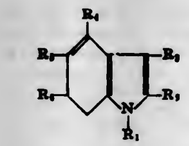
1. The compound 1-methyl-2-alkyl-3-(non- to monoalkyl)pyrrolidine-1-oxide wherein all of said alkyls have from 1 to 18 carbon atoms and at least one alkyl has at least 8 carbon atoms.

3,290,331
6'NO$_2$,7'-METHOXY INDOLINOBENZOSPIROPYRANS
John E. G. Taylor, David B. McQuaide, Richard E. Fox, Richard E. Bowman, and Francis D. Thomson, all of Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 30, 1964, Ser. No. 355,697
1 Claim. (Cl. 260—326.11)

The compound 1,3,3-trimethylindoline-5',7'-dimethoxy-6'-nitrobenzopyrylospiran.

3,290,332
6,7-DIHYDROINDOLES AND DERIVATIVES THEREOF
William Alan Remers, Suffern, N.Y., and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Aug. 30, 1965, Ser. No. 483,851
15 Claims. (Cl. 260—326.12)

1. A dihydroindole of the formula:



wherein R_1 is a member selected from the group consisting of hydrogen, lower alkyl, benzyl and benzenesulfonyl; R_2 is a member selected from the group consisting of hydrogen, formyl, and lower alkyl; R_3 is a member selected from the group consisting of hydrogen and formyl; R_4 is a member selected from the group consisting of lower alkyl, halogen, lower alkyloxy and diloweralkylamino; R_5 is a member selected from the group consisting of hydrogen, formyl, and lower alkyl aldimine and R_6 is a member selected from the group consisting of hydrogen and lower alkyl.

5. The compound 1-benzenesulfonyl - 4 - chloro-6,7-dihydro-5-indolecarboxaldehyde.

3,290,333
1,1-DICHLOROPERFLUOROALKYL ZINC CHLORIDES AND THEIR PREPARATION
Arnold H. Fainberg, Elkins Park, and Murray Hauptschein, Glenside, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,312
14 Claims. (Cl. 260—340.6)

5. 1,1-dichloro-2,2,2-trifluoroethyl zinc chloride dioxanate.

14. The process which consists essentially of reacting 1,1,1-trichloroperfluoroethane with zinc in dioxane at a temperature in the range from about 20° C. to about 150° C., thereby forming 1,1-dichloroperfluoroethyl zinc chloride as a product in the solvent; evaporating uncombined dioxane; and recovering 1,1-dichloroperfluoroethyl zinc chloride dioxanate.

3,290,334
THE PREPARATION OF SYM-DIFURYL AND SYM-DIVINYLGLYCOLS FROM FURFURAL AND α,β-ETHYLENICALLY UNSATURATED ALDEHYDES
George Smith, Richmond, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 9, 1963, Ser. No. 314,871
6 Claims. (Cl. 260—347.8)

2. The process for the production of α,α'-di(α-furyl) glycol by bringing into intimate contact (1) a solution of furfural in aqueous acetic acid, the acetic acid being present in an initial concentration of from about 4.5 normal to about 6.5 normal, with (2) zinc amalgam containing from about 2% to about 5% zinc by weight, at a temperature from about −10° C. to about 25° C.

3,290,335
MIXED NAPHTHENIC ACID ESTERS OF POLYHYDRIC ALCOHOLS
John O. Van Hook, Abington, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Original application June 4, 1962, Ser. No. 199,601, now Patent No. 3,182,034, dated May 4, 1965. Divided and this application Oct. 9, 1964, Ser. No. 402,943
10 Claims. (Cl. 260—348)

1. A mixed naphthenic acid ester having an acid moiety and a polyhydric alcohol moiety, said acid moiety being a mixture of acyl groups of

(a) 80 to 20 mole percent of a naphthenyl radical which contains a maximum average carbon content of 16, and

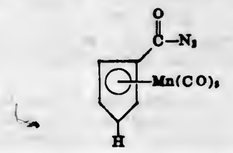
(b) 20 to 80 mole percent of an aliphatic monocarboxylic acid radical, selected from the group consisting of alkyl and alkenyl having at least 6 carbon atoms and epoxidized fatty acid radicals, said polyhydric alcohol moiety being a saturated, aliphatic, polyhydric alcohol residue of 2 to 3 hydroxyl groups.

3,290,336
EPOXIDE PRODUCTION
James D. McClure, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 29, 1963, Ser. No. 284,014
3 Claims. (Cl. 260—348.6)

1. The process for the production of alkyl 3,4-epoxybutyrate by dehydrohalogenating alkyl 4-halo-3-hydroxybutyrate wherein the alkyl is alkyl of from 1 to 10 carbon atoms, by reaction with silver oxide in an inert, neutral, hydrocarbon ether reaction diluent.

3,290,337
AZIDOCARBONYLCYCLOPENTADIENYL MANGANESE TRICARBONYL AND PROCESS FOR PREPARING SAME
John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Original application Dec. 28, 1960, Ser. No. 78,820. Divided and this application May 3, 1965, Ser. No. 463,419
4 Claims. (Cl. 260—349)

1. Process comprising reacting a halocarbonylcyclopentadienyl manganese tricarbonyl compound with a metal azide to form the compound having the formula:



said process being carried out in acetone and at a temperature of about 0° C.

3,290,338
16-ALKYLPROGESTERONES AND THEIR 9α,11β-DIHALOGENO ANALOGS
Elliot L. Shapiro, Irvington, and Eugene P. Oliveto, Glen Ridge, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed June 1, 1959, Ser. No. 817,065
The portion of the term of the patent subsequent to Nov. 21, 1978, has been disclaimed
18 Claims. (Cl. 260—397.4)

1. 6-W-9α-X-11β-Y-16-lower alkyl-17α-R-progesterone wherein W is a member of the group consisting of hydro-

gen and methyl; X is a halogen having an atomic weight greater than 19; Y is a halogen having an atomic weight less than 126 and being at least as electronegative as X; and R is an acyloxy radical of a hydrocarbon carboxylic acid having up to 12 carbon atoms.

3,290,339

AGMATINE DERIVATIVES

Norman Geoffrey Rule and Laszlo Lorand, Evanston, Ill., assignors to Northwestern University, Evanston, Ill., a corporation of Illinois

No Drawing. Filed June 28, 1963, Ser. No. 291,290
4 Claims. (Cl. 260—397.7)

1. A compound selected from the group consisting of p-acetamidobenzenesulfonylagmatine, p-succinamidobenzenesulfonylagmatine and pharmaceutically acceptable, acid-addition salts thereof.

3,290,340

1-PALMITOYL-2,3-DI(β-CARBETHOXYPROPIONIN)

James C. Wootton, Springfield Township, Hamilton County, and Fredric J. Baur, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 17, 1963, Ser. No. 288,438
1 Claim. (Cl. 260—404.8)

1-palmitoyl-2,3-di(β-carbethoxypropionin).

3,290,341

PROCESS FOR PREPARING VITAMIN A FATTY ACID ESTERS

William E. Stieg, Uncasville, and Joseph A. Kardys, Groton, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 761,675, Sept. 18, 1958. This application May 14, 1963, Ser. No. 280,442
2 Claims. (Cl. 260—410.9)

1. In the process for the preparation of a mixture of edible oil fatty acid esters of vitamin A, the improvement which consists of contacting vitamin A alcohol with a molecular excess of an animal or vegetable edible oil in the presence of an alkaline inter-esterification catalyst and washing resultant ester fraction with a lower alkanol.

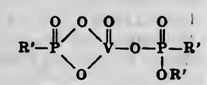
3,290,342

ORGANOPHOSPHORUS-VANADIUM COMPOUNDS AND METHODS FOR PREPARING AND USING THE SAME

Charles J. Stern, Jr., Westfield, and Edward G. Budnick, Scotch Plains, N.J., assignors to Plains Chemical Development Co., Garwood, N.J., a corporation of New Jersey

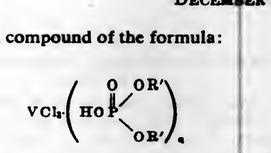
No Drawing. Filed Aug. 18, 1961, Ser. No. 132,292
26 Claims. (Cl. 260—429)

1. A chemical compound of the formula:



wherein R' is an alkyl radical containing from 1 to 16 carbon atoms.

7. A chemical compound of the formula:



wherein R' is an alkyl radical containing from 1 to 16 carbon atoms and q is an integer from 1 to 2.

3,290,343

ORGANOMETALLIC COMPOUNDS CONTAINING FLUOROCARBON RADICALS

Francis G. A. Stone, Watertown, Mass., and Paul M. Treichel, Madison, Wis., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 1, 1961, Ser. No. 135,462
17 Claims. (Cl. 260—429)

1. New compounds having the formula

$$[R]_a[R']_bM[CO]_c[R''_3P]_d$$

wherein R, R', CO, and R''$_3$P are radicals bonded to the metal atom M, and R is a fluorocarbon radical selected from the class consisting of

$HCF_2—CF_2—$, $HCFCl—CF_2—$, $HCCl_2—CF_2—$, $CF_2—CH=C(CF)—$

R' is a cyclopentadienyl radical selected from the class consisting of the cyclopentadienyl radical and hydrocarbon substituted cyclopentadienyl radicals having 6 to 13 carbon atoms which embody a ring of 5 carbon atoms having the general configuration found in cyclopentadiene, M is a metal selected from the class consisting of Groups VB, VIB, and VIII of the Periodic Table, and R'' is selected from the class consisting of halogen and alkyl, cycloalkyl, aryl, alkaryl, and aralkyl hydrocarbon radicals having from one to about 13 carbon atoms; a, b, c, and d are integers such that a=1 to 3, b=0 to 2, c=0 to 5, and d=0 to 2, the values of a, b, c, and d being such that the sum of all the electrons coordinated to the metal and the atomic number of the metal is equal to the atomic number of the next higher inert gas.

2. Process for the formation of new compounds of the Group VB, VIB, VIIB, and VIII metals of the Periodic Table which comprises reacting:

(a) an unsaturated fluorinated hydrocarbon selected from the class consisting of tetrafluoroethylene, trifluorochloroethylene, 1,1-difluoro-2,2 - dichloroethylene, and 1,1,1,4,4,4-hexafluorobutyne-2, with

(b) a hydride of a Group VB, VIB, VIIB, and VIII metal having the formula

$$[R']_bM[CO]_c[R''_3P]_d[H]_e$$

wherein R' is a cyclopentadienyl radical selected from the class consisting of the cyclopentadienyl radical and hydrocarbon substituted cyclopentadienyl radicals having 6 to 13 carbon atoms which embody a ring of 5 carbon atoms having the general configuration found in cyclopentadiene, M is a metal of Group VB, VIB, VIIB, VIII of the Periodic Table, R'' is selected from the class consisting of halogen, and alkyl, cycloalkyl, aryl, alkaryl, and aralkyl hydrocarbon radicals having from one to about 13 carbon atoms; b, c, d and e are integers such that b=0 to 2, c=0 to 5, d=0 to 2, and e=1 to 3, the values of b, c, d, and e being such that the sum of all the electrons coordinated to the metal and the atomic number of the metal is equal to the atomic number of the next higher inert gas,

said process being carried out at a temperature of 0 to 80° C., and at a pressure of 0.3 to 10 atmospheres for 5 hours to 7 days.

3,290,344

[(ACETONYLSULFONYL)CYCLOPENTADIENYL] MANGANESETRICARBONYL

John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Aug. 12, 1960, Ser. No. 49,135. Divided and this application May 13, 1963, Ser. No. 283,141
1 Claim. (Cl. 260—429)

[(Acetonylsulfonyl)cyclopentadienyl] manganese tricarbonyl.

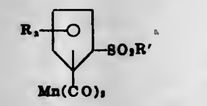
3,290,345

SULFONYL CYCLOPENTADIENYL MANGANESE TRICARBONYLS

John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Aug. 12, 1960, Ser. No. 49,135. Divided and this application May 29, 1963, Ser. No. 299,440
3 Claims. (Cl. 260—429)

1. Compounds having the formula:



wherein R is a univalent hydrocarbon group containing from one to about 8 carbon atoms, x is an integer ranging from 0 to 3 and R' is selected from the group consisting of alkyl and aralkyl groups.

3,290,346

PROCESS FOR PREPARING CARBOXYCYCLOPENTADIENYL MANGANESE TRICARBONYL

John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Dec. 28, 1960, Ser. No. 78,820. Divided and this application May 3, 1965, Ser. No. 463,418
3 Claims. (Cl. 260—429)

1. Process comprising reacting 1 mole of a 1-[2-oxo-2 - (tricarbonylmanganocyclopentadienyl) ethyl]pyridinium halide compound with 2 moles of a base.

3,290,347

PREPARATION OF POLYVALENT METAL SALTS OF DIORGANO DITHIOPHOSPHORIC ACIDS

Harold N. Miller, Plainfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,816
9 Claims. (Cl. 260—429.9)

1. In the preparation of a polyvalent metal salt of a diorgano dithiophosphoric acid wherein the organo groups contain from 1 to 30 carbon atoms and wherein the diorgano dithiophosphoric acid is neutralized with a compound selected from the group consisting of the oxides, hydroxides and carbonates of calcium, barium, cadmium, lead, zinc, copper, nickel, chromium, aluminum and magnesium, the improvement, whereby the time required for neutralization is reduced and the need for an excess of neutralizing compound is eliminated, which comprises conducting the neutralization in the presence of 1 to 10 wt. percent, based on the weight of diorgano dithiophosphoric acid, of a material selected from the class consisting of water-soluble carboxylic acids of from 1 to 5 carbon atoms and the water-soluble metal salts of said carboxylic acids, said carboxylic acid salt in each instance being of the same metal as the metal of said compound.

3,290,348

COBALT(O) COMPLEXES OF PHOSPHORUS ESTERS

Richard D. Mullineaux, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,517
14 Claims. (Cl. 260—439)

1. Tetrakis(trihydrocarbyl phosphite)cobalt(O).

3,290,349

PREPARATION OF ALKYLALUMINUM HALIDES

Allan J. Lundeen, Ponca City, Okla., and Donald M. Coyne, Prairie Village, Kans., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

No Drawing. Filed May 31, 1963, Ser. No. 284,318
10 Claims. (Cl. 260—448)

1. A process for preparing an alkylaluminum chloride which comprises contacting a compound of the structural formula RR_1AlOR_2, wherein R and R_1 each comprises alkyl of at most 3 carbon atoms and R_2 is selected from the group consisting of alkyl and cycloalkyl, with aluminum chloride, and recovering from the reaction mixture a compound selected from the group consisting of RR_1AlCl, $RAlCl_2$ and R_1AlCl_2.

3,290,350

α,α,α',α' - TETRAMETHYL - XYLYLENE DIISOCYANATES AND α,α-DIMETHYLISOPROPENYLBENZYL ISOCYANATES AND THE PREPARATION THEREOF FROM ISOCYANIC ACID AND OLEFINS

Fred W. Hoover, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,512
12 Claims. (Cl. 260—453)

1. A compound having the formula

$$OCN(CH_3)_2C—Arylene—C(CH_3)_2NCO$$

wherein Arylene contains up to 12 carbons and is selected from the group consisting of hydrocarbyl and substituted hydrocarbyl wherein the substituent is selected from the group halogen, hydrocarbyloxy and hydrocarbylcarboxy.

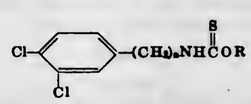
3,290,351

ARYL ESTERS OF 3,4-DICHLORO-PHENYL THIONOCARBAMATES

Arthur F. McKay, Beaconsfield, Quebec, and David L. Garmaise, Montreal, Quebec, Canada, assignors to Monsanto Canada Limited, La Salle, Quebec, Canada

No Drawing. Filed July 30, 1963, Ser. No. 298,598
Claims priority, application Great Britain, Jan. 16, 1959, 1,773/59; June 10, 1959, 19,936/59
7 Claims. (Cl. 260—455)

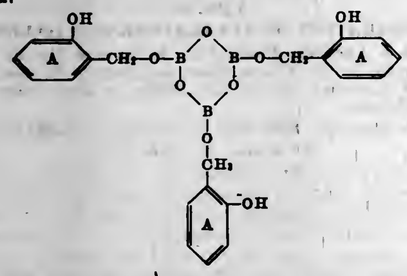
1. Thionocarbamates having the formula



wherein R is a member of the group consisting of phenyl, chlorophenyl, bromophenyl, fluorophenyl, nitrophenyl, lower alkyl phenyl, lower alkoxy phenyl, and 3,4-dichlorophenyl and wherein n is an integer from 0 to 1.

3,290,352
ORTHOHYDROXYBENZYL BORATES
Pierre Andre Robert Marchand, Caluire, and Jean Baptiste Grunet, Bron, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France
No Drawing. Original application Mar. 26, 1963, Ser. No. 267,929. Divided and this application Jan. 21, 1964, Ser. No. 344,519
Claims priority, application France, Mar. 28, 1962, 892,539
6 Claims. (Cl. 260—462)

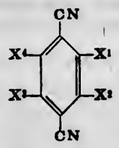
1. Tri(ortho-hydroxybenzyl)metaborates of the formula:



in which each of the rings A may be substituted by up to three substituents selected from the class consisting of alkyl of 1 to 12 carbon atoms alkoxy of 1 to 12 carbon atoms, chlorine, bromine, and iodine.

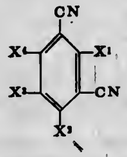
3,290,353
HALOGENATED AROMATIC NITRILES
Robert D. Battershell, Painesville, and Henry Bluestone, University Heights, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,751
14 Claims. (Cl. 260—465)

1. A halogenated-aromatic nitrile of the structure



wherein X^1, X^2, X^3 and X^4 are each selected from the group consisting of hydrogen, chlorine, fluorine and bromine with at least one X being other than hydrogen.

2. A halogenated-aromatic nitrile of the structure



wherein X^1, X^2, X^3 and X^4 are each selected from the group consisting of hydrogen, chlorine, fluorine and bromine with at least one X being other than hydrogen and no more than three X's being fluorine.

3,290,354
METHOD OF PREPARING ACRYLONITRILE
Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,586
8 Claims. (Cl. 260—465.3)

1. A method of preparing acrylonitrile comprising passing a mixture in a molar ratio per mol of propylene of 1 to 2 mols ammonia, up to 7 mols of water vapor and 1 to 3 mols of oxygen, through a bed of catalyst consisting essentially of copper phosphate, Te calculated as TeO_2 and Re calculated as $HReO_4$, in a molar ratio of 100 mols of copper phosphate, 10–30 mols of Te and 1–10 mols of Re at a temperature of from about 400 to about 500° C. with a contact time of from about 2 to about 70 seconds.

3,290,355
PREPARATION OF DIACETONITRILE
Herbert Karl Kunisch, Brig, and Christoph Anton Zinsstag, Visp, Switzerland, assignors to Lonza Ltd., Basel, Switzerland
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,853
Claims priority, application Switzerland, Jan. 3, 1963, 8/63
3 Claims. (Cl. 260—465.5)

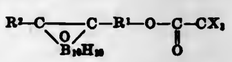
1. In the preparation of diacetonitrile by condensation of acetonitrile with metallic sodium at a temperature of 10 to 35° C. and subsequent hydrolysis of the obtained sodium salt with water, the improvement which consists in carrying out said condensation in benzine boiling in the range of 70 to 180° C. as reaction medium, and adding the water, after completed condensation, directly to the condensation product contained in said benzine, in an amount producing stratification of the system into three layers, an upper layer consisting essentially of said benzine, a middle layer containing diacetonitrile and unreacted acetonitrile, and a lower layer being an aqueous solution of sodium cyanide and sodium hydroxide, separating said middle layer by decantation, and fractionating said decanted middle layer to recover diacetonitrile.

3,290,356
PREPARATION OF 1-BENZOYLOXYDIPROPYL SULFIDE
George Sosnovsky, Chicago, Ill., assignor to IIT Research Institute, a corporation of Illinois
No Drawing. Continuation of application Ser. No. 88,627, Feb. 13, 1961, now Patent No. 3,144,438, dated Aug. 11, 1964. This application Mar. 19, 1963, Ser. No. 266,207
1 Claim. (Cl. 260—476)

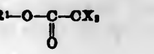
The method of making 1-benzoyloxydipropyl sulfide which comprises the steps of:
mixing n-propyl sulfide with tertiary butyl perbenzoate in the presence of cuprous bromide at a temperature of from 85°–90° C., and
separating said 1-benzoyloxydipropyl sulfide from the other reaction products.

3,290,357
THERMALLY STABLE ESTERS
Marvin M. Fein, 14 Woodbrook Circle, Westfield, N.J., and Nelson N. Schwartz, 9 Darrah Lane E., Trenton, N.J.
No Drawing. Filed Nov. 13, 1963, Ser. No. 324,172
11 Claims. (Cl. 260—487)

1. Novel thermally stable esters of the formula:



wherein X is a halogen, R^1 is a lower alkylene radical, and R^2 is selected from the group consisting of hydrogen and

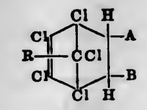


3,290,358
ALKYLARYL-SUBSTITUTED POLYVINYL ALCOHOLS AND ESTER DERIVATIVES
Ernest L. Politzer, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,295
5 Claims. (Cl. 260—488)

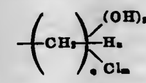
1. A polyvinyl alcohol ester of a lower alkanoic acid containing an average of from about 3 to about 20 vinyl alcohol ester units, substituted on one of the carbon atoms of a terminal vinyl group of the polymer by an alkylaromatic radical selected from the group consisting of the mononuclear and binuclear alkylaromatic hydrocarbon radicals and alkyl phenol radicals having a single nuclear alkyl substituent containing from 5 to about 18 carbon atoms.

3,290,359
POLYHALO-BICYCLIC COMPOUNDS AND OXYGENATED DERIVATIVES
Victor Mark, Norristown, Pa., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 11, 1963, Ser. No. 329,912
6 Claims. (Cl. 260—488)

1. A compound of the formula



wherein R is a chloroalkyl radical of up to eight carbon atoms and having the alpha carbon atom free of chlorine; wherein A and B are each radicals of the structure



wherein p is an integer from zero to one, n is an integer from zero to one, m is an integer from zero to one, provided that the sum of p, n and m is at all times one; and wherein q is an integer from zero to one.

3,290,360
CONDENSATION OF METHYLBENZYL ACETATE
John L. Tveten, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
No Drawing. Filed June 10, 1964, Ser. No. 374,143
5 Claims. (Cl. 260—491)

1. A method of producing a stain-resistant plasticizing oil which comprises
admixing one molar part of methylbenzyl acetate
with from 0 to 3.0 molar parts of glacial aqueous acetic acid having a concentration of 50 to 100% by weight,
adding to said methylbenzyl acetate from 0.1 to 1.0 molar part of aqueous sulfuric acid having a concentration of 30 to 80% by weight,
over a period of 1 minute to 6 hours under reaction conditions including a temperature of 70° C. to 150° C. and
a pressure of 0 to 55 p.s.i.g.,
maintaining the reaction conditions for from 0 to 6 hours after completion of sulfuric acid addition, for a total reaction time of at least one-half hour,
separating the sulfuric acid from the oil phase,
and recovering from said oil phase a product boiling above 200° C. at 20 mm. Hg pressure, and having an ester content of at least 90 weight percent.

3,290,361
PREPARATION OF POLYNUCLEAR AROMATIC ACETATE PLASTICIZERS BY CONDENSATION OF TOLUENE AND FORMALDEHYDE
John L. Tveten, Baytown, and Rowland Pettit, Austin, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
No Drawing. Filed June 10, 1964, Ser. No. 374,189
6 Claims. (Cl. 260—494)

1. In a batch process for condensing toluene and formaldehyde in the presence of acetic acid and sulfuric acid, the method of optimizing the production of polynuclear acetate esters which comprises
admixing 0.9 to 2.0 moles of paraformaldehyde with from 0.5 to 1.5 moles of glacial acetic acid to obtain an admixture,
heating said admixture to a temperature within the range of 75° C. to 150° C. and a pressure of 15 to 70 p.s.i.a.,
and adding to said admixture over a period of 1 to 4 hours 1 mole of toluene and 0.1 to 0.3 mole of sulfuric acid having a concentration of 40 to 70 weight percent,
and maintaining said reaction conditions for 2 to 5 hours after completion of the toluene and sulfuric acid addition,
and thereafter recovering a hydrocarbon product boiling above 200° C. at 20 mm. Hg pressure and having an ester-to-hydrocarbon ratio of at least 3.0 to 1.

3,290,362
PROCESS FOR PREPARING ESTERS AND ACETALS BY THE OXIDATION OF OLEFINS
William D. Scheffer, Pomona, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Aug. 5, 1963, Ser. No. 299,936
6 Claims. (Cl. 260—497)

1. In the oxidation of an olefin having from about 2 to about 5 carbons to valuable oxygenated compounds selected from the class consisting of acetals and unsaturated esters of carboxylic acids wherein oxygen and said olefin are introduced into a reaction zone to contact therein a substantially anhydrous organic reaction medium containing catalytic amounts of a platinum group metal and comprising a reactant selected from the class consisting of aliphatic carboxylic acids and monohydroxy alcohols having from 1 to about 20 carbons to prepare an unsaturated ester of said carboxylic acid when said reaction medium is selected to contain said carboxylic acid and to prepare an acetal of said alcohol when said reaction medium is selected to contain said alcohol, wherein said reaction zone is maintained at temperatures between about 50° and about 200° centigrade and sufficient pressures to maintain liquid phase conditions and wherein a catalyst containing effluent is withdrawn from said reaction zone; the improved method for preventing the formation of tenacious deposits of the platinum metal upon the surfaces of equipment and vessels contacted by said effluent that comprises separating said effluent into gas and liquid streams, analyzing the gas stream so separated for free oxygen content and controlling the relative rate of oxygen introduction into said reaction zone so as to maintain said oxygen content less than about 1.0 volume percent and thereby maintain said catalyst in said reactor effluent in a reduced state; distilling said liquid stream to recover the volatile products from a liquid residue and returning said liquid residue and said catalyst to said reaction zone.

4. In the oxidation of olefins having from about 2 to about 5 carbons to valuable oxygenated compounds selected from the class consisting of acetals and unsaturated esters of carboxylic acids by introducing oxygen and said olefin into a reaction zone to contact therein

a substantially anhydrous organic reaction medium containing catalytic amounts of a platinum group metal and comprising a reactant selected from the class consisting of aliphatic carboxylic acids and monohydroxy alcohols having from 1 to about 20 carbons to prepare an unsaturated ester of said carboxylic acid when said reaction medium is selected to contain said carboxylic acid and an acetal of said alcohol when said reaction medium is selected to contain said alcohol; wherein said reaction zone is maintained at temperatures between about 50° and about 200° centigrade and sufficient pressures to maintain liquid phase conditions and wherein a catalyst containing effluent is withdrawn from said reaction zone, the improved method for preventing the formation of tenacious deposits of the platinum metal upon the surfaces of equipment and vessels contacted by said effluent that comprises depressuring said effluent to separate dissolved gases therefrom, contacting said depressured effluent under reducing conditions with a reducing gas selected from the class consisting of carbon monoxide, hydrocarbon olefins, having 2 to about 5 carbons and mixtures thereof and thereafter distilling said reactor effluent to recover volatile products from a liquid residue and returning said residue and said reduced catalyst to said reaction zone.

3,290,363

METHOD FOR SUBSTANTIALLY REMOVING ALDEHYDE CONTAMINANTS FROM VINYL ACETATE AND ALCOHOLIC SOLUTIONS THEREOF

Nobuho Saito, Ohgaki, and Yasuo Kotani, Hirakata, Japan, assignors to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,916
5 Claims. (Cl. 260—499)

1. A method for removing aldehydes contained in vinyl acetate, which comprises treating vinyl acetate contaminated by aldehydes with 0.25–1 molar weight of an aromatic amine selected from the group consisting of aniline and naphthylamines and 0.01–0.1 molar weight of oxalic acid per 1 molar weight of aldehydes to be removed, at a temperature in the range of from 50° C. to the boiling point of vinyl acetate, and then distilling the vinyl acetate.

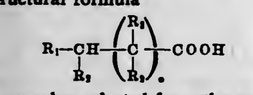
3,290,364

N,N-DI-LOWER ALKYLHYDROXYLAMINE SALTS OF POLYCARBOXYLIC ACIDS

Harry Elmer Albert, Lafayette Hill, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 30, 1963, Ser. No. 319.961
6 Claims. (Cl. 260—501)

1. N,N-di-lower alkylhydroxylamine salts of an acid having the structural formula



where R_1 is a member selected from the group consisting of methyl and carboxyl, R_2 is a member of the group consisting of hydrogen and hydroxyl, R_3 is a member of the group consisting of hydrogen and carboxyl, n is an integer from 0 to 8, and with the proviso that when R_1 is methyl at least one R_2 is hydroxyl.

3,290,365

METHOD OF PREPARING CIS-CYCLOBUTANE-1,2-DICARBOXYLIC ACID

Janice L. Greene, Warrensville Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed June 21, 1963, Ser. No. 289,728
3 Claims. (Cl. 260—514)

1. A process for preparing cis-cyclobutane-1,2-dicarboxylic acid which comprises forming an adduct by reacting cis-cyclobutane-1,2-dicyanide with sulfuric acid monohydrate, hydrolyzing the adduct and isolating the cis-cyclobutane-1,2-dicarboxylic acid from the reaction mixture.

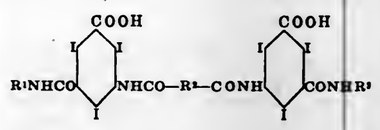
3,290,366

5-AMINO-N-ALKYL-2,4,6-TRIIODOISOPHTHALAMIC ACID DERIVATIVES

George B. Hoey, Ferguson, Mo., assignor to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Mar. 6, 1963, Ser. No. 263,105
9 Claims. (Cl. 260—518)

1. A compound selected from compounds of the formula:



wherein R^1 and R^3 are lower alkyl radicals and R^2 is an alkylene radical containing not more than 14 carbon atoms or phenylene, and the salts thereof with pharmaceutically acceptable cations.

3,290,367

PREPARATION OF C_8 TO C_{12} ALPHA,OMEGA-ALIPHATIC DIACIDS

Charles Marlin White, Westfield, Vincent L. Hughes, Scotch Plains, and William E. Wellman, Edison, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed July 22, 1963, Ser. No. 297,735
9 Claims. (Cl. 260—531)

1. An improved process for the preparation of straight chain C_8 and C_{12} α,ω-dicarboxylic acids which comprises reacting a cyclic material selected from the group consisting of cyclooctanol, cyclooctanone, cyclododecanol and cyclododecanone with aqueous nitric acid having a concentration of 50 to 70 weight percent in a mole ratio of nitric acid to organic feed of from about 20 to 30/1 at temperatures in the range of 55 to 75° C. in the presence of an ammonium vanadate and copper catalyst for reaction times of ¾ to 4 hours, separating solid products from the reaction mixture at a temperature in the range of 35 to 90° C. and recycling at least a portion of the filtrate separated from the solid products to the reaction.

3,290,368

N-SORBOYLAMINO ACIDS

Hans Fernholz, Bad Soden, Taunus, and Hans-Joachim Schmidt and Erich Lück, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 27, 1963, Ser. No. 283,538
Claims priority, application Germany, May 30, 1962, F 36,937
6 Claims. (Cl. 260—534)

1. An N-sorboylamino compound of glutamic acid, hydroxyglutamic acid, glutamine, α-alanine, β-alanine, α-aminobutyric acid, asparagin, aspartic acid, cystine, dihydroxyphenyl-alanine, glycine, isoleucine, leucine, lysine, methionine, norleucine, ornithine, hydroxyproline, proline, serine, tryptophan, tyrosine, valine or sarcosine, or the salt thereof with an alkali metal or alkaline earth metal.

3,290,369

RECOVERY OF ACYCLIC DICARBOXYLIC ACIDS FROM MIXTURES OF THE SAME

John H. Benfield, East Aurora, N.Y., and Reed H. Belden, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 19, 1962, Ser. No. 174,277
4 Claims. (Cl. 260—537)

1. The process for the separation and recovery of succinic, adipic, and glutaric acids from liquors containing them in admixture with one another comprising distilling the mixture under reduced pressure so as to obtain two fractions, the first containing substantially all of the succinic acid and a portion of the glutaric and the second substantially all of the adipic and a portion of the glutaric; recrystallizing the individual fractions from water to isolate pure succinic acid from the first fraction and pure adipic acid from the second fraction; and separating glutaric from the mother liquors obtained in the recrystallization steps by evaporating the mother liquor to dryness.

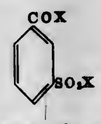
3,290,370

PROCESS FOR THE PREPARATION OF META-HALOSULFONYLBENZOYL HALIDE

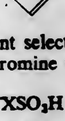
Edward D. Weil, Lewiston, N.Y., and Robert J. Lissake, Sr., Pitman, N.J., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 27, 1963, Ser. No. 283,571
6 Claims. (Cl. 260—544)

1. A process for the preparation of a compound of the formula



wherein X is a substituent selected from the group consisting of chlorine and bromine comprising contacting a compound of the formula



wherein X is a substituent selected from the group consisting of chlorine and bromine with a compound of the formula

$$XSO_3H$$

wherein X is a substituent selected from the group consisting of chlorine and bromine.

3,290,371

PROCESS FOR RENDERING UREA ANTI-CAKING

Dennis Godfrey Brooke and Peter Evans, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,491
Claims priority, application Great Britain, Sept. 14, 1959, 31,204/59; July 8, 1960, 23,899/60
4 Claims. (Cl. 260—555)

1. A process of coating urea particles to improve free-flowing properties and resistance to caking which comprises agitating a quantity of uncoated solid urea particles, maintaining said uncoated urea particles at a temperature above 50° C. but below their melting point while applying under non-acid conditions from about 0.05% to 0.5% by weight of a vapour of a carbonyl compound selected from the group consisting of formaldehyde, acetaldehyde, acetone, cyclohexanone, benzaldehyde, heptaldehyde, salicylaldehyde, p-tolualdehyde, and furfural thereto by simple addition and mixing to thereby uniformly distribute said vapour throughout said quantity of urea particles and coat uniformly said urea particles with a thin, soluble layer of a low molecular weight condensate and recovering the coated urea particles.

3,290,372

N-SUBSTITUTED DIMESYLIMIDES

Karoly Szabo, Pleasantville, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 2, 1963, Ser. No. 277,489
3 Claims. (Cl. 260—556)

1. A compound of the formula:

$$R—N—(SO_2CH_3)_2$$

wherein R is a lower alkylene chain having from 2 to 4 carbon atoms and having attached thereto a member selected from the class consisting of chlorine, bromine and hydroxy.

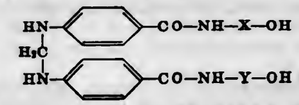
3,290,373

4,4'-METHYLENEDIIMINO-BIS-BENZALCANOLAMIDES

Max Hoffer, Nutley, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,265
5 Claims. (Cl. 260—559)

1. A compound of the formula:



in which X is an alkylene group having a carbon chain length of from 2 to 4 carbon atoms and in which Y is an alkylene group having a carbon chain length of from 2 to 4 carbon atoms.

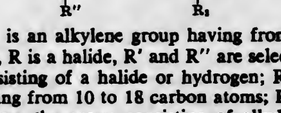
3,290,374

QUATERNARY AMMONIUM COMPOUNDS

Eugene Kraiman, Cedar Grove, N.J., and Arthur F. Hasson, Woodside, N.Y., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,224
12 Claims. (Cl. 260—561)

1. A quaternary ammonium compound of the formula:



wherein A is an alkylene group having from 1 to 6 carbon atoms, R is a halide, R' and R'' are selected from the group consisting of a halide or hydrogen; R_1 is an alkyl group having from 10 to 18 carbon atoms; R_2 and R_3 are selected from the group consisting of alkyl, alkoxy, hydroxy alkyl and alkyl ethers thereof having from 1 to 4 carbon atoms per alkyl group and X is a water soluble anion.

3,290,375

NAPHTHAMIDINES AND SALTS THEREOF

Morton Harfenist and Richard Baltzly, Scarsdale, N.Y., assignors to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,228
Claims priority, application Great Britain, Mar. 22, 1963, 11,554/63
13 Claims. (Cl. 260—564)

1. An acid addition salt of a pharmaceutically acceptable acid with an amidine selected from the class consisting of N,N-di-n-butyl-4-hexyloxy-α-naphthamidine; N,N-dihexyl-4-butoxy - α - naphthamidine; N,N-diheptyl-4-butoxy-α-naphthamidine; N,N-di-octyl-4-methoxy-α-naphthamidine; N,N-dihexyl-4-pentoxy-α-naphthamidine and N,N-diheptyl-4-pentoxy-α-naphthamidine.

3,290,376
N-PHENYL-N'-SEC-ALKYL-ORTHO-PHENYLENEDIAMINES
Joseph A. Chenicek, Long Grove, and William K. T. Gleim, Island Lake, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,137
4 Claims. (Cl. 260—576)

1. N - phenyl-N'-sec-alkyl-ortho-phenylenediamine in which said alkyl contains from 3 to 12 carbon atoms.

3,290,377
CATALYTIC REDUCTION OF NITRO COMPOUNDS TO AMINES
Herbert R. Appell, Pitcairn, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Original application July 11, 1963, Ser. No. 294,254. Divided and this application May 14, 1965, Ser. No. 456,004
4 Claims. (Cl. 260—580)

1. A method of reducing organic nitro-compounds comprising reacting, at an elevated temperature up to the boiling point of the reaction mixture, an organic nitro-compound of the formula: $R'NO_2$, wherein R' is a member selected from the group consisting of lower alkyl, phenyl, lower alkylphenyl, lower alkoxyphenyl, chlorophenyl, and naphthyl, with carbon monoxide in the presence of an aqueous solution, having a pH of at least ten, of at least 0.05 mole per mole of said organic nitro-compound of a copper salt-amine complex catalyst consisting essentially of

(a) a copper salt of the formula CuX, wherein X is a member selected from the group consisting of oxide, hydroxide, carbonate, and the anionic residue of a weak organic acid, and

(b) an amine of the formula: $R—NH_2$, wherein R is a member selected from the group consisting of amino lower alkyl, diamino lower alkyl, hydroxy lower alkyl, and hydrogen,

said complex containing at least two moles of said amine per mole of said copper salt.

3,290,378
STABILIZATION OF GLYOXAL
Kazuzo Tsuneshige, 246 Shoraku, Nishinomiya, Japan, and Yoshiaki Tsujino, 58 3-chome, Nishizaki-cho, Ogaki, Japan
No Drawing. Filed Jan. 2, 1963, Ser. No. 248,887
3 Claims. (Cl. 260—601)

1. Method of preparing a stabilized glyoxal which comprises bringing an aqueous solution of glyoxal into contact with a cation exchanger in hydrogen form, said glyoxal having been formed by the oxidation of (1) a member selected from the group consisting of acetylene, ethylene, acetaldehyde, paraldehyde and ethylene glycol with (2) a member selected from the group consisting of oxygen, nitric acid and selenium dioxide.

3,290,379
SELECTIVE HYDROFORMYLATION OF OLEFINIC COMPOUNDS
John L. Eisenmann, Braintree, Mass., assignor, by mesne assignments, to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Sept. 1, 1961, Ser. No. 135,450
4 Claims. (Cl. 260—604)

1. A method for the preparation of aldehydes by the selective hydroformylation of olefins which comprises contacting with carbon monoxide and hydrogen,

(A) at a temperature below about 125° C. and a pressure between about 200 and 500 atmospheres,

(B) in the presence of (1) a catalyst selected from the group consisting of dicobalt, dirhodium and diiridium octacarbonyls and (2) a catalyst modifier selected from the group consisting of diaryl phosphites, triaryl phosphites and bis-(triaryl phosphite) chromium tetracarbonyl,

(C) a mixture of aliphatic olefinic compounds comprising (3) at least one olefinic compound selected from the group consisting of straight-chain olefinic compounds and olefinic compounds containing branch chains separated from the olefinic linkage by at least two carbon atoms, and (4) at least one olefinic compound which normally forms an aldehyde when conventional hydroformylation techniques with unmodified catalysts are utilized and which contains at least one side chain attached to a carbon atom no more than one position removed from the olefinic double bond;

(D) thereby selectively forming the aldehyde from said olefinic (3) and leaving said olefin (4) unreacted.

3,290,380
BIS(1,2,2-TRIHALOETHYL) SULFOXIDES
Paul C. Aichenegg, Prairie Village, Kans., and Carl D. Emerson, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Original application Jan. 17, 1964, Ser. No. 338,297, now Patent No. 3,249,495, dated May 3, 1966. Divided and this application Sept. 8, 1965, Ser. No. 508,177
2 Claims. (Cl. 260—607)

1. A compound having the formula $(CHX_2CHX)_2SO$ where X is a halogen of atomic weight between 35 and 80.

3,290,381
SULFUR CONTAINING POLYFORMALS AND METHOD OF MAKING SAME
Henry F. Lederle, North Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,340
4 Claims. (Cl. 260—609)

1. A method of preparing a high viscosity sulfur-containing polyformal which comprises reacting a mercaptoalkanol of the formula:

HO—R—SH

wherein R is an alkylene radical containing from 2 to 6 carbon atoms, with paraformaldehyde at a temperature of from about 50° C. to 200° C. and in the presence of about 0.001 to about 0.5 gram of paratoluenesulfonic acid per mole of the said mercaptoalkanol, the quantity of paraformaldehyde employed being from about 0.60 to about 1.75 moles per mole of the mercaptoalkanol, and the reaction being conducted over a period of time ranging from about 3 to about 12 hours.

3,290,382
HIGH VISCOSITY SULFUR CONTAINING POLYFORMALS AND METHOD
Ralph A. Hubecher, Bruchfeldstrasse, Germany, and Frank J. Milnes, Guilford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Dec. 13, 1963, Ser. No. 330,258
10 Claims. (Cl. 260—609)

1. A method of preparing a high viscosity sulfur-containing polyformal lubricant comprising reacting at a temperature of from about 80°C. to 220° C. a mixture of a thiopolyalkylene glycol of the formula:

$H[OR]_xS[R'O]_yH$

wherein x and y are whole numbers, the sum of which is less than 5 and R and R' are alkylene radicals having from 2 to 3 inclusive carbon atoms, and a polyalkylene glycol of the formula:

H[OR'']OH

wherein R'' is an alkylene radical having 2 to 3 inclusive carbon atoms and n is an integer of from 2 to 35, with formaldehyde, from about 0.75 to about 1.75 moles of formaldehyde being reacted with each mole of glycol, there being in the said mixture from 1 to 25 moles of thiopolyalkylene glycol per mole of polyalkylene glycol and the reaction being conducted over a period of time ranging from 2 to 24 hours.

3,290,383
PROCESS FOR THE PREPARATION OF HYDROXYTHIOLS
Bernard Pfingstler, Artix, Basses Pyrenees, and Paul Vannel, Lagor, Basses Pyrenees, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France
No Drawing. Filed Jan. 13, 1964, Ser. No. 337,141
Claims priority, application France, Jan. 14, 1963, 921,353
6 Claims. (Cl. 260—609)

1. A process for the preparation of hydroxythiols, which comprises reacting an alkylene oxide with hydrogen sulphide at a temperature between 0° C. and 100° C. in the presence of a catalyst consisting of an exchange resin selected from the group consisting of sulphonated phenol-formaldehyde resins, polyamines, polyamines of styrene-divinylbenzene copolymers, methacrylic resins, quaternary ammonium derivatives of styrene copolymers and urea-formaldehyde resins to form the corresponding hydroxy-thiol.

3,290,384
ARALKYL HYDROPEROXIDE PRODUCTION
Theodore Largman, Madison, N.J., and Ronald N. Holmes, Philadelphia, Pa., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed July 25, 1963, Ser. No. 297,702
8 Claims. (Cl. 260—610)

1. Process for producing an aralkyl hydroperoxide by oxidizing an aralkyl hydrocarbon, having at least one tertiary alkyl group attached via a tertiary carbon atom to the aryl ring, with elemental oxygen in liquid phase which comprises: providing and maintaining in contact with said aralkyl compound, during said oxidation, at least one solid material of the group consisting of the alkali metal and alkaline earth metal plumbates, bismuthates, stannates and antimonates.

3,290,385
BIS(ALLYLOXYMETHYL)NAPHTHALENE
John O'Brochta, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,806
1 Claim. (Cl. 260—611)

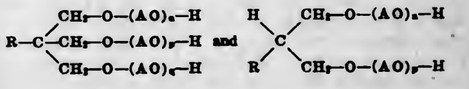
A bis(allyloxymethyl) naphthalene composition consisting essentially of a mixture of 1,4-diallyloxymethyl naphthalene and 1,5-diallyloxymethyl naphthalene, said mixture being further characterized as a colorless oily liquid having about the same viscosity as xylene, a distillation temperature range of 170–177° C. at 6 millimeters pressure, and an iodine number of 189.

3,290,386
PROCESS FOR THE MANUFACTURE OF 4,4' DIHYDROXYPHENYL ETHER
Gale Stoeff Stenhagen, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 27, 1963, Ser. No. 312,006
2 Claims. (Cl. 260—613)

1. A process for the manufacture of 4,4' dihydroxyphenyl ether which comprises heating a mixture of 4,4' dibromophenyl ether with a stoichiometric excess of a caustic alkali dissolved in water in an amount of from about 25% to about 50% by weight of said alkali, and with from about 1% to about 50% by weight of an alkali metal peroxide based on the 4,4' dibromophenyl ether about 1% to 25% by weight of a cuprous halide based on 4,4' dibromophenyl ether, and metallic copper, and thereafter recovering 4,4' dihydroxyphenyl ether from the reaction product.

3,290,387
OXYALKYLATED DIMETHYLOL AND TRIMETHYLOL ALKANES
Claude Bernardy, Geneva, Switzerland, and Marcel Prilleux and Robert Muffat, Mont-Saint-Aignan, France, assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 7, 1962, Ser. No. 193,011
Claims priority, application France, May 8, 1961, 861,174
6 Claims. (Cl. 260—615)

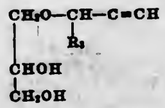
1. The product formed by condensing a C_9 to C_{15} alkanal with formaldehyde in the presence of an alkaline agent to form a mixture of dimethylol and trimethylol alkanes, said mixture being further reacted with a C_2 to C_3 alkylene oxide at a temperature from about 60° to 220° C., said product comprising a mixture of oxyalkylated dimethylol and trimethylol alkanes having the formulae:



wherein R is selected from the group consisting of C_9 to C_{13} straight chain and branched chain alkanes, A is a C_2 to C_3 alkylene chain and n, p and q represent whole numbers between 1 and 10.

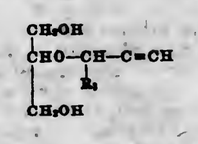
3,290,388
MONOPROPYNYL ETHERS OF GLYCEROL
Joanne Denise Burger and William L. Howard, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 3, 1963, Ser. No. 292,716
4 Claims. (Cl. 260—615)

1. A compound of the formula



wherein R_3 is selected from the group consisting of a hydrogen atom and a lower alkyl radical.

3. A compound of the formula



wherein R_3 is selected from the group consisting of a hydrogen atom and a lower alkyl radical.

3,290,389
PROCESS FOR THE PRODUCTION OF ORTHO-SUBSTITUTED PHENOLS
Willi Hahn, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 18, 1962, Ser. No. 167,169
Claims priority, application Germany, Jan. 25, 1961, F 33,054
10 Claims. (Cl. 260—619)

1. Process for the production of phenols alkylated in ortho-position to the hydroxyl group which comprises reacting phenol and an olefin in liquid phase in the presence of gamma-aluminum oxide as catalyst, and recovering the reaction product.

3,290,390
PRODUCTION OF BISPHENOL FROM RESINOUS BY-PRODUCTS
Walter H. Prahl, Buffalo, and Sol J. Lederman and Ellis I. Lichtblau, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,278
The portion of the term of the patent subsequent to Jan. 15, 1980, has been disclaimed
6 Claims. (Cl. 260—619)

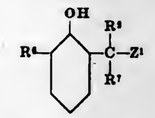
1. The process which includes the steps of (1) reacting phenol and acetone in the presence of an acidic condensing agent to produce a reaction product comprising 2,2-(4,4' - dihydroxydiphenyl)propane, (2) distilling the more volatile materials from the 2,2-(4,4'-dihydroxydiphenyl)propane, (3) vacuum distilling the resulting 2,2-(4,4'-dihydroxydiphenyl)propane from materials less volatile in it, to obtain a distillate of 2,2-(4,4'-dihydroxydiphenyl)propane and a resinous by-product material, (4) separating the said resinous by-product material from the distilled 2,2-(4,4'-dihydroxydiphenyl)propane by means of a solvent selected from the group consisting of benzene, toluene, xylene, methylene chloride, ethylene dichloride, and trichloroethylene, whereby substantially pure 2,2-(4,4'-dihydroxydiphenyl)propane and a solvent solution of resinous by-product material are produced, (5) removing substantially all the solvent from the said resinous by-product material (6) separately treating the resultant resinous by-product material with phenol in the presence of an acidic condensing agent at an elevated temperature between about room temperature to about 150 degrees centrigrade to produce a reaction product comprising additional 2,2-(4,4'-dihydroxydiphenyl)propane, and (7) recovering the 2,2-(4,4'-dihydroxydiphenyl)propane produced in step (6).

3,290,391
PRODUCTION AND PURIFICATION OF A DIPHENYLOLPROPANE
Walter H. Prahl, Buffalo, and Sol J. Lederman and Ellis I. Lichtblau, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,279
The portion of the term of the patent subsequent to Jan. 15, 1980, has been disclaimed
4 Claims. (Cl. 260—619)

1. A process for the recovery of a purified 2,2-(4,4'-dihydroxydiphenyl) propane from its crude reaction product produced by the condensation of phenol with a compound selected from the group consisting of propadiene, propyne, and mixtures thereof, including the steps of (1) removing the more volatile materials from the 2,2-(4,4'-dihydroxydiphenyl) propane, (2) vacuum distilling the 2,2-(4,4'-dihydroxydiphenyl) propane from materials less volatile in it, and (3) separating the distilled 2,2-(4,4'-dihydroxydiphenyl) propane from its impurities with a solvent selected from the group consisting of benzene, toluene, xylene, methylene chloride, ethylene dichloride, and trichloroethylene, whereby substantially pure 2,2-(4,4'-dihydroxydiphenyl) propane and a solvent solution of separated impurities are produced.

3,290,392
ORTHO-ALKYLATED PHENOLS
George G. Ecke, Detroit, Mich., and Alfred J. Kolka, O'Hara Township, Allegheny County, Pa., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,075
5 Claims. (Cl. 260—619)

1. A compound having the formula:



where R^6 is an alkyl radical having from 3 to about 8 carbon atoms, R^7 is an alkyl radical having from 1–3 carbon atoms, R^8 is selected from the class consisting of hydrogen and alkyl radicals having from 1–3 carbon atoms and Z^1 is an aromatic hydrocarbon radical having from 6 to about 12 carbon atoms and is selected from the class consisting of phenyl, alkyl substituted phenyl and phenyl substituted phenyl radicals.

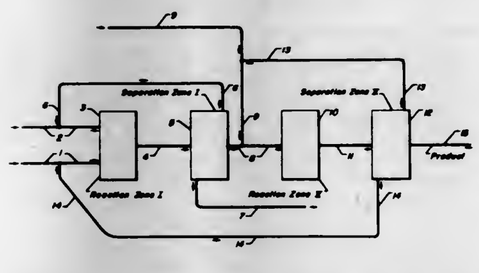
3,290,393
PROCESS FOR THE PRODUCTION OF ORTHO-HYDROXYBENZYL ALCOHOLS
Pierre Andre Robert Marchand, Calaire, and Jean Baptiste Grenet, Bron, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France
No Drawing. Filed Mar. 26, 1963, Ser. No. 267,929
Claims priority, application France, Mar. 28, 1962, 892,539
9 Claims. (Cl. 260—621)

1. Process for the production of an ortho-hydroxybenzyl alcohol in which the ortho-phenylene radical may carry up to three substituents selected from the class consisting of alkyl and alkoxy groups and halogen atoms which comprises reacting in anhydrous medium at 0° to 150° C. a triphenyl metaborate in which each phenyl radical is selected from the class consisting of unsubstituted phenyl radicals and phenyl radicals having at least one free ortho position and substituted by up to three substituents selected from alkyl and alkoxy groups and halogen atoms, with a substance selected from the class consisting of formaldehyde and materials which generate formaldehyde under the conditions of the reaction, and decomposing the tri(ortho - hydroxybenzyl)metaborate produced with an alkali metal hydroxide followed by decomposition of the intermediate complex with a reagent selected from the class consisting of mineral acids and substances which chelate boric acid more strongly than the ortho-hydroxybenzyl alcohol to be liberated, and isolation of the ortho-hydroxybenzyl alcohol thus produced.

3,290,394
PRODUCTION OF ALKYLATED HYDROXY SUBSTITUTED AROMATIC COMPOUNDS
Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Nov. 26, 1963, Ser. No. 326,129
13 Claims. (Cl. 260—624)

1. A process for the production of an alkylated hydroxy substituted aromatic compound which comprises passing

to a first reaction zone a saturated hydrocarbon and a saturated polyhalohydrocarbon containing at least two halogen atoms attached to the same carbon atom, reacting said saturated hydrocarbon with said saturated polyhalohydrocarbon at a temperature of from about 200° C. to about 600° C., passing the effluent from said first reaction zone to a first separation zone, separating from the first separation zone unreacted saturated polyhalohydrocarbon, an olefin-containing hydrocarbon mixture and lower boiling reaction zone by-products, recycling said unreacted saturated polyhalohydrocarbon to the first reaction zone, withdrawing and passing to storage said lower boiling reaction zone by-products, passing said olefin-containing hydrocarbon mixture in admixture with alkylatable hydroxy substituted aromatic compound to a second reaction zone, alkylating at least a portion of said alkylatable



hydroxy substituted aromatic compound with said olefin-containing hydrocarbon mixture in the presence of an acid-acting alkylation catalyst at a temperature of from about 0° to about 300° C. and a pressure of from about atmospheric to about 200 atmospheres, passing the second reaction zone effluent to a second separation zone, separating from the second separation zone unreacted hydroxy substituted aromatic compound, unreacted saturated hydrocarbon and desired alkylated hydroxy substituted aromatic compound, recycling at least a portion of said unreacted hydroxy substituted aromatic compound to the second reaction zone, recycling at least a portion of said unreacted saturated hydrocarbon to the first reaction zone, and removing desired alkylated hydroxy substituted aromatic compound as product from the process.

3,290,395
CHLORINATION OF UNSATURATED ALCOHOLS IN THE SUBSTANTIAL ABSENCE OF WATER AND IN THE PRESENCE OF HYDROGEN CHLORIDE
Georg Bohm and Wilhelm Dietrich, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Kreis Recklinghausen, Germany
No Drawing. Filed May 18, 1964, Ser. No. 368,416
Claims priority, application Germany, Oct. 13, 1962, C 28,175; Aug. 3, 1963, C 30,619
6 Claims. (Cl. 260—633)

1. Process for the production of chlorinated alcohols which comprises reactiong an alcobol selected from the group consisting of allyl alcohol, methallyl alcohol, crotyl alcobol, allyl carbinol, vinylmethyl carbinol, pentenols, hexenols, cyclohexenol, hexadienol, octenol, cyclododecanol, oleyl alcohol, butenediol and hexenediols with chlorine at a temperature within the range from −95° C. to +25° C. and in the substantial absence of water and in the presence of at least 7% by weight of hydrogen chloride based on the weight of the alcohol.

3. Process as defined in claim 1 in which the alcohol is allyl alcohol.

3,290,396
ALCOHOL IMPROVEMENT BY SEQUENTIAL CONTACTING WITH SILICA GEL
Charles M. Starks and Raymond D. Eccles, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
No Drawing. Filed Aug. 30, 1963, Ser. No. 305,822
5 Claims. (Cl. 260—643)

1. A process for the improvement of the odor quality of alkanols for use in the production of alkanol sulfate which process comprises:

contacting at a temperature of about 10°–60° C., (1) a liquid alkanol, having at least 6 carbon atoms and being an even-number, straight chain, primary alkanol product of the hydrolysis of the reaction product of oxygen and aluminum trialkyl growth product, said alkanol containing alkandiol impurity in an amount sufficient to degrade the odor of sulfate made from said alkanol sequentially with (2) a plurality of fresh amounts of particulate silica gel sorbent; and separating liquid alkanol of the desired improved sulfate odor quality from the last amount of sorbent.

3,290,397
ADDITION OF ALLYLIC HALIDES TO OLEFINS AND HALO-OLEFINS
Frederick F. Rust, Orinda, and Harvey S. Klein, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 27, 1963, Ser. No. 326,366
10 Claims. (Cl. 260—651)

1. The process for the addition of (a) an allylic halide reactant containing one ethylenic linkage, from 1 to 2 allylic halogen atoms of atomic number from 17 to 35 and from 3 to 20 carbon atoms, selected from hydrocarbon allylic halide reactants and halohydrocarbon allylic halide reactants wherein each halogen is halogen of atomic number from 17 to 35, to (b) an olefinic compound having from 2 to 20 carbon atoms and from 1 to 2 ethylenic linkages, selected from hydrocarbon olefin and halohydrocarbon olefin wherein each halogen, is halogen of atomic number from 17 to 35, in liquid-phase solution in a cyanoalkane solvent, the molar ratio of solvent to limiting reactant being from about 1:1 to about 20:1, at a temperature from about 75° C. to about 200° C., in the presence of a catalytic amount of ferrous halide as catalyst.

3,290,398
PROCESS OF CONTINUOUSLY PRODUCING VINYLIDENE CHLORIDE
Hermann Richtzenhain, Cologne-Sulz, and Paul Riegger, Bonn, Germany, assignors to Feldmuehle Papier- und Zellstoffwerke Aktiengesellschaft, Duesseldorf-Oberkassel, Germany, a corporation of Germany
Filed Jan. 15, 1962, Ser. No. 166,049
Claims priority, application Germany, Jan. 18, 1961, F 32,990
7 Claims. (Cl. 260—654)

1. In the process of continuously producing vinylidene chloride by reaction of a mixture of 1,1,2-trichloro ethane and an aqueous solution of sodium hydroxide in a vertical reaction zone, the improvements which consist in

(a) using as a starting material an emulsified and partially pre-reacted mixture of 1,1,2-trichloroethane in an aqueous solution of sodium hydroxide, prepared at a temperature of at least 50° C., as starting material,

(b) introducing said emulsified and partially pre-reacted mixture into the lower part of said reaction zone and passing it in upward flow therethrough, said reaction zone being of sufficient length to effect substantially complete conversion of trichloro ethane into vinylidene chloride,

(c) maintaing the heat of the reaction zone at a tem-

perature in the range of about 68° C. to about 90° C., and

(d) withdrawing the vapors of vinylidene chloride in essentially quantitative yields with the spent sodium hydroxide from the upper part of said reaction zone.

3,290,399

PROCESS FOR PREPARING VINYL CHLORIDE

Frédéric François Albert Braconier, Plainevaux, and Pierre-Jean Leroux, Brussels, Belgium, assignors to Societe Belge de l'Azote et des Produits Chimiques du Marly, Liege, Belgium

No Drawing. Filed June 11, 1962, Ser. No. 201,332
10 Claims. (Cl. 260—656)

1. In a process for the preparation of vinyl chloride by pyrolysis and thermal dehydrochlorination of dichloroethane in a heated pyrolysis zone, the steps which comprise introducing a reactant stream consisting essentially of dichloroethane in vapor phase into said pyrolysis zone, disposing a solid activating catalyst consisting essentially of graphite in substantially non-porous form in said pyrolysis zone, passing said dichloroethane through said pyrolysis zone and in contact with said non-porous catalyst therein, heating said pyrolysis zone and said catalyst and said dichloroethane therein to a temperature within the range of about 330°–600° C. effecting pyrolysis of said dichloroethane into a gas mixture including vinyl chloride and hydrogen chloride, collecting said pyrolysis gas mixture from said pyrolysis zone, and separating vinyl chloride as a product therefrom.

3,290,400

PROCESS FOR THE PRODUCTION OF CYCLOALKENES

Hans-Helmut Schwarz and Karl Morgenstern, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,444
Claims priority, application Germany, Apr. 9, 1964, F 42,562
13 Claims. (Cl. 260—666)

1. Process for the production of cycloalkenes by splitting off hydrogen chloride from chlorocycloalkanes at an elevated temperature, which comprises heating a chlorocycloalkane in gaseous form, in admixture with steam, to a temperature between about 300 and about 800° C. and at a pressure at least as low as atmospheric pressure whereby to form the corresponding cycloalkene.

3,290,401

CYCLOOLIGOMERIZATION OF 1,3-DIENES

Marvin A. McCall and Harry W. Coover, Jr., both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,694
11 Claims. (Cl. 260—666)

1. In a process for preparing cyclic oligomers by contacting a 1,3-diene with a catalyst, the novel procedure which comprises employing as a catalyst in said process a complexed divalent organo-nickel compound of the formula:

$$(R_3P)_2NiR_2$$

wherein each of the substituents R is a hydrocarbyl group.

3,290,402

PROCESS FOR PREPARATION OF POLYETHYLBIPHENYL BY ALKYLATION OF BIPHENYL

George Suld, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 27, 1963, Ser. No. 326,395
11 Claims. (Cl. 260—671)

1. Method which comprises (1) contacting biphenyl with ethylene in the absence of a solvent and in the presence of HF and BF_3 as catalyst, the amount of HF being in the range of 0.05 to 1.0 mole per mole of biphenyl and the amount of BF_3 being in the range of 0.01 to 0.25 mole per mole of biphenyl, said contacting being at an ethylene pressure of at least 200 p.s.i.g. and at a temperature sufficient to initiate an exothermic reaction but less than 100° C., (2) continuing said contact after said exothermic reaction begins until consumption of ethylene ceases, whereby there is obtained a reaction product containing polyethylbiphenyl having 5–6 ethyl groups and which is free of other ethylated biphenyls, and (3) recovering from said reaction product polyethylbiphenyl containing 5–6 ethyl groups.

3,290,403

PROCESS FOR PREPARING DIENE HYDROCARBONS FROM 1,3 DIOXANES

Mark Semenovich Nemtsov and Revekka Vulfovna Kachalova, Leningrad, Nadezhda Vasilievna Romanova, Efremov, Nadezhda Andreevna Kalinichova and Fridrikh Shmerkovich Shenderovich, Leningrad, and Elena Jakovlevna Mandelshtam, Sergei Nikolaevich Arkharov, Vladimir Nazarovich Zlatkin, and Valery Jakovlevich Grinshpun, Moscow, all of U.S.S.R., assignors to Vsesouzny Nauchno-Issledovatelsky Institute Sinteticheskogo Kauchooka "Lebedev," Ulitsa, U.S.S.R.

No Drawing. Filed Apr. 23, 1964, Ser. No. 362,168
4 Claims. (Cl. 260—681)

1. A process of preparing diene hydrocarbons from 1,3-dioxanes which comprises simultaneously passing dioxane vapor and superheated steam, containing 0.002–0.060 percent of phosphoric acid, through phosphates heated to 300–400° C. and selected from the group consisting of calcium and cadmium phosphates and mixtures thereof, wherein the phosphoric acid on interaction with said phosphates yields a catalytically active acid phase.

3,290,404

PROCESS FOR THE ISOMERIZATION OF OLEFINS

Eric James Howman, Richard Norman Lacey, and Leonard Turner, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, E.C. 2, England, a British joint-stock corporation

No Drawing. Filed July 3, 1963, Ser. No. 292,716
Claims priority, application Great Britain, July 9, 1962, 26,239/62
7 Claims. (Cl. 260—683.2)

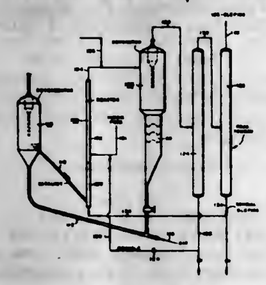
1. A process for the isomerization of a mono-olefinic hydrocarbon by double bond migration which comprises passing said hydrocarbon over a catalyst at a temperature in the range 140–180° C., said catalyst comprising nickel supported on a support material selected from the group consisting of sepiolite, alumina, kieselguhr, chalk, and silica gel, said nickel, in said temperature range, being present in a major proportion as an elemental nickel, said catalyst having been previously modified by treatment with at least one sulphur-containing material selected from the group consisting of elemental sulphur, hydrogen sulphide, carbon disulphide, thiophenes, thiacycloalkanes, dialkylmonosulphides, mercaptans, dialkyldisulphides, and mixtures of the foregoing, at a temperature in the range 0–300° C. such that a minor proportion of the nickel present in the catalyst is thereby combined with sulphur, passing the resulting reaction product over a catalyst bed of the same composition as in the first stage at a temperature in the range 60–100° C. and thereafter recovering isomerized olefin as the product.

3,290,405

PRODUCTION OF ISOOLEFINS

Hermann E. van Rossenberg, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Nov. 7, 1963, Ser. No. 235,951
5 Claims. (Cl. 260—683.2)



1. A method which comprises passing a hydrocarbon feed stock into the second zone of a transfer line reactor comprising a first zone and a second zone, contacting said feed stock in said second zone with a cracking catalyst at a temperature within the range of 850° F. to 1050° F. and a time period within the range of about 1 to about 10 seconds, passing said catalyst and the reacted hydrocarbon into a separation zone, separating said catalyst from said hydrocarbon, separating said hydrocarbon into fractions including a light hydrocarbon fraction including an isoolefin and a normal olefin, separating said light hydrocarbon fraction into an isoolefin fraction and an isoolefin-attenuated fraction, passing said isoolefin-attenuated fraction into said first zone into contact with cracking catalyst at a temperature within the range of 850° F. to 1050° F., at a catalyst to oil ratio within the range from 2.5:1 to 25:1, and for a time period within the range of 0.5 second to about 5.0 seconds to obtain a re-equilibrated stream, and passing all of said catalyst and said re-equilibrated stream into said second zone, thereby maximizing the production of isoolefins.

3,290,406

PROCESS FOR DEHYDROGENATION

William C. Pfefferle, Middletown, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed June 2, 1965, Ser. No. 460,835
4 Claims. (Cl. 260—683.3)

1. In a process for the dehydrogenation of dehydrogenatable hydrocarbons is a reactor maintained under dehydrogenation conditions which preclude any substantial thermal cracking of the hydrocarbons including a temperature of about 800 to 1300° F. and a pressure in the range of 0.05 to 200 p.s.i.g., the improvement which comprises continuously removing hydrogen formed during the dehydrogenation from the reaction zone by diffusion through a non-porous membrane selectively permeable to hydrogen, and contacting the diffused hydrogen with oxygen-containing gas to effect substantially complete combustion thereof at the surface of the membrane.

3,290,407

PROCESS AND CATALYST FOR DEHYDROGENATION OF HYDROCARBONS

Emory W. Pitzer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,774
9 Claims. (Cl. 260—683.3)

1. A process for the dehydrogenation of a dehydrogenatable hydrocarbon which comprises contacting said dehydrogenatable hydrocarbon with halogen-containing alpha-alumina catalyst having a halogen content of 0.1 to 10 percent at a temperature in the range of 700 to 1800° F. in the presence of oxygen and a halogen present in an amount of from 0.001 to 0.09 mol per mol of dehydrogenatable hydrocarbon.

3,290,408

POLYMERIC ADHESIVE COMPOSED OF PYROLYZED METALLIC SALTS OF DIVINYL BENZENE AND ACRYLIC ACID COPOLYMERS, AND A RESINOUS BINDER

Herbert A. Pohl, Princeton, N.J., assignor to Sci-Tech Corporation, Princeton, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,632
8 Claims. (Cl. 260—836)

1. An adhesive polymer composition comprising from about 95% to about 80% of a pyropolymer prepared by pyrolyzing at temperatures from 250° C. up to about 700° C. a cation exchange resin composed of a copolymerization product of divinyl benzene with a member selected from the group consisting of acrylic acid and methacrylic acid, said cation exchange resin containing from about 10% to about 100%, based on the combining capacity of the resin, of a metal selected from the group consisting of lithium, sodium, potassium, rubidium, cesium, beryllium, magnesium, calcium, strontium, barium, radium, titanium, zirconium, hafnium and thorium, and from about 5% to about 20% of a resin binder selected from the group consisting of phenolic resins, urea-formaldehyde resins, diallyl phthalate resins, epoxy resins and polystyrene resins, said cation exchange resin pyrolyzing to give a carbonaceous residue containing most of the metal originally present and said pyrolysis being terminated at a point whereby said pyropolymer remains thermoplastic.

3,290,409

PREPARATION OF POLYCARBONATE RESINS

Howard E. Munro, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 8, 1962, Ser. No. 178,254
8 Claims. (Cl. 260—860)

1. The process for preparing a carbonate polymer which process comprises passing a carbonyl halide through a slurry comprising a suspension of solid particles in a single liquid phase,

the suspension of solid particles comprising

(1) a dihydric phenol and

(2) at least 2 moles, per mole of dihydric phenol, of at least one acid acceptor selected from the group consisting of alkali and alkaline earth metal hydroxides, carbonates and bicarbonates,

and the single liquid phase comprising an inert organic liquid which is a solvent for the carbonate polymer but a non-solvent for the dihydric phenol and the acid acceptor,

to form a reaction mixture having

a solid phase, and

a single liquid phase comprising a solution of the carbonate polymer in said inert organic liquid,

and separating the solid phase from the liquid phase.

3,290,410

COLD CURING REACTION LACQUERS CONTAINING AT LEAST ONE COMPONENT CONTAINING ETHYLENIC UNSATURATION CURABLE BY POLYMERIZATION

Erich Räder, Hanau am Main, and Hubert Koert, Gross-Auheim, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed June 1, 1962, Ser. No. 199,275
Claims priority, application Germany, June 6, 1961, D 36,268
10 Claims. (Cl. 260—862)

1. A cold curing reaction lacquer essentially composed of at least one component curable by polymerization se-

lected from the group consisting of (1) mixtures of at least one monomeric and at least one polymeric lower alkyl ester of an acid selected from the group consisting of acrylic acid and methacrylic acid, (2) an unsaturated polyester containing ethylenic unsaturation which is a polycondensation product of a dicarboxylic acid and a polyhydric alcohol, (3) mixtures of at least one monomeric and at least one polymeric lower alkyl ester of an acid selected from the group consisting of acrylic acid and methacrylic acid together with another organic compound copolymerizable therewith and (4) an unsaturated polyester containing ethylenic unsaturation which is a polycondensation product of a dicarboxylic acid and a polyhydric alcohol together with another organic compound copolymerizable with such unsaturated polyester and a catalytically effective amount of a catalyst system for said curable component essentially consisting of (1) an acyl peroxide, (2) a functional organic sulfur compound selected from the group consisting of monofunctional and polyfunctional mercaptans and esters of mercapto acetic acid of the formulae HS—CH_2—COOR and HS—CH_2—COO—R_1—OOC—CH_2—SH wherein R is selected from the group consisting of alkyl, aryl, alkoxy alkyl and alkoxy alkoxy alkyl and R_1 is selected from the group consisting of alkylene, oxy-alkylene or poly-oxy-alkylene, the quantity of such functional organic sulfur compound being at least equivalent to the acyl peroxide, and (3) a tertiary amine having at least one aromatic radical directly bonded to the nitrogen atom thereof.

3,290,411

METHOD OF MANUFACTURING MODIFIED POLYESTERS HAVING GOOD DYEABILITY

Takaakira Tsuji, Kanji Matsubayashi, Chihiro Sugie, and Kenichi Tanabe, Kurashiki, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed May 22, 1963, Ser. No. 282,244
Claims priority, application Japan, May 30, 1962, 37/22,008; June 19, 1962, 37/25,306
7 Claims. (Cl. 260—873)

1. A method of manufacturing modified linear fiber forming polyester polycondensation products of a saturated dicarboxylic acid and dihydric alcohol which consists essentially of forming an ester interchange reaction product of the dicarboxylic acid and dihydric alcohol, thereafter admixing thereinto a modifier selected from the group consisting of addition polymers of unsaturated carboxylic acid esters and addition copolymers of unsaturated carboxylic acid esters with other unsaturated carboxylic acid esters, with unsaturated carboxylic acids, and with vinyl aromatic compounds, the copolymers with vinyl aromatic compounds having at least 10% by weight based on monomer proportions of the unsaturated carboxylic acid ester, said modifier having a degree of polymerization of from 5–5000 and being employed in an amount of 0.2–30.0% by weight based on the weight of saturated dicarboxylic acid, then effecting polycondensation of the ester interchange reaction product mixture.

3,290,412

MOLDING COMPOUNDS PREPARED FROM MIXTURES OF POLYTETRAFLUOROETHYLENE AND RESINOUS POLYCARBONATES

Kenneth B. Goldblum, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,542
6 Claims. (Cl. 260—873)

1. A moldable resin mixture consisting essentially of (1) a polytetrafluoroethylene resin in the form of particles having diameters ranging from about 20 microns to about 1000 microns and (2) a polycarbonate resin having a glass transition temperature of at least about 125° C. in an amount ranging from about 10% to about 40% of the total weight of the polytetrafluoroethylene and the polycarbonate.

3,290,413

TRANSPARENT IMPACT-RESISTANT POLYSTYRENE CONTAINING POLYSULFIDE POLYMER

Edward M. Fettes, Oakmont, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed July 8, 1963, Ser. No. 293,248
2 Claims. (Cl. 260—874)

1. An impact-resistant transparent thermoplastic composition comprising a blend of from 2–7 parts by weight of a liquid polysulfide polymer and from 93–98 parts by weight of polystyrene.

3,290,414

BLOCK COPOLYMERS OF ALPHA C_{1-4} ALKYL STYRENE AND ETHYLENE

William S. Anderson, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 20, 1963, Ser. No. 281,825
4 Claims. (Cl. 260—878)

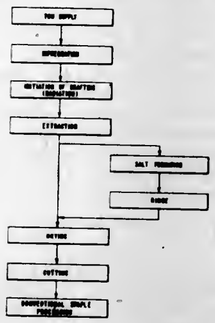
1. A process for producing high molecular weight block copolymers of alpha-C_{1-4}-alkyl styrene and ethylene composed of one or more blocks each containing 50–100 mol percent of ethylene units and one or more blocks each containing 50–100 mol percent of alpha-C_{1-4}-alkyl styrene, such block polymers being prepared by copolymerizing ethylene and alpha-alkyl styrene in a mole ratio between 1:10 and 10:1 in a polar-containing organic solvent selected from the group consisting of an oxygen containing and a sulfur-containing organic solvent and with an organo lithium catalyst at a temperature between 0° C. and 50° C. and a pressure between 5,000 and 100,000 p.s.i. for a substantial period of time, and continuing the copolymerization under the same conditions for an additional period of time between —100° C. and 0° C. and at a pressure below 5,000 p.s.i., the resulting block polymer having a molecular weight of from 6,000 to 500,000.

3,290,415

GRAFT COPOLYMER OF POLYMERIC HYDROCARBON AND ORGANIC ACID BEARING RADICAL

David Tanner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 26, 1959, Ser. No. 802,097
22 Claims. (Cl. 260—878)



1. A graft copolymer consisting essentially of (a) a polymeric hydrocarbon substrate derived by addition polymerization of aliphatic mono-olefin and (b) grafted thereto by a carbon-to-carbon linkage, a plurality of side chains of monomeric units having groups from the class

consisting of acid groups and acid anhydride groups, the said side chain comprising from about 0.26% to about 200% by weight of the said copolymer and being derived by free radical mechanism from an organic compound having (1) aliphatic carbon-to-carbon unsaturated and (2) a radical from the class consisting of an acid radical and an acid anhydride radical.

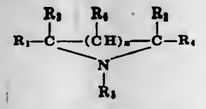
3,290,416

METHACRYLATE POLYMER COATING COMPOSITION MODIFIED WITH AN ALKYLENIMINE

Roger M. Christenson, Gibsonia, Samuel Porter, Jr., Tarentum, and Andrew Halcomanis, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

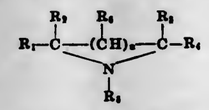
No Drawing. Filed June 22, 1964, Ser. No. 377,119
19 Claims. (Cl. 260—901)

1. A coating composition based on methacrylate polymer containing at least about 50 percent by weight of lower alkyl methacrylate in polymerized form, said composition containing at least about 0.1 percent by weight, based upon the weight of methacrylate polymer, of vinyl polymerized carboxylic acid units which have been reacted with an imine of the formula:



where R_1, R_2, R_3, R_4 and R_5 are each selected from the group consisting of hydrogen, alkyl, aryl, alkaryl and aralkyl, R_6 is selected from the group consisting of hydrogen and lower alkyl, and n is an integer from 0 to 1.

4. An interpolymer of (1) from about 30 percent to about 99.9 percent by weight of a lower alkyl methacrylate, (2) at least about 0.1 percent by weight of ethylenically unsaturated carboxylic acid, and (3) from about 0 percent to about 69.9 percent by weight of at least one other ethylenically unsaturated monomer copolymerizable with said methacrylate and said acid, said interpolymer having at least about 0.1 percent by weight of acidic carboxyl groups thereof reacted with an imine of the formula:



where R_1, R_2, R_3, R_4 and R_5 are each selected from the group consisting of hydrogen, alkyl, aryl, alkaryl and aralkyl, R_6 is selected from the group consisting of hydrogen and lower alkyl, and n is an integer from 0 to 1.

9. A coating composition having as a film-forming component thereof a blend of (*a*) a polymer of a lower alkyl methacrylate and (*b*) the interpolymer of claim 4 wherein sufficient acidic carobxyl groups have been reacted with imine to comprise at least about 0.1 percent of the total weight of said blend.

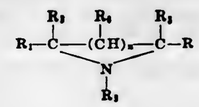
3,290,417

THERMOSETTING COATING COMPOSITIONS MODIFIED WITH AN ALKYLENIMINE

Roger M. Christenson, Gibsonia, Samuel Porter, Jr., Tarentum, and Andrew Halcomanis, Plum Borough, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 1, 1965, Ser. No. 460,494
17 Claims. (Cl. 260—901)

1. A thermosetting coating composition containing as a major film-forming component an interpolymer of (*a*) from about 2 mole percent to about 25 mole percent of hydroxyalkyl ester of an ethylenically unsaturated carboxylic acid, (*b*) from about 0.1 mole percent to about 20 mole percent of ethylenically unsaturated carboxylic acid, and (*c*) at least one other copolymerizable ethylenically unsaturated monomer, said composition containing at least about 0.1 percent by weight of vinyl polymerized carboxylic acid units which have been reacted with an alkylenimine of the formula:



where R_1, R_2, R_3, R_4 and R_5 are each selected from the group consisting of hydrogen, alkyl, aryl, alkaryl and aralkyl, R_6 is selected from the group consisting of hydrogen and lower alkyl, and n is an integer from 0 to 1.

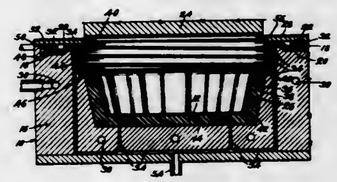
6. The coating composition of claim 1 in which a resin compatible with said interpolymer and coreactive with said interpolymer at elevated temperatures is an additional film-forming component.

3,290,418

METHOD AND MOLD FOR MAKING THIN-WALLED CONTAINERS

Harold E. Best, American National Bank Bldg., Denver, Colo.

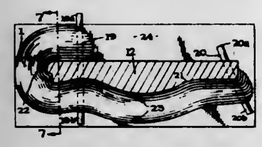
Filed Oct. 12, 1960, Ser. No. 62,275
5 Claims. (Cl. 264—92)



3. The method of forming thin-walled plastic containers of the type which include undercut portions adjacent their mouth in a mold having a rigid body with a cup-shaped cavity therein, a compressible insert seated within the body cavity and containing a centrally-located cavity shaped in the form of the article to be molded together with a flange along its upper edge bordering the latter cavity, means for fastening the flange to the body, a removable rigid die plate overlying the flange containing a central opening registering with the cavity in the insert in a manner to form a continuation thereof, and conduit-forming means opening onto the insert cavity adapted to evacuate air trapped therein underneath the plastic sheet being formed, which comprises the steps of pre-heating a sheet of plastic to a temperature where it begins to sag, laying the pre-heated sheet over the central opening in the die plate in substantially air-tight sealed contact therewith, evacuating the air from within the insert cavity in a manner such that the differential pressure applied to the heat-softened sheet will force the latter into intimate contact with the shaped surface of the insert defining the cavity therein, cooling the shaped sheet until it sets, separating the shaped portion of the plastic from the remainder of the sheet, and ejecting the molded article from the cavity in the insert by removing the die plate, applying air pressure to expand the elastic insert and to lift the same from the body cavity

until the fastened flange thereof expands the mouth of the insert to the extent required for release of the undercut portions of the said shaped seat.

3,290,419
METHOD OF MAKING RAIL ANCHOR
Emory L. Groff, Pompano Beach, Fla., and Charles T. Walker, Rockville, Md., assignors to Poor & Company, Chicago, Ill., a corporation of Delaware
Original application Nov. 14, 1963, Ser. No. 323,677. Divided and this application May 14, 1965, Ser. No. 455,864
2 Claims. (Cl. 264—103)



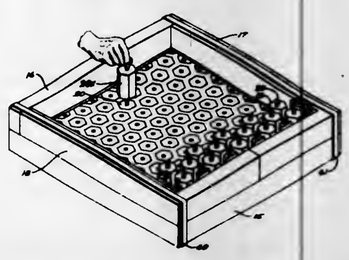
1. A method of forming a rail anchor of plastic material including a longitudinal base, a nose disposed above said base and an upstanding hook portion; comprising the steps of: depositing strands of glass-filled plastic resin around a jig having top, bottom and two end surfaces providing an outer contour approximately the desired inner contour of the formed anchor, said strands deposited by winding from a point adjacent one end surface of said jig in a first direction across the bottom of said jig to form said rail anchor base, continuing the winding by looping said strands around the other of said jig end surfaces in an upward direction normal to said first direction and in a figure-8 pattern providing crossing of the strands to form said rail anchor hook portion, further continuing the winding of said strands over the top surface of said jig towards said first mentioned jig end surface to form said nose portion, curing the wound strands by the application of heat to consolidate the strands in conformity with the contour of said jig, and removing the cured anchor from the jig.

3,290,420
PROCESS FOR MAKING THIN ORIENTED PLASTIC STRIPS AND TAPE
Keith L. Orser, Auburn, N.Y., assignor to Columbian Rope Company, Auburn, N.Y., a corporation of New York
Filed July 5, 1962, Ser. No. 207,718
8 Claims. (Cl. 264—210)



1. In the process of producing a thin, flat tape of oriented polymeric material by applying a stretching force to an extruded length of orientable polymeric material having an elongated cross section to draw the extruded length to a permanently elongated length of oriented material of reduced cross section, the improvement of heating the extruded length to an orientation temperature immediately below the crystallizing temperature of said material and pulling said reheated, extruded length through a confined passage by means of the stretching force in forming the elongated, oriented length and maintaining the walls of said confined passage at approximately that of said orientation temperature, said passage having two parallel walls spaced apart less than the thickness assumed by the extruded length when freely drawn at its natural draw ratio by a stretching force.

3,290,421
MANUFACTURE OF CERAMIC OBJECTS AND THE LIKE
Eldon D. Miller, Jr., Bridgeville, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 13, 1964, Ser. No. 359,145
6 Claims. (Cl. 264—219)

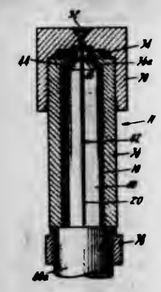


1. Method of manufacturing multi-component moisture-absorbent molds of the type used for casting refractory and ceramic ware from slips and slurries, comprising the steps of:
(A) preparing master pattterns for the mold components, which patterns cooperate to provide a positive image of a unit to be cast in an assembled completed moisture-absorbent mold;
(B) preparing at least one flexible anchor element arranged to cooperate with at least a first of the mold components when they are assembled to releasably hold said first component in place;
(C) temporarily associating the flexible anchor element with a master pattern in a predetermined position, which position determines the later assembly of said first mold component relative to a second mold component;
(D) forming moisture-absorbent mold components from the master patterns and anchoring the flexible anchor element in place within the body of said second mold component during the forming of said component;
(E) associating rigid means with said first mold component which means is arranged to be releasably engaged by said anchor element;
(F) terminating association between the mold components and the master patterns to which they are attached and recovering the mold components from the master patterns, said second mold component having an anchor element fixed in position therein.

3,290,422
METHOD OF PRODUCING A DISPENSING CONTAINER
Kenneth George Michel, Far Hills, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 28, 1962, Ser. No. 247,981
4 Claims. (Cl. 264—259)

1. A method of producing a compartmented collapsible dispensing container, which comprises introducing a

male forming member having a longitudinally extending channel therein and a tubular sleeve thereon into a mold cavity, and flowing molten material into said channel and into said cavity and substantially simultaneously fusing said material in said channel to the inner surface of



said sleeve along at least two lines of contact extending axially the entire length of said sleeve to form a separate wall while shaping said material in said cavity and fusing the same to one end of said sleeve to form it into a headpiece.

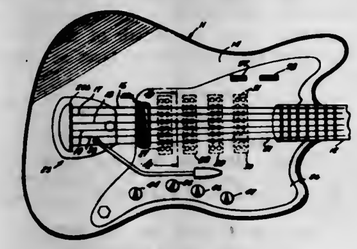
3,290,423
MANUFACTURE OF FRICTION DISCS
Donald Hatch and Peter Gordon Meller, Stockport, England, assignors to Ferodo Limited, Manchester, England, a British company
Filed Nov. 13, 1962, Ser. No. 237,834
Claims priority, application Great Britain, Nov. 17, 1961, 41,326/61
3 Claims. (Cl. 264—294)



1. A method of manufacturing a blank for an annular friction disc from solid ingredients that include fibres and a binding agent comprising the steps of suspending the solid ingredients of the blank in a liquid phase, rotating at high speed a mould having a central opening and an annular cavity whose radial cross-section decreases in depth from the inner edge outwards, feeding the suspension through the opening into the cavity, whereby the solid ingredients separate from the liquid phase under centrifugal action and fill the cavity to form a blank diminishing in thickness radially outwards while the liquid escapes through said central opening, and subsequently compressing the blank to uniform thickness to produce a blank of uniform density.

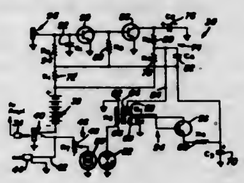
ELECTRICAL

3,290,424
ELECTRIC GUITAR INCORPORATING IMPROVED ELECTROMAGNETIC PICKUP ASSEMBLY, AND IMPROVED CIRCUIT MEANS
Clarence L. Fender, Fullerton, Calif., assignor, by mesne assignments, to Columbia Records Distribution Corp., New York, N.Y., a corporation of New York
Filed Mar. 6, 1964, Ser. No. 349,900
5 Claims. (Cl. 84—1.16)



2. A guitar, which comprises:
a body having a face,
a neck connected to said body and extending outwardly therefrom,
six magnetizable and generally-parallel guitar strings extending over said neck and over said face,
said strings lying generally in a single plane parallel to said face,
means to connect the ends of said strings to said body and to the end of said neck remote from said body,
a plurality of electromagnetic pickup components mounted on said body in spaced relationship longitudinally of said strings whereby to sense the different harmonics generated at different longitudinal points along said strings, and switching and circuit means to connect all of said pickup components to an amplifier and loudspeaker means,
said switching and circuit means being adapted to selectively reverse the phases of said components relative to each other,
said switching and circuit means also being adapted to disconnect selected ones of said pickup components from said amplifier and loudspeaker means,
said switching and circuit means connecting said pickup components in parallel-circuit relationship whereby to permit achievement of novel sound effects in a simple manner and without affecting excessively the volume of the signal supplied to said amplifier and loudspeaker means.

3,290,425
AUTOMATIC VOLUME CONTROL FOR STRINGED MUSICAL INSTRUMENTS
Graham E. Stobaugh, Rte. 3, Box 401B, Rocky Mount, N.C.
Filed Mar. 19, 1965, Ser. No. 441,045
16 Claims. (Cl. 84—1.16)

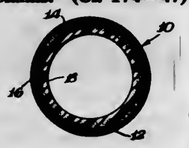


1. In combination with a musical instrument having a string adapted to be vibrated by intermittent engagement thereof and an amplifier for increasing the volume of the sound produced by said vibration of the string, an automatic volume control unit comprising, volume changing means operatively connected to the amplifier for changing the output thereof from a maximum value to a reduced value, signal transferring means operatively connected to the volume changing means for reducing the output of the amplifier in response to a signal of short duration, and contact means responsive to engagement of the string for instantaneously developing said signal of short duration.

3,290,426
PLASTIC PIPE HAVING A CONDUCTIVE EXTERIOR SURFACE AND METHOD OF MAKING THE SAME

William J. Barrentine, Wilmington, Del., assignor to Transpolymer Industries Inc., Wilmington, Del., a company of Delaware

Filed Jan. 6, 1964, Ser. No. 336,057
7 Claims. (Cl. 174—47)

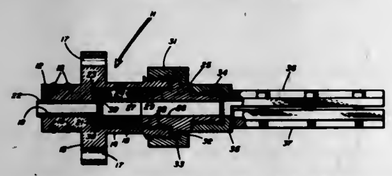


1. A plastic pipe comprising a cylinder wall composed of a thermosetting resin and containing an inert conductive particulate filler, a passage through said pipe formed by a resin rich smooth interior surface of said wall completely free from filler particles and having a high electrical resistivity and a zone at the periphery of the wall having a concentration of filler particles and having an electrical resistivity substantially less than said interior surface.

3,290,427
DEEP SEA HIGH PRESSURE CABLE ENTRY

Ralph M. Newcomer, Gaithersburg, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 26, 1965, Ser. No. 435,759
11 Claims. (Cl. 174—65)



1. A cable entry device for use in sealingly introducing an electrical cable through an opening in a wall having differential pressures on opposite sides thereof, which comprises,

a cylindrical body member having an axial bore therethrough and further having a counter bore formed at one end thereof,

said cylindrical body having a neck portion at its other end for insertion through said opening in said wall,

an annular packing grommet formed of a deformable and substantially incompressible elastic material and having an outer diameter substantially equal to the diameter of said counter bore and having an axial bore formed therein of a diameter substantially equal to the diameter of said cable,

said packing grommet being received in the counter bore portion of said body member,

a packing retainer having an axial bore therethrough of a diameter substantially equal to the diameter of said cable and further having a piston formed on one end thereof,

said piston being slideably received within said counter bore for abutting contact with said packing grommet,

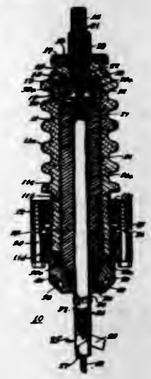
sealing means positioned between and engaging the piston and the wall of the counter bore portion of the body member to prevent fluid leakage therebetween, and

means for moving said piston longitudinally within said counter bore to simultaneously deform and radially compress the packing grommet into circumferential sealing contact with a coaxial cable received.

3,290,428
METHOD AND APPARATUS FOR CABLE CONNECTION

Edward H. Yonkers, Glencoe, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 142,962, Oct. 3, 1961. This application Mar. 29, 1965, Ser. No. 446,774
13 Claims. (Cl. 174—73)

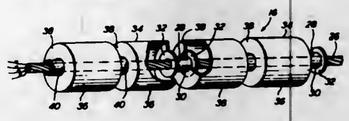


1. In combination with an electrical cable, apparatus for terminating the end of said cable comprising a removable, preformed, tubular elastic filler having a longitudinal bore and an outer peripheral surface, said filler being carried on said cable with the end of the cable protruding therefrom, a rigid terminal housing having an internal wall surface, said cable and filler extending into said housing, facing portions of said wall surface and the peripheral surface of said filler in its unstressed state diverging in a direction extending longitudinally of said filler towards one end thereof, and means for applying gradually increasing force on said filler to move said diverging surfaces into substantially air-free interfacial engagement with one another, said engagement progressively expanding along the length of the filler in the direction of divergence of said surfaces as said force is increased.

3,290,429
ARMORED ELECTRIC LINE

Robert E. Prescott, Rumson, N.J., and Leslie N. Wilder, Fullerton, Calif., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 4, 1964, Ser. No. 387,275
6 Claims. (Cl. 174—102)

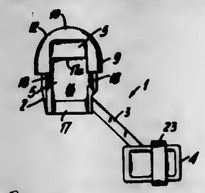


1. An armored electric line comprising conductor means, a plurality of independent and separate sleeve-like armor means each surrounding said conductor means, said armor means each being longitudinally distributed along said conductor means, and means on each of said armor means for linking one armor means to another to form an interlinked sequence of armor means, said linking means on each of said armor means being joined to said armor means and being rotationally fixed relative to said armor means, each of said sleeve-like armor means forming with said linking means thereon a structure longitudinally movable relative to an adjacent armor means.

3,290,430
ANGLE STRAP STRAIN RELIEF BUSHINGS

Ferdinand Klumpp, Jr., Union, and Kerry Heyman, Summit, N.J., assignors to Heyman Manufacturing Co., Kenilworth, N.J., a corporation of New Jersey

Filed Jan. 28, 1966, Ser. No. 526,955
11 Claims. (Cl. 174—153)

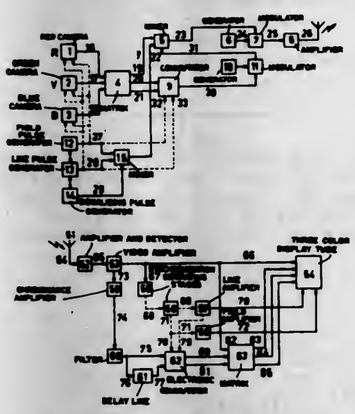


1. A one-piece relief bushing of dielectric material for holding an electric conductor in an aperture in a panel comprising a first part and a second part, said first and second parts adapted to form a shank including channel means; recess means in said channel; tongue means adapted to fit into said recess; and panel locking means, and resilient strap means adapted to join said first and second parts; said strap means normally extending at an angle on said shank from one part; said strap means including a central bending axis crossing the centerline of at least one of said parts and said strap holding said second part away from a centerline approximately the width of the channel part means of said first part when in normal position.

3,290,431
TRANSMISSION SYSTEM FOR COLOR TELEVISION AND TRANSMITTERS AND RECEIVERS FOR USE IN SUCH SYSTEMS

Joseph Tasso, Fromes (Seine), France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 10, 1963, Ser. No. 279,423
Claims priority, application France, Nov. 9, 1962, 914,973
5 Claims. (Cl. 178—5.2)

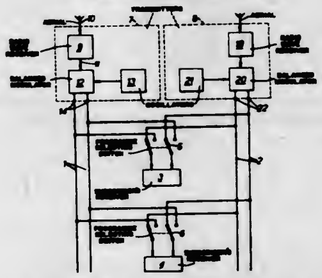


1. A line-sequential color television system having an odd number of lines for each image and two interlaced fields for each image, said system comprising a transmitter and a receiver, said transmitter comprising sources of a luminance signal, a first chrominance signal, a second chrominance signal, a synchronization signal, a main carrier oscillation, and a subcarrier oscillation, means for modulating said luminance signal and synchronization signal on said main carrier, means for modulating said sub-carrier oscillations with said first chrominance signal only on each odd line of each of said fields, means for modulating said sub-carrier oscillations with said second chrominance signal on each even line of each of said fields, means for modulating said modulated sub-carrier oscillations on said modulated main oscillations to produce a complex signal, and means for transmitting said complex signal, said receiver comprising means for receiving and detecting said complex signal, means for separating said luminance signal, said synchronization signal and chrominance signals from said detected signals, first and second color channels, and means responsive to said synchronization signal for applying chrominance signals to said first channel only on each odd line of each field, and for applying chrominance signals to said second channel only on each even line of each field.

3,290,432
WIRED BROADCASTING SYSTEMS AND APPARATUS

Kenneth Charles Quinton, Esher, Surrey, and Daniel Henry Smart, Coulsdon, Surrey, England, assignors to Communications Patents Limited

Filed Oct. 21, 1963, Ser. No. 317,595
Claims priority, application Great Britain, Oct. 22, 1962, 39,799/62
6 Claims. (Cl. 178—5.4)



1. A colour television transmitting apparatus, for energising a conductive network of a wired broadcasting system, which comprises means for producing a first electric wave at a frequency which corresponds to an odd multiple of sixths of the line scanning frequency, means for producing a second electric wave at a frequency which corresponds to a different odd multiple of sixths of the line scanning frequency, means for modulating each electric wave in accordance with brightness information signals to produce a corresponding modulated carrier wave brightness information component, means for modulating each electric wave in accordance with suppressed carrier wave signals pertaining to colour information and having a frequency corresponding to an odd multiple of half the line scanning frequency to produce a suppressed carrier wave colour information component, and means for applying the corresponding brightness and colour information components to a respective conductive network, whereby the beating of these carrier waves or their harmonics takes the form, in a picture produced with the aid of said components, of a dot-pattern which is of reduced visibility compared to the line-pattern normally produced as a result of such beating.

3,290,433
COLOUR TELEVISION TRANSMITTERS

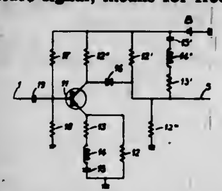
Henri de France, Bernard Degnin, and Gérard Melchior, Levallois-Perret, France, assignors to Compagnie Française de Television, a corporation of France

Filed Apr. 26, 1963, Ser. No. 276,013
Claims priority, application France, May 2, 1962, 896,176
10 Claims. (Cl. 178—5.4)

1. A colour television transmitter comprising: first means, having an output, for generating a first picture sig-

nal having a first frequency band; means for generating a second picture signal; means for frequency-modulating said second picture signal on a wave to provide a frequency-modulated wave having a second frequency band lying within said first frequency band; a circuit, having two inputs respectively; and means having an input coupled to said output of said first means, said circuit having in said second frequency band a gain characteristic which varies as a function of the amplitudes of those frequency components of said first signal lying within said second frequency band, for modifying the amplitudes of at least some of said components relatively to the amplitude of said wave, coupled to the output of said first means and of said circuit, for transmitting over a common channel the sum of said first picture signal and of said frequency-modulated wave.

2. A colour television transmitter comprising: first means, having an output, for generating a first picture signal having a first frequency band; means for generating a second picture signal; means for frequency-modulating



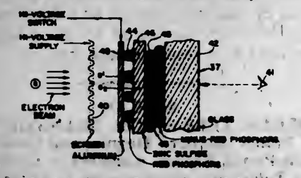
said second picture signal on a wave to provide a frequency-modulated wave having a second frequency band lying within said first frequency band; an emphasizing filter having an amplitude/frequency characteristic enhancing the amplitudes of frequency components lying within said second frequency band relatively to the amplitudes of frequency components lying within the remainder of said first frequency band, said emphasizing filter having an input coupled to said output of said first means, and an output; an amplitude limiter having an input coupled to said output last mentioned and an output; a de-emphasizing filter having an amplitude/frequency characteristic which is complementary to that of said emphasizing filter, said de-emphasizing filter having an input coupled to said amplitude limiter output and an output; mixing means having a first input coupled for receiving said frequency modulated-wave, a second input coupled to said de-emphasizing filter output, and an output; and means for transmitting the output signal of said mixing means.

3,290,434

COLOR TELEVISION RECEIVER INCLUDING DISPLAY MEANS COMPRISING TWO UNIFORMLY DISTRIBUTED LUMINESCENT MATERIALS

Dexter P. Cooper, Jr., Lexington, and Jeanne A. Dalais, Somerville, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed July 24, 1963, Ser. No. 297,341
18 Claims. (Cl. 178—5.4)



1. A color television receiver comprising:

(a) receiver means responsive to received color television signals for producing at least two video signals representing respective color separation image components of different dominant wavelengths scanned in synchronism according to a periodic program;

(b) a kinescope comprising a target assembly defining a raster;

(c) said assembly including a covering on said raster which comprises two superposed layers of material, each of which emits chromatic light of different dominant wavelengths when electrons impinge thereon and excite the same;

(d) the material of the layer first impinged upon by electrons being uniformly distributed over said raster but covering only a portion thereof such that about 50% to 70% of the electrons impinging upon the last mentioned layer transfer thereto a substantial amount of their energy;

(e) the hues of the chromatic light emitted by said two superposed layers of material being substantially complementary so that substantially achromatic light is produced by the simultaneous excitation of both of said layers over a given elemental area on said raster in a manner which causes emission of substantially the same amount of light from each layer;

(f) means to produce a beam of electrons focused on said covering and caused to scan the raster in accordance and in synchronism with said periodic program for exciting said layers;

(g) means to accelerate electrons in said beam during a first portion of said periodic program such that only the layer emitting chromatic light of the longer dominant wavelength is substantially excited;

(h) means to accelerate electrons in said beam during a second portion of said periodic program such that both of said layers are simultaneously excited in the same elemental area to emit substantially the same amount of light;

(i) means to modulate said beam during said first portion of said periodic program with the video signal representing one color-separation image component of relatively long dominant wavelength for causing said beam to reproduce on said raster in chromatic light of the longer dominant wavelength said one color-separation image component; and

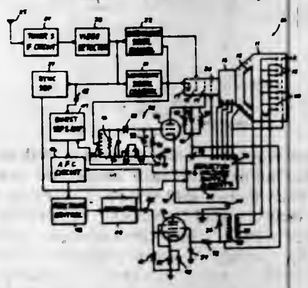
(j) means to modulate said beam during said second portion of said periodic program with the video signal representing another color separation image component of relatively short dominant wavelength for causing said beam to reproduce on said raster in substantially achromatic light said other color separation image component.

3,290,435

COLOR TELEVISION REPRODUCING SYSTEM

Satoshi Shimada, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Oct. 4, 1963, Ser. No. 313,837
Claims priority, application Japan, Oct. 13, 1962, 37/45,425
4 Claims. (Cl. 178—5.4)



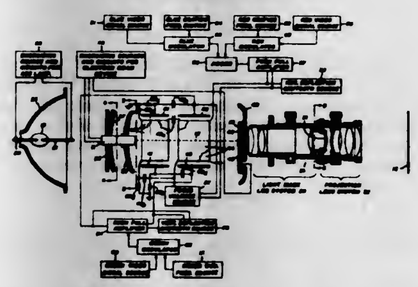
1. In a color television system, means for supplying a composite color television signal including a luminance component and color components on phases of a sub-carrier wave, means for generating a control signal at the frequency of the sub-carrier wave and synchronized therewith, a reproducing tube having color control means responsive to said control signal to produce main colors in certain portions of each cycle of said control signal and mixed colors intermediate said main colors in other portions of each cycle, means for applying to said tube a keying signal having pulses therein for reducing brightness during said other portions of each cycle of the control signal, a biasing circuit for establishing a certain signal level, and means coupled to said biasing circuit and responsive to said color components of said composite signal for increasing the amplitude of said keying signal in proportion to the amount by which the amplitude of said color components exceed said certain signal level.

3,290,436

COLOR PROJECTION SYSTEM

William E. Good, Liverpool, Michael Graser, Jr., Fayetteville, and Henry J. Vanderlaan, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 7, 1964, Ser. No. 365,751
5 Claims. (Cl. 178—5.4)



1. A system for simultaneously controlling point by point the intensity of each of a pair of primary color components in a beam of light in response to respective electrical signals comprising:

(a) a light modulating medium,

(b) means for directing said beam on said light modulating medium,

(c) means for simultaneously producing two sets of deformations in said medium, the deformations in each set being arranged in uniformly spaced similarly directed lines to form respective light diffraction gratings, the lines in each set extending in the same direction, one of said diffraction gratings having a line to line spacing smaller than the other of said gratings,

(d) said sets of deformations forming a third diffraction grating of line to line spacing which is uniform and greater than the line to line spacing of either of said other gratings,

(e) means for controlling the amplitude of the lines of deformation of said one grating in response to the one of said electrical signals corresponding to the one of said color components of longer wavelengths,

(f) means for controlling the amplitude of lines of deformation of the other of said gratings in response to the other of said electrical signals,

(g) a light mask positioned in the path of light transmitted from said medium, said mask having at least three transparent portions, each of said portions being successively displaced in position from the path of undeviated light from said medium,

(h) the one of said transparent portions adjacent said undeviated path being positioned and of extent in the direction of deviation to pass first order light of said color components diffracted by said third grating and to pass first order light of said other color component diffracted by said other grating,

(i) the next adjacent one of said transparent portions being positioned and of extent in the direction of deviation to pass first order light of said one color component diffracted by said one grating and second order light of said other component diffracted by said other grating,

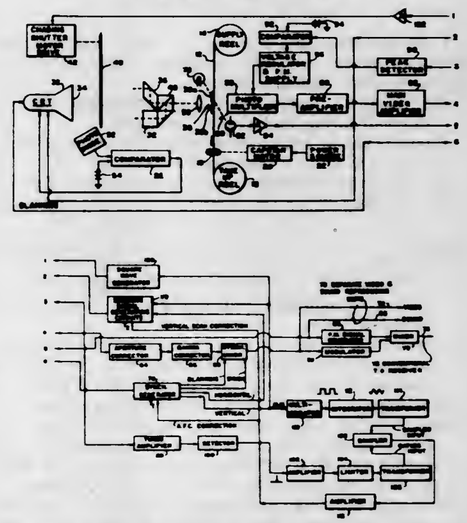
(j) the third of said transparent portions being positioned and of extent in the direction of deviation to pass substantially second order light of said one color component diffracted by said one grating.

3,290,437

MOTION PICTURE FILM AND REPRODUCING APPARATUS THEREFOR

Peter C. Goldmark, Stamford, and John M. Hollywood, Greenwich, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed Apr. 12, 1962, Ser. No. 187,035
15 Claims. (Cl. 178—5.6)



1. In a system for reproducing picture information recorded in a series of successive frames of information disposed longitudinally on a film strip and sound information recorded on a sound track disposed longitudinally on the film adjacent to the frames of picture information, the combination therewith comprising:

(a) means for moving the film strip through a scanning area,

(b) first means for scanning, in accordance with an interrogation pattern independent of the mode of recording said information of said film strip, the scanning area in a series of successive scansions each of which substantially encompasses a frame of picture information on the film to generate signals representative of the information scanned,

(c) means responsive to the signals generated by the first scanning means for generating a main video signal,

(d) second scanning means for scanning a portion of the sound track concurrently with the scanning of the frames of picture information to generate a sound signal,

(e) means for combining the sound signal and the main video signal to generate a composite signal suit-

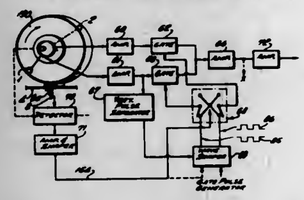
able for direct application to a conventional television receiver, and

(f) means responsive to the signals generated by the first scanning means for varying the frequency of the scansions of the scanning area.

3,290,438
RECORDING AND REPRODUCING SYSTEM HAVING REDUNDANT RECORDING AND SELECTIVE REPRODUCTION

Shiro Okamura, 26 Nichome, Shiba Shirokane, Daimachi, Minatoku, Tokyo, Japan

Filed Oct. 25, 1963, Ser. No. 319,002
13 Claims. (Cl. 178—6.6)



1. A recording and reproducing system for recording an approximately periodical signal on a recording medium for future reproduction, comprising

input terminal means to which said periodical signal is supplied during the recording operation,

output terminal means from which the recorded signal is taken during the reproducing operation,

recording and reproducing transducer means,

first coupling means for electrically coupling said transducer means to said input terminal means,

second coupling means for electrically coupling said transducer means to said output terminal means,

scanning means for causing said transducer means to repeatedly scan said recording medium in a predetermined direction,

transporting means for moving said recording medium relative to said transducer means in a direction to intersect a line along said predetermined direction.

recording boundaries on said recording medium,

said scanning means and said transporting means cooperating to define on said recording medium a recorded pattern comprising substantially parallel paths having their ends substantially at said boundaries,

each of said parallel paths being arranged so as to contain a recorded length corresponding to at least one of the approximate periods of said periodical signal and to contain a redundant portion corresponding to the predicted maximum deviation of at least one of the frequency and phase of the repeating scan of said scanning means from the corresponding frequency and phase of said periodical signal,

and control means responsive to said recorded signals at said boundaries for producing control signals to be supplied to said coupling means to selectively energize at least one of said first and said second coupling means for at least one of the approximate periods of said periodical signal while each of said parallel paths is scanned by said transducer means.

3,290,439
DATA ENCODING KEYBOARD

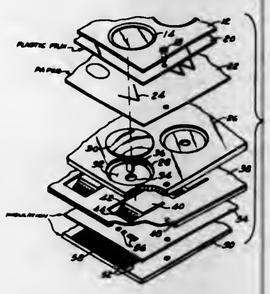
Frederick P. Willcox, 261-1 Oenoke Ridge, New Canaan, Conn., and Newland F. Smith, New Canaan, Conn.; said Smith assignor to said Willcox

Filed Apr. 29, 1963, Ser. No. 276,524
10 Claims. (Cl. 178—17)

1. A selective-contact encoding keyboard, comprising:

(a) a circuit board providing spaced groups coplanar conductors,

(b) an array of flat spring contact tongues mounted above said board, all of said tongues lying normally in a common plane parallel to end spaced from the plane of said conductors, each tongue having independently flexible downwardly inclined contact fingers moved, upon downward depression of such tongue, into substantially simultaneous engagement with selective ones of said conductors, and

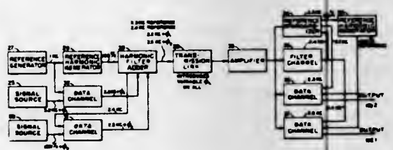


(c) an array of generally coplanar spaced-apart snap-action monostable discs which return to the stable non-operated configuration after release of pressure thereon, said discs being supported above said respective contact tongues for selective depression thereof towards said circuit board conductors.

3,290,440
DATA TRANSMISSION BY VARIABLE PHASE WITH TWO TRANSMITTED PHASE REFERENCE SIGNALS

Roger L. Easton, Oxon Hill, Md., Francis X. Downey, Annandale, Va., and Charles H. Weaver, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 14, 1963, Ser. No. 265,295
3 Claims. (Cl. 178—67)



2. In a system for transmitting phase modulated multiplexed signals on a transmission channel containing a variable phase shift introducing portion,

means for producing a first reference frequency signal,

means for producing a plurality of phase modulated information signals which are phase related to said reference signal at a frequency different therefrom,

means for producing a second reference signal which is phase related to said first reference frequency signal at a selected frequency difference therefrom,

means for applying said signals to said channel,

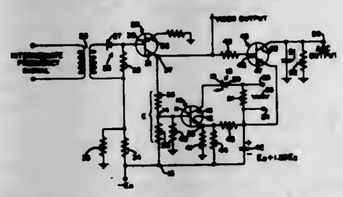
means for receiving said signals from said channel,

and means for comparing the difference frequency between one reference and each information signal with a harmonic including unity of the difference frequency between the two reference signals to derive an output signal in dependency on the modulation of each information signal.

3,290,441
AMPLITUDE-DISCRIMINATING SIGNAL TRANSFER CIRCUIT

John G. Humphrey, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 13, 1963, Ser. No. 287,640
11 Claims. (Cl. 178—69.5)



1. An amplitude-discriminating signal transfer circuit for producing an output signal when the input signal amplitude lies between a first value and a second value comprising:

(a) a semiconductor device having first, second, and third electrodes,

(b) means for applying an input signal to said first electrode,

(c) first resistance means connected to said second electrode,

(d) second resistance means connected to said third electrode,

(e) unilateral conducting means connected between said second resistance means and said third electrode of said semiconductor device,

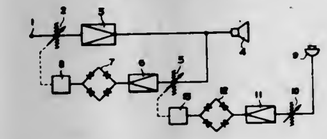
(f) means for applying to said second electrode through said first resistance means a potential substantially equal to said first value and for applying to said third electrode through said second resistance means a potential substantially equal to said second value, and

(g) output means connected to said second resistance means for deriving the output signal.

3,290,442
NOISE RESPONSIVE AUTOMATIC SOUND VOLUME CONTROLLING SYSTEM

Fujio Sugawuma, Shinagawa-ku, Tokyo, Japan, assignor to TDK Electronics Company, Limited, Tokyo, Japan, a corporation of Japan

Filed July 5, 1963, Ser. No. 293,396
Claims priority, application Japan, July 11, 1962, 37/28,487
1 Claim. (Cl. 179—1)

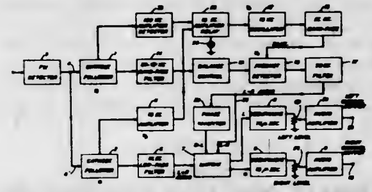


A noise responsive automatic sound volume controlling system comprising a main circuit consisting of a signal volume regulating variable resistance to be given an input signal, a main amplifier to be given an output from said signal volume regulating variable resaitance and a loud speaker to be given an output from said main amplifier, a feedback circuit consisting of a feedback volume regulating variable resistance to be given a part of an output from said main amplifier, a feedback amplifier to be given an output from said feedback volume regulating variable resistance, a full-wave rectifier for rectifying an output from said feedback amplifier and a signal volume regulating variable resistance driving means operated with an output from said full-wave rectifier and a feedback volume regulating circuit for the feedback circuit consisting of a noise volume collecting microphone, a collected sound regulating variable resistance to be given an output from said microphone, a collected sound amplifier to be given an output from said collected sound regulating variable resistance, a full-wave rectifier for rectifying an output from said collected sound amplifier and a feedback volume regulating variable resistance driving means operated with an output from said full-wave rectifier so that the signal input may be sounded from the loud speaker through the main amplifier, a part of an output from said main amplifier may be fed back, the signal volume regulating variable resistance may be driven with a feedback output, the signal input volume may be regulated to be decreased to a proper level, the sum of the noise and the sound signal may be made a collected sound signal by the sound collecting microphone and may be amplified by the collected sound amplifier, the feedback volume regulating variable resistance may be controlled with an output from said collected sound amplifier, the feedback volume of the feedback circuit may be varied, the feedback rate of the feedback circuit may be varied by the signal volume, thus the output level may be made constant irrespective of the variation of the input level and the standard value of the output level to be made constant may be determined to be a value corresponding to the noise volume by controlling an input for the feedback circuit with a collected sound level from the sound collecting microphone.

3,290,443
RECEIVERS OF STEREOPHONIC PROGRAMS FROM A SINGLE MULTIPLEX TRANSMITTING STATION

Fritz L. Mergner, Beechhurst, and Harro K. Heinz, Flushing, N.Y., assignors to Fisher Radio Corporation, Long Island, N.Y., a corporation of New York

Filed July 16, 1964, Ser. No. 383,056
22 Claims. (Cl. 179—15)



1. In a circuit for receiving a signal which may be either stereophonic or monophonic, where the stereophonic signal is derived from a transmitted composite of a control frequency and a high frequency modulated by signals from a pair of distinctly different audio sources, and where the monophonic signal contains errant hiss and noise frequencies, the control frequency being a part of the transmitted composite only when the composite is a stereophonic signal, FM circuit means for separating an audio frequency from the received modulated high frequency, the FM circuit means being operative to produce an audio frequency from the received high frequency whether the received high frequency is stereophonic or monophonic, means for separating the transmitted control frequency, if present, from the high frequency of the received signal, means for utilizing the control frequency after separation from the high frequency to produce separate and distinct audio signals from the separated audio frequency in accordance with the distinct modulation of the high frequency by the separate audio sources, means energized only by the control frequency when the control frequency is present in the transmitted composite for disclosing that the received signal is a stereophonic signal, and means for utilizing a portion of the errant frequencies

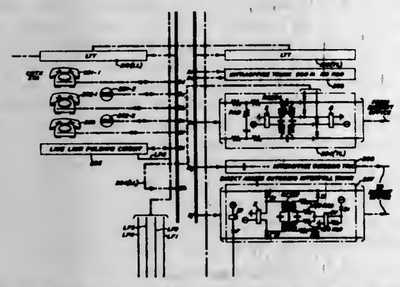
to block the control frequency separating means to prevent actuation of the signal disclosing means by the errant frequencies.

3,290,444

COORDINATION AND CONTROL OF TRANSMISSION COMPATIBILITY AMONG PRIVATE NETWORK, TIE LINE, AND TOLL MESSAGE NETWORK LINES AND TRUNKS IN CROSSBAR OFFICES

Eugene S. Anderson, Westerville, and Eugene D. Mascucci, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 12, 1963, Ser. No. 322,937
10 Claims. (Cl. 179—16)



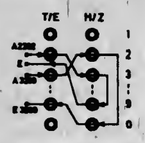
1. In a telephone office for interconnecting individual lines, customer group lines and private and common carrier trunks, an interconnection-controlling marker comprising means for registering an indication of the presence of a switchable attenuation pad in any of said trunks, means for registering an indication of the transmission quality classification assigned to each of said lines and trunks at their respective appearances in said office, means for transmitting attenuation pad switching signals to said trunks, and means operable incident to the interconnection of any of said lines and trunks and responsive to the operation of both said registering means for controlling said transmitting means to transmit signals for switching said pads in accordance with the registered transmission quality classifications assigned said lines and trunks under interconnection.

3,290,445

AUTOMATIC RING CORE IDENTIFICATION SYSTEM

Kurt Fischer and Wolfgang Müller, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Apr. 15, 1963, Ser. No. 273,118
5 Claims. (Cl. 179—18)



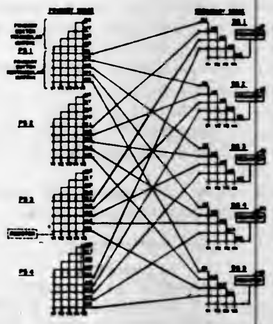
1. A circuit arrangement for number identification devices and number reforming devices in telephone systems and the like, comprising a single transformer matrix of ring-shaped transformer elements arranged in respective row and column coordinates, the coordinates of one type representing the individual digit position characteristic of a multi-digit number, and the other type of coordinates representing the individual value characteristics of each digit position, a marking conductor for each number involved, identifying the figure combination corresponding to the associated number, each such marking conductor forming a primary winding for a transformer element in each coordinate representing individual digit position, to effect a magnetization of desired direction of the associated element with at least one of such primary windings of each marking conductor being arranged to effect an element magnetization in a direction opposite to that of other elements associated with the particular conductor, at least one of said coordinates of at least one of said coordinate types having fewer transformer elements therein than the number of characteristics to be represented in such coordinate, each transformer element in such coordinate having two groups of primary windings respectively connected for opposite magnetizing direction, whereby the transformer elements in such coordinate represent either of two number characteristics depending upon the magnetizing direction in the involved transformer element.

3,290,446

REGISTER POSITION IN A MULTI-STAGE SWITCHING NETWORK

Joseph A. Ceonzo, Poughkeepsie, Leon Stambler, Brooklyn, and Alfred Weiss, Kew Gardens, N.Y., assignors to the United States of America as represented by the Secretary of the Army

Filed Aug. 13, 1963, Ser. No. 302,232
3 Claims. (Cl. 179—18)



1. A multi-stage switching network comprising: a plurality of primary switches, each of said primary switches consisting of a rectangular matrix of verticals and horizontals; triangular matrix means connected to said rectangular matrix verticals of each primary switch for connecting any two of said rectangular matrix verticals by closing one triangular matrix crosspoint; a plurality of triangular secondary switches; means for connecting each of said primary switches to all of the other primary switches through each of said secondary switches; and a plurality of register means, each of said register means being connected solely to a respective one of said triangular secondary switches for accepting address information so that connections can be set up within the network.

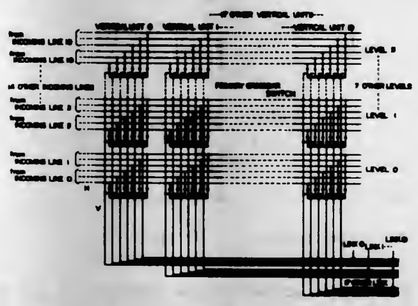
3,290,447

MEANS FOR SPLITTING CROSSPOINTS OF A CROSSBAR SWITCH

Toru Ohno, Yokohama-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Apr. 23, 1963, Ser. No. 274,980
Claims priority, application Japan, May 25, 1962, 37/20,916
6 Claims. (Cl. 179—25)

1. In a crossbar switching system comprised by first and second sets of crossbar switches with the second set of crossbar switches providing a crosspoint splitting function and wherein the total number of vertical switching units in the second set of crossbar switches is equal to the total number of vertical switching units in the first set of crossbar switches, the improvement comprising means of connecting four horizontal level switching units in each vertical unit of said second set of crossbar switches for splitting of crosspoints, means for connecting the remaining horizontal level switching units in the second set of crossbar switches for ordinary crossbar switching connection, means for connecting each one of the vertical units of said first set of crossbar switches to a corresponding vertical unit of the second set of crossbar switches, and means for splitting crosspoints of each crossbar switching unit of said first set of crossbar switches as well as crosspoints of each crossbar switching unit of the remaining horizontal level switching units in the second set of crossbar switches by selective operation of one of the four horizontal level switching units.

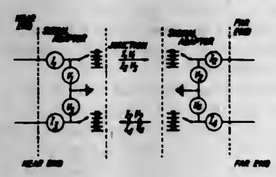


3,290,448

ELECTRIC SIGNALLING SYSTEMS

John Christopher Emerson, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 10, 1963, Ser. No. 294,125
Claims priority, application Great Britain, July 19, 1962, 27,782/62
4 Claims. (Cl. 179—84)



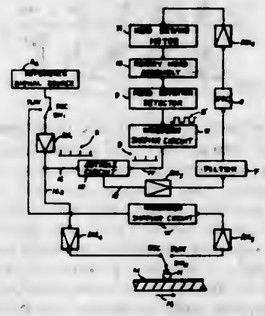
1. An electric signalling system including a pair of stations interconnected by unilateral communication circuits, there being at least one such circuit in each direction, means at each station for transmitting over each communication circuit to the other station signals which are analogue function representations of the input voltage and current received by the transmitting station from other associated equipment, means at each station for receiving the signals transmitted over said communication circuits and comparing them with the corresponding functions of the output vlotage and current of the receiving station, and means for regulating the output current of each station until the latter is a function of the difference of the input and output voltage and current.

3,290,449

SERVO SYSTEM FOR CONTROLLING A ROTARY MAGNETIC HEAD IN A VIDEO TAPE RECORDER

Tsuneo Morita, Setagaya-ku, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Jan. 23, 1963, Ser. No. 253,589
Claims priority, application Japan, Jan. 26, 1962, 37/2,792
6 Claims. (Cl. 179—100.2)



1. A servo system of a driving device for a magnetic recorder or the like comprising

(a) a reference signal source for supplying a reference signal,

(b) detecting means for producing a comparing signal corresponding to the operation of said driving device, and

(c) an astable circuit having inputs coupled respectively to said reference signal source and said detecting means to drive said astable circuit between respective operating conditions in locked relation to said reference signal and said comparing signal for detecting the phase difference between said two signals,

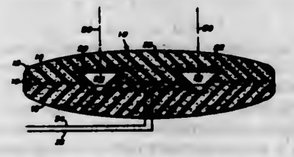
(d) the natural time period of one of said operating conditions of said astable circuit being selected longer than the period corresponding to the phase difference of said reference signal and said comparing signal and being of a value to minimize the effect of a dropout of one of said signals.

3,290,450

PILLOW TYPE SPEAKER SUPPORT

Barna Majoros, 705 N. 27th St., Billings, Mont.

Filed Dec. 21, 1962, Ser. No. 246,455
6 Claims. (Cl. 179—146)

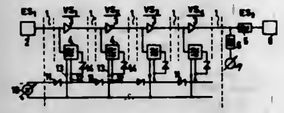


1. A device for increasing the enjoyment of listening to stereophonic sounds comprising, a foam rubber support having an upper surface and first and second interior chambers spaced along the longitudinal length thereof, first and second speakers respectively supported in said chambers and generally following any flexing movement of said support, said speakers having axes of sound generally perpendicular to said upper surface when said support is in an unflexed condition, and said axes intersecting above said upper surface when said support is flexed by a force exerted against said upper surface centrally of said speakers.

3,290,451
CIRCUIT ARRANGEMENT FOR A TRANSMISSION SYSTEM

Jasper Hendrik Duimelaar, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 11, 1963, Ser. No. 264,202
Claims priority, application Netherlands, Mar. 20, 1962, 276,178
4 Claims. (Cl. 179—175.3)

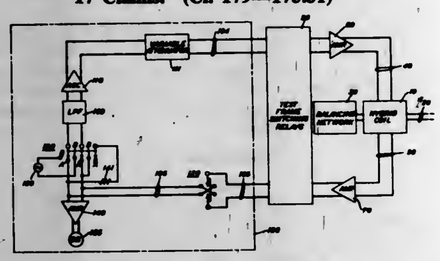


1. A transmission system for the transmission of information signals between first and second terminal stations, comprising a transmission line extending between said terminal stations, said transmission line comprising a plurality of amplifier stages, and means for testing said line to determine the location of faults, said testing means comprising a separate oscillator connected to each of said amplifier stages, a source of variable direct voltage, threshold circuit means connecting said source to said oscillators whereby said oscillators are successively rendered operative as the voltage of said source is increased, and separate threshold means connected to each oscillator whereby each oscillator is rendered inoperative before the next succeeding oscillator is rendered operative as the voltage of said source is increased.

3,290,452
METHODS AND APPARATUS FOR AUTOMATIC SINGING POINT TESTING

Nels K. Olson, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 24, 1963, Ser. No. 318,649
17 Claims. (Cl. 179—175.31)



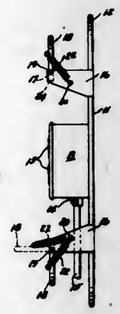
1. In combination, a hybrid coil, a balancing network connected to said hybrid coil, a transmission line and conjugate transmitting means and receiving means all connected to said hybrid coil, variable gain amplification means, means for connecting said amplification means in a closed loop including said transmitting means and said receiving means, said amplification means including means to maintain a constant output level independent of input level variation, and means to measure the gain of said amplification means.

3,290,453
COMBINATION CORD HOLDER AND OUTLET BOX ATTACHMENT

Robert H. Jensen, Rte. 2, Box 128A, Oscoda, Mich.

Filed Oct. 11, 1963, Ser. No. 315,542
3 Claims. (Cl. 191—12.4)

1. A cord holder comprising a frame having pairs of spaced apart, laterally projecting legs rigidly secured thereto; an electrical outlet box mounted on said frame intermediate said pairs of legs for connection to a source of power; U-shaped cord guards pivotally connected to the free ends of each pair of legs; means connected to said cord guards and legs respectively for exerting pressure on



said cord guards, resilient means connected to said legs and guards, respectively, for exerting pressure on said cord guards and stop means on said legs engagable by said cord guards to limit the swinging action of said cord guards.

3,290,454
LAMP FIRING SWITCH WITH IMPROVED SINGLY ACTUATED MECHANISM

Gustav Hubert, San Gabriel, Calif., assignor to Ultra-Violet Products, Inc., San Gabriel, Calif., a corporation of California

Filed Feb. 8, 1965, Ser. No. 430,951
7 Claims. (Cl. 200—5)

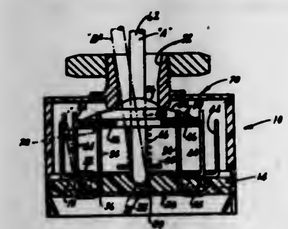


1. In a fluorescent light, the combination of:
a housing;
a switch carrier mounted in said housing for reciprocating movement along an axis between first and second positions,
a first push-to-close electrical switch spring loaded to the open position and mounted in said carrier and having a push-button member engageable with said housing, with movement of said carrier in said housing along said axis to said second position moving said first switch to the closed position and with movement of said carrier to said first position permitting spring return of said first switch to the open position;
a second off-on electrical switch mounted in said carrier and having an actuating member manually movable between off and on positions, with a manual force on said second switch member moving said second switch to the on position and moving said carrier in said housing to said second position and with removal of the manual force permitting return of said carrier to said first position;
circuit means for connecting said first switch into the lamp heater circuit of the light; and
circuit means for connecting said second switch into the power supply circuit of the light.

3,290,455
LEVER ACTUATED SWITCH WITH RESILIENT STATIONARY LEAF-SPRING CONTACTS

William Christensen, 24321 Martha Washington, Southfield, Mich.

Filed Oct. 22, 1965, Ser. No. 501,217
12 Claims. (Cl. 200—6)



1. In a multi position, center off lever switch, the combination of,
a switch case of generally symmetrical configuration;
an insulated switch base which forms the bottom of said case;
a switch mounting means which forms the top of said case;
a first group of resilient wire contacts secured to said insulated switch base;
a second group of resilient wire contacts secured to said insulated switch base;
a generally symmetrical actuator plate positioned by said first group of resilient contacts;
an opening in said actuator plate and said switch mounting meand;
a pivotal lever for positioning said actuator plate, said lever extending through said opening in said switch mounting means and said actuator plate, while being pivotal about an opening in said switch base, displacement of said actuator plate causes selective engagement of certain of said first group of resilient wire contacts with said second group of resilient wire contacts, while buss bars connect certain of said second group of resilient wire contacts.

3,290,456
SWITCH STRUCTURE WITH INTERLOCKING ROTATIONAL AND AXIAL MOVEMENT PREVENTION MEANS

Walter Meyer, McHenry, Ill., assignor to Oak Electro/Netics Corp., a corporation of Delaware

Filed Oct. 19, 1964, Ser. No. 404,859
13 Claims. (Cl. 200—14)

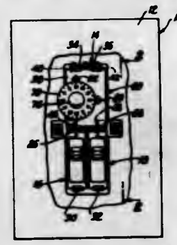


1. A rotary switch comprising: a plurality of switch sections, each having a stator, and a rotor rotatably mounted with respect to each stator; cooperable means integral with the stators of adjacent sections for securing them against axial movement relative to one another; and cooperable means integral with the stators of adjacent sections for securing them against rotational movement relative to one another.

3,290,457
ELECTRIC DISTRIBUTION BOX WITH CIRCUIT BREAKER AND TIMER

William M. Peschmann II, 2133 Industrial Road, Las Vegas, Nev.

Filed Oct. 21, 1963, Ser. No. 317,625
3 Claims. (Cl. 200—38)

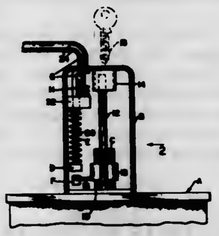


1. In a timer, the combination of:
(a) a housing;
(b) a timer motor in said housing;
(c) a timer switch in said housing;
(d) a slot in said housing having two portions positioned at an angle to each other;
(e) means for opening and closing said timer switch including an element movable in said slot between said portions thereof;
(f) a first cam driven by said timer motor moving said element from one of said portions of said slot into the other closing said timer switch; and
(g) a second cam driven by said timer motor moving said element from said other portion of said slot into said one portion thereof opening said timer switch.

3,290,458
DEVICE FOR PREVENTING THEFT OF MOTOR VEHICLES

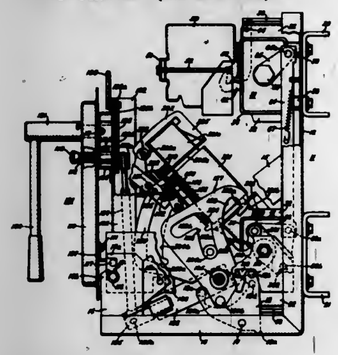
Albert V. Lattimer, 76 Chester St., Worcester, Mass.

Filed Feb. 8, 1965, Ser. No. 430,838
4 Claims. (Cl. 200—44)



1. A device for preventing theft of motor vehicles having electric batteries for energizing the vehicle starter, comprising an enclosure, means mounting the enclosure on the battery in a position to completely cover and conceal a post of the battery, an electrical connection within the enclosure for the concealed post, a second connection passing through a wall of the enclosure to the starter of the vehicle, means forming a gap between the two electrical connections, movable means to bridge the gap to close the circuit, mechanical means to move said gap bridging means to a position to interrupt the current passing between said two electric connections, flexible means to operate said mechanical means, said flexible means extending through a wall of said enclosure to a remote point, a key operated lock at said remote point for said flexible means to selectively prevent or allow turning thereof to operate said mechanical means, and means completely covering and protecting said flexible means.

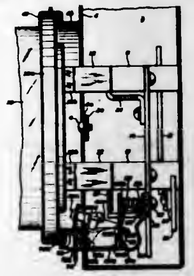
3,290,459
FUSIBLE ELECTRIC SWITCH HAVING MEANS FOR PIVOTALLY SUPPORTING REPLACEABLE CARTRIDGE FUSES ON A TILTABLE CARRIAGE
Howard D. Kurt, Media, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,267
8 Claims. (Cl. 200—50)



1. A switch comprising:
(a) a first unit including means for removably supporting a bridge-like electroconductive element and additional means for movably mounting the supporting means on the first unit;
(b) a second unit having a relatively stationary pair of spaced-apart electric contacts;
(c) means for pivotally mounting said first unit on said second unit for reciprocal movement relative to the second unit to and away from a first position in which said element is adapted directly to engage and hence electrically to interconnect both of said contacts;
(d) anchoring means for locking said first unit in its first position to said second unit;
(e) means for so moving said supporting means relative to said first unit while in said first position that said element disengages at least one of said contacts; and
(f) means responsive to said movement of said supporting means for disabling said anchoring means, thereby releasing said first unit for angular movement relative to the second unit to a second position in which said element is completely separated from both of said contacts and is exposed for safe and convenient removal from said supporting means.

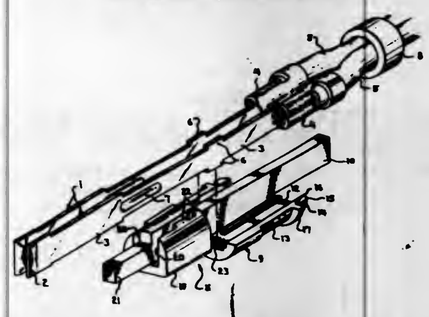
3,290,460
METER RECEPTACLE HAVING AN ELECTRICAL BY-PASS MECHANISM
Paul M. Christensen and Martin F. Koenig, Milwaukee, and Robert W. Wischer, Delafield, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,368
8 Claims. (Cl. 200—51.11)

1. In a receptacle for receiving an electrical meter having a flanged base portion, a pair of electrical conducting members, means connecting said electrical conducting members to said meter, a spring contact member disposed between said pair of conducting members and secured at one end thereof to one of said conducting members and having a portion engageable with the other of said pair of conducting members in its normal condition, a contact carrier member connected to said portion of said spring contact member, a pressure plate member overlying said contact carrier, a rotatable actuating member having a cam surface on one end thereof and an outwardly extending tongue portion at its opposite end, a slidable lever member having connection at one end with said tongue portion of said actuating member and disposed within a receptacle supported guide means at its other end, said lever member being slidable in one direction to rotate said actuating member in a direction causing said cam surface to act upon said contact carrier through said pressure plate to move said contact carrier,



and hence said contact member out of engagement with said other electrical conducting member, and said lever member being slidable in the opposite direction to rotate said actuator member in another direction causing said cam surface to release said pressure plate so that said contact carrier is moved by the natural resilient bias of said spring contact member to permit said portion of the latter to engage the other of said pair of electrical conducting members.

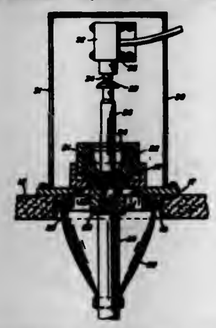
3,290,461
ELECTRICAL CONTACT ASSEMBLY WITH HINGED WING PORTIONS AND CONTACT SEPARATING MEANS
William L. Schumacher, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 7, 1963, Ser. No. 314,248
14 Claims. (Cl. 200—51.1)



1. An electrical contact assembly comprising, in combination, a housing member of insulating material and contact members; said housing member having a separating member, wing sections hingedly connected to said separating member along a portion thereof, said wing sections having recesses disposed in surfaces adjacent said separating member and securing sections thereon, part of said separating member extending outwardly from said wing sections, an element extending outwardly from said separating member and having slots therein; said contact members having first and second sections, said first section defining contact-engaging surfaces, said second section being disposed in corresponding slots of said element and along said separating member with said contact-engaging surfaces extending outwardly from said element, said wing sections being disposed against said

separating member with said second section lying within corresponding recesses of said wing sections, and means engaging said securing sections to secure said wing sections in position against said separating member to maintain said contact members in place in said housing.

3,290,462
BIN-LEVEL SWITCH
Lewis W. Watkins, Chesterton, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,765
3 Claims. (Cl. 200—61.21)



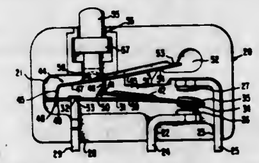
1. The combination with a storage container, of a generally horizontal support therein, a ball-and-socket bearing having its socket mounted on said support, said support having an opening therein below said bearing, a rigid reach rod depending from the ball of said bearing through said opening so that the lower end of the rod will be engaged by material piling up in said container, an on-off switch mounted above said support and having a plunger projecting downwardly therefrom and a rigid arm extending upwardly from the ball of said bearing, said arm having a mushroom-shaped head on its upper end adapted to engage said plunger except when said rod is tilted to a substantial angle with the vertical.

3,290,463
TRIGGER-OPERATED ELECTRIC SWITCH MECHANISM
David W. Johnson, Newington, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Nov. 20, 1964, Ser. No. 412,646
2 Claims. (Cl. 200—67)



1. An electric switch comprising a casing having opposite side walls, switch contacts and wire terminals lying against said side walls, an operating member mounted on said casing and movable to and fro, an overcenter spring interconnected with and movable through an overcenter position by said operating member, a swingable yoke interconnected with and moved by said spring independent of said operating member as the operating member moves through said overcenter position, a cradle made of insulating material hollowed out to receive said spring and yoke, means on the cradle pivotally supporting the yoke, said cradle being positioned in said casing between said opposite casing walls and imposing a solid insulation barrier between opposite wire terminals, said cradle having its bottom face spaced from the bottom wall of said casing leaving a passage extending from wall to wall between said opposite side walls, a generally flat insulating contact carrier slidable in said passage and guided by said cradle and bottom casing wall, bridging contacts carried by said carrier and extending across said passage and engaging said opposite switch contacts, said yoke engaging said carrier and moving it causing contact engagement and disengagement.

3,290,464
HIGH PRECISION OR HIGH VELOCITY BREAK SNAP ACTING SWITCHES USING MODULAR BASIC SWITCH COMPONENTS
Cyril O. Flanegan, Normal, and Erich Kothe, Schiller Park, Ill., assignors to General Electric Company, a corporation of New York
Filed Mar. 2, 1965, Ser. No. 436,696
14 Claims. (Cl. 200—67)

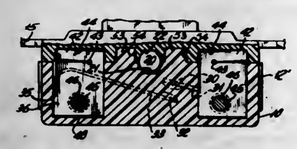


1. A snap switch comprising in combination:
an elongated snap spring having one end fixedly mounted with its opposite end movable between unactuated and actuated positions,
said snap spring including a tension section and compression section terminating in a free end;
a movable contact mounted on the movable end of said snap spring;
means including a fixed contact for engaging said movable contact in one of said positions of said snap spring;
operator means including a compression member portion having a pair of resiliently deflectible spaced arms connected by a base,
one of said arms being pivotally mounted at a fixed position, the other of said arms bearing against the free end of said compression section to place said compression section in compression and said tension section in tension,
said operator means further including a return leaf spring portion connected at one end to said compression member portion and fixed at its other end,
said return leaf spring portion being resiliently flexed when said snap spring moves from said unactuated position to said actuated position; and
actuating means engageable with said operator means for displacing said compression member portion and for flexing said return leaf spring portion to move said snap spring from its unactuated position to its actuated position,
said return leaf spring portion exerting sufficient force on said compression member portion to restore said snap spring to said unactuated condition upon release of said actuating means.

3,290,465
ELECTRICAL WIRING DEVICE AND CONTACT SUPPORTING STRUCTURE THEREFOR
Maximilian Ehrlich, Baldwin, N.Y., assignor to Leviton Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 31, 1964, Ser. No. 341,691
3 Claims. (Cl. 200—68)

3. In an electrical wiring device having a hollow housing of insulating material which includes a base having a

bottom and upstanding side walls defining an opening in the base and a cover resting on said side walls and extending over said opening, the improvement which comprises, an electrical contact located within said hollow housing and a terminal plate of conductive material connected to and supporting said contact, said plate extending lengthwise between the cover and the bottom of the base of the housing with opposite ends of the plate being

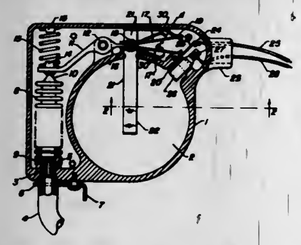


engaged thereby under a compressive force and having a transverse slot extending across a substantial part of its width intermediate its ends, said slot separating the plate into portions which are capable of being forced towards each other under engagement of the cover and the bottom of the housing with the ends of the plate whereby the plate is rigidly held in a fixed position relative to the housing.

3,290,466
PRESSURE SWITCH WITH HIGH AND LOW LIMITS

John V. Olivesu, Greenwich, Conn., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 16, 1964, Ser. No. 396,819
5 Claims. (Cl. 200—83)

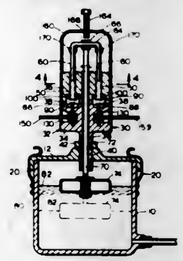


1. A pressure switch for operating a circuit responsive to both a predetermined low pressure limit and a predetermined high pressure limit, which comprises in combination, a switch housing, an expansible and contractable bellows member with a fluid pressure inlet means thereto and a movable exterior portion, a pivoted switch arm mounted in said housing, said switch arm having a first extended arm portion shaped and positioned to contact with the movable exterior portion of said bellows member and a second extended arm portion with a bifurcated electrical conductor member, the latter having flexible spring-like spaced apart end contact elements that are positioned to spring against electrical contact means in turn fixedly positioned in said housing, a pair of prong-like circuit breaking members attached to said second extended arm portion of said switch arm and positioned to be adjacent said flexible contact elements of said electrical conductor member, said circuit breaking members having their free end portions a short spaced distance from the respective flexible contact elements when the latter are in a central position with respect to said electrical contact means, whereby one prong-like member is effective to engage and move its closely adjacent flexible contact element with respect to said electrical contact means responsive to a given pressure increase with an increment of expansion of said bellows member and an accompanying movement of the switch arm, and the other prong-like circuit breaking member is effective to engage and move its closely adjacent flexible contact element with respect to said electrical contact means responsive to a given increment of contraction of said bellows member and the resulting opposite movement of said switch arm.

3,290,467
FLOAT SWITCH FOR INDICATING BRAKE FLUID LEVEL HAVING AN ANNULAR PORTION FOR RECEIVING MERCURY WHEN THE SWITCH IS DISPOSED UPSIDE DOWN

John M. Musgrave, Woodbine, Iowa

Filed Apr. 7, 1965, Ser. No. 446,211
3 Claims. (Cl. 200—84)



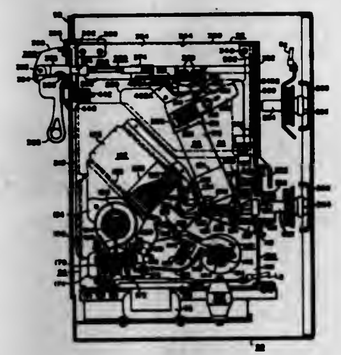
1. A float switch having a body member, a switch rod bore extending upwardly through said body member from a lower end, a float rod extending upwardly through said bore, two contact wire passages in said body member, two contact wires movable in said contact wire passages, means extending through said body member and movable upwardly and downwardly with respect to said body member and interconnecting said contact wires conductively and operatively correlated with said float rod for simultaneous movement upwardly and downwardly in unison therewith, a pair of conductive material chambers in said body member and disposed below said contact wire passages and in communication therewith, conductive fluid material disposed in said chambers respectively, contacts extending through said body member and through the walls of said chambers in portions thereof normally containing said conductive fluid, a float on the lower end of said float rod, whereby when said float moves upwardly and downwardly said contact wires will move out of contact and into contact with the conductive fluid in said chambers respectively for opening and closing electrical communication between said contact points, and in which each of said chambers has an upper wall provided with an annular recess extending horizontally around and spaced from the lower end of a respective one of said contact wire passages, said annular recesses being large enough to receive said conductive fluid at times when said switch is turned upside down.

3,290,468
CLIP FOR FUSE EMPLOYED AS MOVABLE MEMBER OF SWITCH

Russell D. Clark, Jr., East Aurora, and Charles J. Mahler, Fairport, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original application Nov. 7, 1962, Ser. No. 235,940. Divided and this application Aug. 24, 1964, Ser. No. 399,119
10 Claims. (Cl. 200—114)

1. In switching apparatus wherein a movable carrier mounted for guided movement is adapted to move one end of a movable fuse along a path to and from a contact to close and open a circuit, a clip, means coupled to said clip and said carrier for interconnecting the clip and the carrier for movement of the clip along said path in response to movement of the carrier, said clip comprising a pair of conductive elements resiliently biased toward each other, said elements having a set of complementary jaws at one end thereof for receiving therebetween in engaging relation said one end of the fuse whereby said one end of the fuse is movable in response to movement of the carrier, said elements having a second set of complementary jaws at the other end thereof for receiving therebetween in engaging relation said contact, and means

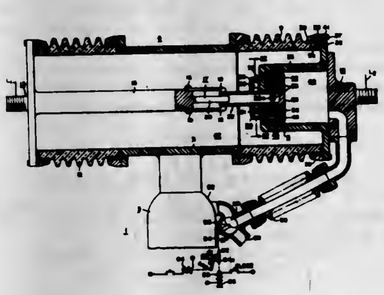


for supporting said elements for relative movement toward and away from each other along their entire length in a manner to translate spreading force applied to one set of jaws into compressive force to the other set of jaws, whereby an end of a fuse lightly held within the first set of jaws is tightly clamped in response to said contact being forced between the second set of jaws against said bias force in response to movement of said clip along said path to said contact.

3,290,469
COMPRESSED-GAS CIRCUIT INTERRUPTER HAVING CAVITATION MEANS

Winthrop M. Leeds, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 30, 1964, Ser. No. 400,366
11 Claims. (Cl. 200—148)

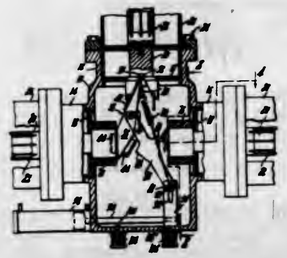


1. A compressed-gas circuit interrupter including means defining an enclosed casing containing gas under pressure, a relatively stationary contact and a cooperable movable tubular venting contact disposed within said enclosed casing, and means causing a cavitation effect downstream of the movable tubular venting contact to cause thereby gas flow through the movable tubular venting contact to cause arc extinction.

3,290,470
ELECTRICAL SWITCH HAVING FRICTIONALLY ENGAGING CONTACTS AND FULCRUM RELEASE MEANS THEREFOR

Donald N. Sewell, Acton, Mass., assignor to Dielectric Products Engineering Company Inc., Littleton, Mass., a corporation of Michigan

Filed May 19, 1965, Ser. No. 457,035
7 Claims. (Cl. 200—153)



1. A coaxial line switch structure comprising a housing, first terminal means for coupling a first coaxial line to said housing, said first terminal means including a fixed contact means disposed within said housing for connection to the center conductor of said first coaxial line connected to said first terminal means, second terminal means for coupling a second coaxial line to said housing, said second terminal means including means for connection to the center conductor of said second coaxial line and means defining a pivot, a switch arm pivotally mounted on said pivot defining means, said switch arm including contact means for frictionally engaging said fixed contact means to complete an electrical circuit between said first terminal means and said switch arm, means for electrically connecting said switch arm to said second terminal means an actuating lever pivotally mounted on said switch arm, a fixed fulcrum surface disposed within said housing adjacent said first terminal means, and said actuating lever having a pivot surface adapted to engage said fulcrum surface, biasing means connected between said actuating lever and said housing and bridging said lever pivot surface, and operator means for moving said actuating lever from a first position to a second position in which said pivot surface contacts said fulcrum surface to place said biasing means under tension and a third position beyond said second position in which said actuating lever is rocked about said fulcrum surface to cam said contacts apart such that said biasing means accelerates said switch arm away from said first terminal means after the frictional coupling between said contacts is released.

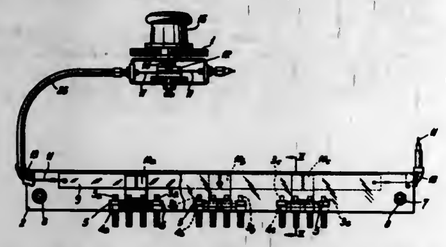
3,290,471
RECTILINEAR ELECTRIC SWITCHES

Maurice Gerardin, Meylan, Isere, France, and Jean Pelatan, 33 Rue Aristide Briand, Fontaine, Isere, France

Filed Jan. 11, 1965, Ser. No. 424,650
Claims priority, application France, Jan. 14, 1964, 960,185; Dec. 24, 1964, 999,878
6 Claims. (Cl. 200—161)

1. An electric switch comprising a rectilinear insulating support which comprises two parallel walls forming a rectilinear groove, a plurality of groups of metal contact studs carried by said support, each one of said groups consisting of a block of insulating material having said fixed contact studs embedded therein, said different blocks being secured between the two walls of said support, a plurality of movable contacts carried by a movable bar, means for producing the movements of

translation of said movable bar in a direction parallel to said fixed insulating support, each movable contact



being substantially U-shaped and adapted simultaneously to engage with its two side portions a pair of said fixed contact studs in a same group thereof.

3,290,472
ELECTRIC CURRENT COLLECTING ELEMENT
Robert H. Savage, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 21, 1965, Ser. No. 465,556
10 Claims. (Cl. 200—166)



1. A longitudinally-extending electric current collecting element having an exposed current collecting contact face, said element comprising:
(a) a longitudinally-extending core of low adhesion, electrically conducting material, and
(b) an outer longitudinally-extending wall of metallic material having low electrical resistance enclosing said core over the sidewall area thereof,
(1) said element having as an exposed current collecting contact face an area of said low adhesion material surrounded by an area of said metallic material with the ratio of the area of low adhesion material to the area of metallic material being in the range of from about 400:1 to 1:1.

3,290,473
ILLUMINATED PUSH BUTTON SWITCH
Bernard John Golbeck, Crystal Lake, William F. Boulter, Mount Prospect, Harry S. Tice, Jr., Crystal Lake, and Raymond Frank Lewandowski, Mount Prospect, Ill., assignors to Oak Electro/Netics Corp., a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,204
11 Claims. (Cl. 200—167)



1. A push button switching device comprising: an escutcheon plate having rows of spaced and aligned openings; a pair of mounting studs secured to said escutcheon plate between each row of openings; a push button switch aligned with each row of openings and fixed to said escutcheon plate, each of said switches having a plurality of switch operators; a button carried by each of said operators, said buttons each having a translucent outer end extending outwardly of an escutcheon plate opening, and a light shield spaced inwardly of the outer end; a reflective member releasably secured to each pair of studs; at least one light source carried by each reflective member, each light source being adapted to illuminate a plurality of translucent button ends on adjacent push button switches; and means mounting said operators for movement between an "out" position where said shield is positioned adjacent said opening to prevent said button translucent portions from being illuminated, and an "in" position where said push button translucent portions are exposed to a light source to illuminate the same.

3,290,474
CIRCUIT INTERRUPTER WITH IMPROVED TERMINAL CONNECTING MEANS
Francis L. Gelzheiser, Fairfield, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 30, 1964, Ser. No. 386,234
13 Claims. (Cl. 200—168)



9. A circuit breaker comprising an insulating housing; said insulating housing comprising a back, a front opposite said back, a line end, a load end and two sides; a circuit-breaker mechanism supported within said housing and comprising a pair of cooperable contacts; said front having a handle-opening therein; an operating handle extending from said handle-opening and being operable to open and close said contacts; said housing having a first opening means at the back line and at one side thereof; said housing having a second opening means at the back line end and at the side opposite said one side thereof; a terminal conductor supported in said housing at the back line end thereof in proximity to said first and second opening means; a conducting stab connector supported on said housing at said first opening means, and being removably connected to said terminal conductor in a first position; and said stab connector being removable from said support at said first opening means and being supportable on said housing and connectable with said terminal conductor at said second opening means in a second position advanced from said first position in the direction extending between said ends.

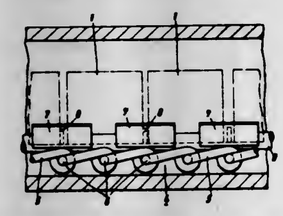
3,290,475
MICROSWITCH HOLDER-ASSEMBLY
Charles F. Broes, Chicago, Ill., assignor, by mesne assignments, to Merrill Machinery Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 23, 1964, Ser. No. 420,661
2 Claims. (Cl. 200—168)



1. A microswitch assembly comprising,
(a) a rectangular shaped hollow housing having four walls defining two opposed open faces;
(b) a plate secured to one of said faces of said housing to close the opening;

(c) an insulation core filling substantially half of said housing above said plate and having in its upper exposed surface a central recess;
(d) a plurality of conductors each attached to an aperture terminal contact and fixedly embedded in the insulation core with the terminal contacts seated exposed in depressions in the upper face of said insulation core;
(e) a microswitch dimensioned to sit in said housing above the insulation core and having a central downward projection on its bottom surface complementing said recess in the upper surface of said insulation core, said projection to be snugly received in said recess to preclude lateral movement of the microswitch with respect to said core; and
(f) knob shaped terminal contacts fixed on the face of the microswitch opposed to the insulation core and dimensioned to snap into and out of said respective apertured conductor terminal contacts when the microswitch is seated into or removed from said housing.

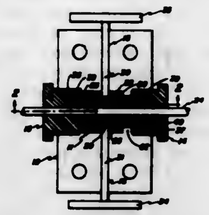
3,290,476
CHAIN CONVEYOR FOR PARTS SUBJECTED TO INDUCTION HEATING
Friedrich Schoeller, Remscheid, Germany, assignor to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, and Allgemeine Elektricitäts-Gesellschaft, Berlin-Grunewald, Germany
Filed Sept. 21, 1964, Ser. No. 398,025
Claims priority, application Germany, Sept. 28, 1963, D 42,584
1 Claim. (Cl. 219—10.69)



An inductive heating apparatus comprising an inductor, a heating zone and an endless chain conveyor for workpieces of non-magnetic, non-ferrous metal that are to be inductively heated, said conveyor having means attached thereto forming compartments at the top of the conveyor at the heating zone for supporting and locating the workpieces against significant shifting during conveyance through the heating zone, said compartment-forming means comprising spaced open-ended trough-like supports with diverging side cheeks for the workpieces carried by the conveyor and comprising medial division means for separating and locating workpieces aligned along the conveyor.

3,290,477
WELDING MEANS AND METHOD
John A. Chapp, Denver, Colo., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 19, 1963, Ser. No. 296,409
6 Claims. (Cl. 219—78)

1. A device for welding together a portion of the walls of a generally elongated tubular metal article to provide at said portion sealed closure of said article comprising in combination, a housing having a welding chamber therein, insulating means disposed within the chamber and penetrated by said tubular article, selectively actuable means for engaging said article to restrain movement thereof, means for passing an electrical current generally lengthwise through said tubular article and portion for heating said portion, and resiliently deformable means interposed within the insulating means for stressing said



portion to squeeze together and deform said portion of the tube during the heating thereof to effect said sealed closure.

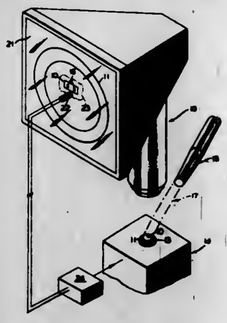
3,290,478
APPARATUS FOR MANUFACTURE OF CONTAINERS
William E. Morley, Bay Village, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed May 21, 1963, Ser. No. 281,917
3 Claims. (Cl. 219—79)



1. An apparatus for making containers at a high rate of speed from thin wall container bodies, each container body having an open end, and covers, each cover shaped to fit over said open end on said container body, one of said container body and said cover having a curl around its free end and the other having a corner at its free end which fits against an area on said curl; said apparatus comprising synchronized rotatable turrets having a plurality of stations spaced around the axis of each of said turrets, each of said stations of a first rotatable turret comprising a pair of opposing electrically conductive heads at least one of which is movable towards the other, one of said heads being shaped to fit against said cover and the other of said heads being shaped to fit against said container body; cover feed means for feeding one of said covers to a position relative to said head of said first turret corresponding thereto in each of said stations of said first turret as said first turret rotates; second rotatable turret means feeding said container bodies one at a time from a plurality of stations to a position relative to said head of said first turret corresponding thereto in each of said stations of said first turret as said first turret rotates; cam means for moving one of said heads towards the other

in each of said stations of said first turret at a place later in rotation than the cover and container body feeding means to enable said heads to hold said cover against said container body under a positive pressure in each of said stations of said first turret as said first turret rotates; a transformer rotatably mounted along with said first turret and connected to a source of electricity on one side thereof and to said heads in each of said stations of said first turret on the other side thereof, said transformer being energizable to supply an electric current across the junction between said cover and said container body while under positive pressure to fuse said cover to said container body in each of said stations of said first turret as said first and second turrets rotate to form a succession of said containers; and third rotatable turret means having a plurality of stations for removing said containers from said stations of said first turret as said turrets rotate synchronously.

3,290,479
APPARATUS FOR BONDING
Michael K. Avedissian, Mohnton, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 9, 1963, Ser. No. 328,989
11 Claims. (Cl. 219—85)



1. Apparatus for bonding two pieces of eutectic forming material to each other, which comprises:

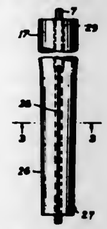
means for supplying heat to two pieces of eutectic forming material to be bonded to each other to cause a eutectic flow, said eutectic flow upon its occurrence covering a portion of at least one of said two pieces of material;

means for projecting a beam of light onto the portion of said one piece of material to be covered by the eutectic flow, the light reflected from said portion changing upon the occurrence of the eutectic flow; and

means responsive to the change in the reflected light from said portion for controlling the heating of said two pieces of material.

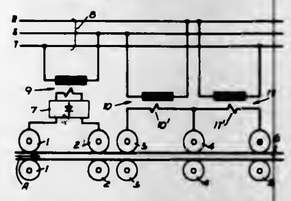
3,290,480
ARC WELDING
Paul R. Fiedler, Andover, Wilbur C. Osha, Morristown, and Leonard Baum, Jr., Oakland, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 7, 1965, Ser. No. 512,059
1 Claim. (Cl. 219—136)

An electric arc welding apparatus comprising a wire of welding material constituting an electrode, means for feeding said wire toward a workpiece, a contact sleeve of electric conductive material through which said wire of welding material extends, a source of electric current connected to the contact sleeve, said contact sleeve being of a one-piece construction having a uniform wall thickness throughout its length and a continuous and uniform bore of slightly greater diameter than the diameter of the electrode wire, said sleeve having a slot at its outer



end to provide spaced fingers between which the wire feeds toward the workpiece, and said spaced fingers being sprung inwardly to resiliently contact the electrode wire throughout a substantial portion of the slotted outer end of the sleeve.

3,290,481
APPARATUS FOR SUCCESSIVELY HEATING LONG MOVING PIECES OF CONDUCTIVE MATERIALS
Artur Hinkel, Osterath-Bovert, Germany, assignor to Friedrich Kocks, Dusseldorf, Germany, a firm
Filed May 26, 1965, Ser. No. 458,853
Claims priority, application Germany, June 6, 1964, K 53,153
5 Claims. (Cl. 219—155)



1. An apparatus for successively heating a long work piece of an electrically conductive material by using the electric resistance thereof while said work piece is moving in its longitudinal direction, comprising at least one first heating circuit, means for supplying a direct current to said first circuit, at least two further heating circuits, displaced downstream of said first circuit in the direction of travel of said work piece, means for supplying an alternating current to each of said further heating circuits, each of said heating circuits comprising at least two contact rollers substantially parallel to and spaced from each other and each adapted to rotate about an axis extending transverse to the longitudinal direction of movement of said work piece to be heated, all of said contact rollers being adapted to be applied upon said work piece in a row behind each other in said longitudinal direction of movement for conducting said direct and alternating currents separately and successively between said two rollers of each circuit through said moving work piece in said longitudinal direction of movement thereof.

3,290,482
HEATING STRUCTURES FOR CHROMATOGRAPHIC COLUMNS
Travis C. Dodd, John B. Rosso, and Charles R. Ferrin, Tulsa, Okla., assignors to National Tank Company, Tulsa, Okla., a corporation of Nevada
Filed Oct. 12, 1964, Ser. No. 403,174
9 Claims. (Cl. 219—201)

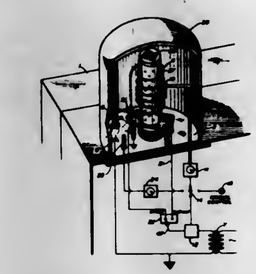
1. A system for heating a metallic chromatographic column, including,

a source of electrical power,

a metallic chromatographic column arranged in the form of a coil,

an electrical resistance mounted within the reaches of the coiled column,

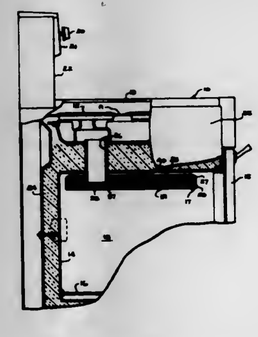
a metallic chromatographic column arranged in the form of a coil,



a means with which to selectively connect the source to the resistance, within the reaches of the coiled column and to the column as a resistance,

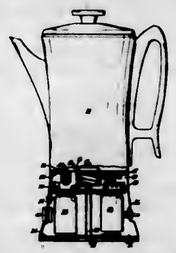
and means for detecting the temperature of the column and automatically and continuously controlling the source to bring the column to a predetermined temperature and maintaining the column at the predetermined temperature.

3,290,483
COMBINED BROILER AND CATALYTIC OXIDATION UNIT
Bohdan Hurko, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 15, 1964, Ser. No. 396,550
4 Claims. (Cl. 219—393)



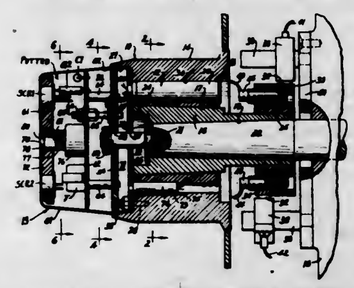
1. A combined broiler and catalytic oxidation unit comprising an inverted pan-shaped housing having a vent pipe therein, a perforated ceramic block of cellular construction positioned within the housing, a source of radiant heat energy combined with the housing for heating the ceramic block, the vent pipe being in contact with the ceramic block and encompassing a limited area of the perforations, a catalytic coating covering the surface of the perforations in the said limited area whereby the catalytic coated portion of the ceramic block constitutes a catalytic oxidation unit when operating at relatively low temperatures of about 300° F. and above so that smoke and other objectionable products of combustion generated by the broiler will be oxidized before being exhausted through the vent pipe by a natural draft created thereby.

3,290,484
COFFEE MAKER-SERVER
William M. Day, Hudson, Ohio, assignor, by mesne assignments, to General Electric Company, Bridgeport, Conn., a corporation of New York
Filed Mar. 22, 1963, Ser. No. 267,100
6 Claims. (Cl. 219—441)



1. A combination coffee maker-server comprising a compartment for containing a liquid for making a coffee brew, a thermal pump for circulating the liquid in said compartment, a main electric heater in heat exchange relation with said pump to actuate said pump, cause percolation of the liquid and heat the liquid to a desired temperature, an auxiliary electric heater for maintaining the liquid in said compartment warm, a self-contained auxiliary power supply carried by said coffee maker-server, a first electric circuit means for connecting said main electric heater to an external power source including a temperature sensitive switch to terminate percolation when the liquid reaches the desired temperature, a second electric circuit means for connecting said auxiliary electric heater to said auxiliary power supply, said second circuit means being independent from said first circuit means, and a common control switch having at least two operative positions including a first position for connecting said main heater to an external power supply source and disconnecting said auxiliary heater from said auxiliary power supply and a second position for disconnecting said main heater from the external power source and connecting said auxiliary heater to said auxiliary power supply.

3,290,485
TEMPERATURE CONTROLLING DEVICE
Glenn A. Pettit, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Jan. 6, 1964, Ser. No. 335,851
16 Claims. (Cl. 219—470)



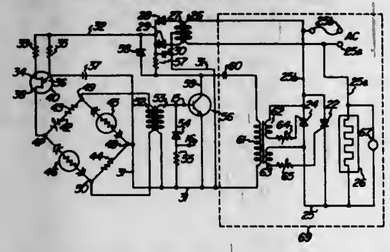
15. A temperature controlling device including, in combination, a heating member, means for supporting said member for rotation about a predetermined axis, said member having an outside peripheral surface engageable with material to be heated during such rotation, variably energizable heating means mounted on and contacting said member to heat said surface, temperature sensing

means producing an electrical signal varying in accordance with variations in the temperature of said surface, said sensing means being mounted on said member for rotation therewith adjacent said surface, electrically operated control means for varying the energizing of said heating means in accordance with variations in said signal and thereby maintaining said surface at a preselected temperature, and means supporting said control means for rotation with said member and said sensing means in a position spaced from the heated portion of the member to minimize heating of said control means during operation of the device.

3,290,486
TEMPERATURE SENSING AND CONTROL SYSTEM

George Mordwinkin, Norwalk, Conn., assignor to Sensor Corporation, Greenwich, Conn., a corporation of Connecticut

Filed Apr. 9, 1964, Ser. No. 358,557
16 Claims. (Cl. 219—499)



1. A temperature sensing and control system including:

an alternating current source,

means for rectifying the alternating current into direct current, said rectifying means coupled to said source,

a free running multi-vibrator including at least a unijunction transistor and driven by said direct current for providing a pulsed output,

a temperature sensitive balanced bridge circuit including a thermistor in each of two opposing legs for sensing temperature, a variable resistor in the third leg for resistively balancing said bridge circuit when said thermistors sense a predetermined temperature and a fixed resistor in the leg opposite the third leg.

means for coupling the pulsed output to the input of said balanced bridge,

means for coupling the output of said balanced bridge to said unijunction transistor,

means for sensing the potential difference across said balanced bridge for providing a first signal representative of a change in temperature in one direction from said predetermined temperature and for providing a second signal representative of a change in temperature in the other direction from said predetermined temperature and for providing a third signal representative of said predetermined temperature,

means for amplifying said first signal,

means coupled to said amplifier means for providing two identical signals each proportional to the amplified signal,

a temperature varying element having first and second inputs, said first input coupled to one side of the said alternating current source,

a pair of phase-sensitive elements coupled in parallel back-to-back to the other side of said source,

means for coupling one of said two identical signals to one of the phase sensitive elements,

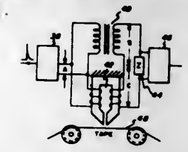
means for coupling the other of said two identical signals to the other of the phase sensitive elements,

said second input of said temperature varying element coupled to said pair of phase sensitive elements for completing the alternating curent circuit for operating said temperature varying element through said phase sensitive elements.

3,290,487
SIGNAL TRANSDUCER

John E. Scott, Rego Park, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Apr. 16, 1962, Ser. No. 187,668
12 Claims. (Cl. 235—61.11)

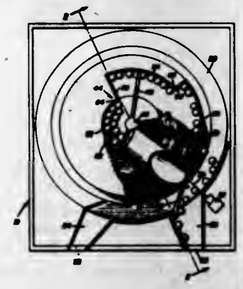


6. Apparatus for determining the nature of data stored in a magnetic medium, said data being stored by data elements which appear magnetically conductive or inert depending on the nature of the data that they store, comprising a first transformer having a constant coefficient of coupling between its windings, a second transformer having a permeable core with a discontinuity therein on which its windings are wound, means positioning the data elements with respect to said discontinuity, whereby both transformers have equal coefficients of coupling when a portion of one kind of data element occupies a particular position with respect to the discontinuity, means algebraically adding the output signals on the secondary windings of said transformers, the primary windings of said transformers being connected to produce opposite phase signals across the secondary windings and being adapted to receive equal amplitude signals, whereby said algebraic sum signal has a sense representative of the data element which has said particular position with respect to the discontinuity.

3,290,488
PILL COUNTER

Cyrus G. Sewell, Box 738, Sweetwater, Tex.

Filed July 24, 1963, Ser. No. 297,342
10 Claims. (Cl. 235—92)



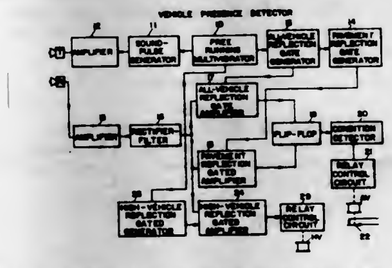
1. A device for counting a predetermined quantity of pills from a random batch comprising housing means, stationary pill aligning means within said housing means for stringing said random batch of pills into a single file, rotatable pill spacing means in said housing means operatively cooperating with said pill aligning means for spacing said pills a predetermined distance apart in said single file, means for counting the pills in said file and information storage means operatively connected to said

counting means for electrically storing a predetermined number of counts, said pill spacing means including a plurality of stacked rotatable surfaces, each succeeding surface in the stack rotating at a greater speed than a preceding surface.

3,290,489
APPARATUS FOR MEASURING VEHICULAR TRAFFIC PARAMETERS

John H. Auer, Jr., Rochester, N.Y., assignor to General Signal Corporation, a corporation of New York

Filed May 9, 1962, Ser. No. 193,406
19 Claims. (Cl. 235—150.24)

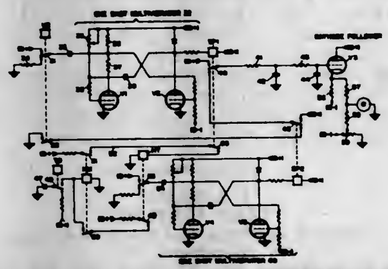


15. Apparatus for measuring vehicular flow velocity comprising in combination, means responsive to the presence of a vehicle in a defined detection zone along a highway or the like for demarcating the occupancy time of said vehicle in said detection zone, signal accumulating means, means controlled by said vehicle responsive means for adding to the signal stored in said accumulating means over any interval an amount of signal proportional to the number of vehicles detected by said vehicle responsive means in said interval and for also subtracting from said signal in said accumulating means an amount of signal proportional to the cumulative vehicle detection periods demarcated by said vehicle responsive means throughout such interval and proportional also to the value of said signal.

3,290,490
METHOD AND APPARATUS FOR OBTAINING TRAFFIC FLOW VELOCITY DATA

John H. Auer, Jr., Fairport, N.Y., assignor to General Signal Corporation, a corporation of New York

Continuation of application Ser. No. 301,941, Aug. 9, 1963, which is a continuation of application Ser. No. 106,935, May 1, 1961. This application Feb. 21, 1966, Ser. No. 540,116
28 Claims. (Cl. 235—150.24)

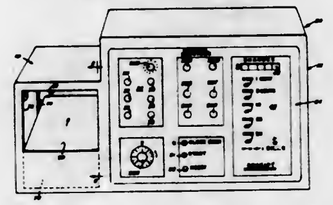


28. Apparatus for measuring vehicular flow velocity comprising in combination, means responsive to the presence of each passing vehicle within a defined detection zone along a highway for demarcating the occupancy time of said vehicle in said detection zone, storage means for storing a parameter whose magnitude is representative of flow velocity, means responsive to each vehicle for algebraically adding to the then-existing value of the flow velocity parameter stored in said storage means in accordance with the difference between said then-existing value of said flow velocity and an indirectly measured velocity value for said passing vehicle, and means responsive to said occupancy time demarcated by said presence responsive means for providing for each passing vehicle said indirectly measured velocity value.

3,290,491
AUTOMATIC MAILING MACHINE

Eric C. Wahlberg, 32 8th St., Stamford, Conn.

Filed June 19, 1961, Ser. No. 117,980
17 Claims. (Cl. 235—151.2)

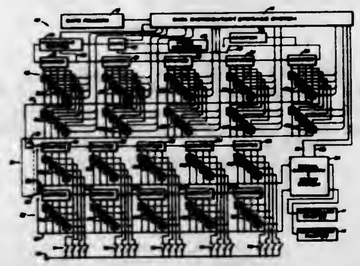


1. An automatic mailing machine comprising in combination a multicontact switch capable of electrically representing the cost of mailing a package on its contacts in response to pulses received, means for converting selected mailing intelligence into pulses and sending said pulses to said switch for cost representation, an apparatus for displaying said cost representation in currency, second means for accepting currency equal to said cost representation, and third means responsive to said second means for matching said contacts on said switch.

3,290,492
NUMERICAL CONTROL SYSTEM

Clyde E. Hallmark, Michigan City, Ind., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

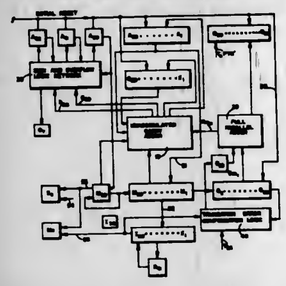
Filed Dec. 7, 1962, Ser. No. 243,020
1 Claim. (Cl. 235—151.11)



In a system for simultaneously controlling movement of a plurality of parts, means for simultaneously generating a plurality of command pulse trains with the rates of generation of pulses in said trains being proportional to programmed rates of movements of said parts, a plurality of fractional multipliers responsive to said command pulse trains to produce a plurality of output pulse trains, each of said fractional multipliers comprising counter circuits operable to produce a plurality of series of pulses with the numbers of pulses in said series being selectively addable to produce a desired number and with the pulses of each series being non-coincident with the pulses of each of the other series, a common output line, and selectively operable gate means for respectively applying

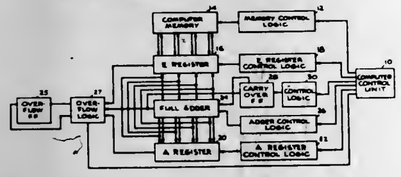
said series of pulses to said output line to develop output pulses thereon, means interconnecting said gate means of said fractional multipliers to cause each to multiply by the same factor, and means responsive to output pulses on said output lines for moving said parts in proportion thereto.

3,290,493
TRUNCATED PARALLEL MULTIPLICATION
Samuel Ellison Githens, Jr., Downey, and Henry Wyle, Garden Grove, Calif., assignors to North American Aviation, Inc.
Filed Apr. 1, 1965, Ser. No. 444,705
20 Claims. (Cl. 235—164)



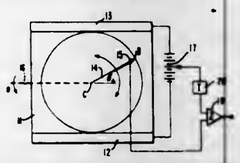
1. A system for deriving the product of a binary multiplier and a binary multiplicand comprising
a group of timing signals, one signal for each multiplier digit,
a shift register for storing said multiplicand including means for scaling said multiplicand in response to said timing signals by repeatedly shifting it in such a direction as to divide it by two once for each timing signal,
means for sequentially scanning digits of said multiplier in order from the most significant to the least significant digit, one digit being scanned in response to each timing signal,
and accumulating means for adding said scaled multiplicand in said shift register to a partial product stored therein in response to each multiplier digit scanned that is equal to one.

3,290,494
BINARY ADDITION APPARATUS
Edward J. Schneberger and Milton G. Bienhoff, Canoga Park, Calif., assignors, by mesne assignments, to The Bunker Ramo Corporation, a corporation of Maryland
Filed Feb. 13, 1963, Ser. No. 258,281
5 Claims. (Cl. 235—175)



1. In an arithmetic system:
a memory storing a plurality of multibit words;
first and second registers each capable of storing one of said words;
means for accessing selected words from said memory for storage in said first and second registers;
a parallel adder circuit comprised of a plurality of ordered stages at least equal in number to the number of bits in each of said words and including a first stage having a carry input terminal and a last stage having a carry output terminal;
means for simultaneously applying words stored in said first and second registers to said adder circuit;
a carry flip-flop having an input terminal and an output terminal;
means coupling said last stage carry output terminal to said carry flip-flop input terminal for storing therein a carry indication resulting from an application of words stored in said first and second registers to said adder circuit; and
means coupling said carry flip-flop output terminal to said first stage carry input terminal for applying the content of said carry flip-flop to said adder circuit simultaneously with a subsequent application of words stored in said first and second registers to said adder circuit.

3,290,495
ELECTRICAL RESOLVER MEANS
Gustav V. A. Malmros, Binghamton, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,490
5 Claims. (Cl. 235—186)



4. A shaft angle electrical resolver for deriving a portion of a trigonometric function of a given shaft angle comprising a shaft, a flat surface having a resistive coating placed thereon of a predetermined uniform resistivity per unit area, a pair of spaced parallel conductive electrodes fastened to and conductively cooperating with said resistive coated surface, a wiper arm pivotally mounted on said resistive coated surface and electrically insulated therefrom and rotatable in accordance with said shaft angle, a wiper contact mounted on the end of said wiper arm for maintaining a slidable conductive contact on said resistive coating, the position of said pivotal mounting and the length of said wiper arm being selected so that said wiper contact makes effective conductive contact alternately with the two parallel electrodes at 180 degrees angular positions of said shaft, said shaft driving said wiper being rotatable through 360 degrees, a source of electrical energy being conductively connected across said pair of electrodes, a summing amplifier having at least two summing inputs, one of said summing inputs being conductively connected to said wiper contact, the other of said summing inputs being connected to an electrical energy source equal in voltage and opposite in polarity to that present in the resistive coating immediately adjacent said shaft position of said wiper arm, the output of said summing amplifier means providing an electrical signal which is a sinusoidal function of the angular position of said shaft.

3,290,496
LAMP FIXTURES
Arthur I. Appleton, One Bridlewood Road, Northbrook, Ill.
Original application Oct. 17, 1962, Ser. No. 231,115. Divided and this application Sept. 29, 1965, Ser. No. 491,129
9 Claims. (Cl. 240—41.55)

8. In a lamp fixture, a reflector housing having an open front, a cover for the open front of the reflector housing including a lens, a lens frame and a lens retainer gasket interposed between the lens and the lens frame, said gasket embracing the periphery of the lens and including a peripheral resilient bead releasably clasping a corresponding bead of the reflector housing adjacent the edge of the open front thereof, a hinge flexibly joined to the



cover at one portion thereof and flexibly joining the cover to the reflector housing at another portion thereof, and said hinge having an off-set portion therein that spaces the connection between the hinge and the cover appreciably away from the reflector housing.

3,290,497
HEADLIGHT PROTECTOR
George R. Ragle and Gerald R. Ragle, both of Box 1256, Plainview, Tex.
Filed Sept. 4, 1964, Ser. No. 394,418
2 Claims. (Cl. 240—46.55)



1. In combination with a headlight assembly of the type including a forwardly opening and adjustably mounted socket assembly; a sealed beam unit disposed in said socket assembly and having a forwardly facing generally semi-spherical lens of substantially constant radius of curvature and whose outer edge portion terminates in a generally radially and circumferentially extending abutment flange projecting outwardly therefrom; a generally cylindrical retaining ring snugly enclosing said abutment flange, including a radially inwardly directed retaining flange at its forward end extending circumferentially thereabout and overlying the forward face of said abutment flange, and provided with radially outwardly directed mounting flange portions on its other end secured to said socket assembly by means of threaded fasteners passed through openings in said mounting flange portions provided therefor and threadedly engaged with said socket assembly; a headlight protector comprising a forwardly convex transparent and generally semi-spherical member of substantially constant radius of curvature disposed forwardly of and in horizontal alignment with said sealed beam unit and including a generally radially outwardly projecting circumferential flange on its open end disposed within said ring and between said abutment and retaining flanges; the radius of curvature of the concave surface of said protector being less than the radius of curvature of the outer surface of said sealed beam unit lens and the concave surface of said protector having its outer peripheral portions disposed in abutting engagement with the corresponding outer surface portion of said lens immediately inwardly of said abutment flange whereby the center of said protector is spaced forwardly of the center of said lens and the spacing between said protector and said lens gradually decreases from the center of said protector to said outer peripheral portions thereof; said retaining ring, by means of said fasteners and said retaining flange, serving to clampingly embrace said circumferential flange on said protector between said retaining flange and said abutment flange.

3,290,498
TOY VEHICLE ACTUATED LANE SWITCHING DEVICE
Robert G. Lahr, West Los Angeles, Calif., assignor to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed Apr. 24, 1964, Ser. No. 362,258
9 Claims. (Cl. 246—415)



1. A toy vehicle actuated branch lane switching device comprising a model roadbed, a main lane determining groove in said roadbed adapted to be tracked by a model self impelled vehicle, a branch lane determining groove in said roadbed adapted to be tracked by said vehicle merging with said main lane groove to afford a choice of said lanes to be traveled by said vehicle, conductors on said roadbed paralleling said grooves for supplying remote controlled current to said vehicle, a switch tongue at the junction of said grooves swingable sidewise to direct an arriving vehicle into one or the other of said grooves, a movable traction tread located to be traversed by the traction wheel of a vehicle traveling in said main lane mounted on said roadbed in a manner to be shiftable toward and away from said switch tongue and so operably connected to the latter that reduction of propulsion current in said conductors when said traction wheel is on said tread causes tongue actuating movement of said tread before said vehicle reaches said junction.

3,290,499
FILM FOR INDICATING DOSAGE OF IONIZING RADIATION
Raymond Lester Vale, Abingdon, and John Joseph Farrell, Blewbury, England, assignors to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed Oct. 31, 1961, Ser. No. 148,807
Claims priority, application Great Britain, Nov. 2, 1960, 37,652/60; Aug. 14, 1961, 29,240/61
18 Claims. (Cl. 250—83)

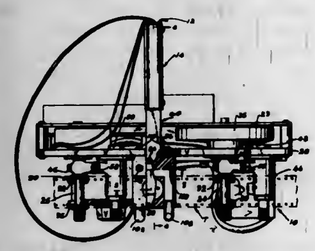
1. A radiation indicator for ionizing radiation comprising a support and first and second layers thereon, said first layer comprising a dried aqueous emulsion of a halogen-containing polymer composition containing an acid-sensitive dye which dye gives a color change on reaction with a halogen acid liberated from said halogen-containing polymer upon exposure thereof to ionizing radiation, said second layer being on the side of said first layer which is remote from the support and comprising a transparent protective layer including materials which protect said first layer from the effects of ultra-violet and visible light.

3,290,500
FAST NEUTRON SPECTROMETER UTILIZING LITHIUM CONTAINING FILMS
Mohammed S. Bokhari, Lahore, Pakistan, and Victor V. Verbinski, Temple A. Love, and Richard E. Zedler, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 15, 1964, Ser. No. 367,906
6 Claims. (Cl. 250—83.1)



3. A spectrometer for fast neutrons comprising a pair of spaced semiconductor detectors, an element responsive to neutrons for producing a pair of charged particles for each neutron captured by the element, a rotatable disk pivotally mounted to project between the detectors, said first element and said second element mounted in spaced relation on the disk, means for rotating the disk to separately position said first and said second elements between the detectors, and means coupled to the detectors for combining their outputs for separately measuring signals therefrom as the first and second elements are interposed between the detectors to provide a measure of true neutron energy spectrum.

3,290,501
APPARATUS FOR THE DETECTION OF RADIOACTIVE ISOTOPES ATTACHED TO MATERIAL OF GAS-LIQUID CHROMATOGRAPHY SYSTEMS
Raymond M. Schiff, 9 Henry Ave., Park Ridge, N.J.
Filed Aug. 17, 1962, Ser. No. 217,730
21 Claims. (Cl. 250—106)



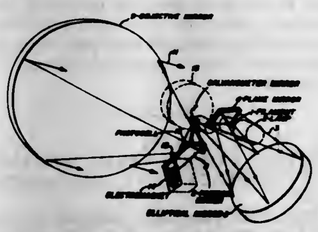
1. A small particle collection and detection apparatus for the continuous collection and detection of a radioactive isotope in the effluent on a moving tape adapted to collect, detect and store the radioactive isotope, the effluent exiting from a packed column of gas-liquid chromatography apparatus and consisting of particulate matter coupled to the radioactive isotope and particulate matter uncoupled to the radioactive isotope, comprising tape transport means adapted to support and transport the tape in a predetermined time relationship related to the time of exiting of the effluent from the packed column, said tape being adapted to receive said radioactive isotope and particulate matter coupled to said radioactive isotope, feeder means operatively connected with said tape transport means for feeding the effluent to the tape, said tape having edge engagement portions, said tape transport means including tape edge engaging means adapted to engage solely the edge engagement portions of the tape whereby to prevent contamination thereof, and transferring means operatively associated with said feeder means for transferring the portion of the effluent consisting of the particulate matter coupled to the radioactive isotope onto the portion of the tape between the edge engagement portions thereof.

3,290,502
PORT APPARATUS FOR EXTRACTING MATERIALS FROM RADIOACTIVE ENCLOSURES
Dewey F. Skinner, Jr., Thomas W. Wolf, and Warren Z. Wade, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 20, 1963, Ser. No. 303,459
5 Claims. (Cl. 250—108)



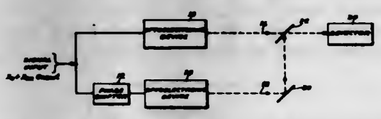
1. In port apparatus for extracting materials from a contaminated hazardous environment within an enclosure including a wall defining an aperture therethrough, the combination comprising:
(a) a generally cylindrical elongated tubular sleeve disposed in said aperture at an angle inclined to the vertical axis, with the exterior surface mounted in sealed relation to said wall, with a first end opening upwardly into said environment and a second end opening downwardly outside said enclosure, and with a first inwardly projecting ridge portion proximate said first end, and a second ridge portion downwardly therefrom on interior surfaces of said sleeve, having circumferential shoulder portions in spaced generally parallel relation and defining, with enlarged circumferential sleeve wall surfaces therebetween, a recessed groove, the shoulder of said second ridge having a smaller inside diameter than said first shoulder;
(b) container means having at least a generally cylindrical tubular mouth portion disposed in said sleeve, and closed container portions projecting outwardly from the second end of said sleeve;
(c) a seal shield comprising a generally annular tube of flexible resilient material having at the upper end an outwardly flanged annular rib portion deformable for insertion within said second end of said sleeve to enter and fit within said recessed groove, and an elongated tubular skirt portion of lesser diameter than said rib portion, extending downwardly to fit within and engage interior surfaces of the mouth of said container to seal and support said container in engagement with said sleeve and to shield mouth portions of said container from contamination, and with the lower end of said annular rib portion defining a circumferential shoulder abutting said second ridge shoulder of smaller diameter and thereby provide selective retention of said seal shield against withdrawal through said second sleeve end.

3,290,503
LIGHT COMMUNICATION SYSTEM
Charles W. Shandenberg, Santa Barbara, Calif., and Donald H. Ward, Glen Ellyn, Ill., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed May 6, 1963, Ser. No. 278,019
5 Claims. (Cl. 250—199)



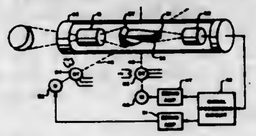
1. A light communication system comprising:
an aplanatic mirror;
a source of light and a movable mirror located at aplanatic focal points of said aplanatic mirror and spaced-apart therefrom, the light from said source being reflected by said aplanatic mirror to said movable mirror;
an objective mirror;
photosensitive means;
a two-position mirror means for blocking the light path between said photosensitive means and said objective mirror during one interval and for directing light from said movable mirror toward said objective mirror during the same interval when said two-position mirror is located in a first position;
and means for removing and placing said two-position mirror in a second position during another interval so that incident light from another source falling upon said objective mirror is focused on said photosensitive means.

3,290,504
DISTORTION COMPENSATION OF OPTO-ELECTRONIC DEVICES
Lucio M. Vallese, Glen Ridge, N.J., and Marvin King, New York, N.Y., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Sept. 6, 1963, Ser. No. 307,196
8 Claims. (Cl. 250—199)



1. A distortion compensation circuit comprising:
a pair of like optoelectronic devices providing light radiation emission upon application of electrical energy excitation under predetermined conditions;
common input means for applying a varying electrical signal to each of said devices to modulate said light radiation emission;
phase shifting means connected between one said device and said input means to apply said signal to said one device in a predetermined phase relation with respect to the other device, said devices being positioned to emit light radiations in separate spaced paths; and means responsive to said light radiations for combining energy from said paths in a predetermined phase relation to provide a common output electrical signal wherein modulation nonlinearities of each said device are balanced out.

3,290,505
PHOTOSENSITIVE LUNAR TRACKER USING RADIAL SCANNING AND FIBER OPTICS
Gus Stavis, Briarcliff Manor, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,243
11 Claims. (Cl. 250—203)



3. Apparatus for determining the direction to the center of a remote, inaccessible, partially illuminated, spherical body, comprising,
an optical system for forming an image of said body,
a transparent plate positioned in the focal plane of said system for receiving said image,
a plurality of strips each comprising a plurality of optical fibres,
one end of each of said strips being fastened to said plate on the side remote from said optical system,
each strip being positioned on a different radial line with the edges of said strips touching each other and clustered about the optical axis of said system,
each strip being gently twisted along its length,
the other ends of said strip being arranged in the same plane parallel to each other in a rectangular stack,
means for scanning said other ends successively in a rectilinear fashion and for generating first signals the variations of which are indicative of the variations in light intensity along said ends,
whereby the effect is that of scanning said image along radial lines and whereby each of said first signals varies abruptly as the image of the edge of said body is scanned,
means controlled by said first signals for generating second signals indicative of the length from the optical axis to the edge of said image along said one end of each of said strips,
means controlled by said second signals for generating two error signals indicative of the departure in two coordinates of said axis of said optical system from the center of said body, and
means controlled by said error signals for adjusting the orientation of said optical system to reduce said error signals to zero.

3,290,506
PHOTOELECTRIC OBJECT TRACKING SYSTEM USING SIGNAL DELAY AND MULTIPLYING CORRELATORS
Sidney Bertram, Los Angeles, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed Dec. 28, 1962, Ser. No. 247,944
13 Claims. (Cl. 250—203)

1. In an automatic gun pointing system for armored vehicles:
angularly positionable imaging means for providing an electromagnetic radiation image of a field of view which includes a selected target-object;
image scanning means for time sequentially scanning incremental portions of said image on a line-by-line basis to develop a video signal which includes different time sequential portions corresponding re-

spectively to the radiation intensity at different longitudinally successive increments of each successive line;

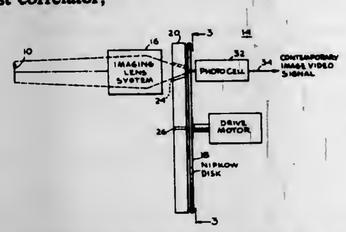
information storage means for storing a portion of said video signal representative of at least one complete scanning of said field of view;

readout means for reproducing the stored video signal from said storage means after a time corresponding to at least one complete scanning cycle;

first and second signal multiplying correlators each having first and second input circuits and an output circuit;

first and second time delay means for individually providing substantially equal signal delay times corresponding to a small fraction of one scanning cycle;

means coupled to said readout means for applying the stored video signal directly to the first input circuit of said second correlator and by way of said first time delay means to the first input circuit of said first correlator;



means coupled to said scanning means for applying a contemporary image video signal directly to the second input circuit of said first correlator and by way of said second time delay means to the second input circuit of said second correlator;

means for alternately sampling the signals produced by said first and second correlators to develop an error signal representative of transverse motion of said target-object relative to the line of sight of said imaging means;

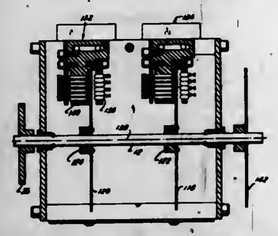
and means responsive to said error signal for controlling the angular position of said imaging means in a manner to hold said target object within the field of view.

3,290,507

PHOTOSENSITIVE DIGITAL OUTPUT APPARATUS OPERATIVE BY CLOCK MOVEMENT

Werner Flieg, Newton Center, and Wilbern F. Davis, Sharon, Mass., assignors to Invac Corporation, Waltham, Mass.

Filed Feb. 15, 1963, Ser. No. 258,810
7 Claims. (Cl. 250—215)



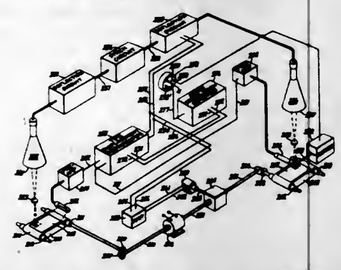
2. Apparatus comprising two shafts, ratchet wheels fixed on said shafts, a cam, an arm extending adjacent said wheels and engaging said cam, pawls on said arm and aligned with said wheels to engage the same, means engaging said arm to urge the pawls into engagement with the wheels, said wheels including evenly spaced peripheral teeth having grooves therebetween to receive the associated pawls, all but one of the grooves on one of the wheels being of depth relative to the associated pawl to maintain the other pawl free of the associated wheel, said one groove being of a depth to permit engagement of said other pawl with the associated wheel, a motor coupled to and driving said cam disc on said shafts to rotate therewith, each disc being provided with time designations, and means to inspect said designations and generate electrical signals corresponding therewith; said designations being in the form of radial arrays of holes, the latter said means comprising radial arrays of lamps and photoelectric cells fixed adjacent said discs to inspect said holes; said apparatus further comprising means to adjust said lamps and cells.

3,290,508

PHOTOELECTRIC CORRELATION SYSTEM AND A TIME DISPLACEMENT DISCRIMINATOR THEREFOR

Hugh M. Ogle, Palo Alto, Calif., assignor to General Electric Company, a corporation of New York

Filed Jan. 27, 1961, Ser. No. 85,286
4 Claims. (Cl. 250—217)



1. In a correlation system, the combination comprising a reference object and a comparison object, first and second cathode ray devices respectively disposed adjacent said objects for synchronous scanning with beams of light, first and second photoelectric devices respectively disposed to convert radiation from said objects into corresponding series of pulses related to gross aspects of said objects, differentiating means coupled to each of said photoelectric devices to develop corresponding series of pulses porportional to the rate of change of said pulses, discriminator means connected to said differentiating means for developing a differential error signal in response to time displacement between individual proportional pulses of both series, said discriminator means connected to one of said cathode ray devices for correspondingly altering the area of scan in response to said differential signal, and correlating means coupled to said differentiating means for developing a signal corresponding to the degree of correlation between said objects.

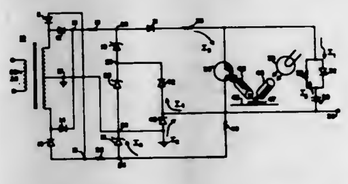
3,290,509

ELECTRO-OPTICAL APPARATUS AND CIRCUIT FOR SENSING REFLECTIVE AREAS OR APERTURES IN TAPE

John D. Meng, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed Oct. 30, 1963, Ser. No. 320,198
10 Claims. (Cl. 250—219)

10. An object sensing device comprising a source of unidirectional pulses having first and second unidirectional pulse reference potentials, first, second and third serially connected Zener diodes each having an anode and a cathode, resistive means connecting said cathode of said first Zener diode to said first reference potential, resistive means connecting said anode of said third Zener diode to said second reference potential, said anode of said second Zener diode being connected to ground; a light actuated switch having an anode and a cathode, a first, second, third and fourth diode each having an anode and a cathode, said anode of said first diode connected to said cathode of said first Zener diode, resistive means connecting said cathode of said first diode to said anode of said switch, resistive means connecting said cathode of said switch to said anode of said third Zener diode, said cathode of said second diode being connected to said cathode of said second Zener diode, said anode of said second diode being connected to said cathode of said switch, said cathode of said third diode being connected to said cathode of said switch, said anode of said



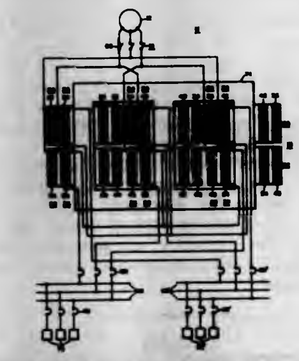
third diode being connected to ground, said anode of said fourth diode being connected to said anode of said switch, capacitive coupling means arranged between said cathode of said fourth diode and said cathode of said switch, resistive means coupling said cathode of said fourth diode to said anode of said fourth diode, an output terminal, said output terminal being connected to said cathode of said switch, a light source, a means for channeling radiation from said light source over a controllable path to said switch, and means to control the amount of light from said source of light falling on said switch to control voltage potential at said cathode of said switch.

3,290,510

ELECTRICAL APPARATUS

Herbert A. Rose, Bellevue, Wash., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 28, 1963, Ser. No. 291,554
7 Claims. (Cl. 307—17)



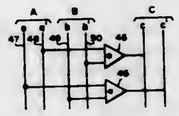
1. A power center connected to a source of alternating potential and a plurality of load circuits, comprising a transformer, said transformer having at least two high voltage windings and associated low voltage windings of like phase inductively disposed on a common winding leg of a magnetic core, the high voltage windings of said transformer being connected in parallel circuit relation with said alternating potential source, the low voltage windings each being connected in circuit relation with one of said load circuits, each of the high voltage windings of said transformer being radially and concentrically coupled on said magnetic core with its associated low voltage winding and axially spaced with respect to the remaining high and low voltage windings.

3,290,511

HIGH SPEED ASYNCHRONOUS COMPUTER

John C. Sims, Jr., Sudbury, Mass., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 19, 1960, Ser. No. 50,761
3 Claims. (Cl. 307—88)



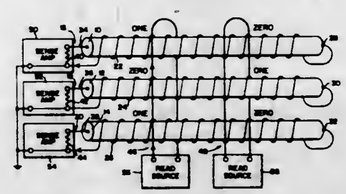
1. A first and second line, each adapted to carry thereon one of two voltage levels, a third and fourth line, each adapted to carry thereon one of said two voltage levels, wherein a high voltage level on high first and second lines represents a first binary digit, a low voltage level on said first and second lines represent a second binary digit, a low and a high level on said first and second lines represent an absence of information, and a high and a low level on said first and second lines represent an excluded condition, and wherein corresponding voltage levels on said third and fourth lines represent corresponding designations, a first buffer-inverter coupled to said first and third lines, a second buffer-inverter coupled to said second and fourth lines, a fifth line coupled to the output of said second buffer-inverter, and a sixth line coupled to the output of said first buffer-inverter, whereby all the voltage levels on said fifth and sixth lines are each high when all the voltage levels on said first, second, third, and fourth lines are each low.

3,290,512

ELECTROMAGNETIC TRANSDUCERS

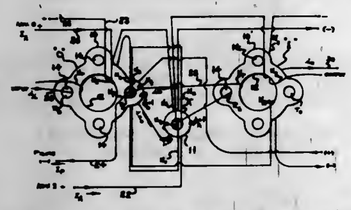
Robert M. Tillman, Willow Grove, and Stanley Schneider, Newtown Square, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed June 7, 1961, Ser. No. 115,557
15 Claims. (Cl. 307—88)



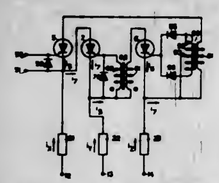
1. An electromagnetic transducer comprising, a plurality of solenoid windings each wound on a different core of magnetic material and electrically connected thereto at one end, circuit means selectively coupling at least one of the plurality of solenoid windings so as to provide mutual coupling or no coupling with the respective solenoid windings, the mutual coupling or no coupling defining, respectively, a ONE or a ZERO in the binary coded number system, said plurality of solenoid windings being adapted to deliver output-sense signals upon the application of an input-read signal to said circuit means.

3,290,513
LOGIC CIRCUIT
Joseph P. Sweeney, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 24, 1963, Ser. No. 282,918
18 Claims. (Cl. 307—88)



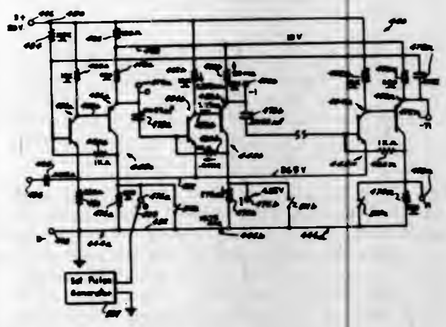
1. A negation device for producing the binary complement output of a binary input comprised of cores of magnetic material having square loop hysteresis characteristics including an input core, an output core and a source core with winding means linking the input and output cores for transferring intelligence states into and out of said device, respectively, advance windings linking said cores to sequentially clear and set the input and source cores and set and clear the source and output cores, a coupling loop linking the input, output and source cores in a sense such that upon the input core being cleared from a set state the source core will be set from a clear state to produce a net flux change in the output core representative of zero and upon the input core being cleared from a clear state, the source core will be cleared from a set state to produce a net flux switched in the output core representative of one whereby the output core will produce an output which is the complement of the input to the input core.

3,290,514
CONTACTLESS ALTERNATING CURRENT SWITCH WITH CONTROLLED RECTIFIERS OF THE ELECTRONIC TYPE
Jiri S. Hankovec and Adolf Klimek, Prague, Czechoslovakia, assignors to Československá akademie věd, Prague, Czechoslovakia
Filed Apr. 25, 1963, Ser. No. 275,734
Claims priority, application Czechoslovakia, Apr. 27, 1962, 2,581/62
5 Claims. (Cl. 307—88.5)



1. A static alternating current switch for controlling the neutral point of an *n* poly-phase load comprising first to *n*th controlled rectifiers, each of said rectifiers comprising an anode, a cathode, and a control electrode, a first transformer comprising a first primary and a first secondary winding, said first primary winding being connected between the anode of said first of said rectifiers and the cathode of a third of said rectifiers, first and second forward poled diodes, the terminals of said first secondary winding being connected through said first and second diodes to the control electrode of said third rectifier, a second transformer comprising a second primary and a second secondary winding, said second primary winding being connected between the anode of said third rectifier and the cathode of a second of said rectifiers, said second secondary winding being in circuit with the control electrode of said second rectifier, the anode of said second rectifier being connected to the cathode of said first rectifier, a unidirectional potential source in circuit with the control electrode of said first rectifier, the cathodes of said first, second and third rectifiers being connected to first, second and third phases of said load.

3,290,515
CONTROLLED PULSE PROGRESSION CIRCUITS WITH COMPLEMENTARY TRANSISTORS
Samuel A. Procter, 1936 Cedar Lake Blvd., Minneapolis, Minn.
Filed May 28, 1963, Ser. No. 283,940
7 Claims. (Cl. 307—88.5)



1. In a pulse progression circuit,
the combination comprising a plurality of breakdown devices,
each of said breakdown devices comprising a switching transistor and an output transistor coupled to said switching transistor for latching said switching transistor in both conductive and nonconductive states,
said switching transistor also latching said output transistor in conductive and nonconductive states corresponding to said conductive and nonconductive states of said switching transistor,
an energizing circuit connected to said breakdown devices and including an impedance common to all of said switching transistors for limiting conduction in said breakdown devices to only one device at any one time,
an input circuit responsive to an input pulse for stopping conduction in all of said breakdown devices,
coupling means connected between said devices in sequence and including means for producing a transfer signal in response to the stopping of conduction in any one of said devices for initiating conduction in the next device in the sequence,
said devices thereby being rendered successively conductive in response to successive input pulses,
and setting means for selectively applying a setting signal to one of said breakdown devices for latching said transistors thereof in a conductive state, said setting signal having a duration greater than said transfer signal.

3,290,516
SEMICONDUCTOR DIODE OPERATING CIRCUITS
Jun-ichi Nishizawa, Sendai, Japan, assignor to Semiconductor Research Foundation, Sendai-shi, Japan, a corporation of Japan
Filed June 19, 1963, Ser. No. 289,143
Claims priority, application Japan, June 20, 1962, 37/25,914
17 Claims. (Cl. 307—88.5)

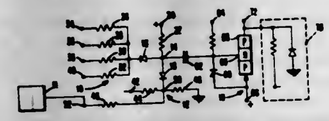
1. A circuit for performing a detector function, comprising a substantially cylindrical conductive housing

sheath, a spirally wound wire within said sheath and insulated therefrom, and a plurality of diodes connected



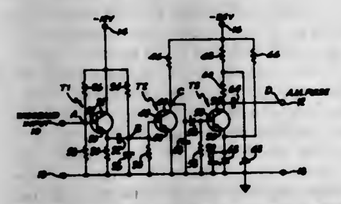
between different points of said wire and said sheath at intermittent locations.

3,290,517
THRESHOLD LOGIC CIRCUITRY PRODUCING OUTPUT ON AMPLITUDE COINCIDENCE
Ivars G. Akmenkalns, Endicott, N.N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 31, 1963, Ser. No. 320,444
5 Claims. (Cl. 307—88.5)



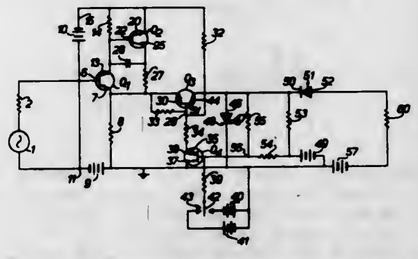
2. A threshold logic circuit comprising:
an input voltage summing network for producing a single input voltage,
said network having a plurality of parallel-wired resistors in series with a first diode,
a linearly time-varying reference voltage generator for providing a voltage of substantially constant slope,
said generator comprising a sawtooth voltage signal source in series with a voltage dividing network, said network being in series with a second diode,
a nodal point connected between said first diode, a constant voltage source and said second diode for passing said reference voltage when said reference voltage is of a lower potential than said single input voltage,
an output signal generator connected to said nodal point for detecting an equality condition between said single input voltage and said reference voltage and providing an output upon said equality condition detection,
said output signal generator comprising a capacitively coupled, nonlinear conductive element connected to an output transistor.

3,290,518
CIRCUIT FOR DETECTING AMPLITUDE MODULATED PULSES APPEARING IN FREQUENCY MODULATED WAVEFORMS
Barrett E. Guisinger, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Jan. 21, 1964, Ser. No. 339,119
9 Claims. (Cl. 307—88.5)



1. A pulse detector for producing an output pulse in response to an AM input pulse superimposed upon an input waveform, comprising: means for switching alternately between a first voltage level and a second voltage level whenever the input waveform crosses a selected reference level, means for creating a voltage rise from an initial level in response to each interval at said first voltage level between alternate switches of the switching means, said voltage rise proportional to the length of said interval, means for resetting said voltage rise to said initial level in response to each interval at said second voltage level between alternate switches of the switching means, and an active switching element with control electrode coupled to receive the voltage rise and with bias circuitry including a Zener diode arranged to prevent switching of the active switching element until the voltage rise exceeds a selected value.

3,290,519
ELECTRONIC SIGNAL SWITCHING CIRCUIT
John D. Ross, Point Claire, Quebec, Canada, assignor to Central Dynamics Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Sept. 25, 1964, Ser. No. 399,295
9 Claims. (Cl. 307—88.5)



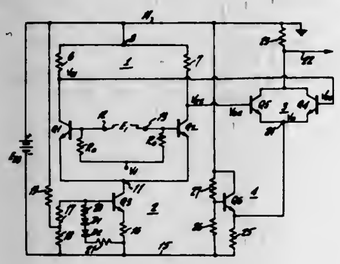
1. A signal switching circuit for switching signals having a wide frequency band from an input load to an output load, said switching circuit comprising:
means for generating a control signal;
first gate means having an input element, output element, and control element, said input element being connected to said input load, said first gate means opening in response to said control signal being applied to said control element of said first gate means,
second gate means connected between said output element of said first gate means and to said output load, said second gate means opening in response to said control signal;
third gate means having at least two terminals, one terminal of which is connected to said output element and another terminal of which is connected to a source of reference potenetial, said third gate means closing in response to said control signal,
said second and third gate means thereby isolating said output load from said first gate means when the latter is closed, and
said first and second gate means having impedances low enough that shunt capacitances across said load are of reduced effect.

3,290,520
CIRCUIT FOR DETECTING AMPLITUDE THRESHOLD WITH MEANS TO KEEP THRESHOLD CONSTANT
Lawrence P. Wessik, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,058
5 Claims. (Cl. 307—88.5)

1. An electrical circuit comprising,
a differential amplifier having first and second inputs, first and second outputs, and first and second power terminals, said first power terminal being coupled to a first circuit junction;

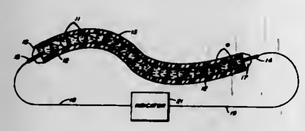
a current source having at least two terminals, one of said current source terminals being coupled to said second power terminal, the other of said current source terminals being coupled to a second circuit junction;

first, second and third transistors, each having base, collector and emitter electrodes, the emitter electrodes of each transistor being coupled to a third circuit junction, the collector electrodes of each transistor being coupled to said first circuit junction, said first and second amplifier outputs being coupled to the base electrodes of said first and second transistors respectively, and



the emitter electrode of said third transistor being coupled by way of a first resistive means to said second circuit junction, the base electrode of said third transistor being coupled to said first circuit junction by a second resistive means and to said second circuit junction by a third resistive means, said third resistive means being large relative to said second resistive means.

3,290,521
ELECTRO-MECHANICAL TRANSDUCER
George M. Coleman, 5614 Elk St., San Diego, Calif.; Robert Ruch, R.F.D. Box 828, Gales Ferry, Conn.; and Jerome Frost Smith, Box 113, U.S.N. Hospital, Chelsea, Mass.
Filed Oct. 31, 1963, Ser. No. 320,584
4 Claims. (Cl. 310—2)



1. An electro-mechanical transducer comprising:

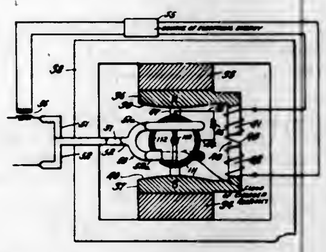
a hollow tube, said hollow tube having an inside diameter less than one millimeter;

a plurality of layers of non-wetting conductive liquid within said tube;

a liquid electrolyte between each of said layers forming distinct sections of electrolyte;

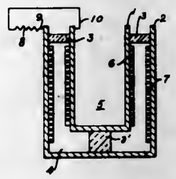
a plurality of conductors, each projecting into a different one of said layers, the walls of said tube being of soft pliable material having high compliance to transmit pressure waves through the wall to said liquid within the tube, the hollow tube being easily flexed to any position, whereby a voltage is generated between said conductors in response to distortions of said tube.

3,290,522
NUCLEAR EMISSION ELECTRICAL GENERATOR
Robert Ginell, 848 McKenna Ave., Baldwin, N.Y.
Continuation of abandoned application Ser. No. 606,708, Aug. 28, 1956. This application Feb. 11, 1965, Ser. No. 438,279
8 Claims. (Cl. 310—3)



3. An apparatus for producing an electric voltage comprising a pair of spaced magnetic pole pieces, means defining a medium of low permeability between said spaced pole pieces traversed by the magnetic flux of said pole pieces, a radioactive source located between said pole pieces within said medium to create between said pole pieces charged particles, said pole pieces forming a magnetic flux around said radioactive source and increasing in flux density from an intermediate plane traversing said medium to deflect the charged particles to orbit within said flux with a kinetic energy produced in the creation of said particles and creating a charged cloud having an external magnetic field and contained within said medium by the flux of said pole pieces, conductive means between said pole pieces and located within the external field of the charged particles, means for periodically varying the density of the flux confining the charged particles to vary the size of the cloud of charged particles and the external field thereof to create a voltage in the conductive means by the movement of the external field.

3,290,523
METHOD OF OPERATION FOR A THERMIONIC CONVERTER
Ralph Forman, Rocky River, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 16, 1962, Ser. No. 238,140
6 Claims. (Cl. 310—4)



1. A thermionic conversion process comprising:

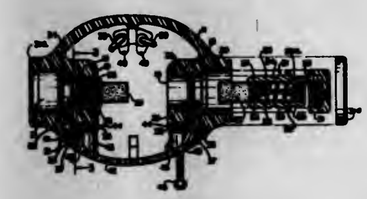
(a) providing a sealed chamber containing a cathode and an anode disposed in an ionizable gas,

(1) said cathode having a thermionic work function greater than the thermionic work function of said anode and being electrically connected to said anode through an external load circuit,

(2) the temperature of said cathode being sufficiently high to effect thermionic emission therefrom and the temperature of said anode being below the temperature of said cathode;

(b) and irradiating said ionizable gas by means of a radiation source external to said chamber at a radiation dosage sufficiently high to produce a discharge region in the anode current-anode voltage characteristic in the absence of an applied voltage, said current-voltage characteristic lying entirely in the region of no applied voltage.

3,290,524
BRUSH HOLDER ASSEMBLY FOR INSULATED HOUSING
George E. Malfey, Jr., Timonium, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Mar. 25, 1964, Ser. No. 354,733
5 Claims. (Cl. 310—71)



2. A brush holder assembly for a housing made from an insulating material, comprising, in combination:

(a) a conductive brush holder insert secured within the housing;

(b) a brush slidably guided within said insert and electrically connected thereto;

(c) a recess formed in the housing and communicating with said insert;

(d) said recess being substantially closed and having an opening through which said recess is accessible;

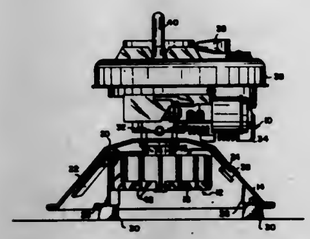
(e) a conductor having a terminal secured thereto, said terminal being received through said opening in said recess and engaging said insert;

(f) a window formed in the housing facing said recess; and

(g) a cover plate made from an insulating material, seated in said window, and secured to the housing;

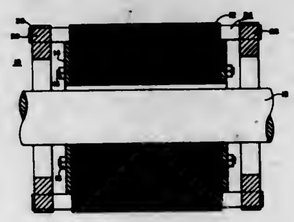
(h) said plate having a portion substantially fitting over said opening in said recess to trap said terminal therein.

3,290,525
ALTERNATOR STRUCTURE
Gustav H. Sudmeier, 2708 Torrance Blvd., Torrance, Calif.
Filed Oct. 11, 1963, Ser. No. 315,569
3 Claims. (Cl. 310—153)



1. An electrical system for providing electrical energy, comprising: an internal combustion engine including a shaft revolved during operation of the engine; a hollow cylinder structure axially affixed to said shaft to be revolved thereby, said cylinder structure having one flat end thereof substantially closed, and having air-moving fins affixed thereon; a plurality of permanent magnets mounted inside said cylinder structure about the curved surface thereof; a plurality of coils positioned inside said cylinder structure and fixed relative said engine whereby said magnets provide magnetic flux to said coils, said coils including first windings and second windings, said first windings being interconnected to provide an electrical output from said system and said second windings being interconnected to provide an inductive circuit; a capacitive circuit connected with said inductive circuit to provide a resonant circuit; a bonnet structure substantially enclosing said shaft and said cylinder structure and for supporting said electrical system with the axis of said shaft vertical and having at least said capacitive circuit mounted thereon for support.

3,290,526
INDUCTION MOTOR ROTOR
John R. Wren, Amherst Township, Erie County, and James W. York, Clarence Township, Erie County, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 5, 1963, Ser. No. 300,000
5 Claims. (Cl. 310—211)

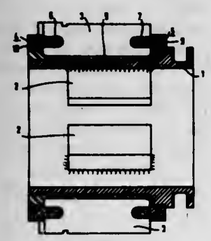


1. A rotor member for an induction motor comprising an elongated generally cylindrical core member having a plurality of longitudinally extending slots disposed in spaced relation about the lateral periphery thereof, a conductor bar combination disposed in each of at least some of said slots, a resistance ring joined to the ends of said bar combinations adjacent each end of said core member, each of said bar combinations having longitudinally and radially coextending generally parallel portions providing parallel current paths and formed from different high temperature strength materials, at least one of said portions formed from a material comprising nickel and having a magnetic permeability as high as that of nickel and a melting point in excess of 1083° C. and having a relatively high electrical conductivity as compared to that of electrical steel, another of said portions formed from a material having a magnetic permeability lower than the first mentioned magnetic permeability and further having a melting point in excess of 1083° C.

3,290,527
COMMUTATOR, PARTICULARLY FOR ELECTRICAL MACHINES
Helmut Habermann, Nuremberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, and Erlangen, Germany
Filed Oct. 14, 1964, Ser. No. 403,829
Claims priority, application Germany, Oct. 15, 1963, S 87,963
8 Claims. (Cl. 310—233)

1. A commutator comprising a hub member, a circular group of commutator laminations surrounding said hub member and having peripherally sequential laminations extending substantially in respective radial planes, said group of laminations having two coaxial annular recesses in axially opposite sides respectively, an intermedi-

ate insulation of casting resin between said group of laminations and said hub member, and two tie rings formed of wound glass fiber strands and impregnated with hard-



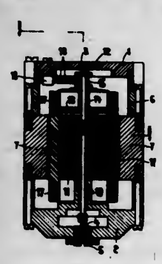
ened casting resin, said hardened rings being seated in said respective recesses and securing said laminations together.

3,290,528

DIRECT CURRENT DOUBLE AIR GAP MOTOR

Karl Adler, Rutl, Buren, and Georges Ducommun, Grenchen, Switzerland, assignors, by mesne assignments, to Bivistor S.A., Geneva, Switzerland, a corporation of Switzerland

Continuation of application Ser. No. 278,731, May 7, 1963. This application Mar. 8, 1966, Ser. No. 536,553
Claims priority, application Switzerland, May 12, 1962, 5,690/62
9 Claims. (Cl. 310—266)



1. A direct current motor comprising a rotor including a substantially cylindrical carrier, a plurality of multiple layer windings each winding having turns lying in diametrical planes of the carrier and whose opposite sides are embedded therein so that the outer turns are flush with the outer surface of the carrier, and a commutator having pairs of diametrically opposed conductive segments, opposite ends of each winding being connected each to one segment of one of said pairs of segments, each said winding and connected segments of the commutator subtending substantially the same angle of rotor displacement, brush means arranged to contact one of said pairs of segments to connect the segments of each pair to a direct current source during displacement of the rotor through said angle, and a flux conducting stator including permanent magnet means, a cylindrical member and a pair of opposed pole pieces having cylindrical surfaces each subtending an arc at least equal to the sum of the arcs subtended by two adjacent windings, said cylindrical member and pole piece cylindrical surfaces being coaxially positioned to define an annular air gap between them, said carrier and windings being disposed in and angularly displaceable through said air gap, the width of said air gap being less than the shortest distance between said pole pieces to reduce stray flux and provide homogeneous magnetic flux fields of substantially constant flux density in said air gap between each pole piece and the cylindrical member, whereby each said winding while connected to a direct current source through a pair of commutator segments and said brush means is completely inside one of said homogeneous flux fields during the total time of displacement of the rotor through said angle.

3,290,529

ELECTRON TUBE WITH EXTERNAL FLEXIBLE CONTACT ARMS FOR VIBRATION DAMPENING

Paul Warren Kaseman, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 13, 1963, Ser. No. 287,677
14 Claims. (Cl. 313—50)



6. An electron tube including an envelope having a side wall and an end wall,

(a) electrodes within said envelope,

(b) support means for said electrodes extending through and outside of said end wall,

(c) elongated flexible contact arms connected at one end thereof to said support means outside of said envelope, said contact arms having free end portions curved towards the outer surface of said side wall and normally spaced therefrom, said contact arms being adapted to be flexed to cause the free ends thereof to engage said outer surface when said tube is disposed in a housing,

(d) and resilient flexible means between said wall and said free ends for insulating said side wall from shocks transmitted to said arms.

3,290,530

PHOTOCONDUCTIVE PICKUP TUBE TARGET WITH OPAQUE SECTION FOR MEASURING DARK CURRENT

John F. Heagy, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 11, 1964, Ser. No. 351,148
7 Claims. (Cl. 313—65)



1. A photoconductive pickup tube having a target, said target comprising:

(a) an insulating substrate,

(b) a conductive layer on said substrate,

(c) an opaque layer of bismuth on only a portion of said conductive layer, whereby another portion of said conductive layer is exposed, and

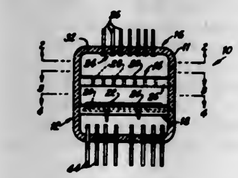
(d) a layer of photoconductive material on said exposed portion of said conductive layer and on said bismuth layer.

3,290,531

ELECTRONIC SWITCHING TUBE

Thaddeus V. Rychlowski, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,665
8 Claims. (Cl. 313—69)



2. An electronic switching tube comprising a source of electron emission, a target assembly toward which the electrons are directed and a gating structure therebetween, said gating structure comprising an electrically insulating support having parallel rows of apertures therethrough, a number of apertured conductive means overlying said apertures in said support for controlling the flow of electrons therethrough, said apertures in said conductive means being aligned with said apertures in said support, and said target assembly comprising conductors traversing all of the conductive means of said gating structure, and individual connections leading to each of the conductive means and connections to the source of electron emission and the conductors of the target assembly.

3,290,532

CONJOINTLY-MOVABLE, PLURAL MAGNET MEANS FOR BLUE LATERAL CORRECTION IN COLOR KINESCOPES

Eugene Lemke and Philip G. McCabe, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed Apr. 23, 1964, Ser. No. 362,092
8 Claims. (Cl. 313—77)



1. In combination with an image reproducing tube having a generally cylindrical, beam-enclosing neck portion, beam position adjusting apparatus comprising:

a first pair of magnets, the magnets of said first pair being disposed at first selected positions spaced about the external periphery of said cylindrical tube neck portion;

a second pair of magnets, the magnets of said second pair being disposed at second selected positions spaced about the external periphery of said neck portion, the peripheral neck region adjacent to said second magnet positions being diametrically opposed to the peripheral neck region adjacent to said first magnet positions;

and adjustable support means for conjointly altering the proximity of said first and second magnet pairs to the central axis of said cylindrical neck portion.

3,290,533

CONJOINTLY-MOVABLE CAM-ACTUATED SUPPORT MEANS FOR MAGNETS IN COLOR KINESCOPES

John McDaniel Ammerman, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 23, 1964, Ser. No. 361,951
6 Claims. (Cl. 313—77)



5. Apparatus for adjustably supporting a plurality of beam shifting magnets on the neck of a color kinescope, said apparatus comprising the combination of:

a pair of magnet holders;

a main support member having an aperture for receiving said neck;

a guide member supported for rotation on a cylindrical surface provided on said main support member in eccentric relationship to said neck-receiving aperture, said guide member including means for providing respective guideways in which said magnet holders may ride, said guideways permitting motion of said magnet holders in a plane perpendicular to the axis of symmetry of said neck-receiving aperture; and

cam means for simultaneously adjusting the positions of both of said pair of magnet holders in their respectively associated guideways in such manner as to alter the proximity of both of said pair of magnet holders to said neck-receiving aperture in the same sense.

3,290,534

ECCENTRICALLY MOUNTED BEAM POSITION ADJUSTING DEVICE

Jerrold K. Kratz, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,600
7 Claims. (Cl. 313—77)



4. A lateral correcting device for a multibeam color kinescope, comprising the combination of:

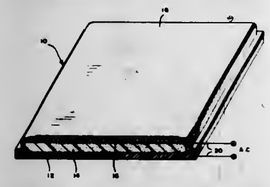
a pair of ring magnets, each provided with a pattern of six alternating poles located symmetrically along the ring circumference;

and neck mount structure, having a cylindrical aperture dimensioned to receive a kinescope neck, and including means for receiving said pair of ring magnets in rotatably adjustable positions eccentrically disposed with respect to said neck receiving aperture.

3,290,535
ELECTROLUMINESCENT LAMP HAVING A MOISTURE RESISTANT VITREOUS LIGHT-TRANSMITTING MATERIAL WHICH INCLUDES 4 TO 8% LiF

Chikara Hirayama, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 31, 1961, Ser. No. 149,119
9 Claims. (Cl. 313—108)

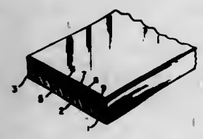


7. In combination with an electroluminescent device the operative portion of which comprises spaced electrodes, one of which is light-transmitting, with electroluminescent phosphor embedded in light-transmitting vitreous material included between said spaced electrodes, the improvement which comprises, a vitreous light-transmitting layer over said light-transmitting electrode and exterior to the operative portion of said device, said vitreous layer consisting essentially of the following constituents within about the specified relative proportions by weight: 23% to 38% B_2O_3, 1% to 15% SiO_2, 10% to 52% BaO, 5% to 27% ZnO, 4% to 7% LiF, 2% to 8% MgO, 0 to 5% Na_2O, 0 to 8% CaO, and 0 to 6% Al_2O_3.

3,290,536
ELECTROLUMINESCENT LAMP WITH HOMOGENEOUS PHOSPHOR-DIELECTRIC LAYER

Eric L. Mager, Beverly, Mass, assignor to Sylvania Electric Products Inc., a corporation of Delaware

Application Oct. 24, 1958, Ser. No. 769,511, now Patent No. 3,043,978, dated July 10, 1962, which is a continuation of application Ser. No. 230,738, June 9, 1951. Divided and this application Jan. 2, 1962, Ser. No. 163,758
2 Claims. (Cl. 313—108)



1. An electroluminescent lamp comprising two electrodes having therebetween a layer of an electroluminescent phosphor in a dielectric medium and a layer of dielectric material only, one of said electrodes being transparent, the other being of metal, the layer of dielectric material only being between the metal electrode and the layer containing electroluminescent phosphor, said layer of electroluminescent phosphor in a dielectric medium being homogeneous.

3,290,537
ELECTROLUMINESCENT DEVICE INCLUDING A DIELECTRIC SUBSTRATE HAVING A PLURALITY OF CLOSELY-SPACED, THIN WIRE CONDUCTORS PASSING THERETHROUGH

Robert K. Logan, 669 Skyview Drive, El Cajon, Calif.

Filed Dec. 26, 1963, Ser. No. 333,772
6 Claims. (Cl. 313—108)

1. An electroluminescent device comprising in combination:

(a) a light-transmissive electrically-conductive electrode layer;

(b) an electroluminescent dielectric-phosphor layer underlying said electrically-conductive electrode layer;

(c) a dielectric substrate underlying said dielectric-phosphor layer, said dielectric substrate consisting of a dielectric material filled with a plurality of discrete closely-spaced thin wire conductors rigidly sealed in said dielectric material such that when an electric current is applied to one side of said substrate said current will be conducted through said substrate to the opposite side thereof; and

(d) conductive means, underlying said dielectric substrate and in intimate contact therewith, for defining a predetermined selective locus of contact between said conductive means and said dielectric substrate;



(e) said electrode layer and said conductive means being adapted to be electrically connected respectively to the opposite poles of a source of actuating voltage for cooperatively inducing an activating electrical field across said dielectric-phosphor layer to selectively activate to luminescence that portion of said dielectric-phosphor layer which lies intermediate said electrode layer and the locus of contact between said conductive means and said dielectric substrate as determined by said conductive means, the pattern of light definition produced by said electroluminescent device, when activated, thus conforming to the configuration of the locus of contact between said conductive means and said dielectric substrate.

3,290,538
LOW-PRESSURE ELECTRIC DISCHARGE LAMP WITH INTERNAL ELONGATED STRUCTURE THAT MODIFIES THE DIFFUSION LENGTH OF THE DISCHARGE AND IMPROVES THE LAMP PERFORMANCE

Daniel A. Larson, Cedar Grove, and Peter J. Walsh, East Orange, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 23, 1961, Ser. No. 112,071
32 Claims. (Cl. 313—109)

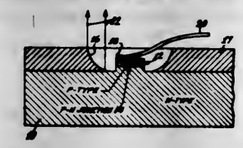


14. A fluorescent lamp comprising, a tubular light-transmitting envelope of substantially uniform diameter, a quantity of mercury and an inert ionizable gaseous medium contained by said envelope, a thermionic electrode sealed into each end of said envelope, a phosphor coating on the inner surface of said envelope, and an elongated structure in and extending longitudinally along the discharge space between said electrodes, said structure having an electrically non-conductive surface and being so oriented that at least a portion of the structure extends along substantially the center of the discharge space, the configuration and dimensions of said structure relative to those of said envelope being so correlated that the discharge space is of substantially the same size throughout its length and said envelope defines a single substantially unobstructed discharge chamber, the surface area of said structure being of such magnitude that it provides a non-conductive recombination surface in the discharge space that decreases the diffusion length of the discharge and thus increases the light output of said lamp.

3,290,539
PLANAR P–N JUNCTION LIGHT SOURCE WITH REFLECTOR MEANS TO COLLIMATE THE EMITTED LIGHT

Michael F. Lamorte, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 16, 1963, Ser. No. 309,062
7 Claims. (Cl. 313—114)

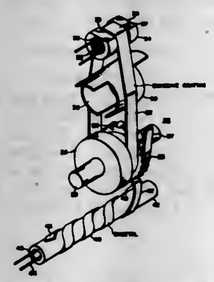


1. A light source comprising a P–N junction, and a reflector around said P–N junction, said P–N junction being planar and adapted to emit light in the plane of said P–N junction when said P–N junction is forward biased with a predetermined voltage, and said reflector being disposed to reflect said light substantially perpendicularly to said plane.

3,290,540
ELECTRON DISCHARGE TUBE HAVING A MOVABLE CATHODE TAPE

Eros Atti, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 16, 1964, Ser. No. 360,268
15 Claims. (Cl. 313—146)



1. An electron discharge device comprising an elongated, flexible filamentary support having at least first and second emissive portions for producing an electron beam, a target means for receiving said beam, means for exciting electrons in association with said first emissive portion, magazine means for storing an extended length of said filamentary support in a contracted configuration, and means for moving said support so that said second emissive portion is brought into association with said means for exciting and said first emissive portion is displaced from said means for exciting.

3,290,541
INDUCTIVE APPARATUS UTILIZING A MAGNETIC CUSP FIELD FOR ACCELERATING PLASMOIDS

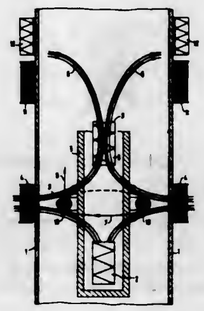
Walter Hertz, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany

Filed Dec. 18, 1964, Ser. No. 419,309
Claims priority, application Germany, Dec. 21, 1963, S 88,841
10 Claims. (Cl. 313—153)

4. Electrodeless apparatus for producing and accelerating plasmoids in an insulating tube having an axis and a periodically excited low-induction coil coaxially positioned around said insulating tube for producing an electrical field in said insulating tube, comprising

a shielding cylinder coaxially mounted in said insulating tube;

two field coils wound in opposite directions relative to each other coaxially mounted in axially spaced relation with each other in said shielding cylinder for producing a common magnetic cusp field, said low-induction coil being positioned in the common magnetic cusp field produced by said field coils equidistantly from said field coils; and

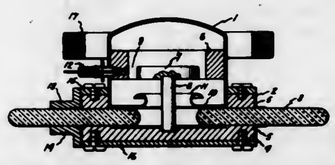


an additional low-induction coil coaxially positioned around said insulating tube in axially spaced relation from the first-mentioned low-induction coil and free of the magnetic field produced by said field coils for producing a plasmoid.

3,290,542
TRIGGERED VACUUM DISCHARGE DEVICE

James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 26, 1963, Ser. No. 297,925
5 Claims. (Cl. 313—178)



1. A low inductance triggered vacuum discharge device comprising:

(a) an evacuated, hermetically sealed envelope;

(b) primary discharge means lying within said envelope comprising concentric, coplanar primary discharge electrodes wherein the innermost of said electrodes is completely enclosed within the volume defined by the outermost of said electrodes and defining a primary gap therebetween, said electrodes comprising,

(c1) a ring electrode, and

(c2) a disc electrode positioned completely within said ring electrode;

(c) terminal connectors mounted outside said envelope and electrically connected to said electrodes;

(d) trigger means positioned adjacent said primary gap for injecting charged particles into said primary gap; and

(e) means for applying a voltage to said primary electrodes for initiating a discharge therebetween upon injection of said charged particles.

3,290,543
GRAIN ORIENTED DISPENSER THERMIONIC EMITTER FOR ELECTRON DISCHARGE DEVICE

Ira Weissman, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Original application June 3, 1963, Ser. No. 285,150. Divided and this application May 13, 1964, Ser. No. 367,183
9 Claims. (Cl. 313—346)



1. A thermionic emitter structure adapted for operation at elevated temperatures for emitting a stream of electrons, said emitter structure having an emitting surface for emitting the stream of electrons and being formed by a layer of grain oriented polycrystalline material, means forming a source supplying a layer of coating material to said polycrystalline emitting surface, said layer of material having a lower work function than the bare emitting surface whereby the work function of said coated surface is lowered uniformly, and said layer of low work function material being depleted in use and being replenished in use by diffusion from said source through said polycrystalline emitting surface.

3,290,544
TRAVELLING WAVE TUBE

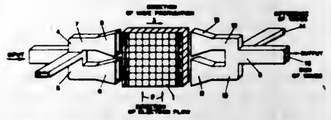
Thomas Henry Staerck, Galleywood Common, Essex, England, assignor to English Electric Valve Company Limited, London, England, a British company
Filed Dec. 22, 1961, Ser. No. 161,516
Claims priority, application Great Britain, Jan. 2, 1961, 54/61
4 Claims. (Cl. 315—3.5)



1. A travelling wave tube having an electron gun for generating an electron beam, a helical delay winding coaxially surrounding the path of the electron beam, a plurality of rods supporting said winding and in contact with the outside thereof along a plurality of lines distributed around the periphery thereof, a choke near the end of the delay winding nearer the gun, said rods extending beyond the gun end of said choke, and a helically coiled strained elastic metal spring encircling the extension of said rods beyond the choke so as to exert an inward force on the rods, said spring being so connected in circuit with said delay winding and being so dimensioned as to act as a choke helix.

3,290,545
ELECTRON DISCHARGE DEVICE WITH EXTERNAL MODE SUPPRESSION MEANS WHICH SEPARATE WANTED FROM UNWANTED MODES AND ALLOW FOR DISSIPATION OF UNWANTED MODES

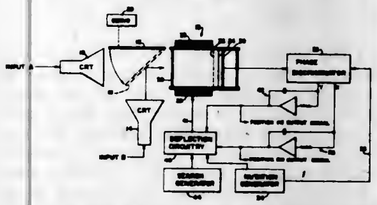
Georges Mourier, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed Mar. 26, 1963, Ser. No. 268,183
Claims priority, application France, Apr. 4, 1962, 893,250
6 Claims. (Cl. 315—3.6)



1. An ultra-high-frequency arrangement comprising:
an electron discharge tube including a two dimensional wave delay structure, means for propagating at least one electron stream approximately parallelly to one of the dimensions of said delay structure, coupling means operatively connected to said wave delay structure to enable the propagation of electromagnetic waves along said wave delay structure approximately parallelly to another dimension thereof and in energy transfer relationship to said electron stream,
and means for producing the sum and the difference of two half-waves at least within the area of said coupling means and for separating the energies obtained in said sum and difference, respectively.

3,290,546
CATHODE RAY TUBE IMAGE MATCHING APPARATUS

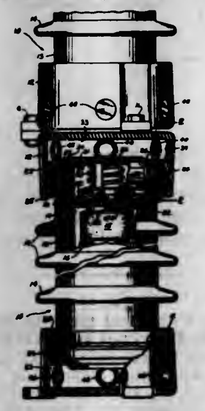
Thomas V. Lisk, Akron, and Richard H. Smith, North Canton, Ohio, assignors to Goodyear Aircraft Corporation, Akron, Ohio, a corporation of Delaware
Filed Oct. 25, 1962, Ser. No. 232,961
9 Claims. (Cl. 315—12)



1. An electronic tube means for correlating two information displays in the form of light images A and B having a photo-emissive cathode to receive the light images, an electron storage grid means spaced in substantially parallel relation from the cathode to accumulate the electrons emitted from the cathode in response to reference light image A, a viewing screen for receiving electrons passed through the storage grid and to produce readout information which is a function of the number of received electrons, a magnetic yoke surrounding the tube means for accelerating and focusing the electrons emitted from the cathode toward and on the storage grid means, separate magnetic yoke means surrounding the tube means for deflecting the electrons emitted from the cathode in response to active light image B to provide relative movement on the storage grid between the stored electron pattern of image A and the electron pattern of image B, whereby the number of electrons passed through the storage grid means and striking the viewing screen being a function of the correlation between image A and B, and means to measure the read-out information on the viewing screen.

3,290,547
PRESSURE RELIEF AND FAILURE INDICATING MEANS FOR ARRESTER

Edward L. Sankey, Oak Creek, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,689
2 Claims. (Cl. 315—36)



1. In a lightning arrester having a tubular insulating housing enclosing spark gap and valve block resistor elements, a rupturable pressure sensitive diaphragm sealing one end of said housing, a cup-shaped metallic end member surrounding said one end of said housing and said diaphragm and defining a venting chamber sealed from the interior of said housing by said diaphragm and also having venting apertures in the sidewall thereof communicating with said venting chamber, and plugs releasably closing said venting apertures and being adapted to be ejected therefrom in response to a predetermined pressure within said venting chamber incident to rupture of said diaphragm caused by failure of said arrester and buildup of pressure within said housing, whereby said diaphragm and plugs vent said arrester to prevent rupture of said housing and provide a positive visual indication of arrester failure.

3,290,548
REVERSE MAGNETRON

Fred A. Fenner, Green Village, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed Aug. 10, 1962, Ser. No. 216,227
9 Claims. (Cl. 315—39.51)



1. Coupling apparatus for coupling an array of vane resonators to a circular electric mode wave supporting structure through a common wall member including, a circumferential array of radially directed vane resonators, a circumferential array of elongated axially directed coupling slots communicating through the common wall member between the circular electric mode wave supporting structure and the array of vane resonators, said slots having an axial length greater than a quarter wavelength at the center operating frequency of the circular electric mode structure for maximum energy exchange between the array of resonators and the circular electric wave supporting structure, said slots having an axial length substantially greater than the axial height of said vane resonators, and means forming a conductor juxtapositioned said slots on said array of resonators side of said common wall with a separation between the slotted common wall and said conductor means being less than the width of the coupling slots and covering at least one end portion of a plurality of said coupling slots by being axially co-extensive therewith over an end portion of said slots for reducing wave energy radiation from said slots.

3,290,549
ELECTROLUMINESCENT DISPLAY DEVICE WITH PIEZOELECTRICAL SCANNING AND GATING MEANS

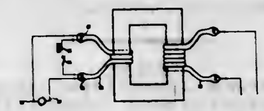
John J. Lambe, Wayne, Joseph Mudar, Whitmore Lake, and Sol Nudelman, Ann Arbor, Mich., assignors to Research Corporation, New York, N.Y., a corporation of New York
Filed Aug. 8, 1960, Ser. No. 47,989
2 Claims. (Cl. 315—55)



1. An electroluminescent display device comprising a wedge shaped piezoelectric crystal element, an electroluminescent material disposed on a tapering longitudinal surface of said crystal element, an electrode disposed on the same surface as said material, said electrode and said material extending along the entire length of said surface, the widthwise dimension of said electrode, with respect to the width of said tapering longitudinal surface, being less than the widthwise dimension of said electroluminescent material, and a base electrode extending over that surface of said crystal which is opposite to said tapering surface.

3,290,550
TRANSFORMER HAVING CONDUCTIVE GASEOUS WINDINGS

Alexander M. Senkewich, New York, N.Y., assignor of five percent to James M. Hellman, Rye, N.Y., and five percent to Marjorie Kingston, Flushing, N.Y.
Filed Mar. 4, 1965, Ser. No. 437,079
3 Claims. (Cl. 315—57)



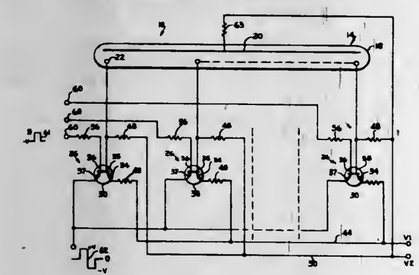
1. An electrical circuit for passing electricity through a gas-filled tube composed of a gas-filled tube having heater elements in each end thereof, two contacts connected to an external source of electricity, a first conducting means connecting said contacts with one end of each of said heater elements, a second conducting means connecting the opposite ends of said heater elements to each other through a contact switch, and choke coil being positioned in said second conducting means whereby

when current is passed through said heater elements they will be heated and throw off electrons, and when said switch is operated the choke coil will force an extra surge of current through the tube and ignite the gas beam in said tube, a closed metallic yoke, said gas-filled tube wrapped around one leg of said yoke, and electrical conducting means wrapped around the opposite leg of said yoke whereby current of a different voltage will be induced in said electrical conducting means.

3,290,551
MEMORY CIRCUIT FOR INDICATOR DEVICES EMPLOYING FOUR-ELECTRODE, FOUR-LAYER SEMICONDUCTOR SWITCH

Arthur F. Cake, Orange, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Mar. 23, 1964, Ser. No. 353,960
3 Claims. (Cl. 315—84.6)



1. A circuit for operating indicator devices comprising an indicator tube including a gas-filled envelope which contains an anode electrode and a plurality of cathode indicator electrodes, each of which provides a visual character indication,

a multiple junction semiconductor switching device including first, second, third, and fourth zones of P-type and N-type semiconductor material which alternate in conductivity type with a P–N junction between adjacent zones,

said first zone comprising an anode, said second zone comprising an anode gate, said third zone comprising a cathode gate, and said fourth zone comprising a cathode,

said first zone being connected to a source of relatively low bias voltage,

said second zone being connected both to one of said indicator electrodes in said tube and through a resistor to a source of relatively high bias voltage,

said fourth zone being coupled to a source of control signals for turning the semiconductor device off and on, and

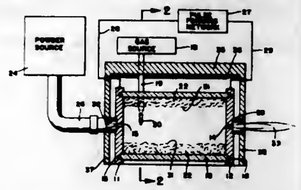
said third zone being coupled to a source of signal information, the entry of which in said indicator tube is controlled by said control signals.

3,290,552
APPARATUS FOR GENERATING HIGH-INTENSITY LIGHT WITH HIGH TEMPERATURE PARTICULATE MATERIAL

Delbert G. Van Ornum, Newport Beach, Calif., assignor to Gianninl Scientific Corporation, Santa Ana, Calif., a corporation of Delaware

Continuation of application Ser. No. 186,587, Mar. 30, 1962, which is a continuation of application Ser. No. 35,940, June 14, 1960. This application Apr. 21, 1964, Ser. No. 363,332
4 Claims. (Cl. 315—111)

1. Apparatus for generating high-intensity light, comprising wall means to define a chamber and having a light-transmissive portion, means to introduce gas continuously into said chamber and to effect vortical flow of gas therein about a central axis and consequent formation of a canal along said axis, means to drain gas continuously from said chamber, means to introduce a particulate light-emitter substance directly into said canal, first and second electrode means disposed at spaced points

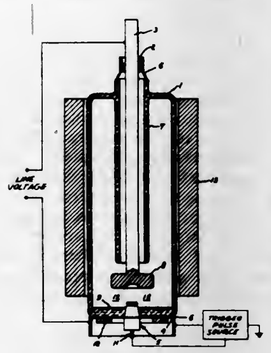


along said canal, and means to effect passage of an electrical discharge between said electrode means along said canal, said last-named means effecting said electrical discharge at a power level sufficiently high to explode said particulate substance and thus generate high-intensity light.

3,290,553
TRIGGERED VACUUM DISCHARGE DEVICE HAVING A LIQUID CATHODE

James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 24, 1966, Ser. No. 529,790
9 Claims. (Cl. 315—115)



1. A vacuum gap discharge device for controlling a kilovolt range alternating voltages and comprising:

(a) a hermetically sealed envelope at least a portion of which is composed of an insulating dielectric evacuated to a pressure of 10^{-6} mm. of Hg or less;

(b) primary discharge electrodes in said envelope defining a primary discharge gap, one of said electrodes comprising a liquid metal which does not supply conduction carriers to initiate electrical breakdown, said metal being characterized by a melting point vapor pressure of less than 10^{-7} mm. of mercury so as to permit the attainment of an equilibrium pressure within said device at equilibrium operating temperature of 10^{-5} mm. of Hg or less;

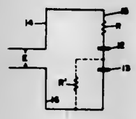
(c) means for applying a voltage to be controlled to said primary electrodes; and

(d) trigger means for injecting a breakdown-inducing conductive electron-ion plasma between said primary electrodes to render said primary discharge gap conductive irrespective of the polarity of the voltage applied to said primary electrodes.

3,290,554
ELECTROLUMINESCENT DISPLAY SCREEN AND CIRCUIT THEREFOR

Edgar A. Sack, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 17, 1962, Ser. No. 245,330
1 Claim. (Cl. 315—169)



In a display screen formed of a plurality of independently controlled display elements, the improvement in which,

(a) said display elements are formed of barium titanate material having a surface of electroluminescent material,

(b) an electrical circuit including a voltage source and a first resistor connected in series with each of said display elements to apply a charge to the barium titanate material,

(c) a second discharging resistor in said circuit and connected in parallel with the electroluminescent material,

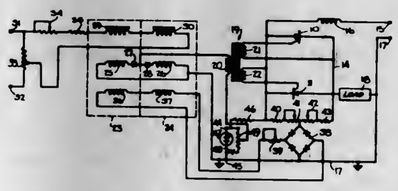
(d) said voltage source and first resistor being operative to supply an electrical charge of predetermined value to the barium titanate material and

(e) said discharging resistor bypassing the barium titanate material and having a value selected to control the rate of discharge of the electrical energy from the barium titanate material and provide a predetermined period of excitation of the electroluminescent material.

3,290,555
SILICON CONTROLLED RECTIFIER DIMMER

Ariel R. Davis, Salt Lake City, Utah, assignor to B. J. Management Corporation, Salt Lake City, Utah, a corporation of Utah

Filed June 9, 1964, Ser. No. 373,704
4 Claims. (Cl. 315—194)

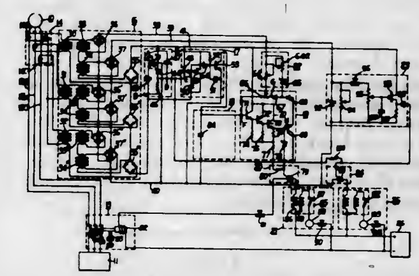


3. Electrical control apparatus for controlling the current applied from first and second input voltage terminals to an incandescent lamp load comprising solid state controlled rectifiers connected in series with said incandescent lamp load across said input voltage terminals for controlling alternating current passing through said load, phase shifting means connected to said rectifiers for applying firing pulses to said rectifiers variable in phase over each half cycle, input control means connected to said phase shifting means for varying the time of firing of said rectifiers, a resistance network connected across said solid state controlled rectifiers and to said first input voltage terminal, rectifying means having a direct current output connected to said phase shifting means and having an alternating current input connected between an intermediate point of said network and said second input voltage terminal, a portion of the resistor network connected to said first input terminal having a substantially greater resistance than the remaining portion and passing a substantially constant current over the range of illumination while said remaining portion passes current varying with the conductivity of the rectifiers to provide adjustment of the relation of said input control means and lamp load illumination over the entire illumination range to attain the desired relation between the input control means and the illumination of the lamp load.

3,290,556
OVERCURRENT STATIC RELAY

John M. Graham, Minneapolis, Minn., and Richard J. Woudra, West Allis, and Gerard M. Larose, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Jan. 21, 1963, Ser. No. 252,984
3 Claims. (Cl. 317—36)

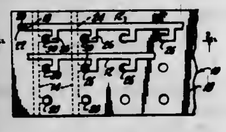


2. A control system responsive to current in a polyphase electrical circuit to produce a signal, said control system comprising: current transformers each having its primary winding connected to a different phase and having the outputs from its secondary windings connected in series to produce an output varying as a function of the highest current of any phase; storage means connected to receive the output for storing energy from the output as a voltage; a bypass circuit connected parallel to the storage means; a potentiometer connected to adjust the portion of the input passed to the storage means relative to the portion of the input passed to the bypass circuit; said bypass circuit comprising the emitter-collector circuit of a transistor; an emitter-follower amplifier connected to maintain the potential across the bypass circuit equal to the potential across the storage means, said transistor and components selected whereby the impedance in the bypass circuit is maintained equal to the impedance across the storage means; a silicon controlled rectifier connected to control the switching circuit; a zener diode connected in series with the gating terminal of the silicon controlled rectifier and connected in parallel with the storage means to turn on the silicon controlled rectifier when the voltage across the storage means exceeds a predetermined level; a transistor connected to receive a function of the output and having its emitter-collector circuit in parallel with the storage means, said transistor biased and controlled to remain in a conductive state when the output is below a predetermined level and to assume a nonconductive state when the output is above a predetermined level; a circuit connected in series with the current generating means, said last circuit comprising a zener diode connected in parallel with a variable resistance and in series with a variable resistance.

3,290,557
WIRING DEVICE WITH SELECTIVELY SEVERABLE CONDUCTOR FOR FORMING PREDETERMINED CIRCUIT PATTERN

William H. Ayer, Scituate, Mass., assignor, by direct and mesne assignments, of one-half to The Sippican Corporation, Marlapoisett, Mass., a corporation of Massachusetts, and one-half to Albert C. Nolte, Jr., New York, N.Y.

Filed Feb. 23, 1962, Ser. No. 175,200
8 Claims. (Cl. 317—101)



1. A universally adaptable wiring system for electrical apparatus, comprising an insulating sheet, a plurality of spaced conductors on one side of the insulating sheet, a second plurality of spaced conductors on the other side of the insulating sheet lying in a criss-cross relation to said opposite side conductors, and electrical connection means between opposite side conductors at each criss-cross junction, said electrical connection means including spaced extending tab portions on opposite side conductors passing through apertures in the insulating sheet, said tabs being welded together and positioned adjacent said criss-cross junctions whereby preselected severing may be made by removing the welded connection to form a predetermined wiring pattern.

3,290,558
MOUNTING ARRANGEMENT FOR UNIDIRECTIONALLY CONDUCTIVE DEVICES

Jacques Sapy, Valence, Drome, France, assignor to Société Crouzet S.A.R.L., Valence, Drome, France, a French company

Filed Jan. 29, 1964, Ser. No. 341,082
Claims priority, application France, Feb. 1, 1963, 923,527, Patent 1,355,034
3 Claims. (Cl. 317—101)

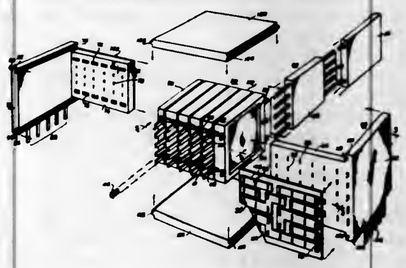


1. A diode mounting arrangement comprising, in combination:
- (a) a sheet member of electrically insulating material having two opposite faces, said sheet member being formed with a plurality of spaced openings therethrough, each opening extending from one of said faces to the other face, and having a wider portion adjacent one of said faces and a narrower portion adjacent the other face;
- (b) diode means in each of said openings, said diode means being mainly received in said wider portion;
- (c) conductor means on each of said faces,
  - (1) each conductor means including a plurality of conductor members elongated in a common direction and spaced from each other transversely of said common direction,
  - (2) the common direction of elongation of the conductor members on said one face being transverse of the direction of elongation of the conductor members on said other face,
  - (3) whereby said conductor members intersect each other, and the thickness of a plurality of spaced portions of said sheet member separates respective intersecting conductor members on its opposite faces thereof,
  - (4) said openings being formed in said spaced portions, and
  - (5) the intersecting conductor members associated with each of said openings being formed with apertures aligned with the associated opening; and
- (d) two leads on each diode means and extending therefrom in opposite directions outward of the associated opening through said apertures, said leads being respectively connected to said conductor means.

3,290,559
MODULAR ASSEMBLY FOR FUNCTIONAL ELECTRONIC BLOCKS

William G. Kirby and Raymond Marlow, Dallas, Tex., assignors to International Energy Conversion, Inc., Garland, Tex., a corporation of Texas

Filed June 16, 1964, Ser. No. 375,608
7 Claims. (Cl. 317—101)



1. A modular assembly for functional electronic blocks, comprising:
- (a) a plurality of rigid inner cover members arranged in a row,
- (b) a plurality of functional electronic blocks interleaved between said plurality of inner cover members,
- (c) said plurality of electronic blocks having electrodes depending therefrom and protruding from between adjacent cover members beyond the edges thereof,
- (d) each of said plurality of cover members having portions extending from said edges which are adjacent to at least some of said electrodes of said blocks adjacent thereto,
- (e) fastening means for securing said at least some of said electrodes to said portions which are adjacent thereto for holding said plurality of cover members and said plurality of electronic blocks together as a unit,
- (f) an outer cover member defining a plurality of apertures therethrough coinciding with at least some of said electrodes disposed along a first surface thereof against a first side of said unit with said at least some of said electrodes passing through said plurality of apertures coinciding respectively therewith,
- (g) electrically conducting means disposed on a second surface of said outer cover member opposite said first surface adjacent to said plurality of apertures for interconnecting said at least some of said electrodes according to a predetermined scheme, and
- (h) an additional outer cover member disposed along a surface thereof against another side of said unit having thermal means for controlling heat flow in and out of said unit.

3,290,560
ELECTRICAL WIRING SYSTEM

Raymond C. Locke, Bloomington, Ill., assignor to General Electric Company, a corporation of New York

Filed Nov. 17, 1961, Ser. No. 153,059
8 Claims. (Cl. 317—122)



1. In an electrical system, an electrical device having a first side wall, means spaced from said device and having a second side wall confronting said first wall, conductors connected to said device and extending into the space between said first and second walls, said first and second walls having confronting longitudinally extending slots, and a cover member having longitudinally extending edges adapted to be positioned in detachable interfitting engagement with said slots to enclose said conductors, said cover member and said first and second walls when engaged forming a trough containing said conductors.

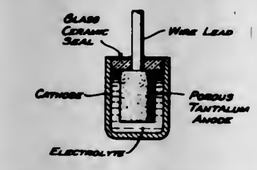
ERRATUM

For Class 317—231 see:
Patent No. 3,289,677

3,290,561
CAPACITOR ELECTROLYTE

John Burnham, 10960 Verano Road, Los Angeles, Calif.

Filed Aug. 26, 1963, Ser. No. 304,330
13 Claims. (Cl. 317—230)



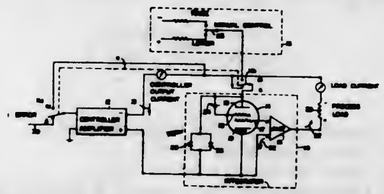
1. A electrolyte for use in electrolytic capacitors consisting essentially of a substantially non-gas forming mixture under operating conditions of at least one heterocyclic compound containing a nitrogen heterocyclic atom located between two carbon atoms, and a compound selected from a group consisting of aliphatic acids, alpha-halogen substituted aliphatic acids, and anhydrides thereof, said mixture being substantially free of film-forming components.

3,290,562
SELF-SYNCHRONIZED CONTROLLER FOR "BUMPLESS" TRANSFER BETWEEN MANUAL AND AUTOMATIC MODES

Leroy M. Faulkner, Boxford, Mass., and Clarence W. Hewlett, Jr., Hampton, N.H., assignors to General Electric Company, a corporation of New York

Filed Dec. 10, 1963, Ser. No. 329,419
9 Claims. (Cl. 317—231)

1. A system for synchronizing a controller which is capable of automatic and manual control to prevent the disruption of the controlled process when switching between its automatic and manual modes of operation comprising signal amplifying means,
- signal integrating means including means for providing an output signal which is proportional to the integral of a signal applied to the input of said signal integrating means,
- a process load electrically coupled to the output of said signal integrating means,
- a source of error signals,
- means for connecting said source of error signals to the input of said signal amplifying means,
- means for obtaining a signal which is equal to the difference between the output signals of said signal amplifying means and said signal integrating means

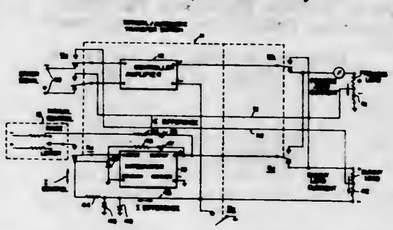


and means for applying said difference signal to the input of said signal integrating means for equalizing the output signal of said signal integrating means with the output signal of said signal amplifying means whereby a signal equal to the output signal of said signal amplifying means will be applied to said process load by said signal integrating means.

3,290,563
SELF-SYNCHRONIZING CONTROLLER WITH AUXILIARY LOAD MEANS FOR "BUMPLESS" TRANSFER BETWEEN MANUAL AND AUTOMATIC MODES

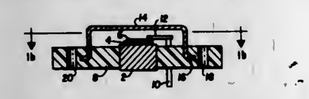
Donald R. Hyer, Lynnfield, Mass., and Clarence W. Hewlett, Jr., Hampton, N.H., assignors to General Electric Company, a corporation of New York

Filed July 31, 1964, Ser. No. 386,590
15 Claims. (Cl. 317—231)



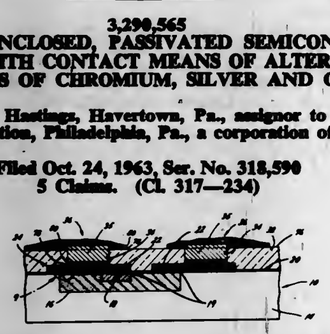
1. A system for synchronizing a controller which is capable of automatic and manual control to prevent the disruption of the controlled process when switching between its automatic and manual modes of operation comprising signal amplifying means for providing an output signal proportional to signals applied to the input thereof,
- signal integrating means including means for providing an output signal which is proportional to the integral of signals applied to the input of said signal integrating means,
- a process load electrically coupled to and energized by the output of said signal amplifying means,
- a dummy load electrically coupled to and energized by the output of said signal integrating means,
- a source of error signals,
- means for connecting said error signal source to the input of said signal amplifying means,
- means for obtaining a difference current which is proportional to the difference between the currents of said process load and said dummy load, and
- means for applying said difference current to the input of said signal integrating means in a polarity for equalizing the output current of said signal integrating means with the output current of said signal amplifying means.

3,290,564
SEMICONDUCTOR DEVICE
Elmer A. Wolff, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 26, 1963, Ser. No. 261,138
20 Claims. (Cl. 317—234)



1. A semiconductor power device comprising
(a) a base of insulating material,
(b) a heat sink having a flat surface,
(c) a semiconductor unit mounted in thermal contact with a surface of said heat sink substantially opposite said flat surface,
(d) at least a portion of the body of said heat sink being surroundingly sealed in said base with said flat surface being exposed,
(e) means enclosing said semiconductor unit, and
(f) electrically conducting means sealed in and protruding from said base making electrical connections to the active regions of said semiconductor unit,
(g) said base adapted for being secured to a member that includes a thermally conducting surface in thermal contact with said flat exposed surface.

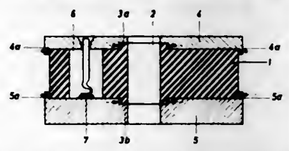
3,290,565
GLASS ENCLOSED, PASSIVATED SEMICONDUCTOR WITH CONTACT MEANS OF ALTERNATE LAYERS OF CHROMIUM, SILVER AND CHROMIUM
Joseph A. Hastings, Havertown, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,590
5 Claims. (Cl. 317—234)



5. A semiconductor device comprising: a silicon semiconductive body having an active region therein forming a junction terminating at a surface thereof; a passivating layer of silica overlying said junction; and means sealing said device comprising a layer of glass adherent to said silica and contact means composed of alternate layers of chromium, silver and chromium hermetically sealed to said glass and ohmically connected to said active region by a metallic interface of aluminum and silver.

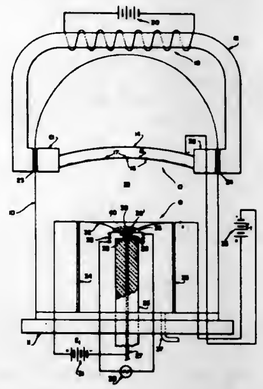
3,290,566
STACKABLE SEMICONDUCTOR RECTIFIER ELEMENT HAVING SEALS UNDER COMPRESSIVE STRESS
Heinz Rüsle, Schnaittach, Karl-Heinz Kasper, Nuraberg, and Horst Rumler, Cologne, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 402,982
Claims priority, application Germany, Sept. 28, 1963, St 21,126
8 Claims. (Cl. 317—234)

1. A semiconductor mounting device comprising an insulator body, a pair of conductive plates secured on each side of said insulator, a first hole extending axially completely through said insulator from one said side to the other between said plates, a semiconductor element positioned in said first hole and having one electrode connected to one plate and another electrode to the other plate, each side of said insulator having a longitudinal projection extending from the outer surface of the insula-



tor body into and engaging a mating recess in each said plate, and a layer of sealing material extending about the peripheral edges of said projection between the laterally engaging portions of said plates and insulator projection within said recess.

3,290,567
CONTROLLED DEPOSITION AND GROWTH OF POLYCRYSTALLINE FILMS IN A VACUUM
Hammond E. T. Gowen, Escondido, Calif., assignor to Technical Industries Incorporated, Burbank, Calif., a corporation of California
Continuation of application Ser. No. 58,144, Sept. 23, 1960. This application Nov. 16, 1965, Ser. No. 511,285
13 Claims. (Cl. 317—234)



6. In an article of manufacture, a substrate, a crystalline coating on said substrate, said coating comprising a plurality of monocrystals joined in boundaries in the direction substantially parallel to the surface of the substrate, said monocrystals in a direction away from the surface of said substrate being a single crystallographic structure having an inclination parallel to an axis of the crystal, and each of said monocrystals being of one single crystalline structure in a direction extending away from said substrate.

3,290,568
SOLID STATE, THIN FILM TRIODE WITH A GRADED ENERGY BAND GAP
Lincoln W. Hershinger, Oreland, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,248
9 Claims. (Cl. 317—235)

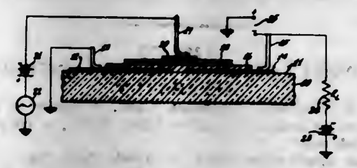
6. A solid state electron device comprising first, second and third conductive electrodes, a first layer of a substitutional solid solution of zinc-cadmium sulfide separating said first and second electrodes, a second layer of a substitutional solid solution of zinc-cadmium sulfide separating said second and third electrodes, said first layer having

a higher percentage of zinc sulfide at said second electrode than at said first electrode, the percentage of zinc sulfide within said first layer being a continuous function of the



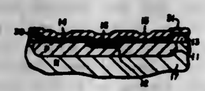
distance from said second electrode toward said first electrode, said second electrode having a thickness less than the mean free path of an electron therein.

3,290,569
TELLURIUM THIN FILM FIELD EFFECT SOLID STATE ELECTRICAL DEVICES
Paul Kessler Weimer, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 14, 1964, Ser. No. 344,921
13 Claims. (Cl. 317—235)



1. A solid state device comprising:
an insulating substrate;
a layer of semiconductive tellurium, said layer having a thickness less than one micron;
at least two spaced electrodes on said layer, said space between said electrodes being less than 100 microns;
an insulating film less than one micron thick on at least a portion of said tellurium layer;
and at least one electrode on said insulating film extending over at least part of the gap between said two spaced electrodes.

3,290,570
MULTILEVEL EXPANDED METALLIC CONTACTS FOR SEMICONDUCTOR DEVICES
James A. Cunningham, Dallas, and Robert P. Williams, Plano, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Apr. 28, 1964, Ser. No. 363,197
12 Claims. (Cl. 317—240)



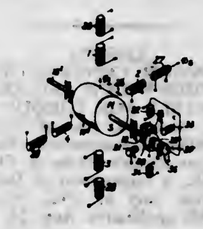
1. A contact and lead arrangement for a semiconductor device of the type including a silicon wafer having a region adjacent one face thereof with a P-N junction between such region and other silicon of the wafer extending to said one face beneath a silicon oxide coating, the coating defining a small opening over said region, the contact and lead arrangement comprising a deposited layer of molybdenum engaging the surface of said region in said opening in the silicon oxide coating, the layer of molybdenum extending from said opening out over said silicon oxide coating in direct contact therewith and over the edge of said junction to a position spaced from said region on said one face, and a deposited layer of gold overlying said layer of molybdenum.

3,290,571
CAPACITOR HAVING UNITARY SEALED ENCLOSURE OF INSULATION
William M. Robinson, Fairhaven, Mass., assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware
Original application Sept. 13, 1962, Ser. No. 223,473. Divided and this application Aug. 27, 1965, Ser. No. 496,213
10 Claims. (Cl. 317—260)



1. An encased tubular capacitor comprising an outer tubular element of thermoplastic insulating material, a wound capacitor body within said tubular element intermediate the ends thereof, contact spring pressure means abutting the respective ends of said wound capacitor body, and combined end contact and lead terminal assemblies in contact with said contact spring pressure elements, each of said terminal assemblies including a transverse imperforate metal wall having an integral outward-projecting annular formation, a terminal projecting from said metal wall encircled by said annular formation, the ends of said tubular element completely covering and being everywhere in intimate surface contact with the annular formation of each terminal assembly and extending into intimate surface contact with a portion of the metal wall encircled by the annular formation, said outer tubular element of thermoplastic insulating material maintaining said contact spring pressure means in stressed pressure contact with said capacitor body.

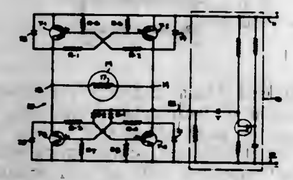
3,290,572
DIRECT CURRENT MOTOR WITH TRANSISTORIZED POWER SUPPLY
Julius Hartmann, Berlin-Friedenau, and Helmut Mocnala, Berlin-Grunewald, Germany, assignors to Licentia Patent Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed July 6, 1964, Ser. No. 380,266
Claims priority, application Germany, July 5, 1963, L 45,270
10 Claims. (Cl. 318—138)



1. In a D.C. motor having a stator and a rotor, the combination which comprises: means forming armature windings; a power supply having armature transistors connected to said windings; a control circuit connected to said armature transistors for controlling the same in dependence on the relative angular position between the stator and rotor, said control circuit being an oscillatory circuit incorporating a control transistor; means for producing a permanent magnetic motor field which rotates with the rotor; and speed regulating means connected to said control circuit for applying thereto a tachometer potential, which is generated by the inductor action of said magnetic motor field, which potential renders said

control circuit ineffective at a given predetermined rotational speed by interrupting the feeding of power to said armature windings.

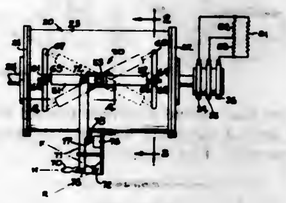
3,290,573
MOTOR OPERATING CIRCUIT
Bruce H. Kenyon, Thomaston, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,532
8 Claims. (Cl. 318—171)



1. In combination, an alternating current motor having a field coil, a pair of bistable flip-flops the first of which comprises two PNP transistors in a common-emitter configuration and the second of which comprises two NPN transistors in a common-emitter configuration, the collectors of said PNP transistors being connected, respectively, to the collectors of said pair of NPN transistors, said flip-flops thereby being connected back-to-back and defining a bridge circuit the input terminals of which are constituted by the emitter junctions and the output terminals of which are constituted by the collector junctions, said field coil of said motor being connected to said output terminals, a source of D.C. voltage having its positive terminal connected to the emitter junction of said PNP transistors and its negative terminal connected to the emitter junction of said NPN transistors, a steering circuit connected to the bases of said transistors of one of said flip-flops, and oscillator means coupled to said steering circuit, and arranged to provide trigger signals of predetermined polarity to be applied successively to the bases of said transistors of said one flip-flop, whereby the successive trigger signals change said flip-flops back and forth between the stable states thereof so as to effect, without the intermediary of coupling transformers or capacitors, alternating reversals of the current flow through said motor field coil between said output terminals.

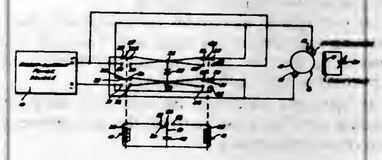
3,290,574
INDUCTION MOTOR CONTROL WITH PLURAL WOUND ROTORS WHICH ARE AXIALLY RELATIVELY MOVABLE FOR TORQUE CONTROL
Charles C. Roe, deceased, late of Rockford, Ill., by Herschel H. Stilley, administrator, Rockton, Ill., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware
Original application July 6, 1962, Ser. No. 207,886. Divided and this application Aug. 26, 1965, Ser. No. 482,948
4 Claims. (Cl. 318—214)

1. In an A.C. motor the combination comprising a source of A.C. current, a frame, first and second stators arranged side by side in said frame and having substantially identical windings thereon for setting up separate rotating fields, a rotor rotatably mounted in said frame for cooperation with the stators and having a single set of windings thereon with voltages being induced in separate portions thereof by the stator fields, said stators both being relatively movable in said frame between a null phase relation in which the induced voltages cancel for production of substantially zero torque and offset positions on each side of the null phase relation for production of progressively increased torque, a differential linkage for interconnecting the stators and the frame so that the stators are constrained to move equally in opposite directions from the null phase relation, a control member coupled to said linkage so that the output



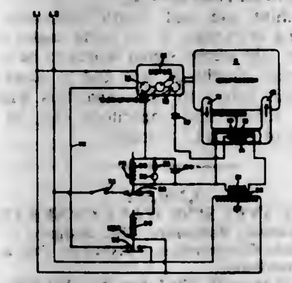
torque goes from maximum to zero and then again to maximum during continuous movement of the control member, and means for reversing the stator windings with respect to the current source automatically as the control member is moved through its zero torque position.

3,290,575
DIRECT-CURRENT MOTOR CONTROL APPARATUS
Victor J. Modiano, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Original application May 1, 1964, Ser. No. 364,112. Divided and this application Feb. 18, 1966, Ser. No. 528,458
2 Claims. (Cl. 318—261)



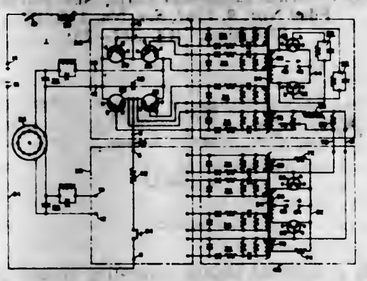
1. An apparatus for controlling the polarity of a direct-current voltage applied across a utilization device having first and second input terminals, said apparatus comprising a direct-current power source having first and second output terminals, the potential developed at said first output terminal being positive relative to the potential at said second output terminal; first and second switch means each including first and second pairs of normally-open contacts and first and second pairs of normally-closed contacts; means connecting said first output terminal of said direct-current power source in parallel through said first pairs of normally-open contacts of said first and second switch means to a first junction and from said first junction through said normally-closed contacts of said first and second switch means to said second and first input terminals of said utilization device, respectively; means connecting said second output terminal of said direct-current power source in parallel through said second pairs of normally-open contacts of said first and second switch means to a second junction and from said second junction and from said second junction through said second pairs of normally-closed contacts of said first and second switch means to said first and second input terminal of said utilization device, respectively; and unidirectionally conducting means connected from said first junction to said second junction, said unidirectionally conducting means being poled to allow normal current flow in a direction towards said first junction.

3,290,576
DETECTORS OF FLUID FLOW
Erik H. Jensen and George L. Brainard, Jr., Staunton, Va., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 12, 1964, Ser. No. 366,823
4 Claims. (Cl. 318—471)



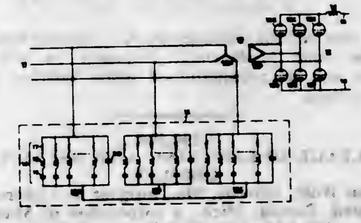
4. An oil flow detector for a refrigerant compressor having an electric driving motor, having a passage through which lubricating oil flows when said compressor is in operation, having a first PTC thermistor in heat exchange contact with said motor, having a protective relay with an energizing coil, having electric supply connections, and having a circuit connecting said coil and thermistor in series to said connections, said detector comprising a second PTC thermistor in said passage and a heater resistor in said passage in heat exchange contact with said second transistor, and cooled by oil flowing in said passage, said resistor being connected to said connections, said second thermistor being connected in said circuit in series with said coil and said first thermistor, said relay having a switch that is closed when the temperature of said motor is normal, and when oil flows in said passage, and that opens when the temperature of said motor has increased to an abnormal temperature, and when there is no oil flow in said passage, and means including said switch for connecting said motor to said connections.

3,290,577
STARTING APPARATUS FOR A MULTI-PHASE INVERTER
Victor C. Shannonhouse, Shawnee Township, Allen County, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 30, 1963, Ser. No. 276,726
10 Claims. (Cl. 321—9)



1. In an inverting system for energizing a polyphase network of n phases, an individual inverting apparatus for individually supplying each of the n phases of the system, a pair of supply terminals for energization from a unidirectional-potential electrical energy supply, means connecting said inverting apparatuses in series circuit between said supply terminals, and a unidirectional current conducting shunting network connected in series with one of said inverting apparatuses and said supply terminals for conduction of current through said one inverting apparatus and between said supply terminals, said shunting network including n-1 impedance elements connected in shunt with all of said apparatuses except said one apparatus.

3,290,578
MULTI-PHASE CONVERTER INCLUDING A HARMONIC FILTER
John Desmond Ainsworth, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Apr. 1, 1963, Ser. No. 269,479
Claims priority, application Great Britain, Apr. 6, 1962, 13,410/62
4 Claims. (Cl. 321—9)

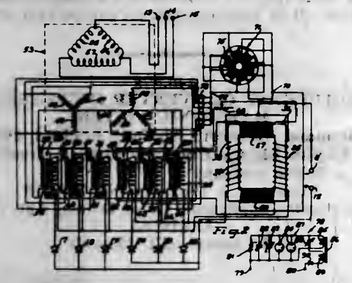


2. A multi-phase converter installation for the exchange of electrical power between a multi-phase A.C. system operating at a predetermined fundamental frequency and a D.C. system, the converter installation comprising
a multi-phase transformer having a primary winding and a secondary winding,
a plurality of controlled rectifying devices connected together as a bridge circuit,
means connecting the said bridge circuit between the said secondary winding and the said D.C. system,
means connecting the said primary winding to the said A.C. system, and
a harmonic filter for substantially removing each one of the harmonics of the said predetermined fundamental frequency in the series 5th, 7th, 11th, 13th, 17th, 19th, 23rd, 25th . . . harmonics, the said harmonic filter comprising
a plurality of filter branches each connected across a respective said phase of the A.C. system, and each said filter branch comprising
a plurality of parallel-connected tuned circuits, which plurality is less than the number of said harmonics in the said series, each tuned circuit being tuned to a respective one of the said harmonics,
each filter branch also including a capacitive reactance connected in parallel with all the tuned circuits of the branch,
said capacitive reactance being arranged to tie in parallel resonance with all the said tuned circuits in the branch at a frequency between the highest one of the said harmonics to which any said tuned circuit is tuned and the next higher one of the said harmonics in the series.

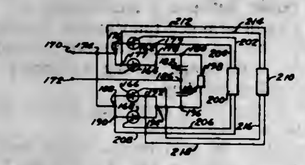
3,290,579
MULTI-PHASE A.C. TO D.C. CONVERTER WITH OUTPUT CONTROL MEANS
Johann Karl Hausner, 3832 N. Tripp Ave., Chicago, Ill.
Filed Oct. 30, 1963, Ser. No. 320,875
15 Claims. (Cl. 321—9)

1. In a converter having a multi-phase A.C. input and a D.C. output, a plurality of rectifiers connected to said output, a multi-phase system connected to said input and including a plurality of transformers having control windings and having output windings connected in circuit with said rectifiers and said output and operative

in the absence of signals on said control windings to develop a D.C. voltage at said output with a superimposed A.C. ripple voltage, and control means for applying to said control windings an A.C. control signal having the same fundamental frequency as said ripple voltage and in predetermined phase relation to said ripple voltage.

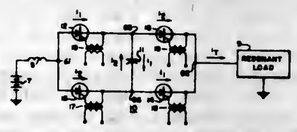


3,290,580
VOLTAGE-MULTIPLYING AND RECTIFYING CIRCUIT
Norman Wolff, Olivette, Mo., assignor to Vickers, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Mar. 22, 1963, Ser. No. 267,154
3 Claims. (Cl. 321—15)



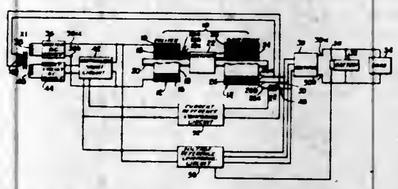
1. A voltage-multiplying circuit that can convert alternating current to direct current and that can make the value of the resulting D.C. voltage a variable multiple of the A.C. voltage and that comprises:
(a) a capacitor,
(b) a second capacitor,
(c) said capacitors being connected in series relation and having the free terminal of the first said capacitor connectable to one terminal of a load and having the free terminal of said second capacitor connectable to the other terminal of said load,
(d) a controlled rectifier that is connected in series with the first said capacitor and the source of alternating current,
(e) a second controlled rectifier that is connected in series with said second capacitor and the source of alternating current,
(f) a signal source that can supply signals with variable firing angles to said controlled rectifiers,
(g) the first said and said second controlled rectifiers responding to signals from said signal source to develop D.C. voltages of a predetermined polarity across said capacitors,
(h) a third controlled rectifier that is connected in series with the first said capacitor and the source of alternating current,
(i) a fourth controlled rectifier that is connected in series with said second capacitor and the source of alternating current, and
(j) a second signal source that can supply signals with variable firing angles to said third and said fourth controlled rectifiers,
(k) said third and said fourth controlled rectifiers responding to signals from said second signal source to develop D.C. voltages of opposite polarity across said capacitors,
(l) the first said and said second controlled rectifiers responding to changes in the firing angles of the signals from the first said signal source to be conductive for different lengths of time and to supply charges of different values to said capacitors whereby the voltages across said capacitors can be variable multiples of the A.C. voltage,
(m) said third and said fourth controlled rectifiers responding to changes in the firing angles of the signals from said second signal source to be conductive for different lengths of time and to supply charges of different values to said capacitors whereby the voltages across said capacitors can be variable multiples of the A.C. voltage.

3,290,581
BRIDGE TYPE SINE WAVE GENERATOR
Edward H. Hooper, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 28, 1963, Ser. No. 291,560
8 Claims. (Cl. 321—45)



2. A sine wave generator comprising in combination: an inductance-capacitance circuit combination adapted to be resonantly charged and discharged from a D.C. source; at least four semiconductor switches arranged in a bridge circuit, being selectively operable in pairs and coupled to the capacitance circuit combination to alternately reverse the electrical charge on the capacitance of said inductance-capacitance circuit combination at predetermined intervals; and a tuned load circuit coupled to said inductance-capacitance circuit combination, being energized by the charge reversal of said capacitance to sustain oscillations at a predetermined output frequency.

3,290,582
BRUSHLESS GENERATING SYSTEM REGULATOR WHICH SHUNTS EXCITATION CURRENT FROM THE FIELD WINDING
Jentje J. Roosma and Labeeb B. Haddad, Hamden, and Daniel P. Schmitt, Northford, Conn., assignors to Safety Electrical Equipment Corp., New Haven, Conn.
Filed Nov. 9, 1962, Ser. No. 236,518
13 Claims. (Cl. 322—25)



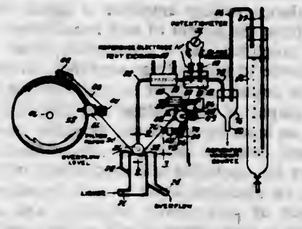
1. In a regulated electric generating system having a generator whose alternating output power varies with the electrical excitation delivered to a generator exciter, the combination of
(A) sensing means for coupling with the generator output power to produce a sensed voltage proportional to one parameter of the electric power output from said generator, said sensing means comprising
(1) a winding linking the generator output power, and

(2) a series resistor-capacitor circuit in parallel with said winding,
(a) the impedance of the combination of said winding and said resistor-capacitor circuit being substantially uniform over the frequency range of the alternating generator output voltage
(i) whereby said sensed voltage is substantially independent of the frequency of the generator output voltage
(B) reference means having an impedance characteristic that has a nonlinearity at a threshold voltage,
(C) electronic means for applying a controllable impedance in parallel with the excitation delivered to the exciter,
(1) said electronic means being connected with said sensing means and said reference means to receive a regulating signal proportional to the difference between said sensed voltage and said threshold voltage,
(2) to control said impedance in response to said regulating signal to regulate the output power from the generator.

3,290,583
VOLTAGE REGULATORS
Walter Sinclair, Hemel Hempstead, England, assignor to Rotax Limited, London, England
Filed Jan. 24, 1963, Ser. No. 253,730
Claims priority, application Great Britain, Feb. 6, 1962, 4,463/62
6 Claims. (Cl. 323—9)

2. A D.C. voltage regulator comprising in combination a pair of input terminals, a pair of output terminals, a D.C. source connected between the input terminals, a load connected between the output terminals, a transistor having its collector and emitter connected between one of the input terminals and one of the output terminals, the other input terminal being connected to the other output terminal, a square wave oscillator connected across said input terminals so as to be operable by said D.C. source, said oscillator producing an output consisting of successive positive and negative half-cycles, a pair of switching circuits through which the output from the oscillator is applied to the base of the transistor so that at the commencement of each half-cycle of the oscillator the transistor is rendered conductive, a pair of controlled rectifiers connected in circuit with the base-emitter junction of said transistor, each of said controlled rectifiers serving when conductive to reverse bias said base-emitter junction to turn said transistor off, a pulse-producing circuit having connections to said output terminals, said pulse-producing circuit producing in each half-cycle an output pulse at a time in the half-cycle dependent on the output voltage across said output terminals, means connecting the output from said pulse-producing circuit to the gates of the controlled rectifiers, and biasing means operable by said oscillator for biasing said controlled rectifiers so that one of them is held non-conductive during the positive half-cycles of the oscillator output, and the other controlled rectifier is held non-conductive during the negative half-cycles of the oscillator output.

3,290,584
APPARATUS FOR PREVENTING FOULING OF pH METER ELECTRODES WITH FILTER ELEMENT TRANSPORTING MEANS
Van Doorsen Harms, Homewood, and Joe S. Johnson, Worth, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware
Filed May 13, 1966, Ser. No. 550,016
5 Claims. (Cl. 324—30)



1. Apparatus for supplying filtered liquid to a pH measurement cell that has at least two electrodes therein for projection into the filtered liquid within the cell, for measuring the pH thereof, comprising:
means providing a flowing supply of liquid to be sampled, with an exposed upper surface from which a sample can be drawn;
a sampling head that is formed with a face that confronts said liquid surface and that is formed with at least one opening through which liquid can be drawn into said head;
conduit means interconnecting and communicating with the opening in said liquid sampling head and said cell;
an elongate filter element, a part of which is interposed between the sampling head, over said opening, and the upper surface of the liquid, in contact with said liquid surface, said filter element being resistant to the liquor being filtered and of a material which will not alter the character of the filtrate;
means for effecting the continuous transport of said element across said opening during operation of said apparatus, thereby to present a continuously renewed fresh portion of the filter element to the liquid, and
means for continuously effecting transport of said liquid through said filter element, opening, conduit means, and cell, to permit continuous pH measurements to be made.

3,290,585
MAGNETIC FLOW METER SYSTEM WITH OVERRIDE CONTROL
Robert H. McHewell, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Aug. 6, 1962, Ser. No. 214,892
1 Claim. (Cl. 324—34)

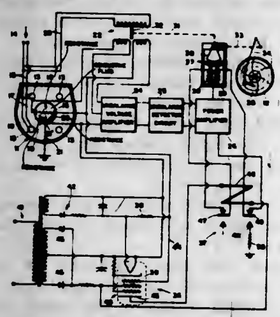
An improved magnetic flow meter circuit system comprising, in combination:
a magnetic flow meter unit for measuring electrically conductive fluid, a pipe in said flow meter through which fluid to be measured is passed, a pair of measuring electrodes and a grounded electrode in said pipe, and a power source of alternating current operatively connected to said flow meter unit,
a high input impedance alternating current unbalance measurement circuit, including said electrodes and

the electrical resistance between said electrodes, said resistance normally provided by the fluid being measured,

a direct current control circuit, including at least one of said measuring electrodes and said ground electrode, and the said electrical resistance therebetween,

and a mechanical system for rebalancing said measurement circuit, normally operatively connected as a feedback for said measurement circuit from the output of said measurement circuit,

said alternating current measurement circuit further comprising a differential transformer, a power connection to said transformer from said alternating current power source, and a signal connection to said transformer from said measurement electrodes, an unbalance voltage amplifier, a signal connection input from the output of said transformer to said voltage amplifier and a connection from said ground electrode to said voltage amplifier, an unbalance detector circuit, an input to said detector circuit from the output of said voltage amplifier, a power amplifier, an input to said power amplifier from the output of said detector circuit, an electromechanical transducer for operating said mechanical rebalancing system, an electrical input to said transducer from the output of said power amplifier, and an electrical switch in said output of said power amplifier between said power amplifier and said transducer,



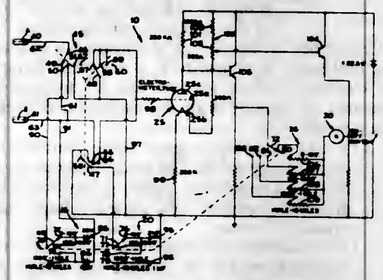
said direct current control circuit further comprising a gating device in the form of a pentode vacuum tube, a voltage divider circuit wherein one voltage divider circuit branch leads to ground through at least one of said flow meter measurement electrodes and said ground electrode, normally through fluid being measured in said flow meter, and another voltage divider circuit branch leads to a control grid in said pentode, and means electrically connecting the output of said pentode to said electrical switch in the output of said power amplifier, whereby said switch is operated when fluid is absent from said flow meter pipe, due to voltage change on said pentode grid in consequence of the voltage change between said electrodes in said flow meter pipe when fluid is absent from said pipe, and a separate power source which is operatively connected through said switch to said electromechanical transducer in the place of said output of said power amplifier to override said measurement circuit when said switch is operated through said control system,

said mechanical rebalancing system further comprising the mechanical portion of said electromechanical transducer, a movable ring in said differential transformer for varying the output of said transformer according to the position of said ring, and an operative connection between said ring and said mechanical portion of said electromechanical transducer.

3,290,586
APPARATUS FOR MEASURING THE DISTANCE TO AN OPEN CIRCUIT IN A CABLE PAIR INCLUDING MEANS FOR STORING A CHARGE COMMENSURATE WITH SUCH DISTANCE

Robert E. Anderson, Sunnyvale, Calif., assignor to Tel-Design Inc., a corporation of California

Filed Aug. 4, 1964, Ser. No. 387,377
15 Claims. (Cl. 324—52)

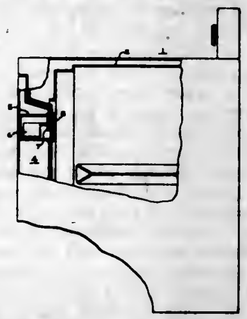


1. An open cable locator comprising terminal means for establishing a connection with conductors to be tested, voltage means connected to said terminal means for applying a predetermined voltage across conductors under test to charge the conductors under test with a potential charge, the conductors storing a charge commensurate with the uninterrupted linear distance thereof, storage means for storing a potential charge, means interconnecting said terminal means and said storage means for transferring potential charge across the conductors under test to said storage means, recording means having a calibrated scale to indicate linear distance and responsive to a potential charge for indicating the magnitude of the potential charge in linear distance, and means interconnecting said storage means with said recording means and responsive to the potential charge on said storage means for operating said recording means, said recording means being operated to give a direct reading of the uninterrupted linear distance of the conductors under test.

3,290,587
DRYNESS SENSOR FOR AUTOMATIC FABRIC DRYING MACHINE

Glenn R. Chafee, Jr., Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Mar. 16, 1964, Ser. No. 352,052
4 Claims. (Cl. 324—58.5)



1. A sensor for determining dryness of the contents of the fabric container of a fabric drying machine, said sensor comprising:

(a) a circuit board having a ground plane affixed to one surface thereof,

(b) oscillator means for generating a high frequency electric current,

(1) said oscillator means including a microstrip line affixed to said circuit board on the side opposite said ground plane and resonant at said high frequency,

(c) antenna means positioned for transmitting electromagnetic waves to the fabric container and for receiving the electromagnetic waves reflected therefrom,

(d) means connecting said microstrip line to said antenna means, and

(e) means connected to said antenna for detecting the electromagnetic waves reflected from the fabric container.

3,290,588
DIELECTRIC MEASURING SYSTEM INCLUDING PHASE INVERTING MEANS

Alan Norwich, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed Mar. 27, 1963, Ser. No. 268,268
17 Claims. (Cl. 324—61)



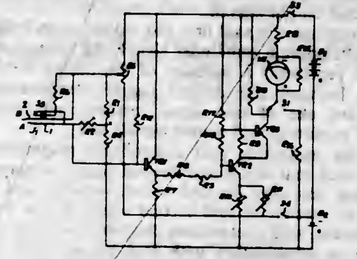
1. A system for determining a property of a dielectric material comprising: a measuring probe having first and second spaced electrodes for coupling said probe to said material, signal generating means for generating a first signal at a first frequency and a second signal at a second substantially different frequency, means connected to said signal generating means for coupling said first and second signals to said first electrode, a balancing impedance connected to said second electrode, phase inverting amplifier means having its input connected to receive the signals coupled to said first electrode for developing third and fourth signals at said respective first and second frequencies and substantially 180° out of phase with said respective first and second signals on said first electrode, means connected to said phase inverting means for applying said third and fourth signals through said balancing impedance to said second electrode to balance said first and second signals passing through said measuring probe so that there is no net signal developed at said second electrode at either of said first and second frequencies in the absence of said material at said probe, and output means connected to said second electrode for measuring a function of the signals developed thereat at both of said frequencies with said material at said probe as an indication of said property of said electric material.

3,290,589
DEVICE FOR MEASURING AND INDICATING CHANGES IN RESISTANCE OF A LIVING BODY

Lafayette R. Hubbard, Saint Hill Manor, East Grinstead, England

Filed June 7, 1965, Ser. No. 466,246
1 Claim. (Cl. 324—62)

In a resistance measuring and indicating device, a bridge network having on one side thereof a first resistance arm connected in series with a second resistance arm, and on the other side thereof a first voltage arm connected in series with a second voltage arm, there being connected in series between the junction of the first and second resistance arms and the junction of the voltage arms a transistorized amplifier circuit and current indicating means showing changes in balance of the bridge network, two electrode means adapted to be connected to a living body, said electrode means being connected respectively to the terminals of one of said resistance arms, whereby the living body can be connected across said one of the resistance arms, a range control comprising a potentiometer connected across said first voltage arm, said potentiometer having a sliding contact connected to the bridge network, one of said electrode means being connected to said sliding contact, a variable resistance connected between the other electrode means and the junction of the first and second resistance arms, said variable resistance being adjustable to enable a balance to be established in the initial setting of the bridge network, said amplifier circuit comprising a transistor emitter follower and cascaded second and third transistors connected to the output of the emitter follower, the collector

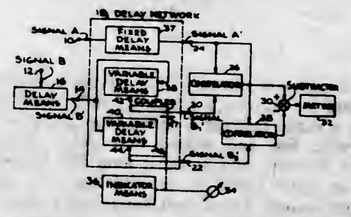


of the second transistor being connected to the emitter of the third transistor, whereby to provide voltage drift compensation, the indicating means comprising a moving coil meter connected in circuit with the collector of the third transistor and the first voltage arm, a sensitivity control branch connected across the second voltage arm and comprising two series-connected resistors, at least one of which is variable, the junction of said last-named resistors being connected directly to the emitter of the second transistor, said other electrode means being connected directly to the base of the transistor emitter follower, and a resistive negative feedback branch connecting the output of the amplifier to the base of the transistor emitter follower.

3,290,590
ELECTRICAL SIGNAL ANALYZING SYSTEMS

Melvin L. Baker, Woodland Hills, Calif., assignor to TRW Inc., a corporation of Ohio

Filed June 29, 1960, Ser. No. 39,674
15 Claims. (Cl. 324—68)



1. A measuring system for measuring an unknown magnitude of timing displacement between a desired signal component of a first time-varying electrical signal and a mutually coherent desired signal component of a second time-varying electrical signal, where said first and second signals include undesired signal components which are mutually coherent and displaced by a known fixed magnitude of timing displacement comprising in combination:

means for delaying a one of said signals such that said undesired signal components are brought into timing agreement;

means for developing a delayed version of said second signal;

means for developing first and second signal versions of said first signal which are respectively retarded and advanced relative to said delayed version of said second signal by a like controllable magnitude of time;

means for selectively changing said controllable magnitude of time to bring the desired signal components of a first one of said signal versions and said delayed version of said second signal into timing agreement;

means for correlating said first signal version with said delayed version of said second signal to develop a first output signal;

means for correlating said second signal version with said delayed version of said second signal to develop a second output signal;

means responsive to said first and second output signals for developing a remainder signal, the magnitude of which represents a measure of the timing displacement between the desired signal components of said first one of said signal versions and said delayed version of said second signal; and

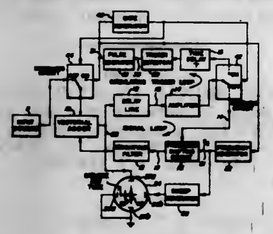
means for measuring said controllable magnitude of time such that when said desired signal components of said first one of said signal versions and said delayed version of said second signal are in timing agreement, said controllable magnitude of time when taken in combination with said known fixed magnitude of timing displacement will represent an accurate measure of the unknown magnitude of timing displacement.

3,290,591

COHERENT FILTER SPECTRUM ANALYZER INCLUDING DUAL RECIRCULATING LOOPS

Roy E. Bylington, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Apr. 25, 1963, Ser. No. 275,633
15 Claims. (Cl. 324—77)



1. A coherent memory filter having a circulating trigger loop for deriving a frequency shift signal by recirculating a signal through a closed loop comprising a pulse generator, first and second time delay means, and a trigger detector, and a signal loop for frequency scanning an input signal by recirculating said input signal through a closed loop circuit comprising a vectorial adder, said first time delay means, and a frequency shifter.

3,290,592

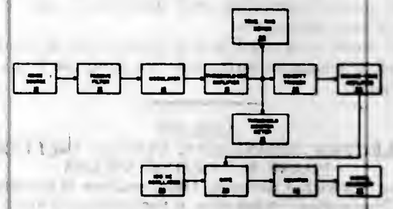
METHOD FOR MEASURING AND UTILIZING THE CUMULATIVE PROBABILITY DISTRIBUTION OF A PREDETERMINED SIGNAL PORTION OF NOISE

Lawrence C. Pharo, Jr., and Richard O. Rowlands, State College, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 9, 1963, Ser. No. 329,329
2 Claims. (Cl. 324—77)

1. The method of measuring the percent modulation of a noise signal within a predetermined frequency band, said signal having a predetermined type of modulation, comprising:

(a) generating a curve representative of the relationship between percent modulation and cumulative probability distribution for said type of modulation;



(b) passing said signal through an electronic circuit to produce a numerical reading characteristic of the cumulative probability distribution thereof; and

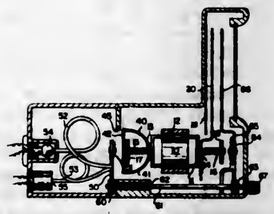
(c) comparing said numerical reading obtained from said signal with said curve to obtain the percent modulation corresponding thereto.

3,290,593

METER RELAY USING FIBER OPTICS FOR EASE OF REPLACING A LAMP AND PHOTOCELL

George J. Crowdes, Chesterland, Ohio, assignor, by mesne assignments, to API Instruments Company, Chesterland, Ohio, a corporation of Ohio

Filed Jan. 29, 1963, Ser. No. 254,779
1 Claim. (Cl. 324—96)



In a meter relay of the type having a signal responsive electromagnetic meter movement which includes a rotatable coil which takes an angular position, about an axis, corresponding to an input signal, and having a surface connected to said coil to be rotatable in a plane at right angles to said axis, said surface having a reflective portion and a non-reflective portion, the combination of

a relatively stationary hence readily replaceable lamp,

a flexible fiber optic bundle having a first end which is stationary and which receives illumination from said lamp and having a second end which is movable and arranged to illuminate a limited portion of said surface in one position thereof,

a relatively stationary photocell,

a flexible fiber optic bundle having a first end which is movable and arranged to view said limited portion of said surface when in said position and having a second end which is fixed and arranged to illuminate said photocell,

and meter relay set point adjusting means including rod and gear means for moving the second end of the first mentioned bundle and the first end of the second mentioned bundle relative to said surface.

3,290,594

POLYPHASE MULTI-ELEMENT INDUCTION METER WITH COMMON EDDY CURRENT ARMATURE HAVING SOLID AND SLOTTED LAMINATIONS

Thomas C. Drew, Jr., Raleigh, N.C., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 27, 1963, Ser. No. 261,317
10 Claims. (Cl. 324—107)



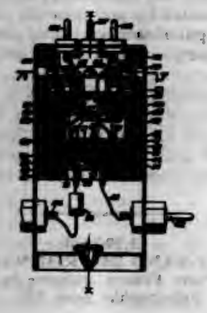
1. In an induction device responsive to an alternating quantity, a plurality of electromagnetic structures each having an air gap and electroresponsive means effective when energized for producing a shifting magnetic field in the air gap, an electroconductive armature mounted for rotation relative to the electromagnetic structures about an axis, said armature having a portion disposed in each of the air gaps to develop a torque acting between the electromagnetic structures and the armature about the axis in response to said shifting magnetic fields, said armature comprising a plurality of laminations of electroconductive material positioned adjacent to each other, each having a portion disposed in each of the air gaps, and substantially symmetric relative to said axis, a first one of said laminations being slotted to limit the paths therein for eddy currents produced by the shifting magnetic fields and a second one of said laminations having less than the number of slots provided in the first one of said laminations to provide substantial paths for eddy currents produced in the second one of said laminations by the shifting magnetic fields.

3,290,595

ELECTRICAL INSTRUMENT

Henry R. F. Novotny, South Pasadena, Calif., assignor to Applied Physics Corporation, Monrovia, Calif., a corporation of California

Filed Mar. 23, 1964, Ser. No. 353,876
30 Claims. (Cl. 324—120)



5. In a vibratory capacitor, a first capacitor electrode, a body member composed of an inorganic monocrystalline material having a ratio (Y/ρ) of Young's modulus (Y) to density (ρ) greater than about 5×10^{11} cm.^{2}/sec.^{2}, said body member being provided with a metallic layer thereon that acts as a vibrating capacitor electrode of said capacitor when said body member is vibrated.

9. In a vibratory capacitor, a circular plate having an electrode on one side thereof providing a vibrating electrode of said capacitor; and

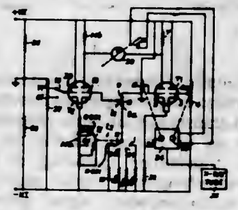
means engaging said plate only radially about its periphery for rigidly supporting said plate.

3,290,596

RATIO OF PERMISSIBLE TO ACTUAL X-RAY LOAD INDICATOR USING PLURAL LOGARITHMIC RESPONSE CIRCUITS

Jean Bougis, Paris, France, assignor to Compagnie Generale de Radiologie, Paris, France, a French body corporate

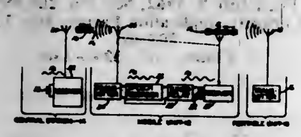
Filed July 9, 1962, Ser. No. 208,485
Claims priority, application France, July 21, 1961, 868,485
1 Claim. (Cl. 324—140)



In X-ray apparatus having first and second variable means for controlling respectively the operating voltage applied to the X-ray tube and the intensity of the current flowing therethrough, a protection arrangement comprising a voltage supply, first and second substantially identical amplifiers each including two amplifying electronic devices connected in parallel across said supply, a first voltage divider connected across said voltage supply for applying biassing voltage to the control electrode of one of said electronic devices of said first amplifier, said first voltage divider having logarithmic variation as a function of the exposure times for the X-ray tube and comprising a plurality of resistances which correspond respectively to different ranges of exposure time and are selectively connected to a logarithmic potentiometer having an adjustable contact for defining a specified exposure time within any one of said ranges, said adjustable contact being connected to said control electrode, a resistance common to both current flow paths through said two electronic devices of said first amplifier and having spaced tappings thereon corresponding respectively to said different ranges of exposure time, switch means for selectively connecting said plurality of resistances to said logarithmic potentiometer and said corresponding tappings to said voltage supply, means for applying a fixed biassing voltage to the control electrode of the other electronic device of said first amplifier, whereby said first amplifier produces a voltage output proportional to the logarithm of the maximum permissible load on said X-ray tube, means operative by said first variable means for applying a biassing voltage proportional to the logarithm of the operating voltage applied to the X-ray tube to the control electrode of one of said electronic devices of said second amplifier, means operative by said second variable means for applying a biassing voltage proportional to the intensity of the current flowing through said X-ray tube to the control electrode of the other electronic device of said second amplifier, whereby said second amplifier produces a voltage output proportional to the logarithm of the actual load on said X-ray tube, and indicator means connected between said two amplifiers and having said volt-

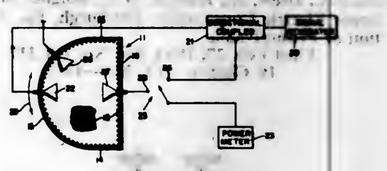
age outputs proportional to the logarithms of the maximum permissible load and actual load applied thereto in opposition, said indicator means therefore displaying the ratio of the maximum permissible load to the actual load, and means operable to produce a signal when said ratio has a predetermined value.

3,290,597
EMERGENCY ASSISTANCE RADIO SIGNALING SYSTEM
George R. Denny, Azusa, and Donald L. Stoner, Upland, Calif., assignors to Robert Berlin, La Verne, Calif., and Gilbert F. Mosley, Covina, Calif.
Filed Dec. 8, 1965, Ser. No. 517,168
7 Claims. (Cl. 325—64)



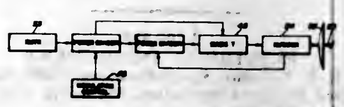
1. An automatic emergency assistance-calling communications system comprising in combination:
- a first radio transmitter of such proportions and configuration as to be concealable on one's person, said first transmitter including a frequency-controlled, radio-frequency signal generator, a multivibrator audio-frequency signal generator, electric circuit means coupling said audio-frequency generator to said radio-frequency generator for modulation of said radio-frequency generator with audio frequency signals of predetermined character, and switch means, coupled to said transmitter, and adapted to be manually operative for actuating said first radio transmitter when an emergency threatens the one who maintains said transmitter on his person;
- a first radio receiver, adapted to be responsive to the modulated signals transmitted by said first radio transmitter, and including circuit means therein adapted to receive and demodulate the modulated radio-frequency signals transmitted by said first transmitter and for deriving therefrom a switching control signal;
- a second radio transmitter having therein a first source of modulating signals in the form of a speech modulator and a second source of modulating signals in the form of a predetermined code signal generator for identifying the particular second radio frequency transmitter by the predetermined code signal, and switching circuit means coupled with said first receiver and adapted to be responsive to said switching control signals to transfer said second transmitter from said speech modulation source to said second source of modulating signals for transmitting a carrier signal modulated by said predetermined code signal; and
- a second radio receiver located in a central station and including therein a characteristic display indicator adapted to be responsive to said predetermined code signal modulating the carrier of said second transmitter and being received by said second radio receiver, said display indicator being further adapted to display an identifying indication characteristic of the particular predetermined code signal being received from that particular second transmitter, said display being an indication of the need for assistance and the location of the one needing assistance whereupon immediate aid can be dispatched from said central station.

3,290,598
MICROWAVE ANECHOIC CHAMBER
David W. Thomas, 66 Hillview, Ventura, Calif.
Filed Sept. 28, 1964, Ser. No. 399,945
11 Claims. (Cl. 325—67)



1. A microwave anechoic chamber for accommodating means for propagating microwaves in a variety of azimuths either simultaneously or successively, and a receiver, comprising:
- a plurality of surfaces assembled to define an enclosure:
- said surfaces being generally arcuate in the enclosure area where microwaves are propagated and generally planar in the enclosure area where the microwaves are received; and
- said propagating means positionable along said arcuate area;
- whereby a quiet zone is provided which extends over a wide arc from the receiver thereby enabling tests to be made from a variety of positions without significant change in the power level at the receiver.

3,290,599
POWER MODULATOR FOR TRANSMITTER BEAM SCAN
William L. Vana, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 29, 1955, Ser. No. 556,370
8 Claims. (Cl. 325—178)

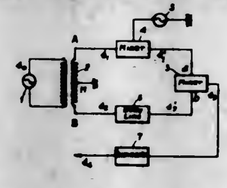


1. A power modulator comprising, a source of electromagnetic energy, a pair of separate paths in shunt for conducting energy from said source, means for combining the energy conducted by said separate paths, an antenna receiving the output of said combining means for radiating the combined energy, a junction in one of said paths, said junction including a load for absorbing energy and a path for transmitting energy, means in said one of said paths for proportioning the energy in said one of said paths between said load of said junction and said transmission path of said junction, and means for dividing the energy flowing from said source between said separate paths.

3,290,600
WIDE-BAND DISCRIMINATORS
Léon Malsser, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 31, 1963, Ser. No. 298,819
Claims priority, application France, Aug. 14, 1962, 906,920, Patent 1,338,811
2 Claims. (Cl. 325—345)

1. A frequency discriminator for extracting the information from a frequency modulated wave, the carrier frequency of which is variable, comprising: a mixer having

two inputs and an output; another mixer coupled to one of said inputs; means for feeding to said other mixer said wave and a fixed frequency signal; a delay line coupled to



said other input; means for phase shifting said wave by a predetermined phase shift; means for feeding said phase shifted wave to said delay line; and a phase discriminator coupled to said output.

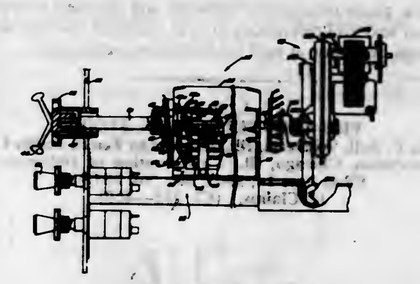
3,290,601
LINE CORD AND MONOPOLE ANTENNA SYSTEM
Rosario Pizzarello, Primos, and Adolph G. Kardoley, Philadelphia, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 7, 1963, Ser. No. 286,292
7 Claims. (Cl. 325—372)



1. In a line-operated radio receiver including a chassis and a radio frequency input circuit, an antenna system comprising a line cord adapted to connect the power supply circuits of said receiver to a source of electrical power, means having a low impedance at carrier wave frequencies connecting the receiver end of the line cord to the receiver chassis, means for coupling one terminal of the radio frequency input circuit of said receiver to the line cord at a point physically displaced along said line cord from the receiver-connected end thereof, a monopole antenna element independent of said line cord and means connecting a second terminal of said radio frequency input circuit of said receiver to said monopole antenna element.

3,290,602
REMOTE CONTROL TV TUNER
Fred M. Hayden, Sherman Oaks, and Orris K. Paddock, Pacific Palisades, Calif., assignors to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 148,118, Oct. 27, 1961. This application Aug. 19, 1965, Ser. No. 484,782
14 Claims. (Cl. 325—393)

12. In a television receiver having a plurality of stations,
- a chassis,
- a tuner mounted on said chassis,
- a first shaft rotatably mounted on said tuner for rotation in first and second opposite directions,
- support means rigidly secured to said first shaft to rotate therewith,
- a plurality of separate coil means secured to said support means, each of said coil means being tuned to a different one of the stations, said shaft being rotatably mounted on said chassis to permit each of said coil means to be rotated into an operative position providing the selection of the associated station, a drive motor detachably secured to said chassis and having a drive shaft disposed adjacent said first shaft,
- means resiliently and detachably coupling said drive shaft to said first shaft for transferring torque from said drive shaft to said first shaft in the first and second opposite directions only after a predetermined amount of angular motion therebetween and in accordance with the operation of the drive motor,
- control circuit means operatively interconnected with said motor for initially obtaining the operation of said motor means,
- self holding means in said control circuit means for maintaining said motor energized after the motor has been initially energized,
- switch means having a normally open position and a closed position and mounted adjacent said support means and electrically interconnected with said control circuit means, said switch means when in the closed position being effective to operate with said self holding means to energize said motor,

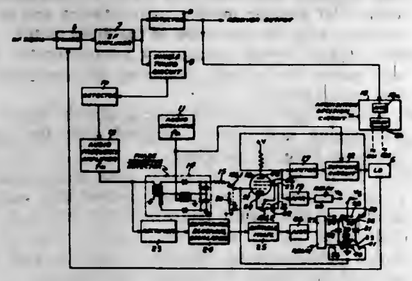


- a separate detent on said support means for each of said coil means, said detents being positioned for closing said switch means whenever said coil means are disposed between said operative positions,
- fine tuning means on each of said coil means, each of said fine tuning means being movable between a retracted position and an extended position, said fine tuning means when in said retracted position being effective to fine tune the coil means without affecting the switch means, said fine tuning means when in said extended position being effective to open said switch means whenever the coil means associated with said fine tuning means is disposed in said operative position, and
- means operatively associated with said control circuit means for obtaining an initial energizing of said motor.

3,290,603
FREQUENCY CONTROL SYSTEM
Gerald Rabow, Brooklyn, N.Y., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Sept. 6, 1958, Ser. No. 760,285
13 Claims. (Cl. 325—421)

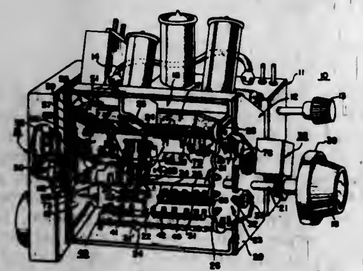
1. An automatic frequency search and control system for a superheterodyne receiver capable of operation on either the upper sideband or lower sideband which includes a mixer coupled to a source of input signals, an oscillator and an intermediate frequency amplifier coupled to said mixer and a detector coupled to said intermediate frequency amplifier, said system being adapted to tune said oscillator over a given frequency range and to halt said tuning when the oscillator frequency bears a predetermined relationship to the frequency of said input signal, means to frequency modulate the output of said oscillator with a reference signal, means coupled to said detector and responsive to detection of an input signal from said source, which is indicative that said predetermined relationship has been attained, to halt the

tuning of said oscillator, and means to detect from the output of said intermediate frequency amplifier said reference signal and responsive to an error signal indicative



of the phase relationship between said detected reference signal and said reference signal to maintain the frequency of said oscillator at said predetermined relationship.

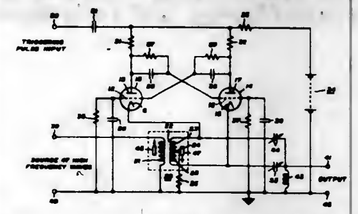
3,290,604
VHF–UHF TELEVISION TUNER
John F. Bell, Wilmette, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed June 14, 1963, Ser. No. 287,922
12 Claims. (Cl. 325—459)



10. A television turret tuner comprising:
a rotatable carriage having provisions for accommodating an array of tuning strips individually assigned to a predetermined television channel;
and a stationary tuner chassis comprising a plurality of active circuit elements and a pair of concentric stationary contact assemblies, one inboard and one outboard of said array of tuning strips;
all of said active circuit elements being mounted on said chassis and connected in a circuit having access points coupled to said stationary contact assemblies,
said tuning strips individually being provided with passive frequency-determining circuit elements and at least one of said strips having two sets of contacts respectively adapted to engage said stationary contact assemblies to complete said tuner circuit when said one strip is presented to a predetermined index station.

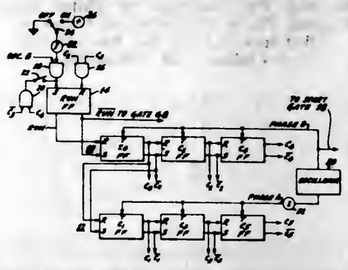
3,290,605
PHASE REVERSAL CIRCUIT
John G. Humphrey, Mattydale, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 15, 1963, Ser. No. 323,975
8 Claims. (Cl. 328—155)

1. In combination, a transformer having a primary winding and a secondary winding, a load impedance, means for coupling each end of said secondary winding to one end of said load impedance, a resistance for coupling an intermediate point of said secondary winding to the other end of said load impedance, and means for



coupling alternately each of the ends of said secondary winding to the other end of said load impedance.

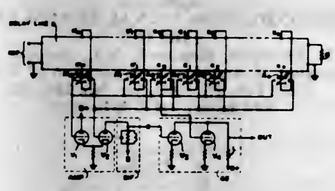
3,290,606
ELECTRONIC CIRCUIT PRODUCING PULSE SEQUENCES OF DIFFERENT RATES
Robert A. Rodner, Lake Park, Fla., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,099
8 Claims. (Cl. 328—62)



1. A pulse generator comprising,
a first register having a plurality of flip-flops connected in cascade,
a second register comprising a plurality of flip-flops connected in cascade,
each of said flip-flops having set and reset inputs and corresponding outputs, and a trigger input for setting the flip-flop to a state determined by the set and reset inputs, said cascade connection of each of said first and said second register including circuit means connecting said set and reset inputs of said flip-flops to respective outputs of preceding ones of said flip-flops within each of said first and said second register
an oscillator,
means for applying one phase of oscillator pulses to the trigger inputs of said first register flip-flops,
means for applying the other phase oscillator pulses to the trigger inputs of said second register flip-flops, said other oscillator pulses being 180° out of phase with respect to said one phase pulses, and
a decoder comprising a plurality of gates, a different one for each output pulse to be produced,
each of said gates having inputs connected to outputs of certain flip-flops of both of said registers,
said gates producing output pulses which have a different repetition rate from that of said oscillator.

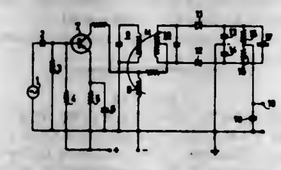
3,290,607
ECHO-TYPE EQUALIZER WHICH DIFFERENTIATES ECHO SIGNALS
Koichi Endo, Tokyo, and Mamo Kawashima, Yokohama-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Apr. 22, 1963, Ser. No. 274,764
6 Claims. (Cl. 328—162)

1. An echo equalizer comprising delay means having a main tap and a plurality of echo taps, respective adjustor means connected to each echo tap and having respective outputs, said adjustor means providing signals at their outputs, circuit means connected to the outputs of the adjustor means for adding their signals, and differentiating



means connecting the output of said circuit means to said main tap for differentiating the echo signals and producing with the signal at the main tap an equalized output signal.

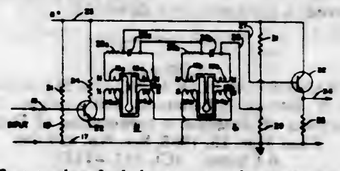
3,290,608
CIRCUIT FOR COUPLING A TRANSISTOR TO AN ANGULAR MODULATION DETECTOR
Erich Gschwandtner, Rexdale, Ontario, Canada, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1964, Ser. No. 361,843
Claims priority, application Canada, Apr. 23, 1963, 873,846
4 Claims. (Cl. 329—103)



1. A circuit for the demodulation of angular modulated signals, comprising first and second resonant circuits tuned to a common center frequency, said first and second resonant circuits comprising inductively coupled primary and secondary windings respectively, said secondary winding having a center tap, a tertiary winding tightly inductively coupled to said primary winding, means connecting one end of said tertiary winding to said tap and the other end thereof to a point of reference potential, a source of angular modulated signals, a transistor having a collector electrode, means connecting said collector to said one end of said tertiary winding whereby said signals are coupled to said primary winding only by the inductive coupling between said primary and teritary windings, and diode load means connected to said second resonant circuit for producing an output voltage representative of angular modulation of said signals about said center frequency.

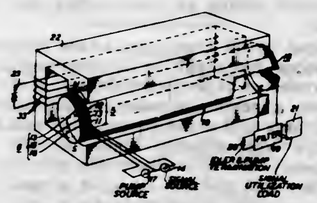
3,290,609
DOUBLE FORK, TUNING FORK RESONATOR FILTERS
Robert R. Shreve, Massapequa, N.Y., assignor to Philamon Laboratories, Inc., Westbury, N.Y., a corporation of New York
Filed Jan. 23, 1964, Ser. No. 339,762
7 Claims. (Cl. 330—1)

1. A tuning fork resonator comprising a first tuning fork, a second tuning fork, drive means for each said fork, pickup means for each said fork, means coupling said drive means to receive a drive signal from a common source and means coupling said pickup means to provide a signal to a common output with the signal due to stray coupling between said drive means and said pickup means



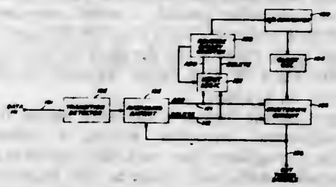
of said first tuning fork in an opposite sense to and substantially cancelling the signal due to stray coupling between said drive means and said pickup means of said second tuning fork.

3,290,610
ELASTIC TRAVELING WAVE PARAMETRIC AMPLIFIER
Bert A. Auld, Menlo Park, Calif., and Herbert Matthews, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 21, 1966, Ser. No. 529,848
4 Claims. (Cl. 330—4.6)



1. An elastic wave amplifier comprising:
an element of nonconductive magnetic material;
means for launching two transverse elastic waves within said element for propagation therein in a given direction;
said elastic waves having different frequencies and being polarized at right angles to each other and to said direction of propagation;
means for applying a steady magnetic field to said magnetic material in a direction parallel to the direction of polarization of the lower frequency wave;
and means for extracting amplified wave energy at said lower frequency from said element.

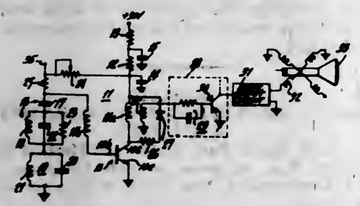
3,290,611
DIGITAL FREQUENCY CONTROL CIRCUIT
Robert L. Horlacher and Mason A. Logan, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 14, 1965, Ser. No. 487,212
9 Claims. (Cl. 331—14)



1. In a synchronizing circuit for a clock oscillator wherein the phase of the clock output pulse is compared with the phase of incoming signals to derive indications of the phase difference, the combination of means respon-

sive to said indications for modifying the frequency of said clock oscillator in accordance therewith, and means for precluding the application of said indications to said frequency modifying means, said preclusion means rendered operable when the repetition rate of said indications exceeds a predetermined threshold.

3,290,612
TRANSISTOR BLOCKING OSCILLATOR
Thomas W. Burns, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,606
6 Claims. (Cl. 331—112)



1. A transistor blocking oscillator for producing a regularly recurring pulse output comprising:
a transistor having an input circuit and an output circuit,
said input circuit comprising means including a first capacitor for supplying an exponential potential determinative of the inter-pulse period of said output pulses, a parallel resonant circuit having a first inductance and a second capacitor tuned to a frequency approximately equal to the operating frequency of the oscillator for providing, in conjunction with said first capacitor, a rapidly changing input potential to said transistor to start each oscillation cycle, and a second inductor coupled in series relation with said first capacitor, said first capacitor and second inductor forming a series resonant circuit tuned to a frequency substantially greater than said parallel resonant frequency and selected such that the duration of each output pulse exceeds the duration of one-half cycle of oscillation in said series resonant circuit by a fraction of a cycle, said input circuit further comprising a third capacitor having a substantially smaller capacitance than either said first or second capacitor and coupled in parallel with said second inductor for bypassing said inductor to permit rapid turn-on of said transistor.

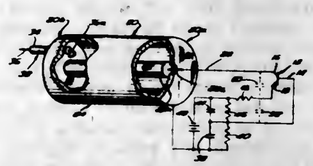
3. A transistor blocking oscillator for producing regularly recurring output pulses comprising:
a transistor having an input circuit and an output circuit,
said input circuit comprising means including a first capacitor for supplying an exponential potential substantially determinative of the interpulse period of said output pulses, an inductor coupled in series relation with said first capacitor, said first capacitor and said inductor forming a series resonant circuit tuned to a frequency such that the duration of each output pulse exceeds the duration of one-half cycle of oscillation in said series resonant circuit by a fraction of a cycle,
said input circuit further comprising means including an additional capacitor having a substantially smaller capacitance than said first capacitor coupled in parallel with said inductor for bypassing said inductor to permit rapid turn-on of said transistor and a resistor coupled in parallel with the combination of said additional capacitor and inductor for damping relatively high frequency oscillations in said combination,
whereby a potential waveform is produced in said input circuit which is substantially free of amplitude variations at said relatively high frequency.

3,290,613
SEMICONDUCTOR SIGNAL TRANSLATING CIRCUIT
Gerald E. Theriault, Hopewell, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,452
11 Claims. (Cl. 331—117)



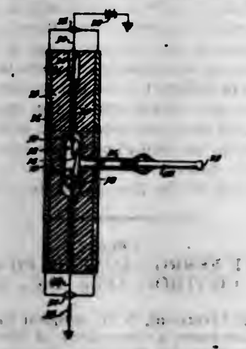
1. An electrical circuit comprising:
an insulated-gate field-effect semiconductor device having source, gate and drain electrodes formed on a substrate of semiconductor material, and which has a rectifying junction between said substrate and source electrodes,
an input circuit including a resistor and a capacitor connected between said gate and source electrodes,
means including a direct current connection between said gate electrode and said semiconductor substrate for establishing said substrate at substantially the same potential as said source electrode under steady state conditions whereby voltage excursions at said gate electrode in one polarity direction are rectified by the rectifying junction appearing between said substrate and source electrodes, and
an output circuit connected to said drain electrode.

3,290,614
HIGH FREQUENCY OSCILLATOR HAVING DISTRIBUTED PARAMETER RESONANT CIRCUIT
Joseph E. Racy, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 20, 1964, Ser. No. 353,424
14 Claims. (Cl. 331—117)



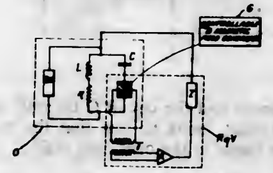
1. A three-reactance radio frequency oscillator comprising, in combination,
(A) a coaxial distributed parameter resonant circuit having an inner line and outer shield forming a first oscillator reactance, said inner line and outer shield
(1) forming first and second spaced conductive sections,
(2) possessing a resonant frequency at which the energy therein has an electric field component between said conductive sections,
(B) a transistor having a first current carrying terminal, a second current carrying terminal and a third control terminal,
(1) said transistor having an internal capacitance between said first and second current carrying terminals forming a second oscillator reactance,
(2) said transistor having a further internal capacitance between said first current carrying terminal and said control terminal forming a third oscillator reactance,
(3) said first current carrying terminal being connected to one of said spaced conductive sections,
(4) said second current terminal being connected to the other of said spaced conductive sections,
(5) said three reactances substantially determining the frequency of oscillation of said oscillator,
(C) a source of potential,
(D) a bias circuit,
(1) connected in parallel with said source of potential,
(2) said bias circuit comprising a resistive voltage divider,
(a) one end of said voltage divider being connected to one of said spaced conductive sections, and
(b) the other end thereof being connected through an impedance to said first current carrying terminal,
(3) said control terminal being connected to said resistive voltage divider intermediate the ends thereof,
(4) capacitive means connected in parallel with said resistive voltage divider, and
(5) means interconnecting intermediate points of said capacitive means and said resistive voltage divider.

3,290,615
MERCURY-WETTED FIXED ELECTRODE ELECTRIC ARC GENERATOR
Peter K. Ludwig, South Bend, Ind., and Juan T. D'Alessio, Buenos Aires, Argentina, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 23, 1965, Ser. No. 466,489
5 Claims. (Cl. 331—127)



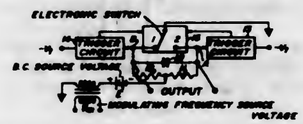
1. Apparatus for generating an electrical discharge of very short duration comprising:
(1) a gas-tight capsule containing a pressurized gas;
(2) first and second conducting electrodes extending into said capsule;
(3) means for continuously wetting the surface of one of said electrodes with a thin coat of liquid metal;
(4) means for fixedly mounting said first and second electrodes within said capsule to form a narrow spark gap defined on one side by a small surface area of one of said electrodes; and
(5) means for applying a potential difference between said electrodes sufficient to generate an electrical discharge across said spark gap causing the gap potential difference to decrease, whereby said pressurized gas quenches the spark.

3,290,616
HALL EFFECT FREQUENCY CONTROL IN OSCILLATING CIRCUITS
Joël Goyet and Bernard Letellier, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Feb. 7, 1964, Ser. No. 343,353
Claims priority, application France, Feb. 12, 1963, 924,500, Patent 1,356,360
2 Claims. (Cl. 331—177)



1. An arrangement for controlling the frequency of an oscillating circuit comprising a parallel resonant circuit having two branches, said arrangement comprising: a Hall plate having two first terminals and two second terminals, said plate being inserted by means of said first terminals in one of said branches; means for coupling said second terminals to a point common to said branches; and means for applying a controllable magnetic field to said plate.

3,290,617
FREQUENCY MODULATED RELAXATION OSCILLATOR
Edward Bellem, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Quebec, Canada
Filed July 9, 1962, Ser. No. 208,381
21 Claims. (Cl. 332—14)

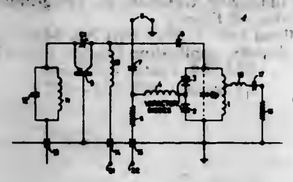


1. A frequency modulated relaxation oscillator comprising a reactive relaxation element, means for causing current flow to flow in one direction to said element and in the reverse direction to said one direction to said element for an interval of time under control of a modulating frequency source voltage superimposed upon a D.C. source voltage, and means for alternating the flow to said element in said one and reverse directions whenever the voltage across or the current flowing to said element reaches a predetermined level of one polarity and substantially the same level of opposite polarity respectively.

3,290,618
FREQUENCY MODULATED TRANSISTOR OSCILLATOR
Hans Leysieffer, Munich-Solln, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Sept. 25, 1963, Ser. No. 311,365
Claims priority, application Germany, Sept. 28, 1962, S 81,779
6 Claims. (Cl. 332—30)

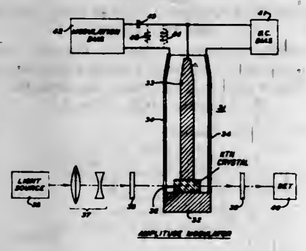
1. An oscillator having a frequency-determining resonant circuit and a feedback coupling path which can be modulated in frequency by a modulating voltage comprising, capacitor means disposed in the frequency-determining resonant circuit of the oscillator which is connected to and variable in synchronism with the modulating voltage and has a capacitance characteristic corresponding to varactor diodes, a resistor, a series resonant circuit, means including said series resonant circuit for connecting said

resistor to said frequency-determining resonant circuit externally of said feedback coupling path of the oscillator, the tuning of said series resonant circuit above the highest



operating frequency and the circuit Q thereof, with inclusion of said resistor, being so low that the modulation characteristic is linear in the operating region.

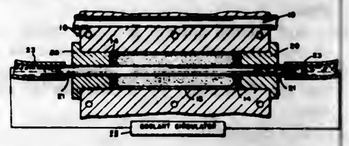
3,290,619
HIGHLY EFFICIENT DEVICES USING CENTROSYMMETRIC PEROVSKITE CRYSTALS BIASED TO SEVERAL π PHASE RETARDATIONS
Joseph E. Geusic, Berkeley Heights, and LeGrand G. Van Uitert, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 19, 1964, Ser. No. 353,049
14 Claims. (Cl. 332—7.51)



1. Device comprising a body consisting essentially of an electro-optic perovskite crystalline material having a center of symmetry, together with a first means for applying a biasing electric field across at least a portion of the said body, the said biasing electric field being of sufficient magnitude to bias the said body to several π phase retardations, together with a second means for applying a modulating electric field across at least a portion of the said body, the maximum value of said modulating electric field being sufficient to produce an additional π phase retardation, and together with means for transmitting electromagnetic wave energy through a portion of the said body, the relationship between the said second means and the said electromagnetic wave energy being such that a variation in the former produces a variation in the latter.

3,290,620
LIQUID COOLED MICROWAVE SWITCH
William H. Wright, Jr., Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 3, 1963, Ser. No. 306,398
9 Claims. (Cl. 333—13)

1. A duplexer comprising a body of heat and electrically conductive material, means for inserting said body transversely in a waveguide, a single wall cylindrical dielectric discharge chamber inserted in and closely fitting in an aperture extending transversely thru said body, a charge of ionizable gas sealed into said chamber, a metal tube extending thru the gas in said chamber and sealed into the wall thereof said tube being adapted for connection to



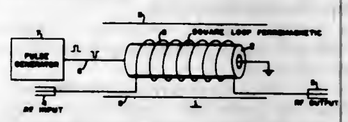
a supply of coolant and a resonant iris in said body communicating from said waveguide to said chamber.

3,290,621
ELECTROMECHANICAL BAND FILTER
Karl-Heinrich Krambeer and Friedrich Kloesmund, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Apr. 2, 1964, Ser. No. 356,981
Claims priority, application Germany, Apr. 3, 1963, S 84,540
3 Claims. (Cl. 333—71)



1. An electromechanical band filter comprising a continuous mechanical transmission line, at least one mechanical resonator connected to said line, a mechanical reactance in the form of a sidebranch connected to said transmission line, said resonator and said sidebranch each having oppositely disposed ends, and each operatively attached at one of such ends to the mechanical transmission line, and the respective opposite ends being free, such attachments falling in a common cross-sectional plane of said mechanical transmission line, said resonator having such physical dimensions with respect to the particular form of oscillation involved that it acts as a single series resonance circuit to generate an attenuation peak at a frequency falling in the blocking range of the filter, said side branch having such length and cross-sectional dimensions, which are different from the corresponding length and cross-sectional dimensions of the resonator, that it acts as a parallel resonance circuit and with the reactance component of the mechanical resonator generates a matching point in the frequency characteristics of the filter at a frequency falling in the pass range thereof.

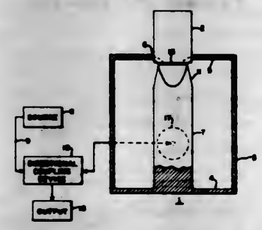
3,290,622
MICROWAVE FERROMAGNETIC PHASE SHIFTER HAVING CONTROLLABLE D.C. MAGNETIZATION
Hugh A. Hair, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 27, 1963, Ser. No. 326,582
13 Claims. (Cl. 333—24.1)



1. A ferromagnetic device for applying a controllable phase shift to RF energy propagating through said device comprising:
(a) a ferromagnetic element having a central bore,
(b) means, including a D.C. magnetizing current conductor wound through said bore, for selectively applying within said element a D.C. magnetization oriented in one of two opposing directions,

(c) a conductor having coupled thereto said RF energy, said conductor being wound along said element so as to produce in response to said RF energy a rotating RF magnetic field within said element disposed in orthogonal spatial relationship with said magnetization, said RF energy being of sufficiently high frequency capable of supporting interaction between said RF magnetic field and precessing electron spins of said ferromagnetic element, whereby an applied D.C. magnetization in one direction provides an appreciable interaction and thereby a first phase delay of the propagating RF energy and an applied D.C. magnetization in a second direction provides essentially no interaction and thereby a second phase delay of said propagating RF energy.

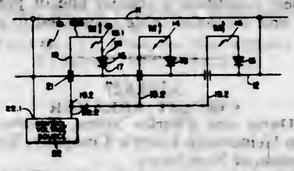
3,290,623
APPARATUS FOR THE GENERATION OF PHONONS BY PIEZOELECTRIC EFFECTS
Joseph W. Brouillette, Jr., Jamesville, N.Y., Heiang Hsu, Columbus, Ohio, and Stephen Wanuga, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 17, 1964, Ser. No. 360,718
14 Claims. (Cl. 333—30)



1. Apparatus for providing efficient coupling between RF electromagnetic energy and phonon energy by piezoelectric effects comprising:
(a) means for supporting said RF electromagnetic energy having a first conductor and a second conductor spaced therefrom, said electromagnetic energy exhibiting an RF electric field extending between said conductors, the first conductor having a free end region at one end of said means so as to provide an effective electrical open circuit at said one end with the electric field thereat a maximum,
(b) said free end region being tapered to a reduced cross-sectional area tip disposed so as to establish between said tip and a portion of said second conductor an electric field of increased density,
(c) a piezoelectric member for supporting said phonon energy, said member being interposed between said tip and the second conductor portion so that the increased density electric field is coupled through said member, whereby efficient coupling is provided between said RF electromagnetic energy and said phonon energy.

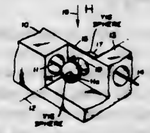
3,290,624
PHASE SHIFTER IN ITERATIVE CIRCUITS USING SEMICONDUCTORS
Marion E. Hines, Weston, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,689
15 Claims. (Cl. 333—31)

1. Circuit for introducing a phase shift into an electromagnetic wave propagating in a transmission line comprising: a section of transmission line, a semiconductor device capable of being voltage-biased to establish at least one of its electrical characteristics, means reactively coupling said device to said line, said coupling means being arranged to couple said device so lightly to said wave that electromagnetic voltage and current, each of a magnitude which is small with respect to the respective



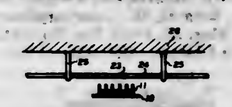
magnitudes of the voltage and current components of said wave, are imposed across said device, and means independently to apply a unidirectional voltage across said device to control an electrical characteristic thereof and thereby control the effect of said coupling means.

3,290,625
YIG FILTER
Robert J. Bertram, Dallas, Richard C. Brown, Richardson, and Joe A. Simpson, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,875
15 Claims. (Cl. 333—73)



1. In a high frequency transmission channel having input and output paths each having a central conductor, a filter which comprises:
(a) a first YIG sphere encompassed by the end portion of the first of said central conductors,
(b) a second YIG of spherical shape encompassed by the end portion of the second of said central conductors wherein said YIG's are aligned on a common axis,
(c) an electrostatic shield between said YIG's having a hole therethrough centered on said axis, and
(d) means for impressing a variable magnetic field which passes through the spheres at right angles to said axis to vary the center frequency of the band of electromagnetic energy to be transmitted from one of said conductors to the other through said hole.

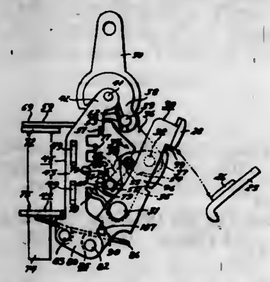
3,290,626
SURFACE WAVE TRANSMISSION
Theodore Hafner, 1501 Broadway, New York, N.Y.
Filed Dec. 28, 1964, Ser. No. 421,539
8 Claims. (Cl. 333—95)



1. In a signal transmission system for a predetermined operating frequency range comprising surface wave conducting means and pickup means including a number of parallel conductors extending radially towards said surface wave conducting means and spaced from each other approximately at distances corresponding to the operating wave length divided by the number of said radial conductors; and a conducting sheet forming the ground plane for said pickup means and extending in a direction substantially perpendicular to said radial conductors; said radial

conductors being conductively interconnected by conducting means extending substantially parallel to said ground forming sheet, spaced therefrom in such a manner so that said conducting means together with said ground forming sheet constitute a coaxial line of predetermined impedance and a coaxial cable connected to said coaxial line.

3,290,627
CIRCUIT BREAKER
Ralph B. Davis and Charles Muse, Trenton, N.J., assignors to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey
Filed Apr. 26, 1965, Ser. No. 450,983
9 Claims. (Cl. 335—9)



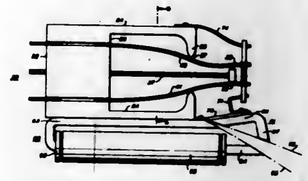
1. In combination, a case, a collapsible linkage means housed within said case, a stationary contact supported within said case; said linkage means comprising a handle extending outside of said case, a movable contact engageable with said stationary contact, a movable arm for moving said movable contact into and out of engagement with said stationary contact, a toggle pivotally connected at one end portion to said movable arm and at the other end portion to said handle, said toggle being formed by two links pivotally connected to each other to form the toggle knee portion, and spring means for automatically resetting said linkage means after electromagnetic tripping and collapsing of the linkage means so that the contacts can be reclosed by movement of said handle from the contacts open position to the contacts closed position; and an electromagnetic tripping device including an armature for initiating movement of said linkage means to the open position of said contacts, said movable arm defining a space between said movable contact and its pivotal connection to said toggle, the toggle knee portion being in telescopic relation with said space so that upon the electromagnetic tripping of, and the collapse of, said linkage means the toggle knee portion moves into said space and back toward its automatically reset position.

3,290,628
CONTACTOR WITH NOVEL CONTACT HOUSING
Robert L. McGary, Batavia, Ill., assignor to Furnas Electric Company, Batavia, Ill., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 441,964
3 Claims. (Cl. 335—131)



1. In an industrial type relay, in combination, a base actuator including a housing containing a field magnet, a solenoid in close surrounding relation with the field magnet for magnetizing the same when the solenoid is energized, an armature retained by the housing and which is reciprocated in one direction when the field magnet is magnetized, a contact block in stacked relation on the base actuator and removable as a unit from the base actuator, a plurality of stationary contacts retained by the block and which are disposed in pairs of spaced but aligned relation as regards each pair, a plurality of bridging contacts for engaging the pairs of stationary contacts, respectively, to electrically close the circuits controlled thereby, a carrier for the bridging contacts mounted in the contact block for limited reciprocating movement to thus effect similar movement of the bridging contacts, and said armature and movable carrier being releasably interconnected by releasable interconnecting means, said carrier and said contact block removable as a unit from said armature and base actuator.

3,290,629
WIRE SPRING RELAY WITH IMPROVED MEANS FOR DETERMINING CONTACT FORCE
Armand L. Jeanne, Granville, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 25, 1964, Ser. No. 369,973
8 Claims. (Cl. 335—133)



1. In an electromagnetic switching device, the combination comprising:
- a pair of outer members each including deflecting means and an outer clamping means;
- an inner member including inner clamping means, said inner member disposed between said outer members with said inner clamping means adjacent to said outer clamping means on each of said outer members;
- a plurality of contacts mounted on said inner member; and
- a pair of wire spring combs each comprising a plurality of two-ended wire springs, each of said combs disposed between an outer member and said inner member with each wire spring therein bowed around the deflecting means on said outer member with one end thereof urged toward one of said contacts and the other end thereof clamped between adjacent inner and outer clamping means.

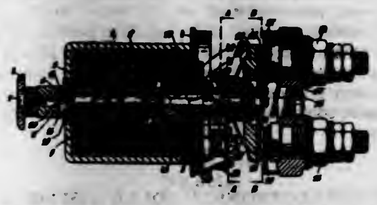
3,290,630
FLASHER SWITCH EMPLOYING A PERMANENT MAGNET AND A SWITCH BLADE COMPOSED OF A CURIE POINT MATERIAL
Robert M. Dykstethouse, Charlevoix, and Maurice M. Orisrey, Walloon Lake, Mich., assignors, by mesne assignments, to Thompson Industries, Inc., Indianapolis, Ind., a corporation of Massachusetts
Filed May 11, 1964, Ser. No. 366,326
6 Claims. (Cl. 335—146)

1. In a flasher switch, the combination comprising:
(a) an elongate resilient switch blade element having a portion thereof of reduced cross-sectional configuration, said switch blade element rigidly mounted at one end thereof, said switch blade element composed entirely of material which loses its magnetic permeability upon heating due to the passage of a current therethrough;
(b) a fixed contact element in spaced apart register with the free end of said elongate switch blade element; and



(c) a magnet in a fixed spaced apart relationship to said switch blade element and said fixed contact, said magnet adapted to cause said switch blade element to bend into contact with said contact element while said switch blade retains its magnetic permeability.

3,290,631
LATCHED CLOSED ELECTRIC SOLENOID SWITCH
Victor Bedgood, Maidens Green, Bracknell, and Eric Arthur Adams Fagan, Camberne Cemmens, Camberne, England, assignors to Albright (Engineers) Limited, Surbiton, England, a British company
Filed Aug. 13, 1963, Ser. No. 301,858
5 Claims. (Cl. 335—168)



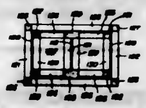
1. An electric solenoid of the single winding type having a movable armature and latching means movable in response to movement of said armature to effect latching and unlatching thereof in response to momentary energization and subsequent momentary re-energization respectively of the solenoid winding, means for effecting de-energization of the solenoid winding after each momentary energization thereof and restoring means for returning the armature to its initial position without actuation of the latching means upon each de-energization of the winding, wherein the latching means includes a stop member, fixedly mounted within a casing of the solenoid, camming means arranged to move with movement of the armature, a rotatable latching member provided with camming surfaces and a slot within which the stop member is normally located to inhibit rotation of the latching member, which latter member is provided with a plurality of cut-away portions, the arrangement being such that in response to energisation of the solenoid winding, the armature moves forward carrying forward the camming means which coact with the camming surfaces of the latching member, initially pushing the latching member forward until the latter is disengaged from the stop member, following which rotation of the latching member is effected by cooperation of the camming means and camming surfaces of the latching member, until the stop member latches within a cut-away portion of the latching member to inhibit rotation thereof.

3,290,632
DISPLAY DEVICE WITH A PLURALITY OF 180° WINDINGS ANGULARLY DISPLACED FROM ONE ANOTHER AROUND AN ANNULAR CORE
Aloysius Edward Kaczewicz, Torrington, Conn., assignor to The Patent Button Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 21, 1964, Ser. No. 405,491
2 Claims. (Cl. 335—272)



1. In an electromagnetic indicator of the type utilizing
(1) a stator having windings mounted upon an annular core, the stator establishing any one of a plurality of discretely oriented magnetic fields upon the electrical energization of a selected one of the windings, and
(2) a rotor having a salient pole magnet mounted to pivot within the annular core whereby the magnet rotates into alignment with the magnetic field established by the stator,
the improvement wherein
(a) each winding of the stator extends over an 180° arc of the core that is angularly displaced relative to the 180° arc occupied by any of the other windings, and
(b) the windings are in overlapping relationship whereby each winding establishes a magnetic field whose orientation is different from the orientation of the magnetic fields established by the other windings.

3,290,633
LAMINATED CORE WITH BIDIRECTIONAL JOINTS
Takashi Kuriyama and Minoru Ozawa, Hitachi-shi, Japan, assignors to Hitachi Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 12, 1962, Ser. No. 244,178
Claims priority, application Japan, Dec. 14, 1961, 36/44,904
3 Claims. (Cl. 336—60)

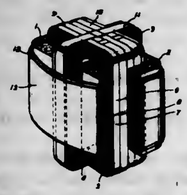


1. A magnetic core structure for transformers comprising a plurality of stacked layers of laminations formed from magnetic strip material having a preferred direction of magnetic orientation, said plurality of stacked layers consisting of an alternate arrangement of first and second core units in stacked relationship, said first core units comprising at least two leg members and at least two interconnecting yoke members of unidirectional magnetic strip material diagonally jointed to form a substantially rectangular core and said second core units comprising at least two leg members and at least two yoke members of unidirectional magnetic strip and substantially rectangular joint sections of bidirectional magnetic strip material interconnecting said leg and yoke members to form a substantially rectangular core,
said magnetic core structure having at least one substantially rectangular window therein with the preferred direction of magnetic orientation in each of said unidirectional leg and yoke members being substantially parallel to the side of the member which defines a side of said window,

said bidirectional joint sections having substantially transverse directions of magnetic orientation parallel to the directions of magnetic orientation of said leg and yoke members, respectively,

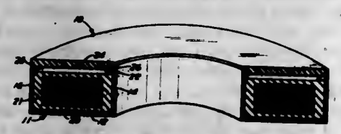
said first and second core units each having at least one intermediate leg member so that said magnetic core structure has at least two substantially rectangular windows therein, the intermediate leg member in said first core unit having a symmetrical point at either end thereof connected to substantially the center of the respective yoke members of said first core unit and the intermediate leg member in said second core unit being joined to the yoke members of said unit by means of substantially rectangular joint sections of bidirectional magnetic strip material.

3,290,634
MAGNETICALLY SHIELDED TRANSFORMER
Bruce E. Stevens, Closter, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 31, 1963, Ser. No. 320,403
1 Claim. (Cl. 336—84)



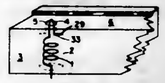
A transformer comprising: a primary coil wound around a central axis; a secondary coil wound around a central axis, said secondary coil and said primary coil being disposed with their central axes in parallel and being wound so that the stray fields generated by each are aiding; a main core for magnetically coupling said primary and secondary coils; a pair of yokes for magnetically shunting said primary and said secondary coils; and a single band encircling said primary and said secondry coil, said main core, and said yokes for reducing the magnitude of said stray fields, said band having a height less than the height of said primary and said secondary coils and comprising an inner layer of grain-oriented silicon steel 40 mils thick and an outer layer of copper 80 mils thick.

3,290,635
DAMPED MAGNETIC CORES
Charles F. Hofmann and Ronald N. Sampson, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 7, 1964, Ser. No. 343,414
4 Claims. (Cl. 336—100)



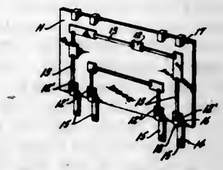
1. In an encased magnetic core, in combination, a sealed non-magnetic enclosure consisting of an electrically insulating material, having walls forming a toroidal chamber, a toroidally wound magnetic core comprising a magnetic material highly sensitive to strains, including strains induced by vibration, disposed within the toroidal chamber in the sealed enclosure, the magnetic core being freely disposed within the chamber, and a silicone gel composition filling the sealed enclosure to dampen the magnetic core, the composition being composed of 2.5 to 4.0 percent by weight of dimethylsilbemioxane terminated dimethylsiloxane fluid and the remainder dimethylsiloxane fluid containing about 0.5 to 2.0 mol percent of methylvinylsiloxane cured to a gel at an elevated temperature.

3,290,636
THIN-FILM CIRCUIT CONNECTOR
Gilles Jozias Overtveld, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Nov. 27, 1963, Ser. No. 326,434
Claims priority, application Canada, Sept. 30, 1963, 885,639
9 Claims. (Cl. 339—17)



1. Apparatus for establishing connection to a thin-film circuit including a substrate and a thin conductive film deposited on said substrate, said film including an area to which contact is to be made, comprising; an electrically insulating block, said block defining a recess therein and a surface for reception of said thin-film substrate, said block defining an orifice in said surface adjacent said area and connecting with said recess, a spring member in said recess having a portion thereof projecting through said orifice in the absence of said substrate for a predetermined distance, a terminal board for mounting said block means attaching said block to said board and fastening means carried on said board for the end of said spring opposite to that of its projecting portion, said spring being precompressed in said recess and fastened by said fastening means, said projecting portion contacting said area of said substrate upon reception of said substrate by said block, said spring being thereby compressed through said predetermined distance and exerting a predetermined contact preasure against said thin-film circuit area.

3,290,637
MICROELECTRONIC MODULE ASSEMBLY
Leonard J. Yuska, Greenwood, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 9, 1963, Ser. No. 329,324
1 Claim. (Cl. 339—17)

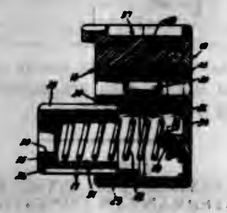


A microelectronic module assembly comprising:

a nonconducting substrate having a front surface and substantially parallel top and bottom surfaces, said front surface having deposited thereon a plurality of thin-film components at least two of which are conductor pads, and

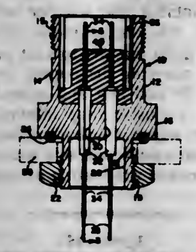
a plurality of terminals, one each for each said conductor pad, each said terminal extending along and being adjacent the entire height of said back side and having a contact portion comprised of a double layer of folded metal and extending beyond said bottom surface and first and second inwardly opposed U-shaped bends, said first U-shaped bend being in contact with said bottom surface and having the end portion thereof in contact with one of said conductor pads and said second U-shaped bend being in contact with said top surface and having the end portion thereof in contact with said front surface of said substrate.

3,290,638
LAMPHOLDERS FOR ELECTRIC DISCHARGE LAMPS
John M. Pistey, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed Oct. 1, 1963, Ser. No. 313,061
6 Claims. (Cl. 339—86)



5. A lampholder for an electric lamp comprising a split housing formed of insulating material with front and rear vertical walls in perpendicular relationship to side walls, said split housing including a pair of housng sections joined to form said side walls of said split housing, one of said housing sections having a ribbed projection extending from one of said vertical walls into the other of said housing sections in interlocking relation therewith, at least one resilient contact strip disposed in edgewise relation between the vertical wall of said other housing section and said ribbed projection, said strip being formed with a first and second contact portion, and said projection including means for locking said resilient contact strip in said other housing section, means including said first contact portion for establishing an electrical connection with the electric lamp, and means for connecting the second contact portion of the contact strip in circuit with at least one conductor lead.

3,290,639
CONNECTOR
William G. Driemeyer, Webster Grove, Mo., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Sept. 14, 1962, Ser. No. 223,775. Divided and this application Aug. 9, 1965, Ser. No. 482,988
8 Claims. (Cl. 339—94)



1. An electrical connector comprising, a base member having an opening extending therethrough, an insulating ceramic ferrule having a portion extending through said opening, said ferrule having an enlargement at one end thereof engageable with a portion of said base member to prevent movement of said ferrule in one direction with respect to said base member, an electrical conductor rigidly secured intermediate said ferrule with a portion thereof extending outwardly of said ferrule in a direction opposite said one direction, a moldable elastic dielectric member encasing the part of said portion of said conductor adjacent said ferrule and the portion of said ferrule adjacent thereto, and said dielectric member being bonded during the molding thereof at least to the said base member and said part of said portion of said conductor.

3,290,640
SEALED R.F. CRIMP TYPE COAXIAL CONNECTOR MEANS
Edgar Wilmot Forney, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 22, 1964, Ser. No. 369,509
10 Claims. (Cl. 339—177)



1. In a coaxial connector for cable of the type having an inner conductor surrounded by dielectric material and an outer conductor further surrounded by a protective sheath, the combination including a pair of connector halves having conductive outer shell portions and conductive center pin members each supported by a dielectric plug member within the shell member, the outer shell and inner contact pin member of the halves being intermatable, each connector half including a rear extension and a sleeve member adapted to be crimped thereover to mechanically join the cable to the connector half, the rear extension being of a diameter to fit within the outer conductor of the cable and the sleeve member including a forward portion adapted to be fitted over the cable outer conductor and crimped inwardly to common the outer conductor to the extension, the sleeve member further including a rear portion of greater inner diameter sized to fit over the outer protective sheath of the cable and to be crimped inwardly to grip the cable at a point spaced from the first mentioned crimp, the sleeve including intermediate the two crimps an internal recess carrying a gasket member of a diameter less than that of the outer diameter of the cable sheath such as to be held in compression when said sleeve is mounted on said cable to terminate each said connector half.

3,290,641
ELECTRICAL PLUG-AND-SOCKET CONNECTIONS
Leslie George Mountjoy Payne and Edward Thomas Buckeridge, both % Newbridge Works, Somerset, Bath, England
Filed June 15, 1964, Ser. No. 375,152
Claims priority, application Great Britain, July 10, 1963, 27,306/63
1 Claim. (Cl. 339—266)

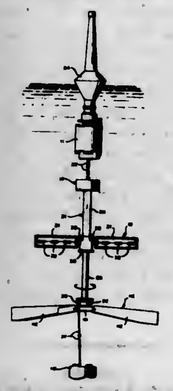
An electrical plug-and-socket connection including a metal socket block for the reception of a plug, said block having a socket part of which one face contains a socket hole extending from said face only partly through the socket part, and a main body integrally extending from said socket part and having a face coplanar with the aforesaid face containing the socket hole and an end face at right-angles thereto, said main body containing a first slot lying in a plane substantially parallel to the axis of said hole cutting into the latter and opening out at the said co-planar face of the said body and also at the right-angular face to form a longitudinally split socket, a second slot in said main body not cutting into the socket hole and lying substantially parallel with the first slot, thereby forming a clamping tongue in the main body, both slots extending only

partly through the main body, in combination with a bore in said main body parallel to the axis of the socket hole, and intersected by the second slot, said bore con-



taining a threaded clamping pin having a conical tapered part adapted by rotation to flex the said clamping tongue and close the socket into a plug gripping condition.

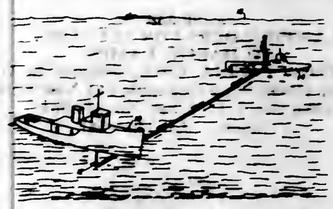
3,290,642
DIRECTIONAL SONOBUOY
Russell I. Mason, Doylestown, and Francis E. Buck, Warminster, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 8, 1965, Ser. No. 424,448
10 Claims. (Cl. 340—2)



1. A directional sonobuoy comprising:
a buoyant means;
a directional hydrophone means depending from said buoyant means; and
motor means drivingly connected to said hydrophone means for causing the latter to rotate, said motor means being slidable relative to said hydrophone means along the rotation axis for acoustically isolating said motor means during normal sonar operation.

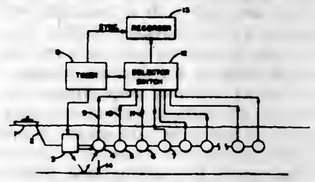
3,290,643
SIMPLIFIED METHOD OF SUBMARINE DEPTH DETERMINATION
Louis R. Padberg, Jr., 4126 Middlesex Drive, San Diego, Calif.
Filed May 25, 1955, Ser. No. 511,136
3 Claims. (Cl. 340—3)

1. The method of remotely determining the depth of a submerged submarine comprising circling a target suspected of being a submarine, projecting a series of energy pulses in a plurality of paths respectively converging on said target, determining the paths which yield the direct echo of maximum amplitude designating beam aspect, increasing the pulse strength until a surface echo appears,



and reducing the length of said energy pulses until the main echo and surface echo are separated by a time period indicating submarine depth.

3,290,644
SEISMIC SYSTEMS FOR INVESTIGATING SUBTERRANEAN CONDITIONS
Hartley Hoskins, Henrietta, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 3, 1963, Ser. No. 249,301
5 Claims. (Cl. 340—7)

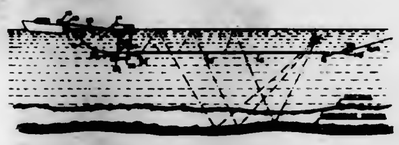


1. In a system for obtaining simultaneously a forward and reverse seismic profile of a subterranean location,
a first and second sound source;
a multiplicity of sound receivers equally spaced therebetween;
means for moving said sound sources and said sound receivers over said location;
means for activating said first sound source at times t_1, t_3, t_5, etc., and said second sound source at times t_2, t_4, t_6, etc.;
a selector switch having a plurality of input circuits and a single output circuit;
a first and second recorder;
means for coupling each of said sound receivers to a different input circuit of said selector switch;
means for advantaing said selector switch at times t_1, t_2, t_3, etc., to different positions thereby to connect each of said input circuits to said output circuit;
and means for coupling the output circuit of said selector switch to said first and second recorders during mutually exclusive time intervals whereby said first recorder registers sound pulses originating at said first sound source and said second recorder registers sound pulses originating at said second sound source.

3,290,645
METHOD AND UNDERWATER STREAMER APPARATUS FOR IMPROVING THE FIDELITY OF RECORDED SEISMIC SIGNALS
George M. Pavey, Jr., Dallas, and Raymond H. Pearson, Richardson, Tex., assignors, by mesne assignments, to Whitehall Electronics Corporation
Filed Feb. 13, 1964, Ser. No. 344,670
16 Claims. (Cl. 340—7)

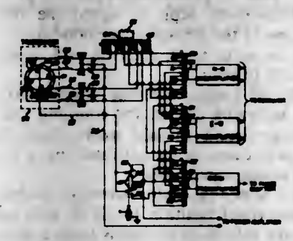
7. The method of producing a high fidelity graph of a seismic wave within a body of water initiated by an acoustical impulse within the water and reflected from a sub-

bottom layer which is cumulative with the character of the layer and unaffected by a spurious secondary wave reflected by the air-water interface which comprises the steps of
(1) firing an explosive shot within the water,
(2) detecting the pressure wave reflected from the subbottom layer at a plurality of wave detecting stations disposed within the water at the same fixed depth greater than the depth at which the shot was fired and making a graph thereof,
(3) sensing the particle velocity of the water accompanying the pressure wave at the same depth the pressure wave was detected and making a graph thereof,



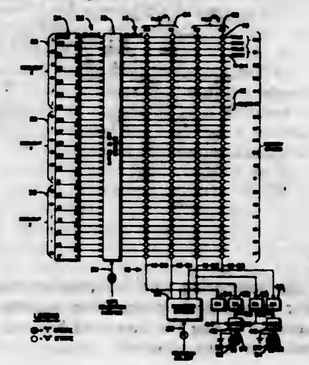
(4) detecting both the secondary pressure wave and the accompanying velocity wave at said depth caused by a secondary reflection of the seismic wave from the air-water interface and making two separate graphs respectively corresponding thereto,
(5) combining the first two named graphs to produce a high fidelity graph of the subbottom layer, and
(6) combining the secondary signals corresponding to said secondary pressure and particle velocity waves in a manner to cancel the graphic effect of the secondary signals on the high fidelity graph.

3,290,646
SONAR TRANSDUCER
Stanley L. Ehrlich, Middletown, R.I., and Paul D. Frolich, Scituate, Mass., assignors to Raytheon Company, Waltham, Mass., a corporation of Delaware
Original application Apr. 6, 1960, Ser. No. 20,444, now Patent No. 3,176,262, dated Mar. 30, 1965. Divided and this application Nov. 9, 1964, Ser. No. 409,874
6 Claims. (Cl. 340—8)



1. In a transducer the combination comprising: a cylindrical base; a plurality of annular active elements each encircling a different portion of said base than the others of said elements encircle; means acoustically isolating said elements from said base and from each other; a plurality of substantially parallel and axial electrodes extending substantially the length of said active elements; means for connecting certain of said electrodes one to another to provide a reference ground voltage and a plurality of output voltages; and a combining network including four transformers each having a plurality of input windings and an output winding, said input windings being connected to each other and to said reference ground voltage and said output voltages to provide two dipole pattern voltages and an omnidirectional pattern voltage.

3,290,647
WITHIN-LIMITS COMPARATOR
Earl C. Joseph, Bloomington, and Albert Kaplan, St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 1, 1962, Ser. No. 191,547
23 Claims. (Cl. 340—146.2)



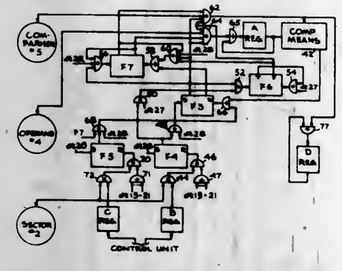
1. Apparatus for comparing an external binary word to a plurality of other binary words, comprising: a plurality of memory storage registers each capable of storing preselected digits of numbers in digit order stages, every two memory registers constituting a register pair for storing numbers defining upper and lower numerical limits; each stage which stores said preselected digits comprising a pair of storage elements respectively storing signal representations of the true and complementary value of the stored digit; an external storage register for containing a test number, each digit order stage of said external register including means for developing a signal representation of the value of the digit stored therein; means for applying said developed signal representation of each external register stage to the corresponding digit order stages of said memory storage registers for effecting at least a momentary change in the stored signal representation in those stages which store said preselected digits when the stored digit order value is not equal to the corresponding test number digit order value; and means coupled to each register pair for sensing change in both registers of the respective pairs resulting from said applied signals.

3,290,648
COMPARATOR
Jack C. Smeltzer, Woodland Hills, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, a corporation of Delaware
Filed Jan. 2, 1963, Ser. No. 249,999
19 Claims. (Cl. 340—146.2)

1. Data processing apparatus adapted to compare each of a first set of numbers with a corresponding number in a second set of numbers comprising:
memory means;
means storing information representing said first set of numbers in said memory means;
means storing information representing said second set of numbers in said memory means;
means for accessing information from said memory means;
means connected to and controlling said memory accessing means for accessing information representing a series of numbers comprised of every other second set number and for accessing information represent-

ing a different first set number between each pair of adjacent numbers in said series;

register means for successively storing said information representing each of said second set numbers; and



means for comparing said information stored in said register means with information representing a first set number during the time said first set number information is being accessed.

3,290,649

DELAY LINE SIGNAL DETECTOR

Harper J. Whitehouse, Hacienda Heights, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 24, 1963, Ser. No. 333,241
8 Claims. (Cl. 340—146.2)

1. A method of detecting the presence of a signal train composed of component parts which may vary between two signal states, and occurring in a predetermined timed relationship and having a total characteristic represented by a predetermined combination of component parts, comprising the steps of:

(a) twisting an elongated conductor, such as a wire, in response to the signal in a twist cycle away from its neutral position in such a manner that each cycle propagates a deformation wave along the wire having spaced portions moving in opposite directions of circumferential movement,

(b) selectively varying the twist cycle in response to the signal in a manner providing either of the two orders of sequence of the opposite directions of circumferential movement during a single cycle,

the cycles of twist producing a traveling wave along said conductor, the order of sequence and spacing of the oppositely circumferentially moving portions of which correspond to the characteristic of said signal, and

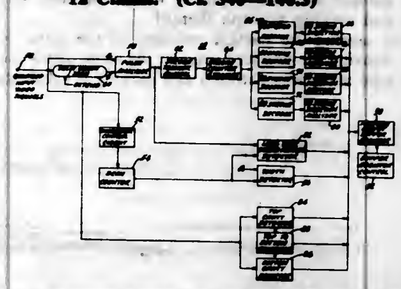
(c) applying discrete magnetic flux fields to the wire crossing its circumferential surface at predetermined spaced points along its length and in essentially one radial direction at each point, and at such spacing and with such direction of flux polarity to produce an aggregate voltage in said conductor which is an indication of the presence of said signal.

3,290,650

CHARACTER READER UTILIZING STROKE AND CAVITY DETECTION FOR RECOGNITION OF CHARACTERS

John M. Bailey, Jr., Barrington, Robert L. Adams, Haddonfield, and Julius Agin, Cherry Hill, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed May 13, 1963, Ser. No. 279,842
12 Claims. (Cl. 340—146.3)



2. In a character reader for reading characters from a document, different ones of said characters being formed of different outline traces on said document, the outline traces of said characters exhibiting a plurality of topographical features including strokes, said character reader including means for scanning successive ones of said characters by a plurality of scans to derive video signals representing the topography of said characters, the combination comprising,

means for detecting pulses in said video signals to detect strokes in a character,

means for comparing pulses in successive scans of a character to generate stroke information signals for each stroke detected in said character,

a plurality of stroke analyzing circuits, one for each stroke in a character, for analyzing said stroke information signals,

a stroke tracker having a plurality of positions with each containing a differently coded signal for tagging each detected stroke with a different label,

means for successively positioning each of said coded signals into a prescribed position in said stroke tracker on every scan to signal the successive redetections of the strokes corresponding to said coded signals so as to track each of said detected strokes from scan to scan,

a plurality of gates, each one coupled to a different stroke analyzing circuit, for coupling said stroke information signals to said stroke analyzing circuits, each of said gates being activated by a different one of said coded signals, and

means for applying each successive coded signals in said prescribed position to all of said gates to pass the stroke information signals from a detected stroke into its corresponding stroke analyzing circuit.

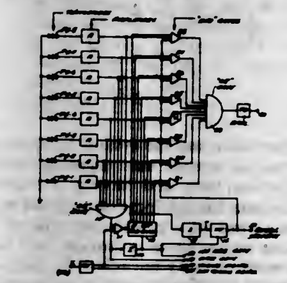
3,290,651

CHARACTER RECOGNITION SYSTEM EMPLOYING CHARACTER DATA DIGITIZER AND BLACK AND WHITE DATA DIODE MEMORY ARRAY

Eldred H. Pauve, Susquehanna, Pa., and Robert B. Grouly, Binghamton, and Frank P. Lewandowski, Johnson City, N.Y., assignors, by mesne assignments, to Character Recognition Corporation, Binghamton, N.Y., a corporation of Delaware

Original application Oct. 17, 1961, Ser. No. 149,144. Divided and this application Dec. 23, 1965, Ser. No. 515,815
18 Claims. (Cl. 340—146.3)

1. In character recognition apparatus, means for scanning a character to be recognized and for providing a bi-valued pulse train characteristic of said character, comprising, in combination: means for moving a document bearing characters to be read in a first direction; a plurality of photo-sensitive elements disposed in a row which extends in a second direction perpendicular to said first direction; means for generating a periodic timing signal; an electronic ring counter connected through a first coincidence gate to be advanced through successive counts by successive occurrences of said timing signal, said counter having a stage individual to each of said photo-sensitive elements; an OR gate having a plurality of input lines; a plurality of AND gates each



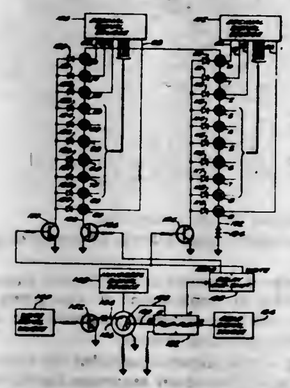
having a first input line connected to a respective one of said photo-sensitive elements and a second input line connected to a respective stage of said counter to connect signals from successive of said photo-sensitive elements successively to respective ones of said input lines of said OR gate, thereby to provide serial output pulse trains from said OR gate; bi-stable switch means connected to be operated by said ring counter to change state during certain count conditions of said ring counter; and circuit means connecting said switch means to said AND gates to open and close said AND gates during predetermined count conditions of said ring counter.

3,290,652

MAGNETIC ENCODING SYSTEM

Wilbur E. Du Vall, Gardena, Calif., assignor, by mesne assignments, to The Electrada Corporation, Los Angeles, Calif., a corporation of Delaware

Filed June 13, 1962, Ser. No. 202,151
3 Claims. (Cl. 340—147)



1. A coder-decoder circuit arrangement comprising a first plurality of magnetic cores, a second plurality of magnetic cores, each of the magnetic cores in said first and second plurality having two states of magnetic remanence respectively designated as the one and zero state and being drivable from one to the other upon the application of magnetomotive forces thereto, each of the magnetic

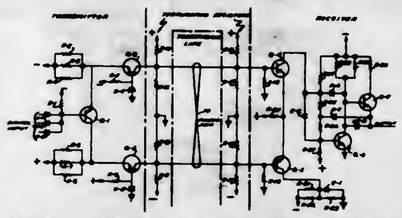
cores in said first plurality of cores being representative of a different numerical digit of a second order, each of the magnetic cores in said second plurality of cores being representative of a different numerical digit of a first order, a plurality of groups of sensing windings, the number of groups of sensing windings in said plurality being equal to the number of cores in said first plurality of cores, the number of sensing windings in a group of sensing windings being equal to the number of cores in said second plurality of cores, each said group of sensing windings being inductively coupled to a single core in said first plurality of cores, each sensing winding in a group of sensing windings being inductively coupled to a different one of the cores in said second plurality of cores, a different sensing circuit connected to a different one of the sensing windings, means for applying a writing drive to successive cores in said first and second pluralities of cores to drive one core in each said plurality to its one state, means for applying a reading drive to all the cores after a writing drive to drive them to their zero state whereby a voltage is induced in the sensing lines coupled to those of the magnetic cores which respond to said reading drive, and means in each of said sensing circuits for providing at particular times an indication whenever a sensing winding connected thereto is inductively coupled to two cores which are driven simultaneously from their one to their zero states of magnetic remanence.

3,290,653

SINGLE ENDED TO DOUBLE ENDED TO SINGLE ENDED COMMUNICATION SYSTEM

Leo F. Slattery, St. Paul, and Henry W. Schoenherr, Minneapolis, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 10, 1963, Ser. No. 250,692
9 Claims. (Cl. 340—147)



1. A communication system for transferring digital information from one location to another comprising a source of single-ended digital information, a transmitter connected to said source for converting said single-ended digital information to a double-ended signal and for transmitting said double-ended signal, transmission means over which said double-ended signal is transmitted, and receiver means for receiving said transmitted double-ended signal and for utilizing the polarity of said double-ended signal with respect to a reference level to reconvert said signal to a single-ended signal representative of the digital information.

3,290,654

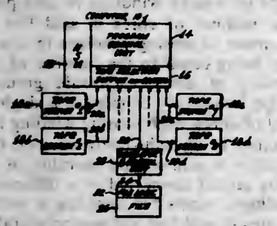
INFORMATION HANDLING SYSTEM

Albert S. Rettig, Haddonfield, N.J., David Z. Cohen, Tel Aviv, Israel, and Orval A. Gwinn, Pennsauken, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Mar. 8, 1961, Ser. No. 94,253
7 Claims. (Cl. 340—172.5)

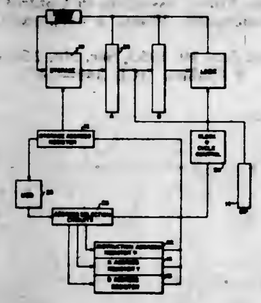
1. In a system having a plurality of signal lines, and means for applying command signals selectively to said signal lines for determining and controlling the mode of operation of a first equipment normally connected to said signal lines, the combination comprising: said signal lines;

a simulator and control unit connected to said lines in place of said first equipment; a second equipment, different in kind from said first equipment, connected to said simulator and control unit, said second equipment requiring for control of its operation different, other com-



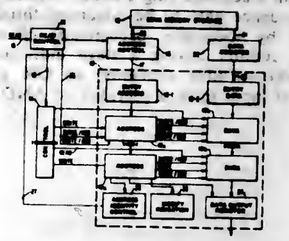
mand signals than those available on said selected lines; and logic circuit means in said unit responsive to the types and sequence of successive sets of command signals applied on said lines for generating therefrom the command signals required to determine and control the mode of operation of said second equipment.

3,290,655
PROGRAM CONTROL FOR DATA PROCESSING MACHINE
Roger E. Abernathy, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 26, 1962, Ser. No. 247,939
4 Claims. (Cl. 340—172.5)



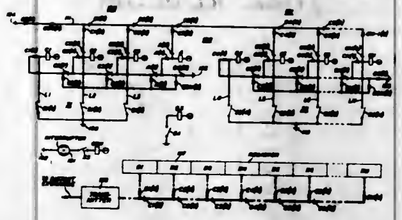
1. In a data processing machine controlled by a program comprising a series of instruction steps,
a storage means storing manifestations representing operands and other manifestations representing instructions,
means for normally addressing said instructions successively in storage in a predetermined order,
means for normally addressing certain operands in storage,
means for selectively monitoring a predetermined condition which may occur during the operation of the machine in performing the program and for generating an electric signal upon the occurrence of said predetermined condition,
means for generating control signals for utilizing the contents of said addressing means for reading out data from the designated location in storage,
bistable gating means,
electronic switching means, and
means under control of the coincidence of said control signals and said condition signal to change the state of said bistable gating means to selectively condition said electronic switching means for substantially simultaneously interchanging said addressing means upon the occurrence of the predetermined condition.

3,290,656
ASSOCIATIVE MEMORY FOR SUBROUTINES
Arvin R. Lindquist, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,504
19 Claims. (Cl. 340—172.5)



1. An information storage system comprising an associative information storage unit requiring relatively short information-access time and having a relatively small number of discrete storage locations, means responsive to each succeeding one of a preselected type of address-selected read-out operation of a storage unit having large information word capacity but relatively long access time for automatically effecting storage in successively selected storage locations of said associative storage unit of at least an identifiable portion of the address supplied to the large capacity storage unit and at least a portion of the address-selected word read therefrom, and means controlled by an identifying portion of a selection address supplied at any time to said associative storage unit for effecting rapid-access information translation with respect to any storage location thereof which stores an address identifying portion corresponding to said identifying portion of the selection address.

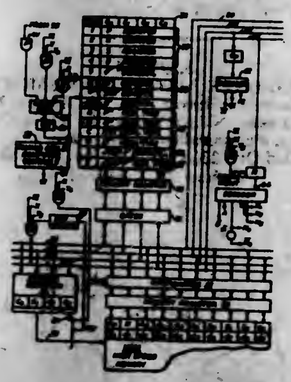
3,290,657
SEQUENCE CONTROL CIRCUIT
George Riddell, Linecroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 4, 1963, Ser. No. 327,979
10 Claims. (Cl. 340—172.5)



1. A sequence circuit comprising
means for generating a train of energizing potential pulses;
a first chain of sequence control means each energized responsive to application of energizing potential thereto and held energized responsive to application of holding potential thereto;
energizing circuit means controlled by each energized one of said first chain sequence control means for applying the next succeeding one of said pulses in said train only to the next succeeding one of said first chain sequence control means;
first holding circuit means controlled by each energized one of said first chain sequence control means for applying holding potential to said energized one of said first chain sequence control means;

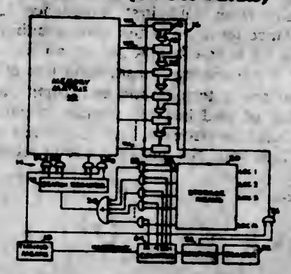
first release circuit means controlled by each energized one of said first chain sequence control means and by said pulse generating means for removing said applied holding potential from the next preceding one of said first chain sequence control means;
a second chain of sequence control means each energized responsive to application of energizing potential thereto and held energized responsive to application of holding potential thereto;
said energizing circuit means controlled by each energized one of said second chain sequence control means when said holding and energizing potentials are removed from all but the last one of said first chain sequence control means for applying the next succeeding one of said pulses in said train only to the next succeeding one of said second chain sequence control means;
second holding circuit means controlled by each energized one of said second chain sequence control means for applying holding potential to said energized one of said second chain sequence control means;
and second release circuit means controlled by each energized one of said second chain sequence control means and by said pulse generating means for removing said applied holding potential from the next preceding one of said second chain sequence control means.

3,290,659
ELECTRONIC COMPUTER WITH INTERRUPT FACILITY
James F. Callaghan, Williamstown, Richard D. Smith, Moorestown, and Richard H. Yen, Cherry Hill, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 329,639
11 Claims. (Cl. 340—172.5)



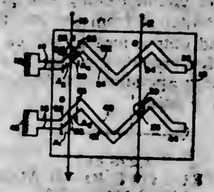
1. An electronic computer having a program-controlled interrupt facility comprising
a plurality of interrupt indicators each adapted to be set in response to a request for interruption due to the occurrence of a respective condition,
means responsive to the setting of any interrupt indicator to cause an interruption of the program being performed and a jump to the performance of a stored program which stores the conditions of the interrupt indicators and generates an address peculiar to the conditions stored, and
means utilizing said address to fetch and enter into the performance of a corresponding stored-program interrupt subroutine, or to return to the performance of the interrupted program.

3,290,660
CONTENT ADDRESSABLE MEMORY APPARATUS
Richard H. Fuller and Robert N. Mayhew, Los Angeles, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,817
9 Claims. (Cl. 340—172.5)



1. In combination with a content addressable memory including means for simultaneously comparing a search data word with stored data words together with a selection device including N binary stages, each stage being responsive to a mismatch comparison between said search data word and a different one of said stored data words for switching from a first to a second information state;
means for periodically modifying said search data word and for shifting the information state stored in each of said binary stages to an immediately subsequent binary stage.

3,290,662
NON-DESTRUCTIVE SENSING SEMI-PERMANENT MEMORY
Richard I. Fynbloom, Bloomington, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 2, 1960, Ser. No. 26,979
17 Claims. (Cl. 340—173)

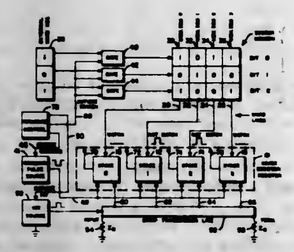


1. A memory device comprising a non-magnetic metal plate having an aperture in at least one given area for representing a binary digit of one status, an opposite status binary digit being represented by the absence of an aperture in the plate at another area, and a non-linear magnetic element disposed in a plane adjacent said plate at at least each area which has an aperture therein with the aperture in projection encompassing said element and the element being disposed off center relative to the center of its respective area of the plate.

3,290,661
CONTENT ADDRESSABLE ASSOCIATIVE MEMORY WITH AN OUTPUT COMPARATOR
Frankel L. Bilgard, Lake Hiawatha, and Lawrence A. Lacy, Cedar Knolls, Morris County, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,438
3 Claims. (Cl. 340—173)

1. Apparatus of the nature described comprising in combination: N bistable circuits each having operational states of relatively high and relatively low impedance levels; first means coupled to all of said circuits for setting

ing them to the same first impedance level; a group of N input lines each coupled to a respectively different one of the bistable circuits each of said lines being associated with a different one of a plurality of memory locations respectively designated 0 through N—1; means for applying information-representing binary signals to said group of lines for switching the respectively corresponding bistable circuits from said first impedance level to the other impedance level when the corresponding binary input signal is of a first binary value; an interrogate line constructed to experience transmission line effects having an input end and a terminating end; input circuit means coupling each of said bistable circuits in parallel to one another to said interrogate line in spaced relationship along said line with the bistable circuit associated with



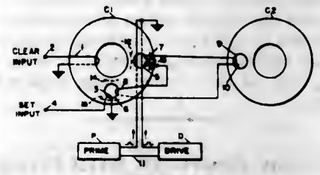
memory location 0 coupled closest to the input end and the remaining bistable circuits coupled in corresponding ascending order toward the terminating end; means for applying at least one interrogating pulse signal to the input end of the interrogate line said line effecting a propagation of the pulse toward the terminating end; said bistable circuit closest to the transmission line input end which is in said first impedance level presenting a low impedance to said pulse to terminate further propagation thereof; said input circuit passing said pulse to said bistable circuit to switch it from the low to the high impedance level; and output means coupled to each of the bistable circuits for providing a signal indication of the switching of the corresponding bistable circuit in response to the interrogating pulse.

3,290,662
NONDESTRUCTIVE READ MAGNETIC FILM MEMORY
Andrew H. Bobeck, Chatham, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 7, 1962, Ser. No. 215,447
10 Claims. (Cl. 340—174)



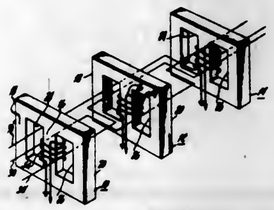
1. A magnetic memory circuit comprising a high magnetic permeability base plate having a bottom portion and a plurality of posts extending from said bottom portion, an overlay magnetic sheet having substantially rectangular hysteresis characteristics positioned over said posts, a first, second, third and fourth of said posts being linearly aligned on said plate with said second and third posts positioned closely adjacent one another and between said first and fourth posts, a memory cell being defined by said four posts, said overlay material and said base plate; means for establishing a first remanent magnetic condition in the portion of said overlay sheet above all four of said posts representative of one binary value stored in said cell and for establishing a second remanent magnetic condition in the portion of said sheet above all four of said posts representative of another binary value stored in said cell, means for reestablishing said first remanent magnetic condition in only the portion of said sheet above said second and third posts, and means for detecting magnetic flux switching in said portion of the overlay sheet between said second and third posts.

3,290,663
NON-DESTRUCTIVE READ-OUT CIRCUIT
Willis R. Smith, Rochester, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Oct. 10, 1962, Ser. No. 229,572
9 Claims. (Cl. 340—174)



4. A system for indefinite storage of information comprising a multi-aperture core having input means coupled to a first aperture for setting said core, and output means coupled to a second aperture, means producing output pulses across the output means, and means coupling a portion of each pulse from the output means back to the input means to provide a set pulse for the core upon occurrence of every output pulse.

3,290,664
READ-ONLY MAGNETIC MEMORY
Chia Y. Hsueh, Levittown, Pa., and Henry P. Cichon, Medford Lakes, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 23, 1962, Ser. No. 232,388
3 Claims. (Cl. 340—174)



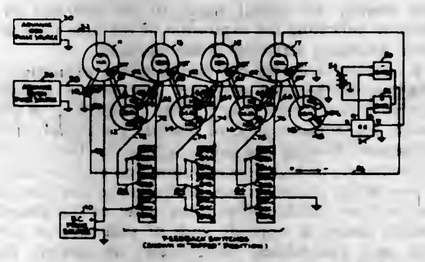
1. A memory construction for the storage of *m* words each having *n* bits, where *m* and *n* are each greater than one, comprising,

n magnetic cores each having two apertures with a central magnetic leg therebetween,

m primary windings each extending through one aperture of each of said magnetic cores, a primary winding extending through one aperture of a core to store a "0," and a primary winding extending through the other aperture of a core to store a "1," and

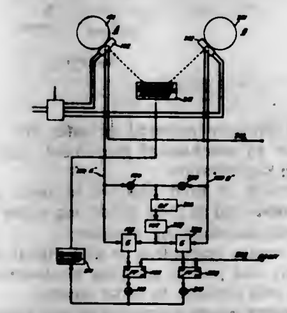
a secondary winding wound around the central leg of each of said magnetic cores.

3,290,665
FEEDBACK SHIFT REGISTER
William K. English, Menlo Park, Calif., assignor to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey
Filed Nov. 26, 1962, Ser. No. 240,032
9 Claims. (Cl. 340—174)



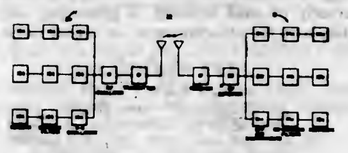
2. In a shift register having a plurality of magnetic ferrite cores each having a set state of magnetic remanence and a clear state of magnetic remanence, means for effectuating a complementary transfer of states between a preceding core and a succeeding core, comprising an auxiliary magnetic core, said auxiliary magnetic core having a clear and set state of magnetic remanence, an auxiliary priming winding coupling said preceding core and said auxiliary core, means responsive to an output from a core in said register for applying current to said auxiliary priming winding for priming said preceding core if in its set state and for placing said succeeding core in its set state, means for driving said preceding core and said auxiliary core to their clear states, and transfer winding means inductively coupling said preceding core, said auxiliary core and said succeeding core with a sense to oppose in said winding currents induced by simultaneously driving said preceding core and said auxiliary core to their clear states.

3,290,666
COLLISION DETECTOR
Beverly L. Crew, Phoenix, Ariz., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1960, Ser. No. 12,585
7 Claims. (Cl. 340—174.1)



1. In combination, a magnetic drum adapted to be rotated, a magnetic head adapted to fly over the surface of said drum and adapted to be retracted away from said surface, a control circuit adapted to raise said head when said circuit is actuated, and means for detecting a collision of said head with said drum and for actuating said control circuit in the event of said collision.

3,290,667
AUTOMATIC FREQUENCY DEVIATION CONTROL SYSTEM FOR SUBCARRIER OSCILLATOR
Paul T. Stine, 5900 Skyline Drive SE., Washington, D.C.
Filed Sept. 30, 1963, Ser. No. 312,900
2 Claims. (Cl. 340—184)



1. A FM/FM telemetering system comprising:

a transmitting portion and a receiving portion, said transmitting and receiving portions being cooperatively coupled;

said transmitting portion comprising:

transmitting means for transmitting an RF signal to said receiving portion and including an RF oscillator coupled to a transmitter;

a plurality *n* of subcarrier channels, each of said plurality of subcarrier channels being coupled to said RF oscillator and including condition sensor means, emphasis filter means and subcarrier oscillator means, said emphasis filter means coupling said sensor means to said subcarrier oscillator means;

each of said subcarrier oscillator means having a different center frequency and a bandwidth which is a predetermined percentage of said center frequency;

each sensor means being operatively adapted and arranged to sense a condition and to produce an electrical signal which has a permissible frequency range from zero to a maximum signal frequency and

each of said emphasis filter means having an attenuation vs. frequency characteristic such that the maximum attenuation occurs at a frequency which is one-half of said maximum signal frequency, said attenuation progressively decreasing at frequencies increasingly remote from the frequency of maximum attenuation;

said receiving portion comprising:

receiving means for receiving said RF signal from said transmitting means and including an RF detector coupled to a receiver;

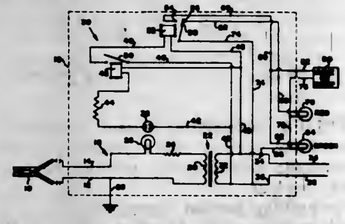
a plurality *n* of receiver channels, each of said receiver channels being coupled to said RF detector and including recording means, de-emphasis filter means and band pass filter and discriminator means;

each of said de-emphasis filter means having an attenuation vs. frequency characteristic which is the inverse of the attenuation vs. frequency characteristic of different ones of said emphasis filter means.

3,290,668
GROUNDING AND INDICATING DEVICE
Michael L. Perretta, Kirkville, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Aug. 2, 1963, Ser. No. 300,714
1 Claim. (Cl. 340—253)

An explosion proof ground indicating device comprising an explosion proof housing, a power supply in said housing, a first relay circuit connected to said power supply, said circuit including a relay and a light sensitive cell connected in series, a second relay circuit connected to said power supply and including a load relay

connected in series with the jaws of said clip whereby, for energization upon energization of said first relay, signal indicating means connected through the contacts of said second relay for indicating whether said second relay is energized, or de-energized, an intrinsically safe low energy non-inductive circuit having a portion extending exteriorly of said housing, a grounding clip having conducting jaws for attachment to an object to be ground-



ed, a low energy consuming lamp mounted in said housing in juxtaposition to said light sensitive cell and operable when energized to render said cell conductive for the energization of said first relay, said lamp being connected in series through the contacts of said first relay when said clip is attached to a metallic object to be ground, said lamp is energized and one side of said low energy non-inductive circuit being connected to ground.

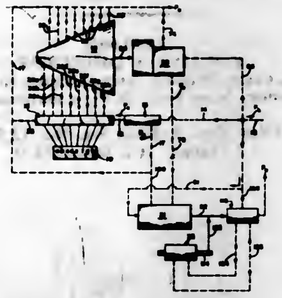
3,290,669
CONTROL DEVICE FOR SIGNALLING A PREDETERMINED TIME PERIOD OF FLOW OF CURRENT BETWEEN TWO TERMINALS
Günter Mews, Reinoldstrasse 39b, Bad Godesberg, Germany
Filed July 26, 1963, Ser. No. 297,794
Claims priority, application Germany, July 28, 1962, M 53,726; Aug. 2, 1962, M 42,972; Mar. 21, 1963, M 56,193
16 Claims. (Cl. 340—267)



7. A control device for signalling the expiration of a time interval between necessary servicing of a machine such as motor vehicle or the like comprising, in combination, elongated support means of insulating material; a pair of resilient contact means mounted spaced from each other on said support means; an indicator tube of transparent material and having opposite open ends; a pair of insulating plugs in said open ends for closing the same; a metal capsule extending through an opening in one of the plugs and having a bottom portion located in the space between said plugs; a liquid coloring material in said capsule; an electrolyte filling the space between said plugs; an electric contact extending through the other plug, said resilient contact means respectively engaging an outer end of said metal capsule and an outer end of said electrical contact for removably holding said indicator tube on said support means; and an electric circuit adapted to be connected to said machine and to be energized whenever the machine is in operation and one terminal of the circuit connected through one resilient contact means to said capsule and the other terminal through the other resilient contact means to said electric contact in such a manner that the capsule forms the anode of the electrolytic circuit formed between said capsule and said electric contact, whereby as current flows through said electric circuit the bottom portion of said capsule will be gradually electrolytically dissolved so that after an opening is thus formed after a predetermined time of current flow through the control device the coloring material in said capsule will mix with the electrolyte to give thereby an optical signal to the operator of the machine indicating the expiration of the time interval between necessary servicing of the machine.

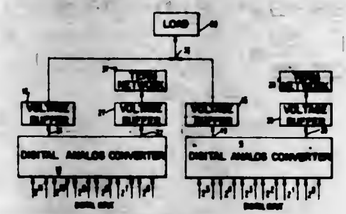
8. A control device for signalling the expiration of a time interval between necessary servicing of a machine such as a motor vehicle or the like comprising, in combination, an indicator tube of insulating material; a metal component dividing said indicator tube into two chambers; an electrolyte of high concentration and high conductivity in one of the chambers; an electrolyte of low concentration and low conductivity in the other of the chambers; contact means at opposite ends of said tube in contact with said electrolytes, respectively; an electric circuit adapted to be connected to the machine and to be energized whenever the machine is in operation and connecting one terminal of said circuit to one of said contact means and the other terminal to the other of said contact means so that as current flows through said electric circuit said metal component is gradually electrolytically dissolved until said two chambers communicate with each other so that said electrolytes will mix and thereby considerably reduce the resistance of said circuit; and signalling means in said circuit and actuated by the increased current flowing therethrough when the resistance thereof is reduced by the mixing of said electrolytes.

3,290,670
FLUID PRESSURE OPERATED ACTUATOR
William Frantz, Winter Park, Fla., assignor to Martin-Marietta Corporation, Middle River, Md.
Filed Oct. 15, 1962, Ser. No. 230,650
12 Claims. (Cl. 340—347)



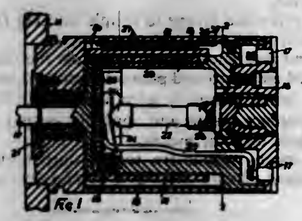
1. A fluid pressure powered actuator for converting digital signals to mechanical movement, said actuator comprising in combination:
(a) a plurality of fluid pressure to force converting means connected in force producing series to a movable force accumulating member,
(b) valve means responsive to said digital signals for selectively and jointly applying predetermined pressures to said pressure to force means,
(c) transmitter means connected to said force accumulating member for producing a fluid pressure signal in accordance with forces exerted by said force accumulating member, said transmitter means including therein pressure responsive means operatively connected to said force accumulating member, latter means being arranged to be subjected to said fluid pressure signal and to deliver on such occasion a force to latter member, the direction of latter force being opposite to the direction of force applied to said force accumulating member by said fluid pressure to force converting means, thus to balance the forces on latter member, and
(d) receiver means connected to said transmitter and adapted to position an output element in accordance with said pressure signal.

3,290,671
BYTE DECODER
William R. Lonergan, Kingston, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 29, 1963, Ser. No. 276,569
9 Claims. (Cl. 340—347)



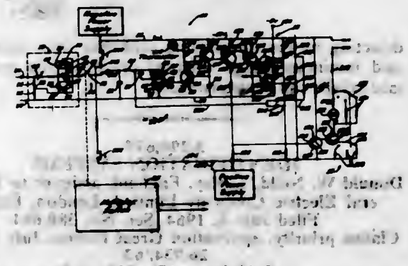
1. A digital to analog decoder for converting a digital word to a corresponding analog signal on a byte basis, each of said bytes consisting of a group of adjacent bits in said digital word, comprising in combination,
a plurality of decoding networks for decoding associated one of said bytes and generating analog signals indicative thereof irrespective of the relative significance of said bytes within said digital word,
means responsive to said analog signals from said decoding networks for weighting each of said analog signals in accordance with the relative significance of each of said bytes in said digital word, and
means responsive to said byte weighted analog signals for providing said analog representation of said binary coded digital word.

3,290,672
ENCODERS
Gyula Horvath, London, England, assignor to Retax Limited, London, England
Filed Aug. 19, 1963, Ser. No. 303,623
4 Claims. (Cl. 340—347)



1. An encoder comprising a body having an outer member defining therein a cylindrical bore and an inner member within the bore spaced from the outer member, a cylindrical encoding member coaxially mounted in the bore for rotation relative to the body passing through the spacing between said inner and outer members, a light source supported by the body within the inner member to direct light through the encoding member, a row of light sensitive devices extending longitudinally along the wall of the bore and carried by the outer member, and a lens supported by the inner member of the body for directing light from the source through the encoding member to energise the light-sensitive devices in a combination determined by the angular position of the encoding member.

3,290,673
DIGITAL TO ANALOG CONVERTER USING A SOLION CELL
Earl R. Bullock, Palos Verdes Estates, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 28, 1963, Ser. No. 310,227
10 Claims. (Cl. 340—347)

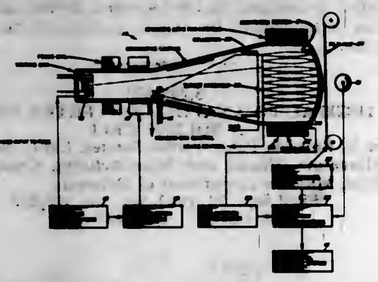


1. Apparatus for converting a digital signal into an analog signal having an amplitude that is proportional to the magnitude represented by said digital signal, said apparatus including the combination of:
storage means including a solion cell having input means and output means, said solion cell being constructed to receive the digital signal at its input means and accumulate a charge proportional to said digital signal and to maintain said charge for an extended period of time without any appreciable change in the charge, said solion cell being constructed to provide at its output means an output signal proportional to the charge accumulated in said solion cell,
an input connected to receive said digital signals, said input being interconnected with the input means of said solion cell for introducing said digital signals into said storage means,
an output interconnected with the output means of said solion cell for providing an output signal that is proportional to the charge accumulated in said storage means, and
control means interconnected with said output and with said input means and responsive to the output signal to vary the charge accumulated in the storage means for maintaining the charge in the storage means within particular limits when said output signal is outside of said particular limits.

3,290,674
ELECTRONIC STORAGE FOR ATRAN
Thomas G. Calhoun, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 27, 1959, Ser. No. 802,585
6 Claims. (Cl. 343—5)

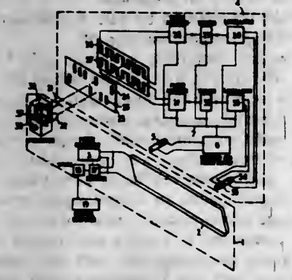
1. An aerial navigation system for a long range missile, comprising an inertial guidance system for maintaining a predetermined course, a radar for obtaining at intervals a representation of the terrain beneath the missile, an electrostatic storage tube for storing the output of said radar and for converting the same into a luminous image having a comparatively long duration, means for supplying a motion of nutation to said visible image, a transparent map superimposed upon said image, said map containing representations of the radar return from the

terrain as it would appear to a missile properly positioned on course, means for detecting the amount of light transmitted by said map, and means responsive to said light



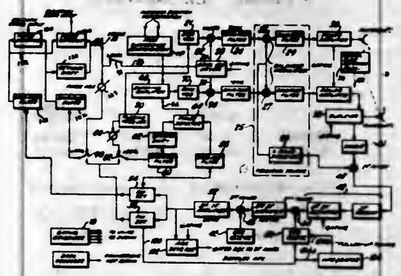
detecting means for shifting said map into registry with said luminous image whereby errors in the position of said missile can be determined.

3,290,675
IDENTIFICATION SYSTEMS
Donald W. Neild, Gatley, England, assignor to The General Electric Company Limited, London, England
Filed July 5, 1964, Ser. No. 380,694
Claims priority, application Great Britain, July 5, 1963, 26,734/63
5 Claims. (Cl. 343—6.5)



1. A system for recording the identity of a moving object as it passes a fixed position adjacent to its path of travel, said system comprising a control means located at said fixed position, a transponder unit on the object, said transponder unit being arranged to emit a coded output signal which is both initiated and received by the control means, the control means comprising means for emitting a transponder-initiating signal and pick-up and recording means for receiving and recording the coded transponder output signal, and the transponder unit including oscillator means for producing oscillations of two different frequencies and a selector device operable in response to the transponder-initiating signal from the control means to actuate the oscillator means in a selected order to produce pulses of output oscillations in a coded time sequence of the different frequencies, which sequence is representative of the object, the selector device of the transponder unit including a first oscillator and a first number of photo-responsive devices each connected to said first oscillator for causing the first oscillator to emit transponder output pulses of a first frequency when the photo-responsive device is excited, and a second oscillator and a second number of photo-responsive devices each connected to said second oscillator for causing the second oscillator to emit transponder output pulses of a second frequency when the photo-responsive device is excited, said first and second numbers of photo-responsive devices being intercalated in a coded sequence of mutual spacings along the direction of travel of the object, and the control means including light projecting means arranged to direct at least one beam of light towards the object so as to be incident on said photo-responsive devices and excite them in succession as the object travels past the control means, and thereby cause the coded time sequence of output pulses of different frequencies to be emitted by the transponder unit.

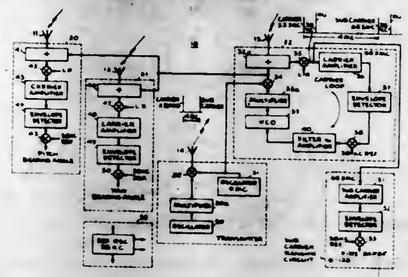
3,290,676
COHERENT FOCUSING RADAR SYSTEM
Robert T. Adams, Short Hills, and Jack B. Harvey, Clifton, N.J., assignors to Sichak Associates, Nutley, N.J., a corporation of New Jersey
Filed Feb. 14, 1964, Ser. No. 345,044
6 Claims. (Cl. 343—7.4)

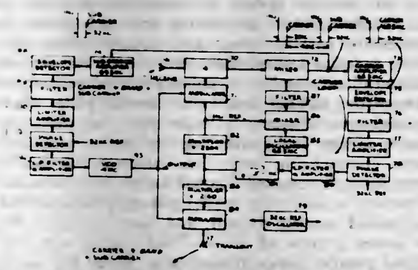


3. A system for focusing on a moving object comprising
a first transmitting channel means for transmitting a first signal,
a second transmitting channel means for transmitting a second signal,
a frequency source means providing a carrier frequency coupled to each of said channel means,
a tag frequency oscillator,
means for applying the output from said tag frequency oscillator to said first transmitting channel to provide a tag frequency modulation to said first signal,
said second transmitting channel including duplex means to allow reception,
AM means coupled to said second transmitting channel through said duplex means in said second transmitting channel to provide detection of AM components from the received signal,
FM means coupled to said second transmitting channel through said duplex means in said second transmitting channel to provide detection of FM components from the received signal,
phase detector means responsive to said AM components,
first reference means to couple said tag frequency oscillator to said phase detector means,
second reference means to couple the output from said FM means to said phase detector means,
and switch means to select one of said first and second reference means and apply the output thereof to said phase detector means,
and means responsive to the output of said detector means to vary the phase of said first signal.

3,290,677
CONTINUOUS WAVE ANGLE AND RANGE DETERMINING RADAR
Don M. Jacob, Los Angeles, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed Dec. 31, 1962, Ser. No. 248,357
15 Claims. (Cl. 343—16)

3. In combination,
a first station and a second station movable with respect to each other,
means located in said first station comprising a continuous wave radar transmitter for generating and transmitting a first carrier signal and a first subcarrier signal to said second station,
means located in said second station for receiving said first carrier signal and said first subcarrier signal and generating a second carrier signal and a second subcarrier signal, said means further including means for adjusting the phase of said second carrier signal in response to the phase of said first carrier signal and means for adjusting the phase of said second subcarrier signal in response to the phase of said first subcarrier signal whereby said second carrier signal and said second subcarrier signal have the same phase relationship as said received first carrier signal and said first subcarrier signal,



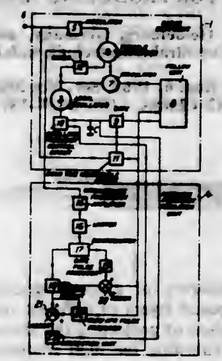


the frequency difference between said second carrier signal and said second subcarrier signal to be substantially equal to the frequency difference between said first carrier signal and said first subcarrier signal, and
means in said first station for measuring the phase of the received second subcarrier signal and comparing said measured phase with the phase of the transmitted first subcarrier signal thereby providing information indicative of the range between said first station and said second station.

3,290,678
MEANS FOR CORRECTING THE LOCAL OSCILLATOR FREQUENCY IN A RADAR SYSTEM
Nils Rune Carlsson, Bandhagen, Sweden, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 5, 1965, Ser. No. 430,556
6 Claims. (Cl. 343—17.1)

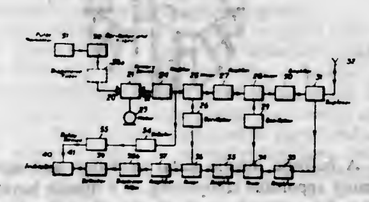
1. A radar system comprising a transmitter and a receiver, said transmitter comprising means for sequentially transmitting pulses of high-frequency energy of varying frequency, said receiver comprising means for receiving echo signals, local oscillator means including voltage responsive means for varying the frequency of oscillation of said oscillator means, mixer means, means applying said echo signals and the output of said oscillator means to said mixer means for producing an intermediate frequency signal, means for producing a first control voltage

responsive to the instantaneous difference between the frequency of said oscillations and the frequency of said pulses upon the occurrence of each pulse, means for applying said first control voltage to said voltage responsive means, whereby the frequency of said oscillations is adjusted to produce intermediate frequency signals of substantially constant frequency, means for producing a second control voltage responsive to the average difference between said local oscillator frequency and the frequency



of said pulses, means applying said second control voltage to said voltage responsive means for preadjusting the frequency of said local oscillator means before said second control voltage is applied to said voltage responsive means, whereby the average of the frequency adjustment of said local oscillator means by said first control voltage is zero, and means for maintaining the amplitude of said first and second control voltages for a predetermined time following each pulse.

3,290,679
PULSE STRETCHING AND COMPRESSION METHODS AND SYSTEMS
Yves Brault, Roland Carre, and Roger Chemisnet, Paris, France, assignors to Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed May 8, 1961, Ser. No. 108,674
Claims priority, application France, May 11, 1960, 826,329
10 Claims. (Cl. 343—17.2)



4. A radar comprising: means for generating short A.-C. pulses; a bandpass filter coupled to said generating means for filtering said pulses; a dispersive filter adapted for stretching the output pulses of said bandpass filter; storing means capable of recording information in a first direction and restituting the recorded information in a second direction, opposite to said first direction, said storing means having an input and an output; a transmitter, including amplifying means and frequency translating means, coupled to said storing means output; an aerial coupled to said transmitter for transmitting pulses

and receiving echo pulses; a receiver coupled to said aerial and including amplifying and frequency translating means; a detector and indicator means coupled in series and means for selectively coupling said dispersive filter (*a*) between said bandpass filter and said storing means input and (*b*) between said receiver and said detector.

3,290,680
ELECTROMAGNETIC WAVE ABSORBER AND PROCESSES FOR PRODUCING AND USING THE SAME
Ludwig Weech, Heidelberg, Germany, assignor to Elro Gesellschaft fur Strahlungstechnik m.b.H., Heidelberg, Germany
Filed Aug. 6, 1963, Ser. No. 300,959
12 Claims. (Cl. 343—18)



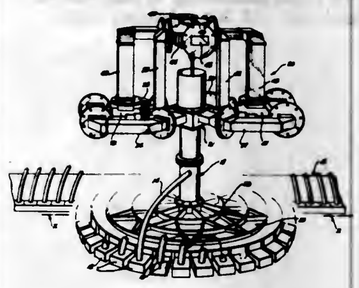
1. For an absorber of electromagnetic wave energy having superimposed layers of different relative dielectric constants, a method of protecting the absorber from icing conditions and adjusting the high frequency constant of the material to thereby tune the damping maximum, said method comprising embedding, in a layer of lower relative dielectric constant, heating wires arranged in spaced parallel relation in the form of a grid and heating the wires to in turn heat the absorber.

3,290,681
DEVICE FOR JAMMING RADAR DETECTION AND INTERCEPTION OF BALLISTIC MISSILES
Roger Henri Bataille, La Napoule, France, assignor to Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France
Filed Mar. 10, 1964, Ser. No. 350,846
Claims priority, application France, Mar. 11, 1963, 927,486
10 Claims. (Cl. 343—18)



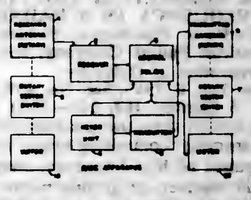
1. A ballistic missile radar detection and interception jamming apparatus comprising, in a missile having a warhead and a secton located aft of said warhead, in combination, in said section, a tight central chamber, ejection tubes of different length and orientations, the axes of which are substantially orthogonal to that of the missile, which ejection tubes are disposed about said chamber while communicating therewith and extend through an external walling of said missile section, shearing diaphragms sealing said ejection tubes at their chamber ends, ejection pistons slidably mounted in said tubes and connected to said diaphragms respectively, closures obturating said tubes at their outer ends and flush with the outer surface of the missile, decoys housed within said tubes between said pistons and closures, means for pressurizing said central chamber in order to eject said decoys, and, within each tube, means for stopping and retaining its associated piston after ejection.

3,290,682
MULTIPLE BEAM FORMING ANTENNA APPARATUS
James S. Ajioka, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 408,205
8 Claims. (Cl. 343—100)



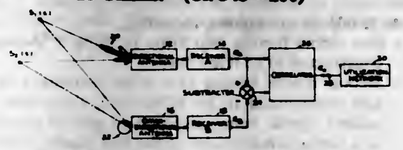
4. An antenna system for providing multiple beams, said antenna system comprising first and second spaced coextensive parallel conductive circular plates for providing a radial transmission line; means for providing a predetermined number of equally spaced pick-up probes between the parallel conductive circular plates about the circumference thereof; a linear array of radiating elements; means for connecting successive radiating elements commencing from one extremity of said linear array through respective equal length transmission lines to successive uniformly spaced pick-up probes of said predetermined number thereof; and means coupled through the center portion of no less than one of said first and second parallel conductive circular plates for simultaneously exciting a fundamental mode and no less than one additional higher order circumferential mode therebetween to provide a corresponding number of beams from said linear array, each of said beams having a unique direction in space.

3,290,683
AIRCRAFT HOMING SYSTEM
Oscar Norgorden and William A. White, both % Naval Research Lab, Anacostia Station, Washington, D.C., and Raymond W. Hayward, % Bureau of Naval (Enlisted) Personnel, Navy Department, Washington, D.C.
Filed Oct. 25, 1945, Ser. No. 624,629
4 Claims. (Cl. 343—100)



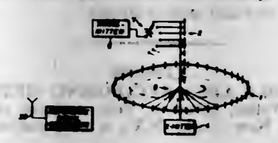
1. In a navigational device, a unidirectional receiving means, means for orienting said receiving means to different directions in successive time intervals, means connected to said receiving means and responsive to received signals for generating a control signal occurring in a respective one of said successive time intervals, a directive transmitting antenna rotatably mounted for orientation in a desired direction, and means responsive to said control signal for orienting said transmitting antenna in the direction associated with the time interval in which said control signal occurs.

3,290,684
DIRECTIONAL RECEIVING SYSTEMS
Charles W. Rees, San Pedro, and La Var H. Barker, Woodland Hills, Calif., and Arnest A. Herak, Garland, Tex., assignors to TRW Inc., a corporation of Ohio
Filed Oct. 3, 1960, Ser. No. 60,213
25 Claims. (Cl. 343—100)



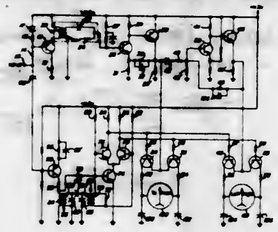
1. In combination:
a first receiving means for receiving a first alternating current signal;
a second receiving means for receiving a second alternating current signal;
subtracter means connected to said first and second receiving means for developing a remainder signal substantially representing the alternating current difference between said first and second signals;
signal comparator means connected to said subtracter means and at least one of said receiving means for developing an output signal substantially representing the time-averaged product of signals applied to said comparator means; and
means connected to said signal comparator means for utilizing said output signal.

3,290,685
OMNI-RANGE DOPPLER BEACONS AND DIRECTION FINDING SYSTEMS
Fritz Steiner, also known as Friedrich Steiner, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 350,839
Claims priority, application Germany, Mar. 9, 1963, St 20,367
7 Claims. (Cl. 343—106)



1. In an omni-range Doppler radio navigation system, a beacon from which an aircraft can derive its azimuth and elevation angles, comprising first means to stimulate the motion of a single antenna across several wavelengths in a vertical direction at a first frequency, means for exciting said first means with a first RF energy, second means to simulate the motion in a horizontal direction of a single antenna in a circle having a diameter of several wavelengths at a second frequency, means for exciting said second means with a second RF energy, so that the RF energy at said first and second steps is frequency modulated at said first and second frequencies, and third means for transmitting a reference signal, whereby azimuth is derived at an aircraft by comparing the phase position of the frequency modulation from said second means with said reference signal, and angle of elevation is derived at an aircraft by the ratio of the frequency deviations of said first and second frequencies.

3,290,686
MODULATION CONVERSION CIRCUIT FOR CHANGING FREQUENCY MODULATION INTO PULSE WIDTH MODULATION AND OMNIRANGE RECEIVER CIRCUIT UTILIZING SUCH CONVERSION CIRCUIT
John R. Kobbe, 160 SW. Meadow Drive, Beaverton, Oreg.
Filed May 20, 1963, Ser. No. 281,710
12 Claims. (Cl. 343—107)



1. Bearing determining circuits for an omnirange radio receiver, comprising:
phase shifting means to vary the phase of a low frequency input bearing signal to select a bearing with respect to an omnirange transmitter and obtain an output bearing signal,
means for converting a higher frequency input reference signal which is frequency modulated with a low frequency reference signal having the same frequency as the input bearing signal into an output reference signal consisting pulses at said higher frequency which are pulse width modulated at said low frequency, and
means for combining said pulses of said output reference signal with said output bearing signal to obtain a pair of indicator signals having relative values depending upon the differences in phase between said output bearing signal and the pulse width modulations of said output reference signals.

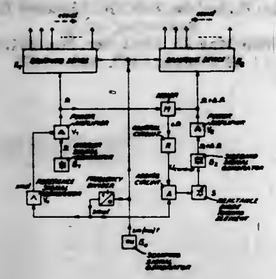
9. Modulation conversion means comprising:
transformer means connected to be supplied with an input signal which is frequency modulated with a lower frequency signal and providing a control signal in quadrature with said input signal at the central frequency of said input signal and having relative phase shifts between said control signal and said input reference signal in opposite directions during alternate half cycles of the frequency modulation of said input signal,
first and second amplifying means connected in series with each other to provide an output signal only when both of said amplifying devices are conducting,
said first amplifying means being connected to be rendered capable of conducting by said input signal during alternate half cycles only of said input signal,
and said second amplifying means being connected to be rendered capable of conducting by said control signal during alternate half cycles only of said control signal to thereby provide an output signal containing pulses at the frequency of said input signal and which are pulse width modulated at the frequency of said lower frequency signal.

3,290,687

COURSE BEACON SYSTEM TO PROVIDE DIRECTIONAL INFORMATION WITH THE AID OF TWO FREQUENCY-DEVIATION DIRECTIONAL RADIATION PATTERNS

Günter Hilgen, Berlin, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 20, 1963, Ser. No. 303,270
Claims priority, application Germany, Aug. 27, 1962, St 19,639
7 Claims. (Cl. 343—107)



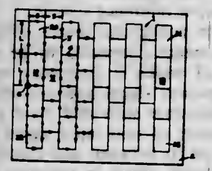
1. A directional determination system, comprising a first horizontal antenna array, means for generating signals and applying said signals to said first horizontal antenna array such that a first frequency-deviation directional pattern is created in space, a second horizontal antenna array, and means for generating signals and applying said signals to said second horizontal antenna array such that a second frequency-deviation directional pattern is created in space, said second pattern being of a different configuration than said first pattern.

3,290,688

BACKWARD ANGLE TRAVELLING WAVE WIRE MESH ANTENNA ARRAY

John D. Kraus, Columbus, Ohio, assignor to The Ohio State University Research Foundation, a corporation of Ohio

Filed June 11, 1962, Ser. No. 201,434
20 Claims. (Cl. 343—731)



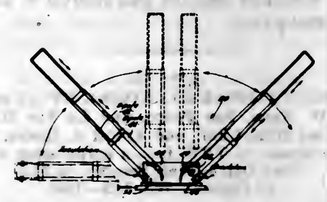
3. A broadband directional antenna structure comprising a plurality of conductors interconnected to form a rectangular mesh, the short sides of said rectangles connected to the centers of the long sides of said rectangles, said rectangles being in parallel relationship to each other and wherein the short sides of the rectangles form a ladder, a ground plane, means for maintaining said ground plane in a fixed relation from said mesh, and feed means connected to one end of said mesh and said ground plane for exciting said antenna by a travelling wave propagating from said one end to the other end of said mesh and wherein there is a progressive shift in phase from one ladder of the mesh to the next.

3,290,689

ANGULARLY ADJUSTABLE FOLDED DIPOLE

Harold F. Rieth, Santa Monica, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California

Filed May 11, 1964, Ser. No. 366,336
5 Claims. (Cl. 343—803)



4. A television antenna, including,
a first dipole having two arms forming a V-shape and constructed to be telescoped,
a second dipole having two arms forming a V-shape and constructed to be telescoped, each arm of the second dipole being disposed in paired relationship to a corresponding arm of the first dipole, the first V-shaped member and the second V-shaped member being in substantially the same plane and the first and second V-shaped members being supported by a bracket and in which the bracket is provided with slots to provide a pivotal disposition of the first and second V-shaped members relative to the bracket,
a first conductive portion extending between first ones of the paired arms of the first and second dipoles,
a second conductive portion extending between the other ones of the paired arms of the first and second dipoles, the first and second conductive portions being at the ends of the arms in the first and second dipoles opposite to the support member,
a first insulating brace extending between the first ones of the paired arms of the first and second dipoles,
a second insulating brace extending between the other ones of the paired arms of the first and second dipoles, the first and second insulating braces being at intermediate positions along the lengths of the arms in the first and second dipoles,
means insulating the arms in the first dipole from each other,
a pair of leads extending from the arms in the first dipole to provide electrical connections to the television receiver for the introduction of television signals to the receiver,
means electrically connecting the arms in the second dipole, and
a support member pivotally supporting the arms of said first and said second dipoles.

3,290,690

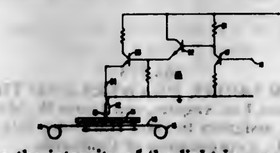
VARIABLE AREA RECORDING METHOD

Charles E. Weller, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Original application Jan. 21, 1963, Ser. No. 252,911, now Patent No. 3,184,752, dated May 18, 1965. Divided and this application Sept. 23, 1964, Ser. No. 398,613
2 Claims. (Cl. 346—1)

1. A method for recording a fluctuating electrical signal to provide a variable area record of said electrical signal, said method comprising:
producing a light having a controllable intensity;
focusing the light into a circular image on a photographic recording medium having a saturation value exceeded by the controllable intensity of the light and confining the light image to a size that is changed significantly by the image spreading tendency of the photographic recording medium;

moving the light relative to the photographic recording medium by moving one with respect to the other; and



controlling the intensity of the light in accordance with the variations in the fluctuating electrical signal.

3,290,691

RECORDER WITH FLEXIBLE TAPE INDICATOR

Lester R. Leidy, Jr., Oakland, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,265
14 Claims. (Cl. 346—17)



1. An apparatus for indicating and recording, comprising a strip chart, a stationary support, a drive means responsive to the variable being measured, a scale mounted on said support, a flexible member movable relative to said scale and having distinguishing portions cooperating with said scale to form an indicator, means connected to the ends of the flexible member to place the flexible member under tension, a recorder comprising a marking element forming an extensible pointer portion of the indicator and in engagement with said chart and said flexible member, and a force-applying means connected to the flexible member to apply a twist thereto and to bias said marking element against said chart.

3,290,692

MAGNETIC STORAGE DISC AND DRUM

Marvin Jacoby, Fort Washington, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 7, 1962, Ser. No. 215,325
10 Claims. (Cl. 346—74)



1. A magnetic drum comprising:
(a) a hollow cylindrical body;
(b) a thin shrinkable element tightly surrounding the periphery of said cylindrical body, and
(c) a magnetic coating on said element to receive magnetic recordings.

DESIGNS

DECEMBER 6, 1966

206,370
DISPLAY SIGN OR SIMILAR ARTICLE
Stanley J. Bell, 143 Cow Neck Road, and Seymour Shenkman, 515 W. Park Ave., both of Nassau County, N.Y. 11023
Filed Jan. 24, 1966, Ser. No. 742
Term of patent 14 years
(Cl. D1—3)



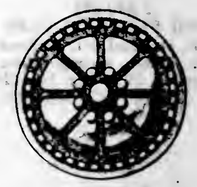
206,371
CARBONATED BEVERAGE DISPENSER
Rodrigo Lopez-Fabrega, Norwalk, and George L. Schick, Georgetown, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Mar. 11, 1966, Ser. No. 1,423
Term of patent 14 years
(Cl. D2—3)



206,372
DRAWER HANDLE
Cornell D. Hazenberg, Jamestown, N.Y., assignor to Chautauqua Hardware Corporation, Jamestown, N.Y., a corporation of New York
Filed Jan. 25, 1966, Ser. No. 802
Term of patent 14 years
(Cl. D10—9)

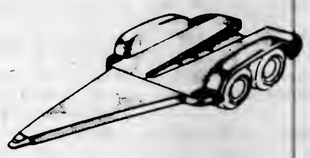


206,373
KNOB FOR DOORS, DRAWERS AND THE LIKE
David F. James, Los Angeles, and James W. Maina, Fullerton, Calif., assignors to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed Mar. 2, 1966, Ser. No. 1,262
Term of patent 14 years
(Cl. D10—8)



206,374
WINDOW SCREEN OR SIMILAR ARTICLE
Stanley D. Barnett, Mount Vernon, N.Y.
(490 Neperhan Ave., Yonkers, N.Y. 10701)
Filed Feb. 25, 1966, Ser. No. 1,175
Term of patent 14 years
(Cl. D13—1)

206,375
UTILITY TRAILER
David K. Kalawaia, La Mirada, and Anthony J. Rivera, Fullerton, Calif., assignors to Kalawaia Boats, Inc., Santa Fe Springs, Calif., a corporation of California
Filed Feb. 28, 1966, Ser. No. 1,288
Term of patent 14 years
(Cl. D14—3)



206,376
MOTOR TRUCK
Theodore Orme, Jr., Fort Wayne, Ind., assignor to International Harvester Company, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 87,785
Term of patent 7 years
(Cl. D14—3)



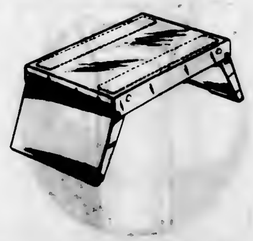
206,377
MOTOR TRUCK INSTRUMENT PANEL
Theodore Orme, Jr., Ronald N. Brunger, Charles B. McGrew, Jr., and Dee Lawton, all of Fort Wayne, Ind., assignors to International Harvester Company, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 87,758
Term of patent 7 years
(Cl. D14—6)



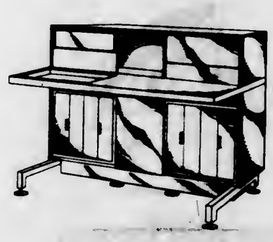
206,378
CHAIR
Robert E. Kjer Jakobsen, Los Angeles, Calif., assignor to Schlumberger Limited, Houston, Tex., a corporation of the Netherlands Antilles
Filed Nov. 15, 1965, Ser. No. 88,083
Term of patent 14 years
(Cl. D15—1)



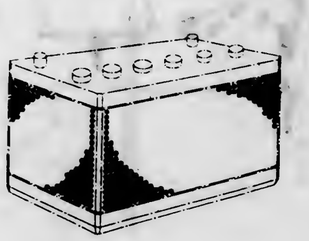
206,379
SAFETY STOOL
Wayne W. Good, Sturgis, Mich., assignor to Hinter Corporation, Sturgis, Mich., a corporation of Michigan
Filed May 20, 1965, Ser. No. 82,568
Term of patent 14 years
(Cl. D15—6)



206,380
CABINET FOR ELECTRONIC EQUIPMENT
Bertram W. Sathmary, Asbury Park, and Daniel Sinnott, Wanamassa, N.J., and John Hayes, Wilton, Conn., assignors to Electronic Associates, Inc., West Long Branch, N.J., a corporation of New Jersey
Filed Jan. 4, 1965, Ser. No. 13,253
Term of patent 14 years
(Cl. D26—5)



206,381
STORAGE BATTERY CASE
Robert C. Brentrup, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 30, 1964, Ser. No. 81,071
Term of patent 14 years
(Cl. D26—6)



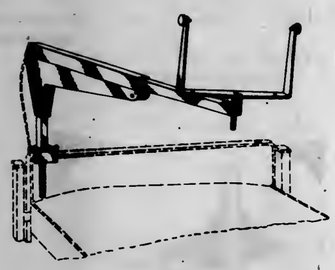
206,382
MAGNETIC DISK STORAGE CARTRIDGE
Donald A. Moore, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 97,660
Term of patent 14 years
(Cl. D26—14)



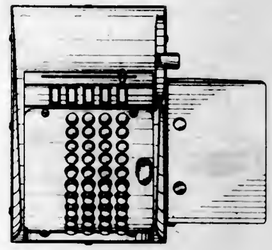
206,383
FISHING LURE
John E. Hollyman, 3402 Polp St., Monroe, La.
Filed Nov. 17, 1965, Ser. No. 88,135
Term of patent 14 years
(Cl. D31—4)



206,384
BED MOUNTABLE SUPPORT FOR A PORTABLE TELEVISION SET
Peter L. Lindenmuth, Boston, Mass., assignor to Wells Television, Inc., New York, N.Y., a corporation of New York
Filed May 26, 1965, Ser. No. 85,472
Term of patent 14 years
(Cl. D33—3)



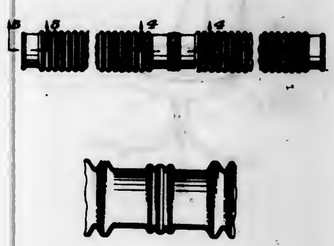
206,385
TOY CALCULATING MACHINE
Shigeaki Kuramochi, 10—10 3-chome, Kohkado-Daimachi, Tokyo, Japan
Filed Nov. 29, 1965, Ser. No. 88,253
Term of patent 14 years
(Cl. D34—15)



206,386
LIFT FOR HEAVY OBJECTS
Howard H. Vermette, 7 E. 143rd St., Hammond, Ind. 46320
Filed Dec. 1, 1965, Ser. No. 7
Term of patent 14 years
(Cl. D41—1)



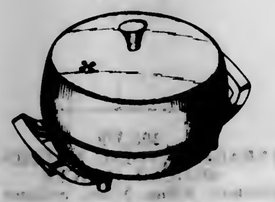
206,387
FLEXIBLE CORRUGATED HOSE OR THE LIKE
Peter H. Seckel, 13 Miller Place, Wayne, N.J. 07470
Filed Nov. 26, 1965, Ser. No. 83,218
Term of patent 14 years
(Cl. D43—1)



206,388
COMBINATION MIXER AND [illegible] APPLIANCE
Waldemar Clemente, Rua Dr. Alvaro Alvim 76, Sao Paulo, Brazil
Filed Feb. 16, 1966, Ser. No. 1,062
Term of patent 14 years
(Cl. D44—8)



206,389
FRYING PAN
Robert O. Ernest, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 12, 1965, Ser. No. 88,070
Term of patent 14 years
(Cl. D44—1)



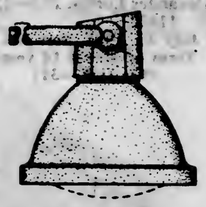
206,390
FOOD SERVING TRAY
Larry J. Jaskulak, 502 N. Daisy, and Earl A. Weber, 1181 Heatherside Road, both of Pasadena, Calif. 91107
Filed Aug. 11, 1965, Ser. No. 86,537
Term of patent 14 years
(Cl. D44—10)



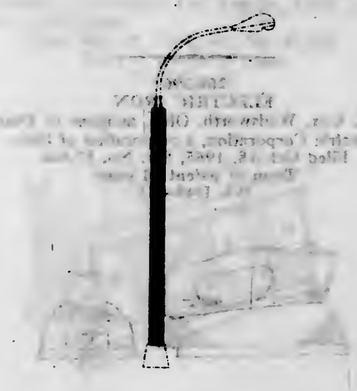
206,391
DISC BRAKE [illegible]
Michael S. Lee, New York, N.Y., assignor to Lipe-Rollway Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 7, 1965, Ser. No. 512,109
Term of patent 14 years
(Cl. D49—20)



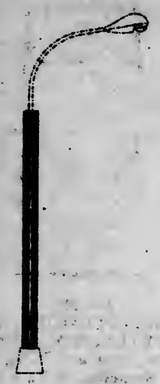
206,392
COMBINED FLOODLIGHT AND EXTENSION ARM
Reynolds B. Winslow, Syracuse, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Feb. 10, 1966, Ser. No. 83,860
Term of patent 14 years
(Cl. D58—23)



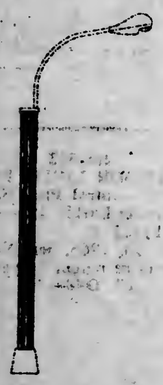
206,393
OUTDOOR LIGHT POST
Donald Dunbar, 222 Central Park S., New York, N.Y. 10019, and Alexander Lurkis, 193—12 Nero Ave., Hollewood, N.Y. 11423
Filed July 13, 1965, Ser. No. 86,133
Term of patent 14 years
(Cl. D60—31)



206,394
OUTDOOR LIGHT POST
Donald Dudley, 222 Central Park S., New York, N.Y. 10019, and Alexander Lurkis, 193—12 Nero Ave., Holliswood, N.Y. 11423
Filed July 13, 1965, Ser. No. 86,137
Term of patent 14 years
(Cl. D48—31)



206,395
OUTDOOR LIGHT POST
Donald Dudley, 222 Central Park S., New York, N.Y. 10019, and Alexander Lurkis, 193—12 Nero Ave., Holliswood, N.Y. 11423
Filed July 13, 1965, Ser. No. 86,140
Term of patent 14 years
(Cl. D48—31)



206,396
ELECTRIC IRON
Austin E. Carr, Wadsworth, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Oct. 18, 1965, Ser. No. 87,546
Term of patent 14 years
(Cl. D49—1)



206,397
KEY BLANK
Richard John Glass, Bristol, Conn., assignor to Sargent & Company, New Haven, Conn., a corporation of Connecticut
Filed Jan. 4, 1966, Ser. No. 476
Term of patent 14 years
(Cl. D50—4)



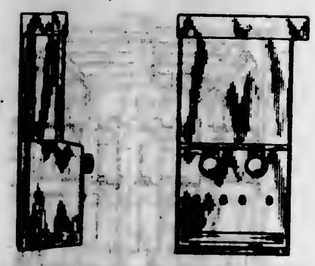
206,398
SOAP DISPENSER
Robert E. Watson, Farmington, Mich., assignor to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 20, 1965, Ser. No. 87,626
Term of patent 14 years
(Cl. D32—2)
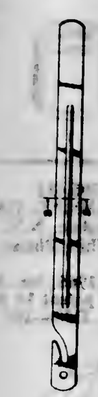


206,399
BEVERAGE VENDING MACHINE OR SIMILAR ARTICLE
James R. Reichow, Edina, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Mar. 31, 1966, Ser. No. 1,714
Term of patent 14 years
(Cl. D32—3)



206,400
[illegible]
Theodore L. Wilson, 2041 Tracy, Kansas City, Mo., 64108
Filed Sept. 22, 1965, Ser. No. 85,257
Term of patent 14 years
(Cl. D32—5)



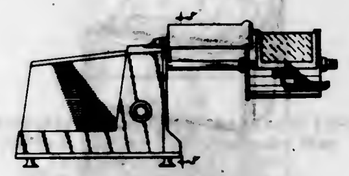
206,401
HANGER FOR HEATING WIRE
Joseph B. Fisher, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Feb. 14, 1966, Ser. No. 1,816
Term of patent 14 years
(Cl. D54—1)



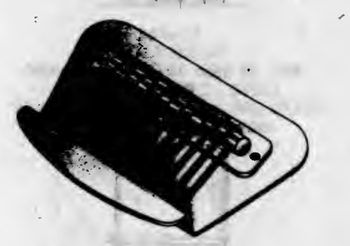
206,402
NUT
George S. Wing, Palos Verdes Estates, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed Oct. 21, 1964, Ser. No. 82,271
Term of patent 14 years
(Cl. D54—6)



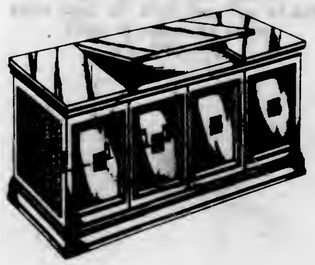
206,403
[illegible]
Joachim E. Behnke, [illegible], assignor to W. [illegible] Radio Tube Co., Newark, N.J., a corporation of New Jersey
Filed June 6, 1966, Ser. No. 2,307
Term of patent 14 years
(Cl. D32—1)



206,404
GUITAR BRIDGE
Clarence L. Fender, Fullerton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Apr. 21, 1966, Ser. No. 1,967
Term of patent 14 years
(Cl. D56—1)



206,405
CABINET FOR A STEREO REPRODUCER OR SIMILAR ARTICLE
James W. Kolen, Pacific Palisades, and Kenneth R. Johnson, Sherman Oaks, Calif., assignors to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed May 19, 1966, Ser. No. 85,369
Term of patent 14 years
(Cl. D61—6)



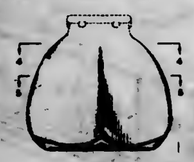
206,406
PHONOGRAPH CABINET
William G. Brunen and Theodore A. Dubose, both of Chicago, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 83,103
Term of patent 14 years
(Cl. D36—4)



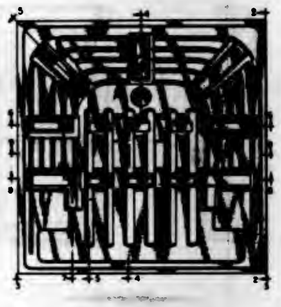
206,407
JUG
Robert E. A. Sharp, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 87,981
Term of patent 14 years
(Cl. D58—5)



206,408
BOTTLE
Richard L. Plaits, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed Sept. 13, 1965, Ser. No. 86,962
Term of patent 14 years
(Cl. D58—6)



206,409
STORAGE TRAY FOR CIRCULAR KNITTING NEEDLE COMPONENTS
Robert W. Murphy, Morton Grove, and Cornelius Mark Phipps, Wheaton, Ill., assignors to The Boye Needle Company, Chicago, Ill., a corporation of Illinois
Filed July 29, 1965, Ser. No. 86,352
Term of patent 14 years
(Cl. D58—13)



206,410
CONTAINER FOR LIQUIDS
Richard L. Plaits, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed Apr. 12, 1965, Ser. No. 84,721
Term of patent 14 years
(Cl. D58—17)



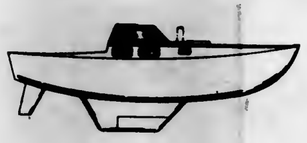
206,411
DISPENSING CAP
Robert N. Marona, Scarsdale, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 83,918
Term of patent 14 years
(Cl. D68—26)



206,412
PULL TAB FOR A TEAR STRIP OPENER
Warren J. Hayford, Greenwich, Conn., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 15, 1965, Ser. No. 87,518
Term of patent 14 years
(Cl. D58—26)



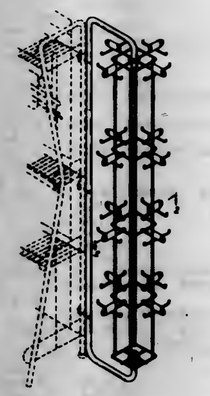
206,413
SAILBOAT WITH RETRACTABLE HATCH COVER
Charles William Lapworth, 660 30th St., Newport Beach, Calif. 92660
Filed Dec. 6, 1965, Ser. No. 70
Term of patent 14 years
(Cl. D71—1)



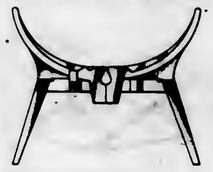
206,414
ARTIST'S PALETTE
Carl B. Sundberg, 59 Hourigan Drive, Meriden, Conn. 06450
Filed Oct. 1, 1965, Ser. No. 87,261
Term of patent 14 years
(Cl. D74—2)



206,415
REVOLVABLE DISPLAY RACK
William Woodburn, Jersey City, N.J., assignor to Glamorene Products Corporation of Delaware, a corporation of Delaware
Filed May 3, 1966, Ser. No. 2,137
Term of patent 14 years
(Cl. D60—10)



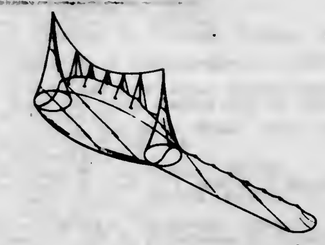
206,415
COMBINED FIRE BASKET AND LOG LIGHTER
Cleo D. Mathis, 9811 Ninth St., South El Monte, Calif. 91733
Filed Oct. 22, 1965, Ser. No. 87,891
Term of patent 14 years
(Cl. D61—10)



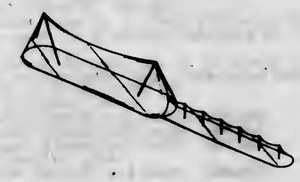
206,417
HYDROTHERAPEUTIC MASSAGE UNIT
Edwin F. Clements, 600 Alexander Way, Palm Springs, Calif. 92262
Filed Dec. 13, 1965, Ser. No. 162
Term of patent 14 years
(Cl. D68—1)



206,418
SOLARIUM
Mike Tocton, 5101 45th St. NW., Washington, D.C. 20016
Filed Sept. 16, 1965, Ser. No. 87,023
Term of patent 14 years
(Cl. D63—1)



206,419
SOLARIUM
Mike Tocton, 5101 45th St. NW., Washington, D.C. 20016
Filed Sept. 16, 1965, Ser. No. 87,034
Term of patent 14 years
(Cl. D63—1)



206,402
COMBINATION CABANA AND SOLARIUM
Mike Tocker, 2401 46th St. NW., Washington, D.C. 20016
Filed Oct. 24, 1966, Ser. No. 87,969
Term of patent 14 years
(Cl. D63—1)



206,421
WATER INLET FITTING
Eugene L. Kilbourn, Marshall, Mich., assignor to Progressive Dynamics, Inc., Marshall, Mich.
Filed Dec. 13, 1965, Ser. No. 166
Term of patent 7 years
(Cl. D91—1)



206,422
TABLECLOTH
Thomas William Binns, Huntingdon Valley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Mar. 30, 1966, Ser. No. 1,855
Term of patent 3½ years
(Cl. D92—26)



206,423
TABLECLOTH
Thomas William Binns, Huntingdon Valley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed June 20, 1966, Ser. No. 2,721
Term of patent 7 years
(Cl. D92—26)



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Kellner, Jackson M. 26,120.
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Semmel, John W., Jr., to General Electric Co. Ductile niobium and tantalum alloys. Re. 26,122, 12-6-66, Cl. 75—174.
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Slater, Saul I., to Slater Electric Inc. Continuously variable dimmer switch. Re. 26,119, 12-6-66, Cl. 323—22.
Wiegand, Edward A. Safety buffing construction. Re. 26,121, 12-6-66, Cl. 169—6.

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Fischer, Carl H., to Selected Glads, Inc., Gladiolus plant. 2,690, 12-6-66, Cl. 35.
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Selected Glads, Inc.: *See*—
Fischer, Carl H. 2,690.
Swim, Herbert C.: *See*—
Armstrong, David L., and Swim. 2,688.

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Barnett, Stanley D. Window screen or similar article. 206,374, 12-6-66, Cl. D13—1.
Bell, Stanley J., and S. Shankman. Display sign or similar article. 206,370, 12-6-66, Cl. D1—3.
Beltram, Joachim R., to International Edge Tool Co. Food cutter. 206,403, 12-6-66, Cl. D55—1.
Binns, Thomas W., to Quaker Lace Co. Tablecloth. 206,422, 12-6-66, Cl. D92—26.
Binns, Thomas W., to Quaker Lace Co. Tablecloth. 206,423, 12-6-66, Cl. D92—26.
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Clements, Edwin V. Hydrotherapeutic massage unit. 206,417, 12-6-66, Cl. D63—1.
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Jasbulek, Larry J., and E. A. Weber. Food serving tray. 206,390, 12-6-66, Cl. D44—10.
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Kilbourn, Eugene L., to Progressive Dynamics, Inc. Water inlet fitting. 206,421, 12-6-66, Cl. D91—1.
Kuramochi, Shigeaki. Toy calculating machine. 206,385, 12-6-66, Cl. D34—15.
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Tecton, Mike. Solarium. 206,419, 12–6–66, Cl. D83—1.
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Vermette, Howard H. Lift for heavy objects. 206,386, 12–6–66, Cl. D41—1.
Watson, Robert E., to Swedish Crucible Steel Co. Soap dispenser. 206,398, 12–6–66, Cl. D52—2.
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Jaskulek, Larry J., and Weber. 206,390.
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Winslow, Reynolds B., to Crouse-Hinds Co. Combined floodlight and extension arm. 206,392, 12–6–66, Cl. D48—23.
Woodburn, William, to Glamorene Products Corp. of Delaware. Revolvable display rack. 206,415, 12–6–66, Cl. D60—10.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 6TH DAY OF DECEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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English, William K. 3,290,605.
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Adams, Ernest C., Jr., and C. T. Haitsma, to Miles Laboratories, Inc. Occult blood diagnostic composition with color enhancing agent. 3,290,117, 12–6–66, Cl. 23—253.
Adams, Harold R., to The Mash Engineering Co. Pump device. 3,289,918, 12–6–66, Cl. 230—70.
Adams, Mark F., and R. M. Hadaker, to Harbison-Walker Refractories Co. Refractory support. 3,290,272, 12–6–66, Cl. 52—245.
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Adams, Robert W., to Overmyer Mould Co. of Pennsylvania. Rotary cutter bar. 3,290,997, 12–6–66, Cl. 99—11.
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Anderson, William R., to Shell Oil Co. Block copolymers of alpha C$_{7-8}$-alkyl styrene and ethylene. 3,290,414, 12–6–66, Cl. 260—876.
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Nakayama, Chozo, Kobayashi, Ito, Yokoyama, and Hirai. 3,289,249.
Semco, Saburo, Yano, Kato, and Hayashi. 3,290,285.
Ashland Oil & Refining Co.: *See*—
Wright, William R., Whitsel, Williams, and Gentry. 3,290,130.
Ashtabula Bow Socket Co.: *See*—
Purcell, Howard M. 3,289,549.
A: son Moberg, Harald. Apparatus for absorption of energy from a moving load. 3,289,792, 12–6–66, Cl. 188—11.
Assmann, Horst, to Esso Research and Engineering Co. Lubricant for two-stroke engines. 3,290,130, 12–6–66, Cl. 44—58.
Atlantic Refining Co., The: *See*—
Cleary, James M. 3,289,776.
Atlantic Research Corp.: *See*—
Godfrey, John N., and Macri. 3,290,190.
Atti, Bros, to Westinghouse Electric Corp. Electron discharge tube having a movable cathode tape. 3,290,540, 12–6–66, Cl. 313—146.
Atwater-Strong Co.: *See*—
Strong, Basil P. 3,289,800.
Aubin, Claude A., to Societe d'Etudes & d'Application Industrielle de Brevents (S.E.A.B.). Apparatus for packing fluent substances in sealed plastic containers. 3,289,388, 12–6–66, Cl. 53—180.
Auer, John H., Jr., to General Signal Corp. Apparatus for measuring vehicular traffic parameters. 3,290,489, 12–6–66, Cl. 235—150.24.
Auer, John H., Jr., to General Signal Corp. Method and apparatus for obtaining traffic flow velocity data. 3,290,490, 12–6–66, Cl. 235—150.24.
Auld, Bert A., and H. Matthews, to Bell Telephone Laboratories, Inc. Elastic traveling wave parametric amplifier. 3,290,610, 12–6–66, Cl. 330—4.6.
Automatic Spot Taping Machine Co. Inc.: *See*—
Zent, Clayton M. 3,289,284.
Automation Products Inc.: *See*—
Banks, William B. 3,289,466.
Avedissian, Michael K., to Western Electric Co., Inc. Apparatus for bonding. 3,290,479, 12–6–66, Cl. 219—85.
Averbach, Benjamin L.: *See*—
Hay, Donald A., and Averbach. 3,290,233.
Avirett, Indiana: *See*—
Fredrick, Lawrence M. 3,289,627.
Avlon, George: *See*—
Greenwald, Harry, Malek, and Avlon. 3,289,802.
Ayer, William H., ½ to Sippican Corp., and ½ to A. C. Nolte, Jr. Wiring device with selectively severable conductors for forming predetermined circuit pattern. 3,290,537, 12–6–66, Cl. 317—101.
Azadian, Genevieve, to Roussel-UCLAF. Method of treating protein anabolism. 3,290,217, 12–6–66, Cl. 167—74.
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Palazzo, Giuseppe. 3,290,327.
Azoplate Corp.: *See*—
Tomanek, Martha. 3,290,146.
Uhlig, Fritz. 3,289,577.
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Nail, Clive. 3,290,105.
B. J., Management Corp.: *See*—
Davis, Artel R. 3,290,855.
B & N Mfg. Co., Inc.: *See*—
Williams, William C. 3,289,738.
B & W Inc.: *See*—
Seward, Edwin H., and Myers. 3,289,767.
Selzam, James R. 3,289,768.
Babcock & Wilcox Co., The: *See*—
Clark, Merle M., and Bennett. 3,289,944.
Koch, Paul H., and Hill. 3,289,451.
Rathmann, Rudolf E., Reiter, and Wilcoxson. 3,289,642.
Schoessow, Earl E., Aldrich, Purdy, and Sawyer. 3,290,222.
Babcock & Wilcox Ltd.: *See*—
Evans, Richard H. 3,289,645.
Bach, Friedrich, to Veb Leuna-Werke "Walter Ulbricht." High pressure caused motor pump. 3,289,595, 12–6–66, Cl. 103—37.
Backstrom, Carlyle K., to C. F. Hathaway Co. Stretch garment. 3,289,213, 12–6–66, Cl. 2—116.
Bader, Erich, and H. Koert, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Cold curing reaction lacquers containing at least one component containing ethylenic unsaturation curable by polymerization. 3,290,-410, 12–6–66, Cl. 260—862.
Bader, Erich, and H. Landsfeld, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Curing liquid for hardening monomeric polymerisable organic compounds. 3,290,-257, 12–6–66, Cl. 252—426.
Badische Anilin- & Soda Aktiengesellschaft: *See*—
Doerfel, Helmut. 3,290,329.
Baechli, George, to Lee-Norse Co. Extendible conveyor. 3, 289,816, 12–6–66, Cl. 198—139.
Bahls, Gene C.: *See*—
Dick, Lloyd C., McNutt, and Bahls. 3,289,828.
Bahlsen, Werner: *See*—
Lange-Wiebe, Ferdinand. 3,289,914.
Bailey, John M., Jr., R. L. Adams, and J. Agin, to Radio Corp. of America. Character reader utilising stroke and cavity detection for recognition of characters. 3,290,650, 12–6–66, Cl. 340—146.3.
Baird, Stephen S., and C. R. Fuller, to Texas Instruments Inc. Method of treating silicon and devices containing PN junctions. 3,290,180, 12–6–66, Cl. 148—1.5.
Baker, Melvin L., to TRW Inc. Electrical signal analyzing systems. 3,290,500, 12–6–66, Cl. 324—68.
Baker Oil Tools, Inc.: *See*—
Bigelow, Herbert L. 3,289,766.
Baker, Theodore C., B. B. Mathias, J. R. Sager, and L. W. Sebring, to Owens-Illinois, Inc. Tubing diameter gauge. 3,289,309, 12–6–66, Cl. 33—148.
Baldwin, Ivan. Stapling pliers. 3,289,456, 12–6–66, Cl. 72—410.
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Baltimore Aircoil Co., Inc.: *See*—
Engalitcheff, John, Jr. 3,290,025.
Baltzly, Richard: *See*—
Harfenist, Morton, and Baltzly. 3,290,375.
Balwanz, William W., to United States of America, Navy. Method and apparatus for weeding the flame plasma of a rocket exhaust. 3,289,410, 12–6–66, Cl. 60—206.
Banaszak, Lloyd J., to Honeywell Inc. Control apparatus. 3,289,978, 12–6–66, Cl. 244—43.
Bancroft, Joseph, & Sons Co.: *See*—
Hodges, James R., and Hall. 3,289,265.
Banks, Peter B., to English Electric Valve Co. Ltd. Method and apparatus for manufacturing thin glass films. 3,290,-132, 12–6–66, Cl. 65—32.
Banks, William B., to Automation Products Inc. Apparatus for measuring viscosity. 3,289,466, 12–6–66, Cl. 73—59.
Baranauckas, Charles F., and J. J. Hodan, to Hooker Chemical Corp. Improved coating compositions containing as a leveling agent an organo phosphite composition. 3,290,264, 12–6–66, Cl. 260—28.5.
Baratoff, Paul, to Korfund Dynamics Corp. All-directional shock mount. 3,289,998, 12–6–66, Cl. 248—358.
Barber-Colman Co.: *See*—
Pettit, Glenn A. 3,290,485.
Barber-Greene Co.: *See*—
Ohman, Ralph L. 3,289,888.
Bardoneschi, Roland: *See*—
Joly, Robert, Warnant, and Bardoneschi. 3,290,298.
Bardwell, Francis G., and F. Brouwer, to Stewart-Warner Corp. Automatic contour tracer progamming apparatus and methods. 3,289,540, 12–6–66, Cl. 90—13.5.
Barker, La Var H.: *See*—
Henn, Charles W., Barker, and Horak. 3,290,084.
Barmatic Machines, Inc.: *See*—
Korecky, Allan J. 3,290,074.
Barnes, Lyle K., to The Hays Corp. Gas sampling device. 3,289,451, 12–6–66, Cl. 73—421.5.
Barnes, Marion D., and A. V. Tobolsky, to Research Corp. Compositions containing elemental sulphur. 3,290,266, 12–6–66, Cl. 260—30.8.
Baroody, Abraham R. Warm air heating system control. 3,289,934, 12–6–66, Cl. 236—9.
Barrentine, William J., to Transpolymer Industries, Inc. Plastic pipe having a conductive exterior surface and method of making the same. 3,290,426, 12–6–66, Cl. 174—47.
Barstow, Frederick C., to Polaroid Corp. Cascade coating apparatus for applying plural layers of coating material to a moving web. 3,289,632, 12–6–66, Cl. 118—412.
Barton, Derek H. R., to Research Institute for Medicine and Chemistry Inc. Process for the production of iodohydrins or of cyclic ethers derived therefrom. 3,290,296, 12–6–66, Cl. 260—239.55.
Bartram, Robert J., R. C. Brown, and J. A. Simpson, to Texas Instruments Inc. Yig filter. 3,290,625, 12–6–66, Cl. 333—73.
Bastian-Blessing Co., The: *See*—
Yuza, Joseph J. 3,289,595.
Battershell, Robert D., and H. Bluestone, to Diamond Alkali Co. Halogenated aromatic nitriles. 3,290,353, 12–6–66, Cl. 260—465.
Batti, Mario A., to Miles Laboratories, Inc. Process for production of citric acid. 3,290,227, 12–6–66, Cl. 195—36.
Baum, Leonard, Jr.: *See*—
Fiedler, Paul R., Oehs, and Baum. 3,290,480.

Baumgarten, Fritz, and J. Niemann, to Savin Business Machines Corp. Variable charge length electrostatic copier. 3,290,553, 12–6–66, Cl. 99—64.
Baur, Fredric J.: *See*—
Wootten, James C., and Baur. 3,289,849.
Bayne, Peter D., and J. L. Pahlow, to Jos. Schlitz Brewing Co. Process and apparatus for concentrating wort. 3,290,-153, 12–6–66, Cl. 99—53.
Beach, Justice M., to The Hoover Co. Pump control, check valve and debris sampling means for shampooing and scrubbing device. 3,289,232, 12–6–66, Cl. 15—29.
Beal, Phillip R. III, G. S. Fonken, and J. B. Pike, to The Upjohn Co. Microbiological conversion of unsaturated fatty acids. 3,290,226, 12–6–66, Cl. 195—30.
Beard, Charles R., to Westinghouse Electric Corp. Controls for refrigeration systems having air cooled condensers. 3,289,429, 12–6–66, Cl. 62—183.
Becker, Rene: *See*—
Morgan, Herbert A., Kreutin, and Becker. 3,289,952.
Becker, Gerhard: *See*—
Hesker, Alfred, and Becker. 3,289,829.
Becker, Heilmut, H. Frank, and H. Schmidt, to Ernst Leitz G.m.b.H. Gun elevation control device. 3,289,594, 12–6–66, Cl. 89—41.
Becker, Kunibert: *See*—
Beulker, Franz, Becker, and Floter. 3,289,907.
Beckman, Ronald H., and G. H. Nelson, to Herman Miller, Inc. Conference desk with concealed storage. 3,290,106, 12–6–66, Cl. 312—251.
Bedgrood, Victor, and R. A. A. Fagan, to Albright (Engineers) Ltd. Latched closed electronic solenoid switch. 3,290,631, 12–6–66, Cl. 335—168.
Beemsterboer, Simon B., and M. Vander Heyden. Pin extractor. 3,290,005, 12–6–66, Cl. 254—18.
Belanger, Celestin V., to H. W. Allen. O-ring seating tool. 3,290,284, 12–6–66, Cl. 29—235.
Belcourt, Francis J., and L. A. Luke, to Sperry Rand Corp. Content addressable associative memory with an output comparator. 3,290,661, 12–6–66, Cl. 340—173.
Belden, Reed M.: *See*—
Benfield, John H., and Belden. 3,290,209.
Belknap, William E., to Phillips Petroleum Co. Process and apparatus for injecting fluid into a well. 3,290,763, 12–6–66, Cl. 166—44.
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Jenson, William R., Gross, and Morris. 3,289,548.
Bell, James R., and E. H. Nelson, to Whitmar Mfg., Inc. Fertilizer spreader. 3,290,046, 12–6–66, Cl. 275—6.
Bell, John, to Zenith Radio Corp. VHF-UHF television tuner. 3,290,604, 12–6–66, Cl. 325—452.
Bell, Lewis W., to Star Expansion Industries Corp. Washer assembly with fastener. 3,289,522, 12–6–66, Cl. 85—10.
Bell Telephone Laboratories, Inc.: *See*—
Anderson, Eugene E., and Maxwell. 3,290,444.
Auld, Bert A., and Matthews. 3,290,610.
Bobeck, Andrew H., and Smith. 3,290,662.
Gensic, Joseph M., and Van Uitert. 3,290,619.
Horlacher, Robert L., and Logan. 3,290,611.
Jeanne, Armand L. 3,290,628.
Kalmus, Dawson, and Lagemaier. 3,290,127.
Olson, Nels K. 3,290,482.
Prescott, Robert E., and Wilder. 3,290,439.
Riddell, George. 3,290,607.
Stevens, Bruce R. 3,290,594.
Bellem, Edward, to Northern Electric Co. Ltd. Frequency modulated relaxation oscillator. 3,290,617, 12–6–66, Cl. 332—14.
Bender, Werner K., to The Kalart Co. Inc. Audio-visual teaching material and apparatus for preparing such material. 3,289,336, 12–6–66, Cl. 35—35.
Bendix Corp., The: *See*—
Camp, Leon W. 3,289,279.
Kytta, Oswald O. 3,289,547.
Rogers, Francis R., McCombs, and Snider. 3,289,411.
Toller, Raymond F. 3,290,686.
Bennett, Jack F., E. L. Brown, Jr., A. T. Heron, and R. B. Lienhard, to Esso Research and Engineering Co. Discounted cash flow return rate template. 3,289,891, 12–6–66, Cl. 235—59.
Bennett, James P., to International Harvester Co. Precision tillage unit. 3,289,771, 12–6–66, Cl. 172—155.
Bennett, William T.: *See*—
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Benno Schilde Maschinenbau AG.: *See*—
Roos, Friedrich. 3,289,318.
Benson, Albert H. Collapsible vessels. 3,289,721, 12–6–66, Cl. 150—5.
Benson, Hyman, Arithmetical teaching device. 3,289,334, 12–6–66, Cl. 35—31.
Bentele, Max, C. Jenne, F. A. Kling, and C. J. Hane, to Cartus-Wright Corp. Air cooled rotary combustion engine. 3,289,650, 12–6–66, Cl. 123—8.
Bernenbaum, Monte H., and R. H. Gobran, to Thiokol Chemical Corp. Curing of unsaturated polymers with triazine tri(sulfenyl chlorides) and derivatives thereof. 3,290,273, 12–6–66, Cl. 260—79.5.
Berg, Morris: *See*—
Zollman, James A., and Berg. 3,290,171.
Berger, Brandt W., and J. F. Kohler, to Allen Electric and Equipment Co. Closure device. 3,289,442, 12–6–66, Cl. 70—172.
Berger, Gerald A.: *See*—
Antenson, David B., and Berger. 3,290,208.
Bergonzo, Pierre, Automatic lathe. 3,289,504, 12–6–66, Cl. 82—2.
Berju, Klaus K., and E. M. Strehlein, to The Electric Storage Battery Co. Electric storage battery electrolyte circulator device. 3,290,176, 12–6–66, Cl. 136—180.
Bertin, Robert: *See*—
Denny, George R., and Stoner. 3,290,697.
Bessandy, Charles, M. Prillieux, and R. Martin, to Rare Research and Engineering Co. Organosilanol chemical and trimethylol alkanes. 3,290,367, 12–6–66, Cl. 260—448.
Bergner, William L., C. P. Malmberg, and R. P. Stewart, to Union Carbide Corp. Load support means for thermally insulated containers. 3,290,417, 12–6–66, Cl. 62—45.
Berthel, Ernst A., and F. J. Gentschow, to Federal Pacific Electric Co. Making a fuse link. 3,290,277, 12–6–66, Cl. 29—155.5.
Bertram, Sidney, to TRW Inc. Photoelectric object tracking system using signal delay and multiplying correlators. 3,290,506, 12–6–66, Cl. 250—203.
Bertrand, Francois, to Rhonepoulenc, S.A. Soluble alkanol ammonium chloroalkine carboxylates. 3,290,288, 12–6–66, Cl. 260—306.7.
Best, Franklin M.: *See*—
Van Dolah, Dales B., Mulland, and Best. 3,290,245.
Best, Harold E. Method and mold for making thin-walled containers. 3,290,416, 12–6–66, Cl. 264—92.
Betteiligungs- und Patentverwaltungs-Gesellschaft mit beschrankter Haftung: *See*—
Maatsch, Jurgen, Borowski, Hofmann, Hess, and Sitzl. 3,290,681.
Muller, Peter. 3,289,692.
Beteille, Roger H., to Sud-Aviation Societe Nationale de Constructions Aeonautiques. Device for jamming radar detection and interception of ballistic missiles. 3,290,681, 12–6–66, Cl. 343—18.
Beulker, Franz, K. Becker, and M. Floter, to Gewertschaft Eisenhutte Westfalia. Mine prop and shoe arrangement. 3,289,907, 12–6–66, Cl. 248—357.
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Garris, Thomas, Daus, Celestino, and Bevis. 3,289,557.
Beyer, Donald S., and C. G. Thornton, to Meterola, Inc. Apparatus for fabricating alloyed junction semiconductor assemblies. 3,290,033, 12–6–66, Cl. 206—24.
Bienhoff, Milton G.: *See*—
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Biro, Attila, to Nikex Nehezipari Kulkereskedelmi Vallalat. Isothermic heat exchangers. 3,289,743, 12–6–66, Cl. 165—10.
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Warrington, Bert, Bishop, and Wood. 3,289,846.
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Vandervoet, Frederick R., and Yonkers. 3,289,240.
Bivlator S.A.: *See*—
Adler, Karl, and Ducommun. 3,290,562.
Bixby, Wallace H. Screen panel. 3,289,837, 12–6–66, Cl. 209—395.
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Blachly, Donald L., and J. R. Prengel, to John Oster Mfg. Co. Portable humidifier. 3,290,021, 12–6–66, Cl. 261—89.
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Mafay, George R., Jr. 3,289,534.
Black, James G., Jr.: *See*—
Mayhern, Charles C., and Black. 3,289,270.
Blackwood, Hennen U. Plow with adjustable and replaceable elements. 3,289,772, 12–6–66, Cl. 172—261.
Blake, Edward S., E. M. De Brunner, and G. A. Richardson, to Monsanto Research Corp. Chlorine-substituted diarylalkanes as hydraulic fluids. 3,290,253, 12–6–66, Cl. 252—78.
Blanchard, Peter M., to British Petroleum Co. Ltd. Silicone ester lubricants. 3,290,244, 12–6–66, Cl. 252—49.6.
Bloch, Herman S., to Universal Oil Products Co. Production of alkylated hydroxy substituted aromatic compounds. 3,290,394, 12–6–66, Cl. 260—624.
Blocher, John M., Jr., M. F. Browning, and R. W. Davies, to United States of America, Atomic Energy Commission. Coated nuclear reactor fuel particles of UO2 and method of making the same. 3,290,256, 12–6–66, Cl. 176—67.
Block, Alfred E., to Block and Anderson Ltd. Duplicating master sheets. 3,289,570, 12–6–66, Cl. 101—149.4.
Bloom, Earl M., Jr., and C. Mrymski, to International Business Machines Corp. High speed printer with variable cycle control. 3,290,676, 12–6–66, Cl. 101—93.
Bluestone, Henry: *See*—
Battershell, Robert D., and Bluestone. 3,290,353.
Bluhm, Aaron L.: *See*—
Weinstein, Julius, Bluhm, and Sousa. 3,290,231.
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Blumcraft of Pittsburgh: *See*—
Blum, Louis, and Horgan. 3,290,851.
Board, Richard G., and F. H. Shapiro. Retractable safety belts. 3,289,970, 12–6–66, Cl. 242—107.4.
Bobeck, Andrew H., and J. L. Smith, to Bell Telephone Laboratories, Inc. Nondestructive read magnetic film memory. 3,290,662, 12–6–66, Cl. 340—174.
Bodine, Albert G., Jr. Vibration isolator for sonic pole driving system. 3,289,774, 12–6–66, Cl. 175—19.
Bohlayer, Melvin F. Accessible fastening means. 3,289,283, 12–6–66, Cl. 24—208.
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Boittel, Arwed C., to Alton Box Board Co. Package for books. 3,289,834, 12–6–66, Cl. 206—46.

Boivie, Jean L. E., to Electrolux Aktiebolaget. Axial flow fan. 3,289,930, 12–6–66, Cl. 230—117.

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Kotelnikov, Georgy R., Trokhachev, Booshin, Klimin, Jablonsky, Chikhachev, Monozon, Sobolev, Mikheidze, and Zigel. 3,290,782.

Booth, Stanley H., and E. W. A. Scrivener, to Her Britannic Majesty's Principal Secretary of State for the War Department. Fluid controlled safety devices for selector valves. 3,289,701, 12–6–66, Cl. 137—627.1.

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Alumbaugh, Eugene L. 3,290,027.
Haley, William J. 3,289,431.
Krause, Albert W. 3,290,028.

Borowski, Kurt: *See*—
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Bosch, Paul, to Robert Bosch G.m.b.H. Axial piston pump or motor arrangement. 3,289,606, 12–6–66, Cl. 103—162.

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Bosse, Ralph W., H. Werle, and A. W. Dixon, to The Alvey-Ferguson Co. Ram-type pusher conveyor. 3,289,821, 12–6–66, Cl. 198—221.

Boston Machine Works Co.: *See*—
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Bougie, Jean, to Compagnie Generale de Radiologie. Ratio of permissible to actual X-ray load indicator using plural logarithmic response circuits. 3,290,596, 12–6–66, Cl. 324—140.

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Golbeck, Bernard J., Boulter, Tice, and Lewandowski. 3,290,473.

Bourne, Joseph R., to Carrier Corp. Absorption refrigeration systems and method of operation providing improved solution distribution over the tubes of the absorber. 3,289,427, 12–6–66, Cl. 62—101.

Bowman, Richard R.: *See*—
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Boyd, Gil R.: *See*—
Nelson, Wayne F., and Boyd. 3,289,769.

Boyd, James W., and D. L. Thaldorf, to Packaging Corp. of America. Carton construction. 3,289,911, 12–6–66, Cl. 229—2.5.

Breconier, Frederic F. A., and P.-J. Leroux, to Societe Belge de L'asote et des Products Chemiques du Marly. Process for preparing vinyl chloride. 3,290,399, 12–6–66, Cl. 260—656.

Brandt, Preston L., to Velsicol Chemical Corp. Production of polymeric compositions from petroleum fraction. 3,290,-276, 12–6–66, Cl. 260—82.

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Breithaupt, Raymond O., to Hughes Tool Co. Mining machine with pivotally mounted and opposed elongated cutters. 3,290,095, 12–6–66, Cl. 299—57.

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Brennan, James H., and MacMaster, to Emhart Corp. Display case. 3,289,422, 12–6–66, Cl. 62—256.

Brette, Alfred J. M., to Compagnie des Compteurs. Oscillating disc liquid meter. 3,289,476, 12–6–66, Cl. 73—258.

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Bristol-Myers Co.: *See*—
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Partyka, Richard A. 3,290,319.

British Petroleum Co. Ltd.: *See*—
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British Petroleum Co. Ltd., The: *See*—
Howman, Eric J., Lacey, and Turner. 3,290,404.

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Justich, Rade. 3,290,135.

Brombach, Ernst, and H. Gansauer, to Siegmer Maschinenbau G.m.b.H. Adjusting device for shear knives. 3,289,517, 12–6–66, Cl. 83—640.

Brumley, Kenneth W., to General American Transportation Corp. Machine for molding bottle carrying cases. 3,289,-282, 12–6–66, Cl. 18—42.

Brooks, Dennis G., and P. Evans, to Imperial Chemical Industries Ltd. Process for rendering urea anti-caking. 3,290,271, 12–6–66, Cl. 260—555.

Brooks, James P., ¼ to W. P. Hickey. Hook structure for perforated boards. 3,289,992, 12–6–66, Cl. 248—225.

Bross, Charles F., to Merrill Machinery Co. Microswitch holder-assembly. 3,290,475, 12–6–66, Cl. 200—168.

Brouillette, Joseph W., Jr., H. Hsu, and S. Wanuga, to General Electric Co. Apparatus for the generation of phonons by piezoelectric effects. 3,290,622, 12–6–66, Cl. 333—30.

Brouwer, Frans: *See*—
Bardwell, Francis G., and Brouwer. 3,289,540.

Brouwer, Frans, to Stewart-Warner Corp. Height control transducer. 3,290,032, 12–6–66, Cl. 264—23.

Broverman, Irwin: *See*—
Eichelman, George H., Jr., and Broverman. 3,290,182.

Brown, Charles R., to United States of America, Navy. Missile launching tube seal. 3,289,533, 12–6–66, Cl. 89—1.810.

Brown, Christopher K., to Ingersoll-Rand Co. Torque device. 3,289,407, 12–6–66, Cl. 60—54.5.

Brown, James L., Jr., R. Ferguson, and C. V. Hinton, to The Terrell Machine Co. Bobbin stripping and waste conditioning apparatus. 3,289,266, 12–6–66, Cl. 28—19.

Brown, Kenard D. Apparatus for direct contact condensation of vapors. 3,290,229, 12–6–66, Cl. 202—177.

Brown, Lemual G. Grille or screen. 3,289,876, 12–6–66, Cl. 52—626.

Brown, Nestor, Jr., and J. F. Schmidt, to Carrier Corp. Trap devices. 3,290,022, 12–6–66, Cl. 261—29.

Brown, Oliver L. I.: *See*—
Schonewald, Roger L., Brown, and Wilson. 3,289,897.

Brown, Ralph L., Jr.: *See*—
Bennett, Jack F., Brown, Heron, and Lienhard. 3,289,-931.

Brown, Raymond L., to Electrolux Corp. Flexible hose and method of making the same. 3,289,703, 12–6–66, Cl. 138—125.

Brown, Richard C.: *See*—
Bartram, Robert J., Brown, and Simpson. 3,290,625.

Browne-Morse Co.: *See*—
Wilson, Durward D., and Walhout. 3,290,106.

Browning, Melvin F.: *See*—
Blocher, John M., Jr., Browning, and Dayton. 3,290,228.

Brucato, Vincent A. Cutting tool. 3,289,274, 12–6–66, Cl. 29—97.5.

Bruckner, Klaus: *See*—
V. Werder, Fritz, Irmscher, Bruckner, Reiff, Nowak, and Hampel. 3,290,214.

Brunk, James E. High lift wing and flap structure for aircraft. 3,289,979, 12–6–66, Cl. 244—42.

Brunswick Corp.: *See*—
Stevens, Eric S., and Puhlmann. 3,289,354.

Bryans, David F.: *See*—
Herb, Carl C., and Bryans. 3,289,435.

Brzezinski, Donald E., and N. I. Potter, to Wehr Steel Co. Rotary motion control device. 3,289,797, 12–6–66, Cl. 188—171.

Buccigross, Henry L., to Arthur D. Little, Inc. Method for making porous resin structures. 3,290,260, 12–6–66, Cl. 260—2.5.

Buchanan, Beverly J. Electrical lead pull takeout. 3,289,-917, 12–6–66, Cl. 220—55.

Buck, Francis E.: *See*—
Mason, Russell L., and Buck. 3,290,642.

Buckeridge, Edward T.: *See*—
Payne, Leslie G. M., and Buckeridge. 3,290,641.

Buckle, Cecil H., to Goodall Rubber Co. Coupling device. 3,290,067, 12–6–66, Cl. 285—247.

Buckman, Raymond W., Jr.: *See*—
Thomas, Donald E., and Buckman. 3,289,943.

Buddecke, Heinrich. Apparatus for thoroughly aquably dyeing yarn in the form of a large yarn package. 3,289,440, 12–6–66, Cl. 68—189.

Budnick, Edward G.: *See*—
Stern, Charles J., Jr., and Budnick. 3,290,342.

Buhler, Hansruedi, to Maschinenfabrik Oerlikon. Device for controlling the speed of rail traveling vehicles. 3,289,783, 12–6–66, Cl. 180—82.1.

Bullock, Earl R., to Minnesota Mining and Mfg. Co. Digital to analog converter using a solion cell. 3,290,673, 12–6–66, Cl. 340—347.

Bundy, Milo, Corp.: *See*—
Krug, James R., and Bundy. 3,289,670.

Bundy, Milo E.: *See*—
Krug, James R., and Bundy. 3,289,670.

Bunker Ramo Corp., The: *See*—
Fuller, Richard H., and Mellott. 3,290,659.
Hallmark, Clyde E. 3,290,492.
Principotta, Josef E., Jr. 3,289,909.
Schneberger, Edward J., and Bienhoff. 3,290,494.
Spoltzer, Jack C. 3,290,648.

Buntin, William A.: *See*—
Mashburn, Morris W., Jr., and Buntin. 3,290,900.

Buonanno, Robert B. Molds. 3,289,563, 12–6–66, Cl. 18—47.

Burger, Joanne D., and W. L. Howard, to The Dow Chemical Co. Monopropynyl ethers of glycerol. 3,290,388, 12–6–66, Cl. 260—615.

Burke, Kenneth O., to Owens-Illinois, Inc. Case unloader. 3,289,867, 12–6–66, Cl. 214—309.

Burlington Industries, Inc.: *See*—
Glickmann, David, and Petree. 3,289,401.

Burmeister, Henry. Display supports. 3,289,994, 12–6–66, Cl. 248—225.

Burnham, John. Capacitor electrolyte. 3,290,561, 12–6–66, Cl. 317—230.

Burroughs Corp.: *See*—
Cake, Arthur F. 3,290,551.
Tillman, Robert M., and Schneider. 3,290,512.

Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
Harfenist, Morton, and Baltzly. 3,290,275.

Burrus, Thomas W., to Radio Corp. of America. Transistor blocking oscillator. 3,290,612, 12–6–66, Cl. 331—112.

Bucall, David C., Jr., to United States of America, Army. Insulated wire and cable clamp. 3,289,260, 12–6–66, Cl. 24—129.

Buschbom, Floyd R., to Vandale Corp. Conveying means. 3,289,863, 12–6–66, Cl. 214—17.

Buse, Frederic W., and S. H. Weaver, to Ingersoll-Rand Co. Centrifugal pumps. 3,290,998, 12–6–66, Cl. 103—103.

Bush, Edwin H. Cable coupling shield. 3,290,044, 12–6–66, Cl. 285—46.

Bush, George W., to Philadelphia Handle Co., Inc. Collapsible handle with sideaway linkage. 3,289,709, 12–6–66, Cl. 190—58.

Butler Mfg. Co.: *See*—
Anderson, Arthur I. 3,289,896.

Byington, Roy R., to Raytheon Co. Coherent filter spectrum analyzer including dual recirculating loops. 3,290,591, 12–6–66, Cl. 324—77.

Byrkett, Elwood L., J. H. Straw, and A. W. Wiseman, to The Shotland Corp. Pneumatic gaging apparatus. 3,289,-444, 12–6–66, Cl. 73—37.5.

C.A.V. Ltd.: *See*—
Hutchison, Keith F. 3,289,890.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Guyot, Joel, and Letellier. 3,294,616.
Malnar, Leon. 3,290,600.
Mouries, Georges. 3,290,545.

Cadieu, Jean, to Andre Seche: Anonyme Citroen. Load responsive brake system. 3,289,796, 12–6–66, Cl. 188—152.

Cahill, John J. Reinforcement applicator. 3,289,560, 12–6–66, Cl. 93—140.

Cais, Michael: *See*—
Kaufmann, John, and Cais. 3,290,337.
Kaufmann, John, and Cais. 3,290,344.
Kaufmann, John, and Cais. 3,290,345.
Kaufmann, John, and Cais. 3,290,346.

Cake, Arthur F., to Burroughs Corp. Memory circuit for indicator devices employing four-electrode, four layer semiconductor switch. 3,290,551, 12–6–66, Cl. 315—94.6.

Caldwell, Arthur R.: *See*—
Carper, Darrell R., and Caldwell. 3,290,609.

Calhoun, Thomas G., to United States of America, Navy. Electronic storage for strap. 3,290,674, 12–6–66, Cl. 340—5.

Callahan, James F., R. D. Smith, and R. H. Yen, to Radio Corp. of America. Electronic computer with interrupt facility. 3,290,656, 12–6–66, Cl. 340—172.5.

Calumet & Hecla, Inc.: *See*—
Engle, Lester F., and Day. 3,290,210.

Camarata, Frank J., to Westinghouse Electric Corp. Press sealing apparatus. 3,290,124, 12–6–66, Cl. 65—140.

Cambier van Nooten, Wilhem H. J., to Van Leer Industries Ltd. Tool and method for opening sealed containers. 3,290,289, 12–6–66, Cl. 29—427.

Cameo, Inc.: *See*—
McGowen, Harold R., Jr. 3,289,419.
Tausch, Gilbert H. 3,289,479.

Camp, Leon W., to The Bendix Corp. Method of manufacturing annular laminated cores for transducers. 3,289,279, 12–6–66, Cl. 29—155.57.

Campbell, Robert M., and I. W. Mills, to Sun Oil Co. Process for slow release fertilizer comprising urea, paraffin wax, and urea-wax addect inhibitor. 3,290,139, 12–6–66, Cl. 71—30.

Campbell Soup Co.: *See*—
Ramsey, Joseph D. 3,289,832.

Canadian International Paper Co.: *See*—
Hamilton, Douglas D. 3,289,805.

Candlin, James H., Jr., deceased (by First National Bank of Leasing, Ill., administrator), and W. Van Der Steyn, to Pullman Inc. Fifth wheel stand for railroad cars. 3,289,-967, 12–6–66, Cl. 248—110.

Carabateas, Philip M., to Sterling Drug Inc. 1-(N-aryl-N-alkanoylaminoalkyl)-4-aryl-4-piperidinols and their esters. 3,290,317, 12–6–66, Cl. 260—293.4.

Carey, Russell M., deceased (by E. M. Carey, executrix), to Ellason Refrigerator Co. Offset hinge assembly for a swingable door. 3,289,344, 12–6–66, Cl. 16—154.

Carle, Robert A., and J. D. Williams, to Phillips Petroleum Co. Apparatus and process for handling stacked and nested members. 3,290,861, 12–6–66, Cl. 214—8.5.

Carlsson, Nils E., to North American Philips Co., Inc. Means for correcting the local oscillator frequency in a radar system. 3,290,676, 12–6–66, Cl. 343—17.1.

Carmody, Robert J. Method of making filament wound plastic containers. 3,290,197, 12–6–66, Cl. 156—171.

Carper, Darrell R., and A. B. Caldwell. Apparatus for conveying a heavy line down a steep hillside. 3,290,009, 12–6–66, Cl. 294—147.

Carre, Reinhard: *See*—
Brault, Yves, Carre, and Cheminant. 3,290,679.

Carrier Corp.: *See*—
Bourne, Joseph R. 3,289,427.
Brown, Nestor, Jr., and Schmidt. 3,290,022.
Haines, John T. 3,289,426.
Herb, Carl C., and Bryans. 3,289,435.
Leonard, Louis H., Jr. 3,289,748.
Traver, Darwin G. 3,289,434.

Carroll, James H., to Phillips Petroleum Co. Calorimetric analysis for control of catalytic polymerization reactions. 3,290,116, 12–6–66, Cl. 23—230.

Carroll, William J. Reinforcing rod support. 3,289,378, 12–6–66, Cl. 52—688.

Carron, Maurice C. H., to Societe Anonyme des Laboratories Robert et Carriere. Antibacterial nitrofurylidene dolivatives and methods of using same. 3,290,213, 12–6–66, Cl. 167—65.

Carruthers, James M.: *See*—
Miller, Frank H., and Carruthers. 3,289,899.

Carter, Sidney L., and A. Gutschmit, to Alamac Knitting Mills, Inc. Splitting machine. 3,289,510, 12–6–66, Cl. 83—151.

Cary, Paul O. Automatic sectioning machines. 3,289,663, 12–6–66, Cl. 125—13.

Cascade Corp.: *See*—
Richards, John A. 3,289,842.

Casland, Jean, G. De Sosta, and J. Cholet, to Institut Francais du Petrole, des Carburants & Lubrifiants. Transmitting device for sound waves. 3,289,784, 12–6–66, Cl. 181—.5.

Castelman, Clarence M., and T. E. Predum, Sr. Tool for removing old tile cement or mastic from walls and floors. 3,289,297, 12–6–66, Cl. 30—347.

Cassidy, Uhle F.: *See*—
Mole, Cecil J., and Cassidy. 3,290,177.

Castrol Ltd.: *See*—
Elliott, John S., and Edwards. 3,290,245.

Caterpillar Tractor Co.: *See*—
Kristensen, Rodney E. 3,289,546.
See, Shao L. 3,289,921.

Catterall, Eric, to Dunlop Rubber Co. Ltd. Polymerization of isoprene with a VCl_3-Al(C_2H_5)$_2$-diisopropyl ether catalyst. 3,290,279, 12–6–66, Cl. 260—94.3.

Cave, Boyd D.: *See*—
Agin, Ernest W., Cave, and Hafer. 3,289,881.

Casalis, Jean P., and G. Lefort, to Commissariat a l'Energie Atomique. Device for providing a leak-tight coupling between two sealed enclosures. 3,289,698, 12–6–66, Cl. 137—614.01.

Casalis, Jean-Pierre, G. Lefort, and J. Rouillard, to Commissariat a l'Energie Atomique. Leak-tight coupling device for master-slave manipulator. 3,289,435, 12–6–66, Cl. 76—18.2.

Celestino, Alfred: *See*—
Garcia, Thomas, Daza, Celestino, and Bevis. 3,289,577.

Central Dynamics Ltd.: *See*—
Rees, John D. 3,290,519.

Ceonso, Joseph A., L. Stambler, and A. Weiss, to United States of America, Army. Register position in a multi-stage switching network. 3,290,446, 12–6–66, Cl. 179—18.

Ceskoslovenska akademie ved: *See*—
Haskovec, Jiri S., and Klimek. 3,290,514.

Chafee, Glenn E., Jr., to General Electric Co. Dryness sensor for automatic fabric drying machine. 3,290,587, 12–6–66, Cl. 324—58.5.

Chambers, Ondas S. Dental floss holder. 3,289,681, 12–6–66, Cl. 132—92.

Champion, Ronald H., to Eclipse Fuel Engineering Co. Tamper-proof control for a by-pass type meter bar. 3,289,-696, 12–6–66, Cl. 137—599.1.

Chandler, Earl. Joggling tool. 3,289,454, 12–6–66, Cl. 72—385.

Chandler & Price Co., The: *See*—
Rapp, William C. 3,289,514.

Character Recognition Corp.: *See*—
Paafve, Eldred H., Greenly, and Lewandowski. 3,290,-651.

Charnigo, Joseph, Jr. Ventilated metal corner pieces. 3,289,-280, 12–6–66, Cl. 52—716.

Chemagro Corp.: *See*—
Alchenagy, Paul C., and Emerson. 3,290,280.

Chemetron Corp.: *See*—
Smith, Robert L. 3,289,712.

Chemical Construction Corp.: *See*—
Marten, Jerome H. 3,290,206.
Marten, Jerome H. 3,290,209.

Chemical & Phosphates Ltd.: *See*—
Harel, Simha, Stern, and Klein. 3,290,114.
Harel, Simha, Stern, Pussahovitz, and Budman. 3,290,-113.

Chemical Rubber Products, Inc.: *See*—
Davis, Edwin S. 3,290,195.

Cheminant, Roger: *See*—
Brault, Yves, Carre, and Cheminant. 3,290,679.

Chemische Fabriek L. Van der Grinten N.V.: *See*—
Ezenhuistra, Jan, Heibers, and Van Helden. 3,290,150.

Chemische Werke Huls Aktiengesellschaft: *See*—
Bohm, Georg, and Dietrich. 3,290,205.

Chemicek, Joseph A., and W. K. T. Gleim, to Universal Oil Products Co. N-phenyl-N'-sec-alkyl-ortho-phenylenediamines. 3,290,376, 12–6–66, Cl. 260—576.

Chester Corp.: *See*—
De Pew, Chester C. 3,289,576.

Chevillon, Manuel. Braille recording and reproducing means. 3,289,227, 12–6–66, Cl. 35—35.

Chevron Research Co.: *See*—
Anderson, Donald J. 3,290,254.
Larson, Orvis V., and LaVigne. 3,290,252.

Chicago Aerial Industries, Inc.: *See*—
Maurer, John A. 3,289,561.

Chicago Metallic Sash Co.: *See*—
Jahn, Martin D. 3,290,075.

Chiesa, Arterigo. Machine for shearing or punching of sheer materials. 3,289,515, 12–6–66, Cl. 83—533.

Chikhachev, Jury N.: *See*—
Kotelnikov, George R., Trokhachev, Booshin, Klimin, Jablonsky, Chikhachev, Monozon, Sobolev, Mikheidze, and Zigel. 3,290,782.

Cholet, Jacques: *See*—
Casaud, Jean, De Sosta, and Cholet. 3,289,784.

Chopp, John A., to United States of America, Atomic Energy Commission. Welding means and method. 3,290,477, 12–6–66, Cl. 219—78.

Chow, Ho. Swivel joints. 3,290,072, 12–6–66, Cl. 287—87.

Christensen, Allan & Co., Firm: *See*—
Nielsen, Georg P. C. 3,289,222.

Christensen, Paul M., M. F. Koenig, and R. W. Wiesner, to Cutler-Hammer, Inc. Meter receptacle having an electrical bypass mechanism. 3,290,469, 12–6–66, Cl. 200—51.11.

Christensen, William. Lever actuated switch with resilient stationary leaf-spring contacts. 3,290,455, 12–6–66, Cl. 200—6.

Christenson, Roger M., S. Porter, Jr., and A. Halcoussis, to Pittsburgh Plate Glass Co. Methacrylate polymer coating composition modified with an alkylenimine. 3,290,416, 12-6-66, Cl. 260—861.

Christenson, Roger M., S. Porter, Jr., and A. Halcoussis, to Pittsburgh Pate Glass Co. Thermosetting coating compositions modified with an alkylenimine. 3,290,417, 12-6-66, Cl. 260—861.

Chrysler Corp.: *See*—
Sarto, Jorma O. 3,290,023.

Church, James. Bicycle handlebar attachment. 3,289,493, 12-6-66, Cl. 74—551.8.

Ciba Corp.: *See*—
Schmidt, Paul and Schweizer. 3,290,306.

Ciba Ltd.: *See*—
Mentz, Max, and Heinzer. 3,290,310.
Reusch, Karl. 3,290,333.
Weber, Oscar. 3,289,845.

Cichon, Henry P.: *See*—
Hesch, Otto Y. and Cichon. 3,290,664.

Cincinnati Milling Machine Co., The: *See*—
Decker, Jacob. 3,289,357.

Citroen, André: *See*—
Panhard, Paul. 3,289,406.

Citroen, André Societe Anonyme: *See*—
Cadion, Jean. 3,289,794.

Civitello, Anthony J., to Continental Can Co., Inc. Apparatus for and method of manufacturing multi-ply bags. 3,289,915, 12-6-66, Cl. 229—59.

Clark Equipment Co.: *See*—
Hoyt, Deryl R. 3,289,869.
La Tourneau, Howard C., and Willis. 3,289,871.

Clark, James L., to Plastronics, Inc. Closure construction for a flexible container. 3,289,723, 12-6-66, Cl. 150—7.

Clark, Merle M., and W. T. Bennett, to The Babcock & Wilcox Co. Spray nozzle mounting and oscillating mechanism. 3,289,944, 12-6-66, Cl. 239—227.

Clark, Russell D., Jr., and C. J. Mahler, to Westinghouse Electric Corp. Clip for fuse employed as movable member of switch. 3,290,463, 12-6-66, Cl. 200—114.

Clark, Willard F.: *See*—
Karpovich, John, and Clark. 3,290,256.

Clarkson, Richard, to Imperial Chemical Industries Ltd. (+)-3-hydroxyoestr-5-enogona-4-en-17-ol-3-ones. 3,290,314, 12-6-66, Cl. 260—286.

Clayton, Robert E.: *See*—
Vanderbilt, Byron M., and Clayton. 3,290,267.

Cleary, James M., to The Atlantic Refining Co. Underdrilling bit. 3,289,776, 12-6-66, Cl. 175—398.

Clements, Albert, to Minster Machine Co. Can extrusion machine. 3,289,450, 12-6-66, Cl. 72—267.

Clemons, Warren A., and D. A. Schwean, to Viking Auto Products, Inc. Automotive exhaust pipe support. 3,289,964, 12-6-66, Cl. 248—60.

Cleveland Trust Co.: *See*—
Webb, Ernest C. 3,289,574.

Clevite Corp.: *See*—
Kruse, Clarence E., and Richmond. 3,289,359.

Cline Aluminum Products, Inc.: *See*—
Cline, Robert S. 3,289,875.

Cline, Edward T., to E. I. du Pont de Nemours and Co. Process for increasing optical densities. 3,290,149, 12-6-66, Cl. 96—27.

Cline, Robert S., to Cline Aluminum Products, Inc. Panel construction. 3,289,375, 12-6-66, Cl. 52—593.

Clinton, Sam D. P. A. Haas, L. J. Hirth, and A. T. Kleinsteuber, to United States of America, Atomic Energy Commission. Process for preparing oxide gel microspheres from sols. 3,290,122, 12-6-66, Cl. 23—345.

Coal Tar Research Corp., The: *See*—
Grant, David W. 3,289,462.

Coburn, Clara M.: *See*—
Coburn, Wallace A. 3,289,936.

Coburn, Claire W.: *See*—
Coburn, Wallace A. 3,289,936.

Coburn, James H.: *See*—
Coburn, Wallace A. 3,289,936.

Coburn Mfg. Co., Inc.: *See*—
Coburn, Orin W., Suddarth, and Ganther. 3,289,255.

Coburn, Orin W., J. M. Suddarth, and F. E. Ganther, to Coburn Mfg. Co., Inc. Automatic lens grinding machine. 3,289,355, 12-6-66, Cl. 51—33.

Coburn, Wallace A., deceased, by C. W., J. H. and C. M. Coburn, executors. Humidification apparatus for forced air heating systems. 3,289,933, 12-6-66, Cl. 236—44.

Cohen, Clarence B. J. D. Schetzer, and J. E. Sellars, to TRW Inc. Manned spacecraft with staged re-entry. 3,289,974, 12-6-66, Cl. 244—1.

Cohen, David Z.: *See*—
Rettig, Albert S., Cohen, and Gwinn. 3,290,654.

Coleman, George M., R. Ruch, and J. F. Smith. Electromechanical transducer. 3,290,521, 12-6-66, Cl. 310—2.

Colgate-Palmolive Co.: *See*—
Farrar, Richard E., Russett, and Zmoda. 3,289,887.

Collins Microdot Co., Inc.: *See*—
Standridge, Ray D. 3,289,298.

Colonial Sugar Refining Co. Ltd., The: *See*—
Smythe, Bruce M., and Moye. 3,290,263.

Columbia Broadcasting System, Inc.: *See*—
Goldmark, Peter C., and Hollywood. 3,290,437.

Columbia Records Distribution Corp.: *See*—
Fender, Clarence L. 3,290,424.

Columbia Rope Co.: *See*—
Orser, Keith L. 3,290,420.

Combustion Engineering, Inc.: *See*—
Tuppeny, William H., Jr., and Ligenza. 3,289,526.

Commander Beard International Inc.: *See*—
Edwards, Lindell N. 3,289,240.

Commissariat a l'Energie Atomique: *See*—
Casalis, Jean-Pierre, and Lafort. 3,290,698.
Casalis, Jean-Pierre, Lafort, and Rouillard. 3,289,485.
Mitault, Gerard, and Puychevrier. 3,290,220.

Communications Patents Ltd.: *See*—
Quinton, Kenneth C., and Smart. 3,290,482.

Compact Industries, Inc.: *See*—
Syverson, Martelle J. and J. R. 3,289,885.

Compagnie des Compteurs: *See*—
Brette, Alfred J. M. 3,290,476.

Compagnie Francaise de Television: *See*—
De France, Henri, Dognin, and Melchior. 3,290,432.

Compagnie Generale de Radiologie: *See*—
Bougie, Jean. 3,290,326.

Compagnie Generale de Telegraphie Sans Fil: *See*—
Brault, Yves, Carre, and Chesnimant. 3,290,679.

Compton, James A., to Fawick Corp. Field displacement device usable as a hydraulic motor or pump. 3,289,801, 12-6-66, Cl. 103—130.

Conklin Equipment Co.: *See*—
Conklin, George D. 3,289,285.

Conklin, George D., to G. D. Conklin, doing business as Conklin Equipment Co. Machine for removing brake lining. 3,289,285, 12-6-66, Cl. 29—233.

Conrad, Winthrop B., to Teleflex, Inc. Control assembly. 3,289,491, 12-6-66, Cl. 74—501.

Consolidated Electronics Industries Corp.: *See*—
Kamens, Bruce H. 3,290,573.

Contemporary Research, Inc.: *See*—
Hay, Donald A., and Averbach. 3,290,233.

Continental Can Co., Inc.: *See*—
Civitello, Anthony J. 3,289,915.
Frankenberg, Henry E. 3,289,827.
Frankenberg, Henry E. 3,290,891.
Trnka, Ralph J. 3,289,308.

Continental Illinois Bank and Trust Co., The: *See*—
Frye, Charles F. 3,289,694.

Continental Oil Co.: *See*—
Lundeen, Allan J., and Coyne. 3,290,349.
Martin, William L., and Felsenthal. 3,289,758.
Starks, Charles M., and Eccles. 3,290,396.

Control Data Corp.: *See*—
Slattery, Leo F., and Schoenherr. 3,290,653.

Cook, Maurice D.: *See*—
Smoot, Thomas W., and Cook. 3,290,160.

Cooley, Kenneth D.: *See*—
Hogg, Walter R., and Cooley. 3,289,916.

Cooper, Dexter P. Jr., and J. A. Dainis, to Polaroid Corp. Color television receiver including display means comprising two uniformly distributed luminescent materials. 3,290,434, 12-6-66, Cl. 178—5.4.

Coover, Harry W., Jr.: *See*—
McCall, Marvin A., and Coover. 3,290,401.

Corazzo, Paul J., to Sherwood Tool Inc. Paper cup making machine. 3,289,552, 12-6-66, Cl. 93—39.3.

Cordeiro, Robert L.: *See*—
Medeiros, Charles L., and Cordeiro. 3,290,011.

Corliss, Robert F., to Monogram Industries, Inc. Portable toilet. 3,289,214, 12-6-66, Cl. 4—115.

Corn Products Co.: *See*—
Harms, Van D., and Johnson. 3,290,584.
Marino, Santino P. 3,290,173.

Cornelius Co., The: *See*—
Beighow, James E. 206,899.

Cornell-Dubilier Electric Corp.: *See*—
Robinson, William M. 3,290,571.

Corry, Stuart E. Device for transferring liquids. 3,289,593, 12-6-66, Cl. 103—72.

Corwin, Howard R., Jr.: *See*—
Turner, Alec F., and Corwin. 3,289,647.

Coulter Electronics, Inc.: *See*—
Hogg, Walter R., and Cooley. 3,289,916.

Counsell, Raymond E.: *See*—
Klimstra, Paul D., and Counsell. 3,290,295.

Cowdery, James R.: *See*—
Lounsbury, Donald H., and Cowdery. 3,289,610.

Cox, Arthur, and Sons, Inc.: *See*—
Millette, Kenneth A. 3,289,243.

Cox, Randal A. Tractor scraper blade. 3,289,382, 12-6-66, Cl. 37—144.

Coyne, Donald M.: *See*—
Landeen, Allan J., and Coyne. 3,290,349.

Cragoe, Edward J., Jr., and J. H. Jones, to Merck & Co., Inc. Derivatives of 3,5-diamino-6-chloropyrazinoic acid esters and a process for making them. 3,290,311, 12-6-66, Cl. 260—250.

Crast, Leonard B., Jr., to Bristol-Myers Co. 5-methyl-3-(2'-chloro-3'-thienyl)-b-isoxazolyl-penicillin and salts thereof. 3,290,291, 12-6-66, Cl. 260—239.1.

Cravens, Samuel V., to Maruma Enterprises Ltd. Counter-rotating disk cohesive material disintegrator. 3,289,951, 12-6-66, Cl. 241—39.

Crest Lock Co., Inc.: *See*—
Sheiman, Julius. 3,289,965.

Crew, Beverly L., to Sperry Rand Corp. Collision detector. 3,290,666, 12-6-66, Cl. 340—174.1.

Cross, Alexander D., to Syntex Corp. Tetrahydrofuranyl ethers of $\Delta^{1,3,5(10)}$ estratriene. 3,290,2207, 12-6-66, Cl. 260—239.55.

Crotean, Antonio E. Process of installing plastic liners inside of pipes. 3,289,288, 12-6-66, Cl. 29—401.

Crouch, Alfred E.: *See*—
Wood, Fenton M., and Crouch. 3,290,107.

Crouse-Hinds Co.: *See*—
Porretta, Michael L. 3,290,668.

Crowdes, George J., to API Instruments Co. Meter relay using fiber optics for ease of replacing a lamp and photocell. 3,290,503, 12-6-66, Cl. 324—96.

Crump, Ralph E., to Frigitronics, Inc. Refrigerated medical apparatus and heating means therefor. 3,289,749, 12-6-66, Cl. 165—48.

Cunningham, Donald F., to U.S. Partition & Packaging Corp. Intermediate spindle construction for guide belts for partition strip feeder construction. 3,290,041, 12-6-66, Cl. 271—9.

Cunningham, James A., and R. P. Williams, to Texas Instruments Inc. Multilevel expanded metallic contacts for semi-conductor devices. 3,290,570, 12-6-66, Cl. 317—240.

Curtiss-Wright Corp.: *See*—
Benteis, Max, Jones, Kling, and Sinna. 3,289,650.
Turner, Alec F., and Carwin. 3,289,647.

Cusano, Dominic A., and R. L. Sermanger, to General Electric Co. Semiconductor photovoltaic devices. 3,290,175, 12-6-66, Cl. 136—89.

Cushing, Donald E., to General Electric Co. Door structure for washing appliance. 3,290,806, 12-6-66, Cl. 222—154.

Cusic, John W., and P. Yonan, to G. D. Searle & Co. Hydrazones of 1-amino-4-dibenzocycloheptenylpiperazine. 3,290,300, 12-6-66, Cl. 260—240.

Cusic, John W., and P. Yonan, to G. D. Searle & Co. 1-carbamoyl-4-xanthenylpiperazines. 3,290,313, 12-6-66, Cl. 260—268.

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Christensen, Paul M., Koenig, and Wiesner. 3,290,460.

Cuva, Angelo C. Tape reel. 3,289,965, 12-6-66, Cl. 242—71.5.

Cvacho, Daniel, and F. I. Robertson, Jr., to Reynolds Metals Co. Method and apparatus for rotating and/or axially advancing tubular stock or the like. 3,289,554, 12-6-66, Cl. 93—60.

Dafin Corp.: *See*—
MacGillivray, Robert K. 3,289,833.

Dagens Nyheters Aktiebolag: *See*—
Dalin, Gustav B. 3,289,835.

Dailey, Donald B. and A. F. Hiltz, to Mead Johnson & Co. Nursing container. 3,289,874, 12-6-66, Cl. 215—11.

Daimler-Benz Aktiengesellschaft: *See*—
Enke, Kurt. 3,289,085.
Lamm, Heinz. 3,289,649.
Muller, Alfred H. 3,289,648.
Wilfert, Karl. 3,290,083.

Dainis, Jeanne A.: *See*—
Cooper, Dexter P., Jr., and Dainis. 3,290,434.

D'Alessio, Juan T.: *See*—
Ludwig, Peter K., and D'Alessio. 3,290,615.

D'Alessio, Philip A.: *See*—
D'Alessio, Stephen A. and P. A. 3,290,204.

D'Alessio, Stephen A. and P. A. Laminated panels and their method of production. 3,290,204, 12-6-66, Cl. 161—43.

Dalin, Gustav B., to Dagens Nyheters Aktiebolag. Method of sorting out defective printed matter arriving from rotary printing machines, particularly newspaper printing machines, and device for carrying the method into effect. 3,289,835, 12-6-66, Cl. 209—120.

Dalton Sheet Metal Co., Inc.: *See*—
Hall, Herman M. 3,290,430.

Damiani, John H. Camper bed. 3,290,085, 12-6-66, Cl. 296—32.

Dammannbeeken Plasticindustri A/S: *See*—
Steenberg, Andreas P. 3,289,555.

Daniel Industries, Inc.: *See*—
Taylor, Joseph W. 3,290,001.

Daniels, Dennis. Rotary actuator. 3,289,544, 12-6-66, Cl. 91—167.

Darthenay, Georges R., to R. A. A. Darthenay. Apparatus for reproducing continuously moving documents. 3,289,529, 12-6-66, Cl. 88—24.

Darthenay, Robert A. A.: *See*—
Darthenay, Georges R. 3,289,569.

Datamack, Inc.: *See*—
Wasserman, Carl I. 3,289,575.

Daubenfeld, Jean, to Zimmermann & Jansen G.m.b.H. Extruder (screw type) for the profiling of plastic materials, i.e., plastics gutters, earthy masses, etc. 3,289,251, 12-6-66, Cl. 18—12.

Daugherty, T. Stevens, to Reynolds Metals Co. Method of producing multitextural flat stock. 3,290,145, 12-6-66, Cl. 75—214.

Dauner, Karl, to Siemens & Halske Aktiengesellschaft. Method of producing an electrical capacitor. 3,289,269, 12-6-66, Cl. 29—25.42.

Daus, Carl G.: *See*—
Garcia, Thomas, Daus, Celestino, and Bevis. 3,289,557.

Davenport, Joseph J., to Shell Oil Co. Vent plug. 3,289,878, 12-6-66, Cl. 220—44.

Davey, Thomas J. Lead forming tool. 3,289,446, 12-6-66, Cl. 72—36.

Davies, Henry K., and D. M. Storms. Barrier-mixer for tubular containers. 3,290,017, 12-6-66, Cl. 259—114.

Davis, Ariel R., to B. J. Management Corp. Silicon controlled rectifier dimmer. 3,290,585, 12-6-66, Cl. 315—194.

Davis, Edwin S., to Chemical Rubber Products, Inc. Method of making a V-belt. 3,290,196, 12-6-66, Cl. 156—139.

Davis, Frank L. Buckle with swinging clamp bolt adjustment. 3,289,261, 12-6-66, Cl. 24—193.

Davis, Jesse. Etching process. 3,290,191, 12-6-66, Cl. 156—3.

Davis, Ralph B., and C. Mano, to Heinemann Electric Co. Circuit breaker. 3,290,627, 12-6-66, Cl. 335—6.

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Fileg, Werner, and Davis. 3,290,507.

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Richmond, William J. 3,289,515.

Dawson, Douglas M., to Industrial Plastic Molders, Inc. Breakable seal. 3,290,080, 12-6-66, Cl. 292—322.

Dawson, Vernon L.: *See*—
Hitchens, Aaron L., Fountain, Dawson, and Lowry. 3,289,588.
Hitchens, Aaron L., Fountain, Dawson, and Lowry. 3,289,589.

Day, Howard E.: *See*—
Engle, Lester F., and Day. 3,290,210.

Day, William M., to General Electric Co. Coffee maker-server. 3,290,484, 12-6-66, Cl. 219—441.

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Bleecher, John M., Jr., Browning, and Dayton. 3,290,228.

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Dean Research Corp.: *See*—
Dean, George A. 3,289,860.

De Bernardis, Joseph N., to Sylvania Electric Products Inc. Assembly jig. 3,289,283, 12-6-66, Cl. 29—25.19.

De Blase, Louis A. Baseboard radiation. 3,289,751, 12-6-66, Cl. 165—55.

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De Castelet, Gaetan De C., to Regie Nationale des Usines Renault. Air-conditioning of automobile vehicles. 3,289,938, 12-6-66, Cl. 237—34.

Deckel, Friedrich W.: *See*—
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Deckel, Hans: *See*—
Ostler, Josef. 3,289,538.

Decker, Jacob, to The Cincinnati Milling Machine Co. Machine tool anti-backlash mechanism. 3,289,367, 12-6-66, Cl. 51—165.

De Coye de Castelet, Gaëtan, to Regie Nationale des Usines Renault. Air-conditioning devices for automobile vehicles. 3,289,534, 12-6-66, Cl. 98—2.

Dedricks, Alvin N., and R. H. Swanson, to The Manitowoc Co., Inc. Spray type ice cube making machine. 3,289,430, 12-6-66, Cl. 62—135.

De France, Henri, B. Dognin, and G. Melchior, to Compagnie Francaise de Television. Colour television transmitters. 3,290,433, 12-6-66, Cl. 178—5.4.

De Groff, Morton S., and R. E. Pleuck, to The Arc Corp. Automatic shut-off tool. 3,289,715, 12-6-66, Cl. 144—32.

Deichert, William G., and H. K. W. Veigt, to American Cyanamid Co. Apparatus for testing the mar resistance of materials. 3,289,458, 12-6-66, Cl. 73—7.

De Jong, Elkan J. Stable pharmaceutical and cosmetic dispersions. 3,290,218, 12-6-66, Cl. 167—82.

Delamater, William B. Sewer pipe plug. 3,289,375, 12-6-66, Cl. 220—24.5.

Del Giudice, Frank P., and R. C. Wade, to Metal Hydrides Inc. Method for preparing sodium aluminum hydride. 3,290,128, 12-6-66, Cl. 23—365.

Delligatti, Raymond A. Pump apparatus. 3,289,607, 12-6-66, Cl. 103—178.

Del Rose, Sergio: *See*—
Perrotti, Emilio, and Del Rose. 3,290,246.

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Frye, Charles F. 3,289,694.

Demag Aktiengesellschaft: *See*—
Breuer, Karl. 3,289,488.

Dennison Mfg. Co.: *See*—
Nelson, George R. 3,290,251.

Denny, George R., and D. L. Stoner, to R. Berlin and G. F. Manley. Emergency assistance radio signaling system. 3,290,597, 12-6-66, Cl. 325—64.

De Pew, Chester C., to Chester Corp. Insulated filler cap. 3,289,876, 12-6-66, Cl. 220—25.

De Roelj, Abraham H., and P. A. M. Aggenbach, to Stamicarbon N.V. Process for preparing concentrated formaldehyde solutions. 3,289,891, 12-6-66, Cl. 55—90.

Derschmidt, Hans, to Bolkow Gesellschaft mit beschrankter Haftung. Helicopter rotor system. 3,289,776, 12-6-66, Cl. 170—160.25.

De Sceta, Gerard: *See*—
Camand, Jean, De Sceta, and Cholet. 3,289,784.

Detert, Henry W. to Spaulding Fibre Co., Inc. Apparatus for loading flat articles into magazines. 3,289,890, 12-6-66, Cl. 12—1.

Deutsche Edelstahlwerke Aktiengesellschaft: *See*—
Scheller, Friedrich. 3,290,476.

Deutsch Fastener Corp.: *See*—
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Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
Bader, Erich, and Koert. 3,290,410.
Bader, Erich, and Landsfeld. 3,290,257.
Zippe, Gernot, Scheffel, and Steenbeck. 3,289,926.

Deye, Neil S. Amusement device. 3,289,346, 12-6-66, Cl. 18—1.

Diamond Alkali Co.: *See*—
Battershell, Robert D., and Hunstone. 3,290,353.
Eisenmann, John L. 3,290,270.

Dick, Lloyd C., F. C. McWutt, and G. C. Bahls, to KVP Sutherland Paper Co. Unitized carton loads. 3,289,828, 12-6-66, Cl. 206—65.

Di-Dro Engineering Co.: *See*—
Williamson, Floyd M. 3,290,064.

Diebold, Max, E. Meagre, H. Schottle, and R. Hanschitz, to Electrostar G.m.b.H., Firma. Cleaning device for shoes, upholstery and the like. 3,289,239, 12-6-66, Cl. 15—320.

Dielectric Products Engineering Co. Inc.: *See*—
Sewell, Donald N. 3,290,470.

Dietrich, Wilhelm: *See*—
Bohm, Georg, and Dietrich. 3,290,295.

Crump, Ralph E., to Frigitronics, Inc. Refrigerated medical apparatus and heating means therefor. 3,290,749, 12-6-66, Cl. 165—48.
Cunningham, Donald F., to U.S. Partition & Packaging Corp. Intermediate spindle construction for guide belts for partition strip feeder construction. 3,290,041, 12-6-66, Cl. 271—9.
Cunningham, James A., and R. P. Williams, to Texas Instruments Inc. Multilevel expanded metallic contacts for semi-conductor devices. 3,290,570, 12-6-66, Cl. 317—240.
Curtiss-Wright Corp.: *See*—
Bentele, Max, Jones, Kling, and Sloan. 3,290,650.
Turner, Alex F., and Carwin. 3,290,647.
Cusano, Dominic A., and R. L. Sormberger, to General Electric Co. Semiconductor photovoltaic devices. 3,290,175, 12-6-66, Cl. 136—89.
Cushing, Donald H., to General Electric Co. Door structure for washing appliances. 3,290,906, 12-6-66, Cl. 222—154.
Cusic, John W., and P. Yonan, to G. D. Searle & Co. Hydrazones of 1-amino-4-dibenzocycloheptenylpiperazine. 3,290,309, 12-6-66, Cl. 260—240.
Cusic, John W., and P. Yonan, to G. D. Searle & Co. 1-carbamoyl-4-xanthenylpiperazines. 3,290,318, 12-6-66, Cl. 260—268.
Cutler-Hammer, Inc.: *See*—
Christensen, Paul M., Koenig, and Wiecher. 3,290,460.
Cuva, Angelo C. Tape reel. 3,290,065, 12-6-66, Cl. 242—71.8.
Cvacho, Daniel, and F. I. Robertson, Jr., to Reynolds Metals Co. Method and apparatus for rotating and/or axially advancing tubular stock or the like. 3,289,504, 12-6-66, Cl. 93—80.
Daffin Corp.: *See*—
MacGillivray, Robert K. 3,290,832.
Dagens Nyheters Aktiebolag: *See*—
Dalin, Gustav B. 3,289,825.
Dailey, Donald R., and A. F. Miers, to Mead Johnson & Co. Nursing container. 3,290,874, 12-6-66, Cl. 215—11.
Daimler-Benz Aktiengesellschaft: *See*—
Enke, Kurt. 3,290,085.
Lamm, Heinz. 3,290,649.
Muller, Alfred H. 3,290,648.
Wilfert, Karl. 3,290,065.
Dainis, Jeanne A.: *See*—
Cooper, Dexter P., Jr., and Dainis. 3,290,434.
D'Alessio, Juan T.: *See*—
Ludwig, Peter K., and D'Alessio. 3,290,615.
D'Alessio, Philip A.: *See*—
D'Alessio, Stephen A. and P. A. 3,290,204.
D'Alessio, Stephen A. and P. A. Laminated panels and their method of production. 3,290,204, 12-6-66, Cl. 161—43.
Dalin, Gustav B., to Dagens Nyheters Aktiebolag. Method of sorting out defective printed matter arriving from rotary printing machines, particularly newspaper printing machines, and device for carrying the method into effect. 3,289,825, 12-6-66, Cl. 209—126.
Dalton Sheet Metal Co., Inc.: *See*—
Dawson, Vernon L.: *See*—
Hitchens, Aaron L., Fountain, Dawson, and Lowry. 3,289,583.
Hitchens, Aaron L., Fountain, Dawson, and Lowry. 3,289,800.
Day, Howard E.: *See*—
Engle, Lester F., and Day. 3,290,210.
Day, William M., to General Electric Co. Coffee maker-server. 3,290,484, 12-6-66, Cl. 219—441.
Dayton, Russell W.: *See*—
Blocher, John M., Jr., Browning, and Dayton. 3,290,-223.
Dazzi, Joachim: *See*—
Keller, Ernst, and Dazzi. 3,290,207.
Dean, George A., to Dean Research Corp. System for handling stacked sheets. 3,289,860, 12-6-66, Cl. 214—8.5.
Dean Research Corp.: *See*—
Dean, George A. 3,289,860.
De Bernardis, Joseph N., to Sylvania Electric Products Inc. Assembly jig. 3,289,268, 12-6-66, Cl. 29—25.19.
De Blase, Louis A. Baseboard radiation. 3,290,751, 12-6-66, Cl. 165—55.
De Brunner, Ralph E.: *See*—
Blake, Edward S., De Brunner, and Richardson. 3,290,-253.
De Castelet, Gaetan De C., to Regie Nationale des Usines Renault. Air-conditioning of automobile vehicles. 3,289,-938, 12-6-66, Cl. 237—34.
Deckel, Friedrich W.: *See*—
Ostler, Josef. 3,289,538.
Deckel, Hans: *See*—
Ostler, Josef. 3,289,538.
Decker, Jacob, to The Cincinnati Milling Machine Co. Machine tool anti-backlash mechanism. 3,289,257, 12-6-66, Cl. 51—165.
De Coye de Castelet, Gaëtan, to Regie Nationale des Usines Renault. Air-conditioning devices for automobile vehicles. 3,289,534, 12-6-66, Cl. 98—2.
Dedricks, Alvin N., and R. H. Swanson, to The Manitowoc Co., Inc. Spray type ice cube making machine. 3,289,430, 12-6-66, Cl. 62—136.
De France, Henri B. Dognin, and G. Melchior, to Compagnie Francaise de Television. Colour television transmitters. 3,290,433, 12-6-66, Cl. 178—5.4.
De Groff, Morton S., and R. E. Pleuck, to The Aro Corp. Automatic shut-off tool. 3,289,715, 12-6-66, Cl. 144—32.
Deichert, William G., and H. K. W. Voigt, to American Cyanamid Co. Apparatus for testing the mar resistance of materials. 3,289,458, 12-6-66, Cl. 73—7.
De Jong, Elkan J. Stable pharmaceutical and cosmetic dispersions. 3,290,218, 12-6-66, Cl. 167—82.
Delamater, William B. Sewer pipe plug. 3,289,875, 12-6-66, Cl. 220—24.5.
Del Giudice, Frank P., and R. C. Wade, to Metal Hydrides Inc. Method for preparing sodium aluminum hydride

Dietzel, Walter, and H. Hillebrand, to Braunschweigische Maschinenbauanstalt. Sugar-recovery centrifuge. 3,290,172, 12–6–66, Cl. 127—19.

Di Pasquantonio, Ernest A.: *See*—
Reddock, William F., and Di Pasquantonio. 3,290,060.

Dixon, Albert W.: *See*—
Reese, Ralph W., Werle, and Dixon. 3,289,821.

Dodd, Travis C., J. H. Rosso, and C. R. Ferrin, to National Tank Co. Heating structures for chromatographic columns. 3,290,482, 12–6–66, Cl. 219—201.

Doelter, Gandolph. Sliding clasp continuous fasteners. 3,290,264, 12–6–66, Cl. 24—205.1.

Doerfel, Helmut, to Badische Anilin- & Soda Aktiengesellschaft. Purification of pyrrolidone-(2). 3,290,329, 12–6–66, Cl. 260—326.5.

Dognin, Bernard: *See*—
De France, Henri, Dognin, and Melchior. 3,290,433.

Dole Valve Co., The: *See*—
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Donahue, Gary M., to Owens-Illinois, Inc. Packing element for stoppering article. 3,289,829, 12–6–66, Cl. 206—65.

Doshi, Ronald M. Slotted top work bench. 3,289,616, 12–6–66, Cl. 108—161.

Donnelly, John J., A. J. Grandy, and F. J. Shinaly, to United States of America, Army. Fin stabilised projectile. 3,289,587, 12–6–66, Cl. 102—49.

Dorr-Oliver Inc.: *See*—
Miles, Harry V. 3,289,848.
Nyrop, Per. 3,289,848.

Dorsey, William E., and S. I. Strashun, to Vacu-Dry Co. Dehydrated precooked bean process. 3,290,159, 12–6–66, Cl. 99—204.

Dow Chemical Co., The: *See*—
Barger, Jeanne D., and Howard. 3,290,388.
Karpovich, John, and Clark. 3,290,256.
Trepanier, Donald L. 3,290,303.

Downey, Francis X.: *See*—
Reeder, Roger L., Downey, and Weaver. 3,290,440.

Drager, Otto H.: *See*—
Van der Smissen, Carl E. 3,290,118.

Dravo Corp.: *See*—
Loeb, Abraham P., and O'Laughlin. 3,289,665.

Drew, Thomas C., Jr., to Westinghouse Electric Corp. Polyphase multi-element induction meter with common eddy current armature having solid and slotted laminations. 3,290,594, 12–6–66, Cl. 324—107.

Driemeyer, William G., to Jay Mfg. Co. Connector. 3,290,639, 12–6–66, Cl. 339—94.

Drinkard, George L., Jr.: *See*—
Jensen, Erik H., and Drinkard. 3,290,576.

Drucker, Siegfried. Snow and ice melting and traction device for vehicles. 3,289,665, 12–6–66, Cl. 126—271.1.

Dubberke, Walter H. Pipe pulling device. 3,290,006, 12–6–66, Cl. 254—31.

Dubrovin, John, to The Welch Scientific Co. Method of machining a pump stator. 3,289,501, 12–6–66, Cl. 77—61.

Ducharme, Jean. Liquid fuel and air mixing device for internal combustion engine. 3,290,019, 12–6–66, Cl. 261—23.

Ducommun, Georges: *See*—
Adler, Karl, and Ducommun. 3,290,528.

Duff, Jack E., to The Hoover Co. Method of making an extensible reinforced hose. 3,290,196, 12–6–66, Cl. 156—144.

Duffee, Homer W.: *See*—
Pearson, Arthur J., and Duffee. 3,289,871.

Duffy, Lawson W. Fluid powered hydraulic motor. 3,289,545, 12–6–66, Cl. 91—273.

Duinselaar, Jasper H., to North American Philips Co. Inc. Circuit arrangement for a transmission system. 3,290,451, 12–6–66, Cl. 179—175.2.

Dunaway, J. C., to United States of America, Army. Actuator for pure fluid amplifier. 3,289,687, 12–6–66, Cl. 137—81.5.

Dunlap, Paul M.: *See*—
Watrous, Benjamin A. 3,289,338.

Dunlop Rubber Co. Ltd.: *See*—
Catterall, Eric. 3,290,379.

Dunmire, Hannah: *See*—
Dunmire, Russell P., and Eby. 3,289,675.

Dunmire, Russell P., deceased (by H. Dunmire, executrix), and H. C. Eby; said Eby assor. to said Hannah Dunmire. Tubular hypodermic needle. 3,289,675, 12–6–66, Cl. 128—221.

Dunn, William R., to Honeywell Inc. Spring adjusting means for a pressure operated valve. 3,289,692, 12–6–66, Cl. 137—505.

Dunning, Noel E., to A. A. Webb. Multicolor anodising of aluminum. 3,290,232, 12–6–66, Cl. 204—35.

Du Pont de Nemours, E. I., and Co.: *See*—
Cline, Edward T. 3,290,149.
Fuchs, Julius J. 3,290,289.
Hoover, Fred W. 3,290,350.
Iler, Ralph K., Pasfield, and Yates. 3,290,144.
Kiess, Erik. 3,290,262.
Levitt, George. 3,290,215.
Magat, Eugene E., and Tanner. 3,290,207.
Monson, Leon A. 3,290,136.
Stamatoff, Gelu S. 3,290,386.
Tanner, David. 3,290,415.

Dutot, Wilbur E. Rotary edge trimming tool. 3,289,716, 12–6–66, Cl. 144—134.

Dutot, Wilbur E. Rotary edging tool with guide wheel. 3,289,717, 12–6–66, Cl. 144—134.

Dutro, Orville V. Roller support adjusting advice. 3,289,580, 12–6–66, Cl. 101—221.

Du Vall, Wilbur E., to The Electrada Corp. Magnetic-encoding system. 3,290,662, 12–6–66, Cl. 340—147.

Duxbury, Donald, to United Kingdom Atomic Energy Authority. Production of uranium metal. 3,290,143, 12–6–66, Cl. 75—122.7.

Dwyer, Donald J., and R. C. Piccony. Biopsy capsule arrangement. 3,289,649, 12–6–66, Cl. 128—3.

Dykstenhouse, Robert M., and M. M. Orlarey, to Thompson Industries, Inc. Flasher switch employing a permanent magnet and a switch blade composed of a Curie Point material. 3,290,630, 12–6–66, Cl. 335—146.

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Feuiner, Fred A., to S-F-D Laboratories, Inc. Reverse magnetron. 3,290,549, 12–6–66, Cl. 315—39.51.

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Fuller, Richard H., and R. N. Mellott, to The Bunker Ramo Corp. Content addressable memory apparatus. 3,290,650, 12–6–66, Cl. 340—173.5.

Funk, Charles W., and H. R. Ward, to Sperry Rand Corp. Power transmission. 3,289,005, 12–6–66, Cl. 192—142.

Furnas Electric Co.: *See*—
McGary, Robert L. 3,290,628.

Fyfe, William G.: *See*—
McKenzie, Samuel B. 3,290,079.

GFC Engineering and Sales Corp.: *See*—
Gillemot, George W. 3,290,194.

G & H Products Corp.: *See*—
Kessler, Joseph S. 3,290,003.

Gabor, Joseph: *See*—
Rice, Herman E., Jr., and Gabor. 3,290,231.

Gaffney, Donald J., to Fisher Governor Co. Adjusting means for cams and the like. 3,289,494, 12–6–66, Cl. 74—568.

Gaia, Aldino J., to McGraw-Edison Co. Method of making an electric fuse. 3,289,278, 12–6–66, Cl. 29—155.5.

Ganseuer, Horst: *See*—
Brombach, Ernst, and Ganseuer. 3,289,517.

Ganther, Forrest E.: *See*—
Coburn, Orin W., Suddarth, and Ganther. 3,289,355.

Ganung, Robert B., to National Can Corp. Can with dual closure system. 3,289,881, 12–6–66, Cl. 220—60.

Garcia, Thomas, C. G. Daus, A. Celestino, and P. D. Bevis, to United States of America, Navy. Extreme environments protective camera enclosure. 3,289,567, 12–6–66, Cl. 95—11.

Garmaise, David L.: *See*—
McKay, Arthur F., and Garmaise. 3,290,351.

Garrett, Samuel L., to Phillips Petroleum Co. Crystal purification apparatus. 3,289,858, 12–6–66, Cl. 210—97.

Garrison, Langdon I., to The John Swenson Granite Co., Inc. Dual head sawing machine. 3,289,662, 12–6–66, Cl. 125—14.

Garrison, Ross A., and A. M. Thomas, to Esso Research and Engineering Co. Device for applying coating materials stripe. 3,289,241, 12–6–66, Cl. 15—275.

Gartner, Rodney W., to Penestra, Inc. Fabricated folded plate roof structure and support therefor. 3,289,360, 12–6–66, Cl. 52—18.

Gary Steel Products Corp.: *See*—
Primich, Theodore, and Nichols. 3,290,066.

Gawlick, Heins: *See*—
Stadler, Hans, and Gawlick. 3,290,584.

Geber, Ernst G. A., to Max Sievert Aktiebolaget. Burner for gaseous fuel. 3,289,731, 12–6–66, Cl. 158—116.

Gehrie, Charles S., to Presto Lock Co., Inc. Handle assembly for luggage or the like. 3,289,796, 12–6–66, Cl. 190—58.

Gehring, James H. Insert. 3,289,725, 12–6–66, Cl. 151—41.73.

Geiger, Johann. Rotary piston type internal combustion engine. 3,289,654, 12–6–66, Cl. 123—171.

Geigy Chemical Corp.: *See*—
Roth, Willy. 3,289,949.

Geigy, J. R., A.G.: *See*—
Keller, Ernst, and Dassi. 3,290,807.
Voltz, Jacques, and Bossard. 3,290,280.

Gellenthin, Carl O., Jr., 95% to R. H. Hurst, and 5% to L. M. Keating. Apparatus for and method of automatically changing tape cartridges. 3,290,042, 12–6–66, Cl. 242—55.18.

Gelsheiser, Francis L., to Westinghouse Electric Corp. Circuit interrupter with improved terminal connecting means. 3,290,474, 12–6–66, Cl. 200—168.

General American Transportation Corp.: *See*—
Bromley, Kenneth W. 3,289,253.

General Dynamics Corp.: *See*—
Schoenewald, Roger L., Brown, and Wilson. 3,289,897.

General Electric Co.: *See*—
Abbott, Roy W. 3,289,433.
Abt, Ronald C., and Eisberg. 3,290,227.
Brouillette, Joseph W., Jr., Hsu, and Wanuga. 3,290,622.
Chafee, Glenn E., Jr. 3,290,567.
Cusano, Dominic A., and Sornberger. 3,290,175.
Cushing, Donald S. 3,289,896.
Day, William M. 3,290,484.
Faulkner, Le Roy M., and Hewlett. 3,290,562.
Finnegan, Cyril O., and Kothe. 3,290,464.
Gist, William B., Jr. 3,289,413.
Glenn, William B., Jr. 3,289,961.
Goldblum, Kenneth B. 3,290,261.
Goldblum, Kenneth B. 3,290,412.
Good, William E., Graser, and Vanderlaan. 3,290,436.
Hair, Hugh A. 3,290,622.
Hewlett, Clarence W., Jr. 3,289,677.
Houston, John M. 3,290,170.
Humphrey, John G. 3,290,441.
Humphrey, John G. 3,290,605.
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Hurwitz, Henry, Jr. 3,290,219.
Hyer, Donald E., and Hewlett. 3,290,563.
Johnson, Norman W., and Farrell. 3,289,953.
Jones, Howard T. 3,289,280.
Kauffman, Melvin R. 3,289,854.
Kurt, Howard D. 3,290,459.
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Lafferty, James M. 3,290,542.
Lafferty, James M. 3,290,553.
Lennard, Dean J. 3,289,946.
Locke, Raymond C. 3,290,560.
Meag, John D. 3,290,509.
Moore, Harwood B., and Stein. 3,290,045.
Muller, Horst G. 3,289,283.
Munro, Howard E. 3,290,409.
Ogle, Hugh M. 3,290,508.
Pixley, John M. 3,290,638.
Polonsky, Samuel. 3,289,630.
Savage, Robert H. 3,290,472.
Smith, Ivie L. 3,290,255.
Staub, Fred W. 3,289,752.
Vanegas, Guillermo J. 3,290,109.

General Electric Co. Ltd.: *See*—
Neild, Donald W. 3,290,675.

General Foods Corp.: *See*—
Stagmeier, Arthur F., and Rothmann. 3,289,387.

General Precision, Inc.: *See*
Paufve, Eldred H., Greenly, and Lewandowski. 3,290,651.
Stavis, Geo. 3,290,505.

General Research, Inc.: *See*—
Rosema, Thomas J. 3,289,814.

General Signal Corp.: *See*—
Auer, John H., Jr. 3,290,489.
Auer, John H., Jr. 3,290,490.
Smith, Willis R. 3,290,663.

General Slicing Machine Co.: *See*—
Weiner, Harry, Friedman, and Katz. 3,289,336.

General Turbine Corp.: *See*—
Sawyer, James G. 3,289,922.

Genich, William H., to J. W. Greer Co. Product rearranging conveyor system. 3,289,809, 12–6–66, Cl. 198—34.

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Wright, William R., Whitsel, Williams, and Gentry. 3,290,120.

George, Connie E. Profiling stylus. 3,289,541, 12–6–66, Cl. 90—62.

Georgiev, Anatoly K., to Izhevsky Mekhanicheesky Institute. Orthogonal worm-bevel gearing. 3,289,489, 12–6–66, Cl. 74—427.

Gerardin, Maurice, and J. Pelatan. Rectilinear electric switches. 3,290,471, 12–6–66, Cl. 200—161.

Gernhardt, Paul D., and C. W. Verrell, to The Ohio Brass Co. Derrick. 3,289,555, 12–6–66, Cl. 212—67.

Getsin, Allan E., to American Air Filter Co., Inc. Filter support arrangement. 3,289,865, 12–6–66, Cl. 55—341.

Geusic, Joseph E., and L. G. Van Uitert, to Bell Telephone Laboratories, Inc. Highly efficient device using centrosymmetric perovskite crystals biased to several π phase retardation. 3,290,619, 12–6–66, Cl. 332—7.51.

Gewertschaft Eisenhutte Westfalia: *See*—
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Giannini Scientific Corp.: *See*—
Van Ornum, Delbert G. 3,290,552.

Gibson, Preston H., Jr. Novel light. 3,289,342, 12–6–66, Cl. 40—152.2.

Gilbert, A. C., Co., The: *See*—
Lahr, Robert G. 3,290,498.

Gilchrist, Allan E., to The Glidden Co. Electrodeposition of acidic resin with subsequent anodic electrolysis in dispersion containing metal treating oxyanions. 3,290,225, 12–6–66, Cl. 204—181.

Gildone, Anthony M. Valve connector. 3,289,760, 12–6–66, Cl. 137—614.04.

Gilford Instrument Laboratories, Inc.: *See*—
Gilford, Saul R., and Emary. 3,289,527.

Gilford, Saul R., and R. J. Emary, to Gilford Instrument Laboratories, Inc. Flow-through cell including means for providing a uniform flow pattern therethrough. 3,289,537, 12–6–66, Cl. 88—14.

Gillemot, George W., to GFC Engineering and Sales Corp. Process and apparatus for injecting fluids into a sheathed cable. 3,290,194, 12–6–66, Cl. 156—48.

Gillenwater, Hagen B., P. K. Harsin, and G. Mason, to United States of America, Agriculture. Apparatus for dispensing insecticides. 3,290,112, 12–6–66, Cl. 21—110.

Gillies, George A.: *See*—
Fremery, Maximilian I., and Gillies. 3,290,330.

Gisell, Robert. Nuclear emission electrical generator. 3,290,522, 12–6–66, Cl. 310—3.

Ginsberg, Arthur, to Royal London, Ltd. Electro-mechanical toy bank. 3,289,347, 12–6–66, Cl. 46—4.

Ginsberg, Arthur, to Royal London, Ltd. Pencil sharpener. 3,289,641, 12–6–66, Cl. 120—86.

Ginsberg, Arthur, to Royal London, Ltd. Combined agitator and fluid mover. 3,289,897, 12–6–66, Cl. 222—239.

Girden, Barney E. Apparatus for exchanging coastal tidal waters with fresh sea water. 3,289,417, 12–6–66, Cl. 61—1.

Gist, William B., Jr., to General Electric Co. Fluid mixing apparatus for turbofan engines. 3,289,413, 12–6–66, Cl. 60—268.

Gith, Walter: *See*—
Wilms, Hans-Gunther, Kamp, and Gith. 3,289,957.

Githens, Samuel E., Jr., and H. Wyle, to North American Aviation, Inc. Truncated parallel multiplication. 3,290,493, 12–6–66, Cl. 235—164.

Glamorene, Inc.: *See*—
Federman, Murray. 3,289,851.

Glassman, Barnett, to Nationwide Financial Corp. Manifolding device. 3,290,061, 12–6–66, Cl. 282—28.

Gleim, William K. T.: *See*—
Chenicek, Joseph A., and Gleim. 3,290,376.

Glenco Refrigeration Corp.: *See*—
Heilweil, Jerome P., and Schweizer. 3,289,352.

Glenn, William B., Jr., to General Electric Co. Tension maintaining device for tape recorders. 3,289,961, 12–6–66, Cl. 242—55.12.

Glidden Co., The: *See*—
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Gliksmann, David, and D. W. Petree, to Burlington Industries, Inc. Stretch yarn and process for preparing the same. 3,289,401, 12–6–66, Cl. 57—157.

Glover, Francis P. Bath seat lift. 3,289,217, 12–6–66, Cl. 4—185.

Gluckin, William, & Co., Inc.: *See*—
Rouder, Henry N. 3,289,339.
Rouder, Henry N., and Sooy. 3,289,912.

Gobran, Riad H.: *See*—
Berenbaum, Morris B., and Gobran. 3,290,378.

Godfrey, John N., and B. J. Macri, to Atlantic Research Corp. Plastisol propellant process with improved dispersion stability. 3,290,190, 12–6–66, Cl. 149—16.

Goehring, Werner. Apparatus for the generation of a furnace atmosphere for the heat treatment of metals, especially of steel. 3,290,090, 12–6–66, Cl. 266—5.

Golbeck, Bernard J., W. F. Boulter, H. S. Tice, Jr., and E. F. Lewandowski, to Oak Electro/Netics Corp. Illuminated push button switch. 3,290,474, 12–6–66, Cl. 200—167.

Goldberg, Albert L, J. Fertig, and M. Skoultchi, to National Starch and Chemical Corp. Salicylic acid derivatives and polymers thereof. 3,290,270, 12–6–66, Cl. 260—47.

Goldblum, Kenneth B., to General Electric Co. Foamed resin comprising aromatic polycarbonate and oxymethylene polymer. 3,290,261, 12–6–66, Cl. 260—2.5.

Goldblum, Kenneth B., to General Electric Co. Molding compounds prepared from mixtures of polytetrafluoroethylene and resins polycarbonate. 3,290,412, 12–6–66, Cl. 260—873.

Golde G.m.b.H. & Co., K.G.: *See*—
Werner, Johannes. 3,290,087.

Goldman, Leo, and J. M. Prange, to Rockwell-Standard Corp. Sealed brake. 3,290,793, 12–6–66, Cl. 188—18.

Goldmark, Peter C., and J. M. Hollywood, to Columbia Broadcasting System, Inc. Motion picture film and reproducing apparatus therefor. 3,290,437, 12–6–66, Cl. 178—6.6.

Goldschmidt, Th., A.G.: *See*—
Schmitz, Adolf. 3,290,805.

Goldsholl, Morton, and J. E. Logan. Timing device and method. 3,289,396, 12–6–66, Cl. 222—1.

Goldstein, Abraham, and M. Wolf, to Tri-Wall Containers, Inc. Method of making corrugated fibre board and products obtained thereby. 3,290,205, 12–6–66, Cl. 161—137.

Golkowski, Lloyd F. Display sign. 3,289,237, 12–6–66, Cl. 40—125.

Gomaki, Joseph, to Westinghouse Air Brake Co. Continuous mining machine. 3,290,094, 12–6–66, Cl. 299—57.

Good, William E., M. Graser, Jr., and H. J. Vanderlaan, to General Electric Co. Color projection system. 3,290,436. 12–6–66, Cl. 178—5.4.

Goodall Rubber Co.: *See*—
Buckle, Cecil H. 3,290,067.

Goodman, Robert. Chairs with tiltable portions. 3,290,091. 12–6–66, Cl. 297—302.

Goodrich, B. F., Co., The: *See*—
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Ramp, Floyd L., and Trapasso. 3,290,272.

Goodrich-Gulf Chemicals, Inc.: *See*—
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Goodwin, Laurence: *See*—
Groves, Henry W., and Goodwin. 3,289,436.

Goodyear Aircraft Corp.: *See*—
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Gorker, George E., to United States of America, Atomic Energy Commission. Boiling water nuclear reactor with buoyant fuel or reflector control assembly. 3,290,221. 12–6–66, Cl. 176—28.

Gosaling, Robert C., to Torjesen, Inc. Self-propelled partition assembly. 3,289,741, 12–6–66, Cl. 160—188.

Gotaverken, Aktiebolaget: *See*—
Hallala, Antti K. 3,289,620.

Gottlieb, Maurice D.: *See*—
Weiser, Simon, and Gottlieb. 3,289,823.

Gottschald, Rudolf, to V. Langen, sole responsible partner of the firm A. Ehrenreich & Cie. Ball and socket joints. 3,290,073, 12–6–66, Cl. 287—90.

Gould, Richard J. Golf cart accessory. 3,289,928, 12–6–66, Cl. 235—1.

Goulding, Frederick S., to United States of America, Atomic Energy Commission. Method and apparatus for determining drift depth of impurities in semiconductors. 3,290,179, 12–6–66, Cl. 148—1.5.

Gowen, Hammond E. T., to Technical Industries Inc. Controlled deposition and growth of polycrystalline films in a vacuum. 3,290,567, 12–6–66, Cl. 317—234.

Graham, John M., R. J. Woudra, and G. M. Larose, to Allis-Chalmers Mfg. Co. Overcurrent static relay. 3,290,556. 12–6–66, Cl. 317—36.

Graham, Robert B.: *See*—
Taylor, David W., Hobson, and Graham. 3,289,963.

Graham-White Sales Corp.: *See*—
Franks, Virgil L. 3,289,690.

Grandy, Andrew J.: *See*—
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Grant, David W., to The Coal Tar Research Corp. Sampling device. 3,289,482, 12–6–66, Cl. 73—422.

Grantham, Curtis O. Apparatus for magnetically supporting a non-magnetically attractable article. 3,289,990, 12–6–66. Cl. 248—206.

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Good, William E., Graser, and Vanderlaan. 3,290,436.

Gray Tool Co.: *See*—
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Gray, William O., and E. A. Hilliard, to Esso Research and Engineering Co. Frictional resistance reduction using non-newtonian fluid. 3,289,623, 12–6–66, Cl. 114—67.

Grebe, Robert K., and E. R. Kreinberg, to AMP Inc. Wire-securing means. 3,289,445, 12–6–66, Cl. 72—14.

Gressar, George E.: *See*—
Sharp, John O., Gressar, and Lamblyn. 3,290,166.

Greene, Janice L., to The Standard Oil Co. Method of preparing cis-cyclobutane-1,2-dicarboxyl acid. 3,290,365, 12–6–66, Cl. 260—514.

Greenly, Robert B.: *See*—
Paufve, Eldred H., Greenly, and Lewandowski. 3,290,651.

Greenwald, Harry, J. H. Malek, and G. Avlon, ⅓ each to H. Greenwald, L. Wolff, and H. Silberglait. Coin rejector mechanism. 3,289,802, 12–6–66, Cl. 194—99.

Greer, J. W., Co.: *See*—
Genich, William H. 3,289,809.
Lounsbury, Donald H., and Cowdery. 3,289,610.

Grenet, Jean B.: *See*—
Marchand, Pierre A. R., and Grenet. 3,290,352.
Marchand, Pierre A. R., and Grenet. 3,290,393.

Grettve, Neil B. C., and J. T. Rose, to Miles Laboratories Inc. Test composition and device for detecting glucose. 3,290,228, 12–6–66, Cl. 195—127.

Grewe, Eugene F., to Elco Containers, Inc. Self-correcting feed device for pre-printed sheet stock. 3,289,507, 12–6–66, Cl. 53—74.

Griffin, Edward L., Jr.: *See*—
Mastakas, Gus C., and Griffin. 3,290,155.

Griffith-Hope Co.: *See*—
Filkpewics, Edwin A. 3,289,882.

Grimshaw, Herman, to Vitaform, Ltd. Cushion supports. 3,289,230, 12–6–66, Cl. 5—230.

Grinnell Corp.: *See*—
Sherburne, Philip C. 3,289,702.

Grinshpun, Valery J.: *See*—
Nemtsov, Mark S., Kachalova, Romaneva, Kalinicheva, Shenderovich, Mandelshtam, Arkharov, Zlatkin, and Grinshpun. 3,290,403.

Groff, Emery L., to Poor & Co. Synthetic railway tie. 3,289,940, 12–6–66, Cl. 238—29.

Groff, Emery L., and C. T. Walker, to Poor & Co. Method of making rail anchor. 3,290,419, 12–6–66, Cl. 264—103.

Gross, George: *See*—
Jensen, William E., Gross, and Morris. 3,289,548.

Grosso, Patrick F., to Minnesota Mining and Mfg. Co. Lithographic printing plate with vacuum deposited image. 3,290,578, 12–6–66, Cl. 101—149.2.

Groupement Atomique Alsacienne Atlantique: *See*—
Archer, Jacques, and Boiron.

Groves, Henry W., and L. Goodwin, to Hawker Siddeley Dynamics Ltd. Air condition systems. 3,289,436, 12–6–66, Cl. 62—402.

Grubb, Milton D., ½ to N. S. King. Boat Hull drain assembly. 3,289,625, 12–6–66, Cl. 114—183.

Gruska, Casimir F., to American Home Products Corp. Can opener assembly. 3,289,294, 12–6–66, Cl. 30—9.

Gschwandtner, Erich, to North American Philips Co., Inc. Circuit for coupling a transistor to an angular modulation detector. 3,290,605, 12–6–66, Cl. 329—103.

Gubash, Peter J. Ice skimmer. 3,289,850, 12–6–66, Cl. 210—470.

Guetschow, Harold R. Feed control for whipped food freezers. 3,290,015, 12–6–66, Cl. 259—9.

Gulsinger, Barrett E., to Ampex Corp. Circuit for detecting amplitude modulated pulses appearing in frequency modulated waveforms. 3,290,518, 12–6–66, Cl. 307—88.5.

Gulf Oil Corp.: *See*—
Stone, Virgil D. 3,289,775.

Gulf States Paper Corp.: *See*—
Svensson, Soldan A. 3,289,913.

Gunkel, Walter A.: *See*—
Van der Veer, William R., and Gunkel. 3,289,448.

Gunn, John M. Apparatus for producing fibrous wafers or flakes. 3,289,719, 12–6–66, Cl. 144—162.

Gurits, Kenneth E. Apparatus for attaching inserts to ducts. 3,289,287, 12–6–66, Cl. 29—243.52.

Gutschmit, Alan: *See*—
Carter, Sidney L., and Gutschmit. 3,289,510.

Guy, Arthur L., to Esso Production Research Co. Method for driving piles. 3,289,420, 12–6–66, Cl. 61—53.5.

Guyot, Joel, and B. Letellier, to CSF-Compagnie Generale de Telegraphie Sans Fil. Hall effect frequency control in oscillating circuits. 3,290,616, 12–6–66, Cl. 331—177.

Gwinn, Orval A.: *See*—
Bettig, Albert S., Cohen, and Gwinn. 3,290,854.

Haas, Paul A.: *See*—
Clinton, Sam D., Haas, Hirth, and Kleinstauber. 3,290,122.

Habermann, Helmut, to Siemens-Schuckerwerke Aktiengesellschaft. Commutator, particularly for electrical machines. 3,290,527, 12–6–66, Cl. 310—233.

Haddad, Labeeb B.: *See*—
Rooseua, Jentje J. Haddad, and Schmitt. 3,290,582.

Haeberi, John A., to Shell Oil Co. Power-operated pipe coupling. 3,290,063, 12–6–66, Cl. 285—18.

Hafer, Richard F.: *See*—
Agin, Ernest W., Cave, and Hafer. 3,289,281.

Häfner, Erich. Reel with reinforced flanges. 3,289,972, Cl. 242—118.7.

Hafner, Theodore. Surface wave transmission. 3,290,626, 12–6–66, Cl. 333—95.

Hahn, Willi, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of ortho-substituted phenols. 3,290,389, 12–6–66, Cl. 260—619.

Haines, John T., to Carrier Corp. Reverse cycle refrigeration system. 3,289,428, 12–6–66, Cl. 62—149.

Hair, Hugh A., to General Electric Co. Microwave ferromagnetic phase shifter having controllable DC magnetization. 3,290,622, 12–6–66, Cl. 333—24.1.

Haitsma, Cornelia T.: *See*—
Adams, Ernest C., Jr., and Haitsma. 3,290,117.

Halcoussis, Andrew: *See*—
Christenson, Roger M., Porter, and Halcoussis. 3,290,416.
Christenson, Roger M., Porter, and Halcoussis. 3,290,417.

Haley, William J., to Borg-Warner Corp. Refrigeration system capacity control with pilot operated regulating valve. 3,289,431, 12–6–66, Cl. 62—217.

Hall, Fred V., to B. Walker. Device for controlling the hydrocarbon evaporation losses from automotive vehicles. 3,289,711 12–6–66, Cl. 141—286.

Hall, Herman M., to Dalton Sheet Metal Co., Inc. Dye beck having flame fired heat exchanger. 3,289,439, 12–6–66, Cl. 68—15.

Hall, John N.: *See*—
Hodges, James R., and Hall. 3,289,265.

Hall, Leslie J., to Hawker Siddeley Aviation Ltd. Aircraft. 3,289,975, 12–6–66, Cl. 244—12.

Halliburton Co.: *See*—
Schell, Dwight, Wallen, and Wilkes. 3,289,762.
Smith, Orville R. 3,289,474.

Hallmark Cards, Inc.: *See*—
Kolster, Harvey L. 3,290,107.

Hallmark, Clyde E., to The Bunker-Ramo Corp. Numerical control system. 3,290,492, 12–6–66, Cl. 235—151.11.

Hamilton, Douglas D., R. Ramsauhofer, and R. Bolvin, ⅓ each to Quebec North Shore Paper Co., Canadian International Paper Co. and Abitibi St. Anne Paper Co. Ltd. Vehicle log bunk. 3,289,865, 12–6–66, Cl. 214—85.

Hammer, Waldemar. Multiple vertical spindle woodworking machine and method of woodworking. 3,289,714, 12–6–66, Cl. 144—1.

Hampel, Bruno: *See*—
V. Werder, Fritz, Irmscher, Bruckner, Reiff, Nowak, and Hampel. 3,290,214.

Hanak, Joseph J.: *See*—
Rosl, Fred D., and Hanak. 3,290,186.

Hanschits, Rudolf: *See*—
Diebold, Max, Menge, Schottle, and Hanschits. 3,289,-239.

Hansen, Elmer K. Laterally movable article support assembly. 3,289,873, 12–6–66, Cl. 214—730.

Hanson, Ove O., to Mayes Brothers Tool Mfg. Co. Carpenter's tool. 3,289,301, 12–6–66, Cl. 33—93.

Harbison-Walker Refractories Co.: *See*—
Adams, Mark F., and Huffaker. 3,289,372.
Miller, Eldon D., Jr. 3,290,421.
Smott, Thomas W., and Cook. 3,290,160.

Hardenbrook, Frederic G., to United States of America, Army. Flexible cooking bag. 3,289,722, 12–6–66, Cl. 150—.5.

Harein, Phillip K.: *See*—
Gillenwater, Hagen B., Harein, and Eason. 3,290,112.

Harel, Simha, G. Stern, Z. Pessahovits, and G. Budman, to Chemical & Phosphates Ltd. Process for the manufacture of alkali metal fluoborates. 3,290,113, 12–6–66, Cl. 23—59.

Harel, Simha, G. Stern, and C. C. Klein, to Chemical & Phosphates Ltd. Process for the preparation of potassium fluoborates. 3,290,114, 12–6–66, Cl. 23—59.

Harfenist, Morton, and R. Baltzly, to Burroughs Wellcome & Co. (U.S.A.) Inc. Naphthamidines and salts thereof. 3,290,375, 12–6–66, Cl. 260—564.

Harms, Van D., and J. S. Johnson, to Corn Products Co. Apparatus for preventing fouling of pH meter electrodes with filter element transporting means. 3,290,584, 12–6–66, Cl. 324—30.

Harris, Darrel M.: *See*—
Nielsen, Morris L., and Harris. 3,290,258.

Harris, Mack. Heating and storing heat to power a generator and a compressor in a vehicle. 3,289,767, 12–6–66, Cl. 165—42.

Hart, John F., Jr. Fan mounting. 3,289,982, 12–6–66, Cl. 248—41.

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Hartmann, Julian, and H. Mocsala, to Licentia Patent Verwaltungs- G.m.b.H. Direct current motor with transistorized power supply. 3,290,572, 12–6–66, Cl. 318—138.

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Georgiev, Anatoly K. 3,289,480.
Jablonsky, Stanislav P.: *See*—
Kotelnikov, Georgy R., Trakhachev, Boochin, Klimin, Jablonsky, Chilkachev, Monsson, Sobolev, Mkheidze, and Eigel. 3,290,732.
Jackson, Donald M., to FMC Corp. Field coupling. 3,290,-065, 12–6–66, Cl. 235—176.
Jacob, Don M., to TRW Inc. Continuous wave angle and range determining radar. 3,290,677, 12–6–66, Cl. 343—10.
Jacobs, Heinz, to Industrie-Compagnie Kleinwaefers Konstructions- und Handelsgesellschaft m.b.H. Hanging reoperator with adjustable stop for thermal expansion. 3,289,-755, 12–6–66, Cl. 165—145.
Jacoby, Marvin, to Sperry Rand Corp. Magnetic storage disc and drum. 3,290,662, 12–6–66, Cl. 346—74.
Jaeger, Ulric R., to Olin Mathieson Chemical Corp. Heat exchanger. 3,289,754, 12–6–66, Cl. 165—155.
Jahn, Martin D., to Chicago Metallic Sash Co. Interlocking runner connection. 3,290,075, 12–6–66, Cl. 287—189.36.
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McKenzie, Samuel B. 3,290,079.
Janapol, Melvin N., to Wortso Corp. Spring unit with limiting means. 3,289,221, 12–6–66, Cl. 5—339.
Janiszewski, Kazimir. Means for releasably mounting bearing members on the platens of a die set. 3,290,076, 12–6–66, Cl. 287—20.3.
Jeanne, Armand L., to Bell Telephone Laboratories, Inc. Wire spring relay with improved means for determining contact force. 3,290,629, 12–6–66, Cl. 335—133.
Jeffrey Galion Mfg. Co.: *See*—
Steinmetz, Walter C. 3,289,810.
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Williams, Claude H. 3,289,879.
Jenkins, Harold B., to Kamp Kooker, Inc. Gas operated coin controlled outdoor grill. 3,289,801, 12–6–66, Cl. 194—8.
Jennings, David C., to United Aircraft Corp. Heat transfer garment. 3,289,748, 12–6–66, Cl. 165—46.
Jensen, Erik H., and G. L. Driskard, Jr., to Westinghouse Electric Corp. Detectors of fluid flow. 3,290,576, 12–6–66, Cl. 318—471.
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Solan, Edward C., Eberman, and Jensen. 3,289,512.
Jensen, Robert H. Combination cord holder and outlet box attachment. 3,290,453, 12–6–66, Cl. 191—124.
Jensen, Robert P., and D. W. Sackett. Means and method for making mats for pictures and the like. 3,289,548, 12–6–66, Cl. 40—154.
Jensen, William E., G. Gross, and H. A. Morris, to Bell Aerospace Corp. Servo stroke divider. 3,289,548, 12–6–66, Cl. 91—387.
Jessen, Paul J., to American Motors Corp. Seal placement tool. 3,289,502, 12–6–66, Cl. 81—9.1.
Jester, James J. Picker stick checking device. 3,289,708, 12–6–66, Cl. 139—164.
Jinno, Seiso, to Kanmar Diesel Engine Co., Ltd. Cooling device for rotary piston engines. 3,289,651, 12–6–66, Cl. 123—68.
Joa, Curt G. Machine for manufacturing sanitary napkins and the like. 3,289,254, 12–6–66, Cl. 19—145.
Johnson, Arthur F. Aluminum production. 3,290,141, 12–6–66, Cl. 75—10.
Johnson, Bruce E., and J. V. Erwin, to Minnesota Mining and Mfg. Co. Curl resistant laminate. 3,290,206, 12–6–66, Cl. 161—164.
Johnson, Carl W.: *See*—
Moench, Frank F., and Johnson. 3,289,728.
Johnson, David W., to The Arrow-Hart & Hegeman Electric Co. Trigger-operated electric switch mechanism. 3,290,-463, 12–6–66, Cl. 200—67.
Johnson, Fred M., to Radio Corp. of America. Processing metal vapor tubes. 3,290,110, 12–6–66, Cl. 316—3.
Johnson, Herbert L.: *See*—
Polishuk, Arthur T., and Johnson. 3,290,244.
Johnson, Jos S.: *See*—
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Johnson, Norman W., and E. P. Farrell, Jr., to General Electric Co. Lubricated shaft and shaft seal. 3,289,958, 12–6–66, Cl. 241—287.
Johnson, Oliver D., and D. W. Leach, to International Business Machines Corp. Rotary cutting apparatus. 3,289,513, 12–6–66, Cl. 83—344.
Johnson, Oliver D., and D. W. Leach, to International Business Machines Corp. Card feeding mechanism. 3,290,042, 12–6–66, Cl. 271—44.
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Joly, Robert, J. Warnant, and R. Bardoneschi, to Roussel-UCLAF. Lactone of 3'-[4-fluoro-4-androstene-17-ol-3-one-17-yl] propionic acid and process utilized in the preparation thereof. 3,290,298, 12–6–66, Cl. 260—239.57.
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Bentele, Max, Jones, Kling, and Slape. 3,289,850.
Jones, Howard T., to General Electric Co. Method of making a shell transformer. 3,289,280, 12–6–66, Cl. 29—155.57.
Jones, James H.: *See*—
Cragoe, Edward J., Jr., and Jones. 3,290,311.
Jones, Otis V., Jr. Bundle feed and orientation system. 3,289,820, 12–6–66, Cl. 198—219.
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Jordan, Edgar A. Bow sight. 3,289,300, 12–6–66, Cl. 33—46.
Jorgensen, Leif G. Motion picture film splicing device. 3,290,201, 12–6–66, Cl. 156—505.
Joseph, Earl C., and A. Kaplan, to Sperry Rand Corp. Within-limits comparator. 3,290,647, 12–6–66, Cl. 340—146.2.
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Yonkers, Edward H. 3,290,428.
Joy Mfg. Co.: *See*—
Driemeyer, William G. 3,290,630.
Jung, Inevar K. E., and L. E. Mussenius, to Stal-Laval Turbin AB. Thermal power installation. 3,289,402, 12–6–66, Cl. 60—39.16.
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Kahler, Paul R., to Phillips Petroleum Co. Detonation meter. 3,289,461, 12–6–66, Cl. 73—35.
Kahn, Nathaniel L., to Sangamo Electric Co. Flexible printed circuit chassis. 3,289,153, 12–6–66, Cl. 211—16.
Kahn, Neil W. Cover for drainage tiles. 3,289,840, 12–6–66, Cl. 210—131.

Kahng, Dawon, and M. P. Lepselter, to Bell Telephone Laboratories, Inc. Barrier diode with metal contact and method of making. 3,290,127, 12–6–66, Cl. 29—195.

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Wyle, Charles, and Nagy. 3,289,453.

Kalahar, Thomas L. Support fixture. 3,289,991, 12–6–66, Cl. 248—226.

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Bender, Werner K. 3,289,236.

Kalinichenya, Medzhda A.: *See*—
Nametov, Mark S., Kachalova, Romanova, Kalinicheva, Shenderovich, Mandelshtam, Arkharov, Zlatkin, and Grinshpun. 3,290,403.

Kalopissis, Gregoire, and G. Vanlerberghe, to L'Oreal. Quaternary ammonium compounds, their preparation and their use. 3,290,304, 12–6–66, Cl. 260—247.2.

Kamenas, Bruce H., to Consolidated Electronics Industries Corp. Motor operating circuit. 3,290,573, 12–6–66, Cl. 318—171.

Kammerer, Archer W., ½ to A. W. Kammerer, Jr., and ½ to J. K. Lamphere. Method and apparatus for cementing and conditioning bore holes. 3,289,760, 12–6–66, Cl. 166—21.

Kammerer, Archer W., Jr.: *See*—
Kammerer, Archer W. 3,289,760.

Kamp, Heinrich: *See*—
Wilms, Hans-Gunther, Kamp, Gith, and Reimers. 3,289,-957.

Kamp Kooker, Inc.: *See*—
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Kaneko, Akira, to Kureha Chemical Industry Co., Ltd. Three stage polymerisation process for the production of polyvinyl chloride resins. 3,290,265, 12–6–66, Cl. 260—29.6.

Kano, Hideo, and I. Adachi, to Shionogi & Co., Ltd. 3-aminoalkyl-5-alkylisoxazoles. 3,290,301, 12–6–66, Cl. 260—243.

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Kapella, William A.: *See*—
Evans, Charles R., Kapella, and Hawley. 3,289,788.

Kaplan, Albert: *See*—
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Karpovich, John, and W. F. Clark, to The Dow Chemical Co. Foam breaking apparatus. 3,290,256, 12–6–66, Cl. 252—361.

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Kaseman, Paul W., to Radio Corp. of America. Electron tube with external flexible contact arms for vibration dampening. 3,290,539, 12–6–66, Cl. 313—50.

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Kato, Toshio: *See*—
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Keating, Martin, Jr., to Universal Folding Box Co., Inc. Dispensing display package. 3,289,881, 12–6–66, Cl. 206—78.

Keiser, Clayton G.: *See*—
Sorenson, Dale C., and Keiser. 3,289,238.

Keller, Ernst, and J. Dassl, to J. R. Geigy A.G. N-substituted melamines. 3,290,307, 12–6–66, Cl. 260—249.6.

Kelley, Dale T., to Motorola, Inc. Method of etching semiconductors. 3,290,192, 12–6–66, Cl. 156—17.

Kelley, Hugh D., to The J. B. Ehrsam & Sons Mfg. Co. Registry maintenance for stacked-board transfer. 3,289,811, 12–6–66, Cl. 198—35.

Kelly, Eugene J. Distance gauge. 3,289,807, 12–6–66, Cl. 33—143.

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Kennard, Thomas A. Valve sub. 3,289,691, 12–6–66, Cl. 137—496.

Kennedy, Thomas J. Back cleaning device. 3,289,215, 12–6–66, Cl. 4—158.

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Kent, Owen, to Reliance Camera & Photo Supplies Inc. Extensible camera and flash gun support. 3,289,566, 12–6–66, Cl. 95—86.

Kenyon, Ralph W. Blind flight without gyros, methods and instruments. 3,289,475, 12–6–66, Cl. 73—178.

Kerr, Robert M. Clamp. 3,290,040, 12–6–66, Cl. 269—95.

Kessler, Joseph S., to G & H Products Corp. Value construction facilitating removal of parts. 3,290,003, 12–6–66, Cl. 251—318.

Kesting, Robert E., ½ to Aerojet-General Corp., and ½ to United States of America, Interior. Partially hydrolyzed cellulosic reverse osmosis membranes and methods of preparing the same. 3,290,286, 12–6–66, Cl. 260—230.

Kibbel, William H., Jr.: *See*—
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Thompson, George F. 3,289,226.

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King, William N.: *See*—
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Kingston, Marjorie: *See*—
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Kirby, William G., and R. Marlow, to International Energy Conversion, Inc. Modular assembly for functional electronic blocks. 3,290,559, 12–6–66, Cl. 317—101.

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Kish, Arthur S.: *See*—
Ziherl, Frank A., and Kish. 3,290,062.

Kissa, Erik, to E. I. du Pont de Nemours and Co. Fiber-reactive dyes. 3,290,282, 12–6–66, Cl. 260—146.

Kittredge, Gifford, to Unarco Industries, Inc. Conveyor for handling unit loads. 3,289,818, 12–6–66, Cl. 198—190.

Klahenik, Adolph V. Vibratory hopper with attached article guide means positionable adjacent a vertical magazine means. 3,289,884, 12–6–66, Cl. 221—178.

Klatt, Henry G., Jr. Allen wrench device. 3,289,503, 12–6–66, Cl. 81—71.

Klane, Hermann. Disk brake. 3,289,795, 12–6–66, Cl. 188—72.

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Harel, Simha, Stern, and Klein. 3,290,114.

Klein, Harold T.: *See*—
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Klein, Harvey S.: *See*—
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Kleinschmidt, Edward F. and S. E., to SCM Corp. Typewriter having typelevers mounted on a rotating member. 3,289,805, 12–6–66, Cl. 197—18.

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Klimin, Alexei V.: *See*—
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Kline, John L., to American Air Filter Co., Inc. Air conditioning apparatus. 3,289,746, 12–6–66, Cl. 165—36.

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Knotowicz, Aloysius E., to The Patent Button Co. Display device with a plurality of 180° windings angularly displaced from one another around an annular cone. 3,290,632, 12–6–66, Cl. 335—272.

Kobayashi, Gunji, to Nippon Electric Co. Solar still apparatus for extracting and collecting water from soil. 3,290,230, 12–6–66, Cl. 202—234.

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Kobayashi, Hiroto, and K. Aibara, to Kabushiki Kaisha Keihin Seiki Seisakusho. Valve assembly. 3,289,689, 12–6–66, Cl. 137—221.

Kobbe, John R. Modulation conversion circuit for changing frequency modulation into pulse width modulation and omnirange receiver circuit utilizing such conversion circuit. 3,290,686, 12–6–66, Cl. 343—107.

Koch, Paul H., and J. R. Hill, to The Babcock & Wilcox Co. Method and apparatus for forming internal helical ribbing in a tube. 3,289,451, 12–6–66, Cl. 72—283.

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Kodaira, Nobuhisa, and N. Motegi. Vapor heating apparatus of closed or half-closed type. 3,289,644, 12–6–66, Cl. 122—406.

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Kohl, Karl, Sinker bar for straight machines. 3,289,438, 12–6–66, Cl. 66—109.

Kohler, Jerry F.: *See*—
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Kolbe, Joachim. Vehicle suspension system. 3,290,055, 12–6–66, Cl. 280—112.

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Kollar, Ernest P., to International Business Machines Corp. Film record card and method for making the same. 3,289,844, 12–6–66, Cl. 40—168.

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Kollonitsch, James, to Merck & Co., Inc. 2-hydroxymethyl-6-nitroimidazoles and process. 3,290,328, 12–6–66, Cl. 260—309.

Kolster, Harvey L., to Hallmark Cards, Inc. Display case. 3,290,107, 12–6–66, Cl. 312—234.1.

Komeno, Taichiro, to Shionogi & Co., Ltd. 17α-oxygenated 2,3-epithio-5α-pregnanes and production thereof. 3,290,294, 12–6–66, Cl. 260—239.5.

Konak, Peter A. Flow regulator for flexible tubes. 3,289,-999, 12–6–66, Cl. 251—6.

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Kozel, Harrys, to Radiant Mfg. Corp. Slat lock assembly for portable screens. 3,290,737, 12–6–66, Cl. 160—24.

Kozel, James A., E. R. Plasko, and H. W. Kogan, to American Radiator & Standard Sanitary Corp. Solenoid valve having the solenoid encapsulated within a dielectric cover. 3,289,-697, 12–6–66, Cl. 137—606.

Kozikowski, John, and M. Cais, to Ethyl Corp. [(acetoxyl-sulfonyl) cyclopentadienyl] manganesetricarbonyl. 3,290,-344, 12–6–66, Cl. 260—439.

Kozikowski, John, and M. Cais, to Ethyl Corp. Sulfonyl cyclopentadienyl manganese tricarbonyls. 3,290,345, 12–6–66, Cl. 260—439.

Kozikowski, John, and M. Cais, to Ethyl Corp. Process for preparing carboxycyclopentadienyl manganese tricarbonyl. 3,290,346, 12–6–66, Cl. 260—439.

Kozikowski, John, and M. Cais, to Ethyl Corp. Azidocarbonylcyclopentadienyl manganese tricarbonyl and process for preparing same. 3,290,337, 12–6–66, Cl. 260—349.

Kraiman, Eugene, and A. F. Hansen, to San Chemical Corp. Quaternary ammonium compounds. 3,290,374, 12–6–66, Cl. 260—561.

Krambeer, Karl-Heinrich, and F. Kunemund, to Siemens & Halske Aktiengesellschaft. Electromechanical band filter. 3,290,621, 12–6–66, Cl. 333—71.

Kramer, Hyman. Push-on retainers. 3,289,523, 12–6–66, Cl. 85—35.

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Kraus, John D., to The Ohio State University Research Foundation. Backward angle travelling wave wire mesh antenna array. 3,290,688, 12–6–66, Cl. 343—731.

Kraut, Herman G., to The Stanley Works. Method of forming packages. 3,289,284, 12–6–66, Cl. 53—22.

Kreinberg, Mari R.: *See*—
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Krodsen, John E., and W. J. Slamec. Mobile exercise bar. 3,290,044, 12–6–66, Cl. 272—91.

Krug, James R., and M. E. Bundy, to Milo Bundy Corp. Device for abrading and applying biologicals to the skin of a patient. 3,289,670, 12–6–66, Cl. 128—2.

Kruse, Clarence H., and G. F. Richmond, to Clevite Corp. Wire brush sharpening device. 3,289,359, 12–6–66, Cl. 51—241.

Krusan, Albert W., to Borg-Warner Corp. Gas fired clothes dryer. 3,290,028, 12–6–66, Cl. 263—33.

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Bloom, Earl M., Jr., and Kryniuk. 3,289,676.

Kubiak, Victor. Hair rolling apparatus. 3,289,690, 12–6–66, Cl. 132—40.

Kulpon, Walter A. Milling cutter. 3,289,275, 12–6–66, Cl. 29—105.

Kuming, Charles A., H. N. Harvey, Jr., and G. A. Weber, to Interchemical Corp. Copper chelate pigments and process of making them. 3,290,290, 12–6–66, Cl. 260—240.

Kunemund, Friedrich: *See*—
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Kunisch, Herbert K., and C. A. Zinsstag, to Lonza Ltd. Preparation of diacetonitrile. 3,290,956, 12–6–66, Cl. 260—465.5.

Kupper, Wilhelm, to W. Reimers. Method and apparatus for removing the reserve winding of yarn coils. 3,289,966, 12–6–66, Cl. 242—35.6.

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Kureha Chemical Industry Co., Ltd.: *See*—
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Kuriyama, Takashi, and M. Osawa, to Hitachi Ltd. Laminated core with bidirectional joints. 3,290,833, 12–6–66, Cl. 336—60.

Kurt, Howard D., to General Electric Co. Fusible electric switch having means for pivotally supporting replaceable cartridge fuses on a tiltable carriage. 3,290,459, 12–6–66, Cl. 200—50.

Kusiak, Edward H., to United Aircraft Corp. Locking device-spanner nut. 3,290,071, 12–6–66, Cl. 287—53.

Kutney, John T., to General Electric Co. Cruise fan powerplant. 3,289,414, 12–6–66, Cl. 60—263.

Kuttes, Anthony. Rotary pump or motor. 3,289,653, 12–6–66, Cl. 123—16.

Kyowa Hakko Kogyo Co., Ltd.: *See*—
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La Barge, Robert L., to Aluminum Co. of America. Joining and jointed structures. 3,290,077, 12–6–66, Cl. 287—187.36.

Lacey, Richard N.: *See*—
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Lafferty, James M., to General Electric Co. Triggered vacuum discharge device having a liquid cathode. 3,290,553, 12–6–66, Cl. 313—115.

Laharty, Mile L. Choker. 3,289,259, 12–6–66, Cl. 24—123.

Lahr, Robert G., to The A. C. Gilbert Co. Toy vehicle actuated lane switching device. 3,290,496, 12–6–66, Cl. 246—415.

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Lakin, Winfield A.: *See*—
Walsh, Ralph E., and Lakin. 3,290,013.

Lambe, John J., J. Mudar, and S. Nudelman, to Research Corp. Electroluminescent display device with piezoelectrical scanning and gating means. 3,290,549, 12–6–66, Cl. 315—55.

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Lamorte, Michael F., to Radio Corp. of America. Planar P-N junction light source with reflector means to collimate the emitted light. 3,290,529, 12–6–66, Cl. 313—114.

Lamoureux, William R., to International Business Machines Corp. Byte decoder. 3,290,671, 12–6–66, Cl. 340—347.

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Lange-Wiehe, Ferdinand, to W. Bahlsen. Blank for producing cartons. 3,289,914, 12–6–66, Cl. 229—31.

Lansky, Zdenek J., to Parker-Hannifin Corp. Apparatus for punching a hole by a tool inside a hollow workpiece. 3,289,-511, 12–6–66, Cl. 83—191.

Largman, Theodore, and E. N. Holmes, to Allied Chemical Corp. Aralkyl hydroperoxide production. 3,290,384, 12–6–66, Cl. 260—610.

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Larson, Charles O., to Chas. O. Larson Co. Folding sawhorse bracket. 3,289,789, 12–6–66, Cl. 182—226.

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La Tourneau, Howard C., and D. A. Willis, to Clark Equipment Co. Method and means providing overhead protection and access to industrial trucks. 3,289,871, 12–6–66, Cl. 214—674.

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Leciejewski, Anthony G., to Freeway Washer & Stamping Co. Bearing device. 3,290,100, 12–6–66, Cl. 308—6.

Leclercq, Andre A., to Pneumatiques, Caoutchouc Manufacture & Plastiques Kleber. Methods of producing rigid cellular materials and products obtained thereby. 3,290,262, 12–6–66, Cl. 260—2.5.

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Leonard, Louis H., Jr., to Carrier Corp. Heating and cooling system. 3,289,745, 12–6–66, Cl. 165—14.

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Leto, Salvatore F. and J. Dynamic torque response device. 3,289,495, 12–6–66, Cl. 74—574.

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Levoin, Francis, to IDEAL a.r.l. Minuterie Metalliche. Push button operating device for ball point pens. 3,289,638, 12–6–66, Cl. 120—42.03.

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Lewus, Alexander J. Cooking apparatus. 3,289,571, 12–6–66, Cl. 99—339.

Leyzieffer, Hans, to Siemens & Halske Aktiengesellschaft. Frequency modulated transistor oscillator. 3,290,618, 12–6–66, Cl. 332—30.

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Prahl, Walter H., Lederman, and Lichtblau. 3,290,391.

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Lindsey, John W. Vehicle roadlight wiper. 3,289,237, 12–6–66, Cl. 15—250.24.

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Lipe, Gordon C., and C. W. Hinds. Ski binding release checking device. 3,289,472, 12–6–66, Cl. 73—133.

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Litchard, Alexander. Container filling machine. 3,289,710, 12–6–66, Cl. 141—116.

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Little, Arthur D., Inc.: *See*—
Succigrosa, Henry L. 3,290,260.

Livingston, Elmer R., and E. Taylor. Adjustable strainer. 3,289,849, 12–6–66, Cl. 210—469.

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Logan, Robert K. Electroluminescent device including a dielectric substrate having a plurality of closely-spaced thin wire conductors passing therethrough. 3,290,537, 12–6–66, Cl. 313—108.

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Loken, Bjarte, and I. V. Sollins, to Phytogen Products, Inc. Oxidation of steroids. 3,290,322, 12–6–66, Cl. 260—397.4.

Longobardi, Felice. Razor blade holder and stropper for a hone and strop. 3,289,358, 12–6–66, Cl. 51—218.

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Loomis, Chauncey C., to Chas. Pfizer & Co., Inc. Process of preparing a reactive iron additive. 3,290,142, 12–6–66, Cl. 75—58.

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Louda, Jan, to Zavody V. I. Lenina Plzen. Tension measuring apparatus. 3,289,473, 12–6–66, Cl. 73—143.

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Lough, Richard C., and C. A. Orr, to Whirlpool Corp. Multiple output blowers for dryers and the like. 3,289,317, 12–6–66, Cl. 34—133.

Lounsbury, Donald H., and J. R. Cowdery, to J. W. Greer Co. Chocolate shaker. 3,289,610, 12–6–66, Cl. 107—8.

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Hitchens, Aaron L., Fountain, Dawson, and Lowry. 3,289,589.

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Lubowe, Irwin I. Allantoin biotin compositions. 3,290,324, 12–6–66, Cl. 260—299.

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Ludwig, Peter K., and J. T. D'Alessio, to United States of America, Atomic Energy Commission. Mercury-wetted fixed electrode electric arc generator. 3,290,615, 12–6–66, Cl. 331—127.

Luke, Louselle A.: *See*—
Belcourt, Francis J., and Luke. 3,290,661.

Lundeen, Allan J., and D. M. Coyne, to Continental Oil Co. Preparation of alkylaluminum halides. 3,290,349, 12–6–66, Cl. 260—448.

Lundquist, Richard C., to Westinghouse Air Brake Co. Core cutters for ripper type miners. 3,290,099, 12–6–66, Cl. 299—85.

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Smith, Peter H. 3,289,570.

M & S Tool Co., Inc.: *See*—
Mettersheimer, John H., Jr., and Stedman. 3,289,499.

Maatsch, Jurgen, K. Borowski, F. J. Hofmann, W. Hess, and G.-A. Bixel, to Beteiligungs- und Patentverwaltungs-Gesellschaft mit beschrankter Haftung. Smelting-furnace, particularly for the production of steel. 3,290,031, 12–6–66, Cl. 266—11.

MacGillivray, Robert K., to Daffin Corp. Rotary material separator having adjustable baffle means. 3,289,833, 12–6–66, Cl. 209—75.

Mack Trucks Inc.: *See*—
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Mackintosh, Charles. Grandstands. 3,289,367, 12–6–66, Cl. 52—191.

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Godfrey, John N., and Macri. 3,290,190.

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Testa, Emilio, and Maffii. 3,290,212.

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Simmons, Patrick M. L. 3,289,808.

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Mair, George L. Teaching apparatus having uncoding template for coded answers. 3,289,330, 12–6–66, Cl. 35—9.

Majors, Barnes. Pillow type speaker support. 3,290,450, 12–6–66, Cl. 179—146.

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Mallory, George R. Door closers. 3,289,242, 12–6–66, Cl. 16—66.

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Malnar, Leon, to CSF-Compagnie Generale de Telegraphie Sans Fil. Wide-band discriminators. 3,290,600, 12–6–66, Cl. 325—349.

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Mabott, Thomas J., to The New York Air Brake Co. Flow divider valve for use with two pumps. 3,289,688, 12–6–66, Cl. 137—114.

Mandelshtam, Elena J.: *See*—
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Manus, George. Control system for electric typewriters including current limiting means. 3,289,806, 12–6–66, Cl. 197—19.

Marchand, Pierre A. R., and J. R. Grenet, to Rhone-Poulenc S.A. Orthohydroxybenzyl borates. 3,290,352, 12–6–66, Cl. 260—462.

Marchand, Pierre A. R., and J. R. Grenet, to Rhone-Poulenc S.A. Process for the production of ortho-hydroxybenzyl alcohols. 3,290,393, 12–6–66, Cl. 260—631.

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Mark, Edward H., to Interstate Industries Inc. Modular partition structure. 3,289,968, 12–6–66, Cl. 52—220.

Mark, Victor, to Monsanto Co. Polyhalo-bicyclic compounds and oxygenated derivatives. 3,290,350, 12–6–66, Cl. 260—486.

Marks, Charles A. Emergency traction cleat for vehicles. 3,289,727, 12–6–66, Cl. 152—225.

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Kirby, William G., and Marlow. 3,290,550.

Marschak, Howard J. Device readily attachable to a shelf or the like for forming a shelf extension or tray. 3,289,615, 12–6–66, Cl. 108—97.

Marten, Jerome H., to Chemical Construction Corp. Synthesis of pure melamine. 3,290,308, 12–6–66, Cl. 260—249.7.

Marten, Jerome H., to Chemical Construction Corp. Synthesis of melamine. 3,290,309, 12–6–66, Cl. 260—249.7.

Martin, Joseph P. Holder for nursing bottles, pacifiers and teething elements. 3,289,986, 12–6–66, Cl. 248—106.

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Martin, Thomas C., to Union Carbide Corp. Sulfuric acid concentration. 3,289,753, 12–6–66, Cl. 159—15.

Martin, William L., and M. Felsenthal, to Continental Oil Co. Method for recovering petroleum. 3,289,758, 12–6–66, Cl. 166—9.

Martinov, Melvin. Combination traction aid and warning device for vehicles. 3,289,939, 12–6–66, Cl. 238—14.

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Maschinenfabrik Burckhardt A.G.: *See*—
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Maschinenfabrik Oerlikon: *See*—
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Mashburn, Morris W., Jr., and W. A. Bustin. Bow making apparatus. 3,289,900, 12–6–66, Cl. 223—46.

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Maurer, John A., to Chicago Aerial Industries, Inc. Focal plane shutter. 3,289,561, 12–6–66, Cl. 95—57.

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Mayer, Bruce W., to The Electromark Corp. Electrolytic marking apparatus including stencil holder. 3,290,236, 12–6–66, Cl. 204—224.

Mayer, John F., to North American Aviation, Inc. Relief seal with dual sealing surfaces. 3,290,047, 12–6–66, Cl. 277—2.

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Mayes Brothers Tool Mfg. Co.: *See*—
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Masur, Robert H., and R. Pappo, to G. D. Searle & Co. 17-oxygenated (optionally N-alkylated) 2-azaandrostan-3-ones, 4-dehydro derivatives thereof, and A-homo compounds corresponding. 3,290,287, 12–6–66, Cl. 260—284.3.

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McDonald, Robert J. Handles for ski poles and the like. 3,290,049, 12–6–66, Cl. 280—11.37.

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McGinnis, Gerald E., to Westinghouse Electric Corp. Incinerator device. 3,289,618, 12–6–66, Cl. 110—8.

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Sankey, Edward L. 3,290,547.
McHowell, Robert H., to The Foxboro Co. Magnetic flow meter system with override control. 3,290,585, 12–6–66, Cl. 324—34.
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McKenzie, Samuel B., to J. M. Jamison, J. T. Smith, and W. G. Tyfe. Door lock and keeper. 3,290,079, 12–6–66, Cl. 292—172.
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Mergea, Herbert A., H. G. Krestin, and E. Becker. Pulverizer with basket-type rotor. 3,289,962, 12–6–66, Cl. 241—49.
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Metz, Henry L. Wall repair device. 3,289,374, 12–6–66, Cl. 52—514.
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Michel, Kenneth G., to American Can Co. Method of producing a dispensing container. 3,290,422, 12–6–66, Cl. 264—250.
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Miller, Frank E., and J. M. Carruthers, to Wald Industries, Inc. Glass sphere dispenser spreader for highway marking. 3,289,899, 12–6–66, Cl. 222—459.
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Monson, Leon A., to E. I. du Pont de Nemours and Co. Protectively coated nickel or cobalt articles and process of making. 3,290,126, 12–6–66, Cl. 29—194.
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Muller, Alfred H., to Daimler-Benz Aktiengesellschaft. Rotary piston engine. 3,289,648, 12–6–66, Cl. 123—8.
Muller, Horst G., to General Electric Co. Feeding mechanism. 3,289,253, 12–6–66, Cl. 29—203.
Muller, Jacques. Filtering equipment for fluids. 3,289,839, 12–6–66, Cl. 210—136.
Muller, Peter, to Beteiligungs- und Patentverwaltungs-gesellschaft mit beschraenkter Haftung. Rotary displacement machine. 3,289,653, 12–6–66, Cl. 123—16.
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Mustakas, Gus C., and R. L. Griffin, Jr., to United States of America, Agriculture. Process for preparing debittered full-fat soybean materials. 3,290,155, 12–6–66, Cl. 99—98.
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Christenson, Roger M., Porter, and Halcoussis. 3,290,-417.
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Ravner, Harold, and C. O. Timmons, to United States of America, Navy. Metal antioxidants for fluorosesters. 3,290,242, 12–6–66, Cl. 252—28.
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Roos, Friedrich, to Beano Schilde Maschinenbau AG. Drying lightweight loose material. 3,289,318, 12–6–66, Cl. 34—182.

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Rose, Herbert A., to Westinghouse Electric Corp. Electrical apparatus. 3,290,510, 12–6–66, Cl. 307—17.

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Rosenblad, Axel E. Multiple effect evaporator of the switching type. 3,289,735, 12–6–66, Cl. 159—20.

Rosler, Ernst, and K. Kresse, to Montblanc-Simplo G.m.b.H. Ink conductor for fountain pens. 3,289,640, 12–6–66, Cl. 120—50.

Rosi, Fred D., and J. J. Hanak, to Radio Corp. of America. Superconducting materials and method of making them. 3,290,186, 12–6–66, Cl. 148—126.

Ross, Bernd, to Hoffman Electronics Corp. Epitaxial alloy semiconductor devices and processes for making them. 3,290,185, 12–6–66, Cl. 148—177.

Ross, John D., to Central Dynamics Ltd. Electronic signal switching circuit. 3,290,519, 12–6–66, Cl. 307—88.5.

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Rothemund, Rudolf E., M. P. Reiter, and W. H. Wilcoxson, to The Babcock & Wilcox Co. Vapor generator. 3,289,643, 12–6–66, Cl. 122—406.

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Ruddock, William F., and E. A. Di Pasquantonio, to Pitney-Bowes, Inc. Form set and method utilizing same. 3,290,060, 12–6–66, Cl. 282—22.

Ruf, Walter. Device for suspension and shock absorption in vehicles. 3,290,036, 12–6–66, Cl. 267—15.

Rule, Norman G., and L. Lorand, to Northwestern University. Agmatine derivatives. 3,290,339, 12–6–66, Cl. 260—397.7.

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Rupp, William C., to The Chandler & Price Co. Clamp operating mechanism for paper cutting machines and the like. 3,290,514, 12–6–66, Cl. 83—459.

Russell, Clayton D., to Phoenix Iron Works. Manhole frame and cover. 3,289,556, 12–6–66, Cl. 94—34.

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Rust, Frederick F., and H. S. Klein, to Shell Oil Co. Addition of allylic halides to olefins and halo-olefins. 3,290,397, 12–6–66, Cl. 260—651.

Rutledge, Joseph P., to Stewart-Warner Corp. Heat exchanger. 3,289,757, 12–6–66, Cl. 165—166.

Rutschi, K., A.G.: *See*—
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Rychlewski, Thaddeus V., to Sylvania Electric Products Inc. Electronic switching tube. 3,290,531, 12–6–66, Cl. 313—69.

Rzepecki, Josef, to Maschinenfabrik Burckhardt A.G. Yielding pressure-chamber partitions. 3,289,551, 12–6–66, Cl. 92—89.

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Sable, Carl S. Marine propulsion apparatus. 3,289,628, 12–6–66, Cl. 115—37.

Sack, Edgar A., to United States of America, Navy. Electroluminescent display screen and circuit therefor. 3,290,554, 12–6–66, Cl. 315—169.

Sackett, Donald W.: *See*—
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Safety Electrical Equipment Corp.: *See*—
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Sager, James R.: *See*—
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Saito, Nobuho, and Y. Kotani, to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha. Method for substantially removing aldehyde contaminants from vinyl acetate and alcoholic solutions thereof. 3,290,363, 12–6–66, Cl. 260—489.

Salka, Ludovit, ¼ each to A. Reback, G. R. Wright, and D. M. Kanton. Painter's edging tool. 3,290,294, 12–6–66, Cl. 15—210.

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Salzle, Erich. Method of polishing crystal glass and lead crystal glass articles. 3,290,103, 12–6–66, Cl. 156—24.

Samain, Jacques H. H. Method and apparatus for preparing microfile records. 3,289,530, 12–6–66, Cl. 88—24.

Samitz, Erwin, to Motorenfabrik Hatz G.m.b.H. Cage for roller bearings. 3,290,103, 12–6–66, Cl. 308—217.

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Hofmann, Charles F., and Sampson. 3,290,635.

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Sandor, Raymond P. Method and apparatus for installing fasteners. 3,289,290, 12–6–66, Cl. 29—432.

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Sankey, Edward L., to McGraw-Edison Co. Pressure relief and failure indicating means for arrester. 3,290,547, 12–6–66, Cl. 315—36.

Santourian, Malcon, to Phillips Petroleum Co. Removal of water blocks from oil and gas wells. 3,289,764, 12–6–66, Cl. 166—42.

Sapy, Jacques, to Societe Crouzet S.A.R.L. Mounting arrangement for unidirectionally conductive devices. 3,290,-558, 12–6–66, Cl. 317—101.

Sarto, Jorma O., to Chrysler Corp. Back bleed choke mixture control. 3,290,023, 12–6–66, Cl. 261—34.

Saunders, Joseph A. Hospital patient's chart holder. 3,289,-676, 12–6–66, Cl. 129—35.

Saurer, Adolph, Ltd.: *See*—
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Sause, Henry W., to G. D. Searle & Co. Phenyl-2-pyridylthioacetamide compounds possessing anti-ulcer activity. 3,290,-318, 12–6–66, Cl. 260—294.8.

Sauter, Bobbie R., to Deutsch Fastener Corp. Retaining device. 3,289,726, 12–6–66, Cl. 151—69.

Savage, Robert H., to General Electric Co. Electric current collecting element. 3,290,472, 12–6–66, Cl. 200—166.

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Sawyer, James G., to Utah Construction & Mining Co. Air compressor. 3,289,922, 12–6–66, Cl. 230—127.

Scaramucci, Domer. Check valve. 3,289,698, 12–6–66, Cl. 137—525.3.

Schaefer, John O., to International Business Machines Corp. Automatic sequence typing mechanism for printing words upon depression of a single key. 3,289,804, 12–6–66, Cl. 197—7.

Schaeffer, William D., to Union Oil Co. of California. Process for preparing esters and acetals by the oxidation of olefins. 3,290,362, 12–6–66, Cl. 260—497.

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Schell, Dwight, L. J. Wallen, and J. E. Wilkes, to Halliburton Co. Multiple fracturing in a well. 3,289,762, 12–6–66, Cl. 166—58.

Scher, Joseph W., to Weber & Scher Mfg. Co., Inc. Material feed control device. 3,289,959, 12–6–66, Cl. 242—45.

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Schetser, Julius D.: *See*—
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Scheuerman, Richard L.: *See*—
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Schickedanz, Paul D., to Union Carbide Corp. Method for repelling insects with dimethylacrylamides and derivatives. 3,290,211, 12–6–66, Cl. 167—22.

Schiff, Raymond M. Apparatus for the detection of radioactive isotopes attached to material of gas-liquid chromatography systems. 3,290,501, 12–6–66, Cl. 250—106.

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Schild, Charles W., to American Can Co. Can opener and dispenser. 3,289,890, 12–6–66, Cl. 222—95.

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Schmidt, Horst: *See*—
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Schmidt, Jack F.: *See*—
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Schmidt, Paul, and E. Schweiser, to Ciba Corp. Certain 2-oxyalkyl-4-halogenopyrimidines and intermediates therefor. 3,290,306, 12–6–66, Cl. 260—247.5.

Schmitt, Daniel P.: *See*—
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Schmitz, Adolf, to Th. Goldschmidt A.G. Chloro-s-triazinylaminoacids. 3,290,305, 12–6–66, Cl. 260—249.5.

Schneberger, Edward J., and M. G. Bienhoff, to The Bunker Ramo Corp. Binary addition apparatus. 3,290,494, 12–6–66, Cl. 235—175.

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Schonewald, Roger L., O. L. I. Brown, and M. P. Wilson, Jr., to General Dynamics Corp. Aerosol filter. 3,289,897, 12–6–66, Cl. 55—392.

Schoppe, Fritz. Boiler for the heating or vaporisation of a liquid medium. 3,289,642, 12–6–66, Cl. 122—240.

Schottle, Hans: *See*—
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Schuller, Eduard, to Telefunken Patentverwertungs-G.m.b.H. Capstan and pressure shoe. 3,289,906, 12–6–66, Cl. 226—168.

Schults, George. Shoe bottom roughing machine. 3,289,441, 12–6–66, Cl. 69—6.5.

Schumacher, William L., to AMP Inc. Electrical contact assembly with hinged wing portions and contact separating means. 3,290,461, 12–6–66, Cl. 200—51.1.

Schumer, Louis, and S. Kramer. Wig or wiglet carrying case. 3,289,822, 12–6–66, Cl. 206—8.

Schwartz, Marius M., and A. Kotlier. Candy sucker construction. 3,290,157, 12–6–66, Cl. 99—138.

Schwartz, Nelson N.: *See*—
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Schwarz, Hans-Helmut, and K. Morgenstern, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of cycloalkenes. 3,290,400, 12–6–66, Cl. 260—666.

Schweiser, Albert E.: *See*—
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Schweiser, Ernst: *See*—
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Schwenn, Donald A.: *See*—
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Schwiger, John T. Proportioning machine and method. 3,289,889, 12–6–66, Cl. 222—57.

Sci-Tech Corp.: *See*—
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Scofield, Raymond C., to Phillips Petroleum Co. Rubber masterbatching. 3,290,268, 12–6–66, Cl. 260—41.5.

Scott, Douglas R., to Robertshaw Controls Co. Thermostatic control device. 3,289,935, 12–6–66, Cl. 236—21.

Scott, John E., to Sperry Rand Corp. Signal transducer. 3,290,487, 12–6–66, Cl. 285—61.11.

Scott, John N., Jr., F. Hicks, and D. L. Peters, to Phillips Petroleum Co. Blow molding apparatus with blow-mold exhaust means. 3,289,248, 12–6–66, Cl. 18—5.

Scott, Loren F., to Terra-Form Footing Co. Tunneling wheel. 3,290,098, 12–6–66, Cl. 299—90.

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Scragg, Frederick. 3,289,400.

Scragg, Frederick, to Ernest Scragg & Sons (Holdings) Ltd. Apparatus for producing modified twist crimped yarn. 3,289,400, 12–6–66, Cl. 57—34.

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Cusic, John W., and Yonan. 3,290,818.
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Sause, Henry W. 3,290,318.

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Sedlacsik, John Jr., to Interplanetary Research & Development Corp. Process and apparatus for electrostatic detearing. 3,290,169, 12–6–66, Cl. 117—93.41.

Self, Richard E. Flow control valve. 3,290,002, 12–6–66, Cl. 251—210.

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Senkewich, Alexander M., 5% to J. M. Hellman, and 5% to M. Kingston. Transformer having conductive gaseous windings. 3,290,550, 12–6–66, Cl. 315—57.

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Sewell, Cyrus G. Pill counter. 3,290,488, 12–6–66, Cl. 235—92.

Sewell, Donald N., to Dielectric Products Engineering Co. Inc. Electrical switch having frictionally engaging contacts and fulcrcem release means therefor. 3,290,470, 12–6–66, Cl. 200—153.

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Shaneman, Victor C., to Westinghouse Electric Corp. Starting apparatus for a multi-phase inverter. 3,290,977, 12–6–66, Cl. 321—5.

Shapiro, Elliot L., and R. P. Oliveto, to Schering Corp. 16-alkyl progesterones and their 9α,11β-dihalogeno analogs. 3,290,336, 12–6–66, Cl. 260—397.4.

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Smith, Richard K., to Twin Cities Container Corp. Shipping wrapper for bathtubs. 3,289,825, 12–6–66, Cl. 206—46.

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34	3,290,593	37	3,289,408	37	3,290,269	39	3,290,164	42	3,290,063	46	3,289,372
	3,290,629		3,289,422		3,290,271		3,290,413		3,290,095		3,289,418
	3,290,688		3,289,445		3,290,273	40	3,289,238		3,290,116		3,289,542
35	3,289,348		3,289,449		3,290,311	41	3,289,224		3,290,120		3,289,621
	3,289,355		3,289,471		3,290,333		3,289,301		3,290,167		3,289,667
	3,289,363		3,289,537		3,290,335		3,289,329		3,290,180		3,289,719
	3,289,376		3,289,600		3,290,359		3,289,592		3,290,199		3,289,842
	3,289,409		3,289,616		3,290,364		3,289,900		3,290,278		3,289,853
	3,289,416		3,289,618		3,290,377		3,290,122		3,290,360		3,289,868
	3,289,426		3,289,661		3,290,385		3,290,166		3,290,361		3,289,889
	3,289,461		3,289,665		3,290,402		3,290,401		3,290,388		3,290,510
	3,289,467		3,289,673		3,290,416	42	Re.26,120		3,290,405	47	3,289,607
	3,289,583		3,289,680		3,290,417		3,289,262		3,290,488		3,289,629
	3,289,593		3,289,724		3,290,421		3,289,286		3,290,497		3,289,733
	3,289,693		3,289,753		3,290,459		3,289,345		3,290,559		3,289,782
	3,289,729		3,289,754		3,290,461		3,289,349		3,290,564		3,289,788
	3,289,758		3,289,762		3,290,469		3,289,390		3,290,570		3,289,829
	3,289,759		3,289,810		3,290,479		3,289,419		3,290,625	48	3,289,430
	3,289,763		3,289,817		3,290,512		3,289,465		3,290,645		3,289,470
	3,289,764		3,289,858		3,290,513		3,289,466		3,290,690		3,289,502
	3,289,838		3,289,859		3,290,520		3,289,468	43	3,289,939		3,289,512
	3,289,861		3,289,862		3,290,529		3,289,474		3,290,555		3,289,633
	3,290,268		3,289,870		3,290,530		3,289,477	45	3,289,263		3,289,634
	3,290,349		3,289,899		3,290,535		3,289,479		3,289,270		3,289,656
	3,290,396		3,289,905		3,290,554		3,289,490		3,289,281		3,289,723
	3,290,407		3,289,915		3,290,565		3,289,596		3,289,315		3,289,773
	3,290,482		3,289,943		3,290,568		3,289,628		3,289,333		3,289,797
36	3,289,259		3,289,963		3,290,592		3,289,671		3,289,361		3,289,809
	3,289,300		3,289,966		3,290,601		3,289,691		3,289,386		3,289,830
	3,289,331		3,290,077		3,290,635		3,289,761		3,289,410		3,289,882
	3,289,718		3,290,091		3,290,640		3,289,765		3,289,429		3,290,008
	3,289,996		3,290,128		3,290,642		3,289,769		3,289,550		3,290,021
	3,290,009		3,290,129		3,290,651		3,289,776		3,289,554		3,290,041
	3,290,010		3,290,138		3,290,664		3,289,878		3,289,625		3,290,070
	3,290,686		3,290,139		3,290,691		3,289,893		3,289,635		3,290,083
37	3,289,237		3,290,151		3,290,692		3,289,962		3,289,674		3,290,153
	3,289,257		3,290,160	38	3,289,636		3,289,967		3,289,690		3,290,202
	3,289,352		3,290,171		3,289,637		3,289,990		3,289,919		3,290,460
	3,289,362		3,290,176		3,289,702		3,290,001		3,289,925		3,290,547
	3,289,365		3,290,177		3,289,751		3,290,007		3,290,145	49	3,290,229
	3,289,369		3,290,200		3,290,234		3,290,020		3,290,190	50	3,289,227
	3,289,381		3,290,240		3,290,646		3,290,043		3,290,222		3,290,011
	3,289,407		3,290,244	39	3,289,708		3,290,057		3,290,576		

Design Patents

4	206,373	4	206,416	12	206,389	21	206,381	29	206,387	31	206,393
	206,375		206,417		206,406		206,398		206,408		206,394
	206,378	6	206,371		206,409		206,408		206,415		206,395
	206,382		206,397	13	206,377		206,410	31	206,370		206,411
	206,390		206,412		206,386		206,421		206,372	34	206,396
	206,402		206,414		260,376	22	206,399		206,374	37	206,401
	206,404	8	206,418	17	206,383	24	206,400		206,391		206,422
	206,405		206,419	20	206,384	29	206,380		206,392		206,423
	206,413		206,420	21	206,379						

Plant Patents

4	2,688	13	2,689	22	2,690						

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 6, 1966 Volume 833 Number 1

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 220,967 (THE UNITED STATES NEWS), The United States News Publishing Corporation, Periodical publications; Reg. No. 488,871 (WORLD REPORT), same, filed Sept. 29, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45704, *U.S. News & World Report, Inc.* v. *Guy Streit.*

Reg. No. 827,260 (KOROSEAL), The B. F. Goodrich Company, Plasticized polymerized vinyl chlorides; Reg. No. 600,813 (B. F. GOODRICH AND DESIGN), same, Rubberized hair cushioning material, transparent and opaque plastic material sold in sheet form, cellular materials made of rubber or rubber-like materials sold in sheet form, etc., filed Sept. 14, 1966, D.C.N.J. (Newark), Doc. 927–66, *The B. F. Goodrich Company* v. *Koroseal Building Products, Inc. et al.*

Reg. No. 289,512 (BECOTIN), Eli Lilly and Company, Medicinal preparation composed of nicotinic acid and vitamins, useful, among other things, in the treatment of pellagra, many forms of anemia, and any type of vitamin B deficiency; Reg. No. 804,976 (MI-CEBRIN), same, Medicinal preparation of vitamin-mineral supplements used for prophylactic or therapeutic treatment of vitamin and mineral deficiencies in the diet; Reg. No. 804,608 (MI-CEBRIN T), same, Therapeutic vitamin-mineral useful in speeding recovery by meeting increased nutritional demands, filed Sept. 6, 1966, D.C.N.J. (Newark), Doc. 897–66, *Eli Lilly and Company* v. *American Vitamin Products, Inc. et al.*

Reg. No. 262,405 (MOTORTRON), McGraw Electric Company, Fuses and circuit makers and breakers; Reg. No. 837,287 (FUSETRON), same, Electric fuses and protectors for electric circuits that include fuse links and thermal cut-outs and that respond to heavy overloads or short circuits to open the circuit; Reg. No. 664,665 (LIMITRON), McGraw-Edison Company, Electric fuses; Reg. No. 676,699 (TRON), same, Electric fuses; Reg. No. 682,900 (RENEWATRON), McGraw-Edison Company, assignee of Star Fuse Co., Inc., Fuse used to protect electric circuits and motors, filed Sept. 19, 1966, D.C., S.D.N.Y., Doc. 66/3002, *McGraw-Edison Company* v. *Westrex Corporation.*

Reg. No. 378,913(c) (THE BAT MAN AND DESIGN), Detective Comics, Inc., Cartoons published in a series; Reg. No. 382,770(c) (BAT MAN AND DESIGN), same, Magazine, filed May 13, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c657, *National Periodical Publications, Inc.* v. *Rubin Company.* Trademark registrations held valid and infringed; defendant enjoined Sept. 29, 1966.

Reg. No. 378,913(b); Reg. No. 382,770(b); Reg. No. 804,709 (BATMAN AND DESIGN), National Periodical Publications, Inc., Comic magazines, filed July 5, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–630, *National Periodical Publications, Inc.* v. *Parisi Industries, Inc. et al.* Consent judgment—injunction issued Oct. 14, 1966. **Same, filed June 24, 1966, D.C., S.D.N.Y., Doc. 66/1841, *National Periodical Publications, Inc.* v. *S. S. Kresge Co.*** Stipulation and order of dismissal Oct. 25, 1966.

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	27,264
Date of oldest new application	Sept. 13, 1965
Date of oldest amended application (filing date)	Sept. 11, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-13-65	8-5-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 28, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-21-65	9-11-63
Renewals (All Classes)	9-2-66	
Sec. 12(c) Publications (All Classes)	9-27-66	

Applications filed during the month of October—2,265

Registrations Issued ..... 458—No. 819,677 to No. 820,134
Renewals Issued 70

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PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 363,770. (See Reg. No. 378,913.)

Reg. No. 432,871. (See Reg. No. 320,957.)

Reg. No. 462,682 (ANGEL FACE), Pond's Extract Company, Combined foundation and face powder, filed Dec. 27, 1965, D.C., S.D.N.Y., Doc. 65/3925, *Chesebrough-Pond's, Inc.* v. *Chemway Corp.* Stipulation and order of dismissal Sept. 9, 1966.

Reg. No. 512,468 (S. KIRK & SON), Samuel Kirk & Son, Incorporated, Flatware and hollow ware composed wholly or in part of precious metal, filed Sept. 16, 1966, D.C. Conn. (New Haven), Doc. 11590, *Samuel Kirk & Son, Inc.* v. *Kirk's Ltd. et al.*

Reg. No. 512,573 (LIGHTGUARD), The Electric Storage Battery Company, Electrical emergency lighting apparatus, filed Sept. 15, 1966, D.C., S.D. Tex. (Houston), Doc. 66–H–595, *The Electric Storage Battery Company* v. *Lightguard Electronics Mfg. Co., Inc.*

Reg. No. 519,626 (OUIJA), William A. Fuld, doing business as William Fuld, Game board, utilizing a planchette, and sometimes known as a talking board, filed Sept. 22, 1966, D.C., S.D.N.Y., Doc. 66/3049, *Parker Brothers, Inc.* v. *Olympia Records Industries, Inc. et al.*

Reg. No. 537,267. (See Reg. No. 362,405.)

Reg. No. 550,124 (FAIRHURST), John T. Fairhurst Co., Inc., Wardrobes, folding partitions, and parts for wardrobes and folding partitions, filed Sept. 28, 1966, D.C., S.D.N.Y., Doc. 66/3130, *Federal Folding Wall Corp.* v. *National Folding Wall Corp.*

Reg. No. 550,421 (IBM), International Business Machines Corporation, Carbon paper and carbon ribbons, electrical and electronic apparatus, typewriting machines, etc.; Reg. No. 571,422, same, Services comprising analyzing, accounting and statistical problems of governmental agencies, etc., for repair and maintenance of typewriting machines and their accessories, etc., filed Sept. 8, 1966, D.C., W.D. Mo. (Kansas City), Doc. 16158–3, *International Business Machines Corporation* v. *Automation Machine Training Center, Inc. et al.*

Reg. No. 571,422. (See Reg. No. 550,421.)

Reg. No. 594,576. (See Reg. No. 359,812.)

Reg. No. 607,444 ("NO-SEEP" AND DESIGN), Paul E. Thies, doing business as Pet Manufacturing Co., Combined lead sleeve and wax gasket for setting toilet bowls; 2,750,216, P. E. Thies, BOWL SLEEVE GASKET, filed Sept. 15, 1966, D.C. Nebr. (Omaha), Doc. 02598, *Paul E. Thies* v. *William H. Harvey Co. et al.*

Reg. No. 617,121 (VOLKSWAGEN), Volkswagenwerk G.m.b.H., Vehicles—namely, automobiles and trucks, air craft, boats, and parts and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, etc.; Reg. No. 621,649 (VW AND DESIGN), same; Reg. No. 622,695 (VW), same, filed July 29, 1964, D.C., M.D. Tenn. (Nashville), Doc. 3544, *Volkswagenwerk Aktiengesellschaft* v. *Volkswagen Service Center.* Consent order enjoining defendant Sept. 30, 1966. Same, filed Feb. 16, 1966, D.C. Puerto Rico (San Juan), Doc. 96–66, *Volkswagenwerk* v. *Cars Import Corporation.* Consent judgment enjoining defendant Oct. 19, 1966.

Reg. No. 629,295 (THE HOMEFINDERS INC. AND DESIGN), The Homefinders, Inc., Real estate brokerage service and arranging for the financing of homes, filed Mar. 24, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c539, *U.S. Homefinders, Inc. et al.* v. *Homefinders, Inc.* Declaratory judgment prayed for by plaintiff U.S. Homefinders, Inc. in counts 1, 3, 4 and 5 of the complaint denied; declaratory judgment prayed for by plaintiff Seymour Graham in count 2 of complaint denied; injunction issued against plaintiff U.S. Homefinders, Inc. Sept. 2, 1966.

Reg. No. 631,649. (See Reg. No. 617,121.)

Reg. No. 642,146 (ANYSTREAM), Speakman Company, Shower heads, filed Sept. 30, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–923, *Speakman Co.* v. *Rainbow Plumbing & Heating.*

Reg. No. 645,435 (CASUAL CORNER), Casual Corner, Inc., Women's apparel — namely, dresses, shorts, slacks, sport jackets, coats, suits, sweaters, etc., filed Sept. 28, 1966, D.C., M.D. Fla. (Jacksonville), Doc. 66–694–J, *Casual Corner Associates, Inc.* v. *Newman Hosiery Co., et al.*

Reg. No. 663,695. (See Reg. No. 617,121.)

Reg. No. 664,695. (See Reg. No. 537,267.)

Reg. No. 668,267 (MULTILOG), Dennert & Pape, Slide rules, filed Sept. 28, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1736, *Dennert & Pape Aristo-Werke K.G. et al.* v. *Mary Louise & Associates.*

Reg. No. 675,623 (TIGER CLUB), Peter Pan Foundation, Inc., Girdles and panty girdles; Reg. No. 698,778 (TIGER), same; Reg. No. 696,475 (TIGER AND DESIGN), same, Girdles, filed Sept. 7, 1966, D.C., S.D.N.Y., Doc. 66/2847, *Peter Pan Foundations, Inc.* v. *Vanity Fair Mills, Inc.*

Reg. No. 676,630. (See Reg. No. 537,267.)

Reg. No. 680,512. (See Reg. No. 327,286.)

Reg. No. 683,980. (See Reg. No. 537,267.)

Reg. No. 684,668. (See Reg. No. 550,512.)

Reg. No. 695,773. (See Reg. No. 675,623.)

Reg. No. 696,472. (See Reg. No. 675,623.)

Reg. No. 698,726 (EXECUTIVE HOUSE in script), Executive House Motor Hotels Corporation, Operation and management of motels, hotels, and motor hotels—namely, providing lodging, food, and beverages, etc.; Reg. No. 718,761 (EXECUTIVE INN), same, Motel, hotel and restaurant services, filed Oct. 15, 1965, D.C., E.D. Mo. (St. Louis), Doc. 65C260(1), *Executive House, Inc. et al.* v. *Executive International Inn, Inc. et al.* Stipulation dismissing case with prejudice Aug. 30, 1966.

Reg. No. 704,077 (SICILIAN GOLD), Pacific Wine Co., doing business as Paterno Imports, Wines; Reg. No. 762,427 (GOLD DROPS), Anthony Paterno, doing business as Paterno Imports, same, filed Nov. 10, 1965, D.C., E.D. Mich. (Detroit), Doc. 27720, *Paterno Imports, Ltd.* v. *Universal Wine & Liquor Co. (Inc.)* Stipulation and order of dismissal without prejudice May 26, 1966.

Reg. No. 718,889 (IMPERIA NOODLE CHEF), Italian Imports Company, assignee of Industrial Prodotti Stampati, Hand-operated machine for rolling and cutting dough into noodles, spaghetti, ravioli, and the like, filed Dec. 4, 1964, D.C., S.D.N.Y., Doc. 64/3730, *Italian Imports Company* v. *Imber Associates, Inc.* Order of dismissal Sept. 20, 1966.

Reg. No. 718,761. (See Reg. No. 698,726.)

Reg. No. 750,911 (FUTURE), The United States Junior Chamber of Commerce (Missouri incorporated association), Magazine, filed Aug. 3, 1966, D.C., Dist. of Columbia, Doc. 2061–66, *The United States Jaycees, a Missouri corporation* v. *L. Brent Bozell.* Stipulation of dismissal without prejudice Sept. 22, 1966.

Reg. No. 752,443 (TAMMY), Ideal Toy Corporation, assignee of the Royal Doll Mfg. Co., Inc., Dolls; Reg. No. 757,-234, same, Ideal Toy Corporation, Accessories for a toy mannequin doll, including clothing, handbags, jewelry, etc., filed Oct. 18, 1964, D.C., S.D.N.Y., Doc. 64/3112, *Ideal Toy Corporation* v. *Feb-Lu Ltd. (Inc.) et al.* Action closed as to defendant David Faber Sept. 23, 1966.

Reg. No. 757,234. (See Reg. No. 752,443.)

Reg. No. 762,427. (See Reg. No. 704,077.)

Reg. No. 767,373 (DANIEL BOONE), Aladdin Industries, Incorporated, Lunch boxes, lunch kits comprising a carrying case containing thermos bottles, heat insulated receptacles such as thermos bottles and pitchers, filed Mar. 4, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c331, *Aladdin Industries, Inc.* v. *King-Seeley Thermos Co.* Consent order dismissing complaint with prejudice Apr. 21, 1966.

Reg. No. 804,769. (See Reg. No. 378,913(b).)

Reg. No. 865,484 (SPAN AND DESIGN), Boats, Inc., Fibre glass boats, filed Sept. 6, 1966, D.C., W.D. Wis. (Madison), Doc. 66–C–21(S), *Boats, Inc.* v. *Span Boats, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 179,817. Society of Independent Gasoline Marketers of America, New Orleans, La. Filed Oct. 25, 1966. COLLECTIVE MARK.

SIGMA

Class 4—Abrasives and Polishing Materials

For Gloss Polish and Cleaner.

Class 6—Chemicals and Chemical Compositions

For Cooling System Sealer, and Hydraulic Brake Fluid.

Class 15—Oils and Greases

For Rust Inhibitor and Water Pump Lubricant.

Class 52—Detergents and Soaps

For Radiator Cleaner, Whitewall Liquid Spray Cleaner, and Soapless Powder for Car Washing.

First use May 29, 1963.

SN 219,140. Reddy Kilowatt, Inc., New York, N.Y. Filed May 18, 1965.



Owner of Reg. No. 642,866.

Class 21—Electrical Apparatus, Machines, and Supplies

For Small Electrical Household Appliances—Namely, Night Lights for Sale to Investor-Owned Public Utilities in Promoting the Sale of Their Services.

First use May 4, 1962.

Class 27—Horological Instruments

For Small Electrical Household Appliances—Namely, Clocks for Sale to Investor-Owned Public Utilities in Promoting the Sale of Their Services.

First use Feb. 2, 1965.

SN 227,633. Pall Corporation, Glen Cove, N.Y. Filed Sept. 13, 1965.

AMLOC

Class 26—Measuring and Scientific Appliances

For Moisture Load Control Systems for Dryers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Moisture-Load Controlled Dryers.

First use Mar. 19, 1965.

SN 230,900. Kolberg Manufacturing Corporation, Yankton, S. Dak. Filed Oct. 22, 1965.

ROAMIN' CANDLE

Class 12—Construction Materials

For Collapsible Tower, Truck Mounted for Supporting High Powered Lighting Fixtures.

Class 21—Electrical Apparatus, Machines, and Supplies

For Portable Electric Light Towers With Electrical Generator Set.

First use Sept. 28, 1965.

SN 231,355. AB Bjäre Industrier, Karpalund, Sweden. Filed Oct. 28, 1965.

Bjäre

Owner of Swedish Reg. No. 107,129, dated Aug. 16, 1963.

Class 45—Soft Drinks and Carbonated Waters

For Fruit Flavored Soft Drink Concentrates.

Class 46—Foods and Ingredients of Foods

For Preserves, Jellies, and Fruit Sauces.

SN 236,948. Florists' Transworld Delivery Association, Detroit, Mich. Filed Jan. 21, 1966.



The words "Selected Member" are disclaimed apart from the mark as shown. The drawing is lined for gold, but no claim is made to color. Owner of Reg. Nos. 407,189, 773,394, and others.

Class 1—Raw or Partly Prepared Materials

For Flowers, Floral Arrangements, and Plants.
First use Dec. 25, 1965.

Class 50—Merchandise Not Otherwise Classified

For Artificial Flowers and Plants.
First use December 1965.

Class 200

For Indicating Selected Membership in Applicant.
First use Dec. 15, 1965.

SN 238,313. St. Regis Paper Company, New York, N.Y. Filed Feb. 7, 1966.

ST REGIS

Owner of Reg. Nos. 677,917, 712,869, and others.

Class 1—Raw or Partly Prepared Materials

For Wood Pulp and Arabinogalactan Larch Gums.

Class 6—Chemicals and Chemical Compositions

For Torula Yeast and Crude Tall Oil.

First use on or about Dec. 7, 1965.

SN 239,582. The Brearley Company, Rockford, Ill. Filed Feb. 25, 1966.

house of Fiske

Owner of Reg. No. 694,440.

Class 2—Receptacles

For Hampers and Waste Baskets.

Class 32—Furniture and Upholstery

For Hassock-Hampers.

First use Jan. 18, 1963.

SN 241,568. Doetsch, Grether & Cie AG, Basel, Switzerland. Filed Mar. 22, 1966.

FENJAL

Owner of Swiss Reg. No. 193,518, dated Aug. 14, 1962.

Class 51—Cosmetics and Toilet Preparations

For Bath Oil and Cologne.

Class 52—Detergents and Soaps

For Toilet Soap.

SN 243,242. Hardy Salt Company, St. Louis, Mo. Filed Apr. 12, 1966.

LAKE MAID

Class 6—Chemicals and Chemical Compositions

For Sodium Chloride for Chemical and Industrial Uses.

Class 46—Foods and Ingredients of Foods

For Salt Used as a Feed, and Salt Used as an Ingredient in Feed for Animals.

First use Nov. 15, 1965.

SN 249,100. The Procter & Gamble Company, Cincinnati, Ohio. Filed June 28, 1966.

CARRY ON

Class 51—Cosmetics and Toilet Preparations

For Shaving Cream.
First use Feb. 28, 1966.

Class 52—Detergents and Soaps

For Hair Shampoo.
First use Mar. 31, 1966.

SN 249,102. The Procter & Gamble Company, Cincinnati, Ohio. Filed June 28, 1966.

FORTITUDE

Class 51—Cosmetics and Toilet Preparations

For Shaving Cream.
First use Mar. 7, 1966.

Class 52—Detergents and Soaps

For Hair Shampoo.
First use Mar. 31, 1966.

SN 249,103. The Procter & Gamble Company, Cincinnati, Ohio. Filed June 28, 1966.

FORTRESS

Class 51—Cosmetics and Toilet Preparations

For Shaving Cream.
First use Mar. 7, 1966.

Class 52—Detergents and Soaps

For Hair Shampoo.
First use Mar. 31, 1966.

SN 249,104. The Procter & Gamble Company, Cincinnati, Ohio. Filed June 28, 1966.

STALWART

Class 51—Cosmetics and Toilet Preparations

For Shaving Cream.
First use Mar. 7, 1966.

Class 52—Detergents and Soaps

For Hair Shampoo.
First use Mar. 31, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 201,143. Fayette R. Plumb, Inc., Philadelphia, Pa. Filed Sept. 2, 1964.

PLUMB

Owner of Reg. Nos. 138,088, 223,157, and 523,846.
For Plastic Molding Compounds.
First use Dec. 31, 1954.

SN 223,748. Thiokol Chemical Corporation, Bristol, Pa. Filed July 19, 1965.

FA

For Elastomeric Polysulfide Polymers.
First use October 1940.

SN 238,328. American Gilsonite Company, Salt Lake City, Utah. Filed Feb. 8, 1966.

LO-VIS SELECTS

Without waiver of common law rights, applicant disclaims the word "Selects" apart from the mark as shown.
For Uintahite or Asphalt.
First use Jan. 11, 1966.

SN 241,455. W. R. Grace & Co., Cambridge, Mass. Filed Mar. 21, 1966.

DEWEY AND ALMY

Owner of Reg. Nos. 811,546, 811,550, and 812,002.
For Polymeric Materials for Use as Synthetic Rubber and for Use as an Ingredient in Rubber Compounds; Emulsions, Dispersions or Latices of Synthetic Polymers Especially Suitable for Use in Paper Coatings; Polymer Impregnated Fibrous Sheet Material for Use as Reinforcing Material in the Manufacture of Shoes; and Polyvinylidene Chloride Latex.
First use on or about Jan. 18, 1960, on emulsions, dispersions or latices of synthetic polymers especially suitable for use in paper coatings.

SN 249,638. General Electric Company, Schenectady, N.Y. Filed July 6, 1966.

NORYL

For Synthetic Thermoplastic Resins for Molding and Extrusion Purposes.
First use Mar. 31, 1966.

SN 250,716. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 21, 1966.

CORFAM

Owner of Reg. No. 755,247.
For Reinforced Foremeric Material for Generalized Use in the Industrial Arts; Such as, Gaskets, Seals, Diaphragms, Buffing and Polishing Pads, Vibrating Dampers, Packings, and Bridge Pads.
First use May 11, 1966.

SN 250,717. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 21, 1966.

FAIRPRENE

Owner of Reg. Nos. 521,227 and 521,586.
For Plastic Coated Fabrics and Laminates in the Roll and Piece for Use in Diaphragms, Bearing Seals, Tarpaulins, Curing Bags, Gas Meter Bellows, Packing Molds, Inflatable Structures, Pipe Wrapping, and the Like.
First use Feb. 23, 1966.

Class 2—Receptacles

SN 214,938. Foresight Corporation, Chicago, Ill. Filed Mar. 24, 1965.

MELT-A-WAY

For Water Soluble Bags Made of Polyvinyl Alcohol Film for Use in Hospitals for Soiled Linens and as Containers for Chemicals, Detergents and Soaps.
First use Dec. 9, 1959.

SN 247,676. Brown Company, Kalamazoo, Mich. Filed June 9, 1966.

DISPENS-A-TRAY

For Carry-Out Trays for Food and Drink for Drive-Ins, and the Like.
First use May 16, 1966.

SN 252,379. Heidi Plastics Corp., Yonkers, N.Y. Filed Aug. 15, 1966.

KLEAR-TAINER

For Plastic Packaging Trays for Food Products, Including Meats, Poultry, Produce, and Other Food Products.
First use July 29, 1966.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 240,244. The Behrwood Foundation, Inc., Brasstown, N.C. Filed Mar. 7, 1966.

CABINCRAFT

For Wallets.
First use June 10, 1965.

Class 4—Abrasives and Polishing Materials

SN 245,260. Universal Foods Corporation, Milwaukee, Wis. Filed May 9, 1966.

UF

For Abrasive Block for Cleaning Grills, and the Like.
First use on or about Mar. 18, 1966.

Class 5—Adhesives

SN 205,067. Schramm Fiberglass Products, Inc., Chicago, Ill., assignee of Cory Corporation, Chicago, Ill. Filed Nov. 6, 1964.

GLUE GIANT

The word "Glue" is disclaimed apart from the mark as shown.
For Adhesive of the Vinyl Resin Type.
First use July 61, 1964.

SN 231,458. Morton International, Inc., Chicago, Ill. Filed Oct. 22, 1965.



For Adhesives—Namely, Primers for Improving Adhesion of Inks, Films and Coatings to Flexible or Rigid Surfaces; Adhesives for Laminating Films, Sheets, Foils and Coatings; Adhesives Comprised of Natural and Synthetic Elastomers and Resins, Plastisols and Organosols.
First use on or about Sept. 30, 1965.

SN 240,067. H. B. Fuller Company, St. Paul, Minn. Filed Mar. 3, 1966.

INSCO

For Adhesive Coating for Attaching and Covering Insulation.
First use at least as early as 1956.

Class 6—Chemicals and Chemical Compositions

SN 230,730. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Oct. 20, 1965.

IOFEC

For Disinfectant and Sanitizer.
First use on or about Aug. 11, 1961.

SN 233,021. Universal Oil Products Company, Des Plaines, Ill. Filed Nov. 19, 1965.

ESPANTONE

For Aroma Chemical.
First use July 9, 1965.

SN 233,022. Universal Oil Products Company, Des Plaines, Ill. Filed Nov. 19, 1965.

HERBANDIN

For Aroma Chemical.
First use Sept. 30, 1965.

SN 234,715. Miles Laboratories, Inc., Elkhart, Ind., assignee of Ames Company, Inc., Elkhart, Ind. Filed Dec. 16, 1965.

SURATEST

For Reagent Test for the Detection of Serum Uric Acid.
First use on or before Oct. 18, 1965.

SN 234,716. Miles Laboratories, Inc., Elkhart, Ind., assignee of Ames Company, Inc., Elkhart, Ind. Filed Dec. 16, 1965.

HARNSTIX

Owner of Reg. No. 656,285.
For Reagent Test for Urine Status for Laboratory Use.
First use on or before Nov. 30, 1965.

SN 235,874. Vineland Chemical Co., Vineland, N.J. Filed Jan. 5, 1966.

VI-CAD

For Liquid Cadmium Turf Fungicide.
First use June 1963.

SN 235,875. Vineland Chemical Co., Vineland, N.J. Filed Jan. 5, 1966.

MERCURAM

For Turf Fungicide.
First use April 1964.

SN 235,876. Vineland Chemical Co., Vineland, N.J. Filed Jan. 5, 1966.

WEED-E-RAD

For Post-Emergence Herbicide in Powder and Liquid Form, for Control of Johnson Grass and Other Weeds in Cotton.
First use March 1963.

SN 235,877. Vineland Chemical Co., Vineland, N.J. Filed Jan. 5, 1966.

DAL-E-RAD

For Selective Liquid Post-Emergence Herbicide for Dallisgrass Control in Bermuda Turf.
First use April 1962.

SN 237,539. Chevron Chemical Company, San Francisco, Calif. Filed Jan. 28, 1966.

CLARIFLOW

For Chemical Preparation for Introduction Into a Septic Tank To Increase Its Capacity To Trap and Settle Solids.
First use Dec. 29, 1965.

SN 239,717. Calgon Corporation, Pittsburgh, Pa. Filed Feb. 28, 1966.

BIOCHEK 60

Owner of Reg. No. 806,741.
For Antibacterial Composition Used To Treat Paper To Render It Self-Sanitising.
First use Jan. 21, 1966.

SN 241,318. Cudahy Company, Phoenix, Ariz. Filed Mar. 18, 1966.

NUTRITONE

For Peptone Concentrate Derived From a Beef Source.
First use Feb. 1, 1966.

SN 241,366. J & J Oven Co., Inc., Pennsauken, N.J. Filed Mar. 18, 1966.

SODINE

For Caustic Liquid for Treating Raw Pretzels Prior to Baking Thereof.
First use Mar. 22, 1966.

SN 241,456. W. R. Grace & Co., Cambridge, Mass. Filed Mar. 21, 1966.

DEWEY AND ALMY

Owner of Reg. Nos. 811,546, 811,550, and 812,002.
For Sodium Calcium Hydrate for Absorbing Gases; Chemical Compounds Used as Dispersing Agents in Preparing Dispersions of Pigments, Colors, Calcareous and Aluminous Substances; Chemicals [illegible] Pastes Containing Dispersed Sulph[illegible] Packing Compounds for Use in the [illegible] Industries; and Chemicals for [illegible] and Galvanic Printing Operations.
First [illegible] for about January 1939.

SN 242,228. Electric Materials Corp. of America, Mamaroneck, N.Y. Filed Mar. 30, 1966.

FIRON

For Composition for Producing Resistors and Conductors.
First use Mar. 23, 1966.

SN 242,280. The American Oil Company, Chicago, Ill. Filed Apr. 14, 1966.

AMOCO

Owner of Reg. Nos. 736,964, 669,477, and others.
For Chemical Products Including Hydrocarbons, Monomers, Liquid and Solid Organic Polymers, Organic Acids, Alcohols, Plasticizers, Solvents, Mercaptans, Nitrogen Containing Organic Compounds, Drying and Semi-Drying Oils, Additives for Oils, Greases and Fuels; Sec-Use, as Supplied, as Chemical Reactants or as Compounding Ingredients in a Broad Range of the Industrial Arts Such as the Plastics, Surface Coatings, Textile, Rubber, Sealant, Adhesives, Petroleum, Electrical, Building Materials, and Pesticide Industries.
First use July 1, 1931, on Solvents.

SN 242,720. Scientific Chemicals, Inc., Chicago, Ill. Filed Apr. 18, 1966.

VINYZORB

Owner of Reg. No. 769,350.
For Chemical Agents Used To Prevent Degradation Resulting From Ultraviolet Radiations.
First use on or about Mar. [illegible], 1966.

SN 244,486. Hercules Powder Company, Wilmington, Del. Filed Apr. 28, 1966.

HERCOSOL

Owner of Reg. Nos. 216,366 and 662,766.
For Solvent Solution of Resins Derived From Rosin and Tall Oil Derivatives.
First use Nov. 24, 1964.

SN 245,268. Tintex Corporation, Jamaica, N.Y. Filed May 9, 1966.

TINTEX

Owner of Reg. No. 734,965.
For Starch for Fabrics.
First use Aug. 13, 1965.

SN 246,507. Wilson Chemical Distributing Company, Wilson, N.C. Filed May 23, 1966.

MODERN AGE

For Starch, a Bleaching Preparation With Disinfectant Properties, Fabric Softener, and Household Ammonia.
First use Jan. 4, 1966.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 233,264. Prometheus Metallwerke G.m.b.H., Kempten, Germany. Filed Feb. 8, 1966.

PROMETHEUS

Owner of German Reg. No. 690,351, dated Jan. 15, 1964.
For Gas Lighters, Lighting Tools, and Lighting Flints.

Class 10—Fertilizers

SN 243,581. Red Barn Chemicals, Inc., Shreveport, La. Filed Apr. 15, 1966.

MASTRAW

For Dry Fertilizers.
First use on or about Dec. 1, 1965.

SN 243,623. Armour Agricultural Chemical Company, Atlanta, Ga. Filed Apr. 18, 1966.



For Liquid Suspension Fertilizer.
First use on or prior to Feb. 28, 1966.

SN 253,262. Dubois Fence & Garden Co., Inc., New York, N.Y. Filed Aug. 29, 1966.



No claim is made to the word "Plant" apart from the mark as shown.
For Plant Mulch Made of Cypress Bark Chips.
First use Mar. 15, 1966.

Class 11—Inks and Inking Materials

SN 247,929. I. C. Compound Company, Gardena, Calif. Filed June 13, 1966.

SAFE-GUARD

For Non-Oily Carrying Agent Used To Keep Ink From Drying While Presses Are Not in Use.
First use April 1963.

Class 12—Construction Materials

SN 209,557. Universal Match Corporation, St. Louis, Mo. Filed Jan. 7, 1965.

UNIFOAM

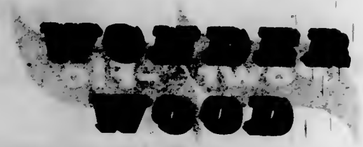
For Insulating Material for Refrigerated Cabinets and Equipment Used for the Storage, Merchandising, or Dispensing of Food or Drink Products.
First use Dec. 11, 1964.

SN 230,063. William L. (Roy) DeWitt, Roscommon, Mich. Filed June 1, 1965.

V FRAME

For Pre-Cut Vacation Homes—Namely, Cabins and Cottages.
First use June 1, 1964.

SN 230,160. Western Red Cedar Shake Association, Seattle, Wash. Filed Oct. 1, 1965.



No claim is made to the word "Wood" apart from the mark as shown.
For Cedar Shakes and Shingles.
First use Feb. 1, 1965.

SN 230,532. Glen-Gery Shale Brick Corporation, Reading, Pa. Filed Oct. 19, 1965.

ONE HUNDRED TO ONE MILLION—QUICK

For Fired Bricks.
First use at least as early as 1936.

SN 232,110. Ahde, Inc., Akron, Ohio. Filed Nov. 4, 1965.

RIGID-Stone

For Fiberglass Simulated Stone Interlocking Panel, Corner and Edge Stone Trim for Application to the Exterior and Interior of Buildings.
First use July 9, 1965.

SN 234,468. Roncari Industries, Inc., East Granby, Conn. Filed Dec. 13, 1965.



For Construction Materials—Namely, Concrete, Petroleum-Based Surfacing Materials, Trap Rock, Sand, Gravel, and the Like.
First use May 25, 1962.

SN 234,932. Paragon Swimming Pool Co., Inc., Pleasantville, N.Y. Filed Dec. 20, 1965.



For Swimming Pools and Swimming Pools and Equipment Therefor Sold as a Complete Package.
First use April 1956.

SN 235,499. Du-Rite Chemical Company, Inc., Brentwood, Md. Filed Dec. 29, 1965.

"Tahitian Pools"

The word "Pools" is disclaimed apart from the mark.
For Swimming Pools.
First use September 1964.

SN 237,217. General Refractories Company, Philadelphia, Pa. Filed Jan. 25, 1966.

PCO

For Refractory Ramming Plastic.
First use Feb. 5, 1962.

SN 237,840. Homasote Company, Trenton, N.J. Filed Feb. 2, 1966.

homasote *Easy-Dry*

Owner of Reg. No. 142,272 and others.
For High-Density, Wood-Fibre, Structural Roof Decking Furnished in Pre-Formed and Machined Slabs, for Use as an Interior Finish and as a Base for Exterior Roof Finish Material.
First use Oct. 1, 1963.

SN 237,941. Clopay Corporation, Cincinnati, Ohio. Filed Feb. 3, 1966.

Tradewind

For Folding Doors.
First use February 1964.

SN 239,827. Texas Refinery Corp., Fort Worth, Tex. Filed Feb. 25, 1966.



For Caulking Compound.
First use Feb. 8, 1966.

SN 239,898. General Refractories Company, Philadelphia, Pa. Filed Mar. 1, 1966.

STEVENS

For Refractory Brick.
First use Apr. 1, 1965.

SN 239,899. General Refractories Company, Philadelphia, Pa. Filed Mar. 1, 1966.

HI-SIL

For Refractory Brick.
First use Sept. 9, 1965.

SN 241,219. AllianceWall Corporation, Topton, Pa. Filed Mar. 17, 1966.

TERRA-CAL

For Prefabricated Panels for Use in Building.
First use on or about Sept. 4, 1964.

SN 244,063. Con/Chem, Inc., Los Angeles, Calif. Filed Apr. 22, 1966.

CONO/CRETE

For Convertible High Polymer Based Floor Resurfacing Material.
First use Oct. 22, 1964.

SN 246,837. Caradco Incorporated, Dubuque, Iowa. Filed May 31, 1966.

C 100'

For Prefabricated Window Units.
First use Apr. 9, 1965.

SN 247,810. Kinkead Industries Incorporated, Chicago, Ill. Filed June 10, 1966.

PATRICIAN

For Bathtub and Shower Enclosures.
First use April, 1961.

SN 247,907. New Castle Products, Inc., New Castle, Ind. Filed June 14, 1966.



The lining in the drawing indicates shading as part of the mark and does not indicate color. Owner of Reg. Nos. 806,320 and 811,395.
For Construction Materials—Namely, Plastic Shutters.
First use Apr. 26, 1966; Jan. 13, 1961 as to "Weathermate."

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 227,957. P. L. Robertson Mfg. Co. Limited, Milton, Ontario, Canada. Filed Sept. 16, 1965.

SWAGELOX

For Screws.
First use June 21, 1965; in commerce June 21, 1965.

SN 227,958. P. L. Robertson Mfg. Co. Limited, Milton, Ontario, Canada. Filed Sept. 16, 1965.

SWAGEFTT

For Screws.
First use June 21, 1965; in commerce June 21, 1965.

SN 227,959. P. L. Robertson Mfg. Co. Limited, Milton, Ontario, Canada. Filed Sept. 16, 1965.

SWAGELOK

For Screws.
First use June 21, 1965; in commerce June 21, 1965.

SN 228,196. Arthur Schmid, Romanshorn, Switzerland. Filed Sept. 20, 1965.



Owner of Swiss Reg. No. 209,456, dated Feb. 18, 1965.
For Pipes, Pipelines, and Bands Therefor.

SN 234,935. Plumb Craft Manufacturing Corp., Bedford Heights, Ohio. Filed Dec. 20, 1965.

PLUMB CRAFT

For Flexible Supplies (Tubes for Kitchen Sinks, Wash Basins, and Toilet Closets), Flexible Fittings, Flexible Compression Stops, Flat Sewer Rod W/Frame, Ballcocks, Toilet Seats, Faucet Handles, Slip Nuts, Trip Face Plate Assembly, Threaded Solder Collars, Basin Nut and Tailpieces, Ballcock Nuts and Tailpieces, Brass Flush Bushing, Copper Float, Hose Connections, Stainless Pipe Clamps, Sink Spray Replacement, Foot Valves and Check Valves, Valves and Fittings.
First use May 14, 1965.

SN 241,284. Swimquip, Inc., El Monte, Calif. Filed Mar. 17, 1966.

ROTOTROL

For Valve Means for Use With Swimming and Bathing Pools.
First use Oct. 30, 1965.

SN 243,522. American Home Products Corporation, New York, N.Y. Filed Apr. 15, 1966.

EK·ALUM

Owner of Reg. No. 432,093.
For Baking Pans.
First use Dec. 10, 1965.

SN 245,141. Agway, Inc., Syracuse, N.Y. Filed May 9, 1966.

AGWAY

Owner of Reg. Nos. 798,187 and 813,796.
For Wire, Fencing, Lawn and Garden Sprinklers, Bale Ties, Stock Tanks, Pipe Fittings, Barn Hardware, Consisting of Metal Cattle Stalls, Metal Water Bowls, Stanchions, and Barn Ventilators, Spray Nozzles, Metal Farm Gates.
First use Mar. 5, 1964.

SN 245,322. Lerner Manufacturing, Inc., Melville, N.Y. Filed May 10, 1966.

SHOWER SWAN

Owner of Reg. No. 783,098.
For Units Providing Shelf Space for Shower Needs and Accessories.
First use Aug. 3, 1965.

SN 245,325. Lerner Manufacturing, Inc., Melville, N.Y. Filed May 10, 1966.

BATH SUSAN

Owner of Reg. No. 783,096.
For Units Providing Shelf Space for Bath Needs and Accessories.
First use Apr. 6, 1966.

SN 248,199. Accurate Automatic Parts, Inc., Brookfield, Wis. Filed June 16, 1966.

IN-THREAD

For Threaded Fasteners—Namely, Studs, Bolts, Screws, and Nuts.
First use on or about May 9, 1966.

SN 248,215. Cook Chemical Company, d.b.a. Bakan Plastics, Kansas City, Mo. Filed June 16, 1966.

VAPO-VALVE

For Dispensing Valves for Attachment to Containers.
First use Jan. 14, 1966.

SN 248,230. Hays Manufacturing Company, Erie, Pa. Filed June 16, 1966.

HAYSTITE

For Pipe and Tubing Couplings and Fittings.
First use May 11, 1966.

Class 14 — Metals and Metal Castings and Forgings

SN 239,203. Arden-Mayfair, Inc., d.b.a. Mayfair Markets, Los Angeles, Calif. Filed Feb. 21, 1966.

Mayfair

Owner of Reg. Nos. 318,625 and 794,801.
For Aluminum Foil.
First use Jan. 21, 1966.

SN 239,756. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Feb. 28, 1966.

RELIALLOY

For Wire.
First use on or about Jan. 21, 1966.

Class 15 — Oils and Greases

SN 236,679. Victrylite Candle Co., Oshkosh, Wis. Filed Jan. 14, 1966.

Tiny Tapers

For Candles.
First use September 1951.

SN 240,678. Texaco Inc., New York, N.Y. Filed Mar. 10, 1966.

GEOTEX

For Lubricating Oils.
First use Dec. 17, 1965.

Class 16 — Protective and Decorative Coatings

SN 228,679. Griffiths Bros. & Co. London, Wednesfield, Wolverhampton, England. Filed Sept. 27, 1965.

FERODOR

Owner of British Reg. No. 636,073, dated Mar. 27, 1945.
For Anti-Corrosive Paints for Metal.

SN 238,283. Phelan-Faust Paint Manufacturing Company, St. Louis, Mo. Filed Feb. 7, 1966.



The characterization of the human figure is fanciful and not that of a living person. Owner of Reg. No. 502,656.
For Protective and Decorative Coatings—Namely, Interior and Exterior Paints and Enamels, Varnishes, Stains; Floor Sealers, Latex Paints, Primers and Finish Paints, and Lacquer.
First use March 1947.

SN 242,384. Osrow Products Company, Inc., Glen Cove, N.Y. Filed Mar. 31, 1966.

INSTANTIQUE

For Antiquing Kit Containing Spray Paint.
First use June 10, 1965.

SN 242,841. Peck's Products Company, St. Louis, Mo. Filed Apr. 6, 1966.

DAZE

Owner of Reg. No. 228,365.
For Water and Alkali Resistant Floor Finishing Composition Containing Ammonium Acrylate.
First use January 1962.

SN 248,398. Paris Paint & Varnish Co., Inc., Brooklyn, N.Y. Filed June 20, 1966.

PARIS

For Paint—Namely, Interior and Exterior Enamel, Flat and Semi-Gloss Paints, Washable Enamels, Alkyd, Titanium and Lead Based Priming, Sealing and Undercoating Paints, Alkyd and Latex Base Paints, and Sash, Trim, and Trellis Paints.
First use at least as early as Dec. 1, 1946.

SN 255,501. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 30, 1966.

3M

For Art Paint.
First use May 24, 1965.

Class 17 — Tobacco Products

SN 229,045. Grayce Kolbe Anderson, Arlington Heights, Ill. Filed Oct. 1, 1965.

WANAMINGO

For Cigars.
First use on or about Sept. 7, 1935.

SN 239,946. Universal Cigar Corporation, New York, N.Y. Filed Mar. 1, 1966.

CATALINA

For Cigars.
First use November 1965.

SN239,948. Universal Cigar Corporation, New York, N.Y. Filed Mar. 1, 1966.

SOMBRERO

For Cigars.
First use November 1965.

Class 18 — Medicines and Pharmaceutical Preparations

SN 230,235. Colorado Serum Company, Denver, Colo. Filed Oct. 15, 1965.



For Veterinary Biologicals—Namely, Hog Cholera Serums and Vaccines, Anti-Hog Cholera Serum, Hog Cholera Antibody Concentrate, Normal Porcine Serum, Anti-Corynebacterium Pasteurella Serum, Anti-Hemorrhagic Septicemia Serum, Bovine Rhinotracheitis Vaccine, Brucella Abortus Vaccine, Leptospira Pomona Bacteria, Wart Vaccine, Anti-Swine Erysipelas Serum, Erysipelas Bacteria, Anthrax Vaccine, Bluetongue Vaccine, Vibrio Fetus Bacterin, Tetanus Antitoxin, Tetanus Toxoid, Pregnant Mare Serum, Canine Distemper, and Hepatitis Combination Vaccine, Canine Distemper Vaccine, Canine Hepatitis Vaccine, Normal Serums.
First use Jan. 1, 1926.

SN 235,335. Parke, Davis & Company, Detroit, Mich. Filed Dec. 27, 1965.



The mark consists of a blue band with straight sides, approximately one-eighth of an inch wide, encircling the central portion of a white capsule. The drawing is lined to indicate the color blue. The representation of the capsule is disclaimed. Owner of Reg. Nos. 753,207 and 794,227.
For Hypnotic-Sedative Preparation.
First use on or before July 9, 1945.

SN 236,189. Imperial Chemical Industries Limited, Millbank, London, England. Filed Jan. 11, 1966.

AIMAX

Owner of British Reg. No. 873,248, dated Dec. 16, 1964.
For Veterinary Preparation for the Controlling of the Reproductive Functions of Farm Animals.

SN 237,809. Ciag-Chemie Aktiengesellschaft, d.b.a. Ciag-Chemie Societe Anonyme, Ciag-Chemie Limited, Schaffhouse, Switzerland. Filed Jan. 26, 1966.

PSICOPERIDOL

Owner of Swiss Reg. No. 193,436, dated Nov. 22, 1962.
For Pharmaceutical Preparation for Use as a Neuroleptic, Tranquilizer and Analgesic.

SN 237,532. Central Drug & Pharmaceutical Company, New Haven, Conn. Filed Jan. 28, 1966.

PHENOSE

For Pharmaceutical Preparation Used as a General Sedative and as an Antispasmodic.
First use on or about Dec. 10, 1965.

SN 242,012. Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. Filed Mar. 28, 1966.

BITRIN

For Analgesic.
First use Mar. 10, 1966.

SN 242,508. Smith, Miller & Patch, Inc., New York, N.Y. Filed Apr. 1, 1966.

FUNDUSCEIN

For Diagnostic Intravenous Preparation.
First use Mar. 25, 1966.

SN 243,223. Ciba Corporation, New York, N.Y. Filed Apr. 12, 1966.

NAVIDRIL

Owner of Reg. No. 710,914.
For Antihypertensive.
First use Apr. 6, 1966.

SN 245,582. Raymond Epstein, d.b.a. Vetco Company, Sharon, Mass. Filed May 13, 1966.

VETCO

For Veterinary Pharmaceuticals—Namely, Tonic and Vitamin Supplement for Racing Animals.
First use at least as early as Apr. 1, 1959.

SN 245,903. British Chemotheutic Products Limited, Bradford, York, England. Filed May 18, 1966.

TIA

Owner of British Reg. No. 834,683, dated May 16, 1962.
For Pharmaceutical Preparations for the Treatment of the Eyes.

SN 245,911. Chilva Laboratories Limited, Bradford, York, England. Filed May 18, 1966.

INDIBRAN

Owner of British Reg. No. 785,469, dated Dec. 24, 1958.
For Pharmaceutical Preparations for the Treatment of Influenza and Coughs.

SN 246,004. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed May 18, 1966.

TEDRAL-25

Owner of Reg. Nos. 353,221 and 726,675.
For Medicinal Compound for Relief From Asthma.
First use September 1963.

SN 246,162. The Dow Chemical Company, Midland, Mich. Filed May 20, 1966.

COYDEN

For Preparation for Controlling and Destroying Parasites in Animals.
First use Nov. 9, 1965.

SN 246,195. Chas. Pfizer & Co., Inc., New York, N.Y. Filed May 20, 1966.

UNBURN

For Medicinal Preparation for Minor Skin Irritations, Burns, and Injuries.
First use May 9, 1966.

SN 247,192. Bristol-Myers Company, New York, N.Y. Filed June 3, 1966.

HETACLOXILLIN

For Medicinal and Pharmaceutical Preparations—Namely, an Antibiotic.
First use Jan. 13, 1966.

Class 19—Vehicles

SN 206,648. Republic Industrial Corporation, New York, N.Y. Filed Nov. 20, 1964.



The drawing is lined for blue and color is claimed as an integral portion of the mark.
For Automotive Door Seal and Trim Strips.
First use Oct. 1, 1963.

SN 209,524. Manlee Industries, Inc., Yonkers, N.Y. Filed Jan. 7, 1965.

KAR-RITE

For Automotive Items—Namely, Speedometer Cables, Coil Spring Boosters, Windshield Wiper Spring Adjustments and Rattle Preventers for Car Doors.
First use Oct. 15, 1959.

SN 227,591. The La Fleur Corporation, Los Angeles, Calif. Filed Sept 10, 1965.



For Vehicles—Namely, Tank Trucks and Pumper Trucks for Transporting Volatile Liquids, Liquefied Gases, and Cryogenic Liquids.
First use on or about June 11, 1963.

SN 233,906. Holiday Rambler Corporation, Wakarusa, Ind. Filed Dec. 3, 1965.



The outline map of the United States is disclaimed apart from the mark as shown.
For Travel Trailers.
First use on or before Nov. 1, 1965.

SN 241,650. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Mar. 23, 1966.

LANCER

For Vehicle Air Conditioners and Parts Thereof.
First use Feb. 7, 1966.

Class 20—Linoleum and Oiled Cloth

SN 236,173. Armstrong Cork Company, Lancaster, Pa. Filed Jan. 11, 1966.

CAMBRIAN

For Resilient Hard Surface Type Vinyl Covering for Floors, Walls, and Other Surfaces.
First use Dec. 29, 1965.

SN 242,177. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed Mar. 30, 1966.

PUSSYFOOT

Owner of Reg. Nos. 285,013 and 736,762.
For Cushioned Underlayment for Floor Coverings.
First use Mar. 15, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 200,439. Horizons Incorporated, Cleveland, Ohio. Filed Aug. 24, 1964.

AMPLITRON

For Cathode Containing Tube for Image Intensification.
First use Aug. 12, 1964.

SN 206,112. Atlantic Research Corporation, Alexandria, Va. Filed Nov. 12, 1964.

LC

For Transducers—Namely, Hydrophones, Microphones, Blast Gauges, Pressure Sensors, Ultrasonic Probes, and Acoustic Projectors.
First use Sept. 18, 1956.

SN 209,550. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 7, 1965.

SONY-MATIC

Owner of U.S. Reg. Nos. 691,940, 770,275, and others.
For Battery Operated Dictating Machine.
First use about Nov. 7, 1964; in commerce about Nov. 17, 1964.

SN 221,438. American Components Incorporated, Conshohocken, Pa. Filed June 18, 1965.

CARBON-MET

For Electrical Components—Namely, Electrical Resistors.
First use on or about Mar. 15, 1961.

SN 221,938. Linden Laboratories, Inc., State College, Pa. Filed June 24, 1965.

SONOTITE

For Ceramic Piezo-Electric Transducer Elements.
First use on or about Apr. 2, 1964.

SN 221,993. Channel Master Corporation, Ellenville, N.Y. Filed June 25, 1965.

ULTRADYNE

For Television Antennas, Parts Thereof, and Accessories Therefor.
First use June 4, 1965.

SN 222,779. The Superior Electric Company, Bristol, Conn. Filed July 6, 1965.

OHMSTAT

Owner of Reg. Nos. 635,500, 748,379, and 770,776.
For Slidewire Resistors.
First use June 23, 1965.

SN 223,594. Sony Corporation of America, New York, N.Y. Filed July 16, 1965.

VIDEO-MAT

For Electronic Apparatus Comprising a Video Tape Recorder, a Monitor, and a Television Camera and Sold as a Unit.
First use June 7, 1965.

SN 228,636. Cole-Parmer Instrument & Equipment Co., Chicago, Ill. Filed Sept. 27, 1965.

PILOT STRIP

Without waiving its common law rights and for purposes of this registration only, applicant makes no claim herein to the word "Strip" apart from the mark as shown.
For Multiple Electric Outlet Connector.
First use June 8, 1963.

SN 228,687. Cole-Parmer Instrument & Equipment Co., Chicago, Ill. Filed Sept. 27, 1965.

PILOT BOX

Without waiving its common law rights and for purposes of this registration only, applicant makes no claim herein to the word "Box" apart from the mark as shown.
For Multiple Electric Outlet Connector.
First use Nov. 3, 1962.

SN 228,851. Trak Microwave Corporation, Tampa, Fla. Filed Sept. 28, 1965.



Applicant disclaims the word "Microwave" apart from its appearance in the mark as shown. Owner of Reg. Nos. 350,660, 792,208, and others.
For Communications Equipment and Parts Thereof—Namely, Radio Frequency Energy Sources, High Frequency Generators, Harmonic Generators, Amplifiers, Frequency Doublers, Modulators, Telemetry Transmitters, Radio Transmitter-Receiver Systems, Radio Receiver Heads, and Parts Therefor.
First use on or before Oct. 31, 1960, on radio frequency energy sources.

SN 229,715. Aid Stores, Inc., Woodside, N.Y. Filed Oct. 11, 1965.



For Automotive Ignition Tune-Up Kits, Electric Generators, and Voltage Regulators.
First use January 1954.

SN 229,727. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

ECONOSTAT

For Electric Aquarium Heater.
First use in or about June, 1964.

SN 229,736. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

MONITOR

For Electric Aquarium Heater.
First use in or about October 1959.

SN 230,051. The Imperial Electric Company, Akron, Ohio. Filed Oct. 13, 1965.

SMOOTHTROL

For Closed-Loop Feed-Back Control for Securing Better Elevator Performance and Greater Landing Accuracy.
First use Oct. 5, 1965.

SN 230,451. Standard Electric Co., Inc., San Antonio, Tex. Filed Oct. 18, 1965.

RELIABLE HI-ENERGY

Applicant disclaims exclusive right to use of the words "Hi-Energy" apart from the mark as shown. Owner of Reg. No. 506,668.
For Storage Batteries.
First use Oct. 13, 1965.

SN 230,523. Dierolite Co., Edmonds, Wash. Filed Oct. 19, 1965.



For Electric Light Fixtures.
First use Aug. 22, 1965.

SN 233,356. Kaiser Aerospace & Electronics Corporation, Oakland, Calif. Filed Nov. 26, 1965.

KAISER

Owner of Reg. No. 698,651.
For Electronic Equipment for Community Antenna Television Systems—Namely, Amplifiers and Cable Powering Units.
First use at least as early as September 1958.

SN 235,351. Starto Jet Inc., Thetford Mines, Quebec, Canada. Filed Dec. 27, 1965.



For Electric Vibrator as an Aid To Start Internal Combustion Engines.
First use July 15, 1965; in commerce Sept. 10, 1965.

SN 237,682. Emerson Electric Co., St. Louis, Mo. Filed Feb. 1, 1966.

CORRO-DUTY

For Electrical Motors.
First use Nov. 30, 1965.

SN 242,165. Wood Conversion Company, St. Paul, Minn. Filed Mar. 29, 1966.

CONWED

For Electric Light Fixtures.
First use on about Jan. 19, 1966.

SN 246,206. Sterner Industries, Inc., Allendale, N.J. Filed May 20, 1966.



For Electric Heaters for Aquarium Tanks.
First use Sept. 4, 1966.

Class 22—Games, Toys, and Sporting Goods

SN 231,306. Southwestern Drug Corporation, Dallas, Tex. Filed Oct. 22, 1965.

TRI·GRIP

For Aerosol Hand Spray for Facilitating Gripping of Articles by Athletes or Sportsmen.
First use Aug. 25, 1964.

SN 231,856. Ski-Mor, Inc., Kenilworth, N.J. Filed Oct. 29, 1965.

SKI·MOR

For Artificial Skiing Surfaces Including Ski Mats Which Are Joined to One Another To Provide a Skiing Surface.
First use June 15, 1965.

SN 233,912. Mark W. Kalatsky, Canoga Park, Calif. Filed Dec. 3, 1965.

TOP SECRET

For Hobby Equipment Particularly Slot Cars and Components Thereof.
First use June 23, 1965.

SN 235,012. Brian P. Randall, Asheville, N.C. Filed Dec. 21, 1965.

WHIP-IT

For Game Pieces in the Shape of a Half Ball Adapted To Be Thrown Through the Air and Batted.
First use Nov. 10, 1965.

SN 236,885. Dolly Darling Clothes, Inc., Miami, Fla. Filed Jan. 20, 1966.



Applicant disclaims the word "Dolly" separate and apart from the mark as shown. Owner of Reg. No. 760,000.
For Toy Dolls and Finished Accessories Therefor.
First use on or about Apr. 1, 1965.

SN 238,345. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Feb. 8, 1966.

SUPERLASTEK

For Tennis Racket Stringing.
First use Dec. 14, 1965.

SN 238,942. Lou J. Eppinger Manufacturing Company, Dearborn, Mich. Filed Feb. 16, 1966.

COP-E-CAT

For Artificial Fish Lures.
First use on or about Dec. 20, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 217,812. Whitlock Associates, Inc., Oak Park, Mich. Filed Apr. 30, 1965.



For Vacuum and/or Pneumatic Conveying, Mixing, and Drying Equipment for Dry Bulk Materials.
First use September 1953.

SN 225,268. Blackstone Corporation, Jamestown, N.Y. Filed Aug. 9, 1965.



Owner of Reg. Nos. 546,600, 755,013, and others.
For Pulverizers, Classifiers, and Separators for Handling Comminuted Materials.
First use June 10, 1965.

SN 227,093. Tridair Industries, Redondo Beach, Calif. Filed Aug. 23, 1965.

TRIDAIR

For Automatic and Semi-Automatic Palletizers and Parts Therefor.
First use Aug. 18, 1965.

SN 229,716. Aid Stores, Inc., d.b.a. Aid Auto Supply Stores, Woodside, N.Y. Filed Oct. 11, 1965.



For Automotive Water Pumps.
First use January 1954.

SN 229,721. American Products, Inc., Spearville, Kans. Filed Oct. 11, 1965.

HI-PLAINS

For Tractor-Drawn Agricultural Implements for Tilling Soil.
First use on or about July 1, 1961.

SN 229,725. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

VANGUARD

For Aquarium Air Pumps.
First use in or about December 1960.

SN 230,126. Aquariums Incorporated, Maywood, N.J. Filed Oct. 14, 1965.

WHIZ-WAND

For Scraping, Pruning, and Planting Tool for Aquariums.
First use in or about May, 1955.

SN 231,798. The Mosler Safe Company, New York, N.Y., assignee of Airmatic Systems Corporation, Rochelle Park, N.J. Filed Oct. 29, 1965.

AIRMATIC

For Pneumatic Tube Dispatch Systems and Accessories Therefor.
First use Apr. 25, 1960.

SN 232,184. Nicholson File Company, East Providence, R.I., assignee of Borg-Warner Corporation, Chicago, Ill. Filed Nov. 5, 1965.

LITE-PAK

For Chain Saw Bar Assembly and Parts Thereof for Replacement and Repair.
First use on or prior to Oct. 14, 1965.

SN 233,398. Rosco Manufacturing Company, Minneapolis, Minn. Filed Nov. 26, 1965.

VIBRASTAT

Owner of Reg. Nos. 671,153, 671,154, and 696,720.
For Self-Propelled Road Rollers.
First use Apr. 26, 1965.

SN 233,400. Rosco Manufacturing Company, Minneapolis, Minn. Filed Nov. 26, 1965.

AIR-PAC

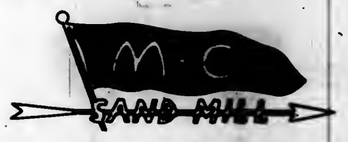
Owner of Reg. Nos. 671,153, 671,154, and 696,720.
For Self-Propelled Road Rollers.
First use July 29, 1960.

SN 233,944. Paul D. Peterson, d.b.a. American Supply Company, Berkeley, Calif. Filed Dec. 3, 1965.

PETERSON TUFEDGE

For Replaceable Cutting Edges for Earth Moving Equipment Such as Scraper Blades, Loader Buckets, Dozer Blades, Routing Bits, Grader Blades, and End Bits for Dozer Blades.
First use May 1948.

SN 238,882. Morehouse-Cowles, Inc., Los Angeles, Calif. Filed Feb. 15, 1966.



The words "Sand Mill" are disclaimed apart from the mark as shown.
For Apparatus of the Mechanical Type for Dispersing Pigments in Liquid Vehicles, and Parts Therefor.
First use Oct. 22, 1965.

SN 239,491. Hans Mueller, d.b.a. H. Mueller Mfg. Co., Poughkeepsie, N.Y. Filed Feb. 23, 1966.

SHERWOOD-CONDOR-PRESS

For Wax Injection Presses.
First use Dec. 1, 1965.

SN 239,656. Programmed & Remote Systems Corporation, St. Paul, Minn. Filed Feb. 25, 1966.



The drawing is lined for the color blue, but no claim is made to the color. Owner of Reg. No. 803,071.
For Materials Handling Equipment Controlled at Substantially the Same Location as the Equipment—Namely, Booms, Cranes, Lifters, Winches and Hoists, and Parts Therefor.
First use Oct. 1, 1962.

SN 239,791. Lee Patten Seed Company, New Jersey, Moonachie, N.J. Filed Feb. 28, 1966.



For Lawn or Turf Spreader.
First use Jan. 5, 1966.

SN 240,648. Pierce-All Manufacturing Limited, Rexdale, Ontario, Canada. Filed Mar. 10, 1966.

PERF-O-MATOR

For Sheet Metal Punching Machine.
First use Dec. 31, 1964; in commerce Dec. 31, 1964.

SN 246,309. Hills-McCanna Company, Carpentersville, Ill. Filed May 23, 1966.

MCCANNAMATIC

Owner of Reg. Nos. 717,400, 737,013, and others.
For Pumps and Adjunctive Equipment Including Control Clutches.
First use in or about October 1964.

SN 247,098. Southern Elevator Company, Greensboro, N.C. Filed June 2, 1966.

SOUTHERN ELEVATOR

Applicant disclaims the word "Elevator" apart from the mark as shown.
For Electrical Elevators, Hoists and Lifts.
First use Nov. 15, 1949.

SN 247,747. The Young Machinery Company, Inc., Muncy, Pa. Filed June 9, 1966.

MULTI-PORT

For Gravity Blender for Storage Bins.
First use Jan. 22, 1965.

SN 248,284. Allied Sewing Machine Distributors, Inc., Oak Park, Mich. Filed June 17, 1966.

SEAMSTRESS

For Sewing Machines and Attachments Therefor.
First use Jan. 3, 1966.

SN 254,845. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 21, 1966.



For Machine for Applying Sheet Material to a Backing.
First use July 25, 1966.

Class 26—Measuring and Scientific Appliances

SN 175,371. American Meter Company Incorporated, Philadelphia, Pa. Filed Aug. 20, 1963.

PICON

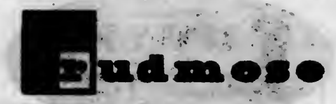
For Instruments for Measuring Dielectric Constant.
First use July 23, 1963.

SN 199,731. Fendall Company, Chicago, Ill. Filed Aug. 12, 1964.



For Protective Eye and Face Shields, Spectacles, Goggles, and Helmets With Eye and Face Shields.
First use on or about June 1, 1950.

SN 213,374. Tracor, Inc., Austin, Tex. Filed Mar. 4, 1965.



Owner of Reg. No. 763,060.
For Audiometer, Noise Generators, Electro-Acoustic Ears, Group Audiometers, Sound Analysers and Associated Amplifiers Sold as a Single Unit, Acoustic Calibrators, Noise-Attenuating Earphone Housings, and Apparatus for Testing Hearing.
First use at least as early as Oct. 1, 1959.

SN 219,623. Shandon Scientific Company Limited, London, England. Filed May 24, 1965.

UNOPLAN

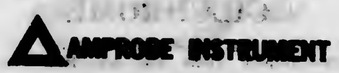
Owner of British Reg. No. 838,464, dated Aug. 24, 1962.
For Chromatographic and Electrophoretic Apparatus—Namely, Plate Levelers and Parts Thereof.

SN 228,634. Cole-Parmer Instrument & Equipment Co., Chicago, Ill. Filed Sept. 27, 1965.

SERVODYNE

For Power-Drive System and Stirrer With Recorder Output Utilizing a Tachometer.
First use Jan. 6, 1965.

SN 230,447. Soss Manufacturing Company, Detroit, Mich. Filed Oct. 18, 1965.



The word "Instrument" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 557,529 and 760,654.
For Electrical Recording and Indicating Instruments—Namely, Voltmeters, Ammeters, Volt-Ammeters, Step-Up and Step-Down Devices Usable With Volt-Ammeters, Circuit Tracers, Volt and Amperage Recording Instruments, Null-Balance Measuring Instruments, Devices for Amplifying Measuring Instruments, Output and Automatic Instrument Controlling switches.
First use Oct. 8, 1962.

SN 232,056. Russell Burton, O.D., Inglewood, Calif. Filed Nov. 3, 1965.

OPTICARE

For Glasses and Glass Cases.
First use July, 1966.

SN 232,488. Van-L, Ltd., Green Bay, Wis. Filed Nov. 10, 1965.

CORRECT-O

For Golf Club Adjusting and Measuring Machines.
First use Mar. 17, 1965.

SN 236,126. Seneca Falls Machine Company, Seneca Falls, N.Y. Filed Nov. 22, 1965.

OPTRONIC

For Photoelectric [illegible] Controlling the Movement of Machine Tools and Other Manufacturing Equipment.
First use April 1964.

SN 235,078. Plough, Inc., Memphis, Tenn. Filed Dec. 20, 1965.



The words "Sun Glasses" are hereby disclaimed. The drawing is lined for brown and gold but color is not claimed as a feature of the mark. Owner of Reg. Nos. 693,601 and 806,935.
For Sun Glasses.
First use Sept. 1, 1965.

SN 235,233. SCM Corporation, New York, N.Y. Filed Dec. 23, 1965.

COGITO

For Computers.
First use Aug. 30, 1965.

SN 235,261. Bell & Howell Company, Chicago, Ill. Filed Dec. 27, 1965.

FOCUS-TRONIC

For Photographic Apparatus Including Cameras and Projectors.
First use as early as August 1960.

SN 235,288. Ciba Limited, Basel, Switzerland. Filed Dec. 28, 1965.

CILCHROME

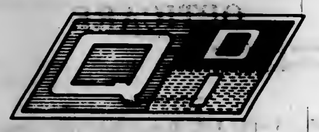
Owner of Swiss Reg. No. 209,929, dated Nov. 13, 1963.
For Photographic Films and Sensitized Photographic Papers.

SN 235,289. Ciba Limited, Basel, Switzerland. Filed Dec. 28, 1965.

CILCOLOR

Owner of Swiss Reg. No. 209,929, dated Nov. 13, 1963.
For Photographic Films and Sensitized Photographic Papers.

SN 235,526. Quantametric Devices, Inc., Binghamton, N.Y. Filed Dec. 29, 1965.



The drawing is lined for blue and gray.
For Electronic Instruments—Namely, Densitometers and Photometers.
First use June 10, 1965.

SN 235,826. Fischer & Porter Co., Warminster, Pa. Filed Jan. 5, 1966.

DETECTACHLOR

For Instruments for Sensing Gas Leakage.
First use Nov. 22, 1965.

SN 236,179. Chesley F. Carlson Company, Minneapolis, Minn. Filed Jan. 11, 1966.

GAMMATROL

For Camera Exposure Controls for Timing.
First use June 1, 1965.

SN 237,768. The Warner & Swasey Company, Cleveland, Ohio. Filed Feb. 1, 1966.

UNI-SPACE

For Materials Testing Machines.
First use Sept. 27, 1965.

Class 27—Horological Instruments

SN 232,977. Morrie Chaitlen, d.b.a. C. & E. Marshall Co., Chicago, Ill. Filed Nov. 19, 1965.

MARSHALL ADD-A-UNIT

For Watch Repair Parts Units, Each of Said Units Consisting of a Watch Repair Parts Cabinet Having a Plurality of Drawers, an Assortment of Watch Repair Parts Envelopes Contained in Said Drawers, an Assortment of Index Cards Contained in Said Drawers for Organizing Said Envelopes, and an Assortment of Watch Repair Parts Contained in Said Envelopes; and Refills for Said Watch Repair Parts Units, Said Refills Consisting of Watch Repair Parts Envelopes Containing Watch Repair Parts.
First use as early as 1915.

Class 28—Jewelry and Precious-Metal Ware

SN 236,485. Charles Goldman, d.b.a. Apex Art Novelty Co., New York, N.Y. Filed Jan. 14, 1966.

APEX ART

The word "Art" is disclaimed apart from the mark as shown.
For Necklaces, Bracelets, Pins, Earrings, Brooches, Rings, and Costume Jewelry.
First use July 1, 1962.

Class 29—Brooms, Brushes, and Dusters

SN 250,721. John O. Butler Company, Chicago, Ill. Filed July 21, 1966.

G•U•M•

For Toothbrushes.
First use in or about July 1958.

Class 30—Crockery, Earthenware, and Porcelain

SN 240,400. Almco Wholesale Corporation, New York, N.Y. Filed Mar. 8, 1966.



For Dinnerware—Namely, Chinaware, Earthenware, Stoneware, and Ironstone.
First use June 1, 1959.

Class 31—Filters and Refrigerators

SN 236,869. Air Products and Chemicals, Inc., Allentown, Pa. Filed Jan. 20, 1966.

CRYO-QUICK

For Freezers and Freezing Systems—Namely, Food Freezers and Systems Utilizing Cryogenic Refrigerants.
First use Dec. 21, 1965.

Class 32—Furniture and Upholstery

SN 229,297. Schnadig Corporation, Chicago, Ill. Filed Oct. 4, 1965.

CHASE

Owner of Reg. Nos. 560,053 and 599,675.
For Household Furniture.
First use 1924.

SN 235,096. Alma Desk Company, High Point, N.C. Filed Dec. 22, 1965.

ALMA

For Office Furniture and Particularly Office Desks, Tables, Chairs, Bookcases, Cabinets, and Sofas.
First use 1890.

SN 239,341. Thayer, Inc., Gardner, Mass. Filed Feb. 21, 1966.

Fast-Fold

Owner of Reg. No. 632,445.
For Children's Play Yards.
First use Jan. 7, 1955.

SN 239,446. Jacob E. Rhodes, Sr., and Mary L. Rhodes (joint owners), d.b.a. Sway-A-Way Co., Livermore, Calif. Filed Feb. 23, 1966.

SWAY-A-WAY

For Laterally Adjustable and Swingable Mirror Supporting Bracket.
First use Dec. 13, 1965.

SN 239,562. Whiting Manufacturing Company, Inc., Cincinnati, Ohio. Filed Feb. 24, 1966.

SEVENTH HEAVEN

For Pillows.
First use Nov. 4, 1965.

SN 243,991. Jarke Corporation, Chicago, Ill. Filed Apr. 21, 1966.

AIRECTOR

For Modular Racks for Storage.
First use Mar. 29, 1966.

SN 251,861. Kangaroo Chair, Inc., Evanston, Ill. Filed Aug. 8, 1966.

KANGAROO

For Chair.
First use May 11, 1966.

SN 254,141. Elm Industries Inc., Philadelphia, Pa. Filed Sept. 9, 1966.

ORTHO-SLUMBER

For Mattresses and Box Springs.
First use Aug. 11, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 224,717. Cherry-Burrell Corporation, Cedar Rapids, Iowa. Filed Aug. 2, 1965.

UNITHERM

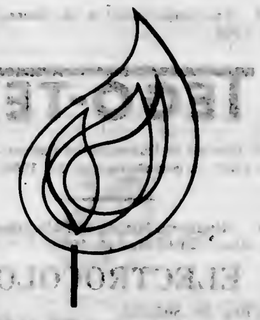
For Sterilization Unit and Parts Thereof for Sterile Processing of Fluid Comestible Products.
First use July 7, 1965.

SN 240,339. Pioneer Manufacturing Co., Los Angeles, Calif. Filed Mar. 7, 1966.

Hoyt

Owner of Reg. No. 192,559.
For Water Heaters.
First use Nov. 16, 1923.

SN 252,321. Victrylite Candle Co., Oshkosh, Wis. Filed Aug. 15, 1966.



For Candle Holders of Glass, Metal, Wood, and Plastic and Coffee Warmer Bases in Which Candles Are Burned.
First use Sept. 14, 1965.

Class 36 — Musical Instruments and Supplies

SN 226,695. F. W. Woolworth Co., New York, N.Y. Filed Aug. 27, 1965.

AUDITION

Owner of Reg. Nos. 715,081, 737,915, and 751,994.
For Guitars, Banjos, Drums, and Tape Recorders.
First use May 1965, on guitars and banjos.

Class 37 — Paper and Stationery

SN 206,105. Westab Inc., Dayton, Ohio. Filed Nov. 12, 1964.

MAGIC MARGIN

No claim is made to the exclusive right to the use of the word "Margin" apart from the mark as shown.
For Stationery Products—Namely, Loose Leaf Notebook Paper.
First use Oct. 26, 1964.

SN 230,305. Stenographic Machines, Inc., Skokie, Ill. Filed Oct. 15, 1965.

STENO-PAD

Owner of Reg. Nos. 514,021, 696,431, and others.
For Paper Tape for Shorthand Machines.
First use on or about May 15, 1940.

SN 232,729. Service Business Forms, Inc., Wichita, Kans. Filed Nov. 15, 1965.

CONTIN-U-TAB

For Business Forms Interconnected End to End and Fastened Together at One Margin.
First use November 1964.

SN 240,635. Millen Industries, Inc., New York, N.Y. Filed Mar. 10, 1966.



For Coated and Uncoated Paper and Paper Products—Namely, Printing and Offset Paper.
First use September 1962.

SN 241,096. Th. Goldschmidt A.-G., Essen, Germany. Filed Mar. 15, 1966.

TEGO-TEX

For Resin Treated or Impregnated Papers.
First use 1952; in commerce Aug. 24, 1965.

SN 245,545. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 13, 1966.

ELECTROCOLOR

Owner of Reg. No. 805,153.
For Precut Protective Plastic Film for Lamination to Photographic Color Print Films.
First use Apr. 24, 1963.

SN 247,694. Hammermill Paper Company, Erie, Pa. Filed June 9, 1966.

SHARPSETTE

For Paper for Writing, Printing, Duplicating, and General Office Use.
First use Apr. 29, 1966.

Class 38 — Prints and Publications

SN 196,815. The Seton Guild of St. Ann's Infant and Maternity Home, Hyattsville, Md. Filed June 30, 1964.

AS YOU LIKE IT

For Cookbooks.
First use Nov. 7, 1959.

SN 199,425. Arthur Wiesenberger & Company, New York, N.Y. Filed Aug. 6, 1964.

F&F
FINDINGS & FORECASTS

The words "Findings" and "Forecasts" are disclaimed apart from the mark as shown.
For Financial Reports.
First use Mar. 19, 1964.

SN 232,777. Fawcett Publications, Inc., Greenwich, Conn. Filed Nov. 16, 1965.

ELECTRONICS ILLUSTRATED

For Magazine Bimonthly Publication Comprising Articles and the Like, Including Construction (How-To) Projects Helpful to Electronic "Do-It-Yourself" Radio and Hi-Fi Hobbyists.
First use May 1958.

SN 239,389. Current, Inc., Colorado Springs, Colo. Filed Feb. 23, 1966.

POST-A-NOTE

Owner of Reg. No. 787,984.
For Decorated Post Cards.
First use 1949.

SN 253,944. Needham Christopher Hines, Arlington, Va. Filed Sept. 6, 1966.

NCH

For Books.
First use Sept. 1, 1966.

Class 39 — Clothing

SN 182,428. Lafitte, Inc., New York, N.Y. Filed Dec. 5, 1963.

Lafitte

For Women's Coats, Suits, Dresses, Skirts, Blouses, Slacks, Sweaters, Gloves, Slips, Petticoats, Girdles, Bras, Nightgowns, Pajamas, and Negligees.
First use Sept. 3, 1963.

SN 217,261. Barad Lingerie Company, St. Louis, Mo. Filed Apr. 26, 1965.

HOP-INS

For Women's Garments, Specifically, Dusters, Robes, and Shifts.
First use Mar. 5, 1965.

SN 223,930. Wilson Footwear Company, Boston, Mass. Filed July 21, 1965.

PIONEER

For Boots and Shoes.
First use 1889.

SN 225,311. Hart Schaffner & Marx, Chicago, Ill. Filed Aug. 9, 1965.

STERLING & HUNT

Owner of Reg. Nos. 219,155, 219,177, and 219,350.
For Men's Suits, Coats and Trousers, Sport Coats, Outer Coats, and Slacks.
First use Mar. 19, 1965; January 1915 as to "Sterling."

SN 229,375. A. Rivets Co., Inc., Boston, Mass. Filed Oct. 5, 1965.



For Printed Fabrics Made Up Into Neckwear.
First use on or about Aug. 23, 1965.

SN 231,983. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Nov. 2, 1965.

F/JR

For Men's and Boys' Pants, Slacks, Coats, Vests, and Trousers.
First use Oct. 14, 1965.

SN 232,163. Romney Fashions, Inc., New York, N.Y. Filed Nov. 4, 1965.

Romney
FROCKS

The word "Frocks" is disclaimed apart from the mark as shown.
For Women's, Girls', and Misses' Clothing—Namely, Dresses, Suits, Coats, Skirts, Trimmed and Untrimmed Hats, Vestees, Gulmpes, Neckties, Scarfs, Boas, Collars, Cuffs, Hosiery, Corsets, Brassieres, Gloves, Negligees, Underwear, Blouses, Sweaters, Bathing Suits, and Knickers and Riding Habits.
First use Mar. 1, 1924.

SN 232,195. Darby Trousers, Incorporated, New York, N.Y. Filed Nov. 5, 1965.

QUALITA BY DI ANTI

Applicant disclaims the term "Qualita" apart from the mark as shown.
For Men's Trousers.
First use Oct. 4, 1965.

SN 232,763. The B.V.D. Company, Inc., New York, N.Y. Filed Nov. 16, 1965.

Lady **B.V.D.**

Owner of Reg. Nos. 49,931, 764,348, and others.
For Hosiery and Panties for Women and Girls.
First use June 29, 1964, on panties.

SN 232,764. The B.V.D. Company, Inc., New York, N.Y. Filed Nov. 16, 1965.

Miss
B.V.D.

Owner of Reg. Nos. 49,931, 764,348, and others.
For Hosiery and Panties for Women and Girls.
First use July 9, 1957, on hosiery.

SN 232,901. Calzaturificio Madras di Valentino Piccolotto S.A.S., Bassano del Grappa, Italy. Filed Nov. 18, 1965.

madras

No claim is made to the exclusive use of the word "Madras" apart from the mark as shown.
For Shoes.
First use May 31, 1949; in commerce on or about Aug. 31, 1958.

SN 237,881. McGregor-Doniger Inc., New York, N.Y. Filed Jan. 28, 1966.

KNUCKLE CORD

The word "Cord" is disclaimed apart from the mark as shown.
For Men's and Boys' Corduroy Sport Coats, Slacks and Jackets and Women's Corduroy Slacks, Skirts, and Jackets.
First use Jan. 18, 1966.

SN 238,161. Ted Bodin, Hialeah, Fla. Filed Feb. 7, 1966.

AN ORIGINAL CREATION BY Ted Bodin

The words "An Original Creation by" are disclaimed apart from the mark as shown. The drawing is lined for blue and gold.
For Knitted Ladies' Suits, Ladies' Sweaters, and Ladies' Dresses, Made of Wool, Cotton, and Synthetic Fibers.
First use Nov. 1, 1965.

SN 238,647. Lord Jeff Knitting Company, Incorporated, Maspeth, N.Y. Filed Feb. 11, 1966.

DE LONK

Pullovers, Sweaters, and Skirts.
First use Feb. 25, 1964.

SN 238,718. David Jonathan Limited, Manchester, England. Filed Feb. 14, 1966.

DAVID JONATHAN

The name "David Jonathan" is fanciful. Owner of British Reg. No. 864,068, dated May 11, 1964.
For Shirts and Pyjamas.

SN 238,722. Doe Spun Inc., York, Pa. Filed Feb. 14, 1966.

CUDDLER

For Knitted Outerwear for Infants—Namely, One and Two Piece Pram Suits, Play Suits, and Sleepwear.
First use Sept. 30, 1965.
Subj. to Intf. with SN 237,788.

SN 239,119. Brilliant Brothers Co., Boston, Mass. Filed Feb. 18, 1966.

COURT SQUARE

For Shoes.
First use Dec. 1, 1965.

SN 239,156. Kelly-Green Hosiery Co., Inc., New York, N.Y. Filed Feb. 18, 1966.

EQUITY

For Hosiery.
First use February 1920.

SN 239,494. Buxton, Incorporated, Agawam, Mass. Filed Feb. 24, 1966.

LORD BUXTON

Owner of Reg. No. 783,047.
For Men's Belts.
First use Dec. 15, 1965.

SN 239,495. Buxton, Incorporated, Agawam, Mass. Filed Feb. 24, 1966.

BUXTON

Owner of Reg. Nos. 508,782 and 783,452.
For Belts.
First use Dec. 15, 1965.

SN 239,719. Camp and McInnes, Inc., Reading, Pa. Filed Feb. 28, 1966.

HAZY TONES

Applicant disclaims the exclusive right to the use of the word "Tones" apart from the mark as shown.
For Men's Hosiery.
First use Feb. 1, 1966.

SN 239,880. J. W. Carter Company, Nashville, Tenn. Filed Mar. 1, 1966.

Carter

For Men's Shoes.
First use about 1926.

SN 241,523. Rough Rider, Inc., Napa, Calif. Filed Mar. 21, 1966.

MONTGOMERY STREETER

For Men's Suits.
First use Feb. 16, 1966.

SN 242,015. Interco Incorporated, St. Louis, Mo. Filed Mar. 28, 1966.

TUFGUM

For Soles and Heels.
First use Jan. 14, 1966.

SN 242,066. Stockton Manufacturing Co., Inc., Dallas, Tex. Filed Mar. 28, 1966.

LITTLE TEX

For Girls' Dresses.
First use Feb. 22, 1966.

SN 242,138. Maidenform, Inc., New York, N.Y. Filed Mar. 29, 1966.

BRIEFLEE

For Foundation Garments.
First use Mar. 7, 1966.

SN 242,149. S.D.S., Inc., d.b.a. Renee of Hollywood, Los Angeles, Calif. Filed Mar. 29, 1966.

BARE N' LOW

For Brassieres.
First use Feb. 17, 1966.

SN 242,497. Melville Shoe Corporation, New York, N.Y. Filed Apr. 1, 1966.

HACKING AROUND

For Men's, Women's, and Children's Shoes.
First use Mar. 29, 1966.

SN 242,594. M. D. Hall, d.b.a. Katie Kay, Fort Worth, Tex. Filed Apr. 4, 1966.

KatieKay

For Baby Shoes, Baby Boots, Baby Moccasins, and Baby Sandals.
First use Oct. 26, 1965.

SN 247,803. American Scene, Inc., St. Louis, Mo. Filed June 6, 1966.

AMERICAN SCENE

For Skirts, Sweaters, Slim Slacks and Pants, Blouses, and Jumpers.
First use May 18, 1966.

SN 250,509. Originals Incorporated, New York, N.Y. Filed July 18, 1966.

GINORI

Owner of Reg. Nos. 501,255 and 814,582.
For Ladies' Wearing Apparel—Namely, Coats, Suits, Dresses, Blouses, Jackets, Skirts, Pants, and Culottes.
First use on or about July 1, 1966.

SN 252,965. Parkcrest of Dallas, Inc., Dallas, Tex. Filed Aug. 23, 1966.

EEK'S

For Sportswear for Women and Girls—Namely, Pants of Slack Length and Shorts Length, and Skirts.
First use June 24, 1966.

SN 254,487. Bleeker Street, Inc., New York, N.Y. Filed Sept. 15, 1966.

BLEEKER STREET

For Dresses.
First use Aug. 2, 1966.

SN 254,849. Cherberg Company, Inc., Philadelphia, Pa. Filed Sept. 21, 1966.

MR. SPENCE

Owner of Reg. No. 714,273.
For Women's Blouses.
First use Jan. 4, 1960.

Class 40—Fancy Goods, Furnishings, and Notions

SN 238,643. Stanley Berrien, Inc., Uxbridge, Mass. Filed Feb. 3, 1966.

Kit

Applicant disclaims the word "Kit" apart from the mark.
For Sewing or Knitting Kits Containing Fabric Yardage and Knitting Materials and the Like.
First use Dec. 1, 1965.

SN 243,745. Wolverine Shoe and Tanning Corporation, Rockford, Mich. Filed Apr. 18, 1966.

HUSH PUPPIES

Owner of Reg. Nos. 663,849, 764,745, and 767,244.
For Shoe Laces.
First use on or about Mar. 19, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 231,620. Canton Cotton Mills, Canton, Ga. Filed Oct. 25, 1965.

SALTY DOG

For Fabrics of Cotton, Wool, and Synthetic Materials and Combinations Thereof.
First use Mar. 16, 1965.

SN 234,266. Asten-Hill Mfg. Company, Philadelphia, Pa. Filed Dec. 9, 1965.

BESTMESH

Owner of Reg. No. 782,915.
For Dryer Felts in the Piece.
First use Dec. 8, 1965.

SN 239,902. Glen Raven Cotton Mills, Inc., Glen Raven, N.C. Filed Mar. 1, 1966.

GLEN-PRESS

For Apparel, Home Furnishings, and Industrial Fabrics of Natural and Synthetic Fibers and Combinations Thereof.
First use Feb. 4, 1966.

SN 239,978. Deering Milliken, Inc., New York, N.Y. Filed Mar. 2, 1966.

WINDBEAM

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof.
First use on or about Feb. 21, 1966.

SN 241,634. Burlington Industries, Inc., New York, N.Y. Filed Mar. 23, 1966.

COCOONA

For Textile Fabrics in the Piece Suitable for Use in the Manufacture of Men's and Boys' Suits, Jackets, and Slacks.
First use Oct. 7, 1964.

SN 242,303. Wambec Mills Incorporated, New York, N.Y. Filed Mar. 30, 1966.

CRIMP DE PRIX

Applicant disclaims the word "Crimp" apart from the mark as shown.
For Knitted Textile Fabrics, Including Textile Fabrics Made of Synthetic and/or Natural Fibers and Blends Thereof.
First use Mar. 14, 1966.

Class 43—Thread and Yarn

SN 213,084. The American Thread Company, New York, N.Y. Filed Mar. 2, 1965.

TWIST DE LUXE

Owner of Reg. No. 64,210.
For Thread and Yarn.
First use 1915.

SN 233,163. Allied Chemical Corporation, New York, N.Y. Filed Nov. 23, 1965.

Happily... it's CAPROLAN

Owner of Reg. Nos. 623,610 and 808,156.
For Yarn.
First use July 26, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 216,793. Brunswick Corporation, Chicago, Ill. Filed Apr. 19, 1965.

TIP TROL

For Medical Tubing for Use Both Internally and Externally of the Patient.
First use Dec. 24, 1963.

SN 245,175. Dupaco Incorporated, Arcadia, Calif. Filed May 9, 1966.

POSITIONEZE

For Instruments, Implements, and Accessories for Surgical, Dental, Anesthesia, and Allied Fields, and Rail Clamps, Bars, Rods, and Universally Jointed Clamp Units for Positioning Such Instruments, Implements, and Accessories.
First use on about Oct. 23, 1961.

Class 45—Soft Drinks and Carbonated Waters

SN 240,255. California Packing Corporation, San Francisco, Calif. Filed Mar. 7, 1966.

DEL MONTE

Owner of Reg. Nos. 75,958, 641,111, and others.
For Soft Drinks.
First use Apr. 23, 1964.

SN 240,408. Canada Dry Corporation, New York, N.Y. Filed Mar. 9, 1966.

FABULA

For Soft Drink.
First use Jan. 6, 1966.

Class 46—Foods and Ingredients of Foods

SN 207,577. The Cudahy Packing Company, Omaha, Nebr. Filed Dec. 7, 1964.

RANCH HOUSE MEAL

The word "Meal" is disclaimed apart from the mark as shown.
For Canned Beef Stew, Corned Beef Hash, Vienna Sausage, Potted Meat Food Product, Chopped Pork and Ham Product, and Chili Con Carne.
First use on or about Oct. 1, 1964.

SN 225,070. Rudolph Foods Company, Lima, Ohio. Filed Aug. 5, 1965.

BAK-EN SNAPS

Applicant disclaims the use of the word "Bak-En" apart from the mark as shown.
For Fried Pork Rinds.
First use April 1965.

SN 225,589. Micell Dairy Products Co., Cleveland, Ohio. Filed Aug. 12, 1965.

BLOC-O-LONI

For Cheeses.
First use June 14, 1965.

SN 227,910. Allied Mills, Inc., Chicago, Ill. Filed Sept. 16, 1965.

WAYNE FARMS

Owner of Reg. Nos. 241,385, 740,127, and others.
For Fresh Dressed and Frozen Turkeys, Fresh Dressed and Frozen Chickens and Fresh Eggs.
First use Aug. 20, 1965.

SN 228,018. Juan Francisco De Lara, d.b.a. De Lara Sausage Co., Los Angeles, Calif. Filed Sept. 17, 1965.



The name "Don Pancho" shown in the drawing does not represent any particular living individual.
For Foods and Food Products—Namely, Pork Cracklings or Chicharrones, Sausage, and Pickled Pigs Feet.
First use on or about Feb. 1, 1954.

SN 229,331. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Oct. 5, 1965.

SOYLEC

For Edible Soybean Flour With Lecithin Added.
First use on or about December 1958.

SN 230,312. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

ALLORGANIC

For Food Concentrate To Be Used as a Dietary Supplement.
First use July 14, 1955.

SN 230,314. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

ARGINEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Sept. 12, 1951.

SN 230,315. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

BIO-DENT

For Food Concentrate To Be Used as a Dietary Supplement.
First use Aug. 11, 1954.

SN 230,319. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

VASCULIN

For Food Concentrate To Be Used as a Dietary Supplement.
First use May 29, 1958.

SN 230,324. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

ORCHEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Sept. 15, 1955.

SN 230,326. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

MYO-PLUS

For Food Concentrate To Be Used as a Dietary Supplement.
First use Aug. 26, 1964.

SN 230,327. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

MIN-TRAN

For Food Concentrate To Be Used as a Dietary Supplement.
First use June 8, 1959.

SN 230,328. Vitamin Products Company, d.b.a. Standard Process Laboratories, Milwaukee, Wis. Filed Oct. 15, 1965.

MIN-CHEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use Sept. 3, 1963.

SN 232,185. Cain's Coffee Co., Oklahoma City, Okla. Filed Nov. 5, 1965.

GOLDEN LIGHT

Owner of Reg. No. 215,024.
For Coffee; Salad and Cooking Oil; Salad Dressings; Mayonnaise; Vinegars; Chili Powder; Paprika; Barbecue Spice; Steak Tenderiser; Monosodium Glutamate; Chili Pepper; Black Pepper; Barbecue Sauce; Olives; Dill and Sweet Pickles; Italian Style Peppers; Mustard; Mustard Flour; Jellies; Maraschino Style Cherries; Fruit Flavoring Syrups for Food Purposes; Imitation Vanilla, Maple, Almond, Banana, and Black Walnut Flavors for Food Purposes; Vanilla Extract; Caramel Coloring; Liquid Malt for Food Purposes; and Waffle Syrup.
First use Feb. 24, 1926.

SN 232,294. Dean Foods Company, Franklin Park, Ill. Filed Nov. 8, 1965.



The word "Quality" is disclaimed apart from the mark as shown. Owner of Reg. No. 565,007.
For Food Products—Namely, Bottled Sweet Pickles and Dills (Whole and Slices); Cranberries, Cranberry With Orange, Cranberry-Apple Salad; and Bottled Cranberry Juice Cocktail and Apple-Cranberry Food Drink.
First use Aug. 2, 1965, on pickles.

SN 232,586. Urban N. Patman, Inc., Los Angeles, Calif. Filed Nov. 12, 1965.

patman's GOOD TASTE IN meats

No claim is made to the words "Good Taste in Meats" apart from the mark as shown. Owner of Reg. No. 564,796.
For Individually Packaged Servings of Fresh and Frozen and Prepared Meat Products.
First use Apr. 23, 1947.

SN 232,587. Urban N. Patman, Inc., Los Angeles, Calif. Filed Nov. 12, 1965.

PATMAN'S PORTION PAK

No claim is made to the words "Portion Pak" apart from the other features of the mark. Owner of Reg. Nos. 564,796 and 866,884.

For Packages Containing Individual Servings of Fresh Beef, Fresh Lamb, and Fresh Pork.

First use on or about Sept. 26, 1966.

SN 232,833. Clyde A. Harbin, d.b.a. J. C. Harbin's Freese Rite Mix Company, and Harbin Mix Company, Inc., Memphis, Tenn. Filed Nov. 17, 1965.



The word "Stick" is disclaimed apart from the mark as shown.

For Malted Ice Milk Confection Mounted on a Stick.

First use Sept. 16, 1957.

SN 234,998. Driscoll Strawberry Associates, Inc., Salinas, Calif. Filed Dec. 16, 1965.



The drawing is lined for red and yellow but no claim is made to color.

For Fresh Strawberries.

First use Apr. 25, 1958.

SN 234,830. H. C. Brill Company, Inc., Cedar Grove, N.J. Filed Dec. 17, 1965.

TOPS-ALL

Owner of Reg. No. 697,105.

For Sweet Powder Base of a Vegetable Fat and Imitation Flavor Nature for Making Imitation Whipped Cream, Whipped Topping, and Fillings.

First use May 26, 1939.

SN 234,831. H. J. Heinz Company, Pittsburgh, Pa. Filed Dec. 17, 1965.

SWEET TREAT

Owner of Reg. Nos. 296,833 and 570,147.

For Frozen Strawberries.

First use Feb. 7, 1968.

SN 235,000. Marvin Fridenmaker, d.b.a. Fridenmaker Farms, Phoenix, Ariz. Filed Dec. 21, 1965.



The portrait shown does not represent any particular living individual.

For Fresh Yams in Their Natural State.

First use Nov. 18, 1965.

SN 235,272. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company, Corpus Christi, Tex. Filed Dec. 27, 1965.



Owner of Reg. No. 352,267.

For Canned Fruits; Canned Fruit Juices; Canned Vegetable Juices; Tomato Sauce; Tomato Catsup; Apple Butter; Jams; Jellies; Fruit Preserves; Orange Marmalade; Orange Food Drink.

First use Feb. 7, 1938.

SN 235,283. Del Mar Fish, Inc., San Pedro, Calif. Filed Dec. 27, 1965.



Applicant disclaims the words "of California" and the representation of the map of California.

For Fresh Frozen Fish Fillets and Fresh Frozen Squid.

First use Dec. 2, 1965.

SN 235,472. Mapleton's Foods Limited, Garston, Liverpool, England. Filed Dec. 9, 1965.

FRUESLI

Owner of British Reg. No. 859,521, dated Jan. 30, 1964.

For Cereal Food Preparations, for Human Use, Containing Dried Fruits and Nut Kernels.

SN 235,546. Ben Hill Griffin, Inc., Frostproof, Fla. Filed Dec. 30, 1965.

NiP

Owner of Reg. Nos. 255,639, 775,941, and others.

For Frozen Fruit Flavored Food Beverages.

First use May 1, 1964.

SN 235,574. National Dairy Products Corporation, New York, N.Y. Filed Dec. 30, 1965.

VILLAGE GREEN

For Ice Cream.

First use on or about Oct. 17, 1957.

SN 235,575. National Dairy Products Corporation, New York, N.Y. Filed Dec. 30, 1965.

LIGHT N' LIVELY

For Imitation Egg Nog.

First use Nov. 17, 1965.

SN 235,661. Foremost Dairies, Inc., d.b.a. Meriden Creamery Company, San Francisco, Calif. Filed Jan. 3, 1966.

HONEY BROOK

For Butter.

First use at least as early as 1948.

SN 235,924. McCormick & Company, Incorporated, Baltimore, Md. Filed Jan. 6, 1966.

SEASON-ALL

Owner of Reg. No. 634,146.

For Seasoning and Flavor Intensifier for Food, Consisting of Salt, Monosodium Glutamate, Spices, and Magnesium Carbonate.

First use July 1, 1955.

SN 236,285. Pierce Pre-Cooked Foods, Inc., Moorefield, W. Va. Filed Jan. 12, 1966.

CAESAR STEAKS

No claim is made to the word "Steaks" apart from the mark as shown.

For Frozen Formed Chicken-Breast Cutlets.

First use Oct. 1, 1965.

SN 237,018. Tom T. Pendley, d.b.a. Tom Pendley, Sedona, Ariz. Filed Jan. 21, 1966.

SLIDE ROCK

For Fresh Deciduous Fruits.

First use Sept. 18, 1964.

SN 237,423. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 27, 1966.

EARTHEN BOWL

For Salad Dressing.

First use Dec. 27, 1965.

SN 237,696. Harrisburg Grocery Co., Harrisburg, Pa. Filed Feb. 1, 1966.

BIG MASTER

For Dog Food and Cat Food.

First use Jan. 1, 1966.

SN 237,874. H. L. Richman, d.b.a. Edwin L. Richman's Enterprises, Chicago, Ill. Filed Feb. 3, 1966.

BUTTOLA

For Butter Oil.

First use Dec. 30, 1965.

SN 238,016. Swift & Company, Chicago, Ill. Filed Feb. 3, 1966.

SUGAR PLUM

For Canned Hams.

First use on or about Nov. 9, 1965.

SN 238,183. Wilson & Co., Inc., Chicago, Ill. Filed Feb. 4, 1966.

MAJESTIC

Owner of Reg. No. 706,888.

For Dressed Poultry.

First use on or about May 1, 1901.

SN 238,662. Pine Forest Co., Chicago, Ill. Filed Feb. 11, 1966.

PURPLE FINK

No claim is made to the word "Purple" apart from the mark as shown.

For Flavored Ice Milk Bar.

First use June 11, 1965.

SN 239,724. Chicklecraft, Inc., Knoxville, Tenn. Filed Feb. 28, 1966.

gardgum

For Chewing Gum Containing Chlorophyl.

First use Oct. 26, 1961.

SN 240,006. Kingston Products Company, Skokie, Ill. Filed Mar. 2, 1966.

KINGSTON

For Dog Food.

First use Aug. 27, 1965.

SN 240,070. John F. Cope Co., Inc., d.b.a. John F. Cope, Cope Brothers, and/or Cope Bros., Manheim, Pa. Filed Mar. 3, 1966.

JOHN
COPE'S

Owner of Reg. No. 575,054.

For Corn Relish; Chow Chow; Apple Butter; Schmitz Butter; Apricot Jam; Black Raspberry Jam; Cherry Jam; Elderberry Jelly; Peach Jam; Strawberry Preserves; Frozen Fresh Asparagus; Frozen Baked Corn Souffle; and Frozen, Fresh, and Dried White and Yellow Corn.

First use 1960.

SN 251,588. B.N.S. International Sales Corporation, New York, N.Y. Filed Aug. 3, 1966.



The words "Colly Cheese Pictorial," "Product of France" and "Made Exclusively for B.N.S. International Sales Corp. New York" are disclaimed apart from the mark as shown.

For Cheese.

First use June 22, 1966.

SN 251,992. Central Sands Produce, Inc., Bancroft, Wis. Filed Aug. 8, 1966.



MR. RUSSET

No registration rights are claimed for the words "Russet" apart from the mark shown, but applicant waives none of its common law rights in the mark shown or any feature thereof.
For Potatoes in Natural State.
First use August 1963.

SN 252,222. Copeland Sausage Company, Inc., d.b.a. Copeland Sausage Co., Alachua, Fla. Filed Aug. 12, 1966.



For Meat, Processed Meat Products and Prepared Meat Products—Namely, Fresh Frozen Beef Steaks, Fresh and Smoked Sausages, Frankfurters, Hams, Sliced Turkey, Bacons, and Luncheon Meats or Cold Cuts Processed From Pork and Beef.
First use April 1962 on luncheon meats.

SN 252,325. Mendota Growers & Shippers, Inc., Mendota, Calif. Filed Aug. 15, 1966.

Hi! Pa'dner

For Fresh Melons.
First use Aug. 2, 1965.

SN 254,218. Bannes Productions, Inc., Los Angeles, Calif. Filed Sept. 12, 1966.

TARZAN

For Chewing Gum.
First use June 28, 1966.

SN 254,490. Edward Morton, d.b.a. Morton's Resturant, Chicago, Ill. Filed Sept. 15, 1966.

OCTAVIUS I

For Salad Dressing.
First use Aug. 3, 1966.

SN 254,929. Hales & Hunter Co., Chicago, Ill. Filed Sept. 20, 1966.

PIONEER SILAGE-MATE

Owner of Reg. Nos. 232,867, 795,902, and others.
For Silage Preservative.
First use July 11, 1966.

Class 47 — Wines

SN 153,185. Paul Masson, Inc., d.b.a. Paul Masson Vineyards, San Francisco, Calif. Filed Sept. 14, 1962.



Owner of Reg. No. 736,087.
For Wines.
First use Oct. 1, 1952.

SN 228,705. Ko-Operative Wijnbouwers Vereniging Van Zuid-Afrika Beperkt (Co-Operative Winegrowers Association of South Africa Limited), Suider Paarl, Cape Province, Republic of South Africa. Filed Sept. 27, 1965.

ONZERUST

The Dutch word "Onzerust" means "our resting place." Owner of South African Reg. No. 64/1791, dated May 27, 1964.
For Sherries.

SN 232,027. Party Tyme Products, Inc., New York, N.Y. Filed Nov. 2, 1965.

PARTY TYME

Owner of Reg. No. 775,088.
For Cooking Wines.
First use Oct. 25, 1965.

SN 233,142. South African Wine Farmers Association (London) Limited, London, England. Filed Nov. 22, 1965.

VOORTREKKER

Owner of British Reg. No. 601,249, dated Sept. 23, 1938.
For Wines.

SN 236,872. Riccardo Alvino, San Francisco, Calif. Filed Jan. 20, 1966.

CHIANTI ALVINO

The word "Chianti" is disclaimed except as used in connection with the mark. Owner of Reg. No. 763,978.
For Chianti Wine.
First use prior to Dec. 18, 1959.

SN 238,851. John Harvey & Sons Ltd., Bristol, England. Filed Feb. 8, 1966.

ROSANNAY

For Wine.
First use May 6, 1965; in commerce May 6, 1965.

SN 238,843. C. da Silva (Vinhos), S.A.R.L., d.b.a. Raphael Moreira & Co., Vila Nova de Gaia, Portugal. Filed Feb. 15, 1966.

THE DOURO FATHERS

The word "Douro" is disclaimed apart from the mark as shown. Owner of Portuguese Reg. No. 76,613, dated May 1, 1953.
For Port Wine and Table Wine.

SN 240,016. Monte Carlo Wine Industries, Ltd., d.b.a. Champagne Industries, Ltd., New Brunswick, N.J. Filed Mar. 2, 1966.

MAISON PIGALLE

For Sparkling Wine.
First use about May 1, 1960.

SN 240,017. Monte Carlo Wine Industries, Ltd., d.b.a. U.S. Champagne Industries, Ltd., New Brunswick, N.J. Filed Mar. 2, 1966.

SABRINA

For Sparkling Wine.
First use about May 1, 1960.

SN 240,960. San Martin Vineyards Company, d.b.a. San Martin Winery, San Martin, Calif. Filed Mar. 14, 1966.

CHAM-BERRY

For Sparkling Blackberry Wine.
First use Feb. 17, 1964.

Class 48 — Malt Beverages and Liquors

SN 239,377. Carling Brewing Company Incorporated, d.b.a. Carling Brewing Company, Cleveland, Ohio. Filed Feb. 23, 1966.



The drawing is lined for the colors blue, green, and red.
Owner of Reg. No. 704,081.
For Beer.
First use Aug. 1, 1965.

SN 248,665. Oertel Brewing Company, Louisville, Ky. Filed June 22, 1966.



For Beer.
First use May 23, 1966.

Class 49 — Distilled Alcoholic Liquors

SN 218,132. Old Stanley Distillery, Incorporated, d.b.a. Royal Deluxe Distilling Co., Stanley, Ky. Filed May 5, 1965.



For Whiskey.
First use on or about July 6, 1955.

SN 227,309. McCormick Distilling Co., Weston, Mo. Filed Sept. 7, 1965.

E. R. McCormick

Owner of Reg. Nos. 401,746 and 793,468.
For Whiskey.
First use Aug. 8, 1933.

SN 236,844. L. N. Renault & Sons, Inc., Egg Harbor City, N.J. Filed Jan. 19, 1966.

DUMONT

Owner of Reg. No. 509,370.
For Brandy.
First use Feb. 13, 1942.

SN 239,462. Robt. Thorne & Sons (Whisky Merchants), Limited, Dumbarton, Scotland. Filed Feb. 23, 1966.

THORNE'S



The lining on the drawing does not represent color. Owner of U.S. Reg. Nos. 644,850 and 814,650.
For Scotch Whisky.
First use in or about 1936; in commerce in or about December 1955.

SN 240,150. Tennessee Dickel Distilling Co., Tullahoma, Tenn. Filed Mar. 4, 1966.

TENNESSEE WALKING HORSE

Applicant makes no claim to the exclusive right to the use of the word "Tennessee" but does not disclaim its rights to use said word as part of the mark as shown. Owner of Reg. Nos. 716,949, 730,604, and 764,198.
For Whiskey.
First use Dec. 8, 1965.

SN 240,206. Schenley Distillers, Inc., d.b.a. Many, Blanc & Co., New York, N.Y. Filed Mar. 4, 1966.

GREAT DANE

For Aquavit.
First use Dec. 22, 1965.

SN 250,562. Colmenero Corporation, New York, N.Y. Filed July 19, 1966.



For Liqueur and Brandy.
First use Apr. 21, 1965.

Class 50—Merchandise Not Otherwise Classified

SN 236,807. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 2, 1965.

DI-NOC

Owner of Reg. No. 443,309 and others.
For Decorative Sheeting.
First use at least as early as Oct. 29, 1965.

SN 236,182. The Outlet Store, Inc., Denver, Colo. Filed Jan. 10, 1966.

SURVIVO

For Combined Device Comprising a Compass, Match, Map, and Candle Holder, Whistle, Mirror, and Striking Flint.
First use on or about Apr. 1, 1965.

SN 239,668. Screen Print Products, Inc., Cincinnati, Ohio. Filed Feb. 25, 1966.

MAGNA-AD

For Flexible Magnetic Based Advertising and Identifying Signs.
First use November 1961.
Subj. to Intf. with SN 236,684.

SN 241,659. W. R. Grace & Co., Cambridge, Mass. Filed Mar. 21, 1966.

DEWEY AND ALMY

Owner of Reg. Nos. 811,546, 811,550, and 812,002.
For Offset Press Blanket; and Polymer Impregnated Fibrous Sheet Material Cut to Size for Use as Packing or Cushioning Element in Letterpress Printing.
First use in or about May 1960 on offset press blankets.

SN 244,275. Van Blarcom Closures, Inc., Brooklyn, N.Y. Filed Apr. 25, 1966.

BETA

For Closures—Namely, Caps and Nozzles.
First use March 1956.

SN 244,276. Van Blarcom Closures, Inc., Brooklyn, N.Y. Filed Apr. 25, 1966.

DELTA

For Closures—Namely, Caps, Nozzles, and Seals.
First use May 1960.

SN 244,277. Van Blarcom Closures, Inc., Brooklyn, N.Y. Filed Apr. 25, 1966.

ALPHA

For Closures—Namely, Caps, Nozzles, and Seals.
First use October 1948.

SN 246,097. Pendergast Industries, Incorporated, Terre Haute, Ind. Filed May 19, 1966.

PRESPLATES

For Nameplates.
First use May 5, 1966.

SN 246,170. Gorham Corporation, Providence, R.I. Filed May 20, 1966.

ADJUST-O-VASE

For Grave Markers and Vase Units.
First use Apr. 21, 1966.

SN 246,205. Sterneo Industries, Inc., Allendale, N.J. Filed May 20, 1966.



For Fish Breeding Containers and Fish Breeder Trays.
First use Sept. 4, 1962.

SN 246,494. Stone Straw Corporation, Washington, D.C. Filed May 24, 1966.

DRINKSTIRS

For Drinking Straws.
First use May 10, 1966.

SN 247,077. Sterneo Industries, Inc., Allendale, N.J. Filed June 1, 1966.



For Aquarium Accessories—Namely, Ornaments, Scrapers, and Planters for [illegible] Decorated Aquarium Plants.
First use Sept. [illegible]

Class 51—Cosmetics and Toilet Preparations

SN 191,977. Hudson National, Inc., New York, N.Y., by change of name from Hudson Vitamin Products, Inc., New York, N.Y. Filed Apr. 24, 1963.



Lady Hudson

For Women's Cosmetic and Toilet Preparations—Namely, Moisturiser, Hand and Body Lotion, Bath Oil, Deep Cleanser, Cosmetic Cream, Deodorant, Creme Rinse, Night Cream, Dusting Powder, Perfume, and Cologne.
First use Mar. 10, 1964.

SN 206,414. Sea & Ski Corporation, Millbrae, Calif., assignee of Botany Industries, Inc., d.b.a. Sea & Ski Company, Reno, Nev. Filed Nov. 16, 1964.

INDOOR OUTDOOR

For Tanning Lotion.
First use about Oct. 8, 1964.

SN 210,018. Laboratoires Biologiques Arval S.A. Sion, Sion, Switzerland. Filed Jan. 15, 1965.

Arval

Owner of Swiss Reg. No. 180,339, dated Mar. 5, 1964.
For Bath Bubbling and Perfuming Compounds, Skin Creams and Lotions, Toilet Water, Bath Oils, Cologne, Face Powder, Hair Tonic, Lipstick, Nail Enamel, Perfume.

SN 211,494. Yardley of London, Inc., Totowa, N.J. Filed Feb. 4, 1965.

SLICKER

For Lip Polish.
First use Jan. 16, 1965.

SN 219,412. Elizabeth of Sweden, Haledon, N.J. Filed May 21, 1965.

Carib-Tan

For Suntan Lotion.
First use Feb. 1, 1961.

SN 226,012. Yardley of London, Inc., Totowa, N.J. Filed Aug. 18, 1965.

CITY SLICKER

For Lipsticks.
First use July 23, 1965.

SN 228,119. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Sept. 20, 1965.

STARDUST

For Cologne, Perfume Spray, Perfume Stick, Dusting Powder, and Bath Oil.
First use July 1955.

SN 230,198. Royal London, Ltd., New York, N.Y. Filed Oct. 14, 1965.

FIESTA BRAVA

For Cologne.
First use Aug. 1, 1965.

SN 230,498. Anson Incorporated, Providence, R.I. Filed Oct. 19, 1965.



For Men's Cologne.
First use Apr. 13, 1965.

SN 231,810. Southwestern Drug Corporation, Dallas, Tex. Filed Oct. 22, 1965.

TRU-STIM

For Mouth Spray.
First use Aug. 25, 1964.

SN 235,477. Curt H. Abel, d.b.a. Novis Co., Long Island City, N.Y. Filed Dec. 29, 1965.

BEAU DE COLOGNE

Applicant disclaims the use of the word "Cologne" apart from the mark as shown. A translation of the French words "Beau De" is "a man of fashion."
For Cologne and After Shave Lotion.
First use Dec. 20, 1965, on cologne.

SN 237,705. Inter-Hamol S.A., Zurich, Switzerland. Filed Feb. 1, 1966.

MILLY MARVEL

The name "Milly Marvel" is fictitious. Owner of Swiss Reg. No. 197,956, dated Feb. 14, 1963.
For Lipstick, Fluid Make-Up, Compact Make-Up, Hair Former (Setting Lotion), Deodorants, Skin Milk, Skin Tonic, and Creams for Night and Day Use.

SN 238,966. I. Posner, Inc., Corona, N.Y. Filed Feb. 16, 1966.

CUSTOM BLENDS

No claim is made to the exclusive right to use the word "Blends" apart from the mark shown, but the applicant waives none of its common law rights therein.
For Cosmetics—Namely, Face and Body Powder, Face and Body Cream, Face and Body Lotions, Deodorants, Lipsticks, Rouge, Nail Polish, and Cologne.
First use Oct. 2, 1965.

SN 241,742. Bristol-Myers Company, New York, N.Y. Filed Mar. 24, 1966.

NEW HANDS

For Hand Care Product.
First use Mar. 2, 1966.

SN 242,247. The House of Wrisley, Inc., Paris, Tenn. Filed Mar. 30, 1966.

WRISLEY

Owner of Reg. No. 427,052.
For Bath Powder, Cologne, Talcum, Bath Oil, Bath Crystals, Perfume, and Lotion for Soothing or Softening the Skin of the Face or Hands.
First use April 1934.

SN 242,257. Johnson & Johnson, New Brunswick, N.J. Filed Mar. 30, 1966.

BOLD MOVE

For Talcum Powder.
First use Mar. 3, 1966.

SN 242,260. Johnson & Johnson, New Brunswick, N.J. Filed Mar. 30, 1966.

SHOWER TO SHOWER

For Talcum Powder.
First use Mar. 3, 1966.

SN 242,344. Julio de Elorza, d.b.a. Marques de Elorza, Short Hills, N.J. Filed Mar. 31, 1966.

Esterlee

For Bath Oils, Perfumes, Cleansing Creams, and Skin Creams.
First use Mar. 28, 1966.

SN 247,594. Freeman-LeA Barber and Beauty Supply Company, Los Angeles, Calif. Filed June 8, 1966.



For Hair Spray and Hair Conditioner.
First use May 15, 1965.

SN 248,313. Diplomat Products, Inc., Los Angeles, Calif. Filed June 17, 1966.

NOB HILL

For Men's Toiletries—Namely, After Shave Lotion and Cologne.
First use June 9, 1965.

SN 250,463. Diplomat Products, Inc., d.b.a. Davlyn Laboratories Ltd., Los Angeles, Calif. Filed July 14, 1966.

LEATHER 'N LYME

Applicant disclaims the exclusive use of the word "Lyme" apart from the mark as shown.
For Men's Toiletries—Namely, After Shave Lotion, Cologne, and All Purpose Lotion.
First use Jan. 28, 1966.
Subj. to Intf. with SN 246,981.

SN 252,794. Yves Saint Laurent Parfums Corp., New York, N.Y. Filed Aug. 22, 1966.

RIVE GAUCHE

The English translation of the French words "Rive Gauche" is "left bank."
For Toilet Water.
First use on or about Nov. 24, 1965.

Class 52—Detergents and Soaps

SN 237,631. Santa Monica Chemical Corporation, Santa Monica, Calif. Filed Dec. 29, 1965.

TSP

Applicant, without prejudice, disclaims the letters "TSP" except in their stylized form, the mark as a whole, reserving, however, all commonlaw rights therein.
For Non-Abrasive Cleaning Powder for Household.
First use July 8, 1956.

SN 239,362. Alconox, Inc., New York, N.Y. Filed Feb. 23, 1966.

DIP 'N DRI

For Cleaning and Detergent Compound for Laundering of Finest Cashmeres, Delicate Woolens, and All Synthetic Fabrics.
First use Sept. 6, 1960.

SN 240,036. Stiefel Laboratories, Inc., Oak Hill, N.Y. Filed Mar. 2, 1966.

NEOLATUM

For Toilet Soap.
First use Jan. 18, 1966.

SN 241,260. Langen Industries, Inc., Los Angeles, Calif. Filed S.R. Mar. 17, 1966; Am. P.R. Sept. 30, 1966.

SPOTZ-A-WAY

For Dry Cleaner and Spot Remover Spray.
First use Nov. 15, 1964.

SN 242,143. Purex Corporation, Ltd., Lakewood, Calif. Filed Mar. 2, 1966.



The lining shown on the drawing is a design feature of the trademark and is not intended to indicate color.
For Detergent for All Cleaning Purposes.
First use Apr. 5, 1960.

SN 242,248. The House of Wrisley, Inc., Paris, Tenn. Filed Mar. 30, 1966.

WRISLEY

Owner of Reg. No. 433,837.
For Bath Soap, Toilet Soap, and Shaving Soap.
First use June 1904.

SN 243,553. Enzor, Inc., Des Plaines, Ill. Filed Apr. 15, 1966.

ELLEMENE

For Rug and Upholstery Shampoo.
First use Mar. 8, 1966.

SN 244,086. Dana Research Corporation, Seattle, Wash. Filed Apr. 22, 1966.

ALUMA-SHEEN

For Aluminum Cleaner.
First use July 14, 1964.

SN 245,103. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 6, 1966.

BLUE RIBBON

Owner of Reg. No. 488,230.
For Household Sudsing Cleaner, Cleanser, and Detergent.
First use Jan. 12, 1966.

SERVICE MARKS

Class 100—Miscellaneous

SN 183,102. Petro-Vend, Inc., Chicago, Ill. Filed Dec. 16, 1963.

PETRO VEND

Applicant disclaims the word "Vend" as applied to "Petro Vend" services, apart from the mark as shown.
For Automotive Service Station Services.
First use Oct. 15, 1963.

SN 188,581. Sahara-Nevada Corporation, Las Vegas, Nev. Filed Mar. 12, 1964.

SAHARA

For Hotel Service.
First use Oct. 7, 1952.

SN 207,065. Attilio F. Lospinoso, Wayne, N.J. Filed Nov. 27, 1964.

UNICOMP

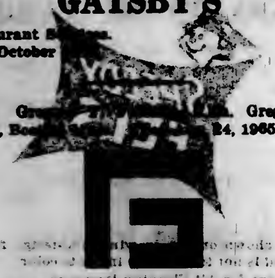
For Manufacturer's Representative Services in the Field of Electronics and Mechanical Equipment.
First use Aug. 5, 1964.

SN 210,[illegible] Gatsby's, Inc., New York, N.Y. Filed Jan. 26, 1965.

GATSBY'S

For Restaurant Services.
First use October [illegible]

SN 226,351. Gr[illegible] Gregory Fossella Associates, Bo[illegible] 24, 1965.



The mark consists of a design of the letters G and F.
For Consulting Services Specializing in Industrial Design.
First use on or about Apr. 23, 1963.

SN 235,816. Central Bio-Analytical Laboratories, Inc., Levittown, N.Y. Filed Jan. 5, 1965.

UNI-SPEC

For Laboratory Services for Physicians.
First use Nov. 15, 1965.

Class 101 — Advertising and Business

SN 221,043. Gridley, Maxon & Co., Chicago, Ill. Filed June 14, 1965.

THE DIFFERENCE IS fresh!

For Food Wholesaling and/or Food Commission Merchandising.
First use May 15, 1965.

SN 221,163. Enterprise Expositions, Inc., New York, N.Y. Filed June 15, 1965.

START YOUR OWN BUSINESS EXPOSITION

No registration rights are claimed for the word "Exposition" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof. Owner of Reg. No. 726,841.
For Conducting Business Expositions Which Enable Firms Offering Franchises and Other Business Opportunities to Meet Individuals Who Are in the Market for Such Offers.
First use at least as early as May 28, 1965.

SN 229,314. Valley Landscape Company Inc., Baltimore, Md. Filed Oct. 4, 1965.

Valley Mart

Applicant disclaims the word "Mart" apart from the mark as shown, without waiving any common law rights therein.
For Retail Store Services, Featuring Gift Items, Garden Supplies, Plants and Trees, Wrought Iron Furniture, Cookery Utensils, and Packaged Foods.
First use on or about Sept. 15, 1962.

SN 232,280. Photronix, Inc., Clayton, Mo. Filed Nov. 24, 1965.

SCAN

For Microfilming Written Material, Sending the Microfilm to Users, and Renting Film Readers.
First use May 15, 1965.

SN 252,087. Hea[illegible] and Susan [illegible]er (joint owners), d.b.a. Scientific Translation Service, Ann Arbor, Mich. Filed Aug. 10, 1965.

STS

For Translation and Interpretation of Foreign Languages in Scientific Literature.
First use Sept. 1, 1965.

Class 102 — Insurance and Financial

SN 214,633. Financial Advertising Agency, Cincinnati, Ohio. Filed Mar. 22, 1965.

GOLD CARPET SERVICE

Applicant disclaims any right to exclusive use of the word "Service" apart from the mark as shown.
For Providing Extra Services to Customer by Savings and Loan Associations, Said Services Comprising Such Conveniences as a Personal Check Cashing Service, Accepting Payment of Utility Bills and Real Estate Taxes, Christmas and Vacation Clubs, Traveler's Checks, and Money Orders.
First use Oct. 4, 1963.

SN 228,889. Pacific Employers Insurance Company, Los Angeles, Calif. Filed Sept. 22, 1965.

PEG

For Full Multiple Line Insurance Including Life, Casualty, Workmen's Compensation, and Automobile Insurance Services.
First use Oct. 26, 1959.

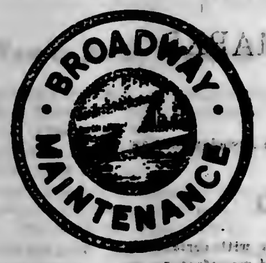
SN 235,496. The Diners' Club, Inc., New York, N.Y. Filed Dec. 29, 1965.



For Extension of Credit to Customers Who Purchase at Subscribing Retail Establishments and Making Collections From Such Customers Through a Central Billing System.
First use on or about Nov. 1, 1965.

Class 103 — Construction and Repair

SN 226,406. Broadway Maintenance Corp., Long Island City, N.Y. Filed Aug. 26, 1965.



The drawing is lined for red, blue, and gold. Applicant disclaims the word "Maintenance" apart from the mark as shown. Owner of Reg. No. 648,006.
For Electrical Maintenance and Construction Service.
First use Jan. 15, 1963.

SN 233,237. Domesticare, Inc., Wyckoff, N.J. Filed Nov. 26, 1965.

DOMESTICARE

For Cleaning Services for Home and Office.
First use Nov. 22, 1964.

SN 253,406. Maraton Oil Company, Findlay, Ohio. Filed Aug. 30, 1966.



Owner of Reg. Nos. 742,273 and 745,637.
For Gas Station Services.
First use Aug. 10, 1961.

Class 104 — Communication

SN 232,618. Miami Valley Broadcasting Corporation, Dayton, Ohio. Filed Nov. 20, 1965.



All wording including the numeral "7" is disclaimed apart from the mark as shown.
For Television Broadcasting Service.
First use May 1965.

SN 232,619. Miami Valley Broadcasting Corporation, Dayton, Ohio. Filed Nov. 20, 1965.



All wording including the numeral 1290 is disclaimed apart from the mark as shown.
For Radio Broadcasting Service.
First use July 1965.

Class 107 — Education and Entertainment

SN 191,069. Operation Crossroads Africa, Inc., New York, N.Y. Filed Apr. 14, 1964.



For Association Services—Namely, Recruiting and Training in the United States of Personnel for Conducting Training Courses in Africa in the Teaching of the English Language, Physical Education, and Agricultural Methods, and for Teacher Training of Undereducated Local Teachers, and for Rendering Medical Services in Hospitals and Clinics, and for Assisting in Construction Projects, and for Engaging in Seminars With Local Leaders in Politics, Government, Education, Labor and Business; Sponsoring, as by Lectures, Essays and the Like in the United States, the Dissemination to Citizens of the United States of Information Learned and Experiences Encountered in Africa; and in Financing and Directing.
First use October 1961.

SN 222,499. Olas Corporation, Gates Mills, Ohio. Filed July 1, 1965.

OF LANDS AND SEAS

For Title of a Television Program, Consisting Principally of Travelogues and Presented as an Entertainment and Education Service.
First use May 24, 1965.

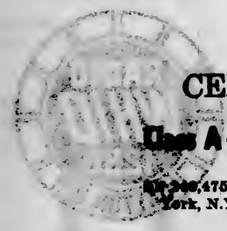
SN 253,716. General Artists Corporation, New York, N.Y. Filed Sept. 1, 1966.

HULLABALOO

For Entertainment Services—Namely, a Television Series Featuring Popular Music and Dancing.
First use Jan. 12, 1965.

CERTIFICATION MARKS

Class A—Goods



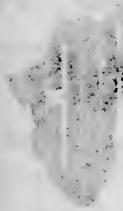
818,475. International Copper Research Association, New York, N.Y. Filed June 20, 1966.

INCRAGRIND

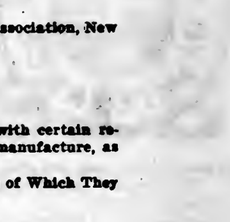
The mark certifies that the goods comply with certain requirements and specifications of quality and manufacture, as established by applicant.

For Cast Metallic Grinding Balls and Alloys of Which They Are Formed.

First use Nov. 23, 1965.







TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

819,677. CORONET JEWELL J (SMOKELESS) AND DESIGN. Jewell Smokeless Coal Corporation. SN 130,700. Pub. 7-21-66. Filed 10-26-61.

819,678. BRAVO CALF. Fleming-Joffe, Ltd. SN 196,085. Pub. 9-20-66. Filed 7-17-64.

819,679. HOME BEAUTY. Seaboard Seed Company, assignee, by mesne assignment, of Diamond Alkali Company. SN 212,291. Pub. 7-19-66. Filed 2-18-65.

819,680. GLEN GREEN. Seaboard Seed Company, assignee, by mesne assignment, of Diamond Alkali Company. SN 212,292. Pub. 7-26-66. Filed 2-18-65.

819,681. TURF QUEEN. Seaboard Seed Company, assignee, by mesne assignment, of Diamond Alkali Company. SN 212,293. Pub. 7-26-66. Filed 2-18-65.

819,682. TUFCOTE. Specialty Converters, Inc. SN 220,414. Pub. 8-24-66. Filed 6-4-65.

819,683. CANGORAN. Adidas S.A.R.L. MULTIPLE CLASS (Classes 1 and 39). SN 221,962. Pub. 9-20-66. Filed 6-25-65.

819,684. RP AND DESIGN. Rowland Products, Incorporated. SN 230,000. Pub. 10-11-66. Filed 11-17-65.

819,685. ASTRO. Fields Plastics & Chemicals, Inc. SN 229,235. Pub. 4-26-66. Filed 10-4-65.

819,686. DS AND SHIELD DESIGN. Dairyland Seed Company, Inc. SN 237,542. Pub. 9-20-66. Filed 1-27-66.

819,687. STARK DOUBLE-DWARF. Stark Bro's Nurseries & Orchards Co. SN 238,014. Pub. 9-20-66. Filed 2-3-66.

819,688. WELLSTRAND. Nichols & Company, Inc. SN 241,361. Pub. 9-20-66. Filed 2-18-66.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

819,689. R.S.V.P. Neiman-Marcus Company. SN 239,168. Pub. 9-20-66. Filed 2-18-66.

819,690. KNACK. Garay & Co., Inc. SN 239,511. Pub. 9-20-66. Filed 2-24-66.

Class 4—Abrasives and Polishing Materials

819,691. CRAMER OF GARDNER, KANSAS AND DESIGN. The Cramer Chemical Company. MULTIPLE CLASS (Classes 4, 6, 18, 22, 44, 46, 51, and 52). SN 201,826. Pub. 9-20-66. Filed 9-14-64.

819,692. BRITE-ITT. S & S Chemicals, Ltd. SN 234,242. Pub. 9-20-66. Filed 12-6-65.

Class 5—Adhesives

819,693. JIFFYCLEAN. Archer-Daniels-Midland Company. SN 226,993. Pub. 9-20-66. Filed 8-2-65.

Class 6—Chemicals and Chemical Compositions

819,691. (See Class 4 for this trademark.)

819,694. BIOPON. General Aniline & Film Corporation. SN 167,544. Pub. 10-1-63. Filed 4-25-63.

819,695. PANOCOAT. Morton International, Inc., by change of name from Morton Salt Company. SN 206,950. Pub. 5-21-66. Filed 12-26-64.

819,696. VICHEM AND DESIGN. Vinchem Chemical Co. SN 211,685. Pub. 2-22-66. Filed 3-9-65.

819,697. AIR 'N' WEAR. The Manson Company. SN 222,502. Pub. 9-20-66. Filed 7-8-65.

819,698. BARBOL. Dexter Chemical Corporation. SN 222,914. Pub. 9-20-66. Filed 7-8-65.

819,699. DEXOPAL. Dexter Chemical Corporation. SN 222,915. Pub. 9-20-66. Filed 7-8-65.

819,700. ULTRAPHOS. Witco Chemical Company, Inc. SN 222,997. Pub. 9-20-66. Filed 7-8-65.

819,701. PATHOTEC. Warner-Lambert Pharmaceutical Company. SN 224,041. Pub. 9-20-66. Filed 7-22-65.

819,702. PREVIEW. Wyandotte Chemicals Corporation. SN 224,282. Pub. 9-20-66. Filed 7-26-65.

819,703. KINGSTON. Kingston Products Company. SN 226,536. Pub. 7-19-66. Filed 8-26-65.

819,704. TIME-MIST AND DESIGN. Time-Mist, Inc. SN 228,579. Pub. 9-20-66. Filed 9-24-65.

819,705. STRAUSS STORES. Strauss Stores Corporation. SN 234,585. Pub. 9-20-66. Filed 12-14-65.

819,706. VANO. E. T. Babbitt, Inc. SN 236,828. Pub. 9-20-66. Filed 2-15-66.

819,707. PRINTOFINE. Bausmann Photo-Chemical Corporation. SN 238,833. Pub. 9-20-66. Filed 2-15-66.

819,708. DIAFINE. Bausmann Photo-Chemical Corporation. SN 238,916. Pub. 9-20-66. Filed 2-16-66.

819,709. EKTAFLO. Eastman Kodak Company. SN 239,028. Pub. 9-20-66. Filed 2-17-66.

819,710. SLIDE-O. Corn Products Company. SN 239,599. Pub. 9-20-66. Filed 2-25-66.

819,711. HY-PIX. Corn Products Company. SN 239,600. Pub. 9-20-66. Filed 2-25-66.

819,712. NOVA. The Harshaw Chemical Company. SN 239,770. Pub. 9-20-66. Filed 2-28-66.

819,713. MISCELLANEOUS DESIGN. Southern Agricultural Insecticides, Inc. SN 240,253. Pub. 9-20-66. Filed 3-7-66.

819,714. TECHNIGOLD. Technic, Inc. SN 240,803. Pub. 9-20-66. Filed 3-11-66.

819,715. TRUMP. Geigy Chemical Corporation. SN 240,877. Pub. 9-20-66. Filed 3-14-66.

819,716. LUMETON. Geigy Chemical Corporation. SN 240,878. Pub. 9-20-66. Filed 3-14-66.

819,717. ACRIMIN. Geigy Chemical Corporation. SN 240,879. Pub. 9-20-66. Filed 3-14-66.

819,718. IGRAN. Geigy Chemical Corporation. SN 240,880. Pub. 9-20-66. Filed 3-14-66.

819,719. ENAROL. Geigy Chemical Corporation. SN 240,881. Pub. 9-20-66. Filed 3-14-66.

819,720. GESINDOR. Geigy Chemical Corporation. SN 240,882. Pub. 9-20-66. Filed 3-14-66.

819,721. OTEGIN. Geigy Chemical Corporation. SN 240,883. Pub. 9-20-66. Filed 3-14-66.

819,722. EMALDIN. Geigy Chemical Corporation. SN 240,884. Pub. 9-20-66. Filed 3-14-66.

819,723. BLANKIBOL. Geigy Chemical Corporation. SN 240,885. Pub. 9-20-66. Filed 3-14-66.

819,724. GESAFLOC. Geigy Chemical Corporation. SN 240,886. Pub. 9-20-66. Filed 3-14-66.

819,725. CONFORMAN. Geigy Chemical Corporation. SN 240,887. Pub. 9-20-66. Filed 3-14-66.

819,726. AGOLON. Geigy Chemical Corporation. SN 240,888. Pub. 9-20-66. Filed 3-14-66.

819,727. OPARIN. Geigy Chemical Corporation. SN 240,889. Pub. 9-20-66. Filed 3-14-66.

819,728. LAWN-TOX. Geigy Chemical Corporation. SN 240,890. Pub. 9-20-66. Filed 3-14-66.

819,729. GESAMAL. Geigy Chemical Corporation. SN 240,891. Pub. 9-20-66. Filed 3-14-66.

819,730. EVICT. Geigy Chemical Corporation. SN 240,893. Pub. 9-20-66. Filed 3-14-66.

819,731. GAFENOX. General Aniline & Film Corporation. SN 240,894. Pub. 9-20-66. Filed 3-14-66.

819,732. SHC. Merrill J. Foster, d.b.a. Marine Instrument Co. SN 241,137. Pub. 9-20-66. Filed 3-16-66.

819,736. PDRP. Sprayon Products, Inc. SN 241,812. Pub. 9-20-66. Filed 3-24-66.

819,734. PDRP AND DESIGN. Sprayon Products, Inc. SN 241,813. Pub. 9-20-66. Filed 3-24-66.

819,735. HIGH CHIEF AND DESIGN. King Kullen Grocery Co., Inc. SN 248,396. Pub. 9-20-66. Filed 6-20-66.

Class 7—Cordage

819,736. ALAMO. Alamo Industries, Inc. SN 239,104. Pub. 9-20-66. Filed 2-18-66.

Class 9—Explosives, Firearms, Equipments, and Projectiles

819,737. SHOT GUN. South Dakota Fireworks, Inc. SN 222,301. Pub. 9-20-66. Filed 6-29-65.

819,738. RED CHERRY. South Dakota Fireworks, Inc. SN 222,302. Pub. 9-20-66. Filed 6-29-65.

819,739. "PRESENTATION MODEL." Pachmayr Gun Works, Inc. SN 222,497. Pub. 9-20-66. Filed 6-30-65.

Class 10—Fertilizers

819,740. NATURE'S RATIO. Northrup, King & Co. SN 239,662. Pub. 9-20-66. Filed 2-25-66.

Class 11—Inks and Inking Materials

819,741. ACE AND DESIGN. J. M. Huber Corporation. SN 239,047. Pub. 9-20-66. Filed 2-17-66.

Class 12—Construction Materials

819,742. POZAMENT. Pozament Corporation. SN 202,618. Pub. 11-30-65. Filed 9-24-64.

819,743. HYDREPOXY. Concrete Masonry Research, Incorporated. SN 216,666. Pub. 9-20-66. Filed 4-16-65.

819,744. GC-TELCO. Textron Electronics Inc. SN 221,166. Pub. 9-20-66. Filed 6-15-65.

819,745. FROST-LITE. Amarada Glass Corp. SN 222,302. Pub. 9-20-66. Filed 7-7-65.

819,746. CERILEAN MARBLE. Cerilean Products Company. SN 225,278. Pub. 9-20-66. Filed 8-9-65.

819,747. VITRO-FLEX. Johns-Manville Corporation. SN 227,762. Pub. 9-20-66. Filed 9-14-65.

819,748. TRI-BOND AND DESIGN. American Panel Products, Inc. SN 238,994. Pub. 9-20-66. Filed 12-6-65.

819,749. NOVOSHELF. United States Plywood Corporation. SN 205,141. Pub. 9-20-66. Filed 12-22-65.

819,750. MISCELLANEOUS DESIGN. Sakrete, Inc. SN 235,709. Pub. 9-20-66. Filed 1-4-66.

819,751. STEP-ONS. Continental Chemical Corporation. SN 235,621. Pub. 9-20-66. Filed 1-4-66.

819,752. BRIK-CARE. General Refractories Company. SN 238,678. Pub. 9-20-66. Filed 2-4-66.

819,753. RAMSTAR. E. J. Lavino and Company. SN 238,244. Pub. 9-20-66. Filed 2-7-66.

819,754. LAVSTAR. E. J. Lavino and Company. SN 238,245. Pub. 9-20-66. Filed 2-7-66.

819,755. TEMSTAR. E. J. Lavino and Company. SN 238,246. Pub. 9-20-66. Filed 2-7-66.

819,756. TEMPREZ. E. J. Lavino and Company. SN 238,247. Pub. 9-20-66. Filed 2-7-66.

819,757. PREBRZ. E. J. Lavino and Company. SN 238,248. Pub. 9-20-66. Filed 2-7-66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

819,758. GC-TELCO. Textron Electronics, Inc. SN 221,167. Pub. 9-20-66. Filed 6-15-65.

819,759. WALDORF. The Wickes Corporation. MULTIPLE CLASS (Classes 13 and 20). SN 231,657. Pub. 9-20-66. Filed 10-27-65.

819,760. ROCKWELL STANDARD R AND DESIGN. Rockwell-Standard Corporation. SN 237,486. Pub. 9-20-66. Filed 1-27-66.

819,761. BELL-RING. Ethyl Corporation. SN 238,507. Pub. 9-20-66. Filed 2-10-66.

819,762. FOUR PARALLELOGRAM MARK (DESIGN). Linair Engineering Division. SN 238,755. Pub. 9-20-66. Filed 2-14-66.

819,763. NYLA-BUSH. Frank Doerner & Sons Limited. SN 238,853. Pub. 9-20-66. Filed 2-15-66.

819,764. DXVAL. Dynamic Valves, Inc. SN 238,854. Pub. 9-20-66. Filed 2-15-66.

819,765. OFL. Hanssen Plastics Corporation. SN 238,952. Pub. 9-20-66. Filed 2-16-66.

819,766. SPRITE. Joseph Gillott & Sons Limited. SN 239,042. Pub. 9-20-66. Filed 2-17-66.

819,767. NATIONAL. National Fastener Corp. SN 239,070. Pub. 9-20-66. Filed 2-17-66.

819,768. 4 REPRESENTATION OF A SEAL AND DESIGN. Tylok International, Inc. SN 239,178. Pub. 9-20-66. Filed 2-18-66.

819,769. MS-SYNCLAMPS. Timber-Top, Inc. SN 244,771. Pub. 9-20-66. Filed 5-2-66.

819,770. MINI-SYNCLAMPS. Timber-Top, Inc. SN 244,772. Pub. 9-20-66. Filed 5-2-66.

819,771. MICRO-SYNCLAMPS. Timber-Top, Inc. SN 244,773. Pub. 9-20-66. Filed 5-2-66.

819,772. SUPER-SYNCLAMPS. Timber-Top, Inc. SN 244,774. Pub. 9-20-66. Filed 5-2-66.

819,773. REVEX-SYNCLAMPS. Timber-Top, Inc. SN 244,775. Pub. 9-20-66. Filed 5-2-66.

819,774. REUSAFLEX. Samuel Moore and Company. SN 244,841. Pub. 9-20-66. Filed 5-3-66.

819,775. ESLOK. Elastic Stop Nut Corporation of America. SN 248,653. Pub. 9-20-66. Filed 6-22-66.

Class 15—Oils and Greases

819,776. DESIGN LINED FOR COLORS RED AND BLUE. The Atlantic Refining Company. SN 227,746. Pub. 9-20-66. Filed 9-10-65.

819,777. FAROY. Faroy, Inc. MULTIPLE CLASS (Classes 15 and 34). SN 230,040. Pub. 9-20-66. Filed 10-13-65.

819,778. ARMOIL. Armstrong Bros. Tool Co. SN 247,807. Pub. 9-20-66. Filed 6-13-66.

Class 16—Protective and Decorative Coatings

819,779. L-6000. Barber Chemical Company. SN 237,919. Pub. 9-20-66. Filed 2-3-66.

819,780. M.M.W. AND DESIGN. Mel-Mel Wallpaper Mills of Waldstein Co. SN 241,672. Pub. 9-20-66. Filed 3-23-66.

Class 17—Tobacco Products

819,781. PRIDE OF HOLLAND. N.V. Sigarettenfabriek Bd. Laurens "Le Khedive." SN 234,230. Pub. 9-20-66. Filed 7-27-65.

819,782. PRINCE OF HOLLAND. N.V. Sigarettenfabriek Bd. Laurens "Le Khedive." SN 234,232. Pub. 9-20-66. Filed 7-27-65.

819,783. GRAVER "A" AND DESIGN. Carreras Limited. SN 233,673. Pub. 9-20-66. Filed 12-1-65.

Class 18—Medicines and Pharmaceutical Preparations

819,691. (See Class 4 for this trademark.)

819,784. PERSONAL. Cutter Laboratories, Inc. SN 154,339. Pub. 5-21-63. Filed 10-10-62.

819,785. RESISTOPEN. E. R. Squibb & Sons, Inc., assignee of Olin Mathieson Chemical Corporation. SN 224,225. Pub. 5-31-66. Filed 7-26-65.

819,786. MISCELLANEOUS DESIGN. Sterling Drug Inc., assignee of Laurence W. Helwig, d.b.a. Aschenbach & Miller. SN 226,445. Pub. 7-19-66. Filed 8-25-65.

819,787. AMORINE. Armour Pharmaceutical Company. SN 228,111. Pub. 9-20-66. Filed 9-20-65.

819,788. BERDEX. Merck & Co., Inc., and Quinton Company. SN 228,563. Pub. 9-20-66. Filed 9-24-65.

819,789. STIP. Cutter Laboratories, Inc. SN 228,650. Pub. 9-20-66. Filed 9-27-65.

819,790. R-GENIX. Cutter Laboratories, Inc. SN 228,653. Pub. 9-20-66. Filed 9-27-65.

819,791. POISONOK. Cutter Laboratories, Inc. SN 228,654. Pub. 9-20-66. Filed 9-27-65.

819,792. PLASMANATE. Cutter Laboratories, Inc. SN 228,655. Pub. 9-20-66. Filed 9-27-65.

819,793. [illegible] Laboratories. SN 229,761. Pub. 9-20-66. Filed 10-11-65.

819,794. TRUSTIN. Malingaux Pharmaceuticals, Inc. SN 237,005. Pub. 9-20-66. Filed 1-21-66.

819,795. UMBILEX. Johnson & Johnson. SN 237,154. Pub. 9-20-66. Filed 1-26-66.

819,796. THALAMONAL. Cilag-Chemie Aktiengesellschaft (Cilag-Chimie Societe Anonyme) (Cilag-Chemie Limited). SN 237,310. Pub. 9-20-66. Filed 1-26-66.

819,797. NOVOCAINE. National Drug Company. SN 237,744. Pub. 9-20-66. Filed 2-1-66.

819,798. BIG 10, Inc., La Gasa, Inc. SN 241,607. Pub. 9-20-66. Filed 3-25-66.

819,799. DONNAMYCIN. A. H. Robins Company, Incorporated. SN 240,465. Pub. 9-20-66. Filed 7-5-66.

819,800. CRAGAR. Bell Auto Parts, Inc. MULTIPLE CLASS (Classes 19 and 23). SN 230,449. Pub. 9-20-66. Filed 6-7-66.

Class 19—Vehicles

819,801. MODEL 7000 AND DESIGN. Pure Motor Cart Company. SN 241,814. Pub. 9-20-66. Filed 3-28-66.

819,802. AID AND DESIGN. Aid Stores, Inc. SN 230,714. Pub. 9-20-66. Filed 10-11-65.

819,803. CAPENCE. DeMard Marine Corporation. SN 231,301. Pub. 9-20-66. Filed 10-24-65.

819,804. VINDALE AND DESIGN. Vindale Corporation. SN 222,045. Pub. 9-20-66. Filed 6-29-65.

819,805. VINDALE AND DESIGN. Vindale Corporation. SN 222,046. Pub. 9-20-66. Filed 11-9-65.

819,806. FLEETMASTER. Rockwell-Standard Corporation. SN 228,152. Pub. 9-20-66. Filed 11-4-65.

819,807. CONTINENTAL. Arnold, Schwinn & Co. SN 232,271. Pub. 9-20-66. Filed 11-8-65.

819,808. GO-GO AND DESIGN. Western Mach. Associates, Inc. SN 233,094. Pub. 9-20-66. Filed 11-9-65.

819,809. LI AND DESIGN. Litton Industries, Inc. SN 233,251. Pub. 9-20-66. Filed 2-7-66.

Class 20—Linoleum and Oiled Cloth

819,759. (See Class 13 for this trademark.)

Class 21—Electrical Apparatus, Machines, and Supplies

819,810. SWING-OUT. King-Seeley Thermos Co., assignee of Structo Manufacturing Company. SN 200,552. Pub. 9-20-66. Filed 1-7-65.

819,811. OMNI SPECTRA. Omni Spectra, Inc. SN 208,716. Pub. 9-20-66. Filed 1-11-65.

819,812. BLONDER TONGUE. Blonder-Tongue Laboratories, Inc. SN 212,394. Pub. 9-20-66. Filed 2-10-65.

819,813. GUARD. In-Flight Devices, assignee of In-Flight Devices, Inc. SN 215,977. Pub. 9-20-66. Filed 6-22-65.

819,814. MIAL AND DESIGN. Mial S.p.A. SN 215,827. Pub. 9-13-66. Filed 4-1-65.

819,815. GC-TELCO. Textron Electronics Inc. SN 221,169. Pub. 9-20-66. Filed 6-15-65.

819,816. TUNE-O-LITE AND DESIGN. Fisher Radio Corporation. SN 222,565. Pub. 9-20-66. Filed 7-2-65.

819,817. DIFFUZOR. BTU Engineering Corporation. SN 223,506. Pub. 9-20-66. Filed 7-16-65.

819,818. DELTA ELECTRONICS AND DESIGN. Delta Electronics, Inc. SN 223,976. Pub. 9-13-66. Filed 7-22-65.

819,819. MISCELLANEOUS DESIGN. Stan Corporation of Michigan. SN 234,534. Pub. 9-20-66. Filed 7-29-65.

819,820. REPUBLIC. Republic Foil, Inc. SN 234,806. Pub. 9-20-66. Filed 8-2-65.

819,821. DESIGN OF A MULE. Male Battery Manufacturing Company. SN 235,417. Pub. 9-20-66. Filed 12-23-65.

819,822. MUSICRAFT. Sidley Industries, Inc. SN 236,016. Pub. 9-20-66. Filed 1-7-66.

Class 22—Games, Toys, and Sporting Goods

819,691. (See Class 4 for this trademark.)

819,823. GRAND PRIX. Grand Prix, Inc. SN 230,495. Pub. 9-20-66. Filed 9-2-65.

819,824. WISE PEOPLE. Fun Things, Inc. SN 230,816. Pub. 9-20-66. Filed 10-7-65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

819,800. (See Class 19 for this trademark.)

819,825. DESIGN OF GROTESQUE SIAMESE TWINS. Polish Research and Mfg. Co. SN 175,475. Pub. 9-6-66. Filed 6-22-63.

819,836. DETROIT DIESEL AND DESIGN. General Motors Corporation. SN 218,968. Pub. 9-20-66. Filed 3-12-65.

819,837. CANDLWHEEL. Lockwood Technical, Inc. SN 219,002. Pub. 9-20-66. Filed 5-17-65.

819,838. SENTINEL. Packaging Industries Limited, Inc. SN 219,901. Pub. 9-20-66. Filed 5-27-65.

819,839. CHILCUT. The O.K. Tool Company, Inc. SN 220,258. Pub. 9-20-66. Filed 6-2-65.

819,840. INDICO. Benjamin Mills III. SN 220,679. Pub. 9-20-66. Filed 6-8-65.

819,841. WARD. H. W. Ward & Co., Limited. SN 220,718. Pub. 9-20-66. Filed 6-8-65.

819,842. HOT LINE AND DESIGN. Minneapolis-Moline, Inc. SN 225,987. Pub. 9-20-66. Filed 8-18-65.

819,843. ATLAS. Atlas Supply Company. SN 226,607. Pub. 9-20-66. Filed 8-27-65.

819,844. CLARK. Clark Equipment Company. SN 227,261. Pub. 9-20-66. Filed 9-7-65.

819,845. PLASTI-SHELL AND DESIGN. Plasti-Shell Corporation. SN 228,187. Pub. 9-20-66. Filed 9-20-65.

819,846. AK AND DESIGN. Agatsuma Seiki Kabushiki Kaisha. SN 228,298. Pub. 9-20-66. Filed 9-22-65.

819,847. RANGER IX. Ben I. Davis, d.b.a. Ranger Tool Company. SN 229,640. Pub. 9-20-66. Filed 10-8-65.

819,848. TRIPLEX PISTONS AND DESIGN. Dana Corporation. SN 230,797. Pub. 9-20-66. Filed 10-21-65.

819,849. KIMPRESS. Kimball Systems Inc. SN 230,843. Pub. 9-20-66. Filed 10-21-65.

819,840. TIMOR. Giesen & Forsthoff. SN 231,107. Pub. 9-20-66. Filed 10-22-65.

819,841. R UNIFIED AND DESIGN. Ralphs Unified Limited. SN 231,224. Pub. 9-20-66. Filed 10-22-65.

819,842. DRAGNAUGHT. Riggs & Lombard, Inc. SN 231,852. Pub. 9-20-66. Filed 10-29-65.

819,843. RAZOR-MATE. Ted L. Ferrier, Jr. SN 231,904. Pub. 9-20-66. Filed 11-1-65.

819,844. BEACHLEACH. Jackson Vibrators, Inc. SN 232,877. Pub. 9-20-66. Filed 11-17-65.

819,845. ORB-ION. National Research Corporation. SN 233,378. Pub. 7-26-66. Filed 11-26-65.

819,846. ZENDEL. Union Carbide Corporation. SN 233,540. Pub. 9-20-66. Filed 11-29-65.

819,847. ATLAS. Apsco Products, Inc. SN 233,558. Pub. 9-20-66. Filed 12-2-65.

819,848. MULTI-CRAFT. The Jacobs Manufacturing Company. SN 236,893. Pub. 9-20-66. Filed 1-20-66.

819,849. KEYRIFFIK. HPC, Inc. SN 237,112. Pub. 9-20-66. Filed 1-24-66.

819,850. BARLIFT. Woodford Manufacturing Co. SN 237,772. Pub. 9-20-66. Filed 2-1-66.

819,851. FIPCO AND DESIGN. Fuel Injection Parts Co., Inc. SN 237,952. Pub. 9-20-66. Filed 2-3-66.

819,852. HI-PROB. Mine and Smelter Supply Co. SN 237,995. Pub. 9-20-66. Filed 2-3-66.

819,853. ROTO-TORQ. Reed-Roller Bit Company. SN 238,562. Pub. 9-20-66. Filed 2-10-66.

819,854. PUSH EZE. The Union Fork and Hoe Company. SN 238,803. Pub. 9-20-66. Filed 2-14-66.

819,855. WASHINGTON FORGE. Washington Forge, Incorporated. SN 238,809. Pub. 9-20-66. Filed 2-14-66.

819,856. WF AND CREST DESIGN. Washington Forge, Incorporated. SN 238,810. Pub. 9-20-66. Filed 2-14-66.

819,857. R AND DESIGN. Tu-Bar Corporation. SN 238,984. Pub. 9-20-66. Filed 2-16-66.

819,858. HEIN-WERNER. Hein-Werner Corporation. SN 240,435. Pub. 9-20-66. Filed 3-8-66.

819,859. HEIN-WERNER AND DESIGN. Hein-Werner Corporation. SN 240,436. Pub. 9-20-66. Filed 3-8-66.

819,860. HEIN-WERNER AND DESIGN. Hein-Werner Corporation. SN 242,728. Pub. 9-20-66. Filed 4-5-66.

819,861. MAXIDYNE. Mack Trucks, Inc. SN 246,240. Pub. 9-20-66. Filed 6-16-66.

819,862. GULMITE. Harvey W. Bergander, d.b.a. Bergander Mfg. Co. SN 246,874. Pub. 9-20-66. Filed 6-21-66.

Class 26—Measuring and Scientific Appliances

819,863. IMPERIALE. Supreme Photo Supply Co., Inc., d.b.a. Supre-Tone. SN 190,991. Pub. 4-26-65. Filed 4-12-64.

819,864. FLIP CHIP. Digital Equipment Corporation. SN 200,706. Pub. 8-17-65. Filed 8-27-64.

819,865. VEND-TROL. Meter-All Mfg. Co., Inc. SN 203,414. Pub. 9-20-66. Filed 10-6-64.

819,866. IMPERIAL AND DESIGN. Imperial Camera Corp. SN 212,883. Pub. 8-1-66. Filed 2-26-65.

819,867. EEP/. Eugene Ernst Products Co. SN 228,815. Pub. 9-20-66. Filed 9-23-65.

819,868. BALREX AND DESIGN. Bausch & Lomb Incorporated. SN 230,605. Pub. 9-20-66. Filed 10-20-65.

819,869. MANORLINE. Jean-Pierre Marchon. SN 231,435. Pub. 9-20-66. Filed 10-28-65.

819,870. FM. Formfoto Manufacturing Company. SN 231,560. Pub. 9-20-66. Filed 10-24-65.

819,871. GIRL CATCHERS. Sea & Ski Corporation. SN 231,854. Pub. 9-20-66. Filed 10-29-65.

819,872. AURIBELL FOCUSIGHT. Birns & Sawyer Cine Equipment Co., Inc. SN 235,488. Pub. 9-20-66. Filed 12-29-65.

819,873. "IMPLION." Ion Physics Corporation. SN 240,619. Pub. 9-20-66. Filed 3-10-66.

819,874. HEAT SPY. William Wahl Corporation. SN 242,689. Pub. 9-20-66. Filed 4-4-66.

Class 29—Brooms, Brushes, and Dusters

819,875. DENT-O-MATIC. Etablissement Calliope. SN 149,067. Pub. 4-26-64. Filed 7-16-63.

819,876. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,790. Pub. 9-20-66. Filed 9-14-65.

Class 30—Crockery, Earthenware, and Porcelain

819,877. L LENOX AND DESIGN. Lenox, Incorporated. SN 230,664. Pub. 9-20-66. Filed 10-20-65.

Class 31—Filters and Refrigerators

819,878. ORIGINAL SWK AND DESIGN. Seitz-Asbest-Werke Theo & Geo Seitz Kommanditgesellschaft. SN 229,881. Pub. 9-20-66. Filed 6-10-65.

819,879. PACER. The Dole Valve Company. SN 223,540. Pub. 9-20-66. Filed 7-16-65.

819,880. DIRECTOR. The Dole Valve Company. SN 223,541. Pub. 9-20-66. Filed 7-16-65.

819,881. CITATION. The Dole Valve Company. SN 223,542. Pub. 9-20-66. Filed 7-16-65.

819,882. UCEGO. UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme. SN 229,383. Pub. 9-20-66. Filed 10-5-65.

819,883. TRITRON AND DESIGN. M. R. Holmes, Jr. SN 230,247. Pub. 9-20-66. Filed 10-15-65.

819,884. GLASCO. Universal Match Corporation. SN 232,486. Pub. 9-20-66. Filed 11-10-65.

Class 32—Furniture and Upholstery

819,885. M. Motorola, Inc. SN 208,019. Pub. 9-28-65. Filed 12-14-64.

819,886. BABY RELAX. Baby Relax Ltd. SN 209,267. Pub. 9-20-66. Filed 1-6-65.

819,887. ZEFCO. Zefyr Industries, Inc. SN 227,982. Pub. 9-20-66. Filed 9-16-65.

819,888. LUXURY CUSHION. Tri-State Bedding Company, Incorporated. SN 233,200. Pub. 9-20-66. Filed 11-23-65.

819,889. LIBERTY HILL. Forest Products Corporation. SN 237,687. Pub. 9-20-66. Filed 2-1-66.

819,890. SANTIAGO. Forest Products Corporation. SN 237,686. Pub. 9-20-66. Filed 2-1-66.

Class 34—Heating, Lighting, and Ventilating Apparatus

819,777. (See Class 15 for this trademark.)

819,891. SELECT-A-GAS. Robertshaw Controls Company. SN 211,580. Pub. 9-20-66. Filed 2-8-65.

819,892. CASCADE CONVERTOR. The International Boiler Works Co. SN 216,956. Pub. 9-20-66. Filed 4-20-65.

819,893. VAPORAIRE. H. Sam Dick Company, Inc. SN 221,255. Pub. 9-20-66. Filed 6-16-65.

819,894. VECTROL. Allied Thermal Corporation. SN 223,207. Pub. 9-20-66. Filed 7-12-65.

819,895. H & B. American Hoist & Derrick Company. SN 226,882. Pub. 9-20-66. Filed 9-1-65.

819,896. CORRU-TUBE. Pall Corporation. SN 227,771. Pub. 9-20-66. Filed 9-14-65.

819,897. TANDEM-TEMP. Continental Manufacturing Company. SN 233,463. Pub. 9-20-66. Filed 11-29-65.

819,898. CANAVERAL. Robert Evans Company, Inc. SN 233,588. Pub. 9-20-66. Filed 11-30-65.

819,899. BIG 98. Tescom Corporation. SN 236,540. Pub. 9-20-66. Filed 1-17-66.

819,900. BIG 98A. Tescom Corporation. SN 236,544. Pub. 9-20-66. Filed 1-17-66.

819,901. SLIM-PAC. Luxaire, Inc. SN 239,058. Pub. 9-20-66. Filed 2-17-66.

819,902. SOLAR GUN. The Coleman Company, Inc. SN 239,382. Pub. 9-20-66. Filed 2-23-66.

819,903. SOLAR PAL. The Coleman Company, Inc. SN 239,384. Pub. 9-20-66. Filed 2-23-66.

819,904. STA LITE. The Coleman Company, Inc. SN 239,385. Pub. 9-20-66. Filed 2-23-66.

819,905. WESTWOOD. Williams Furnace Company. SN 240,568. Pub. 9-20-66. Filed 3-9-66.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

819,906. GLYD RINGS. W. S. Shamban & Co. SN 168,418. Pub. 10-8-63. Filed 2-25-63.

819,907. UDS. United Distributors Service, Inc., d.b.a. United Distributors Service. SN 227,791. Pub. 9-20-66. Filed 9-14-65.

Class 36—Musical Instruments and Supplies

819,908. ARISTO. Aristo-Tone Electronics, Inc. SN 233,560. Pub. 9-20-66. Filed 12-6-65.

Class 37—Paper and Stationery

819,909. GOLD LINE. Paper Products Incorporated. SN 226,566. Pub. 9-20-66. Filed 8-26-65.

819,910. H AND DESIGN. Hamilton Manufacturing Company, Inc. SN 233,603. Pub. 9-20-66. Filed 2-4-66.

819,911. WITE-OUT. Edwin Johannknecht, d.b.a. Color-Out Supply. SN 247,435. Pub. 9-20-66. Filed 1-28-66.

Class 38—Prints and Publications

819,912. KLEENTEAR. Kleentear, Incorporated. SN 197,723. Pub. 9-20-66. Filed 7-13-64.

819,913. SKI COUNTRY USA. Colorado Ski Country U.S.A., Inc., by change of name from Ski Country USA, Inc. SN 216,737. Pub. 9-20-66. Filed 4-16-65.

819,914. PROJECT CONCERN. Project Concern. SN 230,878. Pub. 9-20-66. Filed 6-10-65.

819,915. ARCHWAY BOOKS AND DESIGN. Pocket Books, Inc. SN 237,515. Pub. 6-7-66. Filed 9-9-65.

819,916. CITGO AND DESIGN. Cities Service Oil Company. SN 228,633. Pub. 9-20-66. Filed 9-27-65.

819,917. WORLD AND DESIGN. The World Publishing Company. SN 228,788. Pub. 9-20-66. Filed 9-27-65.

819,918. THE GOLD BUG. Arthur F. Lassagne, d.b.a. The Gold Bug Publishing Co. SN 229,531. Pub. 9-20-66. Filed 10-7-65.

819,919. SMILES. The National Research Bureau, Inc. SN 235,213. Pub. 9-20-66. Filed 12-23-65.

819,920. THE NEW HIP LINE AND DESIGN. Moderne Card Co., Inc., d.b.a. Moderne Card Co. SN 235,218. Pub. 9-20-66. Filed 12-27-65.

819,921. VITRAMON NEWS. Vitramon, Incorporated. SN 235,446. Pub. 9-20-66. Filed 12-28-65.

819,922. LOOK-A-BOO. Norcross, Inc. SN 236,122. Pub. 9-20-66. Filed 1-10-66.

819,923. WONDERMENT. Norcross, Inc. SN 236,127. Pub. 9-20-66. Filed 1-10-66.

819,924. HATS OFF TO YOU. Norcross, Inc. SN 236,128. Pub. 9-20-66. Filed 1-10-66.

819,925. OB/GYN DIGEST. Ob/Gyn Digest, Inc. SN 236,131. Pub. 9-20-66. Filed 1-10-66.

819,926. SUN WORLD AND DESIGN. Outdoor American Corporation. SN 236,620. Pub. 9-20-66. Filed 1-17-66.

819,927. THE OUTDOORSMAN. The Outdoorsman Publishing Co. SN 236,631. Pub. 9-20-66. Filed 1-17-66.

819,928. SIGNATURE. The Diners' Club, Inc. SN 237,544. Pub. 9-20-66. Filed 1-28-66.

819,929. THE HIGH-RISER ETC. Publishers' Allied Services, Inc. SN 245,754. Pub. 9-20-66. Filed 5-16-66.

Class 39—Clothing

819,683. (See Class 1 for this trademark.)

819,930. STRETCHINI MAKES STRETCH-RITHMETIC. Stretchini, Inc. SN 222,077. Pub. 9-20-66. Filed 6-28-65.

819,931. BRIAR. Mister Cravate. SN 223,699. Pub. 9-20-66. Filed 7-19-65.

819,932. VARIL. Harriet Taylor, d.b.a. Varil Industries. MULTIPLE CLASS (Classes 39 and 40). SN 226,214. Pub. 9-20-66. Filed 8-6-65.

819,933. KEY. Key Work Clothes, Inc. SN 227,508. Pub. 9-20-66. Filed 9-9-65.

819,934. FANCEE FREE "SOMEGET-ME-NOT" PANTIHOSE. Fancee Free Manufacturing Co. Inc. SN 229,221. Pub. 9-20-66. Filed 10-4-65.

819,935. STRATHMORE. Strathmore Shoe Co., Inc. SN 231,277. Pub. 9-20-66. Filed 10-22-65.

819,936. KOOLON. The Koolon Company. SN 231,572. Pub. 9-20-66. Filed 10-24-65.

819,937. GOLD CROWN MINK. Radley Furs, Inc. SN 231,612. Pub. 9-20-66. Filed 10-24-65.

819,938. THERESE AHRENS. Therese Ahrens, Inc. SN 232,645. Pub. 9-20-66. Filed 11-15-65.

819,939. STD. Edmont, Inc. SN 232,684. Pub. 9-20-66. Filed 11-15-65.

819,940. RISSINDEATH 'AIR INSULATED' SKI GLOVES AND DESIGN. Rissindeath Glove Co. SN 232,685. Pub. 9-20-66. Filed 11-15-65.

819,941. QUEEN TEENS AND DESIGN. Autry-Baker Shoe Corp. SN 233,805. Pub. 9-20-66. Filed 11-26-65.

819,942. CO-ED COLLEGIANS AND DESIGN. Belcrest Distributors, Inc. SN 233,806. Pub. 9-20-66. Filed 11-26-65.

819,943. FLYN-BROOKE. Flynbrooke Clothes, Inc. SN 233,432. Pub. 9-20-66. Filed 11-29-65.

819,944. A LADY HOWARD CREATION. Howard Stores Corporation. SN 233,503. Pub. 9-20-66. Filed 11-29-65.

819,945. THE SHOE WITH THE LIVELY LOOK. Hamilton Shoe Company. SN 233,901. Pub. 9-20-66. Filed 12-3-65.

819,946. PEG-A-DILLY. Hicks-Ponder Co. SN 234,199. Pub. 9-20-66. Filed 12-8-65.

819,947. RAIN-BLOWS. Zimmon & Company, Inc. SN 234,985. Pub. 9-20-66. Filed 12-20-65.

819,948. STRETCHLIN. Champ Hats, Inc. SN 235,049. Pub. 9-20-66. Filed 12-17-65.

819,949. KILLER JOE'S BELL BOTTOMS AND DESIGN. Casual Sportswear Co., Inc. SN 235,062. Pub. 9-20-66. Filed 12-20-65.

819,950. KILLER JOE'S AND DESIGN. Casual Sportswear Co., Inc. SN 235,063. Pub. 9-20-66. Filed 12-20-65.

819,951. KILLER JOE'S TAPERED JEANS AND DESIGN. Casual Sportswear Co., Inc. SN 235,064. Pub. 9-20-66. Filed 12-20-65.

819,952. MANCREST. Mangel Stores Corporation. SN 235,916. Pub. 9-20-66. Filed 12-29-65.

819,953. GIANT SEE-THRU. Jack Verderame, d.b.a. Giant See-Thru Hat Co. SN 235,539. Pub. 9-20-66. Filed 12-29-65.

819,954. SCALP CAP. The Fibre-Metal Products Company. SN 235,559. Pub. 9-20-66. Filed 12-30-65.

819,955. GYRO SHANK AND DESIGN. Plymouth Shoe Company. SN 236,200. Pub. 9-20-66. Filed 1-11-66.

819,956. GYRO STEP AND DESIGN. Plymouth Shoe Company. SN 236,201. Pub. 9-20-66. Filed 1-11-66.

819,957. GYRO TRED AND DESIGN. Plymouth Shoe Company. SN 236,202. Pub. 9-20-66. Filed 1-11-66.

819,958. DOUBLE CROWN AND DESIGN. Standard Knitting Mills, Inc. SN 236,296. Pub. 9-20-66. Filed 1-12-66.

819,959. SUMNER. C. W. Anderson Hosiery Company. SN 236,246. Pub. 9-20-66. Filed 1-12-66.

819,960. COUNTER ARCH. Ralph A. Burke. SN 236,459. Pub. 9-20-66. Filed 1-14-66.

819,961. LUSTRECETTE. Leslie Fay, Inc. SN 236,738. Pub. 9-20-66. Filed 1-18-66.

819,962. MIRACETTE. Leslie Fay, Inc. SN 236,862. Pub. 9-20-66. Filed 1-19-66.

819,963. GREKORS. El Greco Leather Products Co. Inc. SN 236,862. Pub. 9-20-66. Filed 1-5-66.

819,964. CLOUD HOPPER AND DESIGN. Wayne Knitting Mills. SN 246,428. Pub. 9-20-66. Filed 5-24-66.

819,965. ROAST BEEF. Melville Shoe Corporation. SN 247,960. Pub. 9-20-66. Filed 6-13-66.

819,966. GIDDY UP. Vanity Fair Mills, Inc. SN 249,098. Pub. 9-20-66. Filed 6-27-66.

Class 40 — Fancy Goods, Furnishings, and Notions

819,932. (See Class 39 for this trademark.)

819,967. O.H.S. O.H.S. Inc. SN 239,542. Pub. 9-20-66. Filed 2-24-66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

819,968. BELLAINE. Bellaine Fabrics, Inc. SN 233,575. Pub. 9-20-66. Filed 11-30-65.

819,969. VISTRAM AND DESIGN. Farbenfabriken Bayer Aktiengesellschaft. SN 234,191. Pub. 9-20-66. Filed 12-8-65.

819,970. GLENCREPE. Glen Raven Knitting Mills, Inc. SN 234,816. Pub. 9-20-66. Filed 12-17-65.

819,971. AMES. Ames Shower Curtain Co., Inc. SN 234,867. Pub. 9-20-66. Filed 12-20-65.

819,972. HAMPSHIRE. J. P. Stevens & Co., Inc. SN 235,238. Pub. 9-20-66. Filed 12-23-65.

819,973. CERTIFIED WHIPPED CREAM. Klopman Mills, Inc. SN 235,567. Pub. 9-20-66. Filed 12-30-65.

819,974. PORTHAU. Fieldcrest Mills, Inc. SN 238,068. Pub. 9-20-66. Filed 2-4-66.

819,975. CONE PUFF. Cone Mills Corporation. SN 238,497. Pub. 9-20-66. Filed 2-10-66.

819,976. L'ETERNEAU. Fieldcrest Mills, Inc. SN 238,511. Pub. 9-20-66. Filed 2-10-66.

819,977. BORGAZIA. Amphenol Corporation. SN 238,596. Pub. 9-20-66. Filed 2-11-66.

819,978. POLYWARD. Cone Mills Corporation. SN 238,836. Pub. 9-20-66. Filed 2-15-66.

819,979. HO-DADDY. J. P. Stevens & Co., Inc. SN 238,895. Pub. 9-20-66. Filed 2-15-66.

819,980. RHYMETTE. Deering Milliken, Inc. SN 238,983. Pub. 9-20-66. Filed 2-16-66.

819,981. SOCIALITE. Deering Milliken, Inc. SN 238,984. Pub. 9-20-66. Filed 2-16-66.

819,982. LIBRETTO. Deering Milliken, Inc. SN 238,985. Pub. 9-20-66. Filed 2-16-66.

819,983. LEPRILLE. Deering Milliken, Inc. SN 238,936. Pub. 9-20-66. Filed 2-16-66.

Class 43 — Thread and Yarn

819,984. TRANSITE. Roddy Recreation Products, Inc. SN 204,506. Pub. 9-20-66. Filed 10-21-64.

819,985. PINGOUIN CHASSEUR. Filatures Prouvost & Cie La Lainiere de Roubaix. SN 235,652. Pub. 9-20-66. Filed 1-3-66.

819,986. MAITRE PINGOUIN. Filatures Prouvost & Cie La Lainiere de Roubaix. SN 235,654. Pub. 9-20-66. Filed 1-3-66.

819,987. QUATRE PINGOUINS. Filatures Prouvost & Cie La Lainiere de Roubaix. SN 235,657. Pub. 9-20-66. Filed 1-3-66.

Class 44 — Dental, Medical, and Surgical Appliances

819,931. (See Class 4 for this trademark.)

819,968. EMS AND DESIGN. Electronic Medical Specialties, Inc. SN 176,293. Pub. 9-20-66. Filed 9-4-63.

819,989. UNIBOND. Ethicon, Inc. SN 218,974. Pub. 11-23-65. Filed 5-17-65.

819,990. MONITUBE. The E. R. Mastaught Company. SN 227,509. Pub. 9-20-66. Filed 9-9-65.

819,991. SHEAR CUT. The Bates File Mfg. Co. SN 232,515. Pub. 9-20-66. Filed 11-12-65.

Class 45 — Soft Drinks and Carbonated Waters

819,992. COMPROMISE. Best-Ever Beverage Corporation. SN 223,330. Pub. 9-20-66. Filed 7-15-65.

819,993. CANADA DRY AND DESIGN. Canada Dry Corporation. SN 228,220. Pub. 9-20-66. Filed 9-22-65.

Class 46 — Foods and Ingredients of Foods

819,931. (See Class 4 for this trademark.)

819,994. MINUTE. General Foods Corporation. SN 184,716. Pub. 6-16-64. Filed 1-16-64.

819,995. RIVOL. Condiments & Spices, Inc. SN 192,078. Pub. 9-20-66. Filed 4-21-64.

819,996. LOOK FOR THE GOLDEN ARCHES. McDonald's Corporation (Delaware corporation), by merger of and change of name from McDonald's Corporation (Illinois corporation). SN 199,587. Pub. 9-20-66. Filed 8-10-64.

819,997. THE MAGIC NUT AND DESIGN. Samuel J. Saal, d.b.a. Magic Nut Kitchens. SN 209,209. Pub. 9-20-66. Filed 1-4-65.

819,998. DELMONICO. N.V. Biscuit- en Chocoladefabriek Victoria. SN 213,200. Pub. 9-20-66. Filed 2-8-65.

819,999. LA FORTUNA. Patrick Cudahy Inc. SN 214,062. Pub. 9-20-66. Filed 3-15-65.

820,000. PERKINS PANCAKE HOUSES. Matthew R. Perkins, d.b.a. Perkins Pancake Houses. SN 214,369. Pub. 9-20-66. Filed 3-17-65.

820,001. HI FLO. National Starch and Chemical Corporation. SN 215,869. Pub. 9-27-66. Filed 4-1-65.

820,002. WHITE LILY AND DESIGN. J. Allen Smith & Company. SN 216,208. Pub. 9-20-66. Filed 4-9-65.

820,003. CREST-PAC. Fairmont Foods Company, assignee of Johnson Nut Company. SN 216,598. Pub. 9-20-66. Filed 4-16-65.

820,004. IXL AND DESIGN. Nalley's, Inc. SN 217,199. Pub. 9-20-66. Filed 4-23-65.

820,005. LAMB'S. Lamb-Weston, Inc. SN 220,947. Pub. 9-20-66. Filed 6-11-65.

820,006. IDAHO'S PRIDE. Fruitland Canning Association, Inc. SN 223,225. Pub. 9-20-66. Filed 7-12-65.

820,007. BUTTAMUNCHY. Patersons Scottish Shortbread Ltd. SN 223,238. Pub. 9-2-66. Filed 7-14-65.

820,008. GOLDEN TROUT. W. F. Cosart Packing Co., assignee of Harding & Leggett, Inc. SN 224,739. Pub. 8-9-66. Filed 8-9-65.

820,009. MEMORY AND DESIGN. Nugget Foods, Inc., by change of name from Frank M. Wilson Company, Inc. SN 225,283. Pub. 8-16-66. Filed 8-9-65.

820,010. PLYMOUTH ROCK. Food Corporation of America, Inc., d.b.a. Plymouth Rock Provision Co. SN 227,024. Pub. 6-28-66. Filed 9-2-65.

820,011. SCHWARE AND DESIGN. Schwarz Services International Limited. SN 228,842. Pub. 9-20-66. Filed 9-28-65.

820,012. POLKA DOT. Ward Foods, Inc. SN 229,884. Pub. 9-20-66. Filed 10-5-65.

820,013. OATPORT. Nugget Foods, Inc., by change of name from Frank M. Wilson Company, Inc., d.b.a. Frank M. Wilson Company and Frank M. Wilson Co., Inc. SN 231,234. Pub. 5-3-66. Filed 10-22-65.

820,014. GRILL. Nugget Foods, Inc., by change of name from Frank M. Wilson Company, Inc., d.b.a. Frank M. Wilson Co., Inc., and Frank M. Wilson Co. SN 231,235. Pub. 5-3-66. Filed 10-22-65.

820,015. KEY BASIN. Nugget Foods, Inc., by change of name from Frank M. Wilson Company, Inc., d.b.a. Frank M. Wilson Co., Inc. and Frank M. Wilson Company. SN 231,236. Pub. 5-3-66. Filed 10-22-65.

820,016. DESIGN OF MAN. Chop Chop Corporation. SN 234,808. Pub. 9-20-66. Filed 1-12-66.

820,017. MEYER RITE AND DESIGN. National Pectin Products Company. SN 239,648. Pub. 9-20-66. Filed 2-25-66.

820,018. GOLDEN TROUT AND DESIGN. W. F. Cosart Packing Co. SN 246,134. Pub. 9-20-66. Filed 5-20-66.

Class 47 — Wines

820,019. MONSECCO AND DESIGN. Conte Don Ugo Ravizza. SN 188,029. Pub. 9-20-66. Filed 2-5-64.

820,020. RUINART PERE & FILS. Schieffelin & Co. SN 213,365. Pub. 9-20-66. Filed 3-4-65.

Class 49 — Distilled Alcoholic Liquors

820,021. BRANDY TRES MEDALLAS AND DESIGN. Hijos de Agustin Blasquez. SN 216,868. Pub. 9-20-66. Filed 5-14-65.

820,022. CLAYMORE. MacDonald Greenlees Limited. SN 245,128. Pub. 9-20-66. Filed 5-9-66.

Class 50 — Merchandise Not Otherwise Classified

820,023. SANTA TRIM. Tri-Pac Sales Co. SN 227,996. Pub. 9-20-66. Filed 9-16-65.

820,024. SUN RIVAL. Coleman Company, Inc., assignee of Beise Cascade Corporation. SN 229,488. Pub. 9-20-66. Filed 10-7-65.

820,025. SNO KIST AND DESIGN. Sno Kist Tree Corporation. SN 229,690. Pub. 9-20-66. Filed 10-8-65.

820,026. VELCOIN. American Velcro, Inc. SN 230,862. Pub. 9-20-66. Filed 2-1-66.

820,027. VELSTICK. American Velcro, Inc. SN 230,863. Pub. 9-20-66. Filed 2-1-66.

820,028. GUARDIAN AND DESIGN. Jones Brothers Co. SN 241,245. Pub. 9-20-66. Filed 3-18-66.

Class 51 — Cosmetics and Toilet Preparations

819,931. (See Class 4 for this trademark.)

820,029. ALLERCREME A FOR MEN. Jaffe, Inc., assignee of Texas Pharmical Company. SN 218,243. Pub. 8-2-66. Filed 5-5-65.

820,030. MALE TRAM. L'Oreal, Societe Anonyme. SN 220,115. Pub. 9-20-66. Filed 6-1-65.

820,031. U-K AND DESIGN. Max Goldmann, d.b.a. U-K Manufacturing Co., Inc. SN 220,182. Pub. 9-20-66. Filed 6-1-65.

820,032. MISCELLANEOUS DESIGN. Colgate-Palmolive Company. SN 220,278. Pub. 9-20-66. Filed 6-3-65.

820,033. MOONSHINE. Hi-Score Toiletries, Inc. SN 221,207. Pub. 9-20-66. Filed 6-16-65.

820,034. SANS SOUCI DE SCHIAPARELLI. Parfums Schiaparelli, Inc. SN 223,447. Pub. 9-20-66. Filed 7-15-65.

820,035. SLEEPING. Parfums Schiaparelli, Inc. SN 223,448. Pub. 9-20-66. Filed 7-15-65.

820,036. QUEEN'S GARDEN. Harbour Islanders, Ltd. SN 223,668. Pub. 9-20-66. Filed 7-19-65.

820,037. RIGHT TOUCH. Alberto-Culver Company. SN 223,767. Pub. 9-20-66. Filed 7-20-65.

820,038. ARROWHEAD. International Flavors & Fragrances Inc. SN 223,893. Pub. 9-20-66. Filed 7-21-65.

820,039. PRIVATE STOCK. Sterling International Trading Co. Limited. SN 223,916. Pub. 9–20–66. Filed 7–21–65.

820,040. MARAXAN. Jakob Dreiding. SN 228,159. Pub. 9–20–66. Filed 9–20–65.

820,041. DIADERME. Chas. Pfizer & Co., Inc. SN 228,180. Pub. 9–20–66. Filed 9–20–65.

820,042. BADINAGE. Chas. Pfizer & Co., Inc. SN 228,182. Pub. 9–20–66. Filed 9–20–65.

820,043. H.M.S. Briar Toiletries, Inc. SN 229,055. Pub. 9–20–66. Filed 10–1–65.

820,044. JOHN GARTON HEGO. L. T. Products, Ltd., d.b.a. John Garton Distributors International. SN 229,260. Pub. 9–20–66. Filed 10–4–65.

820,045. TICKY-STICKY. Gummit Laboratories, Inc. SN 235,434. Pub. 9–20–66. Filed 12–28–65.

820,046. KEYNOTE. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics. SN 236,144. Pub. 9–20–66. Filed 1–10–66.

820,047. PRINCESS VAL. Chase Products Co. SN 236,968. Pub. 9–20–66. Filed 1–21–66.

820,048. ARMADA. Germaine Monteil Cosmetiques Corp. SN 237,692. Pub. 9–20–66. Filed 2–1–66.

820,049. SILKEN RORE. Maradel Products, Inc., d.b.a. Tre-Jur. SN 237,719. Pub. 9–20–66. Filed 2–1–66.

820,050. FEARONCE AND DESIGN. Fearonce Beauty Products, Inc. SN 239,836. Pub. 9–20–66. Filed 3–1–66.

820,051. STRANGE MOODS. Harry B. Morton, d.b.a. Parfums Dinard. SN 240,381. Pub. 9–20–66. Filed 2–24–66.

820,052. FARNELLE. Maurice Farnel, d.b.a. Farnelle Distributor. SN 240,512. Pub. 9–20–66. Filed 3–9–66.

820,053. MISCELLANEOUS DESIGN. Produits de Beaute-Parfums Jean d'Avese. SN 240,647. Pub. 9–20–66. Filed 3–10–66.

820,054. SCREWDRIVER. World Wide Perfumes, Inc. SN 240,694. Pub. 9–20–66. Filed 3–10–66.

820,055. TASK. Helene Curtis Industries, Inc. SN 240,713. Pub. 9–20–66. Filed 3–11–66.

820,056. BLUE WONDER. Beauty Counselors, Inc. SN 240,842. Pub. 9–20–66. Filed 3–14–66.

820,057. NEO DERMITOL. Beauty Counselors, Inc. SN 240,843. Pub. 9–20–66. Filed 3–14–66.

820,058. BIO-SPRAE AND DESIGN. Redken Laboratories, Inc. SN 243,750. Pub. 9–20–66. Filed 4–19–66.

Class 52 — Detergents and Soaps

819,691. (See Class 4 for this trademark.)

820,059. ALL-BRANDS. Lehn & Fink Products Corporation, assignee of The Beacon Company. SN 172,866. Pub. 9–20–66. Filed 7–12–63.

820,060. MILKHOUSE. Fleet Wholesale Supply Co., Inc. SN 199,697. Pub. 9–20–66. Filed 8–14–64.

820,061. WAX-AWAY. W. R. Grace & Co. SN 206,941. Pub. 9–20–66. Filed 11–25–64.

820,062. PERKY PENGUIN. Chas. Pfizer & Co., Inc. SN 214,912. Pub. 9–20–66. Filed 3–24–65.

820,063. LYNX AND DESIGN. Joseph F. Rosinsky, Jr., d.b.a. Lynx Products. SN 224,244. Pub. 9–20–66. Filed 7–26–65.

820,064. STRENGTH. Wyandotte Chemicals Corporation. SN 224,283. Pub. 9–20–66. Filed 7–26–65.

820,065. DUSTRAP. Gem, Incorporated. SN 224,415. Pub. 1–11–66. Filed 7–28–65.

820,066. RADIANT GOLD. Morrie Chaitlen, d.b.a. C. & R. Marshall Co. SN 232,978. Pub. 7–19–66. Filed 11–19–65.

820,067. GLAMOL. Heinz Muller-Touraine, d.b.a. Touraine Chemical Co. SN 239,556. Pub. 9–20–66. Filed 2–24–66.

820,068. HIGH CHIEF AND DESIGN. King Kullen Grocery Co., Inc. SN 248,894. Pub. 9–20–66. Filed 6–20–66.

Service Marks

Class 100 — Miscellaneous

820,069. XOGRAPH. Visual Panographics, Inc. SN 188,684. Pub. 1–5–65. Filed 3–13–64.

820,070. PE SERVICES CO. WORLD-WIDE PETROLEUM ENGINEERING SERVICES AND DESIGN. George R. Colton. SN 214,841. Pub. 9–20–66. Filed 3–24–65.

820,071. TAMORA KENNELS AND DESIGN. Hugh R. Morgan, d.b.a. Tamora Kennels. SN 215,935. Pub. 9–20–66. Filed 4–2–65.

820,072. MARK LIPMAN SERVICE. Mark Lipman Service, Inc. SN 223,132. Pub. 9–20–66. Filed 7–13–65.

820,073. TACO BELL. Taco Bell. SN 223,146. Pub. 9–20–66. Filed 7–19–65.

820,074. HOLIDAY HOME AND DESIGN. Holiday Homes, Inc. SN 224,746. Pub. 8–2–66. Filed 8–2–65.

820,075. WRH. Weyerhaeuser Company. SN 227,899. Pub. 9–20–66. Filed 9–15–65.

Class 101 — Advertising and Business

820,076. BOOKY AND DESIGN. Robert Jonas. SN 176,197. Pub. 9–20–66. Filed 9–3–63.

820,077. FOUR PLUS. Couponing, Promotions & Sampling, Inc. SN 191,135. Pub. 9–20–66. Filed 4–15–64.

820,078. NEVER UNDERESTIMATE THE POWER OF A WOMAN. The Curtis Publishing Company. SN 196,121. Pub. 9–20–66. Filed 6–22–64.

820,079. ILLUMINAD. Star Advertising Co., Inc. SN 200,792. Pub. 9–20–66. Filed 8–27–64.

820,080. SKI COUNTRY USA. Colorado Ski Country U.S.A. Inc., by change of name from Ski Country USA, Inc. SN 216,738. Pub. 9–20–66. Filed 4–16–65.

820,081. GIRL TYPING (DESIGN). Ann Thomas. SN 221,312. Pub. 9–20–66. Filed 6–16–65.

820,082. PACE. Statistical Tabulating Corporation. SN 232,360. Pub. 8–2–66. Filed 11–8–65.

Class 102 — Insurance and Financial

820,083. GALLOPING STAGE DESIGN. Wells Fargo Bank. SN 235,144. Pub. 9–20–66. Filed 12–22–65.

Class 103 — Construction and Repair

820,084. 3 FIREMEN (DESIGN). Halprin Supply Company. SN 199,740. Pub. 9–20–66. Filed 8–12–64.

820,085. VAC-VAN. Terry F. Gayes. SN 230,758. Pub. 9–20–66. Filed 6–9–65.

Class 105 — Transportation and Storage

820,086. GOLF TOURS INTERNATIONAL GENERAL TOURS AND DESIGN. General Tours, Inc. SN 219,559. Pub. 9–20–66. Filed 5–24–65.

Class 107 — Education and Entertainment

820,087. BEWITCHED AND DESIGN. Screen Gems, Inc. SN 206,477. Pub. 2–22–66. Filed 11–16–64.

Collective Membership Marks

Class 200

820,088. IMPRESARIO CULTURAL SOCIETY. Impresario Cultural Society. SN 239,262. Pub. 9–20–66. Filed 2–25–66.

820,089. UNIVERSITY OF DAYTON-1850 AND DESIGN. University of Dayton. SN 240,123. Pub. 9–20–66. Filed 3–3–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to oppositions.

Class 4 — Abrasives and Polishing Materials

820,090. Malco Products, Inc., Akron, Ohio. SN 197,406. Filed P.R. 7–8–64; Am. S.R. 9–23–66.

FAST WAX

For Automobile Wax and Cleaner.
First use December 1963.

Class 12 — Construction Materials

820,091. Howmet Corporation, New York, N.Y., by change of name from Howe Sound Company, Dallas, Tex. SN 226,659. Filed P.R. 8–27–65; Am. S.R. 10–3–66.

TWIN-VEE

For Panels for Use as Facing of Commercial and Industrial Buildings.
First use Apr. 22, 1965.

Class 14 — Metals and Metal Castings and Forgings

820,092. Edward H. Bone, Cincinnati, Ohio. SN 222,382. Filed P.R. 7–15–65; Am. S.R. 10–6–66.

Liquid—Forged

For Pressure Cast, Die Cast, Investment Cast and Centrifugal Cast Metal.
First use June 28, 1965.

Class 15 — Oils and Greases

820,093. Compagnie Francaise de Raffinage, Societe Anonyme, and Compagnie Francaise des Petroles, Societe Anonyme (joint owners), Paris, France. SN 167,061. Filed P.R. 4–11–63; Am. S.R. 9–23–66.



Owner of French Reg. No. 468,965, dated June 28, 1957 (Seine); Natl. Inst. No. 92,543; and U.S. Reg. Nos. 616,438 and 643,482. The drawing is lined for red, blue and gold.
For Lubricating Oils and Greases and Hydrocarbon Fuels.

820,094. Royal Candle Company, Inc., Union City, N.J. SN 228,937. Filed P.R. 9–29–65; Am. S.R. 10–5–66.

PARFUM DANS FLAMME

For Candles.
First use June 24, 1965.

Class 17 — Tobacco Products

820,095. Freeman & Gossage, Inc., San Francisco, Calif. SN 192,704. Filed P.R. 5–5–64; Am. S.R. 10–3–66.

DR. JOHNSON

The mark "Dr. Johnson" identifies "Samuel Johnson," deceased.
For Snuff.
First use Apr. 15, 1964.

820,096. The American Tobacco Company, New York, N.Y. SN 240,238. Filed 3–7–66.

TIPTON

For Cigars.
First use Dec. 18, 1964.

Class 18—Medicines and Pharmaceutical Preparations

820,097. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. SN 176,466. Filed P.R. 9-6-63; Am. S.R. 10-4-66.

UNOGRAM

For Medicinal Preparation in Tablet Form for Treating Infections of the Urinary Tract.
First use Apr. 19, 1962.

820,098. Kasar Laboratories, Niles, Ill. SN 228,465. Filed P.R. 9-23-65; Am. S.R. 9-30-66.

TAMES PRIVATE PAIN

For Local Anesthetic, Antiseptic Pharmaceutical Preparation.
First use Sept. 14, 1965.

Class 19—Vehicles

820,099. American Hydrofoils, Inc., New York, N.Y. SN 189,133. Filed P.R. 3-20-64; Am. S.R. 10-11-66.

AQUAFOIL

For Boats and Ships.
First use Feb. 9, 1964.

Class 22—Games, Toys, and Sporting Goods

820,100. Janet L. Hall, d.b.a. House of Ideas, Naperville, Ill. SN 213,009. Filed P.R. 3-1-65; Am. S.R. 10-5-66.

TROLL FADS

No exclusive right to the word "Troll" is claimed apart from the mark as shown.
For Doll Clothes.
First use Nov. 26, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

820,101. White Consolidated Industries, Inc., Cleveland, Ohio. SN 241,210. Filed P.R. 8-16-66; Am. S.R. 9-14-66.

TESSLER

For Sewing Machines.
First use at least as early as Sept. 10, 1964.

Class 26—Measuring and Scientific Appliances

820,102. Kar Temp Co., Inc., Burton, Md., assignee of Joseph M. Gamson, III, Baltimore, Md. SN 209,891. Filed P.R. 1-11-65; Am. S.R. 6-6-66.

WEATHER GUIDE

For Temperature and Weather Indicating Instrument.
First use June 30, 1964.

820,103. George B. Ramsey, Starkville, Miss. SN 229,870. Filed P.R. 10-11-65; Am. S.R. 9-30-66.

RATIO-GRAPH

For Graphical Tables for Solving Problems of Psychometrics Including Air Conditioning Computations.
First use Mar. 27, 1963.

Class 32—Furniture and Upholstery

820,104. Business Efficiency Aids, Inc., Skokie, Ill. SN 196,943. Filed P.R. 7-2-64; Am. S.R. 10-5-66.

MULTI-SIZE

For Card Trays.
First use November 1963.

Class 37—Paper and Stationery

820,105. Quality Industries Inc., Philadelphia, Pa. SN 226,378. Filed P.R. 8-24-65; Am. S.R. 5-27-66.



Without prejudice to common-law rights, the word "Bookmark" is disclaimed apart from the mark as shown.
For Woven Bookmarks.
First use Sept. 15, 1942.

Class 38—Prints and Publications

820,106. Interscience Information, Inc., New York, N.Y. SN 211,535. Filed P.R. 2-8-65; Am. S.R. 10-5-66.

INFORMATION CENTER ON POPULATION PROBLEMS

For Periodically-Issued Publications in the Nature of a Newsletter and Backgrounder Containing Information, Commentary and Other Matters of Interest.
First use Jan. 20, 1965.

820,107. Newhall Newspapers Incorporated, Newhall, Calif. SN 220,786. Filed P.R. 6-9-65; Am. S.R. 9-29-66.

THE VALENCIA VALLEY NEWS

For Newspaper Published Weekly.
First use Apr. 23, 1965.

820,108. Washington Magazine, Inc., Washington, D.C. SN 230,106. Filed P.R. 10-13-65; Am. S.R. 10-5-66.

CAPITAL COMMENT

For Printed Publication.
First use Sept. 24, 1965.

820,109. Washington Magazine, Inc., Washington, D.C. SN 230,107. Filed P.R. 10-13-65; Am. S.R. 10-5-66.

THE RESOLUTE SHOPPER

For Printed Publication.
First use Sept. 24, 1965.

820,110. Washington Magazine, Inc., Washington, D.C. SN 230,108. Filed P.R. 10-13-65; Am. S.R. 10-5-66.

STABLE TALK

For Printed Publication.
First use Sept. 24, 1965.

820,111. Tuesday Publications, Inc., Chicago, Ill. SN 235,440. Filed P.R. 12-22-65; Am. S.R. 10-11-66.

POP-ROCK & ALL THAT JAZZ

For Column for a Newspaper Magazine Section.
First use Sept. 21, 1965.

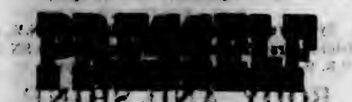
820,112. John E. Felber, d.b.a. Printing Consultants, Publishers, Newark, N.J. SN 236,218. Filed 1-10-66.

THE EXECUTIVE'S INTERNATIONAL TRAVEL GUIDE

For Product Guide Book for Travelers.
First use Mar. 4, 1960.

Class 39—Clothing

820,113. Sweet-Orr & Co., Inc., New York, N.Y. SN 234,479. Filed P.R. 12-13-65; Am. S.R. 10-10-66.



For Work Trousers and Casual Slacks for Men, Young Men and Boys.
First use Feb. 25, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

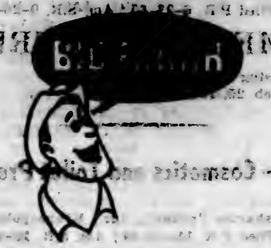
820,114. Textile Rubber & Chemical Co., Dalton, Ga. SN 216,745. Filed P.R. 4-16-65; Am. S.R. 10-6-66.

WAFFLE-BAK

For Carpets and Rugs Having a Skid Resistant Grid-Like Backing.
First use Mar. 22, 1965.

Class 46—Foods and Ingredients of Foods

820,115. John Morrell & Co., Ottumwa, Iowa. SN [illegible]. Filed P.R. 9-29-64; Am. S.R. 9-21-66.



For Wieners and Bologna.
First use July 27, 1964.

820,116. The Quaker Oats Company, Chicago, Ill. SN 225,818. Filed P.R. 8-16-65; Am. S.R. 9-27-66.

FLAVOR PACKS

For Cat Food.
First use July 29, 1965.

820,117. B. F. Trappey's Sons Inc., New Iberia, La. SN 226,867. Filed P.R. 9-21-65; Am. S.R. 10-3-66.



The representation of the woman shown in the drawing is fanciful. The word "Dulcito" is translated as "pleasant and agreeable."
For Bottled Peppers.
First use Sept. 24, 1948.

820,118. Doughboy Industries, Inc., New Richmond, Wis. SN 228,998. Filed P.R. 9-30-65; Am. S.R. 10-10-66.

TEND-R-LEEN

For High Energy Feed Supplement of a Feed Nature for Beef Cattle.
First use on or about Sept. 23, 1965.

820,119. American Shortening & Oil Co., Detroit, Mich. SN 223,650. Filed P.R. 11-15-65; Am. S.R. 10-11-66.

Sauté

For Vegetable Oil Butter.
First use July 2, 1965.

Class 50 — Merchandise Not Otherwise Classified

820,120. General Foods Corporation, White Plains, N.Y. SN 222,088. Filed P.R. 6-22-65; Am. S.R. 9-26-66.

METER-MEASURE

For Dispensing [illegible].
First use Feb. 25, 1966.

Class 51 — Cosmetics and Toilet Preparations

820,121. Dusharme Products, Inc., Minneapolis, Minn. SN 206,013. Filed P.R. 11-12-64; Am. S.R. 10-6-66.

LONDON HOUSE

For After Shave for Men.
First use Oct. 30, 1964.

820,122. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,772. Filed P.R. 4-30-65; Am. S.R. 10-3-66.

GO NATIVE

For Lipsticks.
First use Mar. 11, 1965.

820,123. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,773. Filed P.R. 4-30-65; Am. S.R. 10-3-66.

NAKED BLUSH

For Lipsticks.
First use Mar. 11, 1965.

820,124. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,774. Filed P.R. 4-30-65; Am. S.R. 10-3-66.

PEACH POUT

For Lipsticks.
First use Mar. 11, 1965.

820,125. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,775. Filed P.R. 4-30-65; Am. S.R. 10-3-66.

SUGAR DADDY RED

For Lipsticks.
First use Mar. 11, 1965.

820,126. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,776. Filed P.R. 4-30-65; Am. S.R. 10-3-66.

TAWNY TEASE

For Lipsticks.
First use Mar. 11, 1965.

820,127. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,777. Filed P.R. 4-30-65; Am. S.R. 10-3-66.

WET APRICOT

For Lipsticks.
First use Mar. 11, 1965.

820,128. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,484. Filed P.R. 9-23-65; Am. S.R. 10-3-66.

SPOTLIGHT ORANGE

For Lipsticks.
First use Apr. 29, 1965.

820,129. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,485. Filed P.R. 9-23-65; Am. S.R. 10-3-66.

PINK-ME-UP

For Lipsticks.
First use Apr. 29, 1965.

820,130. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,487. Filed P.R. 9-23-65; Am. S.R. 10-3-66.

BAREFOOT BRONZE

For Lipsticks.
First use Apr. 29, 1965.

820,131. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,488. Filed P.R. 9-23-65; Am. S.R. 10-3-66.

BURST INTO FLAME

For Lipsticks.
First use Apr. 29, 1965.

820,132. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,490. Filed P.R. 9-23-65; Am. S.R. 10-3-66.

IMMORAL CORAL

For Lipsticks.
First use Apr. 29, 1965.

Class 52 — Detergents and Soaps

820,133. Sybil Ives Incorporated, White Plains, N.Y., assignee of Bristol-Myers Company, New York, N.Y. SN 227,244. Filed P.R. 9-7-65; Am. S.R. 8-1-66.

BODY AND SHINE

For Shampoo for the Hair.
First use June 16, 1965.

820,134. Circle Research Laboratories, Inc., Glen Ridge, N.J. SN 242,330. Filed P.R. 3-31-66; Am. S.R. 9-30-66.

DRAIN SAFE

For Enzyme-Bacteria Digester Composition for Cleaning Drains.
First use Feb. 19, 1962.

TRADEMARK REGISTRATIONS RENEWED

29,094. ELLIMAN'S AND DESIGN. Cl. 18. 11-3-1896.
56,739. BOSS. Cl. 24. 10-18-06.
56,831. EIFFEL TOWER IN A CIRCLE (DESIGN). Cl. 46. 10-23-06.
60,712. GOOD THINGS TO EAT. Cl. 46. 2-19-07.
211,126. VEGEX V. Cl. 46. 4-6-26.
215,580. AU GOURMET. Cl. 46. 7-20-26.
216,862. ZONOLITE. Cl. 1. 8-24-26.
218,262. MARCO MI-CHEVEE AND DESIGN. Cl. 33. 9-21-26.
218,640. VIGOR. Cl. 16. 9-28-26.
218,887. TROUBLE SAVERS. Cl. 50. 10-5-26.

216,860. AMERICAN. Cl. 46. 10-5-26.
216,892. WHIRLDRY. Cl. 24. 10-5-26.
218,966. MAJOR. Cl. 26. 10-5-26.
219,107. TILE-TEX. Cl. 27. 10-12-26.
220,868. WASP. Cl. 26. 11-16-26.
222,475. NOKROME. Cl. 26. 1-4-27.
222,767. PARCHKIN. Cl. 37. 1-11-27.
222,962. SELF CLOSING MONKEY LINK AND DESIGN. Cl. 18. 1-11-27.
223,119. TRAFFIC WORLD. Cl. 38. 1-18-27.
223,746. GRAYBAR. Cl. 24. 2-8-27.
223,778. GLOREEN. Cl. 42. 2-8-27.
223,785. HONEY KIST. Cl. 46. 2-8-27.
223,907. SELCO. Cl. 52. 2-15-27.
223,950. GRAYBAR. Cl. 21. 2-15-27.
224,194. G AND DESIGN. Cl. 23. 2-22-27.
224,201. TRAN-COR. Cl. 14. 2-22-27.
224,271. VELLAREEN. Cl. 42. 2-22-27.
224,807. BABY. Cl. 46. 3-8-27.
224,870. CARAVAN. Cl. 46. 3-8-27.
224,926. RAINBOW. Cl. 12. 3-8-27.
225,088. C-V. Cl. 46. 3-8-27.
225,527. MIROCQUETTE. Cl. 42. 3-22-27.
225,529. KASHMIRENA. Cl. 42. 3-22-27.
225,658. GOLDEN FLEECE. Cl. 39. 3-22-27.
225,720. RAINBOW. Cl. 1. 3-22-27.
225,842. SUPERTWILL. Cl. 42. 3-29-27.
225,843. MIRRADEEN. Cl. 42. 3-29-27.
225,844. KASHEDDA. Cl. 42. 3-29-27.
225,846. JUNOVA. Cl. 42. 3-29-27.
422,766. GENIE. Cl. 52. 8-13-46.
423,441. HELSYN. Cl. 21. 9-3-46.
423,473. PROLON. Cl. 21. 9-3-46.
423,730. STARBRIGHT. Cl. 23. 9-10-46.
424,214. AMOCO. Cl. 24. 9-24-46.
424,299. PERSONALITY. Cl. 39. 10-1-46.
424,349. CLOVER LEAF (DESIGN). Cl. 4. 10-1-46.
424,507. DYNALUBE. Cl. 15. 10-8-46.
424,509. DYNAVIS. Cl. 15. 10-8-46.
424,541. FOLGER'S. Cl. 46. 10-8-46.
424,639. SUNOCO. Cl. 05. 10-15-46.
424,853. IN 'N OUTER. Cl. 39. 10-29-46.
425,118. MYRINGACAINE. Cl. 18. 11-5-46.
425,162. SOLULEXIN. Cl. 18. 11-5-46.
425,169. SB. Cl. 18. 11-5-46.
425,399. MEDAL VALVE. Cl. 15. 11-19-46.
425,760. COLEO. Cl. 52. 12-3-46.
426,136. STAR SAPPHIRE. Cl. 39. 12-17-46.
426,238. DARA. Cl. 18. 12-24-46.
426,290. NOTEX. Cl. 21. 12-24-46.
426,318. BRISLAB. Cl. 18. 12-24-46.
426,790. SUNSET. Cl. 38. 1-14-47.
426,806. GELEX. Cl. 46. 1-14-47.
427,287. BEAR. Cl. 26. 2-4-47.
427,288. BEAR (DESIGN). Cl. 26. 2-4-47.
427,500. BERMICO. Cl. 12. 2-11-47.
427,970. ROUGH RIDERS AND DESIGN. Cl. 39. 3-4-47.
427,971. ROUGH RIDERS (DESIGN). Cl. 39. 3-4-47.
428,168. REVENUE. Cl. 46. 3-11-47.
428,190. SPORTEMPOS. Cl. 39. 3-11-47.
428,498. SWEEPINE. Cl. 52. 3-25-47.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

438,299. "DU-EV." Cl. 4. 4-13-48.
809,019. DESIGNERS COLLECTION. Cl. 38. 5-24-66.
809,735. ARUBA RED 5. Cl. 51. 6-1-66.

Section 8

The following registrations issued Oct. 18, 1960

705,717. AMAK. Cl. 1.
705,721. SAMI. Cl. 1.
705,731. PD. Cl. 1.
705,733. RS AND REPRESENTATION OF A S BAR. Cl. 1.
705,743. POLYFRAC. Cl. 1.
705,744. C12. Cl. 1.
705,745. SHELLITE. Cl. 1.
705,750. TRINIMASTIC. Cl. 1.
705,754. ADJUSTABLE PROPER PACKER. Cl. 2.
705,761. SANTAINER AND DESIGN. Cl. 2.
705,762. SHIELD AND DESIGN. Cl. 2.
705,767. CARO J. JACOBS & CO. Cl. 3.
705,768. DIATOM AND DESIGN. Cl. 4.
705,769. OLU-BOY. Cl. 5.
705,772. POLARWELD. Cl. 5.
705,773. TREVIRA. Cl. 6.
705,774. GRISOVIN. Cl. 6.
705,777. ATCOSEL. Cl. 6.
705,780. PER. Cl. 6.
705,787. PERSTOPLEX. Cl. 6.
705,794. A-J. Cl. 7.
705,798. HOME PLATE. Cl. 8.
705,802. AUTO MASTER. Cl. 9.
705,803. VANGUARD. Cl. 10.
705,805. VALU-GRO AND DESIGN. Cl. 10.
705,817. GRAND SLAM. Cl. 12.
705,820. HYDRAMEX. Cl. 12.
705,826. MULTI-CHECK AND DESIGN. Cl. 15.
705,829. SHRAE-AIR. Cl. 15.
705,833. SAFETY-END. Cl. 14.
705,839. VALVE VIGOR. Cl. 15.
705,841. TRANS MASTER. Cl. 15.
705,849. LECI-PRO. Cl. 18.
705,850. AEROTOCHOL. Cl. 18.
705,855. SPACECAPS. Cl. 18.
705,864. MEGADROL. Cl. 18.
705,867. BENTROPENE. Cl. 18.
705,875. SKENNA. Cl. 19.
705,876. AEROSTABLE. Cl. 19.
705,885. LYMBLAST. Cl. 21.
705,886. WOLFSBURG. Cl. 21.
705,887. PYROLUG. Cl. 21.
705,888. VAPORMASTER. Cl. 21.
705,889. FREZZO-LITE. Cl. 21.
705,892. STEWART WARNER SW AND DESIGN. Cl. 21.
705,898. THE IMPALA CORP. AND DESIGN. Cl. 21.
705,900. RAE-MAR. Cl. 21.
705,906. ROTAFLARE. Cl. 21.
705,907. MULT-E-LITER. Cl. 21.
705,909. FLOWER-GLO. Cl. 21.
705,910. RH WITHIN A CIRCLE. Cl. 21.
705,912. BABEE-TENDA. Cl. 22.
705,913. HORN HEAD AND DESIGN. Cl. 22.
705,914. NESTRO ORIGINAL AND DESIGN. Cl. 22.
705,916. BELHOP. Cl. 22.
705,917. WINSTON. Cl. 22.
705,918. STOMPIN' MISSILES. Cl. 22.
705,919. SPIN-FLY. Cl. 22.
705,920. YANKEE DOODLE. Cl. 22.
705,921. CARIBE. Cl. 22.
705,926. WHIRL-A-WAND. Cl. 22.
705,927. SNATCHER. Cl. 22.
705,928. BOB BUDD'S. Cl. 22.
705,929. POLY JESTER AND DESIGN. Cl. 22.
705,930. A-M. Cl. 23.
705,934. WAPCO. Cl. 23.
705,937. KLO-STITCH. Cl. 23.
705,951. DESIGN OF THREE TRIANGLES OVER A LINE. Cl. 23.
705,952. VANGUARD. Cl. 23.
705,959. EXPO-TROL. Cl. 26.
705,976. TEENRING. Cl. 28.
705,977. RING-A-TEEN. Cl. 28.
705,978. LUCKY ELEPHANT. Cl. 28.
705,979. FLEX MASTER 29. Cl. 29.
705,985. CASUALAIRE. Cl. 32.
705,993. IMARK. Cl. 32.
706,002. TROPICAL MIST. Cl. 34.
706,005. X-5R. Cl. 35.
706,007. PERFECTEMPO. Cl. 36.
706,008. PAGEANT AND DESIGN. Cl. 36.
706,009. HI-FI MASTERPIECE. Cl. 36.
706,015. SCRIBE AND DESIGN. Cl. 37.
706,022. DURALL. Cl. 37.
706,027. CALIFORNIA BUILDER. Cl. 38.
706,028. MODERN MANAGEMENT FILMS. Cl. 38.
706,029. PRESTYPE. Cl. 38.

706,057. THE PRO. Cl. 39.
706,068. BIG SOUTHERN. Cl. 39.
706,040. CACTUS LEAGUE. Cl. 39.
706,042. KLEER VUE. Cl. 39.
706,049. PENGUIN. Cl. 39.
706,051. WILLIAM ALLEN. Cl. 39.
706,055. IORIO AND DESIGN. Cl. 39.
706,059. SPONGY AND DESIGN. Cl. 39.
706,060. ANDY STEELE. Cl. 39.
706,067. GRO-KNIT. Cl. 42.
706,075. AIRMATIC. Cl. 44.
706,082. R ROWER AND DESIGN. Cl. 44.
706,087. TESORO. Cl. 46.
706,093. MAJESTIC. Cl. 46.
706,094. NAN KING. Cl. 46.
706,096. SACOVE. Cl. 46.
706,097. SACOVE. Cl. 46.
706,104. CHOCOLATE 45. Cl. 46.
706,106. ROYAL FED. Cl. 46.
706,112. CHOCOLATE 45 AND DESIGN. Cl. 46.
706,114. QUIK EGG AND DESIGN. Cl. 46.
706,117. EMBOSTIC. Cl. 50.
706,119. TALIC-TONE. Cl. 50.
706,120. GLOESCENT. Cl. 50.
706,121. MISSME. Cl. 50.
706,122. TRAFFIC BLAZER. Cl. 50.
706,123. NYLO-LITE. Cl. 50.
706,124. ARCHER-PLAQUE AND DESIGN. Cl. 50.
706,127. THE THINKING MAN. Cl. 50.
706,128. UNIPAK. Cl. 50.
706,137. EAGLE DESIGN WITHIN A CIRCLE. Cl. 102.
706,140. WALL-PLY AND DESIGN. Cl. 12.
706,142. INSTANTILT. Cl. 12.
706,145. SIGN MAKER. Cl. 50.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

58,848. Dec. 25, 1906. Surpass Leather Company, Camden, N.J. Pub. by registrant.

Surpass Kid.

For Shoe-Leather.

Class 5—Adhesives

423,372. Aug. 27, 1946. Perkins Glue Company, Lansdale, Pa. Pub. by Gulf Oil Corporation, Pittsburgh, Pa.

SUNRISE

For Casein Glue.

Class 6—Chemicals and Chemical Compositions

310,010. Feb. 6, 1934. U.S. Industrial Chemical Co. Incorporated, Baltimore, Md., and New York, N.Y. Pub. by National Distillers and Chemical Corporation, New York, N.Y.

ESTERSOL

For Organic Solvents for Nitro-Cottons in the Manufacture of Lacquers and Kindred Products, etc.

Class 8—Smokers' Articles, Not Including Tobacco Products

57,789. Nov. 27, 1906. Loewe & Co., London, England. Pub. by Loewe & Co., Limited, London, England.

L&Cº

For Wooden Tobacco Pipes.

425,550. Nov. 26, 1946. Syracuse Ornamental Co., New York, N.Y. Pub. by Rexall Drug and Chemical Company, d.b.a. Syroco, Los Angeles, Calif.

SyrocoWood

For Ornamental Cigarette, Cigar and Tobacco Boxes, etc.

Class 14—Metals and Metal Castings and Forgings

109,187. Mar. 28, 1916. Pacific Foundry Company, San Francisco, Calif. Pub. by Bartlett-Snow-Pacific Inc., San Francisco, Calif.

CORROSIRON

For Metal Castings Made of an Iron Mixture or Alloy.

225,565. Mar. 22, 1927. Pacific Foundry Company, San Francisco, Calif. Pub. by Bartlett-Snow-Pacific Inc., San Francisco, Calif.

PYROCAST

For Metal Castings Made of an Iron Mixture or Alloy.

423,231. Aug. 27, 1946. Firth Sterling Steel Company, Mc Keesport, Pa. Pub. by Firth Sterling Inc., Pittsburgh, Pa.

SUPER HI-MO

For High Speed Steel in the Form of Bars, Rods, Blocks, and Discs.

425,275. Nov. 26, 1946. Cerro de Pasco Copper Corporation, New York, N.Y. Pub. by Cerro Corporation, New York, N.Y.

CERRO PERU

For Indium.

Class 17—Tobacco Products

423,020. Aug. 20, 1946. Lane Tobacco, Ltd., New York, N.Y. Pub. by Lane Limited, New York, N.Y.

SIESTA

For Smoking Tobacco.

Class 21—Electrical Apparatus, Machines, and Supplies

422,782. Aug. 13, 1946. Harold S. Ehaz, d.b.a. Ladaky Company, Branford, Conn. Pub. by registrant.

FLUR-O-LOCKS

For Non-Metallic Locking Washers and Keys for Use in Locking Fluorescent Tube Connectors in Relation to Their Sockets.

Class 22—Games, Toys, and Sporting Goods

427,746. Feb. 18, 1947. The Brunswick-Balke-Collender Company, Chicago, Ill. Pub. by Brunswick Corporation, Chicago, Ill.

BLACK BEAUTY

For Bowling Balls.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

337,573. Aug. 11, 1936. Pacific Foundry Company, Ltd., San Francisco, Calif. Pub. by Bartlett-Snow-Pacific Inc., San Francisco, Calif.

CORROSIRON

For Metal Castings Made of an Iron Mixture or Alloy.

206,799. Nov. 24, 1942. Eaton Manufacturing Company, Cleveland, Ohio. Pub. by Eaton File & Twine Inc., Cleveland, Ohio.

For Mechanical Seals for Use in Connection With the Valve Operating Mechanism of Internal Combustion Engines, etc.

Class 26—Measuring and Scientific Appliances

215,776. July 27, 1926. Square D Company, Park Ridge, Ill. Pub. by registrant.

D

For Electrical Testing Instruments, etc.

Class 27—Horological Instruments

29,434. Jan. 12, 1897. American Waltham Watch Company, Boston and Waltham, Mass. Pub. by Waltham Watch Company, Chicago, Ill.

ROYAL

For Watch-Movements and Parts of Watch-Movements.

29,473. Jan. 19, 1897. American Waltham Watch Company, Waltham, Mass. Pub. by Waltham Watch Company, Chicago, Ill.

TRAVELER

For Watches and Watch Movements.

Class 32—Furniture and Upholstery

425,741. Dec. 3, 1946. Syracuse Ornamental Co., New York, N.Y. Pub. by Rexall Drug and Chemical Company, d.b.a. Syroco, Los Angeles, Calif.

SyrocoWood

For Furniture Carvings, Mouldings, Book Ends, etc.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

57,352. Nov. 6, 1906. Boston Rubber Company, Boston, Mass. Pub. by United States Rubber Company, New York, N.Y.

PILOT

For Belting, Hose, Machinery Packings.

59,108. Jan. 1, 1907. Peerless Rubber Manufacturing Company, New York, N.Y. Pub. by United States Rubber Company, New York, N.Y.

PEERLESS

For Rubber Belting, Hose, etc.

Class 38—Prints and Publications

214,110. June 15, 1926. The Dayton Company, Minneapolis, Minn. Pub. by registrant.

the Daytonian

For Monthly Publication.

384,746. Feb. 4, 1941. International Association of Lions Clubs, Chicago, Ill. Pub. by registrant.

LIONS INTERNATIONAL

For Club Publications of Various Kinds, Including Magazines, Monthly Letters, Constitution Forms, Organization Charts, Information Folders, Supply Catalogues, Maps, Charters, Cardboard Decorations, and Emblem Decalcomanias.

Class 39—Clothing

55,488. Aug. 14, 1906. Young Brothers, New York, N.Y. Pub. by John B. Stetson Company, Philadelphia, Pa.

Young's Hats

For Hats.

Class 40—Fancy Goods, Furnishings, and Notions

424,166. Sept. 24, 1946. Syracuse Ornamental Co., New York, N.Y. Pub. by Rexall Drug and Chemical Company, d.b.a. Syroco, Los Angeles, Calif.

SyrocoWood

For Brush and Comb Sets.

Class 44—Dental, Medical, and Surgical Appliances

53,565. June 5, 1906. The S. S. White Dental Mfg. Co., Philadelphia, Pa. Pub. by S. S. White Company, Philadelphia, Pa.

PERFECTION

For Polishing and Abrading Strips.

53,566. June 5, 1906. The S. S. White Dental Mfg. Co., Philadelphia, Pa. Pub. by S. S. White Company, Philadelphia, Pa.

VULCARBO

For Abrading Disks, Wheels, and Points.

Class 46—Foods and Ingredients of Foods

56,820. Oct. 23, 1906. The Continental Creamery Company, Denver, Colo. Pub. by Beatrice Foods Co., Chicago, Ill.

Meadow-Gold

For Butter.

65,882. Sept. 24, 1907. Wallace & Co., New York, N.Y. Pub. by Leonard Monheim K.G., Aachen, Germany.

REGENT

For Chocolates and Candy.

Class 50—Merchandise Not Otherwise Classified

426,882. Dec. 31, 1946. Syracuse Ornamental Co, Syracuse, N.Y. Pub. by Rexall Drug and Chemical Company, d.b.a. Syroco, Los Angeles, Calif.

Syroco

For Gift Statues, Statuettes, etc.

Class 51—Cosmetics and Toilet Preparations

53,859. May 29, 1906. The S. S. White Dental Mfg. Co., Philadelphia, Pa. Pub. by S. S. White Company, Philadelphia, Pa.

ORALINE

For Toothpaste.

282,858. Apr. 21, 1931. Lanvin Parfums, Inc., Wilmington, Del., and New York, N.Y. Pub. by Lanvin-Charles of the Ritz, Inc., New York, N.Y.

ARPÈGE

For Perfume Extract.

290,192. Dec. 22, 1931. Lanvin Parfums, Inc., Wilmington, Del., and New York, N.Y. Pub. by Lanvin-Charles of the Ritz, Inc., New York, N.Y.

SCANDAL

For Perfume Extract.

299,041. Nov. 22, 1932. Jean Nathan, New York, N.Y. Pub. by Jean Naté, Inc., New York, N.Y.

Jean Naté

For Skin Lotion.

316,722. June 5, 1934. Lanvin Parfums, Inc., Wilmington, Del., and New York, N.Y. Pub. by Lanvin-Charles of the Ritz, Inc., New York, N.Y.

MY SIN

For Perfumes, Toilet Water, and Talcum Powder.

322,230. Mar. 5, 1935. Lanvin Parfums, Inc., Wilmington, Del., and New York, N.Y. Pub. by Lanvin-Charles of the Ritz, Inc., New York, N.Y.

RUMEUR

For Perfumes and Toilet Waters.

349,614. Aug. 31, 1937. Lanvin Parfums, Inc., Wilmington, Del., and New York, N.Y. Pub. by Lanvin-Charles of the Ritz, Inc., New York, N.Y.

PRÉTEXTE

For Perfumes.

372,516. Oct. 31, 1939. Lanvin Parfums, Inc., Wilmington, Del., and New York, N.Y. Pub. by Lanvin-Charles of the Ritz, Inc., New York, N.Y.

CRESCENDO

For Perfumes.

INDEX OF REGISTRANTS

DECEMBER 6, 1966

(Registered; Renewed; Cancelled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Abbott Laboratories, North Chicago, Ill. 819,782, pub. 9-20-66. Cl. 18.
Acorn Adhesives Co., Inc.: *See*—
Wilfield Shops, Inc.
Adam, Ruth C., Kansas City, Mo. 494,290, ren. 12-6-66. Cl. 20.
Adidas S.A.R.L., Dotzwiller, Bas-Rhin, France. 819,698, pub. 9-20-66. Cl. 25.
Agaiwarma Sekiyu Kabushiki Kaisha, Nagano Prefecture, Japan. 819,836, pub. 9-20-66. Cl. 22.
Ahrens, Theresa, Inc., New York, N.Y. 819,968, pub. 9-20-66. Cl. 20.
Aid Stores, Inc., Woodside, N.Y. 819,806, pub. 9-20-66. Cl. 19.
Akins Industries, Inc., New York, N.Y. 819,796, pub. 9-20-66. Cl. 7.
Alberto-Culver Co., Melrose Park, Ill. 820,007, pub. 9-20-66. Cl. 51.
Alley-Johnson Co., Kansas City, Mo. 705,794, canc. Cl. 7.
Allied Industries Inc., Minneapolis, Minn. 705,761, canc. Cl. 2.
Allied Thermax Corp., New Britain, Conn. 819,894, pub. 9-20-66. Cl. 34.
Amak, Inc., San Antonio, Tex. 705,717, canc. Cl. 1.
Amerada Glass Corp., Chicago, Ill. 819,745, pub. 9-20-66. Cl. 12.
American Biscuit Co., San Francisco, Calif., to National Biscuit Co., New York, N.Y. 819,860, ren. 12-6-66. Cl. 46.
American Casting and Mfg. Corp., Brooklyn, N.Y. 705,833, canc. Cl. 14.
American Cyanamid Co., New York, N.Y. 705,743, canc. Cl. 1.
American Hoist & Derrick Co., St. Paul, Minn. 819,895, pub. 9-20-66. Cl. 34.
American Hydrotelia, Inc., New York, N.Y. 820,009. Cl. 19.
American Marietta Co., Chicago, Ill., from Seaman-Andwall Corp., Milwaukee, Wis. 705,850, canc. Cl. 23.
American Maize-Products Co., New York, N.Y. 494,806, ren. 12-6-66. Cl. 46.
American Oil Co., The, Chicago, Ill. 494,214, ren. 12-6-66. Cl. 34.
American Panel Products, Inc., Ypsilanti, Mich. 819,746, pub. 9-20-66. Cl. 12.
American Reading Ball Co., The, to Armco Steel Corp., Middletown, Ohio. 494,591, ren. 12-6-66. Cl. 14.
American Stylon Co., d.b.a. Pageant Needles, Scranton, Pa. 705,603, canc. Cl. 26.
American Tobacco Co., The, New York, N.Y. 820,056. Cl. 17.
American Velcro, Inc., Manchester, N.H. 820,036, pub. 9-20-66. Cl. 39.
American Velcro, Inc., Manchester, N.H. 820,037, pub. 9-20-66. Cl. 39.
Ames Shower Curtain Co., Inc., New York, N.Y. 819,971, pub. 9-20-66. Cl. 42.
Amphenol Corp., Broadview, Ill. 819,977, pub. 9-20-66. Cl. 42.
Anderson, C. W., Hosiery Co., Clinton, S.C. 819,980, pub. 9-20-66. Cl. 39.
Anderson, Clayton & Co., Dallas, Tex. 705,627, canc. Cl. 16.
Apco Products, Inc., Rockford, Ill. 819,947, pub. 9-20-66. Cl. 28.
Archer-Daniels-Midland Co., Minneapolis, Minn. 819,698, pub. 9-20-66. Cl. 5.
Archer Enterprises, Inc., d.b.a. U.S. Plastic Laminating Co., Los Angeles, Calif. 705,134, canc. Cl. 50.
Armco Steel Corp.: *See*—
American Rolling Mill Co., The.
Armour Pharmaceutical Co., Chicago, Ill. 819,787, pub. 9-20-66. Cl. 18.
Armstrong Bros. Tool Co., Chicago, Ill. 819,778, pub. 9-20-66. Cl. 13.
Ariete-Tuer Electronique, Inc., New York, N.Y. 819,905, pub. 9-20-66. Cl. 36.
Arnold, Schwinn & Co., Chicago, Ill. 819,807, pub. 9-20-66. Cl. 19.
Aschenbach & Miller: *See*—
Sterling Drug Inc.
Atlantic Redning Co., The, Philadelphia, Pa. 819,776, pub. 9-20-66. Cl. 13.
Atlas Supply Co., Springfield, N.J. 819,833, pub. 9-20-66. Cl. 22.
Au Gourmet Foods de Luxe, Inc.: *See*—
Meyer & Langer.
Austin Mfg. Co., Omaha, Nebr. 705,669, canc. Cl. 20.
Autry-Baker Shoe Corp., Dallas, Tex. 819,941, pub. 9-20-66. Cl. 39.
BTU Engineering Corp., Waltham, Mass. 819,817, pub. 9-20-66. Cl. 21.
Babbitt, B. T., Inc., Albany, N.Y. 819,796, pub. 9-20-66. Cl. 6.
Babco-Tinsla Lingnet Corp.: *See*—
Metropolis Banding Co.
Baby Relax Ltd., Essex, England. 819,808, pub. 9-20-66. Cl. 22.
Barbur Chemical Co., Chicago, Ill. 819,779, pub. 9-20-66. Cl. 16.
Bashir York, Sportswear Co. Inc., to Sportempo, Inc., New York, N.Y. 705,190, ren. 12-6-66. Cl. 39.
Basket Tile Mfg. Co., The, Newington, Conn. 819,951, pub. 9-20-66. Cl. 42.
Bauman Photo-Chemical Corp., Chicago, Ill. 819,767, pub. 9-20-66. Cl. 6.
Bauman Photo-Chemical Corp., Chicago, Ill. 819,768, pub. 9-20-66. Cl. 6.
Bausch & Lomb Inc.: *See*—
Bausch & Lomb Optical Co.
Bausch & Lomb Inc., Rochester, N.Y. 819,965, pub. 9-20-66. Cl. 26.
Bausch & Lomb Optical Co., to Bausch & Lomb Inc., Rochester, N.Y. 252,475, ren. 12-6-66. Cl. 26.
Bancom Co., The: *See*—
Lobo & Flint Products Corp.
Bear Mfg. Co., Rock Island, Ill. 427,367, ren. 12-6-66. Cl. 34.
Bear Mfg. Co., Rock Island, Ill. 427,368, ren. 12-6-66. Cl. 34.
Beauty Counselors, Inc., Grosse Pointe, Mich. 819,699, pub. 9-20-66. Cl. 51.
Beauty Counselors, Inc., Grosse Pointe, Mich. 820,697, pub. 9-20-66. Cl. 51.
Belcrest Distributors Inc., Detroit, Mich. 819,962, pub. 9-20-66. Cl. 32.
Bishop Bait Co., Hamtramck, Mich. 705,916, canc. Cl. 22.
Bell Auto Parts, Inc., Bell, Calif. 819,800, pub. 9-20-66. Multiple Class (Classes 19 and 23).
Bell, Taco, Palos Verdes Estates, Calif. 820,073, pub. 9-20-66. Cl. 100.
Bellaire Fabrics, Inc., New York, N.Y. 819,963, pub. 9-20-66. Cl. 42.
Benet, Harry, d.b.a. Dave Products, Cincinnati, Ohio. 494,-228, ren. 12-6-66. Cl. 18.
Bergander, Harvey W., d.b.a. Bergander Mfg. Co., Steele, Ill. 819,692, pub. 9-20-66. Cl. 23.
Bergander Mfg. Co.: *See*—
Bergander, Harvey W.
Best-Ever Beverage Corp., Garden City, N.Y. 819,982, pub. 9-20-66. Cl. 45.
Birns & Sawyer Cine Equipment Co., Inc., Los Angeles, Calif. 819,572, pub. 9-20-66. Cl. 36.
Bissell Inc., Grand Rapids, Mich. 705,979, canc. Cl. 20.
Black Diamond Fur Farms: *See*—
Johansen, Maynard.
Blender-Tenaire Laboratories, Inc., Newark, N.J. 819,812, pub. 9-20-66. Cl. 21.
Boise Cascade Corp.: *See*—
Coleman Co., Inc.
Bose, Edward H., Cincinnati, Ohio. 820,092. Cl. 14.
Bosch, Robert, Corp., Long Island City, N.Y. 705,824, canc. Cl. 21.
Bratton, Keith R., Indianapolis, Ind. 705,821, canc. Cl. 20.
Briar Tolletries, Inc., Los Angeles, Calif. 820,042, pub. 9-20-66. Cl. 51.
Bristol Laboratories Inc., Syracuse, to Bristol-Myers Co., New York, N.Y. 426,576, ren. 12-6-66. Cl. 18.
Bristol-Myers Co.: *See*—
Bristol Laboratories Inc.
Brown Co.: *See*—
State Street Trust Co.
Brown Co., Berlin, N.H., to State Street Trust Co., trustee, Boston, Mass., to Brown Co., Berlin, N.H. 427,369, ren. 12-6-66. Cl. 16.
Bryn Mawr-Coachella Valley Grower: *See*—
Coachella Valley Grapefruit Association.
Budd, Robert A., d.b.a. Bob Budd's and Bob Budd's Bates, Jeffersonville, Ind. 705,823, canc. Cl. 22.
Budd's, Bob, Bates: *See*—
Budd, Robert A.
Bureau of National Affairs, Inc., Washington, D.C. 705,838, canc. Cl. 32.
Burke, Ralph A., Oakland, Calif. 819,994, pub. 9-20-66. Cl. 39.
Burndy Corp., Norwalk, Conn. 705,887, canc. Cl. 21.
Business Efficiency Aids, Inc., Skokie, Ill. 820,104. Cl. 32.
Campbell Tippett Associated Bakeries, Inc.: *See*—
Grocers' Baking Co.
Canada Dry Corp., New York, N.Y. 819,982, pub. 9-20-66. Cl. 45.
Candoil Oil Co., Cleveland, Ohio. 705,880, canc. Cl. 15.
Cannon Shoe Co., Baltimore, Md. 427,970, ren. 12-6-66. Cl. 39.
Cannon Shoe Co., Baltimore, Md. 427,971, ren. 12-6-66. Cl. 39.
Carrera Ltd., Basildon, Essex, England. 819,782, pub. 9-20-66. Cl. 17.
Casual Sportswear Co., Inc., New York, N.Y. 819,949, pub. 9-20-66. Cl. 39.
Casual Sportswear Co., Inc., New York, N.Y. 819,950, pub. 9-20-66. Cl. 39.
Casual Sportswear Co., Inc., New York, N.Y. 819,951, pub. 9-20-66. Cl. 39.

Cerilean Products Co., South Bend, Ind. 819,746, pub. 9–20–66. Cl. 12.

Chaitlen, Morrie, d.b.a. C. & E. Marshall Co., Chicago, Ill. 820,046, pub. 7–19–66. Cl. 52.

Champ Hats, Inc., New York, N.Y. 819,948, pub. 9–20–66. Cl. 39.

Chase Products Co., Broadview, Ill. 820,047, pub. 9–20–66. Cl. 51.

Chicago's Top Ten, Inc.: *See*—
Kimberly-Clark Corp.

Chop Chop Corp., Superior, Wis. 820,016, pub. 9–20–66. Cl. 46.

Chun King Sales, Inc., Duluth, Minn. 706,094, canc. Cl. 46.

Cilag-Chemie Aktiengesellschaft, Schaffhausen, Switzerland. 705,864, canc. Cl. 18.

Cilag-Chemie Aktiengesellschaft, Schaffhausen, Switzerland. 705,867, canc. Cl. 18.

Cilag-Chemie Aktiengesellschaft (Cilag-Chimie Societe Anonyme), Schaffhausen, Switzerland. 819,796, pub. 9–20–66. Cl. 18.

Circle Research Laboratories, Inc., Glen Ridge, N.J. 820,184. Cl. 52.

Cities Service Oil Co., Tulsa, Okla. 819,916, pub. 9–20–66. Cl. 23.

Clark Equipment Co., Buchanan, Mich. 819,834, pub. 9–20–66. Cl. 22.

Clover Mfg. Co., The, Norwalk, Conn. 424,349, ren. 12–6–66. Cl. 4.

Coachella Valley Grapefruit Association, Thermal, to Bryn Mawr-Coachella Valley Groves, Bryn Mawr, Calif. 225,088, ren. 12–6–66. Cl. 46.

Cold Spring Granite Co., Cold Spring, Minn. 225,720, ren. 12–6–66. Cl. 1.

Cold Spring Granite Co., Cold Spring, Minn. 224,926, ren. 12–6–66. Cl. 12.

Coleman Co., Inc., Wichita, Kans., from Boise Cascade Corp., Boise, Idaho. 820,024, pub. 9–20–66. Cl. 50.

Coleman Co., Inc., The, Wichita, Kans. 819,902, pub. 9–20–66. Cl. 34.

Coleman Co., Inc., The, Wichita, Kans. 819,903, pub. 9–20–66. Cl. 34.

Coleman Co., Inc., The, Wichita, Kans. 819,904, pub. 9–20–66. Cl. 34.

Colgate-Palmolive Co., New York, N.Y. 820,032, pub. 9–20–66. Cl. 51.

Colgate-Palmolive Co.: *See*—
Crown Chemical Co., The.

Colgate-Palmolive-Peet Co., Jersey City, N.J., to Colgate-Palmolive Co., New York, N.Y. 426,760, ren. 12–6–66. Cl. 52.

Colgate-Palmolive-Peet Co.: *See*—
Colgate-Palmolive Co.

Collier Carbon and Chemical Corp., Los Angeles, Calif. 705,744, canc. Cl. 1.

Colorado Ski Country U.S.A., Inc., from Ski Country USA, Inc., Denver, Colo. 820,090, pub. 9–20–66. Cl. 101.

Colorado Ski Country U.S.A., Inc., from Ski Country USA, Inc., Denver, Colo. 819,913, pub. 9–20–66. Cl. 38.

Color-Out Supply: *See*—
Johanknecht, Edwin.

Colton, George R., Tulsa, Okla. 820,070, pub. 9–20–66. Cl. 100.

Compagnie Francaise des Conduites D'eau, Paris, France. 705,921, canc. Cl. 22.

Compagnie Francaise de Raffinage, Societe Anonyme, and Compagnie Francaise des Petroles, Societe Anonyme, Paris, France. 820,088. Cl. 15.

Concrete Masonry Research, Inc., Orange, Conn. 819,743, pub. 9–20–66. Cl. 12.

Concentrados Vegetales S.A., Madrid, Spain. 706,096, canc. Cl. 46.

Concentrados Vegetales S.A., Madrid, Spain. 706,097, canc. Cl. 46.

Condiments & Spices, Inc., Miami, Fla. 819,995, pub. 9–20–66. Cl. 46.

Cone Mills Corp., Greensboro, N.C. 819,975, pub. 9–20–66. Cl. 42.

Cone Mills Corp., Greensboro, N.C. 819,976, pub. 9–20–66. Cl. 42.

Connor Lumber and Land Co., The, Wausau, Wis. 705,817, canc. Cl. 12.

Cook, Charles H., Co.: *See*—
Cook, Charles H.

Cook, Charles H., d.b.a. Charles H. Cook Co., Los Angeles, Calif. 705,959, canc. Cl. 26.

Conte Don Ugo Ravizza, Milan, Italy. 820,019, pub. 9–20–66. Cl. 47.

Continental Chemical Corp., Bethesda, Md. 819,751, pub. 9–20–66. Cl. 12.

Continental Mfg. Co., Baltimore, Md. 819,897, pub. 9–20–66. Cl. 34.

Corn Products Co., New York, N.Y. 819,710, pub. 9–20–66. Cl. 6.

Corn Products Co., New York, N.Y. 819,711, pub. 9–20–66. Cl. 6.

Cosart, W. F., Packing Co., Exeter, Calif., from Harding & Leggett, Inc., Orange Cove, Calif. 820,006, pub. 8–8–66. Cl. 46.

Cosart, W. F., Packing Co., Exeter, Calif. 820,018, pub. 9–20–66. Cl. 46.

Cosponding, Promotions & Sampling, Inc., New York, N.Y. 820,077, pub. 9–20–66. Cl. 101.

Cramer Chemical Co., The, Gardner, Kans. 819,691, pub. 9–20–66. Multiple Class (Classes 4, 6, 14, 22, 44, 46, 51, and 52).

Crouse-Hinds Co., Syracuse, N.Y. 705,888, canc. Cl. 21.

Crown Chemical Co., The, Cleveland, Ohio, to Colgate-Palmolive Co., New York, N.Y. 422,766, ren. 12–6–66. Cl. 52.

Curtis Publishing Co., The, Philadelphia, Pa. 820,078, pub. 9–20–66. Cl. 101.

Curtis, Helene, Industries, Inc., Chicago, Ill. 820,055, pub. 9–20–66. Cl. 51.

Cutter Laboratories, Inc., Berkeley, Calif. 819,784, pub. 5–14–66. Cl. 18.

Cutter Laboratories, Inc., Berkeley, Calif. 819,789, pub. 9–20–66. Cl. 18.

Cutter Laboratories, Inc., Berkeley, Calif. 819,790, pub. 9–20–66. Cl. 18.

Cutter Laboratories, Inc., Berkeley, Calif. 819,791, pub. 9–20–66. Cl. 18.

Cutter Laboratories, Inc., Berkeley, Calif. 819,792, pub. 9–20–66. Cl. 18.

Dairyland Seed Co., Inc., Campbellsport, Wis. 819,686, pub. 9–20–66. Cl. 1.

Dana Corp., Toledo, Ohio. 819,838, pub. 9–20–66. Cl. 23.

Dara Products: *See*—
Benet, Harry.

Davis, Ben I., d.b.a. Ranger Tool Co., Ellendale, Tenn. 819,837, pub. 9–20–66. Cl. 28.

Davis, William J., d.b.a. W. J. Davis Mfg., Rock Island, Ill. 705,927, canc. Cl. 22.

Davis, W. J., Mfg.: *See*—
Davis, William J.

Deering Milliken, Inc., New York, N.Y. 819,980, pub. 9–20–66. Cl. 42.

Deering Milliken, Inc., New York, N.Y. 819,981, pub. 9–20–66. Cl. 42.

Deering Milliken, Inc., New York, N.Y. 819,982, pub. 9–20–66. Cl. 42.

Deering Milliken, Inc., New York, N.Y. 819,983, pub. 9–20–66. Cl. 42.

Delta Electronics, Inc., Alexandria, Va. 819,818, pub. 9–13–66. Cl. 21.

Demco Packing Co.: *See*—
Demco Packing Co., Inc.

Demco Packing Co., Inc., d.b.a. Demco Packing Co., Los Angeles, Calif. 706,106, canc. Cl. 46.

Deutsche Arzneimittel Gesellschaft Steiner & Co., Berlin, Lankwitz, Germany. 705,850, canc. Cl. 18.

Dexter Chemical Corp., New York, N.Y. 819,698, pub. 9–20–66. Cl. 6.

Dexter Chemical Corp., New York, N.Y. 819,699, pub. 9–20–66. Cl. 6.

Diamond Alkali Co.: *See*—
Seaboard Seed Co.

Diamond Alkali Co.: *See*—
Seaboard Seed Co.

Dick E. Sam, Co., Inc., Seattle, Wash. 819,893, pub. 9–20–66. Cl. 24.

Digital Equipment Corp., Maynard, Mass. 819,864, pub. 8–17–65. Cl. 26.

Diner's Club, Inc., The, New York, N.Y. 819,928, pub. 9–20–66. Cl. 38.

Display Craft, Inc., Rockford, Ill. 706,117, canc. Cl. 50.

Dodge, A. W., Clothespin Mfg. Co., Coudersport, Pa., to Forster Mfg. Co., Inc., Wilton, Maine. 54,759, ren. 12–6–66. Cl. 24.

Doerner, Frank, & Sons Ltd., Waterloo, Ontario, Canada. 819,763, pub. 9–20–66. Cl. 13.

Dole Valve Co., The, Morton Grove, Ill. 819,879, pub. 9–20–66. Cl. 31.

Dole Valve Co., The, Morton Grove, Ill. 819,880, pub. 9–20–66. Cl. 31.

Dole Valve Co., The, Morton Grove, Ill. 819,881, pub. 9–20–66. Cl. 31.

Doughboy Industries, Inc., New Richmond, Wis. 820,118. Cl. 46.

Dr. Ing. Hans O. Scheid, Vienna, Austria. 706,075, canc. Cl. 44.

Dr. Lerear, Inc., St. Louis, Mo. 819,798, pub. 9–20–66. Cl. 18.

Dreyding, Jakob, Klichberg, Switzerland. 820,040, pub. 9–20–66. Cl. 51.

Du-Ev Products Co., Inc., Brooklyn, N.Y. 428,299, canc. Cl. 4.

Dunham, George W., Corp., Utica, N.Y., to Hupp Corp., Cleveland, Ohio. 218,892, ren. 12–6–66. Cl. 24.

Durham Printing Co., Muncie, Ind. 706,022, canc. Cl. 37.

Dusharme Products, Inc., Minneapolis, Minn. 820,121. Cl. 51.

Dynamic Valves, Inc., Mountain View, Calif. 819,764, pub. 9–20–66. Cl. 13.

E. & L. Mfg. Co., New York, N.Y. 705,917, canc. Cl. 22.

Eastman Kodak Co., Rochester, N.Y. 819,709, pub. 9–20–66. Cl. 6.

Ebert Electronics Corp., Queens Village, N.Y. 705,907, canc. Cl. 21.

Edmont, Inc., Coshocton, Ohio. 819,829, pub. 9–20–66. Cl. 39.

Eisendrath Glove Co., Marinette, Wis. 819,940, pub. 9–20–66. Cl. 39.

Elastic Stop Nut Corp. of America, Union, N.J. 819,775, pub. 9–20–66. Cl. 13.

Electronics Inc., Providence, R.I. 819,744, pub. 9–20–66. Cl. 12.

Electronics Inc., Providence, R.I. 819,758, pub. 9–20–66. Cl. 13.

Electronic Medical Specialties, Inc., Cleveland, Ohio. 819,988, pub. 9–20–66. Cl. 44.

Elgan Co., Inc.: *See*—
Flower City Specialty Co.

El Greco Leather Products Co. Inc., New York, N.Y. 819,963, pub. 9–20–66. Cl. 39.

Ellman Sons & Co., Ltd.: *See*—
Ellman Sons & Co.

Ellman Sons & Co., to Ellman Sons & Co., Ltd., Slough, England. 29,694, ren. 12–6–66. Cl. 18.

Elsenor Maquillage Co., San Francisco, Calif. 706,046, canc. Cl. 39.

Emax Corp. of Mich., Troy, Mich. 819,819, pub. 9–20–66. Cl. 21.

Em Em Co., Corp.: *See*—
Sapphire Hosiery Co.

Ernst, Eugene, Products Co., Farmingdale, N.J. 819,987, pub. 9–20–66. Cl. 26.

Establissement Callaga, Vaduz, Liechtenstein. 819,875, pub. 4–26–66. Cl. 39.

Ethicon, Inc., Somerville, N.J. 819,900, pub. 11–23–65. Cl. 44.

Ethyl Corp., New York, N.Y. 819,761, pub. 9–20–66. Cl. 18.

Evans, Robert, Co., Inc., Jacksonville, Fla. 819,806, pub. 9–20–66. Cl. 24.

Evdel Industries, Inc., New York, N.Y. 705,951, canc. Cl. 22.

Fairmont Foods Co., Omaha, Nebr., from Johnson Nut Co., Hopkins, Minn. 820,003, pub. 9–20–66. Cl. 46.

Fancee Tree Mfg. Co., Inc., St. Louis, Mo. 819,934, pub. 9–20–66. Cl. 39.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt/Main, Germany. 705,773, canc. Cl. 6.

Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 819,962, pub. 9–20–66. Cl. 42.

Farnel, Maurice, d.b.a. Farnelle Distributor, New York, N.Y. 820,052, pub. 9–20–66. Cl. 51.

Farnelle Distributor: *See*—
Farnel, Maurice.

Faroy, Inc., Houston, Tex. 819,777, pub. 9–20–66. Multiple Class (Classes 18 and 24).

Fay, Leslie, Inc., New York, N.Y. 819,961, pub. 9–20–66. Cl. 39.

Fay, Leslie, Inc., New York, N.Y. 819,962, pub. 9–20–66. Cl. 39.

Fearnoco Beauty Products, Inc., Philadelphia, Pa. 820,050, pub. 9–20–66. Cl. 51.

Felber, John H., d.b.a. Printing Consultants, Publishers, Newark, N.J. 820,112. Cl. 38.

Fellom Publishing Co., San Francisco, Calif. 706,027, canc. Cl. 38.

Ferrier, Ted L., Jr., Dallas, Tex. 819,842, pub. 9–20–66. Cl. 28.

Fibre-Metal Products Co., The, Chester, Pa. 819,954, pub. 9–20–66. Cl. 39.

Fieldcrest Mills, Inc., Spray, N.C. 819,974, pub. 9–20–66. Cl. 42.

Fieldcrest Mills, Inc., Spray, N.C. 819,975, pub. 9–20–66. Cl. 42.

Fields Plastics & Chemicals, Inc., Lodi, N.J. 819,685, pub. 4–26–66. Cl. 1.

Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. 819,905, pub. 9–20–66. Cl. 42.

Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. 819,906, pub. 9–20–66. Cl. 42.

Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. 819,907, pub. 9–20–66. Cl. 42.

Fimbrecoin Clothes, Inc., Baltimore, Md. 819,943, pub. 9–20–66. Cl. 39.

Fisher Radio Corp., Long Island City, N.Y. 819,816, pub. 9–20–66. Cl. 21.

Fleet Wholesale Supply Co., Inc., Appleton, Wis. 820,060, pub. 9–20–66. Cl. 53.

Fleming-Joffe, Ltd., New York, N.Y. 819,678, pub. 9–20–66. Cl. 1.

Flexible Slate Products Co., Chicago Heights, Ill., to The Finishote Co., New York, N.Y. 819,107, ren. 12–6–66. Cl. 12.

Finishote Co., The: *See*—
Flexible Slate Products Co.

Flower City Specialty Co., to Elgan Co., Inc., Rochester, N.Y. 422,962, ren. 12–6–66. Cl. 18.

Flager, J. A., & Co., Kansas City, Mo., to The Flager Coffee Co., Cincinnati, Ohio. 424,541, ren. 12–6–66. Cl. 46.

Folger Coffee Co., The: *See*—
Folger, J. A., & Co.

Food Corp. of America, Inc., d.b.a. Plymouth Rock Provision Co., New York, N.Y. 820,010, pub. 6–28–66. Cl. 46.

Fore Motor Cart Co., Detroit, Mich. 819,901, pub. 9–20–66. Cl. 19.

Forest Products Corp., Morristown, Tenn. 819,889, pub. 9–20–66. Cl. 32.

Forest Products Corp., Morristown, Tenn. 819,890, pub. 9–20–66. Cl. 32.

Formfoto Mfg. Co., Villa Park, Ill. 819,870, pub. 9–20–66. Cl. 24.

Forster Mfg. Co., Inc.: *See*—
Dodge, A. W., Clothespin Mfg. Co.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 224,371, ren. 12–6–66. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 225,527, ren. 12–6–66. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 225,530, ren. 12–6–66. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 225,775, ren. 12–6–66. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 225,842, ren. 12–6–66. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 225,843, ren. 12–6–66. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 225,844, ren. 12–6–66. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 225,845, ren. 12–6–66. Cl. 42.

Foster, Merrill J., d.b.a. Marine Instrument Co., Fox River Grove, Ill. 819,722, pub. 9–20–66. Cl. 6.

Frank, J. P., Chemical Corp., Brooklyn, N.Y. 705,797, canc. Cl. 6.

Frederick-Willys Co., Inc., St. Paul, Minn. 705,889, canc. Cl. 22.

Freeman & Gemage, Inc., San Francisco, Calif. 820,005. Cl. 17.

Fresselini, James, d.b.a. General Research Laboratory, New York, N.Y. 705,889, canc. Cl. 21.

Fruitland Canning Association, Inc., Fruitland, Idaho. 820,006, pub. 9–20–66. Cl. 46.

Fuel Injection Parts Co., Inc., West Springfield, Mass. 819,851, pub. 9–20–66. Cl. 23.

Fun Things, Inc., Culver City, Calif. 819,824, pub. 9–20–66. Cl. 22.

Garay & Co., Inc., New York, N.Y. 819,699, pub. 9–20–66. Cl. 3.

Garton, John, Distributors International: *See*—
L.T. Products, Ltd.

Gayou, Terry F., Dayton, Ohio. 820,095, pub. 9–20–66. Cl. 102.

Gemmon, Joseph M., III: *See*—
Kar Tronic Co., Inc.

Gem, Inc., Byhalia, Miss. 820,095, pub. 1–11–66. Cl. 52.

General Aniline & Film Corp., New York, N.Y. 819,694, pub. 10–1–63. Cl. 6.

General Aniline & Film Corp., New York, N.Y. 819,781, pub. 9–20–66. Cl. 6.

General Dynamics Corp., Rochester, N.Y. 706,007, canc. Cl. 26.

General Kinetics Corp., Englewood, N.J. 705,839, canc. Cl. 12.

General Motors Corp., Detroit, Mich. 819,886, pub. 9–20–66. Cl. 23.

General Research Laboratory: *See*—
Fresselini, James.

General Refractories Co., Philadelphia, Pa. 819,782, pub. 9–20–66. Cl. 12.

General Foods Corp., White Plains, N.Y. 819,694, pub. 6–16–64. Cl. 46.

General Foods Corp., White Plains, N.Y. 820,120. Cl. 50.

General Tours, Inc., New York, N.Y. 820,094, pub. 9–20–66. Cl. 105.

Georgia Plywood Corp., Dublin, Ga. 706,140, canc. Cl. 22.

Germaine Monteil Cosmetiques Corp., New York, N.Y. 820,048, pub. 9–20–66. Cl. 51.

Geigy Chemical Corp., Ardsley, N.Y. 819,715, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,716, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,717, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,718, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,719, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,720, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,721, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,722, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,723, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,724, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,725, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,726, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,727, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,728, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,729, pub. 9–20–66. Cl. 6.

Geigy Chemical Corp., Ardsley, N.Y. 819,730, pub. 9–20–66. Cl. 6.

Giant See-Thru Hat Co.: *See*—
Vanderagon, Jack.

Giesen & Forsthoff, Solingen, Germany. 819,840, pub. 9–20–66. Cl. 28.

Gillott, Joseph, & Sons Ltd., Dudley, England. 819,768, pub. 9–20–66. Cl. 18.

Glaxo Laboratories Ltd., Greenford, Middlesex, England. 705,774, canc. Cl. 6.

Glen Raven Knitting Mills, Inc., Glen Raven, N.C. 819,970, pub. 9–20–66. Cl. 42.

Gold Dug Publishing Co., The: *See*—
Lasagna, Arthur F.

Goldsmith, Max, d.b.a. U-X Mfg. Co., Inc., New York, N.Y. 820,031, pub. 9–20–66. Cl. 51.

Grace, W. R., & Co., New York, N.Y. 820,091, pub. 9–20–66. Cl. 52.

Grace, W. R., & Co.: *See*—
Zonolite Co., The.

Grais, Rubin, & Sons, Chicago, Ill. 706,057, canc. Cl. 39.

Grand Pubs, Inc., Phoenix, Ariz. 819,833, pub. 3–22–66. Cl. 23.

Graybar Electric Co., Inc., New York, N.Y. 222,744, ren. 12–6–66. Cl. 24.

Graybar Electric Co., Inc., New York, N.Y. 223,950, ren. 12-6-66. Cl. 21.
Greenlee Bros. & Co., Rockford, Ill. 224,194, ren. 12-6-66. Cl. 26.
Grocers' Baking Co., Louisville, Ky., to Campbell Taggart Associated Bakeries, Inc., Dallas, Tex. 223,785, ren. 12-6-66. Cl. 46.
Guardian Life Insurance Co. of America, The, New York, N.Y. 706,157, canc. Cl. 102.
HI-C, Inc., Chicago, Ill. 819,849, pub. 9-20-66. Cl. 23.
Hall, Janet L., d.b.a. House of Ideas, Naperville, Ill. 820,100. Cl. 22.
Halpern Supply Co., Los Angeles, Calif. 820,084, pub. 9-20-66. Cl. 103.
Hamilton Mfg. Co., Inc., Richmond, Va. 819,910, pub. 9-20-66. Cl. 37.
Hamilton Shoe Co., St. Louis, Mo. 819,945, pub. 9-20-66. Cl. 39.
Hampden Plastics Corp., Dallas, Tex. 819,795, pub. 9-20-66. Cl. 13.
Harbour Islanders, Ltd., New York, N.Y. 820,036, pub. 9-20-66. Cl. 51.
Hardigg & Leggett, Inc.: *See*—
Cosart, W. F. Packing Co.
Harsco Corp.: *See*—
Steel Scaffolding Co.
Harshaw Chemical Co., The, Cleveland, Ohio. 819,712, pub. 9-20-66. Cl. 6.
Hein-Werner Corp., Waukesha, Wis. 819,858, pub. 9-20-66. Cl. 22.
Hein-Werner Corp., Waukesha, Wis. 819,859, pub. 9-20-66. Cl. 22.
Hein-Werner Corp., Waukesha, Wis. 819,860, pub. 9-20-66. Cl. 22.
Hellermann Electric Ltd., Crawley, England. 423,441, ren. 12-6-66. Cl. 21.
Helwig, Laurence W.: *See*—
Stealing Drug Inc.
Hi-Chemical Co.: *See*—
Milan Supply Co., Inc.
Hicks-Ponder Co., El Paso, Tex. 819,946, pub. 9-20-66. Cl. 39.
Hijos de Agustin Blazquez, Cadiz, Spain. 820,021, pub. 9-20-66. Cl. 49.
Hi-Score Toiletries, Inc., New York, N.Y. 820,033, pub. 9-20-66. Cl. 51.
Holiday Homes, Inc., Princeton, Ind. 820,074, pub. 9-2-66. Cl. 100.
Holmes, M. E., Jr., Billings, Mont. 819,883, pub. 9-20-66. Cl. 21.
Hoosier Tarpaulin & Canvas Goods Co., Inc., Indianapolis, Ind. 706,163, canc. Cl. 50.
House of Ideas: *See*—
Hall, Janet L.
Howard Stores Corp., Brooklyn, N.Y. 819,944, pub. 9-20-66. Cl. 38.
Howe Sound Co.: *See*—
Howmet Corp.
Howmet Corp., New York, N.Y., from Howe Sound Co., Dallas, Tex. 820,001. Cl. 12.
Hubber, J. M., Corp., Borger, Tex. 819,741, pub. 9-20-66. Cl. 13.
Hudson, H. D., Mfg. Co.: *See*—
Hudson Mfg. Co.
Hudson Mfg. Co., to H. D. Hudson Mfg. Co., Minneapolis, Minn. 218,966, ren. 12-6-66. Cl. 23.
Hupp Corp.: *See*—
Dunham, George W., Corp.
Hydraulic Mechanisms, Inc., Brooklyn, N.Y. 705,820, canc. Cl. 13.
Imhof, Alfred, Ltd., London, England. 705,993, canc. Cl. 32.
Impala Corp., The, Smithfield, Va. 705,868 canc. Cl. 31.
Imperial Camera Corp., Chicago, Ill. 819,866, pub. 9-1-66. Cl. 24.
Impresario Cultural Society, Lathrup Village, Mich. 820,088, pub. 9-20-66. Cl. 200.
In-Flight Devices, Columbus, Ohio, from In-Flight Devices, Inc., Chicago, Ill. 819,813, pub. 9-20-66. Cl. 21.
In-Flight Devices, Inc.: *See*—
In-Flight Devices.
Indianapolis Glove Co., Indianapolis, Ind. 225,658. ren. 12-6-66. Cl. 39.
Industrial Enterprises, Inc.: *See*—
Novo Industrial Corp.
Interco Inc.: *See*—
International Shoe Co.
International Boiler Works Co., East Stroudsburgh, Pa. 819,-902, pub. 9-20-66. Cl. 34.
International Flavors & Fragrances Inc., New York, N.Y. 820,028, pub. 9-20-66. Cl. 51.
International Shoe Co., to Interco Inc., St. Louis, Mo. 424,-363, ren. 12-6-66. Cl. 39.
Interreference Information, Inc., New York, N.Y. 820,106. Cl. 35.
Ion Physics Corp., Burlington, Mass. 812,873, pub. 9-20-66. Cl. 26.
Iorio, Ettore, Brooklyn, N.Y. 706,055, canc. Cl. 39.
Ives, Sybil, Inc., White Plains, N.Y., from Bristol-Myers Co., New York, N.Y. 820,123. Cl. 32.
Jackson, Wilbertson, Inc., Ludington, Mich. 819,844, pub. 9-20-66. Cl. 25.
Jacobs, J., & Co., San Francisco, Calif. 706,767, canc. Cl. 3.
Jacobs Mfg. Co., The, West Hartford, Conn. 819,943, pub. 9-20-66. Cl. 23.
Jelko, Inc., from Texas Pharmacal Co., San Antonio, Tex. 820,089, pub. 9-20-66. Cl. 51.
Jewell Smokeless Coal Corp., Knoxville, Tenn. 818,677, pub. 7-21-66. Cl. 1.
Johnkraecht, Edwin, d.b.a. Color-Out Supply, Washington, D.C. 819,911, pub. 9-20-66. Cl. 37.
Johns-Manville Corp., New York, N.Y. 819,747, pub. 9-20-66. Cl. 12.
Johnson & Johnson, New Brunswick, N.J. 819,756, pub. 9-20-66. Cl. 18.
Johnson, Maynard, d.b.a. Black Diamond Fur Farm, Two Harbors, Minn. 705,721, canc. Cl. 1.
Johnson Nut Co.: *See*—
Fairmont Foods Co.
Jones, Robert, West Orange, N.J. 820,076, pub. 9-20-66. Cl. 101.
Jones Brothers Co., Barre, Vt. 820,038, pub. 9-20-66. Cl. 50.
Judson Research and Mfg. Co., Conshohocken, Pa., 819,836, pub. 9-6-66. Cl. 23.
Kar Temp Co., Inc., Easton, Md., from Joseph M. Gassman III, Baltimore, Md. 820,102. Cl. 32.
Kaiser Laboratories, Niles, Ill. 820,098. Cl. 18.
Key Worth Clothes, Inc., Fort Scott, Kans. 819,933, pub. 9-20-66. Cl. 39.
Kimball Systems Inc., Belleville, N.J. 819,830, pub. 9-20-66. Cl. 23.
Kimberly-Clark Corp., Neenah, Wis., from Chicago's Top Ten, Inc., Chicago, Ill. 706,015, canc. Cl. 27.
King Kullen Grocery Co., Inc., Westbury, N.Y. 820,066, pub. 9-20-66. Cl. 42.
King Kullen Grocery Co., Inc., Westbury, N.Y. 819,765, pub. 9-20-66. Cl. 6.
King-Seeley Thermos Co., Ann Arbor, Mich., from Stronto Mfg. Co., Freeport, Ill. 819,810, pub. 9-20-66. Cl. 21.
Kingston Products Co., Skokie, Ill. 819,708, pub. 7-19-66. Cl. 6.
Kleentear, Inc., New York, N.Y. 819,912, pub. 9-20-66. Cl. 38.
Klopman Mills, Inc., Rockleigh, N.J. 819,978, pub. 9-20-66. Cl. 42.
Koelon Co., The, Baltimore, Md. 819,936, pub. 9-20-66. Cl. 50.
Koyama Farms: *See*—
United Farms Co.
Koyama, Ray: *See*—
United Farms Co.
L.T. Products, Ltd., d.b.a. John Garton Distributors International, Los Angeles, Calif. 820,044, pub. 9-20-66. Cl. 51.
Lamb-Western Inc., Portland, Oreg. 820,005, pub. 9-20-66. Cl. 44.
Landstrom Co., d.b.a. Vital Foods, San Francisco, Calif. 705,-849, canc. Cl. 18.
Lane Magazine & Book Co.: *See*—
Lane Publishing Co.
Lane Publishing Co., San Francisco, Calif., to Lane Magazine & Book Co., Menlo Park, Calif. 426,799, ren. 12-6-66. Cl. 38.
Lapeagne, Arthur F., d.b.a. The Gold Bug Publishing Co., Walnut Creek, Calif. 819,916, pub. 9-20-66. Cl. 32.
Lavino, E. J., and Co., Philadelphia, Pa. 819,752, pub. 9-20-66. Cl. 12.
Lavino, E. J., and Co., Philadelphia, Pa. 819,754, pub. 9-20-66. Cl. 12.
Lavino, E. J., and Co., Philadelphia, Pa. 819,753, pub. 9-20-66. Cl. 12.
Lavino, E. J., and Co., Philadelphia, Pa. 819,754, pub. 9-20-66. Cl. 12.
Lavino, E. J., and Co., Philadelphia, Pa. 819,757, pub. 9-20-66. Cl. 12.
Lehn & Fink Products Corp., New York, N.Y., from The Beacon Co., Cambridge, Mass. 820,039, pub. 9-20-66. Cl. 32.
Lenox, Inc., Trenton, N.J. 819,877, pub. 9-20-66. Cl. 30.
Les Fils de M. Haguenauer Aîné, Pantin, France, to Societe Anonyme Usines de la Seigneurie, Pantin (Seine), France 218,640, ren. 12-6-66. Cl. 16.
Lindair Engineering Division, Inglewood, Calif. 819,762, pub. 9-20-66. Cl. 13.
Lipman, Mark, Service, Inc., Memphis, Tenn. 820,072, pub. 9-20-66. Cl. 109.
Litton Industries, Inc., Beverly Hills, Calif. 819,809, pub. 9-20-66. Cl. 19.
Lockwood Technical, Inc., Monterey, Calif. 819,827, pub. 9-20-66. Cl. 23.
L'Oreal, Societe Anonyme, Paris, France. 820,090, pub. 9-20-66. Cl. 51.
Luzaire, Inc., Elyria, Ohio. 819,901, pub. 9-20-66. Cl. 34.
Lynx Products: *See*—
Rezinsky, Joseph F.
Maas & Waldstein Co., Newark, N.J. 819,780, pub. 9-20-66. Cl. 16.
MacDonald Greenless Ltd., Edinburgh, Scotland. 820,022, pub. 9-20-66. Cl. 49.
Mack Trucks, Inc., Allentown, Pa. 819,861, pub. 9-20-66. Cl. 33.
Magic Nut Kitchens: *See*—
Saal, Samuel J.
Malco Products, Inc., Akron, Ohio. 820,090. Cl. 4.
Mallinckrodt Pharmaceuticals, Inc., Fairfax, Va. 819,794, pub. 9-20-66. Cl. 18.
Mangel Stores Corp., New York, N.Y. 819,962, pub. 9-20-66. Cl. 39.
Marudel Products, Inc., d.b.a. Tre-Jur, Farmingdale, N.Y. 820,042, pub. 9-20-66. Cl. 51.
Marchon, Jean-Pierre, Vessoix, Switzerland. 819,869, pub. 9-20-66. Cl. 26.
Marine Instrument Co.: *See*—
Foster, Merrill J.
Marshall, C. & E., Co.: *See*—
Chaitlen, Morris.
Marshall, C. & E., Co., to M. Chaitlen, d.b.a. C. & E. Marshall Co., Chicago, Ill. 218,262, ren. 12-6-66. Cl. 33.

Olin Mathieson Chemical Corp.: *See*—
Squibb, E. R., & Sons, Inc.
Melville Shoe Corp., New York, N.Y. 819,966, pub. 9-20-66. Cl. 39.
Menzen Co., The, Morristown, N.J. 819,897, pub. 9-20-66. Cl. 6.
Merck & Co., Inc., d.b.a. Quinton Co., Rahway, N.J. 819,788, pub. 9-20-66. Cl. 18.
Meter-All Mfg. Co., Inc., Dallas, Tex. 819,965, pub. 9-20-66. Cl. 26.
Metro-Atlantic, Inc., Owensboro, Ky. 705,777, canc. Cl. 6.
Metropolitic Bonding Co., from Rubco-Tunda Licensee Corp., Metropolitic, Ill. 705,913, canc. Cl. 22.
Meyer & Lange, New York, N.Y., to Rosto Fiber Foods, Inc., d.b.a. An Gourmet Foods de Lanz, Inc., Chicago, Ill. 215,580, ren. 12-6-66. Cl. 46.
Mial S.p.A., Milan, Italy. 819,854, pub. 9-13-66. Cl. 21.
Milam Supply Co., Inc., d.b.a. Hi-Chemical Co., Houston, Tex. 705,702, canc. Cl. 4.
Mills, Benjamin, III, Needham Heights, Mass. 819,890, pub. 9-20-66. Cl. 32.
Miller Dial & Name Plate Co., El Monte, Calif. 706,120, canc. Cl. 50.
Minneapolis-Moline, Inc., Hopkins, Minn. 819,832, pub. 9-20-66. Cl. 23.
Mister Cravats, Los Angeles, Calif. 819,931, pub. 9-20-66. Cl. 39.
Mitten's Display Letters: *See*—
Mitten, Frank P.
Mitten, Frank P., d.b.a. Mitten's Display Letters, Redlands, Calif. 706,146, canc. Cl. 50.
Moderne Card Co.: *See*—
Moderne Card Co., Inc.
Moderne Card Co., Inc., d.b.a. Moderne Card Co., Chicago, Ill. 819,930, pub. 9-20-66. Cl. 38.
Modesto Fruit Exchange, Modesto, Calif. 224,870, ren. 12-6-66. Cl. 46.
Montgomery, Francis M., Gark, Channel Islands. 705,875, canc. Cl. 19.
Moore, Samuel, and Co., Mantua, Ohio. 819,774. pub. 9-20-66. Cl. 15.
Morgan, Hugh R., d.b.a. Tamora Keanoh, Spring Grove, Pa. 820,071, pub. 9-20-66. Cl. 100.
Morrell, John, & Co., Ottumwa, Iowa. 220,115. Cl. 46.
Morton, Harry B., d.b.a. Parfums Dinard, New York, N.Y. 820,051, pub. 9-20-66. Cl. 51.
Morton International, Inc., from Morton Salt Co., Chicago, Ill. 819,826, pub. 5-31-66. Cl. 6.
Morton Salt Co.: *See*—
Morton International, Inc.
Motorola, Inc., Franklin Park, Ill. 819,885, pub. 9-28-66. Cl. 23.
Mule Battery Mfg. Co., Providence, R.I. 819,821, pub. 9-20-66. Cl. 36.
McDonald's Corp., Chicago, Ill. 819,936, pub. 9-20-66. Cl. 42.
Nalley's Inc., Tacoma, Wash. 820,004, pub. 9-20-66. Cl. 46.
National Biscuit Co.: *See*—
American Biscuit Co.
National Fireproof Corp., New York, N.Y. 819,767, pub. 9-20-66. Cl. 13.
National Pectin Products Co., Chicago, Ill. 820,017, pub. 9-20-66. Cl. 46.
National Research Corp., Newton Highlands, Mass. 819,945, pub. 7-20-66. Cl. 23.
National Research Bureau, Inc., The, Chicago, Ill. 819,919, pub. 9-20-66. Cl. 35.
National Starch Chemical Corp., New York, N.Y. 820,001, pub. 6-21-66. Cl. 46.
Neiman-Marcus Co., Dallas, Tex. 819,969, pub. 9-20-66. Cl. 3.
Neotro Mfg. Co., Baldwin, N.Y. 706,014, canc. Cl. 22.
Newbury Guild Division, The: *See*—
Plasticchrome Greetings, Inc.
Newhall Newspapers Inc., Newhall, Calif. 820,107. Cl. 38.
Nichols & Co., Inc., Boston, Mass. 819,883, pub. 9-20-66. Cl. 1.
Nilo Santos Pinto, Rio De Janeiro, Brazil. 706,009, canc. Cl. 26.
Norcross, Inc., New York, N.Y. 819,922, pub. 9-20-66. Cl. 38.
Norcross, Inc., New York, N.Y. 819,923, pub. 9-20-66. Cl. 38.
Norcross, Inc., New York, N.Y. 819,924, pub. 9-20-66. Cl. 38.
Northrup, King & Co., Minneapolis, Minn. 819,748, pub. 9-20-66. Cl. 10.
Notek Electric Co. Ltd., Kent, England. 426,299, ren. 12-6-66. Cl. 21.
Novo Industrial Corp., from Industrial Enterprises, Inc., New York, N.Y. 706,068, canc. Cl. 32.
Nugget Foods, Inc., from Frank M. Wilson Co., Inc., Stockton, Calif. 820,009, pub. 8-16-66. Cl. 46.
Nugget Foods, Inc., from Frank M. Wilson Co., Inc., d.b.a. Frank M. Wilson Co. and Frank M. Wilson Co., Inc., Stockton, Calif. 820,013, pub. 8-9-66. Cl. 46.
Nugget Foods, Inc., from Frank M. Wilson Co., Inc., d.b.a. Frank M. Wilson Co. and Frank M. Wilson Co., Inc., Stockton, Calif. 820,014, pub. 8-9-66. Cl. 46.
Nugget Foods, Inc., from Frank M. Wilson Co., Inc., d.b.a. Frank M. Wilson Co. and Frank M. Wilson Co., Inc., Stockton, Calif. 820,015, pub. 8-9-66. Cl. 46.
N.V. Biscuit-En Chocoladefabriek Victoria, Deudrecht, Netherlands. 819,908, pub. 9-20-66. Cl. 46.
N.V. Sigarettenfabriek Ed. Laurens "Le Rhedive," The Hague, Netherlands. 819,781, pub. 9-20-66. Cl. 17.
N.V. Sigarettenfabriek Ed. Laurens "Le Rhedive," The Hague, Netherlands. 819,782, pub. 9-20-66. Cl. 17.
O.K. Tool Co., Inc., The, Milford, N.H. 819,889, pub. 9-20-66. Cl. 23.
O.K. Rubber Welders, Inc., Littleton, Colo. 706,005, canc. Cl. 39.
Ob/Gyn Digest, Inc., Northfield, Ill. 819,926, pub. 9-20-66. Cl. 38.
Offset Process, Inc., Fort Worth, Tex. 705,953, canc. Cl. 23.
Opal Spectra, Inc., Detroit, Mich. 819,811, pub. 9-20-66. Cl. 21.
Oxmoor Wood Preserving Co. of America, Inc., Buffalo, N.Y. 705,709, canc. Cl. 6.
Outboard Marine Corp., Waukegan, Ill. 819,806, pub. 9-20-66. Cl. 12.
Outdoor American Corp., Spokane, Wash. 819,924, pub. 9-20-66. Cl. 38.
Outdoorsman Publishing Co., The, Minneapolis, Minn. 819,-827, pub. 9-20-66. Cl. 38.
Pacific Lyre Gun Works, Inc., Los Angeles, Calif. 819,730, pub. 9-20-66. Cl. 9.
Packaging Industries Ltd., Inc., Montclair, N.J. 819,926, pub. 9-20-66. Cl. 28.
Pageant Needles: *See*—
American Stylus Co.
Pall Corp., Glen Cove, N.Y. 819,808, pub. 9-20-66. Cl. 34.
Paper Products Inc., Long Beach, Calif. 819,908, pub. 9-20-66. Cl. 37.
Paramount Wedding Ring Co., Chicago, Ill. 705,976, canc. Cl. 28.
Paramount Wedding Ring Co., Chicago, Ill. 705,977, canc. Cl. 28.
Parfums Dinard: *See*—
Morton, Harry B.
Parfums Schiaparelli, Inc., New York, N.Y. 820,024, pub. 9-20-66. Cl. 51.
Parfums Schiaparelli, Inc., New York, N.Y. 820,025, pub. 9-20-66. Cl. 51.
Paterson Scottish Shortbread Ltd., Edinburgh, Scotland. 820,097, pub. 9-2-66. Cl. 46.
Paterson Parchment Paper Co., The, Passaic, N.J., to The Paterson Parchment Paper Co., Bristol, Pa. 122,767, ren. 12-6-66. Cl. 37.
Patrick Cudahy Inc., Cudahy, Wis. 819,900, pub. 9-20-66. Cl. 46.
Pee-Dee Farms, Drives, Va. 705,731, canc. Cl. 1.
Perkins, Matthew E., d.b.a. Perkins PanCake House, Cincinnati, Ohio. 820,060, pub. 9-20-66. Cl. 46.
Perkins PanCake House: *See*—
Perkins, Matthew E.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,041, pub. 9-20-66. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,042, pub. 9-20-66. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,043, pub. 9-16-66. Cl. 53.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,120. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,122. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,124. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,125. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,126. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,127. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,128. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,129. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,130. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,131. Cl. 51.
Plasticchrome Greetings, Inc., d.b.a. The Newbury Guild Division, Jamaica Plain, Mass. 808,019, canc. Cl. 38.
Plant Shell Corp., Philadelphia, Pa. 819,824, pub. 9-20-66. Cl. 23.
Plymouth Rock Prevention Co.: *See*—
Food Corp. of America, Inc.
Plymouth Shoe Co., Middleboro, Mass. 819,956, pub. 9-20-66. Cl. 39.
Plymouth Shoe Co., Middleboro, Mass. 819,956, pub. 9-20-66. Cl. 39.
Plymouth Shoe Co., Middleboro, Mass. 819,957, pub. 9-20-66. Cl. 39.
Pocket Books, Inc., New York, N.Y. 819,915, pub. 9-6-66. Cl. 38.
Popper, Gray & Co., Inc.: *See*—
Popper, Gray & Co.
Popper, Gray & Co., to Popper, Gray & Co., Inc., New York, N.Y. 56,551, ren. 12-6-66. Cl. 46.
Possmont Corp., Milford, Conn. 819,742, pub. 11-20-65. Cl. 13.
Pratt & Whitney Aircraft Co., The, Hartford, Conn., to United Aircraft Corp., East Hartford, Conn. 220,966, ren. 12-6-66. Cl. 23.
Premier Textile Co., New York, N.Y. 706,042, canc. Cl. 39.
Prestype, Inc., New York, N.Y. 706,026, canc. Cl. 38.
Produits de Beaute-Parfums Jean d'Avese, Paris, France. 820,053, pub. 9-20-66. Cl. 51.
Printing Consultants, Publishers: *See*—
Fuller, John H.
Project Concern, Coronado, Calif. 819,914, pub. 9-20-66. Cl. 38.
Proper Folding Box Corp., The, Whitestone, N.Y. 706,754, canc. Cl. 2.
Pro-Phy-Lac-Tic Brush Co., Northampton, to Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 426,475, ren. 12-6-66. Cl. 21.
Publishers' Allied Services, Inc., Washington, D.C. 819,899, pub. 9-20-66. Cl. 38.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 425,899, ren. 12-6-66. Cl. 15.
Q.H.B. Inc., Hicksville, N.Y. 819,967, pub. 9-20-66. Cl. 40.
Quaker Oats Co., The, Chicago, Ill. 820,114. Cl. 46.
Quality Industries Inc., Philadelphia, Pa. 820,105. Cl. 37.

Quinsten Co.: *See*—
Marck & Co., Inc.
Radcliff Gravel Co., Inc., Mobile, Ala. 705,745, canc. Cl. 1.
Radford, Harold, (Coachbuilders) Ltd., London, England. 705,964, canc. Cl. 21.
Radley Furs, Inc., New York, N.Y. 819,937, pub. 9–20–66. Cl. 50.
Rado-Matic Corp., The, Cleveland, Ohio. 705,926, canc. Cl. 22.
Rae-Mar Electronics, Inc., South El Monte, Calif. 705,900, canc. Cl. 21.
Ralphs Unified Ltd., Leicester, England. 819,841, pub. 9–20–66. Cl. 22.
Ralston Purina Co., St. Louis, Mo. 819,797, pub. 9–20–66. Cl. 12.
Ramsey, George B., Starkville, Miss. 820,103. Cl. 26.
Ranger Tool Co.: *See*—
Davis, Ben I.
Redken Laboratories, Inc., Van Nuys, Calif. 820,058, pub. 9–20–66. Cl. 51.
Reed Roller Bit Co., Houston, Tex. 819,853, pub. 9–20–66. Cl. 23.
Reese Finer Foods, Inc.: *See*—
Meyer & Lange.
Regie Nationale Des Usines Renault, Billancourt (Seine), France. 705,876, canc. Cl. 19.
Remco Industries, Inc., Newark, N.J. 705,920, canc. Cl. 22.
Remington Arms Co., Inc., Bridgeport, Conn. 705,802, canc. Cl. 9.
Rempel Mfg., Inc., Akron, Ohio. 705,918, canc. Cl. 22.
Republic Foil, Inc., Danbury, Conn. 819,820, pub. 9–20–66. Cl. 21.
Revlon, Inc., New York, N.Y. 809,735, canc. Cl. 51.
Rexall Drug and Chemical Co., d.b.a. Vanda Cosmetics, Los Angeles, Calif. 820,046, pub. 9–20–66. Cl. 51.
Rheem Mfg. Co., Richmond, Calif. 705,910, canc. Cl. 21.
Riggs & Lombard, Inc., Lowell, Mass. 819,842, pub. 9–20–66. Cl. 22.
Rimsen, Oscar C., Co., The, Franklin Park, Ill. 705,826, canc. Cl. 13.
Robertshaw Controls Co., Richmond, Va. 819,891, pub. 9–20–66. Cl. 34.
Robins, A. H., Co., Inc., Richmond, Va. 819,799, pub. 9–20–66. Cl. 18.
Rockwell-Standard Corp., Pittsburgh, Pa. 819,760, pub. 9–20–66. Cl. 13.
Rockwell-Standard Corp., Pittsburgh, Pa. 819,806, pub. 9–20–66. Cl. 19.
Roddy Recreation Products, Inc., Gardena, Calif. 819,984, pub. 9–20–66. Cl. 43.
Rosinsky, Joseph F., Jr., d.b.a. Lynx Products, Green Bay, Wis. 820,062, pub. 9–20–66. Cl. 52.
Ross-Saturn, Inc., Washington, D.C. 706,051, canc. Cl. 39.
Rower Dental Mfg. Corp., Boston, Mass. 706,082, canc. Cl. 44.
Rowland Products, Inc., Kensington, Conn. 819,684, pub. 10–13–66. Cl. 1.
Royal Candle Co., Inc., Union City, N.J. 820,004. Cl. 15.
Rust Master Chemical Corp., Worcester, Mass. 705,841, canc. Cl. 15.
S & S Chemicals, Ltd., Honolulu, Hawaii. 819,692, pub. 9–20–66. Cl. 4.
Safety Aids Co., Cosmopolis, Pa. 706,122, canc. Cl. 50.
Sakrete, Inc., Cincinnati, Ohio. 819,750, pub. 9–20–66. Cl. 12.
Salem Co., Inc., The, Winston-Salem, N.C. 706,060, canc. Cl. 39.
Sandox, Inc., Hanover, N.J. 705,855, canc. Cl. 18.
Sapphire Hosiery Co., Philadelphia, Pa., to Em El Es Corp., New York, N.Y. 426,136, ren. 12–6–66. Cl. 39.
Saul, Samuel J., d.b.a. Magic Nut Kitchens, Los Angeles, Calif. 819,997, pub. 9–20–66. Cl. 46.
Schiefflin & Co., New York, N.Y. 820,020, pub. 9–20–66. Cl. 47.
Schneida, Miami L.: *See*—
Vitamin Food Co., Inc.
Schwarts Jewelry Co., Inc.: *See*—
Waldron & Co., Inc.
Schwartz Services International Ltd., Mount Vernon, N.Y. 820,011, pub. 9–20–66. Cl. 46.
Screen Gems, Inc., New York, N.Y. 820,067, pub. 2–22–66. Cl. 107.
Massengill, S. E., Co., The, Bristol, Tenn. 819,990, pub. 9–20–66. Cl. 44.
Sea & Ski Corp., Millbrae, Calif. 819,871, pub. 9–20–66. Cl. 26.
Seaboard Seed Co., Bristol, Ill., from Diamond Alkali Co., Cleveland, Ohio. 819,679, pub. 7–19–66. Cl. 1.
Seaboard Seed Co., Bristol, Ill., from Diamond Alkali Co., Cleveland, Ohio. 819,680, pub. 7–26–66. Cl. 1.
Seaboard Seed Co., Bristol, Ill., from Diamond Alkali Co., Cleveland, Ohio. 819,681, pub. 7–26–66. Cl. 1.
Seaman-Andwall Corp.: *See*—
American-Marietta Co.
Seasonmaster, Inc., Westbury, N.Y. 706,142, canc. Cl. 12.
Seits-Asbest-Werke Theo & Geo Seits Kommanditgesellschaft, Bad Kreuznach, Germany. 819,878, pub. 9–20–66. Cl. 31.
Selig Chemical Industries, Inc., The: *See*—
Selig Co., The.
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Seymour Foods, Inc., Topeka, Kans. 706,114, canc. Cl. 46.
Shanahan, W. S., & Co., Culver City, Calif. 819,906, pub. 10–6–66. Cl. 35.
Shield Fabricators, Inc., Gardena, Calif. 705,762, canc. Cl. 2.
Shirley Industries, Inc., Chicago, Ill. 819,822, pub. 9–20–66. Cl. 21.
Silvray Lighting Inc., New York, N.Y. 705,902, canc. Cl. 21.
Ski Country USA, Inc.: *See*—
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Slate Knit, Inc., Slatington, Pa. 706,027, canc. Cl. 42.
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Snd Kist Tree Corp., Cheboygan, Mich. 820,025, pub. 9–20–66. Cl. 50.
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South Dakota Fireworks, Inc., Sioux Falls, S. Dak. 819,737, pub. 9–20–66. Cl. 9.
South Dakota Fireworks, Inc., Sioux Falls, S. Dak. 819,738, pub. 9–20–66. Cl. 9.
Southern Agricultural Insecticides, Inc., Palmetto, Fla. 819,-713, pub. 9–20–66. Cl. 6.
Southern Department Stores, Inc., Richmond, Va. 706,088, canc. Cl. 39.
Spmayon Products, Inc., Bedford Heights, Ohio. 819,733, pub. 9–20–66. Cl. 6.
Spmayon Products, Inc., Bedford Heights, Ohio. 819,734, pub. 9–20–66. Cl. 6.
Specialty Converters, Inc., East Braintree, Mass. 819,682, pub. 5–24–66. Cl. 1.
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Baker, Jack, Sportswear Co. Inc.
Squibb, E. R., & Sons, Inc., from Olin Mathieson Chemical Corp., New York, N.Y. 819,785, pub. 6–21–66. Cl. 18.
Standard Knitting Mills, Inc., Knoxville, Tenn. 819,968, pub. 9–20–66. Cl. 39.
Star Advertising Co., Inc., Philadelphia, Pa. 820,079, pub. 9–20–66. Cl. 101.
Stark Bro's Nurseries & Orchards Co., Louisiana, Mo. 819,-687, pub. 9–20–66. Cl. 1.
Statistical Tabulating Corp., Chicago, Ill. 820,083, pub. 9–2–66. Cl. 101.
Steel Scaffolding Co., Evansville, Ind., to Harsco Corp., Wormleysburg, Pa. 218,837, ren. 12–6–66. Cl. 50.
Sterling Drug Inc., New York, N.Y., from Laurence W. Helweg, d.b.a. Aschenbach & Miller, Philadelphia, Pa. 819,786, pub. 7–19–66. Cl. 18.
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Stewart-Warner Corp., Chicago, Ill. 705,892, canc. Cl. 21.
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Structo Mfg. Co.: *See*—
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Summit Laboratories, Inc., Indianapolis, Ind. 820,045, pub. 9–20–66. Cl. 51.
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Sun Oil Co., Philadelphia, Pa. 424,507, ren. 12–6–66. Cl. 15.
Sun Oil Co., Philadelphia, Pa. 424,509, ren. 12–6–66. Cl. 15.
Sun Oil Co., Philadelphia, Pa. 424,639, ren. 12–6–66. Cl. 35.
Superior Plastics Inc., Chicago, Ill. 706,127, canc. Cl. 50.
Supreme Photo Supply Co., Inc., d.b.a. Supre-Tone, New York, N.Y., 819,863, pub. 4–26–66. Cl. 26.
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Sutherland, Robert Q., Kansas City, Mo. 705,733, canc. Cl. 1.
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Taylor, Harriet, d.b.a. Varil Industries, Evanston, Ill. 819,-932, pub. 9–20–66. Multiple Class (Classes 39 and 40).
Technic, Inc., Cranston, R.I. 819,714, pub. 9–20–66. Cl. 6.
Tecom Corp., Minneapolis, Minn. 819,899, pub. 9–20–66. Cl. 34.
Tecom Corp., Minneapolis, Minn. 819,900, pub. 9–20–66. Cl. 34.
Textile Rubber & Chemical Co., Dalton, Ga. 820,114. Cl. 42.
Textron Electronics Inc., Providence, R.I. 819,815, pub. 9–20–66. Cl. 21.
Texas Pharmacal Co.: *See*—
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Thermo-Craft Corp., Montville, N.J. 705,885, canc. Cl. 21.
Thomas, Ann, New York, N.Y. 820,081, pub. 9–20–66. Cl. 101.
Time-Mist, Inc., Stamford, Conn. 819,704, pub. 9–20–66. Cl. 6.
Timber-Top, Inc., Freeport, N.Y. 819,769, pub. 9–20–66. Cl. 18.
Timber-Top, Inc., Freeport, N.Y. 819,770, pub. 9–20–66. Cl. 18.
Timber-Top, Inc., Freeport, N.Y. 819,771, pub. 9–20–66. Cl. 18.
Timber-Top, Inc., Freeport, N.Y. 819,772, pub. 9–20–66. Cl. 18.

Timber-Top, Inc., Freeport, N.Y. 819,773, pub. 9–20–66. Cl. 18.
Tingue, Brown & Co., New York, N.Y. 706,128, canc. Cl. 50.
Tippett & Wood, Phillipsburg, N.J. 705,913, canc. Cl. 22.
Touraine Chemical Co.: *See*—
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Touraine, Heinz M., d.b.a. Touraine Chemical Co., Long Island City, N.Y. 820,067, pub. 9–20–66. Cl. 52.
Tu-Bar Corp., Cleveland, Ohio. 819,857, pub. 9–20–66. Cl. 23.
Tuesday Publications, Inc., Chicago, Ill. 820,111. Cl. 38.
Traffic Service Corp., The, Washington, D.C. 223,119, ren. 12–6–66. Cl. 38.
Trappey's, B. F., Sons Inc., New Iberia, La. 820,117. Cl. 46.
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Trinidad Lake Asphalt Contracting Co. of Rhodesia (Private) Ltd., Salisbury, Southern Rhodesia. 705,750, canc. Cl. 1.
Tri-Par Sales Co., New York, N.Y. 820,028, pub. 9–20–66. Cl. 50.
Tri-State Bedding Co., Inc., Bowling Green, Ky. 819,888, pub. 9–20–66. Cl. 32.
Tylok International, Inc., Euclid, Ohio. 819,768, pub. 9–20–66. Cl. 18.
UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme, Saint-Gilles, near Brussels, Belgium. 819,882, pub. 9–20–66. Cl. 21.
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Goldmann, Max.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 425,118, ren. 12–6–66. Cl. 18.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 425,142, ren. 12–6–66. Cl. 18.
Uncas Mfg. Co., Providence, R.I. 705,978, canc. Cl. 28.
Union Carbide Corp., New York, N.Y. 819,846, pub. 9–20–66. Cl. 23.
Union Fork and Hoe Co., The, Columbus, Ohio. 819,854, pub. 9–20–66. Cl. 23.
Union Oil Co. of California: *See*—
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United Aircraft Corp.: *See*—
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United Distributors Service: *See*—
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United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 819,874, pub. 9–20–66. Cl. 29.
United Distributors Service, Inc., d.b.a. United Distributors Service, Roanoke, Va. 819,907, pub. 9–20–66. Cl. 35.
United Farms Co., to R. Koyama, d.b.a. Koyama Farms, Gudalupe, Calif. 426,168, ren. 12–6–66. Cl. 46.
United States Rubber Co., New York, N.Y. 706,049, canc. Cl. 39.
United States Plywood Corp., New York, N.Y. 819,749, pub. 9–20–66. Cl. 13.
Universal Match Corp., St. Louis, Mo. 819,884, pub. 9–20–66. Cl. 21.
University of Dayton, Dayton, Ohio. 820,089, pub. 9–20–66. Cl. 200.
U.S. Plastic Laminating Co.: *See*—
Archer Enterprises, Inc.
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Vanda Cosmetics: *See*—
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Varil Industries: *See*—
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Vindale Corp., Brookville, Ohio. 819,804, pub. 9–20–66. Cl. 19.
Vindale Corp., Brookville, Ohio. 819,805, pub. 9–20–66. Cl. 19.
Vineland Chemical Co., Vineland, N.J. 819,696, pub. 2–22–66. Cl. 6.
Visual Panographics, Inc., New York, N.Y. 820,069, pub. 1–5–65. Cl. 100.
Vitamin Food Co., Inc., to M. L. Schneisin, d.b.a. Vegex Co., New York, N.Y. 211,126, ren. 12–6–66. Cl. 46.
Vitramon, Inc., Monroe, Conn. 819,921, pub. 9–20–66. Cl. 38.
Vital Foods: *See*—
Landstrom Co.
Wahl, William, Corp., Santa Monica, Calif. 819,874, pub. 9–20–66. Cl. 26.
Waldron & Co., Inc., Philadelphia, Pa., to Schwarts Jewelry Co., Inc., Buffalo, N.Y. 423,780, ren. 12–6–66. Cl. 23.
Wallace & Co., Brooklyn, N.Y. 706,104, canc. Cl. 46.
Wallace & Co., Brooklyn, N.Y. 706,113, canc. Cl. 46.
Ward Foods, Inc., New York, N.Y. 820,012, pub. 9–20–66. Cl. 46.
Ward, H. W., & Co., Ltd., Selly Oak, Birmingham, England. 819,861, pub. 9–20–66. Cl. 23.
Warner-Lambert Pharmaceutical Co.: *See*—
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Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 819,701, pub. 9–20–66. Cl. 6.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 820,097. Cl. 18.
Washington Forge, Inc., Englishtown, N.J. 819,855, pub. 9–20–66. Cl. 23.
Washington Forge, Inc., Englishtown, N.J. 819,856, pub. 9–20–66. Cl. 23.
Washington Magazine, Inc., Washington, D.C. 820,108. Cl. 38.
Washington Magazine, Inc., Washington, D.C. 820,109. Cl. 38.
Washington Magazine, Inc., Washington, D.C. 820,110. Cl. 38.
Wayne Knitting Mills, Humboldt, Tenn. 819,964, pub. 9–20–66. Cl. 39.
Wells Fargo Bank, San Francisco, Calif. 820,083, pub. 9–20–66. Cl. 102.
West Chemical Products, Inc.: *See*—
West Disinfecting Co.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 423,495, ren. 12–6–66. Cl. 52.
Western Alloy Products Co., Grand Junction, Colo. 705,924, canc. Cl. 23.
Western Mass. Associates, Inc., West Springfield, Mass. 819,-808, pub. 9–20–66. Cl. 19.
Weyerhaeuser Co., Tacoma, Wash. 705,772, canc. Cl. 5.
Weyerhaeuser Co., Tacoma, Wash. 820,075, pub. 9–20–66. Cl. 100.
W.H. Co., Clayton, Mo. 705,798, canc. Cl. 8.
White Consolidated Industries, Inc., Cleveland, Ohio. 820,-101. Cl. 23.
Wickes Corp., The, Saginaw, Mich. 819,759, pub. 9–20–66. Multiple Class (Classes 13 and 20).
Wilbold Glea, Inc., from Acorn Adhesives Co., Inc., Los Angeles, Calif. 705,760, canc. Cl. 5.
Williams Furnace Co., Buena Park, Calif. 819,905, pub. 9–20–66. Cl. 24.
Williams, Ted, Inc., Miami, Fla. 705,919, canc. Cl. 22.
Witco Chemical Co., Inc., New York, N.Y. 819,700, pub. 9–20–66. Cl. 6.
Wilson & Co., Inc., Chicago, Ill. 706,093, canc. Cl. 46.
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Wolferman, Fred.
Wolferman, Fred, to Fred Wolferman, Inc., Kansas City, Mo. 60,712, ren. 12–6–66. Cl. 46.
Woodman Co., Inc., Decatur, Ga. 705,937, canc. Cl. 23.
Woodford Mfg. Co., Des Moines, Iowa. 819,850, pub. 9–20–66. Cl. 23.
World Publishing Co., The, Cleveland, Ohio. 819,917, pub. 9–20–66. Cl. 28.
World Wide Perfumes, Inc., Montgomery, Ala. 820,054, pub. 9–20–66. Cl. 51.
Wyandotte Chemicals Corp., Wyandotte, Mich. 819,702, pub. 9–20–66. Cl. 6.
Wyandotte Chemicals Corp., Wyandotte, Mich. 820,064, pub. 9–20–66. Cl. 52.
Zefyr Industries, Inc., Morrison, Ill. 819,887, pub. 9–20–66. Cl. 32.
Zimmon & Co., Inc., Belmont, Calif. 819,947, pub. 9–20–66. Cl. 39.
Zonolite Co., The, Libby, Mont., to W. R. Grace & Co., New York, N.Y. 216,862, ren. 12–6–66. Cl. 1.

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

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PATENTS

NOTICES

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Board of Appeals Hearings

Effective January 1, 1967, examiners will be permitted to attend Board of Appeals hearings in cases related to their technology. Not more than two examiners will attend any one hearing, and they will be present as observers only.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 2, 1966.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Reply by Applicant to Office Action

Effective on the date of publication of this notice in the Federal Register, § 1.111(b) is amended to read as indicated below. This amendment provides that objections or requirements as to form not necessary to further consideration of the claims may be held in abeyance only until patentable subject matter in the application is indicated, rather than until a claim is actually allowed, as was heretofore the case. Since the amendment is procedural only, and makes no substantive change, notice and public hearings are deemed unnecessary.

In § 1.111, paragraph (b) is amended by striking out "a claim is allowed" at the end of the parenthetical matter and inserting in lieu "allowable subject matter is indicated," so that the paragraph, amended, reads as follows:

§ 1.111 *Reply by applicant.*

* * * * *

(b) In order to be entitled to reexamination or reconsideration, the applicant must make request therefor in writing, and he must distinctly and specifically point out the supposed errors in the examiner's action; the applicant must respond to every ground of objection and rejection in the prior office action (except that request may be made that objections or requirements as to form not necessary to further consideration of the claims be held in abeyance until allowable subject matter is indicated), and the applicant's action must appear throughout to be a bona fide attempt to advance the case to final action. A general allegation that the claims define invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section.

* * * * *

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6, 131, 132)

Dated: October 24, 1966.

EDWIN L. REYNOLDS,
Acting Commissioner.

Approved:

J. HERBERT HOLLOMAN,
Assistant Secretary for Science and Technology.

[F.R. Doc. 66-11834; Filed, Oct. 31, 1966; 8:45 a.m.]

Published in 31 F.R. 13944, Nov. 1, 1966

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,911,312, L. C. Hoffman, NON-TOXIC ALUMINUM ENAMEL FRITS, decided May 31, 1966, Interference No. 92,758, claims 1 and 2.

Patent No. 2,937,296, J. J. Logan, SPARK DISCHARGE DEVICE, decided May 26, 1966, Interference No. 93,825, claim 1.

Patent No. 3,026,203, V. C. Chambers, Jr. and A. E. Oberth, SILVER HALIDE PHOTOGRAPHIC EMULSIONS CONTAINING LINEAR POLYAMINE SENSITIZING AGENTS, decided June 20, 1966, Interference No. 93,906, claims 1, 2 and 7.

Patent No. 3,030,326, A. I. Goldberg, A. B. Loebel and K Victor Jasinski (now by change of name Victor Jasinski), PREPARING A GRAFT COPOLYMER OF VINYL ACETATE AND A PROPYLENE OXIDE, ETHYLENE OXIDE AND ETHYLENE DIAMINE REACTION PRODUCT AND COMPOSITIONS CONTAINING SAME, decided July 28, 1966, Interference No. 93,798, claim 4.

Patent No. 3,041,508, H.-J. Henkel and R. Gremmelmaier, TUNNEL DIODE AND METHOD OF ITS MANUFACTURE, decided June 30, 1966, Interference No. 93,256, claims 1, 2 and 6.

Patent No. 3,105,170, W. F. Palmer, APPARATUS FOR CHARGING AND REGULATING THE VOLTAGE ACROSS A CAPACITOR, decided July 27, 1966, Interference No. 94,271, claims 6, 7, 8 and 9.

Patent No. 3,140,915, B. A. Axelrad, R. F. Matson and F. J. Touro, METHOD OF INHIBITING DISSOLUTION OF CALCIUM SULFATE, decided July 28, 1966, Interference No. 94,735, claims 1, 7 and 15.

New Applications Received During October 1966

Patents	7539
Designs	381
Plant Patents	7
Reissues	17
Total	7944

Issue—December 13, 1966

Patents	1486	No. 3,290,698 to No.	3,292,178, incl.
Designs	55	No. 206,424 to No.	206,478, incl.
Plant Patents	3	No. 2,691 to No.	2,693, incl.
Reissues	5	No. 26,123 to No.	26,127, incl.
Total	1549		

Patent No. 3,152,263, P. J. deFries, SEMICONDUCTOR LOGIC CIRCUIT WITH VOLTAGE DIVIDING BASE CHANNELS, decided Oct. 20, 1966, Interference No. 94,838, claims 1, 2, 3, 4, 5 and 6.

Patent No. 3,168,632, J. G. Baran and A. E. Feinberg, BALLAST DISCONNECT DEVICE HAVING A COATING OF FLUX MATERIAL, decided Oct. 20, 1966, Interference No. 95,050, claims 1, 2, 3 and 4.

Patent No. 3,170,276, R. V. Hall, AIR SUPPORTED LAWN MOWER, decided Nov. 7, 1966, Interference No. 95,411, claims 1, 2 and 3.

Patent No. 3,195,308, G. M. Widell, VORTEX VALVE, decided Aug. 8, 1966, Interference No. 95,341, claims 1, 2 and 3.

Classification Order No. 384

Classification Order No. 384, dated September 22, 1966, incorporates changes in the following classes:

23, CHEMISTRY
30, CUTLERY
60, POWER PLANTS
102, AMMUNITION AND EXPLOSIVE DEVICES
128, SURGERY
131, TOBACCO
137, FLUID HANDLING
192, CLUTCHES AND POWER-STOP CONTROL
214, MATERIAL OR ARTICLE HANDLING
222, DISPENSING
244, AERONAUTICS
260, CHEMISTRY, CARBON COMPOUNDS
340, COMMUNICATIONS, ELECTRICAL

All of the above changes will be incorporated in the Manual of Classification replacement pages dated October 1966.

GEORGE A. GOBRECKI,
Director, Office of Patent Classification.

Adjudicated Patents

(C.A. Tex.) Johnson and Harvey Patent No. 3,428,173 (182—115), for PORTABLE AND COLLAPSIBLE SCAFFOLDING. Claims 1 and 2 *Held* invalid. *Up-right* v. *Safway Products, Inc.*, 364 F.2d 580; 150 USPQ 579.

(C.A. Ill.) Zegers Patent No. 3,058,176 (49—435), for MEANS FOR AND METHOD OF DETACHABLY MOUNTING SASH GUIDING WEATHERSTRIPS IN WINDOW FRAMES. Claims 1, 3 and 4 *Held* invalid; claims 5 and 6 *Held* valid and infringed. *Zegers* v. *Zegers, Inc.*, 365 F.2d 166; 150 USPQ 400.

(C.A. Minn.) Harmes, Threlkeld and Deal Patent No. 3,058,668 (239—305), for CLEANING APPARATUS. Claims 4 to 6 and 8 *Held* invalid. *L and A Products, Inc.* v. *Britt Tech. Corp.*, 365 F.2d 83; 150 USPQ 770.

(D.C. Ohio) Jaeger Patent No. 2,508,393 (90—123) for SHORTENING, *Held* not infringed. *Top Scor Products, Inc.* v. *H. C. Fisher Co.*, 247 F. Supp. 775; 150 USPQ 429.

(D.C.N.C.) Gunther Patent No. 3,006,035 (19—96), for COTTON CARDING MACHINE. Claims 1 to 3 *Held* invalid but infringed. *Gunther & Cook Inc.* v. *Southern Elec. Service Co.*, 256 F. Supp. 639; 149 USPQ 438.

(D.C.N.Y.) Appeldorn Patent No. 3,126,786 (88—24), for OVERHEAD PROJECTION SYSTEM. Claims 1–5, 7 and 9 *Held* invalid and not infringed. *Minnesota Min. & Mfg. Co.* v. *Projection Optics*, 256 F. Supp. 354; 150 USPQ 33.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 24, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-2-63	10-10-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Ase; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	8-31-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	6-1-63	8-21-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-5-63	2-2-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-2-63	8-3-62
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-6-64	4-26-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	3-13-63	6-12-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-13-63	7-31-61
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	10-25-62
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	6-15-65	2-6-65

Total number of pending applications (excluding Designs)	195,508
Total number of Design applications pending	4,290
Total number of applications awaiting action (excluding Designs)	143,916
Total number of Design applications awaiting action	2,461
Date of oldest new application awaiting action	Feb. 5, 1963
Date of oldest amended application awaiting action	June 12, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1966*.

Patents ..... Numbers 2,460,011 to 2,492,943, inclusive
Plant Patents ..... Numbers 904 to 910, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-64	5-22-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7-1-64	3-26-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-2-64	3-22-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-7-65	10-31-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-10-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-6-64	7-26-62

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office Before the Board of Appeals

EX PARTE ANDRE ALLAIS

Appeal No. 407—38. Decided November 30, 1965

1. PATENTABILITY—POSITION ISOMER OF CLAIMED COMPOUND—AFFIDAVIT ASSERTION INSUFFICIENT WITHOUT SUPPORTING EVIDENCE.

"While we are not necessarily in agreement with all objections advanced by the Examiner against these showings, we do agree with his conclusion that they are inadequate to establish unexpected superiority over * * * the admitted position isomer of the claimed compound * * *. This affidavit, without supporting evidence, merely asserted that this isomer had no appreciable activity as reserpine antagonist."

2. SAME—SAME—SAME.

"The second affidavit * * * compared the benzoate of the two amines in question but again failed to make any comparison with the free base or the hydrochloride salt of the reference compound. Appellant has shown that his own free base is four times as active as the benzoate salt thereof which seems to make the free base comparison imperative. The comparison with the two trypt-amines is of less significance and need not be discussed."

3. SAME—SAME—SAME.

"The Examiner pointed out that the amount of the compounds used in the later affidavit corresponded to the mean lethal dosage and, therefore, the showing did not prove effectiveness of the drug at a safe (nontoxic) level. Appellant's response to this is that these tests were made for comparative purposes only. This may be so but we have little confidence in the reliability of ptosis measurements made on dying animals."

4. PATENTABILITY—ANTICIPATION—COMPOUND—35 U.S.C. 102(b)—*In re Petering* CONSTRUED.

"We are * * * inclined to affirm the rejection of claims 1, 2 and 4 as fully met by Young under 35 U.S.C. 102(b) in view of the small number of compounds embraced by his formula * * * coupled with his more specific descriptions and designations of substituents and positions thereof in the nucleus."

5. SAME—PARTICULAR SUBJECT MATTER—1-(6'-METHOXY-3'-INDOLYL)-2-PROPYLAMINE, ITS PROCESS OF PREPARATION AND USE.

The refusal of certain compound claims in an application entitled "1-(6'-Methoxy-3'-Indolyl)-2-Propylamine, Its Process of Preparation and Use," as unpatentable over the prior art, is reversed as to one claim and affirmed as to the others.

APPEAL from the Examiner (Nicholas S. Rizzo) of Group 120. Serial No. 230,989, Patent No. 3,260,729, a continuation-in-part of Serial No. 760,536.

AFFIRMED-IN-PART.

Hammond and Littell for appellant.

Before ASP and MAGIL, *Examiners-in-Chief*, and MANGAN, *Acting Examiner-in-Chief*

ASP, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 1 through 4. Claims 7 and 8, the remaining claims in the application, stand withdrawn from further consideration as being for a non-elected invention. Rule 142(b).

Claim 1 is reproduced as illustrative.

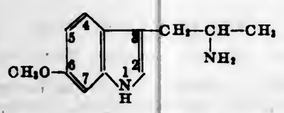
1. A compound selected from the group consisting of 1-(6'-methoxy-3'-indolyl)-2-propylamine and the therapeutically-compatible acid addition salts thereof.

The references relied upon are:

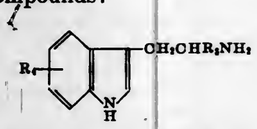
Ullyot, 2,921,069, January 12, 1960 (Filed Apr. 4, 1956).

Young, 3,042,684, July 3 1962 (Filed Feb. 13, 1956).
Vane et al., Nature (London), vol. 191, Sept. 9, 1961, pages 1068–1069.

The claims on appeal are for a compound of the following formula and its acid addition salts:



This compound is disclosed on page 3 of the specification as useful in synthesis of compounds of the reserpine series, as well as being therapeutically active itself. One of these activities is the antagonistic effect on the depressive action of reserpine, and this forms the basis of appellant's showing to overcome the rejection on Young who discloses the following compounds:



where R_4=aryloxy, alkyl or alkoxy and R_3 is alkyl.

The Examiner rejected claims 1, 2 and 4 as fully anticipated by Young within the meaning of 35 U.S.C. 102(b) in view of the fact that such a small class of compounds was involved in the above formula that the presently claimed compound would be clearly envisaged. *In re Petering et al.*, 49 CCPA 993; 1962 C.D. 232; 780 O.G. 710; 301 F.2d 676; 133 USPQ 275. The Examiner in support of this holding points out that Young clearly shows that R_4 may be 6-methoxy in the intermediate (col. 2, line 50) and Example 2 (col. 4, line 2) specifically discloses 6-methoxyindole-3-aldehyde as an intermediate for production of the final compound. The method is essentially the same as that employed by appellant in his synthesis. Finally in Example 37 the patentee prepared 3-β-aminopropyl-5-methoxyindole hydrochloride. This is admittedly a position isomer of appellant's compound. The picrate of claim 4 is taught among various acid salts in line 46 of column 2 of Young.

Claims 1 through 4 were additionally rejected as obvious over Young under 35 U.S.C. 103 since the choice of the particular substituents was at least made obvious by the patentee's disclosure. The benzoate of claim 3 was considered as obvious in view of Ullyot disclosing the benzoic acid salt of similar pharmaceutical compounds.

Appellant has furnished two affidavits by one Dr. Jequier in an effort to establish superior activity in reversing reserpine sedation or depression as compared with the closest compound actually prepared by Young, namely that of Example 37. The Examiner found fault with both showings. [1] While we are not necessarily in agreement with all objections advanced by the Examiner against these showings, we do agree with his conclusion that they are inadequate to establish unexpected superiority over either the free base or the hydrochloride salt of Young's 3-β-aminopropyl-5-methoxyindole which is admitted to be a position isomer of the claimed compound (see e.g. page 10 of the Jequier affidavit, paper No. 6, filed August 12, 1963). This affidavit, without supporting evidence, merely asserted that this isomer had no appreciable activity as reserpine antagonist.

[2] The second affidavit, paper No. 8 filed December 10, 1964, compared the benzoate of the two amines in question but again failed to make any comparison with the free base or the hydrochloride salt of the reference compound. Appellant has shown that his own free base is four times as active as the benzoate salt thereof which seems to make the free base comparison imperative. The comparison with the two tryptamines is of less significance and need not be discussed.

[3] The Examiner pointed out that the amount of the compounds used in the later affidavit corresponded to the mean lethal dosage and, therefore, the showing did not prove effectiveness of the drug at a safe (nontoxic) level. Appellant's response to this is that these tests were made for comparative purposes only. This may be so but we have little confidence in the reliability of ptosis measurements made on dying animals.

However, in appellant's favor, the prior affidavit did establish that a 50% reversal of ptosis occurred with a dose of 5 mg./kg. of the free base and 20 mg./kg. of the benzoate, whereas 50 to 100 mg./kg. of the benzoate salt of Young (Example 37) did not cause any appreciable reversal. It is contended that the 50% reversal should be the basis for measuring the therapeutic index.

Our conclusion as a result of the study of the record in this case is that the rejection of claim 3 to the benzoate is not sustainable but that the rejection of claims 1, 2 and 4 should be upheld since the showing is wholly inadequate and not convincing of unexpected superiority over either the free base or hydrochloride salt of Young. We regard Young as unquestionably rendering the compounds of claims 1, 2 and 4 obvious under 35 U.S.C. 103. [4] We are, however, also inclined to affirm the rejection of claims 1, 2 and 4 as fully met by Young under 35 U.S.C. 102(b) in view of the small number of compounds embraced by his formula, above reproduced, coupled with his more specific descriptions and designations of substituents and positions thereof in the nucleus.

We find it unnecessary to discuss either Vane et al., cited by the Examiner, or the Bertaccini et al. article offered by appellant.

[5] The decision of the Examiner is affirmed as to claims 1, 2 and 4 but is reversed as to claim 3.

AFFIRMED-IN-PART.

In the United States Patent Office
Before the Board of Appeals

Appeal No. 437—63. Decided October 14, 1965

1. DESIGN—PATENTABILITY—STATUTORY BAR UNDER 35 U.S.C. 102(b)—PUBLIC USE OR ON SALE.

"The appealed design has also been rejected, as stated by the Examiner, 'under the "public use" portion of 35 U.S.C. 102(b).' We take this to cover the 'public use or on sale' mentioned in this section of the statute, these factors being commonly coupled together."

2. SAME—SAME—SAME—SAME.

"We are here dealing with a design. In a design, the sole concern is the factor of appearance or visual impact, as distinguished from any functional or mechanical considerations. It seems to us that once a three-dimensional design entity, as here, is brought into being and placed in its intended environment, all of the involved appearance aspects would be immediately manifest and require no further study. Its completeness, to the extent of its inherent esthetic capability, would be instantaneous, and unlike that of a mechanical entity, which may need experiment and tests to establish proper functional

performance and operativeness. Thus, in the present situation, the installation of the signs on the MTA bus in accordance with the design at bar is all that would be necessary [for 'public use or on sale' under 35 U.S.C. 102(b)], and any further demonstration and test procedures must have been for purposes other than design."

3. SAME—SAME—SAME—SAME.

In connection with evidence showing that signs bearing the claimed ornamental design for an advertising sign for buses were installed in an MTA bus more than one year prior to the filing of the appellant's design application, and with reference to appellant's contention that said installation was "for demonstration and test purposes only" *Held* that "* * * the attachment of the signs on the bus certainly constituted an offer for sale of the design in question"; that "Hence, said design was 'on sale,' and this more than one year prior to the filing of this case"; that "Moreover, there being no privity between the parties involved, we think that the aforementioned attachment, which brought the design into being, would also be a public use"; that "The latter does not require use by more than one entity, here the MTA, nor would it here require the bus with the sign installed thereon to travel the open street or highway"; and that "For the reasons given, we deem a violation of the public use or on sale provisions of section 102(b) of Title 35, U.S. Code, to have occurred, barring the grant of appellant's design."

4. SAME—SAME—PARTICULAR SUBJECT MATTER—"ADVERTISING SIGN FOR BUSES, OR THE LIKE."

The refusal of a claim in an application for a design patent entitled "Advertising Sign for Buses, or the Like," is affirmed under the "public use or on sale" provision of 35 U.S.C. 102(b).

APPEAL from the Examiner (Wallace R. Burke) of Group 490. Serial No. D-70,506.

AFFIRMED.

Dike, Thompson, Bronstein & Mrose for appellant.

Before MCCANN, FRIEDMAN and KREEK, *Examiners-in-Chief*

FRIEDMAN, *Examiner-in-Chief*.

This is an appeal from the final rejection of the following claim:

The ornamental design for an advertising sign for buses, or the like, substantially as shown and described.

The references relied upon are:

Cheatwood, Des. 100,487, July 21, 1936.
McConnell, 2,753,640, July 10, 1956.

Appellant's design has been rejected under 35 U.S.C. 103 as unpatentable over Cheatwood in view of McConnell.

Upon careful consideration of the issues presented, we are not inclined to agree with this rejection. There are differences between the instant design and that of Cheatwood, the primary reference, as pointed out by appellant in his brief. These differences, in our opinion, render the designs involved significantly dissimilar in over-all appearance. The subsidiary reference McConnell would have no bearing on this, nor would it be alone suggestive of appellant's design.

Accordingly, the rejection herein based on the prior art will not be sustained.

[1] The appealed design has also been rejected, as stated by the Examiner, "under the 'public use' portion of 35 U.S.C. 102 (b)." We take this to cover the "public use or on sale" mentioned in this section of the statute, these factors being commonly coupled together.

The instant record (affidavit submitted February 4, 1964) shows that on May 30, 1961, more than one year prior to the filing of this application, appellant's assignee installed signs on a bus of the Boston, Massachusetts Metropolitan Transit Authority (hereinafter referred to as MTA). That such signs conformed to the design before us, in both configuration and placement on the bus, is evidenced by appellant's affidavits; for example, that submitted February 4, 1964 denotes the signs installed as aforesaid to be as mentioned in his earlier affidavit submitted March 12, 1963, and paragraphs 4 and 5 of the latter read together clearly indicate the conformity.

We are not impressed by appellant's contentions that said installation was "for demonstration and test purposes only," and by his resulting position that therefore only an experimental use is involved, which would not act to his detriment.

[2] We are here dealing with a design. In a design, the sole concern is the factor of appearance or visual impact, as distinguished from any functional or mechanical considerations. It seems to us that once a three-dimensional design entity, as here, is brought into being and placed in its intended environment, all of the involved appearance aspects would be immediately manifest and require no further study. Its completeness, to the extent of its inherent esthetic capability, would be instantaneous, and unlike that of a mechanical entity, which may need experiment and tests to establish proper functional performance and operativeness. Thus, in the present situation, the installation of the signs on the MTA bus in accordance with the design at bar is all that would be necessary, and any further demonstration and test procedures must have been for purposes other than design. In the sense indicated, the authorities relied on by appellant, as mentioned for example at page 3 of his brief, would here be without pertinence.

[3] The record would signify a lack of any privity between appellant's assignee and the MTA, and under the circumstances denoted, it would follow that regardless of who may have initiated the proceedings the actions of the assignee immediately prior to and including the attachment of the signs on the bus certainly constituted an offer for sale of the design in question. Hence, said design was "on sale," and this more than one year prior to the filing of this case.

Moreover, there being no privity between the parties involved, we think that the aforementioned attachment, which brought the design into being, would also be a public use. The latter does not require use by more than one entity, here the MTA, nor would it here require the bus with the sign installed thereon to travel the open street or highway.

[4] For the reasons given, we deem a violation of the public use or on sale provisions of section 102(b) of Title 35, U.S. Code, to have occurred, barring the grant of appellant's design. We will accordingly sustain the instant rejection.

The decision of the Examiner in rejecting the appealed design claim is affirmed.

AFFIRMED.

In the United States Patent Office
Before the Board of Appeals

Appeal No. 194—38. Decided February 18, 1965

1. PATENTABILITY—STATUTORY BAR UNDER 35 U.S.C. 102(d).

"The present application was filed June 27, 1960. More than twelve months earlier, on June 22, 1959, appellants applied for a patent in Switzerland and the invention has since been patented in Switzerland on the basis of that application, Swiss Patent No. 347,141. There is no question as to the inventions and the parties being the same, the only question raised being the time the invention was patented in Switzerland. If the invention was patented in

Switzerland prior to June 27, 1960, a patent in the U.S. is barred by sec. 102(d), otherwise not."

2. SAME—EFFECTIVE DATE OF SWISS PATENTS—*Ex parte Reuge* CONSTRUED.

"The question of the dates of Swiss patents was considered in *Ex parte Reuge*, 115 USPQ 51. * * * *Ex parte Reuge* considered only the Swiss law and practice in effect prior to January 1, 1956 (which was under the law of 1907). A new patent law came into effect on January 1, 1956, as well as new regulations. Subsequently, revised regulations came into effect on October 1, 1959. Consequently the law of January 1, 1956 and the regulations of October 1, 1959, under which appellants' Swiss patent was issued, must be considered. Furthermore, *Ex parte Reuge* was predicated to a certain extent on an analogy with the practice with respect to German patents and the practice as stated in *Ex parte Reuge* no longer prevails, *Ex parte Gruschwitz et al.*, infra."

3. SAME—SWISS PATENTS.

"Under the present law and regulations, two different systems of issuing patents are simultaneously in operation in Switzerland. One system is governed by part 2 of the statute and one set of regulations. This system is similar to the old one. The other system is governed by part 4 of the statute and a separate set of regulations. This system involves a search for novelty and a different procedure. It is only applicable to applications in two designated fields: processes for treating textile fibers not entirely mechanical and products obtained by such processes, and inventions in the field of measuring time. The examination procedure was started by part II of the regulations of October 1, 1959 and the first patent issued under the examination system was granted on May 31, 1962."

4. SAME—EFFECTIVE DATE OF SWISS PATENTS.

"We have found nothing which would warrant arriving at a different conclusion than that arrived at in *Ex parte Reuge*, according to which the * * * date * * * July 30, 1960, would be the controlling one. While the [Swiss] patent was technically granted on June 15, the right to sue and collect damages for infringement did not commence until July 11 [when a notice was published that a patent had been granted], or July 30, 1960 [when the specification was published]. The ambiguity on this point, referred to an *Ex parte Reuge*, does not appear to have been settled, either by the new statute or by a court decision; it still remains a question of expert opinion and experts have differed. However, both these dates are subsequent to the filing of the present application in the United States. Furthermore, the [Swiss] regulations of October 1, 1959, specifically provide that the specification is not available to the public until * * * [July 30, 1960, when the specification was published] * * *."

5. SAME—EFFECTIVE DATE OF SWISS PATENTS UNDER EXAMINATION SYSTEM.

"Swiss patents granted under the examination system are readily recognizable as the heading of the printed specification of the patent gives the date on which the application was published for opposition on which date the specification of the application was also issued in printed form."

APPEAL from the Examiner (J. P. Strizak) of Group 430. Serial No. 38,899.

REVERSED.

Curtis, Morris, and Safford for appellants.

Before FEDERICO, KREEK and KEELY, *Examiners-in-Chief*

FEDERICO, *Examiner-in-Chief*.

This is an appeal from the final rejection of all the claims in the case on the ground that appellants are barred a patent by reason of the provisions of paragraph (d) of section 102 of Title 35, U.S. Code. This paragraph provides that a patent cannot be obtained if:

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States, or * * *

[1] The present application was filed June 27, 1960. More than twelve months earlier, on June 22, 1959, appellants applied for a patent in Switzerland and the invention has since been patented in Switzerland on the basis of that application, Swiss Patent No. 347,141. There is no question as to the inventions and the parties being the same, the only question raised being the time the invention was patented in Switzerland. If the invention was patented in Switzerland prior to June 27, 1960, a patent in the U.S. is barred by sec. 102(d), otherwise not. The Examiner's position is that the invention was patented in Switzerland on June 15, 1960, the date the printed specification states that the patent was granted.

[2] The question of the dates of Swiss patents was considered in *Ex parte Reuge*, 115 USPQ 51. On the basis of that decision, the Examiner would be reversed, but the matter needs re-investigation for a number of reasons. *Ex parte Reuge* considered only the Swiss law and practice in effect prior to January 1, 1956 (which was under the law of 1907). A new patent law came into effect on January 1, 1956, as well as new regulations. Subsequently, revised regulations came into effect on October 1, 1959. Consequently the law of January 1, 1956 and the regulations of October 1, 1959, under which appellants' Swiss patent was issued, must be considered. Furthermore, *Ex parte Reuge* was predicated to a certain extent on an analogy with the practice with respect to German patents and the practice as stated in *Ex parte Reuge* no longer prevails, *Ex parte Gruschwitz et al.*, infra.

[3] Under the present law and regulations, two different systems of issuing patents are simultaneously in operation in Switzerland. One system is governed by part 2 of the statute and one set of regulations. This system is similar to the old one. The other system is governed by part 4 of the statute and a separate set of regulations. This system involves a search for novelty and a different procedure. It is only applicable to applications in two designated fields: processes for treating textile fibers not entirely mechanical and products obtained by such processes, and inventions in the field of measuring time. The examination procedure was started by part II of the regulations of October 1, 1959 and the first patent issued under the examination system was granted on May 31, 1962. Appellants' Swiss patent, although relating to time measurement, was issued under the non-examining part of the statute and regulations because of the date of the application.

The non-examining system, applied to all cases except those in the two fields mentioned and to cases in these two classes filed before a certain date, and which was applied in the case of appellants' Swiss patent, is similar in all essential respects to the previous non-examining system described in *Ex parte Reuge* and reference to that decision is made for the description. Dates and events with respect to the Swiss patent are listed:

1. "Demande déposé" (application filed): June 22, 1959, 19h.
2. "Brevet enregistré" (patent granted): June 15, 1960.
3. Application filed in the U.S.: June 27, 1960.
4. Publication of a notice that the patent had been granted: July 11, 1960.
5. "Exposé d'invention publié" (specification published): July 30, 1960.

Items 1, 2 and 5 are taken from the heading of the printed specification of Swiss Patent 347,141. Item 4 was supplied by a letter from the Swiss Patent Office filed by appellants.

[4] We have found nothing which would warrant arriving at a different conclusion than that arrived at in *Ex parte Reuge*, according to which the fifth date listed, July 30, 1960, would be the controlling one. While the patent was technically granted on June 15, the

right to sue and collect damages for infringement did not commence until July 11, or July 30, 1960. The ambiguity on this point, referred to in *Ex parte Reuge*, does not appear to have been settled, either by the new statute or by a court decision; it still remains a question of expert opinion and experts have differed. However, both these dates are subsequent to the filing of the present application in the United States. Furthermore, the regulations of October 1, 1959, specifically provide that the specification is not available to the public until the fifth event and date listed above, see *Ex parte Rackham*, 123 C.D. 4, *In re Af Ekenstam*, 1958 C.D. 402; 118 USPQ 349. The decision of the Examiner will be reversed.

It should be noted that this decision does not apply when the Swiss patent is one which has been issued under the examination system. The practice in such cases is quite similar to the practice in Germany, for which see *Ex parte Gruschwitz et al.*, 138 USPQ 505, 1963 C.D. 859. [5] Swiss patents granted under the examination system are readily recognizable as the heading of the printed specification of the patent gives the date on which the application was published for opposition on which date the specification of the application was also issued in printed form.

The decision of the Examiner is reversed.

REVERSED.

In the United States Patent Office Before the Board of Appeals

Appeal No. 315—40. Decided February 23, 1965

1. DESIGN—PATENTABILITY—ANTICIPATION—PLURAL EMBODIMENTS EMBRACED IN SINGLE CLAIM—*In re Rubinfield* CONSTRUED.

"While design practice as interpreted in *In re Rubinfield*, 47 CCPA 701; 123 USPQ 210 permits plural embodiments of a design concept to be illustrated, the design application is only directed to such concept and a single claim is permitted. Such claim is broad in the sense that anticipation of any embodiment presented as representative of the concept would defeat the claim."

2. SAME—SAME—OBVIOUSNESS—VARIED DISPOSITIONS OF MANIKIN'S ARMS AND LEGS.

"In consideration of the present drawings little in contour differing from representation of normal human anatomy and artful display thereof is noted. The headless manikin form is adequately demonstrated to be an old concept as well as the elongation and terminal treatment of the neck. Appellants argue as if each disposition of the arms and legs in poses was illustrative of a new design form. It appears to us that such presentations of the subject matter do no more than follow expected artistic practices in the positioning of well known subject matter. The novelty alleged for the article so disported does not appear to us to add unobvious character to the article for which a design patent is requested. Terms such as 'arrested motion' may be useful in describing an appearance but they cannot be accepted as definitive of such structure as creates the appearance or as subject matter *per se* upon which a design patent can issue."

3. SAME—SAME—PARTICULAR SUBJECT MATTER—"MANIKIN."

The refusal of a claim in an application for a design patent entitled "Manikin" is affirmed.

APPEAL from the Examiner (Adeline B. Hannah) of Group 490. Serial No. D-75,101.

AFFIRMED.

Fulwider, Patton, Rieber, Lee and Utecht for appellants.

Before DRACOPOULOS, BREWRINK and MANIAN, *Examiners-in-Chief*

BREWRINK, *Examiner-in-Chief*.

This is an appeal from the final rejection of the following design claim:

The ornamental design for an manikin substantially as shown and described.

The references relied upon by the Examiner are:

Wolf, Des. 194,961, April 2, 1963.
Young, 2,175,789, October 10, 1939.
Display World, January 1957, page 65, style #F, and style #K items.
Display World, July 1960, page 23, second photograph from top left of page.
Display World, January 1962, page 56, lower left corner, "Madisonia" manikin.
Display World, April 1962, front cover page, lower left kneeling manikin item.
Display World, June 1962, rec. May 25, page 19.
Hugh Lyons & Co. catalog, rec. May 15, 1941, page 1, "standing figure F-30."
Nat Siegel Inc., Nymphette Ladies and Junior Mannequins, catalog No. 49, rec. November 21, 1950, page 7, item 0308-A manikin, page 10, item 0509-A manikin.
Nat Siegel Inc., catalog No. 53, rec. November 1950, page 36, item No. 918-J.

In rejecting the design claim on the June 1962 Display World publication item, it is the Examiner's position that design features fully commensurate with FIGURES 5, 6 and 7 as well as FIGURES 14, 15 and 16 were presented in this publication more than one year before appellants' filing of the present application.

In rejecting the design claim on references other than the above, the Examiner combines references using the Hugh Lyons and Co. catalog item as a basic reference and referring to further illustrations for features in the art such as elongated neck treatments and the disposition of arms, hands, and legs in disposing a manikin to give impressions of "arrested motion." This rejection is detailed at pages 4 and 5 of the Examiner's answer.

By the brief and at oral hearing, appellants urge that the June 1962 Display World publication in presentation of a single view does not disclose three dimensional shapes and does not present the rear contour and other features of limb disposition that accentuate the design features presented in the present application. With regard to specific elements of contour considered as not definitive in the publication attention is directed to the arched back line of FIGURES 6 and 15 of the drawings and it is urged that this presents a distorted anatomical presentation which is not taught in the publication.

For the rejection based on the Hugh Lyons and Co. catalog in combination with the further references, it is the appellant's position that such art does not render obvious the design as a whole which is urged as giving the effect of arrested motion rather than a static lifeless impression as in the Hugh Lyons and Co. figure.

We have considered appellants' disclosure and arguments as presented in the brief and at oral hearing but are not convinced as to error in the Examiner's rejections. [1] While design practice as interpreted in *In re Rubinfield*, 47 CCPA 701; 123 USPQ 210 permits plural embodiments of a design concept to be illustrated, the design application is only directed to such concept and a single claim is permitted. Such claim is broad in the sense that anticipation of

any embodiment presented as representative of the concept would defeat the claim. In the present case, we share the Examiner's views that the June 1962 Display World publication is an adequate presentation of the configurations involved by FIGURES 5–7 and 14–16 respectively of appellants' disclosure. In considering the publication in terms of what is taught thereby it appears inescapable to us that manikins of a three dimensional nature are represented. The analogy to natural anatomy normally associated with such representations of human form make the publication directly suggestive of the departures in form as to elongated neck and curved back to be followed in forming manikins after the teachings of this publication. While we find no significant feature in appellants' illustrations that is not taught by the publication, we further note that the highly arched back argued by appellant is not entitled to great weight as indicative of the generic design concept when such exaggeration of human form is first questioned as a significant departure as illustrated in FIGURE 6 of the drawings, and secondly, is not carried throughout the other forms presented as embodiments of the single design invention. The stated rejection of the design claim based on the June 1962 Display World item is affirmed.

The further rejection of the design claim based on the references as used with the Hugh Lyons and Co. catalog item is also affirmed. [2] In consideration of the presented drawings little in contour differing from representation of normal human anatomy and artful display thereof is noted. The headless manikin form is adequately demonstrated to be an old concept as well as the elongation and terminal treatment of the neck. Appellants argue as if each disposition of the arms and legs in poses was illustrative of a new design form. It appears to us that such presentations of the subject matter do no more than follow expected artistic practices in the positioning of well known subject matter. The novelty alleged for the article so disported does not appear to us to add unobvious character to the article for which a design patent is requested. Terms such as "arrested motion" may be useful in describing an appearance but they cannot be accepted as definitive of such structure as creates the appearance or as subject matter *per se* upon which a design patent can issue. The stated rejection of the design claim on the references as combined is affirmed.

[3] The decision of the Examiner finally rejecting the appealed claim is affirmed.

AFFIRMED.

In the United States Patent Office
Before the Board of Appeals

Appeal No. 470—27. Decided March 29, 1966

1. PATENTABILITY—SATAUTORY SUBJECT MATTER—METHOD OF DOING BUSINESS.
   On the issue "* * * can a plurality of business steps involving judgment and calculation, coupled to a printing step give rise to a patentable method," *Held* that "We think not."
2. SAME—SAME—*Cochrane* v. *Deener* AND *Expanded Metal Company* v. *Bradford* CONSTRUED.
   "Appellants have cited *Cochran* v. *Deener*, 94 U.S. 780, 787, 23 L ed 139; *Expanded Metal Company* v. *Bradford* (1909) 214 U.S. 366, 53 L ed 1034, in support of the proposition that the instant claims fall within the statute. Both the subject matter of these cases, flour milling and metal working, and the language of the decisions, indicate that a process to be statutory must treat tangible matter."
3. SAME—OBVIOUSNESS—USE OF DETACHABLE PORTIONS ON BUSINESS FORMS.
   "Since it is conventional practice to arrange for detachable portions wherever desired on office forms, provision of such as called for in part (*d*) of claim 5 is not deemed a patentable distinction."
4. SAME—PARTICULAR SUBJECT MATTER—"METHOD OF COMPUTER PROCESSING OF PERIODICALLY ISSUED CREDIT DOCUMENTS."
   The refusal of certain claims in an application entitled "Method of Computer Processing of Periodically Issued Credit Documents," on the ground "That they are drawn to non-statutory subject matter, namely, a system of credit handling," is affirmed.

APPEAL from the Examiner (Leo Smilow) of Group 430. Serial No. 245,459.

AFFIRMED.

Lyon and Lyon for appellants.

Before KREEK, *Examiner-in-Chief* and ANDREWS and BURNS, *Acting Examiners-in-Chief*

BURNS, *Acting Examiner-in-Chief*.

This appeal arises from the final rejection of claims 1 to 4, the only claims then in this application. In an amendment filed subsequent to the appeal, claims 5, 6 and 7 were entered in lieu of claims 1 to 4, which newly entered claims are now before us.

Claim 5 is as follows:

5. A process for producing a periodically issued credit authorization form providing written evidence of credit commitment within a specified period, comprising the steps of
   (*a*) selecting from an available supply of identical forms a form having different portions for identification, account statements and credit authorisation;
   (*b*) computing a total credit authorisation derived from prior credit ratings as affected by a current credit account balance;
   (*c*) dividing said total credit authorisation into a predetermined number of separate smaller amounts; and
   (*d*) imprinting said smaller amounts on individual detachable sections of said credit authorisation portion while simultaneously imprinting said total credit authorisation and current account information on the account statement portion thereof and identification data on said identification portion thereof.

The Examiner has rejected the claims upon the single ground that they are drawn to non-statutory subject matter, namely, a system of credit handling.

Appellants urge that the claims under consideration fall within the bounds set by 35 U.S.C. 101 as a process. They state that a distinction is to be found between the present subject matter and that of the cases cited by the Examiner during the prosecution of this application, namely, *Hotel Security Checking Co.* v. *Lorraine*, 160 Fed. 467; *In re Tallmadge*, 174 O.G. 1219, *Lowe's Drive-In Theatres Inc.* v. *Park in Theatres, Inc.*, 81 USPQ 149, *Green Walt* v. *Stanley Company of America*, 416 O.G. 335 and *Joseph E. Segram & Sons, Inc.* v. *Marzell*, 632 O.G. 335.

It is stated that appellants' system treats with a consumable end product whereas the cited cases do not.

Proceeding to the claims, we note that four steps are recited as basic to the method. All are found in claim 5, claims 6 and 7 adding only qualifying statements.

The first step, that of selecting a form, we perceive to be purely a step of judgment, a choice. Insofar as it involves activity or action, it must be characterized as wholly mental. Choosing the right form would be a step incident to commercial transactions.

The second and third steps, computing and dividing, respectively, are entirely mathematical in character. Here the recitation is of such breadth that there is nothing to distinguish the steps from mental effort.

The final step, imprinting, is of a more conventional character. It suggests use of mechanical equipment operating to produce a visible result upon a physical form.

The sum of these four steps makes up a portion of a larger business transaction.

[1] The question then is, can a plurality of business steps involving judgment and calculation, coupled to a printing step give rise to a patentable method?

We think not. [2] Appellants have cited *Cochrane* v. *Deener*, 94 U.S. 780, 787, 23 L ed 139; *Expanded Metal Company* v. *Bradford* (1909) 214 U.S. 366, 53 L ed 1034, in support of the proposition that the instant claims fall within the statute. Both the subject matter of these cases, flour milling and metal working, and the language of the decisions, indicate that a process to be statutory must treat tangible matter.

Here the second and third steps relate directly to calculations, the significance of which depends upon the related business credit and loan administration.

In the instant claims, the final step, imprinting, is the only step which could be argued as falling within the statute. Its value as part of the method, however, depends upon the significance of what is imprinted upon the sections, since printing *per se* is conventional.

We consider it to be subject to the same disability which marks the second and third steps.

Appellants have not cited and we know of no cases which would extend the principles of the latter cases to claims such as are sought in this appeal.

[3] Since it is conventional practice to arrange for detachable portions wherever desired on office forms, provision of such as called for in part (*d*) of claim 5 is not deemed a patentable distinction.

That appellants' printed form, resulting as an end product, is consumable we do not find to be a persuasive argument in view of the foregoing.

Though appellants' argument have been the subject of our careful consideration, we find no reversible error in the Examiner's holding.

[4] The decision of the Examiner is affirmed.

AFFIRMED.

In the United States Patent Office
Commissioner's Decision

IN RE DELAY IN PAYMENT OF ISSUE FEE

Decided April 11, 1966

1. APPLICATION—ISSUE FEE—DELAY IN PAYMENT.

The substance of the present petition appears to be that the applicant desires to delay the payment of the issue free for three months beyond the date fixed by the statute, and to have a ruling in advance that he will be justified in doing so. The statute in question provides that if the issue fee is presented within three months after it is due and sufficient cause is shown, it may be accepted. No provision is made for considering a showing of cause apart from the presentation of the fee and the Commissioner has no more authority to extend, in advance, the time for filing such a fee than he has to extend the six months period for response to an Office action.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the Commissioner "rule that a delay of three months in payment of the final fee on this application will be a 'sufficient cause' within the meaning of 35 U.S. Code 151" and that certain actions by the Correspondence and Mail Branch and the Application Branch be reviewed. The petition points out no irregularity in those actions and none has been found.

[1] The substance of the present petition appears to be that the applicant desires to delay the payment of the issue fee for three months beyond the date fixed by the statute, and to have a ruling in advance that he will be justified in doing so. The statute in question provides that if the issue fee is presented within three months after it is due and sufficient cause is shown, it may be accepted. No provision is made for considering a showing of cause apart from the presentation of the fee and the Commisisoner has no more authority to extend, in advance, the time for filing such a fee than he has to extend the six months period for response to an Office action.

The petition is denied.

Since a petition of this kind does not require a fee, the case will be forwarded to the Finance Branch to determine whether a refund is in order.

In the United States Patent Office
Commissioner's Decision

IN RE APPLICATION PAPERS FILED OCTOBER 26, 1965

Decided January 14, 1966

1. APPLICATION—COMPLETE—DRAWING—35 U.S.C. 111 AND 113 CONSTRUED.

Title 35, sections 111 and 113 of the United States Code provide that a complete application must include a drawing when the nature of the case admits of it. The nature of this case clearly admits of a drawing since the specification is based on a drawing. Even assuming, as alleged in the petition, that it would be possible to understand the invention without a drawing, the statute still would not be complied with. It is evident, moreover, that the description would be satisfied by a wide variety of drawings and the disclosure is, therefore, indefinite in the absence of a drawing.

2. SAME—SAME—SAME—SAME.

The fact that reference is made in this application to a British application cannot be considered as incorporating the drawing of the British application herein, particularly when such drawing was not in the possession of the Patent Office when the present application was filed.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the above application be given a filing date of October 26, 1965, which date was refused by the Application Branch for the reason that the papers then filed contained no drawings. The drawings were filed December 1, 1965, which is the present filing date of the application.

[1] Title 35, sections 111 and 113 of the United States Code provide that a complete application must include a drawing when the nature of the case admits of it. The nature of this case clearly admits of a drawing since the specification is based on a drawing. Even assuming, as alleged in the petition, that it would be possible to under-

stand the invention without a drawing, the statute still would not be complied with. It is evident, moreover, that the description would be satisfied by a wide variety of drawings and the disclosure is, therefore, indefinite in the absence of a drawing.

[2] The fact that reference is made in this application to a British application cannot be considered as incorporating the drawing of the British application herein, particularly when such drawing was not in the possession of the Patent Office when the present application was filed.

Since the requirement here involved is a statutory one, it cannot properly be waived under Rule 183, regardless of the particular circumstances involved.

The petition is denied.

In the United States Patent Office
Commissioner's Decision

IN RE APPLICATION PAPERS FILED MAY 13, 1966

Decided August 16, 1966

1. APPLICATION—FILING DATE—INSUFFICIENT FILING FEE—35 U.S.C. 41(a).

Title 35 U.S.C., section 41(a) provides that errors in payment of the additional fees due on filing an application may be rectified in accordance with regulations of the Commissioner. However, in order to justify such rectification it must appear that there has been an error and also it must be shown how the error arose. In the present case there is nothing to show why the full statutory fee was not presented with the application and the petition must accordingly be denied.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the above application be given a filing date of May 13, 1966, which date was refused for the reason that the fee then submitted was $65.00 whereas the statutory fee required was $155.00. The remaining $90.00 was submitted on June 27, 1966, which is the present filing date of the application.

[1] Title 35 U.S.C., section 41(a) provides that errors in payment of the additional fees due on filing an application may be rectified in accordance with regulations of the Commissioner. However, in order to justify such rectification it must appear that there has been an error and also it must be shown how the error arose. In the present case there is nothing to show why the full statutory fee was not presented with the application and the petition must accordingly be denied.

In the United States Patent Office
Commissioner's Decision

IN RE APPLICATION PAPERS FILED JUNE 24, 1966

Decided August 30, 1966

1. APPLICATION—FILING DATE—FILING FEE NECESSARY—UNSIGNED CHECK—NOT PAYMENT OF FEE.

The requirement that the filing fee be supplied before a filing date is accorded is statutory and the Patent Office has no authority to waive it. Since an unsigned check does not constitute payment of the fee the refusal of the filing date here requested was proper.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the above application be given a filing date of June 24, 1966, which was refused for the reason that the check then presented in payment of the filing fee was unsigned.

[1] The requirement that the filing fee be supplied before a filing date is accorded is statutory and the Patent Office has no authority to waive it. Since an unsigned check does not constitute payment of the fee the refusal of the filing date here requested was proper.

While the Patent Office, when it notices errors of the kind here involved, may notify the attorney in order to permit early correction, it cannot undertake doing this as a matter of duty. Accordingly, the failure of the Office to give such early notice in any particular case cannot constitute the basis for the granting of relief.

The petition is denied.

In the United States Patent Office
Commissioner's Decision

IN RE APPLICATION PAPERS FILED MAY 17, 1966

Decided June 29, 1966

1. APPLICATION—FILING DATE—PHOTOPRINTS AS DRAWINGS—NOTICE OF 805 O.G. CONSTRUED.

The notice in question relates to photoprints of such a nature that they would be accepted if in the form of India ink drawings. It was not contemplated that every photoprint would necessarily be accepted for filing date purposes regardless of any informalities which might be involved. The present photoprints are not only of a size greatly in excess of that provided for by the rules but they are also informal in that they contain much irrelevant matter, some of which has been crossed out in ink, and also contain legends in ink, none of the ink involved being India ink. Further, two of the sketches are not photoprints and are not in India ink.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the above-identified papers be accorded a filing date of May 17, 1966 as a complete application, that date having been refused by the Application Branch for the reason that the drawings then submitted comprises "oversized prints, two ink sketches and one print of the drawings." It is the petitioner's contention that the drawings should have been accepted in view of the notice of July 16, 1964, 805 O.G. 293.

[1] The notice in question relates to photoprints of such a nature that they would be accepted if in the form of India ink drawings. It was not contemplated that every photoprint would necessarily be accepted for filing date purposes regardless of any informalities which might be involved. The present photoprints are not only of a size greatly in excess of that provided for by the rules but they are also informal in that they contain much irrelevant matter, some of which has been crossed out in ink, and also contain legends in ink, none of the ink involved being India ink. Further, two of the sketches are not photoprints and are not in India ink.

Under these circumstances, it is considered that the drawings are clearly too informal to justify according them a filing date and the petition is denied.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

3,265,614, C. H. Kirk, EXPANSION TANK, filed Oct. 24, 1966, D.C., R.I. (Providence), Doc. 3697, *American Tube and Controls, Inc.* v. *General Fittings Company.*

3,130,766, A. J. Turchi et al., DENTAL DRILL WITH COLLET, filed Nov. 9, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1859, *Star Dental Mfg. Co., Inc.* v. *Midwest Dental & Mfg. Co., Inc.* Order holding patent valid and infringed; cause dismissed Oct. 3, 1966.

3,181,836, P. S. Van Baarn, CLOSURE FOR TUBES AND THE LIKE, filed Nov. 10, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1870, *Etudes Recherches, Developments* v. *Piochman, Inc.* Consent order of dismissal without prejudice Oct. 5, 1966.

3,134,136, L. E. Soderquist, TIRE CARCASS LOADING APPARATUS FOR TIRE CURING PRESS; **3,141,191**, same, PRESS FOR SHAPING AND CURING PNEUMATIC TIRES; **3,167,810**, same, TIRE CARCASS LOADING APPARATUS FOR TIRE CURING PRESS; **3,222,715**, E. J. Harris, APPARATUS FOR LOADING GREEN TIRES IN A TIRE PRESS; **3,222,716**, same, TIRE CURING PRESS AND UNLOADING APPARATUS THEREFOR; **3,223,767**, same, METHOD OF LOADING A TIRE IN A TIRE PRESS, filed Oct. 11, 1966, D.C., N.D. Ohio (Cleveland), Doc. C66-716, *Edward J. Harris* v. *McNeil Corporation.*

3,135,269, E. F. Pauldine, CURLING IRON HAVING DETACHABLE CURLING TUBE, filed Oct. 17, 1966, D. C., N.D. Ill. (Chicago), Doc. 66c1876, *Eugene E. Pauldine* v. *Northern Electric Company.*

3,140,466, M. M. May, SWITCH WITH PLURAL INPUTS TO, AND PLURAL FEEDBACK PATHS FROM, AN OPERATIONAL AMPLIFIER, filed Oct. 28, 1966, D.C., Md. (Baltimore), Doc. 17772, *Computer Systems, Inc.* v. *Electronic Associates, Inc.*

3,141,191. (See 3,134,136.)

3,141,490, P. H. Bunten, BASEBOARD RADIATOR WITH CONNECTOR UNITS, filed Aug. 10, 1964, D.C.N.J. (Camden), Doc. 749-64, *Repco Products Corporation* v. *Suntemp Industries, Inc.* Consent decree—defendant enjoined; counterclaim dismissed (notice Oct. 28, 1966).

3,146,330, R. G. Miller, TOGGLE SWITCH LEVER MOUNTING, filed Oct. 14, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64-680, *Cutler-Hammer, Inc.* v. *Lucerne Products, Inc.*

3,155,984, D. L. Derrick, FASTENERLESS EXAMINATION GOWN, filed June 24, 1965, D.C., W.D. Wash. (Seattle), Doc. 6477, *Olympic Surgical Company et al.* v. *American Hospital Supply Corporation.* Consent judment—patent held valid and infringed Oct. 21, 1966.

3,160,452, H. H. Rothman, HOT AND COLD FOOD SERVICE CART; **3,265,622**, B. E. Stents, TRAY SUPPORT AND THERMAL WALL FOR A HOT AND COLD FOOD SERVICE CART, filed Oct. 15, 1965, D.C. Del. (Wilmington), Doc. 3099, *S. Blickman, Inc.* v. *United Service Equipment Co., Inc.* Consent order dismissing complaint with prejudice; counterclaim for patent infringement dismissed without prejudice Oct. 11, 1966.

3,161,300, Z. B. Levine, GUARD FOR GARBAGE DISPOSAL, filed Feb. 17, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65-266-S, *Zelda B. Levine* v. *Sunset House, Inc. et al.* Judgment holding patent invalid Aug. 31, 1966.

3,163,434, M. W. Krueger, TRUCK TANK, filed Oct. 10, 1966, D.C., E.D. Wis. (Milwaukee), Doc. 66-C-272, *Dairy Equipment Company* v. *Jacob Brenner Co., Inc.*

3,167,810. (See 3,134,136.)

3,181,795, L. R. Phillips, ENCLOSURE STRUCTURE, filed Jan. 17, 1966, D.C. Conn. (New Haven), Doc. 11239, *Triangle Sheet Metal Works, Inc.* v. *S. H. Pomeroy Company et al.* Final judgment in favor of plaintiff; patent held valid and infringed; defendants enjoined Oct. 21, 1966.

3,265,622. (See 3,160,452.)

3,210,767, D. E. Isbell, FREQUENCY INDEPENDENT UNIDIRECTIONAL ANTENNAS, filed Mar. 29, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c567, *The University of Illinois Foundation* v. *Blonder-Tongue Laboratories, Inc. and Allied Radio Corporation.* Stipulation and order dismissing Allied Radio Corp. as one of the defendants herein Sept. 7, 1966. Same, Doc. 66c568, *The University of Illinois Foundation* v. *Channel Master Corporation and Electronic Distributors, Inc.* Judgment dismissing defendant Channel Master Corporation from this suit Oct. 17, 1966.

3,212,173, R. F. Wonneman, APPARATUS FOR APPLYING CURVED DIP TUBED CLOSURES TO CONTAINERS; **3,212,174**, same, INLINE APPARATUS FOR ASSEMBLING FLEXIBLE CURVED DIP TUBE CLOSURES TO CONTAINERS; **3,212,175**, same, ROTARY APPARATUS FOR CONTINUOUSLY ASSEMBLING FLEXIBLE CURVED DIP TUBED CLOSURE ASSEMBLIES TO CONTAINERS, filed Apr. 11, 1966, D.C. Md. (Baltimore), Doc. 17212, *Roman F. Wonneman* v. *Machinery Systems, Inc. et al.* Case dismissed Oct. 13, 1966.

3,212,174. (See 3,212,173.)

3,212,175. (See 3,212,173.)

3,222,715. (See 3,134,136.)

3,222,716. (See 3,134,136.)

3,223,767. (See 3,134,136.)

3,227,158, J. W. Mattingly, METHOD AND APPARATUS FOR ORAL HYGIENE; Reg. No. 762,414 (WATER PIK), Aqua-Tec Corporation, Readily portable oral hygiene appliance utilizing a pulsed jet of water for massaging the gums and cleaning spaces adjacent the teeth; Reg. No. 785,673 (WATER PIK AND DESIGN), same; Reg. No. 809,624 (AQUA PIK), same, filed Oct. 19, 1966, D.C. Colo. (Denver), Doc. 66-C-550, *Aqua-Tec Corporation* v. *Montgomery Ward & Co., Incorporated.*

3,243,914, D. B. Poynter, ELECTRICALLY OPERATED COIN BOX DEVICE, filed Oct. 6, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1793, *Poynter Products, Inc.* v. *Jewel Companies, Inc.* Same, filed Oct. 14, 1966, D.C., S.D.N.Y., Doc. 66/3384, *Poynter Products, Inc. et al.* v. *Allied Stores Corp. et al.*

3,243,916, J. W. Ryan, WALKING TOY; **3,267,607**, same; **3,267,608**, same, filed Oct. 31, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C-1028, *John W. Ryan and Mattel, Inc.* v. *Deiger, Inc.*

3,246,336, L. E. Baribo et al., MOLASSES FEED BLOCKS AND METHOD OF PREPARATION AND USE, filed Oct. 26, 1966, D.C. Kans. (Kansas City), Doc. KC-2588, *A. E. Staley Manufacturing Company* v. *Stockade Products.*

3,251,158, E. Shapiro, AUTOMATIC ROOF VENTS, filed July 29, 1966, D.C., N.D. Tex. (Dallas), Doc. 3-1394, *Raymar, Inc.* v. *Plastic Products of Texas, Inc.* Order of dismissal Oct. 28, 1966.

3,266,292, R. L. Bailey, METHOD OF DETECTING VOLATILE ORGANIC CONTAMINANTS IN REUSABLE CONTAINERS, filed Oct. 24, 1966, D.C. Oreg. (Portland), Doc. 66-513, *National Distillers & Chemical Corp.* v. *Raymond K. Baker et al., doing business as Cleary Dairy.*

3,267,347, Godshalk and Medlar, BATTERY CHARGERS, filed Oct. 3, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1772, *Foe Products Company* v. *Blitz Electric Company, Inc.*

3,267,607. (See 3,243,916.)

3,267,608. (See 3,243,916.)

3,276,179, J. M. Rallis, CEILING ACCESS OPENING AND BRACKET THEREFOR, filed Oct. 17, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C-974, *James M. Rallis* v. *Fred Grosskortenhaus, Inc. et al.*

3,277,942, J. J. Dwyer, deceased, by M. Dwyer, executrix, LOCK NUTS HAVING REDUCED SINGLE HEXAGON WRENCHING SURFACES, filed Oct. 19, 1966, D.C.N.J. (Newark), Doc. 1055-66, *Standard Pressed Steel Co.* v. *Elastic Stop Nut Corporation of America.*

Des. 173,281, R. B. Morrison, LABORATORY TABLE UNIT, filed Jan. 6, 1966, D.C., E.D. Mo. (St. Louis), Doc. 66C9(1), *E. H. Sheldon and Company* v. *Capital Fixtures, Inc.* Final consent judgment—injunction issued against defendant Oct. 20, 1966.

Des. 188,966, J. S. Knoll, TABLE OR SIMILAR ARTICLE, filed Oct. 28, 1966, D.C., S.D.N.Y., Doc. 66/3603, *Knoll Associates, Inc.* v. *Stoelcase, Inc.*

Des. 193,266, T. Wada, KNIFE OR THE LIKE, filed Oct. 11, 1966, D.C., S.D.N.Y., Doc. 66/3306, *Cutlers International Ltd. et al.* v. *Cosmos Products Co.*

Des. 195,234, N. D. Louis, DRAWER KNOB, filed Feb. 18, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66-318-PH, *Ajax Hdw. Mfg. Corp.* v. *Superior Hdw. Co. et al.* Judgment enjoining defendants and further order dismissing action against defendant David Allison Co., Inc. Aug. 30, 1966.

Des. 196,536, J. Shifman, RING BOX, filed Aug. 18, 1966, D.C., S.D.N.Y., Doc. 66/2609, *Rocket Jewelry Box, Inc.* v. *Iwei New York, Inc. et ano.* Consent judgment—defendants enjoined Oct. 24, 1966.

Des. 197,267, W. Z. Salcer, PLASTIC TABLECLOTH; **Des. 197,366**, same, filed Jan. 18, 1965, D.C., S.D.N.Y., Doc. 65/161, *B & S Plastic Art, Inc.* v. *Amin E. Adjmi.* Order of dismissal Oct. 4, 1966.

Des. 197,366. (See Des. 197,267.)

Des. 198,502, J. J. F. March, PRUNING SHEAR, filed Sept. 8, 1965, D.C. Minn. (Minneapolis), Doc. 4-65/282, *The Stanley Works* v. *Globemaster, Inc.* Stipulation and order of dismissal without prejudice Oct. 31, 1966.

Des. 205,531, Ertsgaard and Gale, SNOW PLOW, filed Nov. 7, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2028, *Toro Manufacturing Corp.* v. *Sears, Roebuck and Co.*

Erratum

In the OFFICIAL GAZETTE, vol. 832, page 1378, Nov. 22, 1966, under "Patent Suits," col. 1, line 28 "2,938,460" should read *2,938,649*.

REISSUES

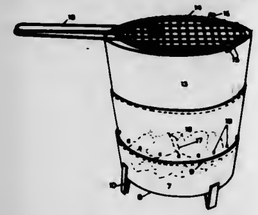
DECEMBER 13, 1966

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,123
STOVE FOR GRILLING VIANDS

Derek Edward Thorrold Davis, Caiross Road, Bryanston, Johannesburg, Transvaal, Republic of South Africa

Original No. 3,046,969, dated July 31, 1962, Ser. No. 119,699, June 26, 1961, which is a continuation of Ser. No. 285,183, May 20, 1963. Application for reissue June 22, 1965, Ser. No. 469,966
3 Claims. (Cl. 126—25)



3. A portable grilling unit comprising a body means and a wire grill, said body means including a side wall portion and a bottom wall portion, each of said wall portions being formed of thin sheet-like fireproof material, said side wall portion including a plurality of tapering wall sections which are movable with respect to one another, means interconnecting said wall sections for retaining them in upwardly flaring operative erected relationship to define a continuously upwardly flaring body means, said side wall portion defining a space therewithin for receiving paper as an initial fuel which is adapted to be supported on said bottom wall portion, said side wall portion defining an open unobstructed upper end, said side wall portion having openings therethrough concentrated adjacent said bottom wall portion constituting the sole combustion draft openings through said side wall portion, said wire grill being detachably supported on the upper edge of said body means, said wire grill including two like wire mesh sections hinged together, each of a dimension to substantially cover said unobstructed upper end and each having a handle diametrically opposite the hinge to provide a viand clamp and said body means being unobstructed from said upper end thereof to said bottom wall portion to allow fats or oils of the viands to be directed downwardly and fall upon the burning paper and function as supplemental fuel.

26,124
INJECTION SET AND FLOW METER FOR PARENTERAL FLUIDS

Wilbur R. Koehn, 20 Shorewood Drive, Sands Point, N.Y.

Original No. 3,101,710, dated Aug. 27, 1963, Ser. No. 34,725, June 8, 1960. Application for reissue July 27, 1965, Ser. No. 477,358
6 Claims. (Cl. 128—214)

1. An injection set for parenteral liquids comprising in combination, a container for parenteral liquids, a float type flow meter, an injection needle, tubes connecting the container to the flow meter and the flow meter to the needle, means for controlling the flow to the needle to maintain the flow meter filled with liquid, said flow meter comprising a continuous wall of transparent material forming an annular chamber diverging downwardly from the container toward the needle, said tube for connecting the container to the flow meter being directly connected to the upper small end of the downwardly diverging chamber so that parenteral liquid flows downwardly therethrough, a float in said chamber having a specific gravity less than the specific gravity of the liquid, said float being buoyed up by a force equal to the difference in the weight of the float and liquid displaced and



opposed by the drag force of the solution flowing downwardly through the chamber and acting to position the float in equilibrium at a position corresponding to a particular rate of flow, and a calibrated scale in fixed relation to the wall of said chamber to accurately indicate the rate of flow of solution therethrough.

26,125
REAGENTS AND ANALYSIS OF NITROGEN

Albert L. Chaney, 1347 Andenes Drive, Glendale, Calif.

No Drawing. Original No. 3,119,751, dated Jan. 28, 1964, Ser. No. 193,332, May 8, 1962. Application for reissue Jan. 24, 1966, Ser. No. 526,319
22 Claims. (Cl. 195—103.5)

18. A method for the analysis of urea nitrogen in biological fluids comprising the sequential steps of first adding to said biological fluid buffered urease to thereby convert the urea nitrogen in said biological fluids to ammonia nitrogen in solution, second, concurrently adding to said solution a mixture of phenol and an alkali metal nitroprusside, the ratio by weight of the said alkali metal nitroprusside to the said phenol being from 1:2000 to 1:40, and, third, adding to said solution an alkali metal hypochlorite formulation which contains a sufficient excess of alkali metal cations such that when calculated on a sodium hydroxide basis the ratio by weight of the phenol to the sodium hydroxide is from about 1:1 to about 1:3.

26,126
TRANSITION COUPLINGS

Herman F. Buschow, Hilladale, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Original No. 3,208,776, dated Sept. 28, 1965, Ser. No. 54,286, Sept. 6, 1960. Application for reissue June 6, 1966, Ser. No. 560,369
2 Claims. (Cl. 285—284)



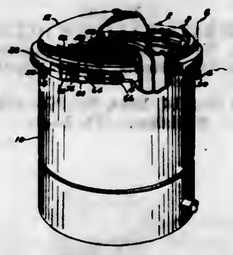
2. A transition coupling for use in piping systems comprising a pair of pre-assembled cylindrical members, said members being formed, respectively, of aluminum and steel, said aluminum member being molded against the steel member, said members extending axially beyond the adjacent portions thereof in opposite directions to form connecting portions adapted to be welded respectively to portions of similar metals of the piping system whereby the stresses of said piping system are transferred through the coupling and a chemical bond uniting said coupling members at their adjacent portions, said bond being occasioned by the intermigration of the metals of the coupling members forming a ferroaluminum alloy, said alloy being microscopically thin across the adjacent portions and penetrating into the adjacent members by decreasing amounts providing a cohesion between said coupling members having a relatively low brittleness factor and serving as a gas seal.

26,127
SEALING CLOSURE

Charles E. Wade, 760 Rancho El Fuerte, Covina, Calif. 91722

Original No. 3,246,793, dated Apr. 19, 1966, Ser. No. 489,799, Sept. 7, 1965, which is a continuation of Ser. No. 81,524, Jan. 9, 1961, Ser. No. 303,195, July 31, 1963, and Ser. No. 398,838, Sept. 21, 1964. Application for reissue July 12, 1966, Ser. No. 570,113
6 Claims. (Cl. 220—46)

1. A sealing closure for connecting a body section and a cover section of a cylindrical fluid pressure tank, said closure comprising a retaining channel of U-shaped cross-sectional configuration defined by parallel flanges extending radially outward about the body section, an annular resilient sealing element disposed in said retaining channel and extending radially outward therefrom, a radially extending shoulder on the cover section adapted to seat against one of said retaining channel flanges, an axially extending skirt depending from the periphery of said cover shoulder and configurated to engage the periphery of the annular resilient sealing element to compress the



sealing element and provide pressure sealing therebetween, clamping means of channel-shaped cross-sectional configuration disposed about the skirt and the sealing element to secure the sections together, and means for constricting the clamping means to exert radially constrictive force urging the skirt inwardly to compress the sealing element, whereby the sections are secured together in sealed relation.

PLANT PATENTS

GRANTED DECEMBER 13, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,691
ROSE PLANT

Marie Louise Meilland, Alpes Maritimes, France, assignor to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania

Filed Oct. 12, 1965, Ser. No. 495,364
1 Claim. (Cl. Plt.—18)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous and upright habit of growth, a distinctive and attractive size, shape and color of the foliage as described and shown, the presence of comparatively few prickles on the flowering canes, a high-centered flower form, with the flower petals loosely rolled outward, from the beginning to maturity, and a distinctive and attractive Pale Purplish-Pink (Pale Lilac) general color tonality of the flowers.

2,692
ROSE PLANT

Marie Louise Meilland, Alpes Maritimes, France, assignor to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania

Filed Oct. 12, 1965, Ser. No. 495,365
Claims priority, application France, Aug. 13, 1965, 46,314
1 Claim. (Cl. Plt.—21)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous and well-branched habit of growth, a habit of producing flowers in clusters, as well as occasionally on single stems, attractive bright green foliage of large size and oval shape as more particularly described and illustrated, and a distinctive and attractive general color tonality of the flowers corresponding to what is generally described as dark, velvety, luminescent red.

2,693
ROSE PLANT

Marie Louise Meilland, Cap d'Antibes, Alpes Maritimes, France, assignor to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1965, Ser. No. 500,457
1 Claim. (Cl. Plt.—21)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous habit of growth, an attractive general appearance of the foliage, a habit of bearing flowers usually singly to a stem, an unusually large flower size, and a distinctive and attractive Tyrian Purple general color tonality of the flowers.

PATENTS

GRANTED DECEMBER 13, 1966

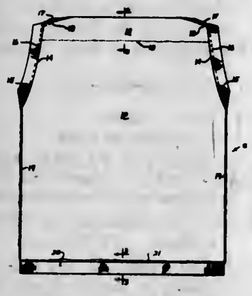
GENERAL AND MECHANICAL

3,290,693
BASEBALL BATTER'S HELMET
Lindsay Wolfe, Swarthmore, Pa., assignor to American Baseball Cap, Inc., Media, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1964, Ser. No. 418,055
8 Claims. (Cl. 2—3)



1. A baseball batter's helmet of stiff protective material comprising a cap shaped to fit over the head of the wearer having a depending portion at one side thereof only for covering the side of the face of the wearer disposed toward the pitcher when the wearer is at bat, so that the wearer's ear disposed away from the pitcher is uncovered avoiding impairing the wearer's hearing, minimizing the size and weight of the helmet and obviating confining the wearer's face.

3,290,694
BOAT-NECK SWEATER
Norman H. Goodman, New York, N.Y., assignor to Van-mark Research Corporation, Greensboro, N.C., a corporation of North Carolina
Filed June 29, 1964, Ser. No. 378,527
3 Claims. (Cl. 2—90)



1. A boat-neck sweater of full-fashioned knit construction, of the type having counterpart substantially rectangular front and back panels configured to provide arm openings at their sides, and united by flat-stitched side seams extended from the lower portion of each arm opening to the bottom of the panels, said sweater body being characterized in that the entire width of the upper portion of each panel comprises a knit turned welt, a flat seam securing the upper portions of said welts together, said flat seam sloping from the arm openings on each side upwardly for a short distance only towards the center of the garment, the upper portions of the turned welts free of seams defining a neck opening and a neck area.

3,290,695
SAFETY GLOVES
Carl Bartoff, 702 Kathleen Place, Brooklyn, N.Y. 11235
Filed Dec. 14, 1964, Ser. No. 424,467
2 Claims. (Cl. 2—161)



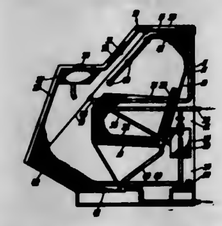
1. A safety glove comprising a homogeneous hand covering member, said hand covering member having stalls for the fingers and thumb of a wearer, and having a plurality of relatively thickened, inflexible, integral, protective sections of like material surrounding all the inter-jointal areas and the tips of said finger stalls for protecting the fingers and thumb of the wearer, and said hand covering member further including a protective piece integral with said hand covering member and constructed of the same inflexible material as said protective sections, said protective piece surrounding the palm and back of the hand covering member with the protective piece constituting an additional thickened part of the entire hand covering member.

3,290,696
STRAPS
William Rosenzweig, Roslyn, N.Y., assignor to Fashion Development Corporation, New York, N.Y., a corporation of New York
Filed July 16, 1964, Ser. No. 383,039
20 Claims. (Cl. 2—323)



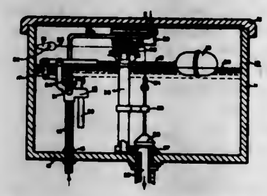
1. A strap comprising a buckle having opposite sides and comprising two middle bars and two outer bars and forming a middle slot between the two middle bars, and an outer slot between each of said two middle bars and said two outer bars, respectively, a ribbon having a first portion extending through one outer slot from one side of the buckle to the other side thereof, and over said middle bars and middle slot, at said other side of the buckle, a second portion extending from the first portion through the other outer slot, from said other side of the buckle to said one side of the buckle, and over said middle bars and middle slot at said one side, a third portion extending through said one outer slot from said one side of the buckle to said other side thereof and over the middle bar which is adjacent said one outer slot, at said other side of said buckle, a fourth portion extending through said middle slot and over the other middle bar at said one side of said buckle, a fifth portion extending through the other outer slot from said one side to said other side of said buckle, and terminating in a sixth portion extending over said middle bars and middle slot, at said other side of said buckle.

3,290,697
CABINET BATHS
Ronald Thomas Anderson, 37 Clarendon Parade, West Footscray, Victoria, Australia; Norman W. Anderson, 41 River St., Maidstone, Victoria, Australia; and Norman Ronald Dawson, Braybrook, Victoria, Australia; said Dawson assignor to said Ronald T. Anderson and said Norman W. Anderson
Filed June 2, 1964, Ser. No. 372,003
Claims priority, application Australia, Dec. 16, 1963, 38,834/63
14 Claims. (Cl. 4—161)



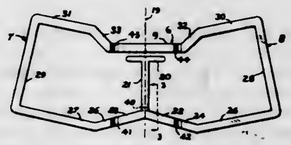
1. A cabinet bath including a casing body within which a user is adapted to be seated, a top opening in the casing adapted to receive the neck of the user, an inclined open front to permit access by the user to the interior of the casing, a door hinged to the open front to close said open front, a step formation on said door having manually operable controls thereon for regulating bath conditions in the cabinet, and with arm openings in the door above the step formation to permit access to the said controls by the user from within the cabinet.

3,290,698
BATHROOM DEODORIZER
Russell J. Joyner, 175 North 9th West, and Harold L. Thatcher, 41 South 5th West, both of Provo, Utah
Filed Aug. 10, 1964, Ser. No. 388,376
2 Claims. (Cl. 4—228)



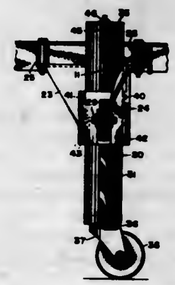
1. In a toilet tank including an inlet pipe for supplying incoming water, a shut-off valve connected to said inlet pipe and including an outlet afterfill pipe, a float operatively connected to said shut-off valve, said tank including an outlet orifice leading to a toilet bowl, a valve seat disposed on the inlet side of said outlet orifice, an overflow-pipe communicating directly with said toilet bowl around said valve seat and having an upper end disposed above the water level of said tank; an improvement comprising a container mounted within said tank above the normal water level for the reception of chemical granules, said container having a bottom wall and upstanding side walls, a screen operatively disposed within said container and having an upstanding side screen portion dividing the interior of said container into a chemical granule receiving portion and a container outlet portion, an inlet orifice in one of said upstanding side walls, means connecting said inlet orifice to said afterfill pipe for water communication therewith, a conduit supported within said container connected at one end to said inlet orifice for conducting the flow of water from said afterfill pipe and opening at its opposite end into said container outlet portion for emptying water therein, said conduit having a longitudinal portion between its ends traversing above said chemical granule receiving portion, said longitudinal portion having a plurality of spray orifices along the length thereof for spraying a portion of the water flowing through said conduit onto said chemical granule receiving portion, an outlet orifice in one of said walls and disposed below said inlet orifice, said outlet orifice communicating with said container outlet portion, and means connecting said container outlet orifice to said upper end of the overflow pipe for water communication therewith, whereby said water sprayed onto said chemical granule receiving portion flows through said screen into said container outlet portion where it joins the water emptying into said container outlet portion from said conduit open end for outflow through said outlet orifice to said overflow pipe.

3,290,699
TOILET BOWL DEODORIZER
Morris L. Weinstein, Atlanta, Ga., assignor to I. Schneid, Inc., Atlanta, Ga., a corporation of Georgia
Filed Apr. 15, 1964, Ser. No. 359,937
8 Claims. (Cl. 4—231)



1. In a hanging bracket for a toilet bowl deodorizer, a frame having a central section and a pair of opposite side sections hingedly secured together, each side section being generally U-shaped in configuration and foldable on its leg portions through aligned hinged areas about an opposite side of said central section, said central section including a pair of spaced apart crossbars extending between corresponding hinged areas of said opposite side sections and a deodorizer support secured to one of said crossbars.

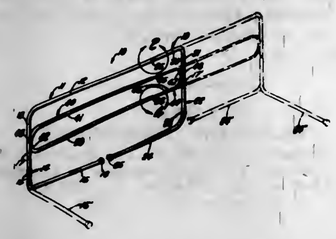
3,290,700
LIFT LEG STRUCTURE
Chester J. Barecki and Robert L. Knapp, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Jan. 10, 1966, Ser. No. 519,488
6 Claims. (Cl. 5—63)



1. In a lift device, telescoping inner and outer cylindrical legs, said inner leg being adapted to rest upon the floor and having a vertical portion thereof turned inwardly to provide a grooved keyway bearing, said outer leg being fixed to a member to be lifted and provided with a slot and with radially-extending flanges providing a sheave bearing, a sheave between said flanges, a transverse sheave pin extending through said flanges and

sheave, said sheave extending into said keyway for engagement therewith as a key, and a tension element extending about said sheave and within said keyway and having its end fixed to an upper portion of said inner leg.

3,290,701
BED RAIL
John E. Luff, Yucaipa, Calif., assignor to The Cal-Dak Company, Los Angeles, Calif., a corporation of California
Filed Jan. 11, 1965, Ser. No. 424,552
6 Claims. (Cl. 5—331)



2. A bed rail comprising: a framework including a first horizontal tube-like body and a second horizontal body slidably telescoped into said first body; a pair of L-shaped members swingably mounted on said framework for movement between retracted positions in the plane of said framework and extended positions normal to the plane of said framework; and a bushing fixed to said first body in a position extending around said second body, said second body also being tube-like and having a flared end inside said first body larger than the inner diameter of said bushing.

3,290,702
FITTED SHEET
Norman L. Saltzer, Princeton, N.J., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed July 30, 1964, Ser. No. 386,221
10 Claims. (Cl. 5—334)



1. A fitted woven sheet of single layer plain weave construction characterized by substantial stretchability and recoverability for easy placement and a conforming fit on mattresses, supposedly of a particular standard size but having varying dimensions, to present a smooth, taut, unwrinkled appearance, said sheet being rectangular and having pockets formed at the corners thereof to receive corners of a mattress therein, said sheet being formed of fabric comprising interwoven sets of warp and filling yarns, at least one of said sets of yarns consisting essentially of cellulosic fibers and being disposed in a sinuous path with the sinuosity thereof, together with the number of yarns per inch, the size, twist and weaving of such yarns, providing substantial stretchability and recoverability in the fabric in the longitudinal direction of said one set of yarns, said fabric being readily and sufficiently stretchable upon the application of manual force thereto by a user for easy placement thereof over the corners of a mattress, the recoverability of said fabric providing conforming securement of the sheet on the mattress, and any loss in stretchability and recoverability of said fabric resulting from use being substantially restored upon laundering.

3,290,703
PILLOW COVERING
Olga N. Worrall, Baltimore, Md., assignor to K & W Enterprises, Inc., Baltimore, Md., a corporation of Maryland
Filed Sept. 24, 1964, Ser. No. 398,979
1 Claim. (Cl. 5—337)



A covering for a pillow having a compressible and expansible filling and a porous ticking extending about the filling comprising, in combination:
(a) said covering having a body portion with opposite face portions of waterproof material extending snugly over the ticking;
(b) a zipper fastening attached along the edges of the opposite face portions at one end of the cover for closing and opening one end of the cover for inserting and removing the pillow;
(c) a porous netting attached along the edge of the face portions opposite the end carrying the zipper for allowing for ingress and egress of air into and out of the pillow when the cubic area of the pillow is changed in the normal use thereof.

3,290,704
PILLOW AND METHOD OF MAKING SAME
Arnold L. Willis, Chicago, Ill., assignor to United Felt Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 12, 1965, Ser. No. 432,180
16 Claims. (Cl. 5—337)



3. A pillow comprising a pillow tick and a pillow batt enclosed therein, the pillow batt being formed from a three dimensional mat in sheet-like form rolled upon itself, said mat consisting of a plurality of superimposed layers of soft, resilient, compressible material in the form of a web of intermingled fibers, at least some of the layers of the batt terminating at a point within the batt removed from the outer extremities thereof to provide a greater number of layers of said material at the central portion of the batt than at the outer extremities of the batt thereby to impart greater fullness to the central portion of the pillow while substantially overcoming excessive compacting of the extremities of the batt by the pillow tick.

3,290,705
MACHINE FOR UNCAPPING HONEYCOMBS
Arthur S. Harrison, P.O. Box 602, Los Banos, Calif.
Filed Nov. 2, 1964, Ser. No. 408,965
7 Claims. (Cl. 6—12)

1. In a machine for uncapping a plurality of substantially planar oriented honeycomb structures arranged in spaced substantially parallel layers and having elongated

end-capped cells disposed in contiguous juxtaposed relation within layers and in end-to-end relation between adjacent layers, a plurality of elongated knives each having opposite ends, said knives being adapted to separate the caps from said cells by slicing contact therewith; means supporting said knives at one end thereof in pairs and in spaced parallel relation for unitary rotational movement by respective pairs, each pair having an axis of rotation



disposed between the knives of the pair and substantially parallel thereto; means for positioning the respective pairs of knives between said structures; means for rotating the knife pairs into slicing contact with the respective honeycomb structure; and means for effecting slicing relative movement between the knives and the honeycomb structures to separate the caps from the cells along the entire respective sides of each structure.

3,290,706
BOAT
Gordon B. Hale, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 418,989
11 Claims. (Cl. 9—1)



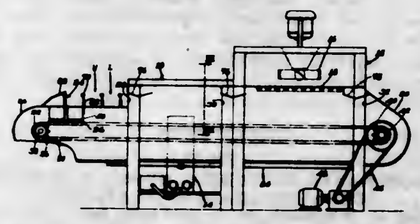
6. The combination of a boat, a frame a windshield supported by said frame, means mounting said frame on said boat for movement relative to a generally upright shielding position, a vent, and means spaced below said means mounting said frame on said boat and pivotally mounting said vent on said frame below said windshield for common movement with said frame relative to said upright position and for movement of said vent between open and closed positions with respect to said frame.

3,290,707
SWIMMING AID
Maxson H. Montgomery, 265 Attica Drive, Long Beach, Calif.
Filed Apr. 16, 1965, Ser. No. 448,586
6 Claims. (Cl. 9—307)



1. A swimming aid for attachment to a swimmer's arm, comprising:
a pair of plates arranged side-by-side;
resilient band means that encircle a swimmer's arm with the top of said band means being disposed at the front of said arm;
and attachment means securing said plates to the top portion of said band means, the resilient nature of said band means constantly biasing said plates toward the rear of said arm, said plates being movable toward the front of said arm as said arm undergoes a swimming stroke.

3,290,708
APPARATUS FOR CONDITIONING ARTICLES OF MANUFACTURE
Frank W. Spencer, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed June 3, 1964, Ser. No. 372,340
11 Claims. (Cl. 12—1)



9. Apparatus for heat-setting lasted shoe uppers comprising a first chamber having a hot-moist atmosphere therein and a second chamber having a high temperature dry atmosphere therein, said first and second chambers having ingress and egress openings therein, an endless conveyor for moving lasted shoe uppers through said chambers, a plurality of carriages mounted on said conveyor in spaced relation to receive and support the lasted shoe uppers, the spacing of the carriages being such as continuously to position one or more of said carriages in each of said openings, each of said carriages comprising a base member and a member pivotally mounted thereon, said base member and pivotal member having siding thereon to protect a lasted shoe upper position in the carriage and to seal said openings when the carriage is located therein, means normally biasing said pivotal members into an upper position defined by a plane which intersects the conveyor, and means mounted in said openings engageable with said pivotal members to urge said pivotal members out of said upper position during passage of the carriage through said openings thereby continuously to seal said openings.

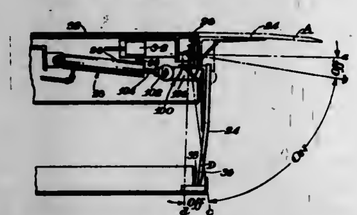
3,290,709
AUTOMATIC LIP FOR POWER OPERATED LOADING PLATFORM
Taylor D. Whitenack, Jr., and John A. Anderson, Jr., Fort Wayne, Ind., assignors to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed Nov. 17, 1964, Ser. No. 411,888
20 Claims. (Cl. 14—71)



1. A power-operated ramp for bridging the space between a loading dock and a vehicle bed adjacent to it comprising a platform, main hinge means connecting the rear of said platform to said loading dock, powered elevating means connected to react between said loading dock and said platform for rotating it upwardly about

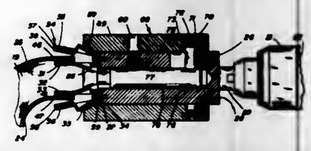
said main hinge means, a lip disposed at the front of said platform, lip hinge means rotatably connecting said lip to the front of said platform for movement between a substantially vertical retracted position to a bridging position in which it forms a substantial continuation of said platform, powered lip actuating means connected to react between said platform and said lip for raising said lip from said retracted to said bridging position, control means connected to said powered lip actuating means for operating it, platform position responsive means in said control means for operating said powered lip actuating means to raise said lip above said vehicle bed when said platform is raised to a predetermined inclination above said vehicle bed, sustaining means in said control means for maintaining said lip actuating means and said operating lip raised, and ramp lowering phase associated means in said control means connected to said sustaining means for inactivating said sustaining means when said ramp is externally supported for conditioning said lip to drop to said substantially vertical retracted position when said lowering phase of said ramp is completed.

3,290,710
LIP-OPERATED SWITCHING DEVICE FOR POWER OPERATED LOADING PLATFORM
Taylor D. Whitenack, Jr., Fort Wayne, Ind., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed Nov. 17, 1964, Ser. No. 411,930
4 Claims. (Cl. 14—71)



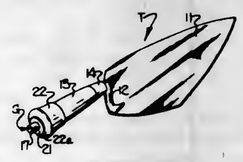
1. A lip-operated switching device for a power operated ramp for bridging the space between a loading dock and a vehicle bed adjacent to it comprising a platform, main hinge means connecting the rear of said platform to said loading dock, powered elevating means connected to react between said loading dock and said platform for rotating it upwardly about said main hinge means, a lip disposed at the front of said platform, lip hinge means rotatably connecting said lip to the front of said platform for movement between a substantially vertical retracted position to a bridging position in which it forms a substantial continuation of said platform, lip operating cylinder means connected to react between the bottom of said platform and said lip for raising said lip from said retracted to said bridging position, an electrical switch mounted under said platform, said switch having an operating stem disposed toward said operating cylinder, a stem contacting surface upon said cylinder, said operating cylinder being rotatably connected to said platform and a portion of said lip for rotating said lip about said lip hinge means, said cylinder inclining away from and toward said platform as it rotates said lip, said cylinder and its mode of connection to said lip being arranged to cause said cylinder to assume substantially the same angle relative to said platform when said lip is in said substantially vertical retracted position and in said bridging position whereby said stem contacting surface is in the same phase of operation relative to said stem in both of said positions, and said cylinder assuming a different angle relative to said platform when said lip is in between said substantially vertical retracted position and said bridging position for disposing said switch contacting surface in a different operating phase relative to said stem whereby said switch is energized only when said cylinder is disposed in positions in between said retracted and bridging positions of said lip.

3,290,711
PORTABLE HAND TOOL FOR CLEANING PIPE JOINTS
Gosta Swanson, P.O. Box 26, Hollis, N.H.
Filed July 23, 1965, Sr. No. 474,347
8 Claims. (Cl. 15—104.03)



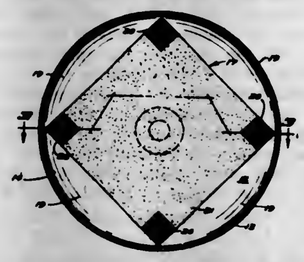
1. A portable hand tool device for wiping a pipe joint or the like, said device comprising
an elongated cylindrical support having a shaft at the rearward end thereof, said shaft fitting in the chuck of a power hand drill;
first wiping means mounted at the forward end of said support, said means having an outer wiping face adapted to fit within said joint and wipe the inner face thereof;
second wiping means mounted on said device, said means having an inner wiping face adapted to fit around said joint and wipe the outer face thereof; and
mechanism, including a hollow cylindrical member, sleeved on said support for axial sliding movement thereon, for moving at least one said wiping means relative to the other, to alternately position said first wiping means to engage the inner face of said joint and said second wiping means to engage the outer face of said joint.

3,290,712
COMBINATION TROWEL AND GAUGE
James Richey, 2410 Lupine St., Charleston, Heights, S.C.
Filed May 11, 1965, Ser. No. 454,661
5 Claims. (Cl. 15—105.5)



4. In a trowel of the type for use by a bricklayer for applying mortar to bricks and the like having a blade, an elongated handle, and means for connecting one end of said handle to said blade, the improvement which consists of, an end wall on the other end of said handle, a tubular cap of resilient material having an end wall positioned over said handle other end with said cap end wall in overlying engagement with said handle end wall, an elongated cylindrical rod having a diameter corresponding to the spacing between adjacent bricks in the laid position, a base plate on one end of said rod, a screw secured to the opposite side of said base plate from said rod and in coaxial relationship with the rod, said screw being threaded into said handle end wall through said cap end wall with said base plate in overlying engagement with said cap end wall and with said rod positioned in a rearwardly projecting, central relationship with both said end walls, said cylindrical rod being adapted to be simultaneously engaged by the opposed walls of adjacent bricks as said bricks are laid by said bricklayer thereby permitting said adjacent bricks to be positioned in the desired spaced relationship.

3,290,713
FLOOR SCRUBBING BRUSH
Robert M. Berry, St. Paul, Minn., assignor to Multi-Clean Products Incorporated, St. Paul, Minn., a corporation of Minnesota
Filed Apr. 7, 1965, Ser. No. 446,270
2 Claims. (Cl. 15—180)



1. In a floor scrubbing machine, a downwardly opening annular base, a brush mounted within the base for rotation on the center axis of the base, said brush having a horizontally disposed backboard enclosed within the base with bristles covering the underside of and extending downwardly from the backboard beyond the base opening whereby when the bristles are engaged with a floor surface the base will be supported thereby in spaced relation to the surface, said backboard having the horizontal configuration of an equilateral polygon with the corners thereof lying just within the annular wall of the base, and the bristles on the corner areas of the backboard being formed of a material having a greater resistance to abrasion than the material forming the remaining bristles in the brush.

3,290,714
HELICALLY WOUND BRUSH
William F. Encheimaier, 16 Oak Place, North Caldwell, N.J., and Harvard W. K. Encheimaier, 24 Kingwood Drive, Great Notch, N.J.
Filed Mar. 30, 1965, Ser. No. 443,835
12 Claims. (Cl. 15—182)



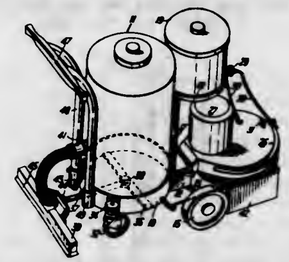
1. A brush comprising an elongated core, a unitary binding strip wound helically on the core, said binding strip before its application to the core having longitudinally extending first and second integrally connected flanges disposed at a substantial angle with respect to each other, the first flange of the binding strip being disposed generally radially of the core and the second flange of the binding strip being disposed generally parallel to the surface of the core, the second flange of the binding strip having a plurality of longitudinally spaced notches therein, said notches extending from the outer, free edge of the second flange inwardly toward the junction of the first and second flanges, a plurality of generally radially extending bristle tufts on the core, said tufts extending outwardly from the core through the respective notches in the binding strip, and means securing the binding strip and roots of the bristle tufts to the core.

3,290,715
CONCEALED WINDSHIELD WIPER MECHANISM
Paul S. Heller, Fairport, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,109
4 Claims. (Cl. 15—250.19)



1. A windshield cleaning mechanism for a vehicle having a windshield, a cowl with a transversely extending well having an access opening and hinged cover means for closing the access opening, including, a pair of spaced oscillatable windshield cleaner assemblies, drive means for said cleaner assemblies including a variable throw crank operable to impart conjoint oscillation to said cleaner assemblies across the outer surface of said windshield and to move the cleaner assemblies to parked positions wherein said cleaner assemblies are disposed within said well, cover operating linkage means drivingly connected to, and automatically actuated upon variation in the throw of said crank during movement of said cleaner assemblies between their parked and operating positions for positively opening said cover means during movement of said cleaner assemblies to their operating position and positively closing said cover means during movement of said cleaner assemblies to their parked position, and over-center actuated toggle spring means operatively connected with said cover means for assisting in moving said cover means between open and closed positions and for maintaining said cover means in either its open or closed position.

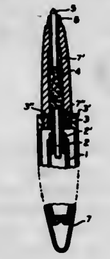
3,290,716
FLOOR TREATING MACHINES
Robert E. Cain, Lot 50, Green Plateau Road, Springfield, near Gosford, New South Wales, Australia
Filed Aug. 11, 1965, Ser. No. 478,796
Claims priority, application Australia, Aug. 13, 1964, 48,068/64
2 Claims. (Cl. 15—353)



1. A floor treating machine having a wheeled frame, a vacuum container mounted on the frame, a suction squeegee nozzle connected by a conduit to the vacuum container, a single pivot arm extending backwards from the frame and connected at one end to the frame by a universal joint and at its other connected to the

squeegee nozzle, whereby the squeegee nozzle is freely displaceable by an operator and normally tracks along behind the frame with its length transverse to the direction of travel of the machine in arcuate as well as straight line travel.

3,290,717
PEN
Noriiko Mimatsui, 79 4-chome Nishikagaya-cho, Suminoki-ku, Osaka, Japan
Filed Aug. 10, 1964, Ser. No. 388,725
Claims priority, application Japan, June 6, 1964, 39/44,794
1 Claim. (Cl. 15—563)



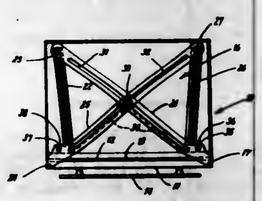
A pen comprising
a pen holder,
a cap receiving said pen holder,
an ink tank disposed inside of said pen holder and having an opening at one end thereof,
a connector sealingly inserted into said open end of said tank,
said connector having an axial bore,
an ink guide immovably secured in said axial bore and closing said bore in said connector,
a hollow body threadedly connected with said pen holder and receiving a filter,
said ink guide projecting into said filter,
said hollow body having a set off recess at its open end and receiving one end of said connector,
a pen nib having a minute bore and received at the free end of said hollow body and projecting into said filter, and
a protector secured to the front end of said hollow body and receiving the front end of said pen nib.

3,290,718
LOCKER HINGE
Arthur P. Kolerioher, Aurora, Ill., assignor to All-Steel Equipment Inc., a corporation of Illinois
Filed Mar. 24, 1964, Ser. No. 354,283
1 Claim. (Cl. 16—128)



A vertical door hinge construction comprising a door post, a supporting strap rigid therewith including a hinge leaf projecting laterally of the post and defining a vertical aperture therein, with the leaf having a relatively flat upper face surrounding the aperture, a door adapted to be mounted on the post for swinging movement with respect thereto, a door panel corner structure having a face portion provided with upper and lower outwardly embossed portions defining upper and lower pintle sockets opening endwise toward each other and laterally toward the inner face of the door, said door panel having a side flange provided with a slot to receive the hinge leaf intermediate said sockets, a straight, generally cylindrical, pintle loosely mounted in said aperture for free rotation therein, a collar fixed on said pintle near the upper end thereof to support and position said pintle within the aperture, said collar having a relatively flat lower surface cooperating with the relatively flat upper surface of the hinge leaf to serve as a thrust bearing for the support of the door on the hinge leaf, the pintle extending above the collar by a predetermined amount and below the hinge leaf by a predetermined amount for engagement with said embossed sockets on the door panel, and means for securing the ends of the pintle to the door panel within said sockets, and for transferring the weight of the door to the collar, whereby the pintle rotates with the door as it is opened and closed, with the lower face of the collar serving as the principal bearing support for the hinge, said means including a hinge clip secured to the door and having portions tightly engaging the ends of the pintle to secure the same against rotation with respect to the door.

3,290,719
DOOR STRUCTURE
Iber C. Courson, Glenside, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,628
6 Claims. (Cl. 16—147)



1. In combination with fixed structure defining an enclosure, means for hingedly mounting a door upon said structure comprising: a first pair of links lying in a plane extending transversely of said door in the region of one end of the latter, means slidably connecting one end of said links to said fixed structure, means securing the opposite end of said links into pivotal connection with opposed edges of said one end of said door; said links extending across one another, and means intermediate the ends of said links slidably connecting said links to each other; a second pair of links lying in a plane extending transversely of said door in the region of the other end of the latter, means slidably connecting one end of said second pair of links, to said fixed structure, means securing the opposite end of said second links into pivotal connection with opposed edges of said other end of the door; said second links extending across one another and means intermediate the ends of said second links slidably connecting said second links to each other and means operable to lock corresponding links of said first and second pair to said fixed structure as said door is hingedly moved about its pivotal connections to the mentioned corresponding links, the construction and arrangement being such that the remaining links of said first and second pair slide with respect to the fixed structure during such movements of the door.

3,290,720
DEVICE FOR CLEANING FISH
George E. Gordon, 11726 100 Ave., Edmonton Alberta, Canada
Filed Jan. 18, 1965, Ser. No. 426,449
2 Claims. (Cl. 17—7)



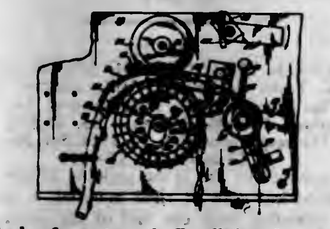
1. In a tool for cleaning fish, a knife blade having a handle secured at one end thereof and coaxial therewith, a spoon shaped eviscerating tool secured to the back of the knife blade in a plane transverse to the plane of the knife blade and projecting forwardly from the knife blade handle at an angle divergent to the knife blade, such knife blade being formed to a point at its forward end.

3,290,721
FOOD PRODUCT FREEZING DEVICE
Burton L. Siegel, Chicago, Ill., assignor to Dur-A-Case, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 3, 1965, Ser. No. 436,906
16 Claims. (Cl. 17—32)



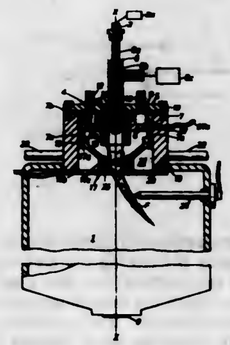
1. A freezing device for molding food products which comprises: a substantially rigid one piece hollow tubular member having opposite longitudinal edges normally biased in spaced facing relationship to define therebetween an axial split along the length of said member, said member having a pair of radially compressible pistons disposed one at each end, and a detachable closure member slidably engaging the exterior of the tubular member along the length thereof on opposite sides of the split for applying a pressure on the tubular member to bring the longitudinal edges closer one to the other simultaneously tending to close the split and radially compress the pistons, the pistons being tightly frictionally engaged within the tubular member during freezing use, but capable of slight axial movement to compensate for expansion of the food product.

3,290,722
SLITTING DEVICE
John C. Nerbs, 237 N. 4th St., Aurora, Ill.
Filed Aug. 25, 1964, Ser. No. 395,640
12 Claims. (Cl. 17—43)



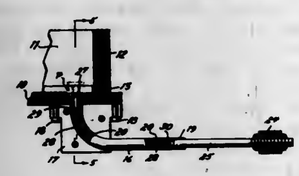
1. A device for automatically slitting the smooth side of an animal casing and forming therefrom a strip of uniform width while simultaneously removing the fatty underside of the casing without breaking or damaging the strip, which comprises an elongated slitting peg over which the casing is adapted to be drawn with its smooth side up and its fatty side down, said peg having a girth normally adapted to fill said casing, a continuously rotating impeller positioned below said peg and comprising a multiplicity of radially extending vanes spaced angularly from one another about the axis of the impeller, said impeller being yieldably urged towards said peg, a gripping surface on the underside of said peg for cooperating with the vanes on said impeller for normally yieldably engaging the fatty underside of said casing between said vanes and said surface for drawing said casing lengthwise over said peg without substantially stretching the smooth side of the casing in any direction, a plurality of continuously rotating slitting knives above said peg and spaced axially from one another with respect to said peg, said peg defining top recesses for receiving the cutting edges of said knives, said slitting knives being adapted to slit through the smooth side of the casing as the knives enter said top recesses and the casing is being driven over said peg by said impeller, whereby a strip may be severed from said casing without substantially stretching the strip in any direction.

3,290,723
APPARATUS FOR PROCESSING PARTICULATE MATERIAL
Thomas Arthur John Jaques, Ridgeway, Weymouth, Dorset, Derek William James Sturge, Dorchester, Dorset, and Richard Terrance Smyth, Winton, Bournemouth, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Oct. 23, 1963, Ser. No. 318,246
Claims priority, application Great Britain, Oct. 26, 1962, 40,569/62
8 Claims. (Cl. 18—1)



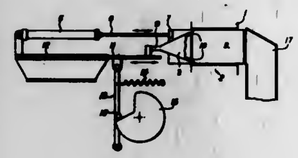
1. A process for spheroidising particulate material which resides in preparing a batch of irregularly shaped particles the volume of each approximating to that of a spherical particle of the required diameter, causing the particles to become entrained in a stream of inert gas having a high heat transfer coefficient, flowing the gas with its particles entrained therein along a flowpath, initiating a zone of hot gas plasma through a constriction in the flow path whilst an electrical potential is maintained across the constriction in said flowpath to melt the particles whereby the latter assume a spherical shape, passing the melted particles in free flight to a cool zone and collecting the particles in the cool zone and including the step of initially reducing the pressure in the flow path below atmospheric before introducing the gas with entrained particles.

3,290,724
MOLD EJECTOR
Svend B. Rosdahl, Bradford, Pa., assignor to Plexowood, Inc., a corporation of Pennsylvania
Filed May 20, 1964, Ser. No. 368,784
11 Claims. (Cl. 18—2)



1. In combination with a mold including a female mold having a horizontal bottom, ejecting mechanism for molded articles comprising: an opening in said bottom, an ejecting pin in said opening, a curved tube secured to said bottom at said opening and communicating therewith, a flexible thrust rod in said tube with one end secured to said pin, a prime mover, and a mechanical connection between said prime mover and the other end of said thrust rod.

3,290,725
APPARATUS FOR MOULDING RUBBER AND LIKE ARTICLES
Ernest T. Jagger and Edward L. Hunter, Newcastle upon Tyne, England, assignors to George Angus & Company Limited, Newcastle upon Tyne, England
Filed June 19, 1964, Ser. No. 376,396
Claims priority, application Great Britain, June 21, 1963, 24,744/63
5 Claims. (Cl. 18—2)

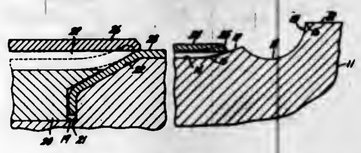


1. In moulding apparatus comprising at least one pair of dies with means for closing the dies together to form mouldings and for opening the dies apart to a spaced-apart position in which the mouldings are accessible from the space between the dies; the improvement which consists in means for removing the mouldings from said space and comprising a pair of side walls, means for moving said side walls into position spaced apart and closing two opposite sides of the effective moulding space between said dies, an air-blast nozzle, means for traversing said nozzle across said space between and in a direction parallel to said walls and means, facing said nozzle, for gathering the mouldings.

3,290,726
PHONOGRAPH RECORD MOLDING APPARATUS
William S. Bachman, Southport, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Apr. 22, 1964, Ser. No. 361,842
11 Claims. (Cl. 18—5.3)

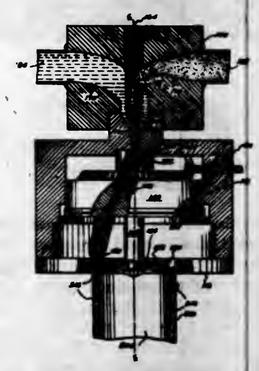
1. In a phonograph record molding apparatus, the combination of

a mold having a matrix receiving area bounded by an upwardly and outwardly inclined surface disposed below and inwardly of an outer annular pinching surface, and



a matrix disposed with only its outer rim supported by the inclined surface, thereby providing space between the matrix and the outer matrix receiving area inwardly of the inclined surface.

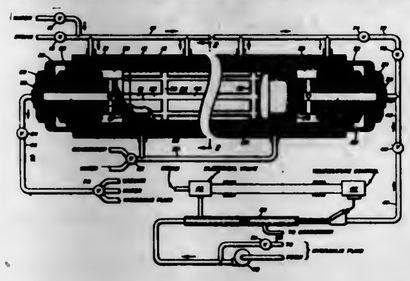
3,290,727
APPARATUS FOR FORMING COMPOSITE ELEMENTS
Aristovoulos George Petzetakis, Thessaloniki and Chandri Sts., Moscaton, Piraeus, Greece
Filed Aug. 29, 1962, Ser. No. 220,291
Claims priority, application Greece, Sept. 5, 1961, 24,307, Patent 22,347
4 Claims. (Cl. 18—13)



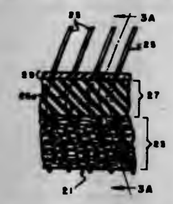
1. A first fluid conduit means having a feed end and a discharge end, a second fluid conduit means having a feed end and a discharge end, the discharge end portion of said first fluid conduit means surrounding the discharge end of said second fluid conduit means, and a third fluid conduit means having a feed end and a discharge end, the feed end of said third fluid conduit means being in fluid communication with the discharge ends of said first and second fluid conduit means and adapted to receive the discharge therefrom, said third fluid conduit means providing a common conduit for receiving said discharge and for discharging the same via the discharge end of said third conduit means, the discharge end of said third fluid conduit means being rotatable with respect to the feed end of said third conduit means.

3,290,728
PLASTIC PIPE MOLDING APPARATUS
Robert C. Pratt, Hollywood, Calif., assignor to Babbitt Pipe Company, Inc., West Hanover, Mass.
Continuation of application Ser. No. 61,526, Oct. 10, 1960. This application Feb. 10, 1964, Ser. No. 362,215
6 Claims. (Cl. 18—19)

2. A mandrel for use in the molding of pipe comprising a cylindrical core of rigid material, a plurality of grooves extending from one end of the mandrel to the other, a sleeve covering the mandrel and secured at its ends to the mandrel and means for forcing fluid under positive pressure along said grooves and thence circumferentially under said sleeve to expand said sleeve so that said sleeve may exert an outward pressure against the interior of a surrounding tube being molded and means for applying a negative pressure to said grooves whereby the fluid expanding said sleeve will be withdrawn to contract said sleeve about said mandrel and said sleeve will be drawn downwardly into said grooves to pull those areas of the sleeve located above said grooves away from the corresponding interior areas of said molded pipe whereby removal of said mandrel from said finished molded pipe may be facilitated.



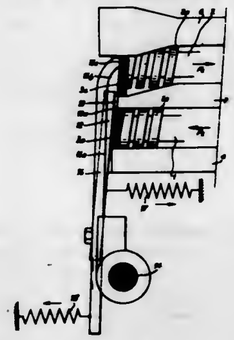
3,290,729
CARD CLOTHING
Marvin E. Maynard, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Aug. 4, 1961, Ser. No. 129,361
6 Claims. (Cl. 19—114)



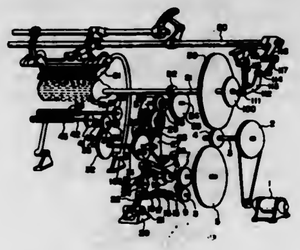
1. A fiber handling laminate particularly adapted for use on textile carding machines and the like, comprising a foundation layer, an intermediate resilient layer of soft elastic and flexible material, an outer covering of a material comprising a polyfluorocarbon compound having an outer exposed face, and a plurality of spaced fiber handling teeth being anchored in said foundation layer and extending through said layers and outwardly from said outer exposed face, said outer covering being in adhering relation to both said intermediate layer and said teeth.

3,290,730
NEEDLE BAR MECHANISM FOR DRAWING FIBERS
Jean Frederic Herubel, Guebwiller, Haut-Rhin, France, assignor to N. Schlumberger & Cie, Haut-Rhin, France
Filed July 6, 1964, Ser. No. 380,476
Claims priority, application France, July 5, 1963, 940,576
4 Claims. (Cl. 19—129)

1. A needle bar mechanism for drawing fibres comprising a plurality of needle bars, a work screw for imparting translatory motion to each of said needle bars in one direction during a working stroke, a return screw for imparting translatory motion to the needle bars in the opposite direction to said one direction during a return stroke, means for transferring said needle bars from one of said screws to the other of said screws during a transfer stroke, a guide member, a first surface defined upon said guide member and disposed so as to exert a guiding action upon said needle bars during a transfer stroke, a braking member, and a second surface defined upon said braking member and disposed so as to exert a braking action upon said needle bars during a transfer stroke, said first and second surfaces being arranged to simultaneously cooperate with the same needle bar over at least a portion of the transfer stroke, and resilient means for applying forces independently to the guide and braking members, said guide and braking members, each including a pivotal lever.



3,290,731
RECTILINEAR COMBER FOR COTTON
Mutsuhiko Katori, Chikusa-ku, Nagoya-shi, Japan, assignor to Howa Kogyo Kabushiki Kaisha, Aichi-ken, Japan, a joint-stock company of Japan
Filed Oct. 21, 1963, Ser. No. 317,656
3 Claims. (Cl. 19—231)



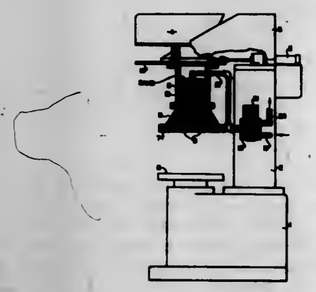
1. A mechanism for inducing rotation of a detaching roller in a cotton rectilinear comber comprising a gear rotatable with a definite relationship with respect to the rotation of the detaching roller, a pinion operatively associated with the gear, a lever for moving the pinion back and forth along the periphery of said gear, and means for actuating the lever, said actuating means including a pair of eccentric mechanisms, means for rotating one of the eccentric mechanisms at a speed twice that of the other eccentric mechanism, a first link connected intermediate its ends to the lever, a second link connected between one end of the first link and one of the eccentric mechanisms, a third link connected between the other end of the first link and the other of the eccentric mechanisms, a fixed bracket, and a fourth link between the connection of the first link to the third link and the bracket thereby actuating the pinion through the lever in accordance with the resultant of the motions of the pair of eccentric mechanisms.

3,290,732
DRAFTING ARRANGEMENT
Bobby L. Pitts, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,564
3 Claims. (Cl. 19—255)



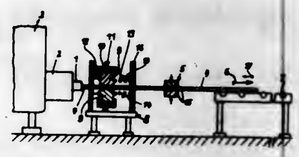
1. A cradle assembly for a textile drafting arrangement having a pair of drafting rolls carrying fiber control aprons thereabout comprising spaced apart wall members, a first nonrotatable apron guiding member extending between and attached to said wall members, a second nonrotatable apron guiding member spaced from said first apron guiding member and extending between and attached to said wall members, said first apron guiding member having a concave surface at one end adapted to contact one of said drafting rolls and an apron reversal portion at the other end, said first apron guiding member having at least two sections with one section molded to one of said spaced apart wall members and the other of said two sections molded to the other of said spaced apart wall members, and means on one section of said two sections engaging the other section of said two sections to maintain said wall members in spaced relationship and to hold said two sections together.

3,290,733
MOLD AND CORE BLOWING MACHINE
Leon F. Miller, Rocky River, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 26, 1962, Ser. No. 175,579
5 Claims. (Cl. 22—10)



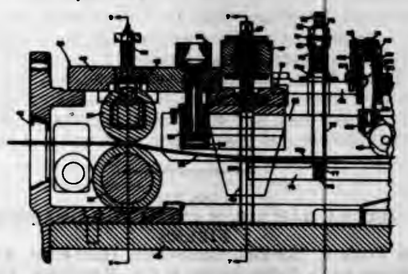
1. In a mold and core blowing machine having a sand reservoir with a blow opening and a sand charging opening, means for closing such charging opening prior to the blow, and means for exhausting said reservoir following the blow; blow means for delivering air under pressure to said reservoir internally of the body of sand contained therein comprising an air conduit leading to and communicating with a pair of tubes sleeved one inside the other with a layer of fine mesh screen interposed therebetween, said tubes extending within said reservoir and having apertures in the walls aligned with one another.

3,290,734
APPARATUS FOR HORIZONTAL, CONTINUOUS METAL CASTING
Alfred J. Wertli, 15 Poststrasse, Winterthur, Switzerland
Filed May 22, 1964, Ser. No. 369,562
Claims priority, application Switzerland, May 25, 1963, 6,477/63
3 Claims. (Cl. 22—57.2)



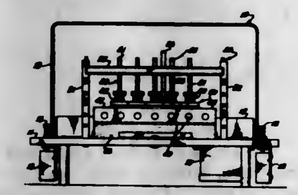
1. In an apparatus for horizontal, continuous casting of metal:
a mold for continuously receiving molten metal and releasing solid metal,
intermittently active means connectible to the solid metal for intermittently advancing the metal away from said mold,
clamp means for frictionally engaging the solid metal for movement therewith in a first direction,
abutment means for limiting the extent of movement of said clamp means to permit sliding of the metal relative to said clamp means during movement of the metal in said first direction, and
power accumulating means engaged between said clamp means and said abutment means for absorbing power during movement of said clamp means in said first direction, said power accumulating means releasing power to return the metal toward said mold when said intermittently active means is inactive whereby the metal is moved toward said mold a distance less than the amount of intermittent movement in said first direction to permanently withdraw continuing lengths of metal from said mold.

3,290,735
APPARATUS FOR MAKING A TRIMETAL BEARING MATERIAL
Wilbert H. Morrison, Euclid, and Rudolph A. Braun, Willoughby, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Apr. 10, 1963, Ser. No. 271,959
8 Claims. (Cl. 22—57.3)



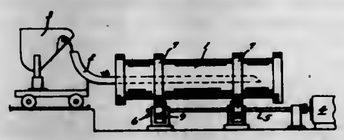
1. Apparatus for depositing liquid babbitt on a metal strip comprising an enclosed housing having an entrance end for the metal strip and an exit end for the metal strip, means for moving said strip through said housing and for holding said strip at a given elevation at said entrance end, means within said housing for holding said strip at an elevation lower than said given elevation, means for distributing liquid babbitt on the upper face of the metal strip at the location where said strip is at said lower elevation, horizontally extending means carried by the housing and engaging the edges of the metal strip to prevent liquid babbitt from flowing off the edges of the metal strip, said horizontally extending means guiding said strip through said housing and forcing said strip to bend downwardly to said lower elevation as it moves through said housing, and means for cooling the liquid babbitt to cause it to become a solid and to bond to the metal strip as said metal strip moves toward the exit end of said housing.

3,290,736
SEMICONDUCTOR ALLOYING TECHNIQUE
John E. Mann, Azusa, Henry Trigger, Monterey Park, and Nathan Hirsch, Los Angeles, Calif., assignors to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware
Filed Mar. 4, 1964, Ser. No. 349,304
2 Claims. (Cl. 22—58)



1. In apparatus for producing fused junctions in a body of semiconductor material having a surface, the combination of:
(a) a supporting structure;
(b) a heating plate having an upper planar surface, said heating plate being mounted to said supporting structure and including means for heating said plate;
(c) a bottom plate for disposition on said heating plate, said bottom plate having an upper planar surface with a plurality of evenly spaced depressions therein, said bottom plate being formed of a material nonwetable by the material of the semiconductor;
(d) a top plate mounted upon the supporting structure above the bottom plate and having a planar lower surface; and,
(e) means for resiliently urging said top plate toward said bottom plate.

3,290,737
SUPPORT ROLLERS FOR CENTRIFUGAL CASTING EQUIPMENT
Jiro Akiyama and Takahiko Wakita, Osaka, Japan, assignors to Kubota Tekko Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed May 10, 1965, Ser. No. 454,490
2 Claims. (Cl. 22—65)



1. A centrifugal casting equipment comprising,
a flask, and a ladle to feed molten metal into the flask,
supporting rollers engaging the outer surface of the flask,
each roller including a hub and a tire surrounding the hub and mounted thereon,
a drive shaft, said hub being affixed to the drive shaft,
an inwardly projecting rib on the tire, said hub having a peripheral groove therein to receive said rib,
elastic nonmetallic means interposed between the hub and the tire,
a pin extending transversely through the hub and the rib of the tire,
a resilient nonmetallic sleeve surrounding the pin at both ends thereof,
said sleeve being interposed between the pin and the hub.

3,290,738
APPARATUS FOR PRODUCING SEMICONDUCTOR DEVICES
Karl Gerhardt Klaus and Kornelius Noss, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Jan. 8, 1964, Ser. No. 336,535
Claims priority, application Germany, Jan. 16, 1963, S 83,275
14 Claims. (Cl. 22—75)

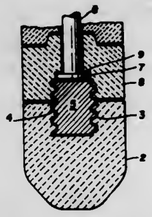


1. In an apparatus for producing semiconductor devices, an airtight processing zone having an aligned inlet and outlet, guide means mounted in said processing zone and defining a path therethrough for a column of at least three superimposed mold members of which at least one member contains semiconductor material to be processed in said processing zone, at least three spaced annular sealing lips of resilient material aligned with said inlet and outlet respectively, said sealing lips being airtightly connected at their peripheries so as to define an airtight passage communicating with said processing zone, means for aligning the superimposed mold members with said annular sealing lips and said processing zone path, and means for successively displacing the mold members through said annular sealing lips and said processing zone path, the spacing between said sealing lips being predetermined in relation to the dimension of each mold member in the direction of displacement so that at least one of the mold members is sealingly engaged by at least one of said annular sealing lips at said inlet and outlet as the mold members are displaced through said annular sealing lips.

3,290,739
STOPPER FOR A LADLE OR SIMILAR RECEPTACLE
Theodore H. Harley, Fox Chapel Borough, Allegheny County, Pa., assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 82,877, Jan. 16, 1961. This application Mar. 12, 1965, Ser. No. 439,322
2 Claims. (Cl. 22—85)

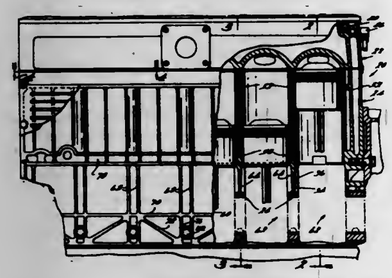
1. A stopper rod assembly comprising a stopper having a lower solid nose and a planar upper surface, said nose including a portion forming a recess opening into said planar upper surface, a plug, connecting means in said nose recess and on said plug securing the plug in said nose recess and disposing said plug above said planar upper surface, a sleeve including a planar lower surface and having portions forming a downwardly opening recess

opening into said lower planar surface of said sleeve and a communicating reduced cross sectioned bore opening into the upper end of said sleeve, and a stopper rod adapted to extend through said sleeve bore and including a lower portion extending laterally into said sleeve recess, said sleeve recess and upper end of said plug including connecting means securing the lower planar surface of



said sleeve juxtaposed on the upper planar surface of said nose and circumposed about said plug and disposing the lower portion of said stopper rod adjacent the uppermost end of said plug and spaced above the upper planar surface of said stopper, the transverse dimension of the sleeve being substantially the same as the transverse dimension of the stopper.

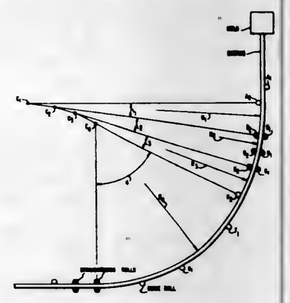
3,290,740
METHOD OF CASTING AN ALUMINUM ENGINE
Achilles C. Sampietro, Bloomfield Hills, and Kenneth G. Matthews, Grosse Pointe Woods, Mich., assignors to Kaiser Jeep Corporation, a corporation of Nevada
Original application Aug. 17, 1961, Ser. No. 132,226, now Patent No. 3,173,407, dated Mar. 16, 1965. Divided and this application Mar. 15, 1965, Ser. No. 442,852
6 Claims. (Cl. 22—200)



4. The method of die casting an engine block having a plurality of in-line, outwardly extending cylinder bores comprising the steps of forming the radially inner surface of the cylinder bores by coaxially extending members and forming the radially outer surface of the cylinder bores by a pair of oppositely located dies movable transversely relative to the axis of the cylinder bores.

3,290,741
METHODS OF BENDING CASTING IN A CONTINUOUS CASTING PROCESS
Erik Allan Olsson, 66 Zurichstrasse, Kusnacht, Zurich, Switzerland
Filed Nov. 14, 1961, Ser. No. 152,161
Claims priority, application Sweden, Nov. 18, 1960, 11,125/60
1 Claim. (Cl. 22—200.1)

The method of bending a casting which leaves a continuous casting mold, from a substantially vertical direction to a substantially horizontal direction, which comprises performing the bending in a plurality of steps, the amount



of bending increasing as the temperature of the casting falls and solidification thereof proceeds.

3,290,742
GRAIN REFINING PROCESS
Vladimir Petrovich, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 343,667
9 Claims. (Cl. 22—200.1)

1. A method of grain refining a magnesium-base alloy containing rare earth metals and zinc which comprises, establishing a molten mass of the alloy to be grain refined, casting said molten mass from a temperature within the range of from about 1190° F. to about 1240° F., thereby imparting to the cast alloy a fine equiaxed grain structure, and cooling to solidify it.

3,290,743
TABLE CLOTH HOLDING DEVICE
Maynard P. Hanson, 2511 McKinley St. NE., Minneapolis, Minn.
Filed Oct. 22, 1965, Ser. No. 502,106
3 Claims. (Cl. 24—81)



1. A table cloth holding device for releasably holding a table cloth on the table top of a picnic table and in which the table cloth is of a greater width than the width of the table top, said device comprising

an elongate substantially flat one piece table cloth engaging member formed of resilient flexible material and being adapted to extend transversely of the picnic table to engage the upper surface of the table cloth to clamp the same upon the picnic table, said table cloth engaging member presenting a continuous uninterrupted planar upper surface when applied to a table,

a pair of retaining members each being releasably connected to one end of said table cloth engaging member and each including a substantially flat attachment portion having slots in one end thereof, each end of said table cloth engaging member being looped and received within the slotted end of the attachment portion of each retaining member and being adjustable relative to the latter,

each retaining member including an edge engaging portion integrally formed with the associated attachment portion and disposed in depending substantially right angular relation therewith for engaging the edge of the table,

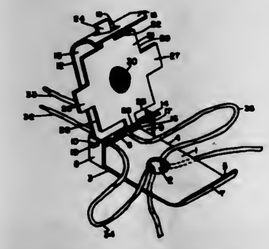
a clamping portion integrally formed with the lower end of said edge engaging portion and extending laterally and upwardly therefrom toward said associated attachment portion and presenting an arcuate engaging surface for engaging the lower surface of the table top and a thumb engaging portion integrally formed with said clamping portion and depending therefrom.

3,290,744
SNAP FASTENER COMPONENT
Bernard R. Silver, Providence, R.I., assignor to Rau Fastener Company, Providence, R.I., a corporation of Rhode Island
Filed Oct. 28, 1964, Ser. No. 407,007
8 Claims. (Cl. 24—90.5)



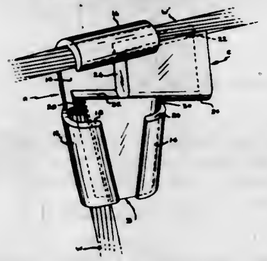
1. A snap fastener stud element assembly, comprising a button-like front of fragile material, a shank integral with and projecting normal to the plane of the back surface of said front, an eyelet including a barrel telescoped over said shank, a tubular stud part telescoped over said barrel, said stud part having a neck of lesser diameter than the outside diameter of the barrel so as to compress the barrel tightly about the shank for securing the parts together.

3,290,745
SHOE LACE CLASP
Theodore B. Maxwell, Potter Hollow, N.Y., and Sol Sobel, 1356 Martine Ave., Plainfield, N.J.
Filed Aug. 17, 1965, Ser. No. 480,348
10 Claims. (Cl. 24—120)



1. A shoe lace clasp comprising a first clasp member having an aperture formed therethrough and a pair of laterally spaced lugs extending upwardly thereof, a second clasp member comprising a body portion and a leg at two opposite ends thereof and extending in a common direction, an end portion of the second clasp member adjacent one of the legs being pivotally mounted for rotation between the lugs, a slot in each of the legs, a plate-like third clasp member having a body portion and a tab at two opposite ends thereof extending in opposite directions, the tabs each being movably mounted in one of the slots, spring means connected between the second and third clasp members, and a projection means on the body portion of the third clasp member, the projection means being engageable with the aperture through the first clasp member.

3,290,746
ELECTRICAL CONNECTOR FOR SECURING WIRES AT RIGHT ANGLES
William F. Brooke, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 14, 1965, Ser. No. 455,905
2 Claims. (Cl. 24—126)



1. A connector comprising a planar member, a first pair of arcuate arms projecting from opposite edges of said member, a third arcuate arm projecting from said planar member laterally to and spaced from said first pair of arcuate arms, and a pair of wedge members adapted to be secured to said connector comprised of a first wedge adapted to be received between the first pair of arcuate arms and the other wedge adapted to be received between the third arcuate arm and one end of said first wedge.

3,290,747
PLASTIC ZIPPERS AND METHOD OF MAKING THE SAME
John E. Burbank, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 18, 1965, Ser. No. 433,598
6 Claims. (Cl. 24—205.16)

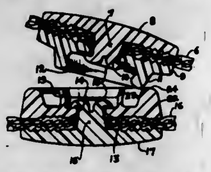


1. A zipper fastener stringer comprising a length of tape, a continuous plastic filament along the edge of said tape, said filament being formed into a series of loops, each loop providing a fastener element, a cord extending longitudinally through said loops and overlying the edge portion of said tape, said tape and cord being longer than said series of loops to provide an element-free extension of said tape and cord, and a continuous line of stitching which holds together said series of loops, cord and tape, said line of stitching extending through said element-free extension where it tightly binds the cord directly to the tape.

3,290,748
PLASTIC SNAP FASTENERS
Hugh H. Andrews, Cheshire, Conn., assignor to Scoville Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 29, 1964, Ser. No. 400,265
2 Claims. (Cl. 24—214)

1. In a snap fastener having stud and socket elements consisting wholly of plastic material which is rigid in thicker sections and flexible in thinner sections, the stud element having a circular base and an upstanding circular stud flange, the socket element also having a base and a circular flange projecting therefrom providing a constricted entrance opening for snap engagement with said stud flange; the improvement which consists of a rigid wall integral with the stud base and surrounding said

stud flange in such spaced relation as to loosely accommodate said socket flange between said wall and stud flange, said wall being substantially heavier in cross-section than said stud flange and of substantially the same



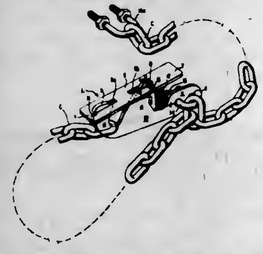
height, the inner surface of said rigid wall having a slope in an upward and radially outward direction so as to guide the socket flange during assembly of the socket with the stud.

3,290,749
HOOK AND EYE GARMENT FASTENER
Maurice Cohn, South St., South Coventry, Conn.
Filed Mar. 3, 1965, Ser. No. 436,768
6 Claims. (Cl. 24—227)



1. A garment fastening device including a hook element and an eye element, one of said elements being located at one side of the garment fabric and being associated with a backing plate on the other side thereof, the said backing plate being provided with spaced integral prongs extending through the fabric and the said one element being provided with at least one end portion which is inturned in spaced relationship to the body of the element and which defines a pair of prong-receiving openings facing the fabric and spaced apart by substantially the same distance separating the prongs on the backing plate, and body portion of the said one element between the said openings being arched to facilitate bending of the prongs toward each other to provide a clinched connection between the element and its associated backing plate as they are forcibly connected by pressing the prongs through the said element openings.

3,290,750
LOCKING LINK-CONNECTOR
George W. Pierce, 2916 Lincoln St., Eugene, Oreg.
Filed Mar. 9, 1965, Ser. No. 438,292
6 Claims. (Cl. 24—234)



1. A locking link-connector comprising a shank having at one end thereof a hook portion and at its other end means for attachment to an object and, further, having a lateral extension projecting from said shank between its end portions; a lock-bar spanning the distance between said extension and said hook portion to form a releasable closure for the entrance to the hook portion; cooperating interlocking parts on said hook portion and said lock-bar; means mounting the lock-bar floatably about said extension; means biasing said lock-bar outwardly of said extension; cam means on said extension cooperating with follower means on the lock-bar, when said lock-bar is depressed against its bias, to shift it longitudinally in one direction and move said interlocking parts out of engagement, whereby said lock-bar swings outwardly to open the entrance to the hook portion, and to shift said lock-bar in the other direction, when said interlocking parts are brought into opposing position and the lock-bar is released from its depressed position against its bias, thereby moving said interlocking parts into engagement and maintaining this locked engagement.

3,290,751
CLIP FOR HOLDING CLOTHES, PAPER AND THE LIKE
Jean Besnier, 57 Rue Felix, Colombes, France
Filed Oct. 22, 1964, Ser. No. 405,678
Claims priority, application France, Oct. 25, 1963, 951,736, Patent 1,383,884
3 Claims. (Cl. 24—262)

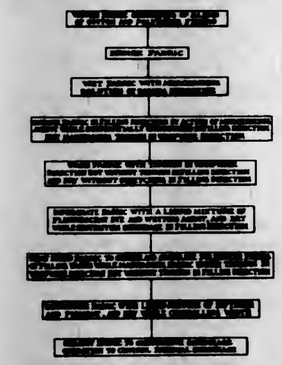


1. A clip comprising a length of resilient wire of folded configuration defining pincer arm portions located one adjacent each end of the wire, a loop portion between said pincer arm portions, said loop portion extending for about 360° and defining an axis of symmetry and intermediate portions located one between each pincer arm portion and the adjacent end of the loop portion, which intermediate portions maintain the pincer arms at an angle of at the most 20° with respect to the axis of symmetry of the loop portion, said intermediate portions having, in projection on a plane at right angles to the axis of symmetry of the loop portion, the configuration of an arc extending over from substantially semi-circle to substantially three quarters of a circle and being disposed symmetrically with respect to the axis of symmetry of the loop, said clip being deformable between open and closed positions by effection of relative rotational movement between the loop portion and the pincer arm portions of from substantially 270° to substantially 360° until the intermediate portions engage each other, the arrangement being such that an object may be held between the pincer arm portions when in the closed position.

3,290,752
WOVEN COTTON-POLYESTER BLEND FABRICS HAVING RECOVERABLE STRETCH CHARACTERISTICS
Harry W. Ormand, Upson County, Ga., assignor to Thomaston Cotton Mills, Thomaston, Ga., a corporation of Georgia
Filed Mar. 26, 1963, Ser. No. 267,932
5 Claims. (Cl. 28—74)

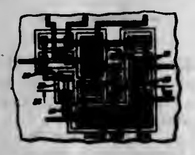
1. A process for treating fabrics woven entirely from standard yarns consisting of a blend of cotton and polyester fibers to impart thereto high stretch and recovery properties in the filling direction only which comprises the following steps:
(a) desizing the fabric;
(b) shrinking the desized fabric in the filling direction by subjecting it to the action of a mercerizing agent while maintaining the fabric under tension in the warpwise direction and in a substantially untensioned condition in the filling direction;

(c) washing the fabric while maintaining it under tension in the warpwise direction but without applying tension in the filling direction until substantially all of the mercerizing agent has been removed;
(d) drying the washed fabric without stretching in the filling direction;
(e) impregnating the dried fabric with a liquid mixture containing a fluorescent dye and a wetting agent;
(f) drying the impregnated fabric while restricting shrinkage thereof in the filling direction;



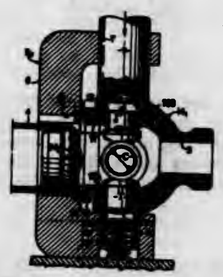
(g) heating the fabric to shrink and stabilize the polyester fibers of the filling yarns of the fabric while maintaining the fabric under tension in the warpwise direction but without tension in the filling direction; and
(h) subjecting the fabric to a compressive shrinking operation to control the residual shrinkage of the cotton fibers of the fabric.

3,290,753
METHOD OF MAKING SEMICONDUCTOR INTEGRATED CIRCUIT ELEMENTS
Joseph J. Chang, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 19, 1963, Ser. No. 302,966
3 Claims. (Cl. 29—25.3)



1. The fabrication of a semiconductor integrated circuit having a plurality of electrically isolated wafers comprising the steps of:
(a) preparing a slice of monocrystalline silicon,
(b) treating the slice to form therein a layer of the same conductivity type but of differing conductivity from that of the original slice,
(c) producing on one major surface of said slice an etch-resistant mask conforming to the desired isolation pattern,
(d) etching said masked surface to produce a network of slots in accordance with this said pattern,
(e) removing the etch-resistant mask,
(f) depositing by evaporation in the network of slots and on said slotted surface a layer of silicon dioxide,
(g) removing from the opposite major surface of said slice a layer of semiconductor material of a thickness so as to at least reach the bottom of said slots thereby producing an array of isolated semiconductor wafers in said slice,
(h) introducing significant impurities into said wafers to form therein areas of opposite conductivity type defining PN junctions,
(i) forming on said opposite major surface a deposited metal film pattern interconnecting said circuit elements.

3,290,754
EQUIPMENT FOR ASSEMBLING UNIVERSAL JOINTS
Alfred Pitner, Paris, France, assignor to Nadella S.A., Seine-et-Oise, France, a French body corporate
Filed Oct. 12, 1964, Ser. No. 405,884
Claims priority, application France, Nov. 5, 1963, 952,758
12 Claims. (Cl. 29—33)

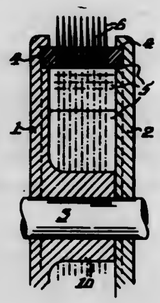


1. Equipment for accurately mounting needle-containing cups in bores in arms of a first yoke and a second yoke of a universal joint and fixing the position of said cups by means of retaining elements which engage said bores, said universal joint including four trunnions of a cross-member which are located in said bores and have end faces extending transversely of the trunnions, said cups being already disposed in said bores with a clearance between said cups and said faces of said trunnions, said equipment comprising in combination a centering device for maintaining the axes of rotation of said yokes in strict alignment with each other and a driving device for simultaneously driving two of said retaining elements through said bores of said first yoke and against the corresponding cups thereby urging said cups through said bores and against said faces of the corresponding trunnions so as to cause said cups to abut said faces of the corresponding trunnions, said driving device also fixing said retaining element in positions in said bores.

3,290,755
ROTARY RASPS, TEXTILE COMB CIRCLES AND SIMILAR ARTICLES
Malcolm Brown, 48 Southfield Road, Bradford, England
Filed May 21, 1964, Ser. No. 369,170
3 Claims. (Cl. 29—78)

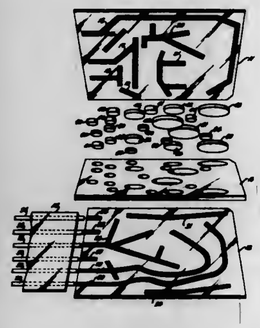
1. A rotary rasp comprising a pair of opposed mutually parallel clamping plates, each plate having an inner face and an outer face and a central aperture therein for engaging a shaft mounting, spacing boss means projecting from the inner face of one of said clamping plates which is located between said inner faces, said inner faces each being provided at mutually opposite positions with a peripheral groove, a plurality of arcuate, segmented, synthetic resin shoes having an inner peripheral face and an outer peripheral face and mutually parallel edges which are profiled to engage and to be compressed against the

said peripheral grooves in the clamping plates, a plurality of closed grouped, radially directed, headless metal pins embedded in said shoes, each pin having a sharp end and a blunt end and being embedded in the shoes such that the sharp ends project from the outer surface of the shoes, and reinforcement means including an annular member



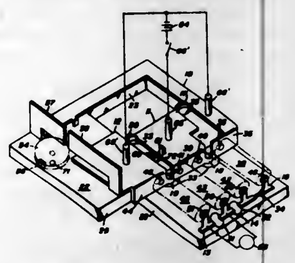
having an outer edge bearing against the inner surface of the shoes and an inner edge bearing against said boss means, said reinforcing means lying between said clamping plates and shaped to bear against the peripheral surfaces of the shoes thereby supporting the blunt end of the pins.

3,290,756
METHOD OF ASSEMBLING AND INTERCONNECTING ELECTRICAL COMPONENTS
Roy W. Dreyer, Orange, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,110
4 Claims. (Cl. 29—155.5)



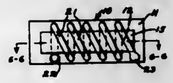
1. A method for mechanically and electrically interconnecting components in a circuit board, which comprises:
(a) forming connecting patterns of uncured conductive adhesive on uncured non-conductive adhesive surfaces of a pair of sheets;
(b) placing components in holes of a component board with electrodes thereof exposed;
(c) contacting said electrodes and component board with said sheets on either side of the component board and exposed components, with the conductive adhesive contacting desired components; and
(d) curing said adhesive to form a circuit board having components hermetically sealed between a pair of sheets in a component board.

3,290,757
METHOD OF ASSEMBLING CIRCUITRY
Frank J. Tanck, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 26, 1963, Ser. No. 268,013
1 Claim. (Cl. 29—155.5)



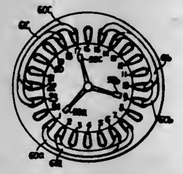
A method of producing an electrical conductor assembly arrangement having an insulating base and at least two shaped conductive elements fixed to the insulating base in a critical predetermined spacing relationship relative to each other, comprising the steps of:
forming the conductive elements from a single strip of conductive material with at least one integral high resistance bridge of substantially reduced cross section integrally joining the elements as a single piece;
shaping the elements to the desired shape and bending the bridge to form a curved bridge raised relative to the portions of the elements adjacent the bridge and to establish and maintain the predetermined spacing between the elements;
forming the insulating base with surface areas for securing the elements thereto and forming a recess in the insulating base between the surface areas;
securing the elements directly to the surface areas of the insulating base with the curved bridge directly over the recess and spaced from the insulating base by the amount of raising and the amount of recess;
and coupling the elements in series with a high current electrical source to vaporize the high resistance bridge and separate the joined elements without damaging the insulating base, or loosening or affecting the spacing between the elements secured to the base.

3,290,758
HYBRID SOLID STATE DEVICE
Richard H. Moyer, Southampton, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,548
11 Claims. (Cl. 29—155.5)



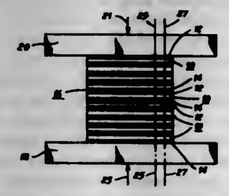
1. A process for constructing a micro magnetic core inductor winding comprising:
diffusing a series of spaced conductors into a semi-conducting substrate,
forming a thin layer of magnetic material on such substrate and over said diffused conductors in electrically insulated relationship to said diffused conductors,
and forming a series of thin conductors over said magnetic layer in electrically insulated relationship to said magnetic layer and electrically interconnecting said diffused conductors and said thin conductors, said thin conductors being applied in such alignment with said diffused conductors as to form with them at least one continuous electrical path encircling the magnetic layer.

3,290,759
METHOD OF MANUFACTURING DYNAMO-ELECTRIC MACHINES
Halsey W. Cory, Cincinnati, Ohio, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 26, 1963, Ser. No. 311,836
2 Claims. (Cl. 29—155.5)



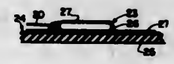
1. The method of winding a three phase winding in the core of a dynamoelectric machine having a total number of winding slots exceeding three and equally divisible by three comprising the steps of: (a) placing three winding heads 120° apart adjacent winding slots in said core; (b) winding three coils simultaneously until said slots are approximately one-half full of coil sides with both sides of each coil in the bottom of the slots; (c) indexing said core in one direction through an angle equal to the angle between adjacent slots of said core; (d) repeating steps (b) and (c) until one-third of said slots have coil sides therein; (e) indexing said core in said direction through an angle equal to the angle between adjacent slots of said core; (f) winding three coils simultaneously with one side of each coil in the bottom of a slot and the other side of each coil in the top of a slot positioned over one of said previously wound coils; (g) repeating steps (e) and (f) until one-third of said core slots have one coil side in the bottom of the slot and the other coil side in the top of a core slot; (h) indexing said core in said direction through an angle equal to the angle between adjacent slots of said core; (i) winding three coils simultaneously with both sides of each coil in the top of the slots overlapping previously wound coil sides; (j) repeating steps (h) and (i) until the remaining one-third of said core slots have coil sides therein; (k) interconnecting the coils electrically to provide an electrically balanced three phase winding.

3,290,760
METHOD OF MAKING A COMPOSITE INSULATOR SEMICONDUCTOR WAFER
Eric F. Cave, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,690
6 Claims. (Cl. 29—155.5)



4. A method of making a composite insulator-semiconductor wafer comprising the steps of
(a) forming an oxide on a plurality of sheets of semiconductor material,
(b) superimposing said oxidized sheets over each other to form a first stack,
(c) applying pressure across said first stack,
(d) heating said pressurized first stack until said oxide on adjacent sheets fuses,
(e) cutting said first stack into slices, each slice being cut at an angle to the large surfaces of said sheets,
(f) forming an oxide on said slices,
(g) superimposing said oxidized slices over each other to form a second stack,
(h) heating said second stack while applying pressure across said second stack to fuse said oxide on adjacent ones of said slices, and
(i) slicing said second stack at an angle to said slices to form said composite wafer.

3,290,761
METHOD OF MANUFACTURING AND ATTACHING NON-ELECTROLYTIC TANTALUM CAPACITORS
Roland K. Ho, Independence, Kans., assignor to Electra Manufacturing Company, Independence, Kans., a corporation of Missouri
Filed July 14, 1964, Ser. No. 382,490
5 Claims. (Cl. 29—155.5)

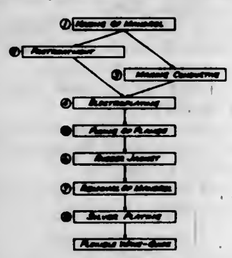


3. In a method of producing an improved solid state tantalum capacitor, the combination of steps comprising providing a thin sheet of tantalum, forming a plurality of tantalum electrodes from said sheet with each electrode being connected to the remaining body portion of said sheet by a narrow neck portion so that the remaining body portion of the sheet provides a common header for all the electrodes formed therefrom, bending said neck portions so that all the electrodes are at an angle with at least a portion of said common header, subjecting said electrodes to an anodizing treatment to form a layer of tantalum oxide on the surface of each electrode, said tantalum oxide forming a dielectric layer integral with each of said tantalum electrodes, coating said dielectric layer with a layer of electrically conductive metal to form a second electrode on the opposite side of said dielectric layer from the tantalum electrode thereby completing a plurality of capacitors, severing said capacitors from the common header, bonding a severed capacitor to a circuit on the surface of an insulating substrate by means of a conductive cement applied to the surface of said second electrode of said capacitor, and encapsulating said capacitor by coating it with an insulating material.

3,290,762
METHOD OF MANUFACTURING FLEXIBLE WAVEGUIDE
Mitsumasa Ayuzawa and Sumio Sawada, Nishinomiya-shi, and Toru Shibukawa, Nara-shi, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a corporation of Japan
Filed Sept. 11, 1964, Ser. No. 395,837
4 Claims. (Cl. 29—155.5)

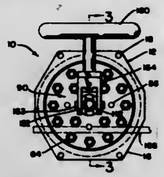
1. The method of manufacturing a seamless bellows type flexible wave guide comprising the steps of providing a transversely corrugated disposable mandrel with an electroconductive surface, electroplating the corrugated exterior of the mandrel, providing a pair of connecting flanges with coaxial portions to engage the electroplating at each end of the mandrel, securing the coaxial portion of each connecting flange to the opposite ends of the electroplate, molding a continuous tightly adhering elastomer coating around and joining each co-

axial flange portion and the intermediate corrugated electroplate and removing the disposable corrugated mandrel



from the interior of the corrugated electroplate to flexibly suspend the same between the elastomer connected flanges.

3,290,763
METHOD OF CONNECTING MULTIPLE FLUID LINES
Emery J. Zaharanec, Bedford, and Zoltan Szohatzky, Cleveland, Ohio, assignors to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio
Original application May 25, 1962, Ser. No. 197,713, now Patent No. 3,214,195, dated Oct. 26, 1965. Divided and this application Dec. 4, 1963, Ser. No. 339,314
4 Claims. (Cl. 29—157)



1. Method of assembling coupling nuts to coupling bodies having complementary threads therefor comprising the steps of:

(a) providing a base means having a plurality of closely spaced adjacent apertures arranged in a plurality of rows;

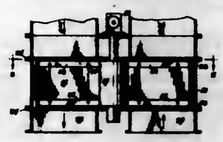
(b) inserting coupling bodies having unthreaded portions and threaded portions into at least two of said apertures in adjacent pairs of rows such that at least part of said unthreaded portions and threaded portions are exposed;

(c) positioning an elongated holding means in frictional engagement with the unthreaded portions of said coupling bodies in an adjacent pair of rows to hold and thereby prevent rotation of said bodies in said pair of rows, and

(d) rotating said coupling nuts to thread said nuts onto said coupling bodies.

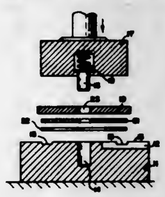
3,290,764
CONTINUOUSLY WRAPPED ROTOR
Franklyn Dore and Robert Blechinger, Wellsville, N.Y., assignors, by mesne assignments, to The Air Preheater Company, Inc., a corporation of Delaware
Filed Mar. 4, 1963, Ser. No. 262,584
2 Claims. (Cl. 29—157.3)

1. The method of forming a perforate matrix for the rotor of a rotary regenerative heat exchanger having rotor structure that includes a central rotor post, said method comprising the steps of securing ends of plane and undulated element strips to said rotor post, placing a tension on one of said elements while wrapping element thereon until accumulated layers attain a predetermined diameter, severing said element strips and securing the severed ends thereof to the rolled matrix, securing a series of radial bars to each end of the rotor post adjacent an end face of said rolled matrix, said bars being of a length such that they terminate radially inward from the periphery of the rolled matrix, forming bar means arcuately



to abut the end edges of said radial bars, compressing said matrix and securing said arcuate bar means to the end edges of the radial bars to form a circumferential band around the periphery of the rotor.

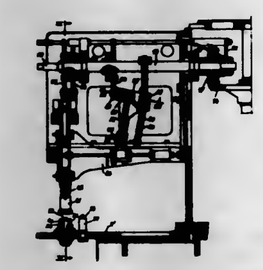
3,290,765
APPARATUS FOR FORMING ARTICLES FROM SHEET MATERIAL
Carl H. Tetzloff, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Original application Nov. 16, 1961, Ser. No. 152,770, now Patent No. 3,146,524, dated Sept. 1, 1964. Divided and this application Dec. 10, 1963, Ser. No. 329,448
4 Claims. (Cl. 29—203)



1. An apparatus for blanking articles from superimposed metal sheets which comprises a stationary die having a surface with cavities and sharp cutting edges and having said metal sheets positioned over said surface, an unconfined metallic matrix material positioned over said metal sheets, and means for engaging said material and extruding said material into said cavities to sever an article from said sheets.

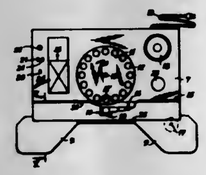
3,290,766
ASSEMBLY MACHINE WITH SWIVELLING TABLE
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works
Filed May 19, 1965, Ser. No. 457,106
Claims priority, application France, May 22, 1964, 975,592, Patent 1,404,646
2 Claims. (Cl. 29—208)

1. A device for performing sequential operations on a plurality of workpieces, said device comprising a multisided stand; a multisided turret fixedly mounted on said stand; a vertical drive shaft extending through said stand and said turret; drive means mounted in said stand; a first coupling means operatively coupling said drive means to said drive shaft; a plurality of first spaced gear members mounted on and driven by said drive shaft; a plurality of spaced auxiliary shafts rotatably mounted adjacent at least one side of at least one of said turret and stands; a second gear member mounted on each of said auxiliary shafts and operatively connected to a corresponding first gear member for imparting rotational movement to said auxiliary shafts; at least one workpiece engaging means detachably mounted adjacent at least one side of at least one of said turret and stand; cam and follower means respectively mounted on said auxiliary shafts and said workpiece engaging means for imparting horizontal and vertical movement to said workpiece engaging means; a workpiece carrier rotatably mounted between said stand and said turret; a second coupling means operatively coupling said carrier to said drive means to drive said carrier thereby presenting each workpiece to said



workpiece engaging means; said cam and follower means and said second coupling means being arranged so as to permit each of said workpiece engaging means to perform a series of independent operations on each of the workpieces according to a predetermined sequence.

3,290,767
ASSEMBLY APPARATUS
Philippe Mamie, Le Sentier, Switzerland, assignor to Société Anonyme de la Fabrique d'Horlogerie le Coultre et Cie, Le Sentier, Switzerland
Filed Feb. 11, 1966, Ser. No. 526,775
Claims priority, application Switzerland, June 30, 1965, 9,250/65, 9,251/65, 9,252/65
7 Claims. (Cl. 29—208)



1. In a device enabling the assembly of a number of units, a first conveyor having compartments each for containing an identical element of an assembly, said first conveyor being movable stepwise, a second conveyor having compartments adapted for containing members for being assembled with the elements in the compartments of the first conveyor, said second conveyor being movable along a path which passes in proximity with the first conveyor at an assembly station, whereat the members on the second conveyor are assembled with the elements of the first conveyor, each of the elements on the first conveyor being assembled with a member from the compartment of the second conveyor which is located at the assembly station after which the second conveyor is moved and another compartment thereof is located at the assembly station, an improvement wherein said second conveyor is movable in opposite directions to enable positioning each compartment more than once in front of the compartments of said first conveyor, said compartments in said second conveyor being constituted by cups, said second conveyor having openings for such cups all of a common size, the cups which are adapted for being positioned more than once in front of the compartments of said first conveyor having greater depth than the other of the cups.

3,290,768
BLIND FASTENER INSERTING TOOLS
Kajetan Leitner, 8939 Wasl 187, Germany
Filed Mar. 4, 1965, Ser. No. 437,240
Claims priority, application Great Britain, Apr. 24, 1964, 17,007/64
7 Claims. (Cl. 29—267)



1. A tool for mounting blind nuts in holes formed in work pieces comprising a tubular body, a reaction member slidably mounted on one end of the body for abutting a work piece in a bore of which a nut is to be mounted, inserting means movable axially in the body and adapted tiltably and releasably to carry the nut endwise through the work piece bore, an operating lever pivotally associated with the body for effecting relative axial advancing and retractive movement of the reaction member and the inserting means, and means controlled by the operating lever for tilting the nut in the course of its retractive movement to position the nut athwart said work piece bore.

3,290,769
TOOL FOR ASSEMBLING AND DISASSEMBLING TEETH ON EXCAVATING EQUIPMENT AND THE LIKE
Michael J. Kasbergen, Westminster, Calif., assignor to Kash Products Incorporated, Westminster, Calif., a corporation of California
Filed July 31, 1964, Ser. No. 386,507
3 Claims. (Cl. 29—275)



1. A tool for mounting a metal cap on the shank of an excavating tooth while said shank is mounted on a support, said tool comprising:

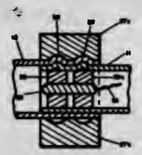
an actuating and fulcrum element having a hook-shaped outer end adapted to be hooked over the end of said cap remote from said support for said shank, said element also having a fulcrum portion,

a bifurcated lever element having arms which are spaced apart sufficiently far to fit downwardly on opposite sides of said shank,

said arms having cam portions thereon adapted to effect cam-crimping of portions of said cap into locking relationship relative to said shank

and in response to pivotal movement of said lever element about said fulcrum portion,
said lever element being pivotally associated with said fulcrum portion of said actuating element,
said lever element having an anvil portion adapted to extend away from said shank and to be disposed on the opposite side of said fulcrum portion from said shank,
whereby striking of the face of said anvil portion remote from said support will effect shifting of said actuating element to seat said cap firmly on said shank, and
will also effect pivotal movement of said lever element about said fulcrum portion to effect crimping of said cap portions into locking relationship with said shank.

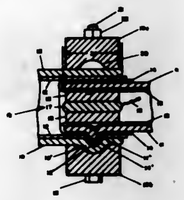
3,290,770
METHOD OF SIMULTANEOUSLY DEFORMING TWO OVERLAPPING TUBULAR METAL ELEMENTS TO FORM INTERLOCKING RIDGES
Daniel Silverman, 5969 S. Birmingham St., and Harold M. Lang, 2606 E. 33rd Place, both of Tulsa, Okla.
Filed May 13, 1965, Ser. No. 455,556
44 Claims. (Cl. 29—421)



30. The method of simultaneously explosively deforming a pair of overlapping cylindrical portions of tubular metal elements positioned within an encircling tightly fitting metal ring, having an internal surface the contour of which departs from a cylindrical surface, whereby said layers are simultaneously driven by explosive shock force inside the inner element into intimate contact with each other and with the internal surface of said ring and deformed into the contour of said surface, thus forming at least one interlocking ridge and depression in the mating surfaces of said elements, comprising,
inserting one end of the smaller tubular element into one end of the larger tubular element to form an overlap section,
positioning said metal ring about said larger tubular element within the overlap section,
inserting into the smaller element within the overlap section an explosive assembly capable of exerting on the inner surface of the smaller element an explosive detonation shock force that is sufficient to simultaneously bulge said overlapping cylindrical portions to form at least one interlocking ridge and depression, and
detonating said explosive assembly to bulge said portions to form at least one interlocking ridge and depression in said mating surfaces.

3,290,771
METHOD AND APPARATUS FOR JOINING LINED TUBULAR ELEMENTS
Daniel Silverman and Harold M. Lang, Tulsa, Okla., assignors to Shok Lok Co., Tulsa, Okla., a co-partnership
Filed July 15, 1965, Ser. No. 472,244
45 Claims. (Cl. 29—421)

1. The method of joining together two tubular metal elements of different diameters each containing a separate thin-walled liner comprising
(a) inserting a first liner into the smaller of said elements so that said liner extends beyond the end of said element by a distance approximately equal to D,
(b) folding back over the end of said element said extended tubing in the form of a cuff,
(c) inserting a second liner into the larger of said elements so that the liner comes at least to the end of said element,



(d) inserting said cuffed end of said smaller element into the lined end of said larger element a distance approximately D,
(e) forcing together in intimate relation said inner and outer metal element and said two intermediate liners.

3,290,772
METHOD OF MAKING A BRAZED JOINT
Donald W. Crouch, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York
Filed Feb. 5, 1964, Ser. No. 342,757
4 Claims. (Cl. 29—493)



1. A method of making a brazed joint between a metallic rod and a metallic plate that has an opening therein for receiving said rod, comprising:
(a) providing first and second metallic rings, each having protuberances that extend radially inwardly of the ring and are so located that the protuberances will firmly engage the outer periphery of said rod when the ring is placed about the rod,
(b) sliding said first ring axially of the rod into a predetermined position on the rod,
(c) positioning said plate on said rod with the opening in said plate receiving said rod and the plate located immediately adjacent said first ring,
(d) sliding said second ring onto said rod into a position wherein said two rings sandwich the plate therebetween and prevent axial movement of said plate relative to said rod,
(e) placing a ring of brazing metal about said rod adjacent one of said metallic rings on an axial side of said one ring opposite to the location of said plate,
(f) heating the resulting assembly with said brazing ring positioned above said one metallic ring to cause molten brazing metal to flow axially of said rod past said one ring into the space between the outer periphery of said rod and the plate,
(g) cooling said assembly to cause the molten brazing metal to solidify and form a bond between said plate and said rod.

3,290,773
PROCESS FOR WELDING NICKEL TO NIOBIUM
Cornel Wohlberg and Jack R. Markham, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Nov. 13, 1963, Ser. No. 323,514
3 Claims. (Cl. 29—498)

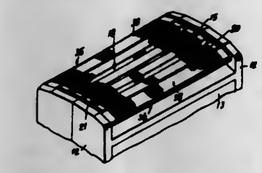
1. A process for Heliarc welding nickel to niobium in which there is employed a welding filler rod consisting essentially of wrought Monel as defined herein.

3,290,774
ELECTRIC SHAVER WITH TRIMMER
Francis J. Schmeisler, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 17, 1964, Ser. No. 375,787
2 Claims. (Cl. 30—34.1)



1. An electric dry shaver comprising a generally rectangular casing defining a handle portion with a cutting surface along one edge of said casing, a rotary motor supported in said casing, a cutter shaft, mounting means supporting said cutter shaft parallel to said edge for oscillating movement about its longitudinal axis, drive means connected to said motor and engaging one end of said cutter shaft for imparting rotary oscillatory movement to said cutter shaft, cutting means defining said cutting surface including a perforate comb surface and a blade mounted on said cutter shaft for oscillatory movement against said comb surface, clipping means disposed at a corner of said casing adjacent one end of said cutting surface, said clipping means including a toothed comb disposed along a line generally normal to said edge, said clipping means additionally including a toothed cutter mounted for reciprocal movement while disposed in shearing relationship with said toothed comb, means including a drive lever mounted on the other end of the cutter shaft for driving said toothed cutter, a pair of spaced openings in said casing flanking said drive lever, protuberances on said toothed cutter over said openings, and springs mounted in said openings and engaging said protuberances for holding said toothed cutter against said toothed comb.

3,290,775
HAIR AND SKIN CONDITION MEANS
Robert J. Tolmie, Bridgeport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 6, 1965, Ser. No. 445,987
5 Claims. (Cl. 30—34.2)



1. Hair conditioning means adapted for attachment to an electric dry shaver provided with a cutter head having a skin engaging cutter member formed with a plurality of hair reception slots, said hair conditioning means comprising,
(a) a resilient frame member having a plurality of guide slots provided in a surface portion thereof,
(b) spaced leg members on said frame member,
(c) one of said leg members mounted on the shaver and positioning said frame member adjacent said skin engaging member with said surface portion spaced beneath the skin engaging surface of the cutter head and with said guide slots each in alignment with a hair reception slot, and
(d) means for biasing said frame member in mounted position in the direction of the said cutter head,
(e) said surface portion of said frame member adapted to engage and maintain flat the skin in advance of the cutter head as hair to be cut is guided through said guide slots into the hair reception slots of the cutter member.

3,290,776
ELECTRIC DRY SHAVER WITH COMMON SHAFT FOR CUTTER AND MOTOR
Ivar Jepson, South Duxbury, Mass., and Sigmund R. Kukulski, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Dec. 21, 1962, Ser. No. 246,488, now Patent No. 3,213,301, dated Oct. 19, 1965. Divided and this application Apr. 6, 1965, Ser. No. 445,973
5 Claims. (Cl. 30—43.9)



1. An electric shaver comprising a casing, a cutting head associated with said casing including an oscillating shaft, an electric motor comprising an oscillating armature, said armature being supported on said shaft whereby said shaft is common to both said cutting head and said electric motor, and resilient means connected to each side of said armature for providing a hair seal between said cutting head and said motor.

3,290,777
ELECTRIC DRY SHAVER WITH REMOVABLE SUBASSEMBLY
Ivar Jepson, South Duxbury, Mass., and Sigmund R. Kukulski, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Dec. 23, 1960, Ser. No. 78,005. Divided and this application Apr. 6, 1965, Ser. No. 445,888
6 Claims. (Cl. 30—43.92)



1. An electric shaver comprising a cup-shaped housing open at one end, means defining a shoulder around the inside of said cup-shaped housing adjacent the open end thereof, a subassembly comprising a support, a cutting head and an electric motor, said support being receivable within the open end of said housing and including a peripheral portion engageable with said shoulder, means for securing said motor and cutting head to said support to define said subassembly with the cutting head above said support and at least a part of said motor dis-

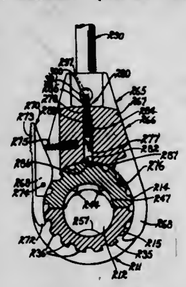
posed below said support, and means for securing said subassembly to said housing with said peripheral portion engaging said shoulder and fixedly supported relative thereto and with said part of said motor disposed within said housing.

3,290,778
RAZOR GUARD
Alva J. Hickerson, 900 Petroleum Club Bldg., Denver, Colo.
Filed May 22, 1964, Ser. No. 369,410
1 Claim. (Cl. 30—90)



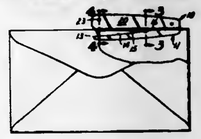
A protective guard for a safety razor comprising a pliable plastic body formed to provide a smooth wall generally conforming to the face of the head of a razor, said body being formed to provide a pair of oppositely facing pockets on one side of said wall, and facing each other to accommodate and cover respective sides of a safety razor head and leaving an opening between them to accommodate the handle of a razor, said pockets having separate end walls forming together the end walls of the body to cover the ends of the razor and slotted to afford bending of said smooth wall along its central axis to initially separate said pockets, each of said pockets having its interior end walls sloping from the opening of the pocket inwardly toward the rear whereby a razor head of sufficient length when inserted in the pocket engages the end walls thereof with wedging action.

3,290,779
RATCHET DRIVE FOR PIPE CUTTER
Lynton K. Bridges, P.O. Box 381, Mariposa, Calif., and Herman C. Wackerman, P.O. Box 57, Mildpines, Calif.
Filed June 21, 1965, Ser. No. 470,308
4 Claims. (Cl. 30—99)



1. A work tool comprising a body having a bore adapted to receive a workpiece therethrough; cutter means including a toothed member releasably slidably disposable in interlocking relation within the body axially of the bore in a plurality of radially adjustable positions with the cutter means extended into said bore; a workpiece support member disposed within the body in diametrically opposed relation to said cutter means; an adjusting member in the body engageable with said support member selectively to position the support member inwardly of said bore against the workpiece to engage the same with said cutter means; and control means having a ratcheting portion providing spaced leg members permitting transverse mounting of said control means on said body for rotating the body about said workpiece in one direction of manipulation and ratcheting said control means relative to the body in the opposite direction of manipulation, said control means including a drive portion selectively registrable with said adjusting member during manipulation of the control means in either direction and being releasably engageable with said adjusting member when in said registered position.

3,290,780
OPENER FOR LETTERS, PACKAGES, AND THE LIKE
Delton D. Oehlert, Edgerton, Minn.
Filed Mar. 21, 1966, Ser. No. 535,967
3 Claims. (Cl. 30—294)



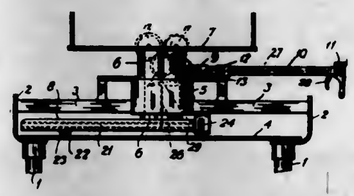
1. An opener for letters, packages, and the like comprising:
(a) a one piece body formed from flat rigid material having a handle receiving portion extending outwardly therefrom and integrally attached thereto;
(b) an integral blade extending outwardly from said body approximately parallel to said handle receiving portion to form a slot therebetween with the edge of said blade adjacent said handle receiving portion being slanted slightly away from said handle receiving portion as it progresses outwardly from said body;
(c) the edge of said blade adjacent said handle receiving portion having a portion thereof in juxtaposition to said body sharpened to form a knife edge; and
(d) a handle attached to said handle receiving portion of said body so that an edge thereof forms one side of said slot and the handle extends outwardly from said body somewhat farther than said blade.

3,290,781
LIGHT-WEIGHT CUTTER BLOCK FOR ELECTRIC SHAVER AND METHOD OF MANUFACTURE
Gerd Paul Kratz, Solingen, Germany, assignor to Gebr. Lang, Solingen, Germany
Filed Dec. 9, 1963, Ser. No. 328,939
Claims priority, application Germany, June 14, 1963, L 45,100
1 Claim. (Cl. 30—346.51)



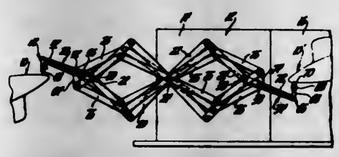
A built-up light-weight cutter block for an electric shaver comprising a plurality of cutter blades each formed with at least one hole and spaced in a row along a tube passing through the holes in the cutter blades, the perimeters of the holes in the cutter blades being embedded in the outer surface of the tube so that the cutter blades are held firmly in position on the tube, a coupling member by which the cutter block may be coupled to driving means in the shaver, an end plate at each end of said row of cutter blades, the end plates having holes the perimeter of which are embedded in the surface of said tube, and angled extensions on said end plates to which said coupling member is attached.

3,290,782
PLANE TABLE INSTRUMENT
Erik Arnfred Lund, 62 Vestergade, Silkeborg, Denmark
Filed Apr. 20, 1964, Ser. No. 360,839
Claims priority, application Denmark, Apr. 19, 1963, 1,830/63
2 Claims. (Cl. 33—1)



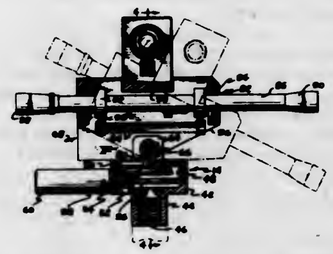
1. In a plane table instrument for surveying provided with a diopter connected to a rectilinear rail for a carriage displaceable in the longitudinal direction along the rail and bearing a plotting pin, whereby the carriage by means of a transmission mechanism is connected to a measuring wheel for cooperation with a tape measure, said wheel being rigidly and rotatably mounted relative to the rail in such a manner that the carriage together with the marking pin by drawing the tape measure out or in is moved outwards along the rail at a gear ratio determined by the transmission mechanism, comprising in combination a set of legs (1) for resting on the ground, a drawing board (4) unshakeably attached to said legs, a bridge (3) fixedly connected to said legs and passing above the board and carrying said diopter and said rail, said measuring wheel being engaged by said tape measure, said tape measure being otherwise free of the plane table instrument and borne in tightened position parallel to said rail independent of said instrument.

3,290,783
REPRODUCING APPARATUS
Richard F. Carolla, Mount Clemens, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,884
4 Claims. (Cl. 33—23)



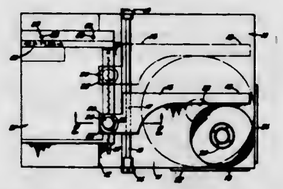
1. Apparatus for reproducing surface outlines from a three-dimensional object fixed in space, comprising, a follower adapted for movement in a plane of said object to scan the outline of said object in said plane, a reproducer for making an image of said outline, follower support means adapted to move said follower in said plane, reproducer support means, means movably mounting said follower and said reproducer each on a respective support means for movement relative thereto, motion duplicating means having a control point fixed in space, means mounting said follower support means and said reproducer support means on said motion duplicating means for bodily movement of said reproducer support means relative to said control point in duplication of bodily movement of said follower support means moving said follower in said plane, and control means interconnecting said follower and said reproducer for coordinated simultaneous movement of said reproducer relative to said reproducer support means with movement of said follower in said plane relative to said follower support means, said follower and reproducer being coordinatively movable relative to said respective support means concurrently with coordinated duplicated bodily movement of said follower support means and said reproducer support means relative to said control point.

3,290,784
OPTICAL FOOTBALL YARDAGE INDICATOR
Theodore L. Goff, 4412 18th St. N., Arlington, Va.; Joseph M. Gallagher, 10605 Ordway Drive, Silver Spring, Md.; Julius Halaman, 4713 7th St. S., Arlington, Va.; and William J. Nagel, 11815 Gainsboro Road, Rockville, Md.
Filed July 31, 1964, Ser. No. 386,604
12 Claims. (Cl. 33—63)



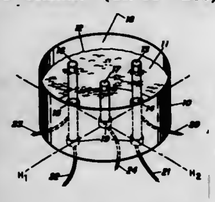
12. A geometrical instrument comprising, a rotatable platform, a pair of telescopes rotatably supported about their longitudinal axes by said platform, said telescopes having their longitudinal axes in fixed perpendicular relationship, a weight fixed to each telescope eccentrically of its axis, and a hairline in each telescope maintained in a true vertical position by gravitational positioning of said eccentric weight.

3,290,785
DEVICE FOR MEASURING LENGTH OF MOTION-PICTURE FILM IN A ROLL
Raymond K. Johnson, Hollywood, Calif., assignor to Metro-Goldwyn-Mayer Inc., Culver City, Calif., a corporation of Delaware
Filed Jan. 24, 1964, Ser. No. 339,940
10 Claims. (Cl. 33—128)



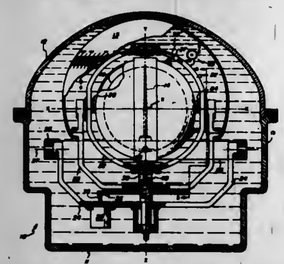
6. In a device for measuring the length of motion-picture film in a roll, the combination of: a base, a stop rail on the base, guide means on the base, a slide bar mounted to move along said guide means and having an arm parallel to the stop rail, said arm of the slide bar and said stop rail being adapted to contact a roll of film positioned between them on said base, marking means carried on said slide bar on the other side of said guide means from said arm of said slide bar, and indexing means on said base for positioning a sheet having a scale thereon with the scale parallel to said guide means, said marking means being actuable to mark a point on said scale in accordance with the position of said slide bar to indicate the length of film in a roll.

3,290,786
ATTITUDE SENSING APPARATUS
William J. Parkin, Natick, Mass., assignor to Mithras, Inc., Cambridge, Mass., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,900
5 Claims. (Cl. 33—206)



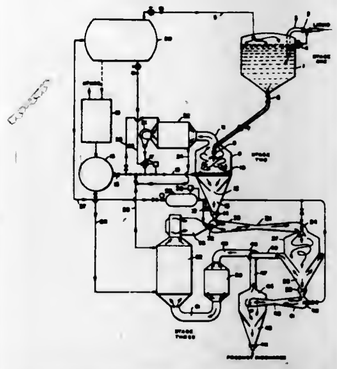
1. Automatic leveling apparatus, comprising:
mount means including a movable member with two degrees of freedom;
an attitude responsive, electrolytic detector element carried by said mount means, said element having a movable conductive fluid and, extending into said fluid, four input ohmic bias electrodes arranged in a rhombic pattern and an output ohmic electrode centrally disposed with respect to said pattern;
reference phase bias signal means coupled to a pair of horizontal axis-defining, diagonally opposed said input terminals for coupling said element to a source of alternating current reference phase bias signal through said fluid;
reference phase balance means coupled to said reference bias means and inoluding means for adjusting the voltage between said output electrode and said horizontal axis-defining pair of input electrodes;
quadrature phase bias signal means coupled to the other pair of orthogonal horizontal axis-defining, diagonally opposed input electrodes for coupling said element to a source of alternating current quadrature phase bias signal through said fluid in phase quadrature with said reference bias signal;
output means coupled to said elements through said output terminal for providing orthogonal drive control signals indicative of errors in level of said mount means; and
drive means coupled to said output means and said movable member for controlling the attitude of said member in response to said drive control signals.

3,290,787
GYROSCOPIC COMPASSES
Richard G. Brugger, Hempstead, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of New York
Filed June 27, 1963, Ser. No. 291,134
10 Claims. (Cl. 33—226)



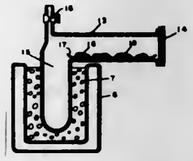
10. In a combination for orienting the directive member of a gyroscopic compass during start-up conditions in which the compass includes a ring movable about a vertical axis, means for connecting the member to the ring in follow-up relation having a servomotor connected to move the ring about its axis, a gimbal mounted on the ring with freedom about a normally horizontal axis on which the member is mounted with freedom about a normally vertical axis; first normally ineffective means for precessing the member about the gimbal axis; second normally ineffective means for precessing the member about its axis; and means providing a reversible biasing input to the servomotor for rendering said first and second precessing means effective sequentially to initially precess the member to a tilted condition about the axis of the gimbal and secondly precess the member about its axis to an oriented condition.

3,290,788
FLUID-SOLIDS CONTACTING METHODS AND APPARATUS, PARTICULARLY FOR USE IN DESICCATING ORGANIC MATERIALS
Karl H. Seelandt, 900 N. Lake Shore Drive, Chicago, Ill.
Filed July 16, 1964, Ser. No. 384,285
42 Claims. (Cl. 34—5)



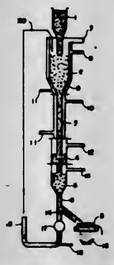
1. In a process for desiccating organic material in liquid solution, the steps of: disintegrating said solution into a plurality of droplets, concentrating a predominant percentage of the moisture in each droplet at the exterior thereof in the form of ice to partially desiccate the interior of each droplet, and subliming the ice from said particles so as to produce a desiccated product.

3,290,789
METHOD AND DEVICE FOR COLLECTING AND SEPARATING FRACTIONS OF LIQUID MATERIALS
Rudolf K. Zahn, Goldbergweg 2, Frankfurt am Main, 6 Germany
Filed June 23, 1965, Ser. No. 466,253
Claims priority, application Germany, June 25, 1964, M 61,512
9 Claims. (Cl. 34—5)



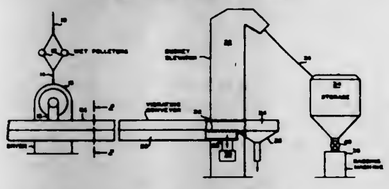
1. A method for collecting fractions emerging in the form of liquid drops from a chromatographic column which comprises subjecting the liquid drops to a temperature below their freezing point so as to obtain columns of solid aggregates.

3,290,790
METHOD OF DRYING A HYDROGEL
Daizo Kunii, Bunkyo-ku, Tokyo, Yujiro Sagahara, Tsuruoka-shi, Yamagata-ken, Kiyoshi Sato, Oaza Nishime, Tsuruoka-shi, Yamagata-ken, Masaji Saito, Kitakanbara-gun, Niigata-ken, and Masahide Ogawa, Musashino-shi, Tokyo, Japan, assignors to Mizusawa Kagaku Kogyo Kabushiki Kaisha, Higashi-ku, Osaka, Japan, a corporation of Japan
Filed Mar. 23, 1964, Ser. No. 353,780
Claims priority, application Japan, Apr. 2, 1963, 38/16,244
4 Claims. (Cl. 34—9)



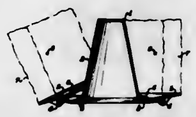
1. A method of drying hydrogels which comprises feeding a mixture of said hydrogels together with finely divided porous granules having a particle size of 10 to 200 Tyler's mesh wherein the mixture contains hydrogels of a higher average apparent specific gravity and a higher average diameter than said porous granules into a drying tower from its upper part, and heating said hydrogels and said granules from the exterior of said tower whereby aqueous vapors are emitted from the hydrogel surfaces and are absorbed by the porous granules, continuing said heating whereby the aqueous vapors are emitted from the granules to the ambient atmosphere so as to fluidize said finely divided porous granules in the interspaces among said hydrogels by the action of said aqueous vapor evolved from said hydrogels within said tower, and recovering the dried gels together with said granules from the lower part of said tower.

3,290,791
PROCESS AND APPARATUS FOR IMPROVING QUALITY OF CARBON BLACK PELLETS
Lawrence C. Keaton, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,376
5 Claims. (Cl. 34—13)



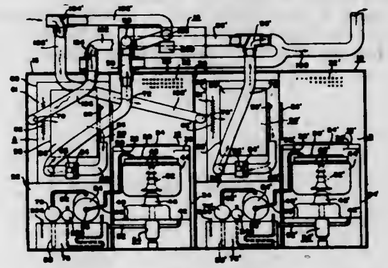
1. A process comprising the steps of
(1) feeding wet carbon black pellets of sizes ranging from substantially finer than 8 mesh to substantially coarser than 8 mesh to a rotary dryer;
(2) heating said pellets in said dryer to a temperature in the range of 500° to 600° F. so as to substantially increase the Photelometer thereof;
(3) passing dried pellets from said dryer directly to a separate transport and cooling zone leading to a storage zone and cooling said pellets to a temperature not in excess of 300° F. therein to permit safe storage when said pellets reach the end of said transport zone;
(4) and storing the pellets from step (3).

3,290,792
TRANSPORT-CONTAINER FOR HYDRO-EXTRACTORS
Gunnar Ivar Fredholm, Forfattarvagen 44, Bromma, Stockholm, Sweden
Filed Feb. 27, 1964, Ser. No. 347,846
Claims priority, application Sweden, Apr. 17, 1963, 4,181/63
3 Claims. (Cl. 34—58)



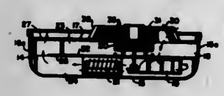
1. A container adapted for the transport of laundry comprising a central portion, a rim extending from said central portion, said rim having a free edge at a distance from said central portion, a plurality of discs adapted for resting on said rim and cooperatively defining a ring encircling said central portion, and hinge means connecting said rim at the free edge thereof to each of said discs, said hinge means being at a substantial distance from the central portion to enable outward tilting of the discs with respect to the central portion.

3,290,793
DRY CLEANER WITH REFRIGERATED SOLVENT RECLAIMING SYSTEM
James W. Jacobs and Jacob Smilack, Dayton, and Ira L. Gould, Hamilton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,362
3 Claims. (Cl. 34—76)



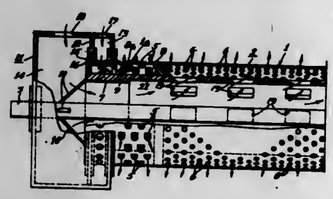
1. In a dry cleaner system the combination of, a plurality of dryers, a refrigerant system including an evaporator for condensing vaporized solvent and a condenser, conduits for connecting said dryers in parallel across said refrigerant evaporator and condenser, means including said conduits for circulating fluid streams through said dryers and across said refrigerant evaporator and condenser, first and second fan means for drawing the fluid streams from said dryers across said refrigerator evaporator and condenser, means forming a plurality of separate passageways across said refrigerant evaporator and condenser each communicating with one only of said dryers and each having one of said fan means therein for maintaining a desired concentration of vaporized solvents in the vicinity of said evaporator to increase extraction of solvent from the recirculating stream, a third fan means, a switch responsive to a predetermined pressure in said refrigerant condenser for actuating said third fan means for circulating ambient air across said condenser to maintain the pressure therein at a predetermined level, actuatable valve means operatively associated with said conduits for selectively communicating said dryers with said refrigerant evaporator and condenser and atmosphere, and means for actuating said valve means to provide a predetermined solvent reclaiming and deodorizing cycle in the operation of said dryers.

3,290,794
HAIR DRYER
Joseph R. Mango, Midlothian, Ill., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1962, Ser. No. 218,720
8 Claims. (Cl. 34—99)



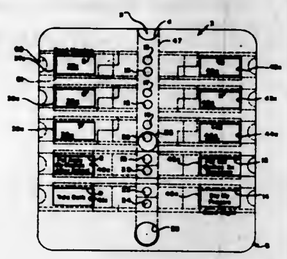
1. In a domestic hair dryer of the portable type, means for drying polish on the fingernails of the user at the same time that the user's hair is being dried, said means comprising: casing structure including a base, said base being adapted to rest on a generally horizontal supporting surface, a cover plate cooperating with said base to define a chamber, air translating means disposed in said chamber, said cover plate having a generally frustoconical raised portion whose inclined side wall has a plurality of openings therethrough for entry to the chamber of air to be translated by the air translating means, said openings being readily accessible to finger tips disposed in close proximity thereto, whereby nail polish applied to the nails of such fingers will be rapidly dried by the flow of air thereover just prior to entry of such air through said openings to the air translating means.

3,290,795
WEB TURNING DEVICE
Bertil Jarreby, Falkenberg, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Mar. 18, 1964, Ser. No. 353,031
Claims priority, application Sweden, Mar. 19, 1963, 3,005/63
5 Claims. (Cl. 34—122)



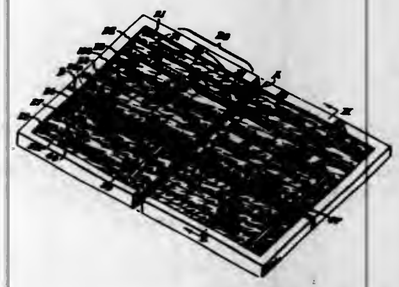
1. A turning device for web-like material, comprising in combination a foraminous rotatable, hollow cylinder having at least one spindle supporting said cylinder, a tube mounted within said cylinder and spaced from the inner surface of said cylinder so as to define a longitudinal space extending therebetween, at least one annular wall circumscribing said tube and connecting said tube to the inner surface of said cylinder so as to divide said space longitudinally into a first and a second chamber, said cylinder surface associated with said first chamber having a plurality of means each defining an opening, said cylinder surface associated with said second chamber having a plurality of holes therein, said openings positioned to cause a flow of a medium therethrough in a direction substantially tangential to the surface of said cylinder and in a direction coincident with the direction of intended motion of said cylinder, said tube having a plurality of slots confined to the portion of said tube associated with said second chamber, means for supplying a low pressure gaseous medium into said tube through said slots, and means for supplying a higher pressure medium to said first chamber.

3,290,796
CONTROL APPARATUS
Richard J. Gurda, Butler, Pa., assignor to Philip Chambers, Butler, Pa.
Filed Sept. 30, 1964, Ser. No. 400,421
16 Claims. (Cl. 35—23)



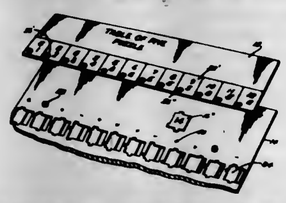
1. Control apparatus comprising a generally planar guideway for an element adapted to advance therealong, a series of detents ranged along the guideway each movable between an operative position blocking advance of the element along the guideway and an inoperative position permitting advance of the element along the guideway and guide means extending substantially parallel to the general plane of the guideway guiding the detents in movement between said positions.

3,290,797
PLANNING AND SCHEDULING BOARD
George E. Opel, 4031 Kottler Drive, Lafayette Hill, Pa.
Filed Nov. 20, 1964, Ser. No. 412,765
2 Claims. (Cl. 35—24)



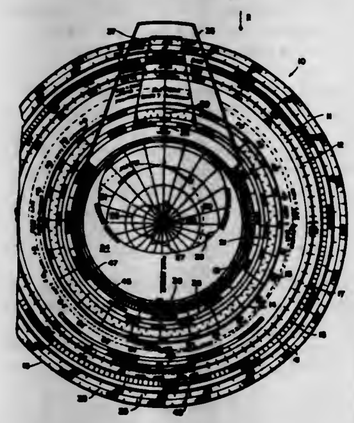
1. A planning and scheduling board of hard extrudable plastic having a plurality of parallel groove tracks; a unit time scale indicated along said tracks; a plurality of activity-designation cards and resilient plastic holders for said cards adapted for friction-type lock insertion into said tracks and adapted to be cut to lengths corresponding to one unit time less than the number of working time units scheduled for the particular activity, a plurality of hard plastic event blocks having a width equal to one working time unit and a base portion adapted for friction-type lock insertion into said tracks at the terminal ends of the activity-designation cards and holders; plastic event bars having a width equal to one working time unit and length sufficient to cross a selected number of tracks, said event bars having a base portion adapted for friction-type lock insertion into said tracks; elongated bridge rods adapted to connect event blocks in non-adjacent tracks by bridging over intervening tracks, and coupling means for coupling event blocks in selected intermediate tracks to the bridge rods.

3,290,798
EDUCATIONAL DEVICE
Edward J. Gilbert, 3305 Badger Ave. SW., Wyoming, Mich.
Filed July 20, 1964, Ser. No. 383,598
2 Claims. (Cl. 35—31)



1. A methematical problem and answer device comprising: a first table having a row of separate numerical relationships; a second table having a plurality of rows of mathematical symbols and adjacent correlative rows of openings for receiving puzzle pieces; said first table and said second table including alignment means therebetween allowing said row of numerical relationships to be selectively positioned adjacent one of said plurality of rows of symbols and the correlative row of openings; a plurality of separate puzzle pieces, each containing an answer to a particular mathematical relationship between said numerical relationships; and said pieces and openings having respective interfitting code means thereon allowing reception of each puzzzle piece in the proper opening to indicate the correct answer to each numerical relationship.

3,290,799
APPARATUS FOR PROVIDING A REPRESENTATION OF CELESTIAL BODIES
William A. Eisenhauer, Van Wert, Ohio, assignor to William A. Eisenhauer, William P. Ellwood, Ida J., and Leigh Eisenhauer, doing business as The Eisenhauer Manufacturing Company, Van Wert, Ohio, co-partners
Filed May 25, 1964, Ser. No. 369,958
9 Claims. (Cl. 35—44)



1. A planisphere for providing a representation of celestial bodies visible at a selected time on a selected date comprising a plurality of concentric dials, a central pin to which the concentric dials are secured and about which the concentric dials are separately rotatable, the first radially smaller of the dials being a mask and horizon control dial including an elliptical portion through which the second dial is viewable representing the horizon of an observer at a predetermined latitude, the rest of the first dial acting as a mask to mask from view representations of celestial bodies not visible at a selected time on a selected day which are represented on the second dial and having oppositely positioned view and sun arrow indications thereon, the second dial being radially larger than the first dial and in surface-to-surface contact therewith and including thereon a planar representation of the celestial bodies visible from the predetermined latitude with the pivot pin as the polar axis, said second dial including around the periphery thereof a date scale and a degree and hours of right ascension scale, a third dial being radially larger than the second dial and positioned in surface-to-surface contact with the second dial on the opposite side thereof from the first dial and including a solar clock scale around the outer periphery thereof and means connected to the planisphere for directly determining the time before a particular celestial body represented on the second dial will be present at a viewing meridian.

3,290,800
EDUCATIONAL GAME
Genevieve A. Le Dell, 640 Bluff St., Beloit, Wis.
Continuation of application Ser. No. 212,391, July 25, 1962. This application June 10, 1964, Ser. No. 375,420
1 Claim. (Cl. 35—71)



An educational game comprising, in combination, a pair of generally rectangular first cards of suitable dimensions having displayed on each all of the letters of the alphabet of one size suitable for easy reading of all letters, the letters being arranged in alphabetical order but separated into four spaced parallel rows, each row containing a plurality of letters and including at least one vowel and having an identifying caption number, the identifying caption numbers being in arithmetical succession, the vowel letters on said first cards being all displayed in one contrasting manner in relation to the consonant letters thereon all of which are displayed alike in another manner, and a deck of generally rectangular playing cards of suitable dimensions each of which bears a single letter of the alphabet, all of these letters being displayed alike, said deck of playing cards including at least one of each letter of the alphabet and being adapted to be shuffled so that the letters do not come in alphabetical order in the deck.

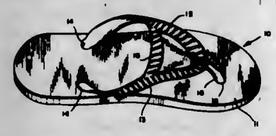
3,290,801
TRACK SHOE HAVING HEEL CUSHIONING MEANS
Alfred Benta, Gutenbergstrasse 11, Herzogenaurach, near Nurnberg, Germany
Filed Dec. 11, 1964, Ser. No. 417,592
Claims priority, application Germany, July 1, 1964, B 77,472
5 Claims. (Cl. 36—2.5)



1. A track shoe having an insole, an outer sole, and a resilient element forming a heel cushion secured between said insole and outer sole, said element having a recess which extends at least up to the instep part of the shoe and which is adapted to receive the downward projection of the heel bone of a foot at least when said

cushion element is resiliently compressed, the parts of said element around said recess being adapted to support the marginal parts of the heel of the foot.

3,290,802
SANDALS
Sadao Fukuoka, 20 Minami Fukushima, Tokushima, Japan
Filed Mar. 20, 1964, Ser. No. 353,374
1 Claim. (Cl. 36—11.5)



A sandal for a user's foot, comprising: a sole having a forward toe end and having a rearward heel end; a toe strap projecting upwardly from said sole adjacent the forward end thereof, said toe strap being adapted to project upwardly between two of the wearer's toes; a pair of flexible side straps which are elliptical in cross section formed as a unitary one-piece construction with the upper end of said toe strap and diverging rearwardly therefrom, the rearward ends of said side straps being fastened to the rearward portion of said sole adjacent the side edges thereof forwardly of said sole heel end; a cross strap formed of a flexible and elastic material having frictional adherence properties formed as a unitary one-piece construction with and extending between said diverging side straps and positioned to stretch across a wearer's instep, said cross strap being of elliptical cross section to provide a convex undersurface adapted to frictionally engage the wearer's instep to prevent the inadvertent withdrawal of his foot.

3,290,803
SHOE WITH A VULCANIZED OUTSOLE
Joseph S. Spatola, 1200 Brunel St., Waycross, Ga.
Filed Feb. 6, 1964, Ser. No. 342,931
3 Claims. (Cl. 36—14)



1. A one-piece die cut neoprene intermediate sole for a shoe of the type having a leather upper and a molded rubber outsole, said intermediate sole having a solid heel portion and an integral continuous welt portion free of joints and a shank integral with said heel portion and projecting forwardly thereof and spaced from the welt portion on opposite sides thereof, said intermediate sole having a contoured through opening defining the inner margin of the integral welt portion and extending on opposite sides of said shank.

3,290,804
CONSOLIDATING APPARATUS
Raymond A. Hanson, % R. A. Hanson Co., Palouse, Wash.
Filed Apr. 3, 1964, Ser. No. 357,133
7 Claims. (Cl. 37—81)

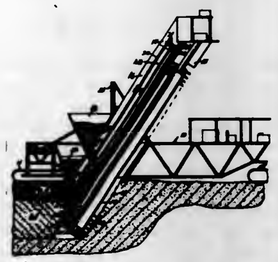
6. In a device for backfilling a trench through a soil surface:

a supporting framework adapted to travel along the trench;

a walled chute mounted on said framework exending downwardly within the trench, the chute being open along its rear surface;

first material supply means including a material outlet directed into the chute;

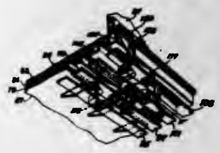
a first consolidating element slidably mounted on the chute within the trench adjacent the bottom end of said chute for reciprocating longitudinal movement relative to said chute;



second material supply means including a material outlet directed into the chute below the outlet of said first material supply means;

and a second consolidating element slidably mounted on the chute within the trench for reciprocating longitudinal movement relative to said chute, said second consolidating element extending across the chute adjacent the material outlet of said second material supply means and rearward of said first consolidating element.

3,290,805
EARTHWORKING MACHINES
Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.
Filed Oct. 14, 1963, Ser. No. 316,003
4 Claims. (Cl. 37—126)



4. In an earthworking machine having a fixed load carrying bucket, a powered tailgate and at least one movable load carrying bucket telescopically mounted within the fixed bucket the improvement which comprises:

(a) a rotatable roller keeper mounted on one of said buckets;

(b) a latching hook pivotally mounted on the other of said buckets, said hook being adapted to cam into engagement with the rotatable roller keeper when said buckets are telescopically closed;

(c) biasing means engaging said latching hook for urging said hook into cooperative over-center latched relationship within the roller keeper when said buckets are telescopically closed; and

(d) means responsive respectively to rearward movement of a said movable bucket and said tailgate for pivotally moving and disengaging said latching hook from the rotatable roller keeper to permit a respective said movable bucket to telescopically open.

3,290,806
CONTROLS FOR TANDEM OPERATED EARTHMOVING SCRAPERS
Robert A. Peterson, San Leandro, Calif., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 2, 1964, Ser. No. 415,361
5 Claims. (Cl. 37—129)



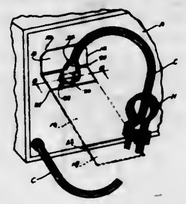
1. In combination with two earthmoving scrapers connected for tandem operation in which each scraper has an operator's station with independent controls for actuating adjustable scraper components independently of the other scraper, auxiliary controls at the operator's station of a first scraper for tandem operation, means connecting the auxiliary controls to the independent controls of a second scraper for actuation thereby, means connecting the auxiliary controls to the independent controls of the first scraper for actuation thereby, and means enabling selective operation of the auxiliary controls to adjust scraper components on the second scraper only or to adjust scraper components on both scrapers simultaneously.

3,290,807
LAUNDRY PRESSES
Takeo Esaka, Toyonaka-shi, Japan, assignor to Matsushita Electric Industrial Co., Osaka, Japan, a corporation of Japan
Filed Sept. 24, 1963, Ser. No. 310,990
Claims priority, application Japan, June 25, 1963, 38/33,613
15 Claims. (Cl. 38—71)



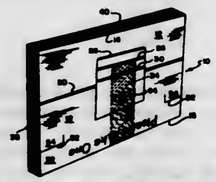
1. A laundry press comprising a heating member and a holding member openably coupled together by means of a hinged connection, said heating member including a plate, heating means disposed on said plate, said heating means including a cloth heater, said cloth heater comprising a cloth of a predetermined size woven of woofs and warps of heat-resisting fibers, and including conductive flexible metal wires disposed lengthwise on both sides of the cloth and interwoven with the warps, and electric heating wires disposed transversely between said conductive metal wires situated on both sides of the cloth and woven into the cloth zigzag-wise in the direction of the woofs and spaced a predetermined distance apart from said woofs so that said heating wires are disposed in a wave-like form with respect to the cloth surface, said heating wires each having heat-resisting threads coiled thereabout at a predetermined number of turns per unit length thereof, and said heating wires being wound about said conductive wires alternately at turned-over portions on the left- and right-hand sides thereof at intervals of a predetermined distance with each other, and a cushion member embracing said heating means and fastened onto said plate, said holding member including a plate and a cushion member fastened onto said plate on the side opposite side heating means, a temperature regulator provided on said heating member for maintaining the heating temperature of said heating means at a desired regulated value, and clamping means for releasably clamping said holding member and said heating member.

3,290,808
PLUG-AND-CORD HOLDER FOR APPLIANCES
Herman O. Deditz, 1515 State St., Racine, Wis.
Filed Apr. 8, 1965, Ser. No. 446,666
8 Claims. (Cl. 40—2)



1. A job ticket, to be affixed to an appliance having a cord provided with a plug having a plurality of prongs, said ticket comprising, in combination a sheet of fibrous material having a tab, said tab provided with an adhesive coating on one surface thereof to permit affixing said tab to said appliance, said tab provided with a plurality of spaced perforations produced without the removal of material, said perforations to receive said prongs temporarily.

3,290,809
PACKAGING AND DISPENSING APPARATUS
Elmore L. King, 301 E. 66th St., New York, N.Y.
Filed Apr. 1, 1966, Ser. No. 539,509
10 Claims. (Cl. 40—10)



1. A packaging and dispensing device comprising, in combination: a quantity-controlled amount of advertising material defined by a plurality of pieces of literature; means individually detachably connecting said pieces with respect to one another; a backing and supporting panel for positioning said advertising material in any one of a multiplicity of arrangements relative to any one of a plurality of stationary and even movable objects, said panel comprising first score line means extending transversely across said panel defining a first flap; second score line means extending transversely across said panel defining a connecting flap; said second score line means being spaced apart from said first score line means; said flaps being capable of pivotal movement with respect to the remaining portion of said panel; and a connector extending across said panel substantially medially thereof.

3,290,810
INDEX CLIP
Carmen G. Morena, 48 Columbus St., Providence, R.I.
Filed June 17, 1964, Ser. No. 375,812
2 Claims. (Cl. 40—23)
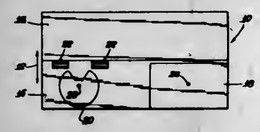
1. An index clip of the character described comprising a square piece of plastic having its lower end terminating in a second square piece of plastic having a beveled bottom, the said second square piece of plastic being smaller than the first mentioned piece of plastic with which it is integral and a second and like index clip being secured to the first mentioned index clip by means of an adhesive on the back surface of the first mentioned square piece of plastic, a wire paper clip having an end for receiving papers and a closed end, the paper clip being in the same plane as the index clip with the closed end extending

across the index clip between said second square pieces, the said index clip being adapted to securement on a paper clip by manually pressing the sides of the said



index clip together at the intersection of the first mentioned square piece of plastic and the second mentioned square piece of plastic.

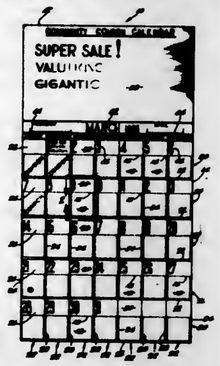
3,290,811
INDICATOR
Jerome T. Atkinson, Jr., 1523 Elmwood Ave., Wilmette, Ill., and Elliott M. Moore, 2114 Central St., Evanston, Ill.
Filed Apr. 14, 1964, Ser. No. 359,706
6 Claims. (Cl. 40—70)



1. A paper sheet having a grain extending in one direction comprising, a header, a carrier formed integral with said header, said carrier having a base press cut therein for easy removal from the carrier, said base having an aperture press cut therein, a dial having a generally circular outer periphery and a window opening onto said periphery press cut in said carrier, said dial having an aperture press cut therein, and a pair of fasteners press cut in said carrier, each of said fasteners having a plurality of elongated fingers along one edge and said fingers having the grain of the paper extending along the length of the fingers, each of said fasteners having a second plurality of elongated fingers along the opposite edge thereof and each of the fingers of the second plurality of fingers having the grain of the paper extending along the length of the fingers.

3,290,812
COUPON CALENDAR
James J. Hunkins, 1210 N. Rose, Santa Ana, Calif.
Filed June 7, 1965, Ser. No. 465,799
5 Claims. (Cl. 40—107)

1. A coupon calendar comprising:
a rectangular calendar sheet having normally upper and lower edges and side edges, one surface of said sheet being imprinted with the name of a given month and with the calendar dates of said given month, said dates being arranged in a series of first spaced parallel rows extending parallel to said upper and lower sheet edges and in a series of second spaced parallel rows extending parallel to said side sheet edges, said sheet having a coupon area adjacent at least each of some of said calendar dates, each of said coupon areas being imprinted to form a coupon which is coded to indicate a redemption date on the coupon associated with the calendar date adjacent to the coupon, and said sheet having a closed line of perforations circumscribing each said coupon and spaced from the lines of perforations circumscribing the adjacent coupons, thereby to permit each coupon to be removed from said sheet while leaving the remainder of said sheet and the remaining coupons intact.

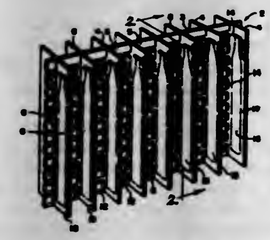


3,290,813
CAR TOP SIGN
Ralph B. Rose, Sr., 4370 SW. 5th St., Miami, Fla.
Filed June 24, 1966, Ser. No. 560,280
10 Claims. (Cl. 40—129)



1. A car top sign of weather resistant sheet material comprising; an inverted shell of generally trapezoidal shape as seen in either side elevation and of truncated isosceles triangular shape as seen in front and rear elevation, said shell including, a top panel having equilength longitudinal side edges and opposed front and rear edges, and having a flow through opening; a first and a second main sign panel of equal size, each connected along one of the longitudinal edges of the top panel; and opposed front and rear panels along said front and rear edges respectively, said front and rear panels each having a body section of truncated triangular isosceles shape and an access opening into the shell interior adjacent the base line, with the line of juncture of each body section and the top panel being along the truncated edge of the body section, and each said body section having feet portions extending distally of the base edge; fold lines along the line of juncture of the top panel and all of the other panels to facilitate folding of the other panels out of the plane of the top panel with the extending edges of the body section and of the sign panels defining a surface of contact for an automobile car top; and means to connect the margins of the inclined edges of said body section and the adjacent marginal edges of the sign panels to wall the interior of said shell between said all of the other panels and the top panel; and a fold line along each base line of the body section to facilitate folding of the feet portions out of the plane of the body sections and toward the other body section to partially floor the shell and overlay a portion of the surface of contact defined by said extending edges; and adhesive means on the feet to adhesively adhere to an automobile car top and hold the car top sign in a predetermined position thereon, said feet being accessible through said access opening and said adhesive means being responsive to pressure applied on said feet through said access openings.

3,290,814
MASTER PERSPECTIVE
Jaroslaw Jelinek, 3234 W. Evergreen St., Chicago, Ill.
Filed June 4, 1965, Ser. No. 461,465
3 Claims. (Cl. 40—137)



2. In a display, a structure comprising a background portion and a plurality of laterally spaced vertically disposed elements extending transversely of the background portion, said background portion presenting reflective areas between the elements, and said elements having images thereon, and said background portions arranged to reflect said images when said structure is viewed from predetermined angles, said background portion comprising a plurality of vertically spaced segments defining horizontally elongated viewing slots therebetween and image means on said elements behind the background portions viewable through said slots from one position concurrently with viewing complementary images on the reflective areas.

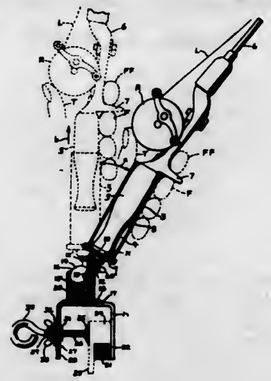
3,290,815
FIREARM RECOIL REDUCER
Jesse B. Edwards, 269 Herbert St., Alton, Ill.
Filed May 10, 1965, Ser. No. 454,435
5 Claims. (Cl. 42—74)



1. In combination with a firearm having a stock with a compartment formed therein, a recoil reducing mechanism disposed in said compartment, and comprising means forming a cylindrical sleeve, said sleeve being provided proximate one of its ends with a plurality of spaced apart air flow passages, a piston slideably received within said sleeve for movement axially thereof; first and second springs provided within said sleeve at opposite ends of said piston, the inner ends of said springs bearing against the proximate face of said piston, first and second spring bearing plates mounted in said sleeve for respective abutment thereagainst of the outer ends of said springs, means for closing the ends of said sleeve in an air-proof manner, said spring bearing plates and the adjacent end closure means being spaced apart, and means disposed between each bearing plate and the adjacent end closure means for maintaining same in said spaced apart relationship, as well as buttressing the related spring bearing plate against the pressure of the related spring.

3,290,816
FISHING POLE HOLDER
Elmer Ekleof, 3226 Carolina Ave., Rockford, Ill.
Continuation of application Ser. No. 134,338, Aug. 28, 1961. This application May 13, 1965, Ser. No. 461,581
2 Claims. (Cl. 43—21.2)

1. A fishing rod holder comprising, in combination a supporting bracket, an elongated tubular holder adapted to receive and support the handle of a fishing rod and having a closed inner end and an open outer end in which to receive a fishing rod handle, a resiliently tensioned ball-joint fixed on said bracket, including a substantially vertical socket member of rigid construction having a ball swivelled and rotatable therein and projecting appreciably therefrom, and a rigid straight stud of small diameter in relation to the diameter of the exposed portion of the ball fixed thereto in eccentric relation to the center of the ball but substantially at right angles to a diametrical plane thereof and forming a rigid axial extension of the inner end of said holder for supporting said holder in eccentric relation to said ball, the



extent of projection of the ball from the socket and the diameter of the stud in relation to the diameter of the exposed portion of the ball being such that in one extreme position of rotation of the ball the stud rigidly supports the holder in a steep angle of inclination by abutment with the adjacent side of the socket, and when the ball is turned to the other extreme position the stud rigidly supports the holder in a nearly horizontal position by abutment with the adjacent side of the socket, intermediate positions of the holder being obtainable by turning the ball with the stud to various positions between these two extremes.

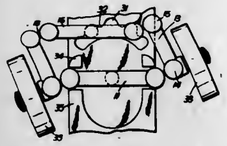
3,290,817
MOBILE TOY
Stanley Kravath, Eastchester, N.Y., assignor to Stahlwood Toy Mfg. Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 21, 1964, Ser. No. 339,137
1 Claim. (Cl. 46—32)



In a mobile toy having a support adapted to be attached to a child's crib: at least one element suspendable from said support, said element being in the form of a bird having a hollow body, said body being provided with a pair of oppositely disposed longitudinal slots, a pair of angle brackets oppositely secured to the outer surface of said body, each of said angle brackets having a laterally projecting leg, said leg being disposed directly beneath its respective slot, and a pair of oppositely disposed wings, each of which is provided at its inner end with a narrow projecting tongue, the width of said tongue being substantially equal to the length of said slot, said tongue

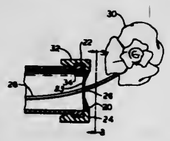
snugly fitting within said slot and being frictionally retained in said slot, each of said wings being unattached to but supported by one of said projecting legs, thereby permitting slight movement of said wings by a breeze to cause a simulated fluttering action of said wings.

3,290,818
STEERING MECHANISMS FOR TOY VEHICLES
Aubrey Robert Mills, London, England, assignor to Die Casting Machine Tools Limited, London, England, a British company
Filed June 17, 1964, Ser. No. 375,814
Claims priority, application Great Britain, Jan. 2, 1964, 272/64
3 Claims. (Cl. 46—221)



1. A steering mechanism for a toy vehicle comprising a frame member, a linkage, said linkage being molded as a single unit of resilient material and including first and second rod portions each having an axle extending therefrom, a linking rod extending between an end of each of said first and second rod portions and relatively thin webs of said resilient material connecting said linking rod to said first and second rod portions whereby to form hinged connections, and means cooperating with said first and second rod portions and said frame member for rotatably mounting said linkage to said frame member and including means cooperating between said frame member and said linking rod for retaining said linkage in any one of a plurality of preselected positions, said last named retaining means comprising an arcuate slot in said frame member formed in a plane parallel to the movement of said linkage on rotation thereof, said arcuate slot having a plurality of recesses, and said linkage including a projecting portion adapted for selective engagement with said plurality of recesses.

3,290,819
FLORAL MOUNTING MEMBER
Elmer A. Turner, New Haven, Ind., assignor to Wayne Plastics, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed May 14, 1965, Ser. No. 455,850
1 Claim. (Cl. 47—41.1)



A container for supporting and suspending flowers through the stalk thereof, comprising an elongated tubular vessel having a hollow interior adapted for receiving water or other liquid, means forming a plurality of integral serrations at the end of said container in proportion to effect piercing through a mounting material having strength suitable for supporting the said container and its contents, means forming an integral shoulder at the end of said tubular vessel and surrounding the open end of said tubular vessel, a single one-piece resilient cover proportioned to extend over said open end and having a skirt which is resiliently deformable to form a snap fitting with said integral shoulder, said resilient cover unperforated except for a central opening therein to receive the stalk which is passed therethrough and into said tubular vessel, a detent portion of said skirt defining a snap fitting combined with said shoulder at the open end of said tubular member to resiliently hold the cover and tubular vessel in assembled relation, and a plurality of radial ribs which are circumferentially spaced on said cover plate to define circumferential spaced portions of reduced thickness to permit distending of said cover by the displacement of water within the tubular vessel as the floral stalk is inserted therein through the opening in said cover, said ribs extending radially from a portion of reduced thickness adjacent said central opening.

3,290,820
FLORAL ARRANGER
Stanley J. Aebersold, 1217 Silver St., New Albany, Ind.
Filed Mar. 2, 1964, Ser. No. 348,694
8 Claims. (Cl. 47—41.12)



1. A floral arrangement device comprising a shallow tray having offsets in the bottom wall defining protuberance on the lower face and shallow wells on the upper face and including upwardly and divergingly inclined side walls terminating in horizontally disposed flanges along its sides and water receiving troughs at the corners, shank headed rivet means secured externally to the side walls below the mid points of said flanges, said flanges having elongated slots therethrough adjacent to the side walls directly above said rivet means, means for supporting said tray including elongated strap members having end portions extending through said elongated slots and having keyhole slots below said slots receiving said shank headed rivet means, said end portions having a normal inclination urging the end portions below the slots against said side walls at said rivet means whereby the keyhole slots are urged into interengagement with said rivet means, the enlarged portion of the keyhole slots being above their narrow portion, and water absorbent means received in said tray for supporting an arrangement of flowers.

3,290,821
STICK-TYPE FERTILIZER AND APPLICATOR
Robert D. Parry, 1336 Custer Ave., Cincinnati, Ohio
Filed Mar. 27, 1964, Ser. No. 355,235
3 Claims. (Cl. 47—48.5)

1. The combination of a stick-type fertilizer and an applicator for said fertilizer comprising an elongated tube of commercial, granular fertilizer bound in a water soluble binder, said applicator having a stake thereon adapted to be driven into the ground and having a spike thereon adapted to be driven into the ground, the inside diameter of the tube of fertilizer being such as to receive said spike in slip-fit relation and the outside diameter of the tube



of fertilizer being such as to fit snugly into a hole prepared in the ground by driving said stake therein.

3,290,822
TOOL FOR SETTING FEEDING TUBES IN PLANTS
James J. Mauget, 1043 Bilton Way, San Gabriel, Calif.
Filed July 16, 1964, Ser. No. 383,147
5 Claims. (Cl. 47—57.5)



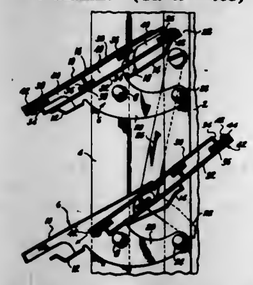
4. A tool for setting a feeding tube in the stem of a plant, comprising:

a body adapted to receive hammer blows;

and a mandrel secured to the body and insertable into a feeding tube;

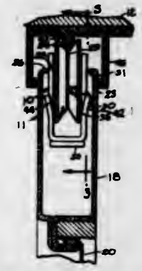
said body having a cylindrical socket surrounding the mandrel to support the inner end of said tube against enlargement during setting operation, said socket having a frusto-conical surface at the inner end thereof engageable with the end surface of the tube, said frusto-conical surface being inclined radially inwardly away from the end of the feeding tube.

3,290,823
JALOUSIE SLATS
Matsuichi Okumoto, 1849 Vancouver Place, Honolulu, Hawaii
Filed Apr. 8, 1964, Ser. No. 358,313
4 Claims. (Cl. 49—403)



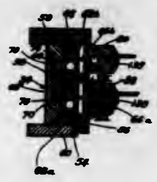
1. A jalousie slat comprising: a pair of identical elongated, generally flat slat members arranged in spaced parallel relation; at least one longitudinal rib on that surface of each member which faces the other member; each of said ribs having at least one laterally extending formation extending along its crest; each member having means thereon, spaced laterally from the rib thereon, defining a longitudinal undercut groove substantially complementary in shape to said laterally extending formation; each said formation on one member being slidably nested in a corresponding groove in the other member, said ribs, lateral formations and grooves including opposed surfaces preventing relative lateral separation of said members whereby said slat may be assembled and disassembled only by sliding one member longitudinally of the other, a pair of brackets pivotally supported on a fixed structure; said brackets having means respectively engaging the end portions of said slat to pivotally support the same and including means on each bracket abutting the ends of both said members to restrain them against relative longitudinal sliding movement.

3,290,824
CLOSURE GUIDING DEVICE
Lloyd L. Anderson, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Feb. 8, 1965, Ser. No. 430,992
3 Claims. (Cl. 49—420)



1. In a sliding closure assembly including a track and a closure having a wall generally parallel to and confronting said track for movement along the latter during movement of the closure, said wall having an opening therein, the improvement comprising an elongated flat spring having one end fastened to said wall on one side of said opening and a free end portion extending generally across the opening, said free end portion being stressed and bent inwardly from the plane of said wall, a roller assembly mounted on said free end portion and including a roller having a peripheral edge disposed outside said wall and in rolling engagement with said track, and opposed abutments on said roller assembly and said closure adjacent said opening for limiting outward movement of said roller, said spring urging said roller toward a predetermined extended position in which said abutments are in engagement, and said abutments permitting insertion of the roller assembly through said opening during installation.

3,290,825
DOUBLE-HUNG BALANCED TAKE-OUT WINDOW
Frank E. Adams, Walton Road, Seabrook, N.H.
Filed June 4, 1964, Ser. No. 372,598
16 Claims. (Cl. 49—431)



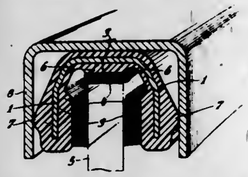
13. A double-hung sash window structure comprising a frame including a sill, side jams and a head jamb, part-

ing strips defining vertical channels with said side jambs, an upper and lower sash having stiles vertically slidable in said channels, each stile of the lower sash having a vertical groove, the adjacent side jamb of the frame having a vertical rib engaging in the groove, means on each groove coactable with the vertical ribs automatically offering initial resistance to both upward and downward movement of the lower sash, but offering reduced resistance once movement in either direction has commenced.

3,290,826
CHANNEL SECTION WINDOW GUIDES

Erich Weimar, Viersen, Rhineland, Germany, assignor to Draftex Limited, Coventry, England

Filed June 30, 1964, Ser. No. 379,158
Claims priority, application Great Britain, Apr. 17, 1964, 16,046/64
3 Claims. (Cl. 49—440)

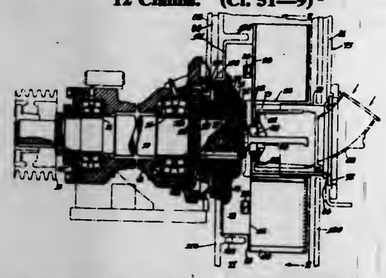


1. A channel section window guide comprising an elongated resilient member having an internal core embedded therein, said guide being substantially U-shaped in cross section having a base and a pair of legs, said core comprising a plurality of spaced parallel strips of flexible sheet metal extending transversely of the length of the guide member, each of said strips being substantially U-shaped in cross section having a base and a pair of legs, the end of which are spaced from the ends of said guide member, a plurality of relatively narrow connector ribs joining the adjacent transverse strips, and extending longitudinally of the guide member, said resilient member being internally thickened on each side of the legs of the core at the ends thereof and being internally thickened on the inner side of the base of the core, the inner surface of the thickened portions being substantially flat, said connector portions being located at the thinner regions of the resilient member on each side of the base thereof, each of said flat surfaces having a flexible coating to permit free sliding movement of the window.

3,290,827
PARTICLE THROWING APPARATUS

Joseph E. Bowling, Jr., Waynesboro, Pa., and George W. Powell, Hagerstown, Md., assignors to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware

Original application Apr. 27, 1962, Ser. No. 190,725. Divided and this application Feb. 11, 1965, Ser. No. 431,861
12 Claims. (Cl. 51—9)

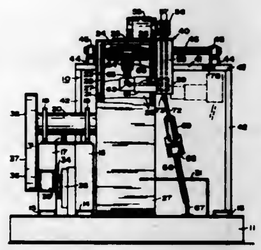


1. A throwing wheel for blasting articles with particles, said wheel having a rotor carrying radially directed vanes for centrifugally throwing outwardly abrasive particles that are fed to the inner portions of the vanes; a journaled spindle on one end of which the rotor is mounted for rotation; a radial flange on said spindle end; a housing covering the rotor, flange and the adjacent portions of the spindle, a first sealing ring held within the housing adjacent the inner portion of the flange face opposite to that engaged by the rotor, said ring extending toward the flange, a mating groove in the flange receiving the extending portion of the ring and closely spaced therefrom, a second sealing ring encircling but spaced from the first sealing ring and held by the housing adjacent the outer portion of the flange, the flange having a peripheral lip projecting into closely spaced cooperation with the outer face of the second sealing ring, the lip being more widely spaced from the housing and the second sealing ring having its outer surface grooved in the portion exposed by the last-mentioned spacing.

3,290,828
GRINDING AND POLISHING METHOD AND APPARATUS

George E. Bonin, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 1, 1964, Ser. No. 371,297
11 Claims. (Cl. 51—73)



5. Apparatus for finishing curvilinear surfaces of glass articles which comprises, support means for holding an article to be finished, means for rotating said support means about an axis perpendicular to a tangent contacting a central portion of the curvilinear surface to be finished, a hollow rotatable body, said body having an interior surface portion contoured to complement the curvilinear surface to be finished, said interior surface portion forming a continuous annular internal work surface having a radius substantially equal to the radius of the curvilinear surface to be finished, means for rotating said body about an axis centrally of said annular work surface, and means for positioning an article to be finished while being rotated about said first-mentioned axis on said work holder in contact with said rotating work surface to uniformly contact the entire curvilinear surface of the article to be finished.

3,290,829
MACHINE FOR GRINDING THE CUTTING EDGE OF A DIE

Alonza F. Martin, 2411 Farrand Drive, and Daniel B. Finnigan, R.F.D. 14, Box 201, both of Richmond, Va.

Filed June 29, 1964, Ser. No. 378,672
14 Claims. (Cl. 51—100)

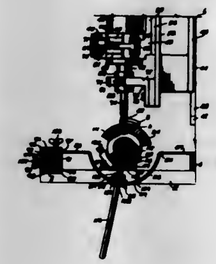
2. A machine for grinding the cutting edge of a die of the type for cutting openings in envelope material and which is carried on a rotating cylinder of a rotary envelope making machine, said grinding machine including

a frame having template seating means,

a template providing a track following the shape of the cutting edge of a die to be ground and said template having portions engaging upon said seating means for supporting the template on the frame,

a die support having a generally cylindrical body with the outer cylindrical surface conforming in diameter with the cylindrical surface of the die carrying cylinder of the rotary envelope making machine,

means on the frame mounting the die support on a fixed axis over the track of the template for oscillation on said axis and for reciprocation longitudinally of said axis,



means for mounting the die to be ground upon said support,

a rotary grinding element,

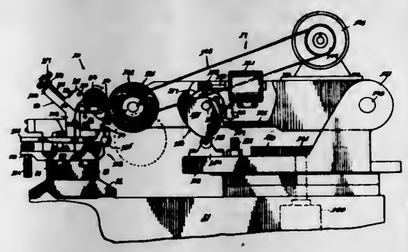
means carrying the grinding element on the frame on the side of the die support opposite the template to rotate on an axis transversely of the fixed axis and in contact with the cutting edge of the die, and

means carried from the die support to provide means for moving the die support on its supporting means and having a part in position to ride upon the track of the template during movement of the die support for controlling contact of the cutting edge of the die with respect to the grinding element.

3,290,830
GRINDING MACHINE

Hiroshi Ono, Chicago, Ill., assignor to Control Grinding Corporation, Chicago, Ill., a corporation of Illinois

Filed Dec. 4, 1963, Ser. No. 327,936
14 Claims. (Cl. 51—103)

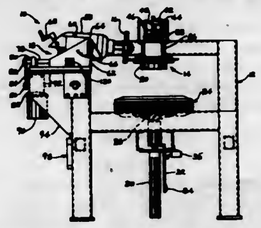


2. In a grinder, a pair of supports for a workpiece, an abrasive wheel adapted to engage the workpiece, and a pair of drive wheels positioned to contact substantially diametrically opposite sides of the workpiece at a point spaced from said abrasive wheel and between said supports, said supports being positioned generally below the workpiece and the drive wheels, said drive wheels being simultaneously rotated in the same direction but one wheel having a greater tangential speed than the other so that said drive wheels rotate the workpiece and urge it downwardly into the supports.

3,290,831
APPARATUS FOR GRINDING WHITE SIDEWALL TIRES

Alfred J. Laube, Findlay, Ohio, assignor to Cooper Tire and Rubber Company, Findlay, Ohio, a corporation of Delaware

Original application Dec. 13, 1962, Ser. No. 244,348, now Patent No. 3,172,243, dated Mar. 9, 1965. Divided and this application June 22, 1964, Ser. No. 384,015
6 Claims. (Cl. 51—106)

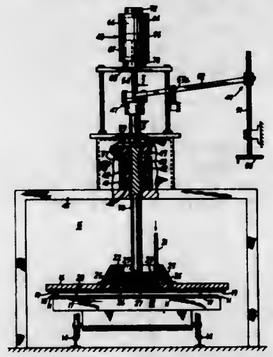


3. Apparatus for finishing the edges of a contrasting stripe in the sidewall of a pneumatic tire, said apparatus comprising means for inflating the tire and for supporting the tire for rotation on its normal axis, means for rotating said supporting and inflating means on the normal axis of the tire, a grinding wheel having an edge with an axial width equal to the width of the stripe, means mounting said grinding wheel for rotation on an axis lying substantially in a same plane as and in angular relationship to the axis of rotation of said chuck and the tire, means for rotating said grinding wheel on its axis, manually-operated means for changing the angular relationship of the axis of said grinding wheel relative to the the axis of said chuck and the tire, means for moving said grinding wheel toward and away from a plane perpendicular to the axis of said chuck and the tire, and motor-operated adjustable stop means for adjustably limiting the movement of said grinding wheel toward the tire.

3,290,832
APPARATUS FOR GRINDING

Carle W. Highberg and Robert E. Bonnet, Murray Hill, N.J., assignors to Engelhard Hanovia, Inc., Newark, N.J., a corporation of New Jersey

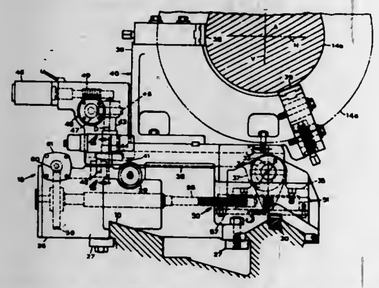
Filed Mar. 9, 1964, Ser. No. 350,335
4 Claims. (Cl. 51—165)



1. Apparatus for surfacing a flat sheet of glass and the like, comprising a rotary grinding head having an annular grinding surface with fixed abrasive bonded therein adapted to lie contiguous and in grinding relation to a surface of the glass sheet, the effective mass of said head determining the grinding relation between said grinding surface and the surface of the glass sheet, an elongated

drive spindle susceptible of longitudinal movement for supporting and driving said rotary grinding head, power operated means slidably coupled to said drive spindle for driving said spindle at a constant predetermined spindle speed, constant velocity universal joint means for coupling said grinding head and said drive spindle in substantially fixed driving relation but facilitating free pivotal motion of said grinding head about the longitudinal axis of said spindle to effectuate a uniform grinding relation between the surface of the sheet of glass and all portions of said grinding surface contiguous therewith, and selectively operated pressure controlled means for controlling axial forces exerted on said drive spindle and said grinding head to establish a predetermined grinding relation between said grinding surface and the surface of the sheet of glass.

3,290,833
POSITIONAL ADJUSTING MECHANISM
John R. Baker, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 14, 1964, Ser. No. 396,306
5 Claims. (Cl. 51—165)



2. Machine tool mechanism for positional adjustment of a member comprising:

(a) a base,

(b) a crankpin journaled in the base and having an eccentric portion,

(c) a support for said member pivotally received on the eccentric portion of the crankpin,

(d) a first actuator mounted between the base and the support operable to pivot said support on the eccentric portion of the crankpin for adjustment of the member in one direction,

(e) and a second actuator mounted in the base and connected to the crankpin for rotation thereof to adjust the member in the other direction.

3,290,834
GRINDING WHEEL
Frederick W. Lindblad, 835 Illinois Ave., Aurora, Ill.
Filed July 15, 1964, Ser. No. 382,831
15 Claims. (Cl. 51—206)



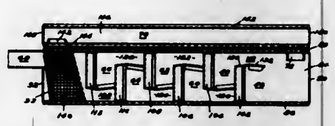
6. A grinding wheel comprising a body having means for mounting the same for rotation about the longitudinal axis of the body, a seat secured to the body and being centered on said axis, and a grinding ring secured to the seat, said seat being of a material having a high thermal conductivity as compared to that of the grinding ring and the part of the body adjacent to the seat, said seat between the grinding ring and body being relatively thick as compared to the thickness of the grinding ring to provide sufficient surface area presented to the atmosphere to dissipate a substantial amount of heat from the grinding ring and thereby prevent an excessive increase in temperature of the grinding ring.

3,290,835
SEGMENTAL ABRASIVE WHEEL
Henry J. Jeffers, Lewiston, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed July 28, 1964, Ser. No. 385,639
9 Claims. (Cl. 51—209)



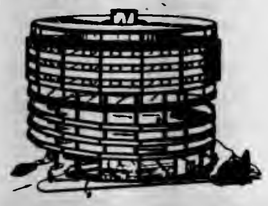
1. A segmental diamond abrasive wheel which comprises a disc-like abrasive body portion comprising abrasive particles and an organic bond therefor, said abrasive body portion having embedded in one face thereof a plurality of annularly-spaced diamond abrasive segments, the bond of said segments being harder than the bond of said body portion, and said abrasive body portion having embedded in the opposite face thereof a plurality of annularly-space mounting nuts, said segments being firmly secured to individual mounting plates, each of said mounting plates comprising a plurality of portions extending beyond the periphery of the segment mounted thereon and being wholly embedded in said body portion whereby to permit firm anchoring of said segments in said abrasive body portion.

3,290,836
METHOD OF SURFACE FINISHING ARTICLES
Peter P. Ruppe, 20 Hampton Road, Grosse Pointe, Mich.
Original application Apr. 6, 1962, Ser. No. 186,302, now Patent No. 3,246,429, dated Apr. 19, 1966. Divided and this application May 27, 1965, Ser. No. 459,302
11 Claims. (Cl. 51—317)



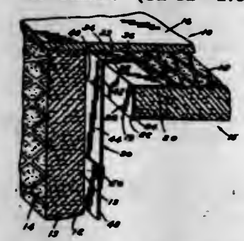
2. A method of surface finishing articles comprising: providing a succession of beds of abrasive particles and articles to be finished, subjecting each bed to vibratory conveying forces to set up relative motion between the particles and articles and to cause the particles and articles to move generally along said succession of beds, defecting the articles and particles into a path counter said general movement along the succession of beds, feeding particles and articles to be finished to a first bed of said succession, transferring particles and articles by spilling them from bed to bed along said succession from the first bed, transferring particles and articles out of the last bed of said succession, and separating the particles from the articles transferred from the last bed.

3,290,837
MULTI-STOREY BUILDING STRUCTURES
Maurice Weston, 13 Kingston House (North), Princes Gate, London, England
Filed Nov. 27, 1963, Ser. No. 326,488
Claims priority, application Great Britain, Dec. 13, 1962, 47,127/62
16 Claims. (Cl. 52—30)



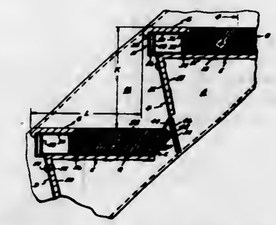
1. A building structure comprising a tubular load-carrying skirt structure defining an inner well open at the top and extending vertically within the building structure; at least one row of columns spaced outwardly of and surrounding said skirt structure; a helical floorway supported on horizontal beams each having one end fixed to said skirt structure and the other end cantilevered over one of said outwardly spaced columns, said floorway extending upwardly from near the bottom of said building and winding around said inner well for several superimposed convolutions; and a structure totally enclosed except for light and air admitting elements and forming a habitable zone supported by said skirt structure and by said outwardly spaced columns and situated above the uppermost convolution of said helical floorway, the open top well admitting light and air to said enclosed structure.

3,290,838
PLASTERING SPLASH APRON
Joseph Van Beel, 37426 Lakeshore Drive, Mount Clemens, Mich.
Filed Nov. 8, 1963, Ser. No. 322,328
13 Claims. (Cl. 52—173)



1. A protective splash apron for use during the plastering of the ceiling of a room or the like comprising an elongated angle shape casement bead having a horizontal flange and a vertical flange, a strip of flexible material having the upper longitudinal edge portion superimposed over the top surface of said horizontal flange, fastening means for operatively connecting said upper longitudinal edge portion to said horizontal flange, said fastening means comprising an elongated adhesive element secured along one longitudinal edge to the upper longitudinal marginal edge portion of said strip of material and secured along the other longitudinal edge to said casement bead, the remaining portion of said strip of material hanging freely along the outer surface of said vertical flange and terminating a predetermined distance below the bottom edge portion of said vertical flange, a reusable sheet of flexible material, and means for detachably connecting said sheet to the lower marginal edge of said strip of material at a point below said casement bead, said means comprising an elongated strip of adhesive material secured along one longitudinal edge portion to the lower marginal edge of said strip of material and secured along the other longitudinal edge portion to the upper portion of said sheet of flexible material, said strip of material being provided with longitudinally arranged perforations laterally and directly opposite an intermediate portion of said vertical flange to permit the portion of said strip of material below the perforations to be readily removed from the other portion of said strip of material after the ceiling has been plastered.

3,290,839
STAIR STRUCTURE
John Wesley Theisen, 3437 Tulane Ave., Long Beach, Calif.
Filed Mar. 5, 1964, Ser. No. 349,629
11 Claims. (Cl. 52—188)



1. In combination with two laterally spaced, parallel stringers disposed at a desired angle relative to a floor surface and including a plurality of pairs of inverted, L-shaped laterally aligned supports affixed to the adjacent surfaces thereof, a stair structure, with each of said supports having a first horizontally disposed leg and a second leg which extends downwardly from the forward end thereof, which stair structure comprises:

(a) a plurality of elongate pans, each of which is of such length as to span the distance between said stringers, with each of said pans including a rectangular section that rests on, and is supported by, one of said first legs, a flange projecting upwardly from a forward edge of said section, and a U-shaped member supported from the rear portion of said section;

(b) a plurality of risers, each of which is of such length as to span the distance between said stringers, with each of said risers including a rectangular section that abuts against one of said second legs when said section is slidably inserted in one of said U-shaped members, and an engageable portion on the upper end of said section that is engaged by one of said flanges;

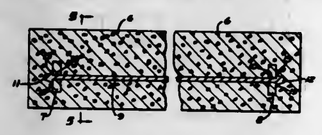
(c) means for affixing said risers to said second legs; and

(d) a plurality of bodies of non-metallic material having flat horizontal upper surfaces, which bodies are supported by said pans to define treads.

3,290,840
METHOD AND MEANS FOR CHEMICALLY PRESTRESSING CONCRETE
Karl H. Middendorf, Costa Mesa, Calif., assignor to The Prescon Corporation, a corporation of Texas
Filed July 20, 1962, Ser. No. 211,191
4 Claims. (Cl. 52—223)

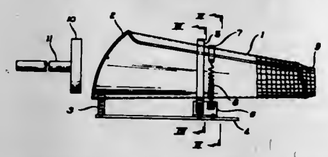
1. In a concrete structure, a body portion of chemically expanded concrete and means for putting said body portion under compression comprising spaced flat faced bearing plates embedded in said body portion in spaced relation to each other, a smooth surfaced high tensile strength steel tension member having a lubricating coating thereon embedded in said body portion and extending between said bearing plates, said bearing plates hav-

ing openings therein through which said tension member extends, said tension member having an enlargement thereon at each end thereof and means securing said enlargements snugly in fixed position to the sides of said



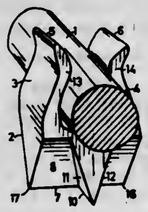
bearing plates remote from each other, said bearing plates, tension member and enlargements on said tension member being completely enclosed within said body portion of chemically expanded concrete.

3,290,841
APPARATUS FOR NETTING MEAT AND MEAT PRODUCTS
Michael A. Sartore, 152 Broadway Drive, Pittsburgh, Pa.
Filed Sept. 15, 1965, Ser. No. 487,399
3 Claims. (Cl. 53—258)



1. An apparatus for netting meat and meat products comprised in a radially expandable horn or shell of thin flexible resilient sheet metal or plastic formed in the shape of an open ended truncated cone and having a longitudinal separation therein, a non-resilient guide ring encircling the said shell in non-concentric relation and slidably engaging the said shell at a point substantially at its longitudinal midpoint, a fixed base rigidly connected to the said shell at a point adjacent its larger end and rigidly connected to the said guide ring, the edges of said shell overlapping in a slidable engagement with each other at the said longitudinal separation and the said overlap being of such order of magnitude that the said slidable engagement is maintained when the said shell is expanded to circumferential engagement with the said guide ring.

3,290,842
DISTANCE PIECE FOR CONCRETE-REINFORCING RODS
Anders Bertil Åberg, 11 S. Kvarnvagen, Klösten, Sweden
Filed Dec. 2, 1963, Ser. No. 328,781
9 Claims. (Cl. 52—309)



1. A distance piece for holding concrete reinforcing rods at a predetermined distance from the form consisting of an integral shaped body formed of a resilient synthetic resin material, said body comprising a base part having a dimension in the vertical direction which determines the desired cover, said body including an upwardly facing rod supporting surface, gripping means extending from said base part and comprising a pair of curved resilient arms which, when in relaxed position, provide a recess having a greater width than height, said arms having inwardly extending rod engaging portions for exerting a downward force on a reinforcing rod to urge the same against said rod supporting surface so that the transverse median plane of said distance piece will be maintained perpendicular to the axis of the rod supported thereby to provide axial stability, said base part having form abutting portions which include two abutments transversely spaced from each other on opposite sides of said rod axis, and each providing narrow line contact with said form.

3,290,843
BEAM AND ALL CONSTRUCTIONS APPLICABLE THERETO
Jacques Werman, 305 West End Ave., New York, N.Y.
Filed Jan. 3, 1964, Ser. No. 335,484
Claims priority, application Belgium, Mar. 13, 1963, 629,509
4 Claims. (Cl. 52—323)



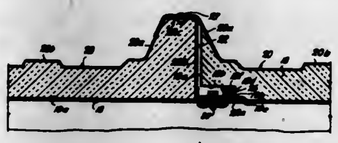
1. In combination, at least two pairs of beam elements each of which is E-shaped in cross-section, the median and lower flanges in each pair being placed in contact and said pairs arranged so that the back surface of one beam element is jointed to the back surface of another; and a filling mass disposed directly above the median flanges and engaging the uppermost flanges.

3,290,844
WATER PROOF ELEVATED FLOOR
Frederick N. Rushton, Ellicott City, and Robert S. Gladden, Jr., Severna Park, Md., assignors to Washington Aluminum Company, Inc., Baltimore, Md., a corporation of Maryland
Filed Oct. 30, 1963, Ser. No. 320,022
5 Claims. (Cl. 52—461)



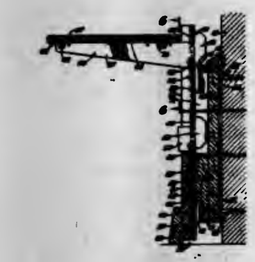
1. A waterproof joint for flooring sections, comprising, a pair of flooring sections each having a bottom portion and a top portion terminating short of at least one edge of said bottom portion, said edge of each said bottom portion being positioned in edge-to-edge contact with each other to form a joint between said pair of flooring sections and a groove between the top portions thereof, each said edge of said bottom portion having a flange spaced from its corresponding top portion and extending into said groove to form a pair of flanges therein, floor tile mounted on the outer surface of each said top portion and terminating at the edges thereof, a strip coated on both sides with adhesive positioned across said pair of flanges to encompass said joint and thereby obtain sealing thereof, and a resilient channel strip positioned over said strip with adhesive and having a longitudinal channel in engagement with said pair of flanges, the top of said channel strip forming a smooth continuation of the floor tile mounted on said flooring sections.

3,290,845
PREFABRICATED INSULATED PANEL SYSTEM
Marvin K. Snyder, Overland Park, Kans., assignor to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Continuation of application Ser. No. 250,177, Jan. 8, 1963. This application May 24, 1965, Ser. No. 461,595
7 Claims. (Cl. 52—478)



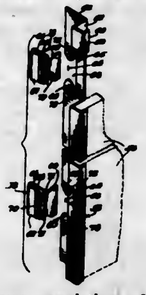
1. A building construction including a support frame, a pair of building panels arranged with one side edge of each adjacent the other, each panel comprising an outer skin and an inner skin separated by and joined to an intermediate insulation body substantially filling the space between said skins, said side edge on one panel including an extension on the outer skin which overlaps the adjoining portion of the outer skin on the adjacent panel and said side edge on the adjacent panel including an extension on the inner skin overlapping the adjoining portion of the inner skin on said one panel, a rib on said last named extension running lengthwise thereof and extending outwardly, deformable sealing means carried by said one panel and engaged by the outer edge of said rib to form a moisture-tight joint.

3,290,846
WALL FACING
Martin H. Mader, Hollywood, and Erhard G. Unger, Los Angeles, Calif., assignors to Mader Cabinet Works, Hollywood, Calif., a corporation of California
Filed Apr. 9, 1964, Ser. No. 358,585
3 Claims. (Cl. 52—479)



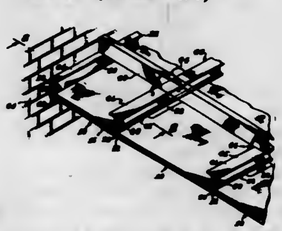
1. A wall-facing structure mounted upon a building wall and comprising strip means for anchoring said structure to said wall, means fastening said strip means to said wall in two spaced lines along the wall and in spaced relationship forwardly from said wall, a plurality of studs each extending from behind the strip means in one of said lines to behind the strip means in the other of said lines, each stud having laterally extending tongues proximate the forwardly disposed surface thereof, a plurality of flat panels arranged in juxtaposition and disposed in a plane forwardly of and against said strip means, the proximate side edges of each pair of adjacent panels having internal grooves receiving said tongues respectively whereby the panels are adapted to be secured by the studs against movement forwardly from the studs, and stop means on the panels engaging with said strip means for resting the panels upon the strip means.

3,290,847
WALL CONSTRUCTION
Jay G. Fenwick, Chicago, Ill., assignor to Morton Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 2, 1964, Ser. No. 348,445
7 Claims. (Cl. 52—489)



1. A wall structure consisting of a plurality of posts having wing portions at each of their sides, bracket supporting strips in said posts, spring clips secured to the wing portions of the said posts and having wing portions thereon and wall panels having bayonet slots in their side edges into which the wings on the clips are fitted whereby the panels are secured to and supported by the said clips, the panels being spaced apart at the said posts to permit attachment of support brackets to the bracket supporting strips.

3,290,848
CEILING AND WALL TILE AND SUSPENSION SYSTEM FOR SAME
John H. Moss, Phoenix, Ariz., assignor to The O'Malley Lumber Company, Phoenix, Ariz., a corporation of Arizona
Filed Feb. 26, 1964, Ser. No. 347,420
1 Claim. (Cl. 52—497)



A suspension system for a ceiling and wall tile, having in combination:
(a) a square tile element,
(b) a front surface on said tile element,
(c) a rear surface on said tile element,
(d) end edges on said tile element,
(e) side edges on said tile element,
(f) a longitudinally spaced tongue and groove associated with each of said edges wherein said groove has a lateral depth equal to the lateral outward projection of said tongue relative to each of said edges,
(g) and stiffening ribs and weight and material reducing cavities formed in the rear surface of said tile
(h) whereby a plurality of said tiles may be placed in abutting engagement of said edges of said tiles to form an interlocked tile assembly,
(i) said suspension system including a double-J bar secured to the building structure characterized by,
(j) a top flange to secure the double-J support bar to the building structure,
(k) an integral vertically disposed depending web,

(l) a lower flange formed on the lower edge of said web and extending at right angles to said web and adapted to engage between the tongue and groove of adjacent abutting tile elements and located at longitudinally spaced positions along said double-J bar,

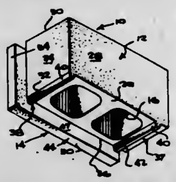
(m) an intermediate flange formed on and projecting at right angles from said web at a distance above said lower flange equal to the thickness of said tongues,

(n) and alternate cut-away portions in said web and lower flange between below said intermediate flange so as to provide interlocking tongue and groove engagement between abutting tile members located each side of said double-J support bar.

3,290,849
BLOCK WITH SPACING LEGS AND FACING SECTION

Lyle E. Wright, Lanham, Md., assignor, by direct and mesne assignments, to Universal Building Products Corporation, a corporation of Maryland

Filed Sept. 2, 1964, Ser. No. 393,893
1 Claim. (Cl. 52—541)



A building block for use in a wall construction including a plurality of blocks arranged in courses with a base course and upper courses, and with vertical and horizontal mortar strips connecting the block units to one another, each building block comprising:

a block main body portion of aggregate material having a substantially flat, uniplanar upper face, a lower face, and opposite, substantially flat side faces;

the block main body portion having forward and rear sides;

the side faces each having an upper end edge and a lower end edge;

the upper face and the forward side meeting at a forward upper edge and the lower face and forward side meeting at a forward lower edge;

the block main body portion having an individual center of gravity substantially equidistant its side faces;

elongated, substantially rectangular legs depending from the block lower face, one such leg being closely adjacent the lower end edge of one of the side faces, and the other being spaced inwardly from the lower end edge of the other side face;

the legs being tapered and extending substantially the full width of the block main body portion and being adapted to rest on the upper face of an adjacent block;

an outer facing block of a length and height greater than that of the block main body portion, including an outer side surface, secured to the forward side of the block main body portion;

the facing block having a top side arranged substantially parallel to and spaced inwardly of the forward upper edge of the block main body portion, and a bottom side arranged substantially parallel to and spaced outwardly of the forward lower edge thereof a distance equal to said top side spacing plus the outward extent of said depending legs;

the facing block having first and second ends arranged substantially parallel to the block side faces and being spaced respectively inwardly of said other side face and outwardly of said one side face, the spacing of said second end being greater than the spacing of said first end;

whereby the facing block is horizontally and vertically offset from the block main body portion, and the building block has a center of gravity different from said center of gravity of the block main body portion;

the legs being located such that they are substantially equidistantly spaced on opposite sides of the building block center of gravity;

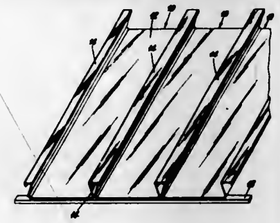
an outer surface of said other leg being substantially aligned with said first end of the facing block whereby the block is adapted to be suitably balanced on a subjacent block; and

whereby the facing blocks in the wall construction are adapted to be joined at their ends and sides at locations offset from the vertical and horizontal mortar strips connecting adjacent block main body portions.

3,290,850
LIGHT DIFFUSING PANELS

Robert E. Byrne, Jr., Martinsville, and Alfred R. Tavarozzi, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed May 4, 1964, Ser. No. 364,497
5 Claims. (Cl. 52—630)

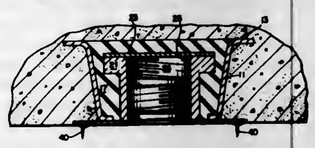


1. A light diffusing panel structure comprising at least one elongated light diffusing plastic panel, each of the longer sides of said panel folding longitudinally and convexly upward and outward, said longer sides then folding upward and inward and terminating in substantially opposed flanges, each of said flanges having an upwardly extending portion disposed at an acute angle with the normal plane of the plastic panel and a second portion integral with said upwardly extending portion and comprising an outward lateral extension thereof, each of said flanges adapted to engage with like flanges of adjacent panels and provide longitudinal reinforcement to each of said panels, said panel being adapted to be supported at the lateral ends thereof.

3,290,851
CONCRETE INSERT

Philip C. Sherburne, East Providence, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware

Filed Aug. 12, 1963, Ser. No. 301,445
3 Claims. (Cl. 52—701)

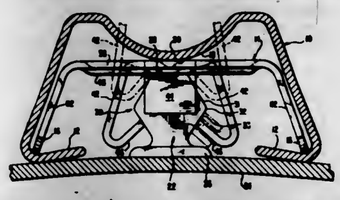


1. An anchoring device for use in concrete construction comprising: a frustro-conical metal shell member having a large open end and a small open end, a socket member within said shell member adjacent said small end having an internally threaded opening in alignment with said large and small open ends and directed toward and substantially even with said small end, a cover plate joined to said socket member over said opening at the end directed toward said large open end of said shell member, an elastomer material covering said socket member and said cover plate and plugging said large open end and interposed between said shell member and said cover plate and socket member, and a removable external plate member having a central threaded plug engageable with the internal threads of said socket member.

3,290,852
ADAPTOR CLIP FOR FASTENER ASSEMBLY

Engelbert A. Meyer, Union Lake, Mich., assignor to Chicago United Products Company, Inc., Detroit, Mich., a corporation of Michigan

Filed Aug. 8, 1963, Ser. No. 300,942
3 Claims. (Cl. 52—717)



2. In a fastener assembly for attaching a hollow channel to a surface of a support having a button secured thereto, an adaptor clip, comprising: a single piece female clip formed of sheet material into a longitudinally inverted U-shaped sled having side runners upwardly curved toward both ends and a top having a socket depending therefrom, said top having transverse end members and a main member extending longitudinally centrally of said end members, said main member having a longitudinally extending rectangular opening therein with transverse cam panels depending from each of the transverse short edges of said opening and at least one catch panel depending from the outer edge of said top adjacent one of the longitudinal long edges of said opening extending downwardly and having an upwardly and inwardly extending catch for frictionally receiving and retaining a button.

3,290,853
METAL EXTRUSION

Joseph Pucci, 443 E. Wadsworth St., and Thomas J. Ryan, 426 E. Allens Lane, both of Philadelphia, Pa.

Filed Dec. 9, 1963, Ser. No. 329,147
2 Claims. (Cl. 52—730)



1. An extrusion for use in the assembly of an article of manufacture comprising an elongated channel including a pair of flanges joined by a web, only a single narrow slot in one of the flanges, said web including a contiguous extension forming a wall of said narrow slot, said extension being substantially longer than the depth of said narrow slot, said extension being of a lesser thickness than said web so that said extension is weakened and susceptible to bending, said flange being thickened beneath said narrow slot to strengthen said channel, said other flange including only a single dovetailed slot, said dovetailed slot adapted to cooperate with a flexible material for providing a seal, the width of said dovetailed slot comprising approximately half of the width of said other flange, the width of said dovetailed slot being substantially greater than the width of said narrow slot.

3,290,854
PLASTIC COVERED WIRE BAG TIE AND METHOD OF CLOSING

Daniel P. McMurray, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 13, 1964, Ser. No. 410,908
9 Claims. (Cl. 53—14)



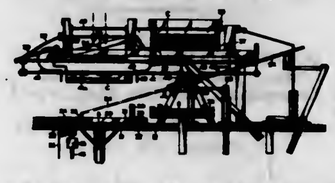
1. A wire tie comprising at least one continuous strand of malleable wire extending longitudinally of and encased within a ribbon of flexible thermoplastic material having serrated edges.

9. A method of closing an open mesh bag which comprises gathering the bag at its normally open end, wrapping a length of wire tie of claim 1 around the gathered portion of the bag and twisting the ends of the tie together thereby causing the projections defined by said serrations to interlock with each other and entangle with said mesh.

3,290,855
PROCESS AND MACHINE FOR PACKAGING STOCKINGS AND OTHER ARTICLES

Ernst Jan Brinck and Anthonius Johannes M. Prins, Haarlem, Netherlands, assignors to Kousenfabrieken Hin N.V., Haarlem, Netherlands, a corporation of Dutch law

Filed Apr. 3, 1963, Ser. No. 270,460
Claims priority, application Netherlands, Oct. 8, 1962, 284,095; Jan. 7, 1963, 287,479
13 Claims. (Cl. 53—21)



2. A packaging machine for packaging stockings and like air permeable articles comprising a folding table having a working surface furnished with suction means, means for feeding separate sheets of impervious material to said working surface, folding rod means movable in the longitudinal plane of the table, said rods being mounted in such a way that they are able to move over the sheet of paper held in place by the suction means on said working surface.

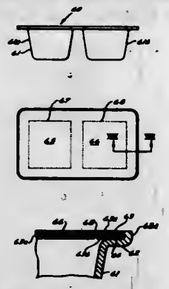
3,290,856
METHOD OF SEALING CONTAINERS WITH LAMINATED CLOSURES

George G. Rumberger, Kalamazoo, Mich., assignor to KVP Sutherland Paper Company, Kalamazoo, Mich., a corporation of Delaware

Original application Apr. 16, 1962, Ser. No. 187,592, now Patent No. 3,194,479, dated July 13, 1965. Divided and this application Mar. 11, 1965, Ser. No. 438,931
4 Claims. (Cl. 53—39)

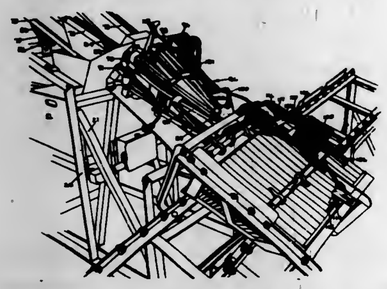
1. The process of producing sealed containers which includes the step of providing a plurality of interconnected container bodies each having a bearing edge for support

of a container closure member and a surface for sealing engagement therewith, filling the formed container bodies with desired content, providing a laminated sheet material for production of container closure members, bringing the said laminated sheet material into juxtaposition with the filled preformed container bodies, and then sealing the laminated sheet material thereto by the application of thermoplastic laminant adhesive activating conditions and severing the connected container bodies and the laminated sheet material in juxtaposition therewith into individual sealed container bodies, the steps of sealing and severing being conducted in any order, the said closure members at least upon severance having avenues of exit



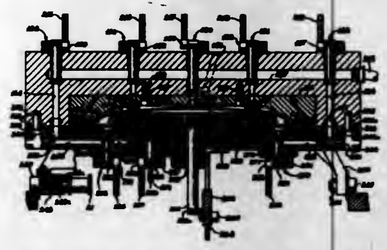
in areas in a ply of said sheet material of their construction which oppose sealing surfaces of the container bodies, said laminated sheet material containing sufficient thermoplastic laminant adhesive between its plies to extrude therefrom through said avenues of exit into contact with said opposed sealing surfaces of said container bodies when in sealing engagement therewith upon application of said thermoplastic laminant adhesive activating conditions without delamination of said laminated sheet material or said individual cover members upon severance, said sealing including the steps of extruding thermoplastic laminant adhesive through said avenues of exit into contact with said opposed sealing surfaces and allowing said adhesive to congeal.

3,290,857
BOBBIN LOADING APPARATUS
John H. Nydam, North Uxbridge, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Oct. 4, 1963, Ser. No. 313,961
14 Claims. (Cl. 53—61)



5. An apparatus for loading a filling bobbin magazine having a plurality of internal divided sections with empty filling bobbins including in combination an inclined hopper for containing a supply of unsorted and unaligned bobbins, a bobbin sorting chamber downwardly adjacent said hopper, a floor member forming the bottom of said chamber, oscillating means being held flush with said floor member for withdrawing and orienting bobbins as received from said hopper, said oscillating means comprising a flat circular disc, and a plurality of bobbin pusher pads being secured to the upper surface of said disc, rotating magnetic means for selecting and removing bobbins singly from said oscillating means, means for aligning in rows a continuing supply of bobbins from said rotating means, a trapping, counting and releasing means for loading a predetermined number of bobbins into said magazine, means for controlling movement of said bobbin magazines transversely of said rows consecutively to position said sections in proper alignment for reception of a full complement of said bobbins, said movement controlling means being automatically actuated by the releasing of bobbins from said trapping means, and other means for guiding full bobbin magazines to a stationary position out of range of said loading apparatus to be there available for further disposal.

3,290,858
CONTINUOUS PACKAGE FORMING MACHINE
Augustus H. Eberman and Hans A. Jensen, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed July 31, 1963, Ser. No. 299,000
22 Claims. (Cl. 53—112)

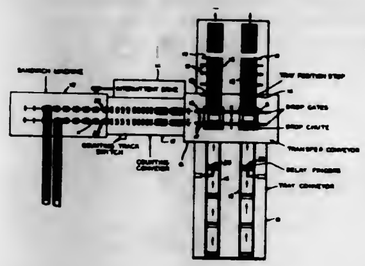


14. In a machine for continuously packaging articles in separate sealed packages formed of plastic film of the type adapted to seal with itself upon contact, a supporting structure, upper and lower die plate means traveling on said structure at the same speed for advancing sheets of said film so that one film overlies the other film at a packaging zone, said lower die plate means supporting said other film in a generally horizontal plane so that articles to be packaged may be carried on the former in longitudinal spaced-apart relation, the improvement comprising, said upper and lower die plate means each including first and second means for physically pressing and vacuum drawing, respectively, said films together around the articles as the upper and lower die plate means pass through said zone thereby forming separate sealed packages, said second means including cam actuated valve means, said lower die plate means being adapted to advance the sealed together films to a cutting zone which includes overhead mounted cutting means for severing the films thereby disconnecting the packages from each other, which lower die plate means includes further cam actuated valve means which cooperate with said second means of the lower die plate means for temporarily holding said other film on the lower die plate means until the films have been severed.

3,290,859
TRAY LOADER
Richard C. Talbot, Skokie, Ill., assignor to Peters Machinery Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 19, 1964, Ser. No. 345,992
36 Claims. (Cl. 53—160)

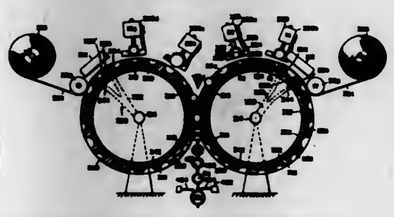
1. In an apparatus for loading cookies and the like, a counting conveyor, conveying counting and separating

cookies into spaced aligned groups, a tray conveyor extending transversely of said counting conveyor and conveying empty trays for loading and full trays for further processing, a transfer conveyor forming a continuation of said counting conveyor, at least one drop chute mounted in cookie receiving relation with respect to said transfer



conveyor and in cookie discharge relation with respect to trays traveling along said tray conveyor, and a drop gate forming a material carrying surface of said transfer conveyor and extending over said drop chute and movable laterally to accommodate groups of cookies to drop through said drop chute for loading.

3,290,860
STACKING AND WRAPPING MACHINE
Richard C. Rau, Meadow, Mass., assignor to Electronic Coin Processing Corp., New York, N.Y., a corporation of New York
Filed Dec. 7, 1962, Ser. No. 243,111
9 Claims. (Cl. 53—184)



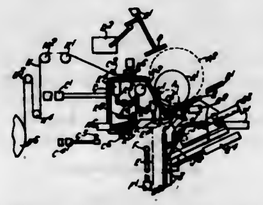
1. A coin wrapping machine comprising,
a pair of axially parallel drums rotatable about their axes and having tangentially meeting outer cylindrical walls,
semicylindrical cavities provided in each of the cylindrical walls and each sized to receive a roll of coins of a selected denomination, the cavities in each cylindrical wall when aligned with like cavities in the other cylindrical wall forming a complete enclosure for rolls of coils placed in them,
means for applying a thin plastic film to each of the cylindrical walls including the cavities before rolls of coins are placed in them,
means for stacking coins in preselected positions in rolls, with the axes of said rolls substantially parallel to the axes of said semi-cylindrical cavities,
means for placing said rolls of coins in selected cavities in each of the cylindrical walls previously covered by the film,
and means for securing the sheets together as the rolls meet tangentially after the rolls have been placed, whereby a complete package is formed about the rolls in the cavities.

3,290,861
ROLL WRAPPER
George J. Prager, Bryn Mawr, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,804
22 Claims. (Cl. 53—214)



1. In an apparatus for wrapping rolls of paper and the like, a wrapper storage stand rotatably supporting at least one roll of wrapping paper, a feed and cut-off stand feeding a predetermined length of paper from said roll and shearing the paper to length, to form a wrapper, a conveyor station conveying a roll of paper for wrapping, means adjacent said conveyor station for centering the roll with respect to its wrapper, a wrapping stand comprising spaced support rolls supporting a roll of paper therebetween, and means for rotatably driving at least one of said rolls for rotatably driving the roll of paper, means progressing a roll of paper to be wrapped to said wrapping station, to be supported on said rolls, feeding means feeding and guiding a sheared wrapper to the nip between the roll of paper and one of said supporting rolls, a gluing station adjacent said feeding station, applying strips of glue to the wrapper adjacent the leading and trailing ends thereof and on the face thereof facing the roll of paper, to be applied to the roll by the pressure of the roll of paper thereon as the wrapper passes into and past the nips between said supporting rolls and the roll of paper.

3,290,862
WRAPPING MACHINES
Joseph Henri Alfred Serge Lagasse, Wembley, England, assignor to Tape Engineering Limited, London, England, a company of Great Britain
Filed July 29, 1963, Ser. No. 298,046
10 Claims. (Cl. 53—228)



1. A wrapping machine for enclosing a package in wrapping material, including in combination, guide means defining a feed path along which the package can move to a wrapping position, a retractable head controlling the feeding of the wrapping material and having an advanced position and a withdrawn position, driving means for moving the retractable head from either of such positions to the other, means whereby the wrapping material is caused to extend from one side of the feed path to the other when the retractable head is in the withdrawn position, whereby the movement of the package into the wrapping position causes the wrapping material to be wrapped around a portion of its periphery, means whereby when the package is in the wrapping position the driving means is caused to move the retractable head from its withdrawn position into its advanced position thereby wrapping the wrapping material around a further portion of the periphery of the package, a sup-

ply reel from which a web of wrapping material is drawn by movement of the retractable head from its withdrawn position into its advanced position, a clamping device for gripping the free end of the web located on the side of the feed path remote from the withdrawn position of the retractable head, means for releasing the clamping device when the package is in the wrapping position prior to the completion of the movement of the retractable head into the advanced position, means for wrapping the released free end portion of the web of wrapping material around a portion of the periphery of the package, a cutting device for severing the web of wrapping material after completion of the wrapping of the periphery of the package by the movement of the retractable head into its advanced position, and means whereby the clamping device is caused to grip the new free end of the web of wrapping material.

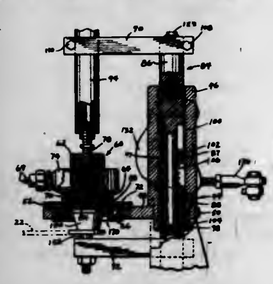
ERRATUM

For Class 53—258 see:
Patent No. 3,290,841

3,290,863
HEAT SEALING CAPPING APPARATUS

Eugene Edmond Geber, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois

Filed Feb. 28, 1964, Ser. No. 348,170
8 Claims. (Cl. 53—360)



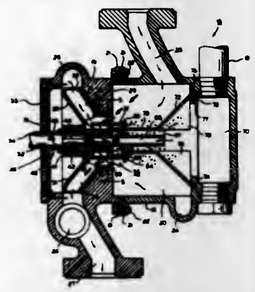
1. An apparatus for heat sealing a cap to a container comprising, a frame, a normally resilient crimping member peripherally held by the frame, means to apply heat to heat-seal the cap to the container, and means to deform the crimping member around the lip of container while the heat is applied and thereafter forcibly return to the heat-set crimping member to its normal configuration.

3,290,864
GAS SEPARATION PUMP FOR LIQUID CIRCULATING SYSTEMS

John H. Harker, Park Ridge, and Jack Keyes, Glencoe, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Aug. 10, 1965, Ser. No. 478,578
3 Claims. (Cl. 55—203)

1. In a pump operable to separate gases from a liquid circuit, a pump housing having a pumping chamber, an inlet chamber and a gas collecting static chamber, a pump shaft having an impeller mounted thereon and adapted to turn said impeller in said pumping chamber, means for separating gas entrained in the liquid entering said inlet chamber and diverting said gas to said gas collecting static chamber comprising a frusto-conical partition separating said inlet chamber from said gas collecting static chamber, a cylindrical extension from said partition coaxial with said impeller and having an end thereof spaced from said impeller, a tube extending from said impeller along the turning axis thereof and defining with said impeller a passageway for gas-free liquid, returning from said collecting static chamber, said last named tube being nested

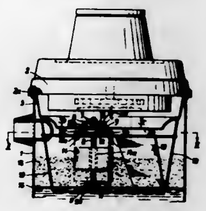


within said cylindrical extension, said tube and said extension providing an annular passageway for movement of gas-entrained liquid into said gas collecting static chamber for separation of gas theretrom.

3,290,865
SUCTION APPARATUS FOR LIQUIDS AND FOAM

Charles Serou and Leonhard Spiewok, Zurich, Switzerland, assignors to Diethelm & Co. A.-G., Zurich, Switzerland

Filed Sept. 24, 1964, Ser. No. 398,910
Claims priority, application Switzerland, Sept. 27, 1963, 11,931/63
5 Claims. (Cl. 55—216)



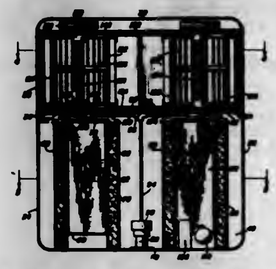
1. A suction cleaner for picking up liquid and foam, including: a receptacle for receiving liquid and foam, said receptacle having an upstanding substantially round wall and defining a vertical central axis; a motor-blower unit located above said receptacle for creating a negative pressure within the receptacle for sucking therein liquid and foam; a fluid-tight member located between said unit and said receptacle, for preventing foam from entering said unit; an intake opening in said wall of said receptacle, located below said member, for sucking liquid, foam, and air into the receptacle; means associated with said intake opening for directing the sucked air in a circular path within the receptacle; a round opening associated with said member, located between said wall and said central axis of the receptacle and more than 270° from said intake opening in the direction of movement of the air in said circular path, said round opening having a truncated upwardly convergent conical inner surface; a float valve in said receptacle vertically aligned with said round opening and vertically freely movable between a lower position and an upper position in which said float valve closes said round opening, said float valve being sufficiently light to float on the foam collected in the receptacle and rising in response to the rising foam level; a truncated upwardly convergent conical member located within said

opening, the included angle of said inner surface and of said conical member being substantially equal, said conical member and said conical inner surface defining a passage, communicating between the receptacle and the motor-blower unit, in the form of an upwardly convergent conical shell, whereby the air is drawn through said passage approximately in the shape of an upwardly convergent conical shell which does not entrain in its path said float for all positions thereof, and raise said float valve to said upper position, until the useful foam capacity of said receptacle is reached; and means located in said receptacle for deflecting said circular path from said float.

3,290,866
EVAPORATIVE COOLER

Edwin A. Schoenrock, deceased, late of San Angelo, Tex., by Verlie Schoenrock, executrix, 2005 Christoval Road, San Angelo, Tex.

Filed Aug. 26, 1964, Ser. No. 392,335
5 Claims. (Cl. 55—229)

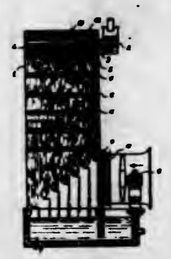


1. An evaporative cooler comprising, a cabinet having separate upper and lower compartments, inlet and outlet openings formed in said cabinet respectively communicating with the lower and upper compartments, flow inducing means mounted within said upper compartment for establishing a flow of air through the lower compartment discharged through the outlet opening, spaced absorption means mounted within said lower compartment presenting stationary porous walls forming an unobstructed flow passage terminated at opposite ends by said inlet openings for said flow of air through the lower compartment in spaced relation to the upper compartment, flow blocking means within the lower compartment for directing said air transversely from said flow passage through the porous walls of the absorption means, distributing conduit means supplying water to the absorption means for moisturizing the air passing through the porous walls thereof, and imperforate baffle means mounted inside of the cabinet spaced above the flow blocking means and adjacent to the flow inducing means in the path of said air flow for preventing discharge of moisture particles with the air from the outlet opening, said flow blocking means comprising a member bridging the porous walls of the absorption means and having trough portions aligned with said walls, said trough portions having apertures therein through which water from the distributing conduit means enters the absorption means, said flow inducing means including at least one bladed rotor, rigid frame means removably mounted within the upper compartment for rotatably mounting the rotor about a vertical axis extending downwardly into said flow passage, a casing mounted by the frame means in enclosing relation to said rotor and forming a partition between the upper and lower compartments, said casing having an axial intake portion in close spaced relation to the baffle means and a tangential discharge portion aligned with the outlet opening, and a drive motor fixedly mounted by the frame means within the upper compartment and drivingly connected to the rotor.

3,290,867
APPARATUS FOR COOLING LIQUIDS

Joseph Jack, 13 Rue Jean Bachelet, Neuilly-Plaisance, France

Filed Dec. 13, 1963, Ser. No. 330,381
Claims priority, application France, Dec. 20, 1962, 919,340, Patent 1,351,499
1 Claim. (Cl. 55—258)



In a liquid-cooling apparatus, in combination, a vertical housing having open upper and lower ends and having a lateral air supply opening adjacent its lower end, means supplying air to the housing through the opening with the air passing upwardly in the housing, means at the open upper end for supplying liquid into the housing, a liquid distribution means arranged transversely in the housing below the upper end, said liquid distribution means including a plurality of liquid distribution elements each of which has an upper vertically disposed portion, a horizontally spaced lower portion parallel to said upper portion, an oblique portion interconnecting said upper and lower portions, a ledge extending outwardly at a right angle from said lower vertical portion, a plurality of notches in said ledge, teeth portions in each of said notches extending beneath said ledge and a partition portion depending from said upper vertical portion and having a lower outwardly extending ledge, means extending through said partition portion and through said oblique portion of each of said elements for mounting said elements in close juxtaposition in said apparatus, droplet separator means at said air supply opening and at the upper end, each said droplet separator comprising an elongated bar-shaped member of dish configuration, means for collecting the liquid retained in said separator at its substantially central portion, means to dispense said collected liquid into the interior of said liquid cooling apparatus, means for mounting said members in spaced relationship within said air supply opening and said open upper end.

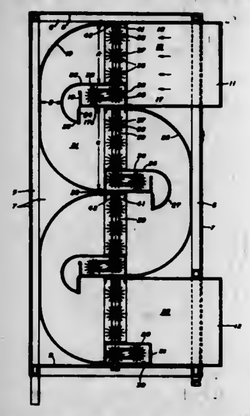
3,290,868
AIR CLEANER

Istvan Upor, Pittsburgh, Pa., assignor, by mesne assignments, to Air Kleener Corporation of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 28, 1964, Ser. No. 392,790
4 Claims. (Cl. 55—343)

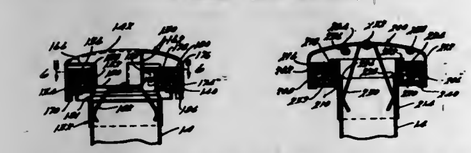
1. An air cleaner of the class described comprising a succession of stacked similar but alternately-reversed units through which the air to be cleaned flows in series, each unit having a horizontal passageway with an entering end and discharge end and with a horizontal divider plate therein set inwardly from its entering end positioned to divide the air flow into a lesser lower stream and a larger upper stream, means in the passage for the upper stream above the divider plate providing a curtain of flexible bristles through which the upper stream of air must flow, a dust-obstructing baffle below the divider plate extending crosswise of the lower stream and providing a passageway over the baffle and under the divider plate through which the lesser stream of air passes, means providing transverse rows of bristles under the divider plate in

advance of the baffle through which the lower stream of air flows, a curved sheet extending from the top of the upper unit at the discharge end of the passageway to the bottom of the entrance end of the unit next below, and



a curved sheet extending from the horizontal divider plate at the discharge end of the passageway of the upper unit and directing it into the top of the entering end of the passageway of the unit next below.

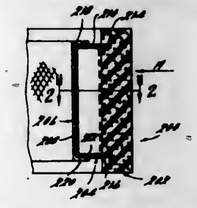
3,290,869
BREATHER CAP
Ervin C. Lentz, Jackson, Mich., and William G. McKenzie, Racine, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Original application Dec. 13, 1961, Ser. No. 159,124. Divided and this application June 8, 1962, Ser. No. 201,118
17 Claims. (Cl. 55—417)



4. A cap for use in a crankcase ventilating system and adapted for association with an air inlet tube, comprising: a cap member having a cover portion and an annular rim portion defining a cup-shaped cavity, inwardly depressed portions formed in said cover portion and extending into said cup-shaped cavity, a channel-shaped annulus having parallel inner and outer cylindrical side walls spaced and connected by an annular web portion, the outer cylindrical side wall being connected to said annular rim portion within said cup-shaped cavity and locating said channel shaped annulus in an outwardly opening position, tube means connected to the inner cylindrical side wall and having one end portion located inwardly beyond said web portion in said cup-shaped cavity and having another end portion located outwardly from said cup-shaped cavity beyond the end of said annular rim portion, passage means formed between said tube means and said annular rim portion and through said web portion and extending in said tube means, valve cavity forming means provided on the one end portion of said tube means to define a valve cavity in association with the inwardly depressed portion of said cover portion and the web portion of said channel-shaped annulus, and movable valve means mounted in said valve cavity for controlling flow through said passage means.

8. A cap assembly for association with an air inlet tube or the like comprising a cap member having a cup-shaped cavity defined by a cover portion and an annular side wall portion, a tube receiving sleeve mounted interiorly of said cap member, a radially extending flange member connecting said tube receiving sleeve and said annular side wall portion and dividing said cup-shaped cavity into a valve chamber and a filter chamber, said valve chamber and said filter chamber being circumferentially aligned and located outwardly circumjacent of said tube receiving sleeve, flow ports provided in said flange member and providing communication between said filter cavity and said valve cavity, one-way valve means mounted in said valve cavity for limiting flow through said flow ports to a direction from said filter chamber to said valve chamber, and air filter means mounted in and filling said filter chamber to filter all air passing through said flow ports.

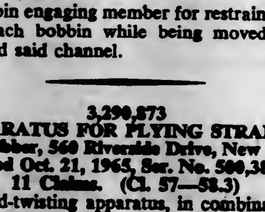
3,290,870
DISPOSABLE AIR FILTER FOR INTERNAL COMBUSTION ENGINES
Richard V. Jensen, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Nov. 21, 1963, Ser. No. 325,361
1 Claim. (Cl. 55—486)



A disposable filter unit comprised of an annular pleated paper filter media, first and second rigid end caps affixed in sealing relationship to opposite ends of said pleated paper filter media, said first and second end caps extending radially outwardly beyond the outer folds of said pleated paper filter media, a resilient annular body of open celled foamed filter media having an inner diameter less than the outer diameter of said first and second end caps and received around said pleated paper media, said resilient annular body extending axially beyond said first and said second end caps at each of its ends, first and second radially extending slots formed in said resilient body and opening into its inner diameter, said first and said second end caps being sealingly received in said first and second slots, respectively, the respective end portions of said resilient body extending axially beyond said first and said second end caps for resilient compression of said end portions upon insertion of said filter unit into an air filter housing for forming an air seal for said resilient body and for said pleated paper filter media.

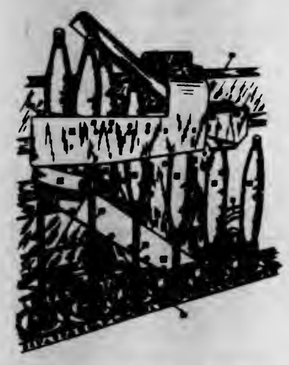
3,290,871
EMERGENCY BRAKE FOR INTERNAL COMBUSTION ENGINE
Lowell E. Haas, Maquoketa, Iowa, assignor to Clinton Engines Corporation, Maquoketa, Iowa, a corporation of Michigan
Filed July 20, 1964, Ser. No. 383,813
11 Claims. (Cl. 56—25.4)

1. In an internal combustion engine having a crankshaft and a driven element directly secured to said crankshaft so as to rotate with said crankshaft at all times, an emergency brake for stopping rotation of both the crankshaft and the driven element, comprising a part rotatable with the crankshaft of the engine and having a braking surface thereon, a brake element movable into and out of engagement with said braking surface, spring means urging said brake element into engagement with said braking surface, a cocking lever engageable with said brake element and movable to a cocked position for retaining said brake element out of engagement with said braking surface, catch means releasably holding said



cocking lever in said cocked position, and a control member connected to said catch means for releasing said catch means from said cocking lever whereby said spring means is effective to engage said brake element with said braking surface to substantially instantaneously stop said engine and said driven element.

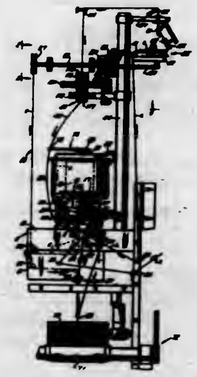
3,290,872
YARN SEVERING DEVICE
Herman Haagsma, Whitinsville, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Feb. 10, 1966, Ser. No. 526,464
9 Claims. (Cl. 57—53)



1. For a bobbin doffing machine having a bobbin raising cam movable with said machine along a parallel row of spindles, a yarn severing device comprising
(a) a bobbin butt supporting track disposed generally as a continuation of said raising cam,
(b) a bobbin guiding channel above said supporting track for directing the bobbins away from said row of spindles, and
(c) a bobbin engaging member for restraining from rotation each bobbin while being moved along said track and said channel.

3,290,873
APPARATUS FOR FLYING STRANDS
Alfred W. Visher, 560 Riverside Drive, New York, N.Y.
Filed Oct. 21, 1965, Ser. No. 500,387
11 Claims. (Cl. 57—58.3)

1. In strand-twisting apparatus, in combination, mechanism for rotating a travelling yarn strand material in the form of a loop, means beyond one end of the loop for feeding the strand at constant speed, and means for detecting the tension of the strand in the loop, said last named means comprising a body in the form of a rotatable solid of revolution mounted spaced from the loop to engage and divert the strand in the run thereof extending between the said one end of the loop and the means for feeding the strand at constant speed, passage of the strand over the body urging the body to rotate in the direction of travel of the strand in engagement therewith, means for yieldingly urging the body to rotate in



the opposite direction, movable means for controlling the size of the loop, a separate source of power for selectively driving the movable means, and means responsive to rotation of the body for controlling the application of power from said separate power source to the movable means for controlling the size of the loop.

3,290,874
GRAVITY PENDULUM CLOCK ESCAPEMENT
Solomon Edward Kopler, Chicago, Ill., assignor to Timette, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 26, 1964, Ser. No. 412,815
1 Claim. (Cl. 58—124)

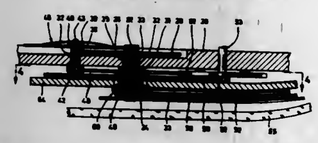


A battery-powered spring-driven clock having a train of clock gears and an escapement mechanism having a geared escapement wheel rotated by the clock gears, said escapement mechanism including
(a) a substantially U-shaped pallet pin plate providing laterally extending spaced apart parallel pallet pins alternately engaging the geared escapement wheel,
(b) a pivot shaft extending parallel to said pallet pins and fixedly journalled through said pallet pin plate for pivotally supporting the same so that the pallet pins alternately engage the geared escapement wheel,
(c) an escapement arm fixedly journalled on said shaft in spaced parallel relation with respect to said U-shaped pallet pin plate,
(d) a rigid elongated pendulum bar having a width less than the width of said escapement arm and connected thereof for supporting a pendulum for said escapement mechanism,
(e) said escapement arm having an opening formed therein adjacent one end for freely receiving a corresponding end of said pendulum bar,
(f) said pendulum bar providing at its one end a hook projecting into said opening formed in said escapement arm for connecting the same together for free limited movement relative to each other,
(g) said opening formed in said escapement arm having its bottom edge curved so as to provide a vary-

ing seat for said hook so that said pendulum bar may hang by gravity in a true vertical plane relative to said escapement arm,

(h) and a pendulum slidably supported on said pendulum bar for regulating the speed of oscillation thereof.

3,290,875
DIAL TRAIN ARRANGEMENT FOR AN ELECTRIC WATCH
Josef Egger, Heinz Meltinger, and Fred Esselborn, all of Pforzheim, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 18, 1965, Ser. No. 426,247
Claims priority, application Germany, Jan. 21, 1964, U 10,429
7 Claims. (Cl. 58—125)



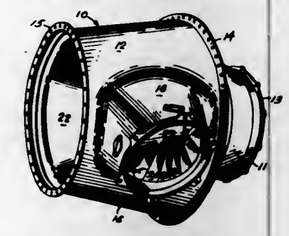
1. In an electric watch having a frame, an index wheel and a fourth wheel driven by the index wheel; a dial train arrangement comprising a third wheel, a third wheel staff pivoted in the frame and a third pinion, the third pinion and the third wheel arranged on the said third wheel staff; a center wheel connected to a center wheel tube pivoted in said frame; an hour wheel connected to an hour wheel tube; and a minute wheel and a minute pinion arranged on a staff pivoted in said frame; wherein the center wheel directly engages with the minute wheel and the minute pinion engages directly with the hour wheel.

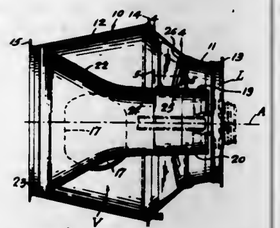
3,290,876
ENGINE EXHAUST GAS DECONTAMINATING DEVICE
Josef Ernst, Hardenbergstrasse 14, Hagen, Germany
Filed Feb. 3, 1965, Ser. No. 430,155
Claims priority, application Germany, Nov. 17, 1964, E 28,149
7 Claims. (Cl. 60—29)



1. An arrangement for decontaminating the exhaust gases of an internal combustion engine, said arrangement comprising: means forming first and second pluralities of chambers sequentially arranged in said exhaust conduit, the first plurality of chambers containing metallic pentoxide and the second plurality of chambers containing activated charcoal, said first and second pluralities of chambers being inter-spaced with each other so that a chamber from the first plurality is followed by the chamber of the second plurality which is followed by a chamber from the first plurality, and so on, said chambers having perforated walls; means forming a cylindrical housing about said first and second pluralities of chambers and having coupling means at its inlet and outlet ends for connection in the engine exhaust conduit; a plurality of perforated channels arranged axially in said housing for intercommunicating said first and second pluralities of chambers, said perforated channels communicating at their respective ends with said inlet and outlet coupling means to provide a continuous exhaust path through the arrangement, the exhaust gases entering said arrangement being at a temperature of at least about 100° C.

3,290,877
TURBINE ENGINE EXHAUST ARRANGEMENT
Douglas Arthur John Millar, Ottawa, Ontario, Canada, assignor to United Aircraft of Canada Limited, Longueuil, Quebec, Canada
Filed Dec. 14, 1964, Ser. No. 417,996
10 Claims. (Cl. 60—39.5)

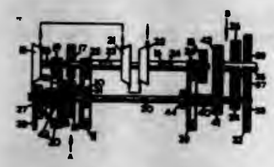




1. In an axial flow gas turbine engine having a last turbine stage from which gas exhausts with both axial and tangential velocities imparted thereto by said last turbine stage, an exhaust structure comprising interior ducting extending axially of the engine, exterior ducting extending axially of the engine, the interior and exterior ducting being relatively immovable with respect to one another and cooperating to define an exhaust volute and a ring-like passage of progressively increasing cross-sectional area forming an exhaust gas flow path from said last stage to said volute, parts of said exterior ducting defining an exhaust port extending laterally through said exterior ducting and placing said exhaust volute in communication with atmosphere, said exhaust port having its main axis tangentially arranged with respect to said interior ducting and vanes in said ring-like passage past which said gas flows while exhausting from said last stage to said volute, said vanes being adapted to guide said gas towards the tangential direction, while diminishing the axial velocity thereof, whereby the flow path of said gas in said volute is substantially around the axis of the engine and the gas exhausts smoothly through said port.

3,290,878
POWER TRANSMISSION SYSTEM FOR A GAS TURBINE ENGINE
Axel C. Wickman, 69 S. Washington Drive, St. Armand's Key, Sarasota, Fla.
Filed Dec. 7, 1964, Ser. No. 416,298
Claims priority, application Great Britain, Dec. 12, 1963, 49,213/63
15 Claims. (Cl. 60—39.16)

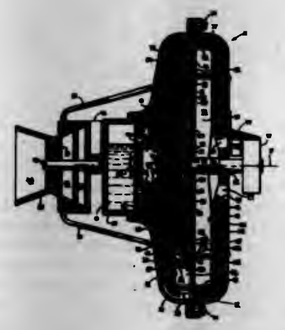
1. A power transmission system for a gas turbine engine including; a compressor, a first turbine rotor capable of driving said compressor at its full capacity, a power output shaft, a second turbine rotor connected to drive said power output shaft, said power transmission including an overdrive epicyclic gearing, a power input member to said overdrive epicyclic gearing, a power output member from said overdrive epicyclic gearing, a reduction gearing connecting said first turbine rotor to drive said power input member, a multiplication gearing connecting said power output member to drive said compressor, a drive shaft, a reaction member for said



overdrive epicyclic gearing, said reaction member being drivingly connected to said drive shaft, a common power output shaft, a further gearing connecting said drive shaft and the power output shaft of said second turbine rotor to drive said common power output shaft, and said further gearing being arranged for the power output shaft of said second turbine rotor to rotate slower than said first turbine rotor.

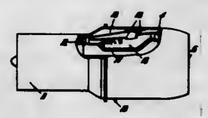
3,290,879
ROTARY ENGINE
Robert L. Wilkins, Indianapolis, Ind. (2316 Bay Drive, Miami Beach, Fla.)
Filed Apr. 8, 1965, Ser. No. 446,651
7 Claims. (Cl. 60—39.39)





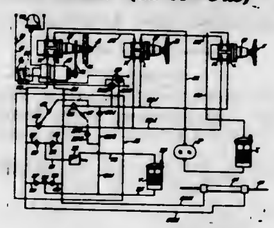
1. In a rotary engine, the combination comprising:
a case having a first cavity therein and having an axis,
said case having an air inlet opening therein,
combustion chamber means in said case;
a rotor mounted for rotation in said case on said axis, said rotor having means thereon disposed in said first cavity of said case and revolving about said axis and pumping fuel,
said fuel pumping means of said rotor including a plurality of fuel pumping blades beginning near said axis in said cavity and extending radially outward to receive fuel from fuel supply means and pump it outward in said cavity for mixture with compressed air,
said rotor including mixture distributor passageways therein having inlets near said axis and outlets remote from said axis and registrable with inlet means for said combustion chamber means as said rotor rotates on said axis in said case.

3,290,880
COMBUSTION EQUIPMENT FOR A GAS TURBINE ENGINE
John Richard Poyser, Spondon, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Jan. 15, 1965, Ser. No. 425,861
Claims priority, application Great Britain, Feb. 21, 1964, 7,469/64
5 Claims. (Cl. 60—39.65)



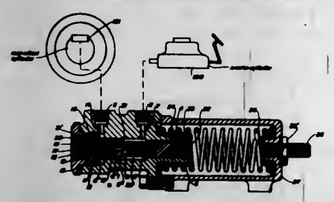
1. Combustion equipment for a gas turbine engine comprising: an elongate flame tube; ducting, including primary, secondary and dilution air ducts extending along the outer side only of and communicating with said flame tube and through which combustion air and dilution air may flow; and means for introducing combustion air and dilution air into said flame tube transversely thereof from said ducting.

3,290,881
HYDRAULIC CONTROL APPARATUS
Elmer J. Bosin, Maple Glen, Pa., assignor to Fluid Circuits Company, Ambler, Pa., a partnership of Pennsylvania
Filed Apr. 17, 1963, Ser. No. 273,736
8 Claims. (Cl. 60—54.5)



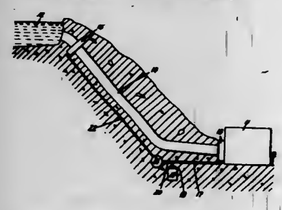
1. Hydraulic control apparatus, comprising in combination: a main control device including a reversible metering pump, a reversible fluid-operated control motor, main fluid conduit means between said main control device and said motor for operating the motor in opposite directions when the main control device is operated in opposite directions, an auxiliary control device including a reversible metering pump, auxiliary fluid conduit means between said auxiliary control device and said main fluid conduit means connected for replacing the action of the main control device by the action of said auxiliary control device, and valve means for isolating said auxiliary conduit means from said main conduit means when said main control device is operated.

3,290,882
BRAKE-FORCE CONTROL VALVE AND SYSTEM INCORPORATING SAME
Heinrich Oberthür, Offenbach-Rumpenheim, Germany, assignor to Alfred Teves, Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 22, 1965, Ser. No. 501,856
Claims priority, application Germany, Dec. 8, 1964, T 27,571
5 Claims. (Cl. 60—54.5)



1. A braking-force regulator adaptable for use in an automotive-vehicle hydraulic brake system having a master cylinder for generating braking pressure and at least one hydraulically actuatable wheel-brake cylinder, said regulator comprising:
a housing having an axial bore;
a differentially operable stepped piston received in said bore and axially shiftable therein while subdividing said bore into an inlet pressure chamber connectable with said master cylinder and an outlet pressure chamber connectable with said wheel-brake cylinder, said piston having a relatively large effective surface area exposed to fluid pressure in said inlet chamber and a relatively small effective surface area exposed to fluid pressure in said outlet chamber;
valve means in said piston for controlling the flow of hydraulic fluid between said chambers and including a valve member shiftable between open and closed positions upon movement of said piston;
elastically deformable cushion means in said housing engageable by said piston and forming a yieldable abutment therefor upon movement of said piston against the net hydraulic force applicable to same for holding said surface member in an open position while said piston abuts said cushion means; and
restoring means acting upon said piston against the net hydraulic force applicable thereto for urging said piston against said cushion means.

3,290,883
DRAG REDUCTION IN HYDRAULIC EQUIPMENT
Walter B. Giles and Hansjoerg Stern, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,951
10 Claims. (Cl. 60—55)



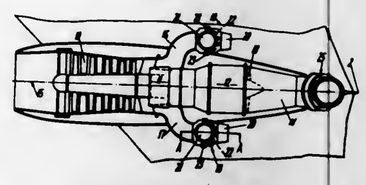
1. A method of reducing frictional drag in hydraulic systems comprising the steps of
adding a viscoelastic, water soluble, linear, high molecular weight, polymer to the flow stream before it enters the equipment so that in passing therethrough it will substantially reduce frictional drag therein, and
recirculating a portion of the polymer that passes through the system to make maximum use thereof.

3,290,884
POWER SYSTEM
James C. Rainey, Grove City, Pa.
Filed Feb. 2, 1966, Ser. No. 533,748
6 Claims. (Cl. 60—59)



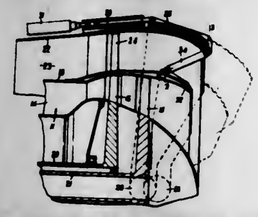
1. A power system comprising a turbine including a turbine housing, a shaft, a rotor mounted on said shaft, said rotor having a plurality of blades spaced around the periphery thereof, exhaust means for receiving power air from said turbine, and means for supplying power air to said turbine including a tank for containing power air and a liquid, means for controlling the level of liquid in said tank, means for recirculating liquid in said tank, means for circulating power air from said tank to said liquid recirculating means, and a supply passage for supplying power air to said turbine.

3,290,885
GAS TURBINE JET PROPULSION ENGINE FOR V.T.O.L. AIRCRAFT
Samuel David Thomas, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed June 29, 1964, Ser. No. 378,825
Claims priority, application Great Britain, July 16, 1963, 28,194/63
8 Claims. (Cl. 60—226)



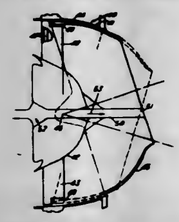
1. A gas turbine jet propulsion engine having compressor means, combustion equipment, turbine means and a jet pipe for exhaust gases, all arranged in flow series, said engine also being provided with two ducts disposed symmetrically on opposite sides of the longitudinal axis of the engine and adapted to be supplied directly with some of the air compressed by said compressor means, a pair of fixed propulsion nozzles having their axes inclined at a fixed angle to each other and mounted in each duct for receiving air conducted by said ducts, and valve means associated with each pair of propulsion nozzles for permitting the compressed air to flow through a selected one of the pair of propulsion nozzles, and for simultaneously preventing the compressed air from flowing through the other propulsion nozzle.

3,290,886
GAS TURBINE ENGINE WITH PIVOTALLY INTERCONNECTED DEFLECTOR MEMBERS
William Thomas Monaghan, Bulwell, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Oct. 26, 1964, Ser. No. 406,263
Claims priority, application Great Britain, Oct. 28, 1963, 42,503/63
4 Claims. (Cl. 60—226)



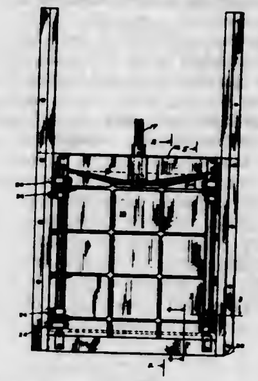
1. A gas turbine engine having inner and outer engine casings defining an annular gas duct; compressor means, combustion equipment, and turbine means arranged in flow series within said gas duct; an outer casing annularly surrounding the downstream end of said outer engine casing and defining therewith an annular air duct, the air duct discharging its air to atmosphere in the form of an annulus surrounding the turbine exhaust gases, an exhaust gas deflector member pivotally mounted at the downstream end of the outer engine casing; a ducted air deflector member pivotally mounted, independently of the gas deflector member, at the downstream end of the outer casing; a link extending between and pivotally connected to both said deflector members; and power means directly connected to the said ducted air deflector member, said power means being operable to move the said ducted air deflector member and hence, via said link, to move the said exhaust gas deflector member.

3,290,887
SWIVELABLE NOZZLE FOR A JET ENGINE
Horace Poole, Bulwell, Nottingham, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Feb. 15, 1965, Ser. No. 432,579
11 Claims. (Cl. 60—229)



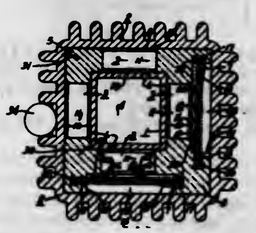
8. A jet engine comprising: a main nozzle; a further nozzle comprising a part-spherical convergent outer member, a single part-spherical convergent inner member swivelable with respect to the outer member to alter the direction of jet gases passing through the inner member when they leave the same, said inner member being mounted within and spaced inwardly from said outer member to define an annular part-spherical convergent gas passage therebetween, said gas passage between said outer member and said inner member insuring that jet gases supplied to the further nozzle and passing through said gas passage contribute to the thrust produced by the further nozzle when discharged from the gas passage; and valve means having respective positions in which jet gases flow respectively through said main nozzle and through said further nozzle.

3,290,888
SLUICE GATE
Charles E. Palmer, Robert H. Palmer, and John A. Oldenburg, Lake City, Pa., assignors to Palmer Filter Equipment Company, Erie, Pa., a partnership firm
Filed May 23, 1963, Ser. No. 282,767
3 Claims. (Cl. 61—28)



2. A sluice gate comprising
a frame,
a channel in each side of said frame with the openings in said channels facing each other,
a sealing member around said frame,
a gate,
said gate having vertically and laterally spaced lugs thereon,
a pair of links at each said lug having one end of each link of each said pair swingably attached to the lug adjacent thereto on an axle,
an operating truss having a rod at each side thereof extending parallel to said channels,
a roller attached to each distal end of said links and disposed in one said channel,
a sleeve attached to each said roller and slidably receiving a said rod,
a spring between said sleeves,
said sleeves being disposed on said rods,
and means between two adjacent said sleeves on each said rod for urging them to compress said spring, moving them together and moving said gate into sealing engagement with said sealing member when said gate is in an operative position.

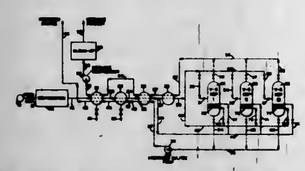
3,290,889
THERMAL JUNCTION THERMOSTATIC CHAMBER
Kazukuni Nii, Nishinomiya, Japan, assignor to Sumitomo Electric Industries, Ltd., Osaka, Japan, a corporation of Japan
Filed Mar. 11, 1965, Ser. No. 439,821
15 Claims. (Cl. 62—3)



1. A thermostatic chamber for heating and cooling objects and including an outer housing with an annular wall

of high thermal conductivity, an inner housing with an annular wall of high thermal conductivity and mounted in said outer housing, an annular insulating mouth connecting both housings leading into a chamber in said inner housing to contain the objects to be treated, an insulating lid closing said annular mouth in both housings, insulation means between the walls of adjacent housings including said annular mouth, a plurality of thermal junctions including semiconductors having their oppositely facing ends directly connected to parallel walls of high thermal conductivity, a plurality of aligned heat exchange surfaces on said adjacent housing walls and on said parallel thermal junction walls in continuous thermal conducting relation to each other to complete a thermal exchange circuit between said chambers, and means to connect said thermal junctions in an electrical circuit to transfer heat relative to said inner chamber, and a movable means of high thermal conductivity material having oppositely disposed heat conducting surfaces and interposed between at least two of said mating adjacent heat exchange surfaces to compensate for the relative expansion and retraction movement between said continuous thermal conducting heat exchange surfaces of said inner and outer housings.

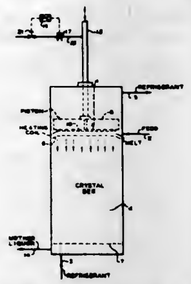
3,290,890
SEPARATION OF H_2S FROM HYDROCARBON IN A GAS-SOLID SYSTEM
Bruce G. Bray, Ponca City, Okla., and George W. Swift, Lawrence, Kans., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed Mar. 27, 1964, Ser. No. 355,237
8 Claims. (Cl. 62—12)



1. A low temperature process for separating hydrogen sulfide from a normally gaseous hydrocarbon which process comprises:
cooling a feed gas mixture of hydrogen sulfide and at least one normally gaseous hydrocarbon, said feed containing about 3–90 mole percent of hydrogen sulfide and methane as the major hydrocarbon constituent and being essentially free of water vapor, to produce a system consisting of gaseous hydrocarbon and solid hydrogen sulfide, said cooling being carried out to a temperature between about —126° F. and —200° F. and at a pressure between approximately 150 p.s.i.a. and 450 p.s.i.a.; such that said gas-solid system is formed; and
separating said gaseous hydrocarbon phase which has a hydrogen sulfide content lower than said feed, from said solid hydrogen sulfide phase.

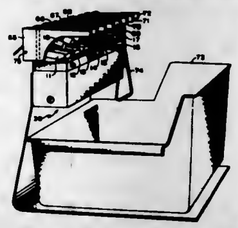
3,290,891
BATCH CRYSTAL PURIFICATION
Merritt V. De Lano, Jr., and Donald C. Tabler, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed May 2, 1963, Ser. No. 277,636
3 Claims. (Cl. 62—58)

1. A batch process for the separation of at least one component from a liquid mixture comprising cooling said liquid in an elongate confined batch cooling zone to form a bed of crystals, melting said crystals to form a melt by the movement of a heated piston against one surface of said crystal bed, maintaining intimate contact between said piston and the melt trapped between said piston and said surface, moving said piston toward the opposite end portion of said crystal bed without moving said bed as said surface melts, said piston forcing a portion of said melt into the surface as reflux, removing adherent mother



liquor from said opposite end portion of said zone, permitting the remainder of said melt to pass through at least one passageway in said piston and withdrawing said remainder of the melt from said zone.

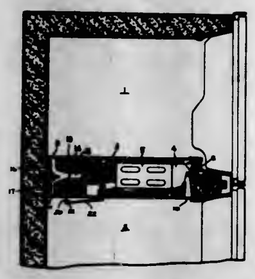
3,290,892
AUTOMATIC ICE MAKING MACHINE
Henry E. Roedter, 538 Clinton Springs Ave., Cincinnati, Ohio
Filed Oct. 21, 1964, Ser. No. 405,358
5 Claims. (Cl. 62—137)



4. In an automatic ice maker of the type including a plurality of mold cavities, individual flexible liners secured within said cavities, means for supplying water to said liners when the liners are non-inverted and disposed within the mold cavities, means for supplying a refrigerated environment for freezing said water, a reservoir for working fluid, reversible pumping means for withdrawing working fluid from or returning it to the reservoir, and a heater for melting the ice to aid in the ejection, the improvement which comprises in combination:
a thermostat having an open condition and a closed condition for indicating the presence of ice in the molds,
a harvesting relay in circuit with said thermostat and adapted to be energized when the thermostat is in closed condition, said relay including a relay holding circuit,
a programming device comprising a motor having a motor holding circuit and a plural-circuit cam switch driven by said motor, said cam switch including harvest-enabling means in series with said relay holding circuit, said relay further including ejection-ordering means adapted to cause the reversible pumping means to withdraw fluid from the reservoir and force it beneath said liners, whereby the liners are inverted and eject the ice, and to energize the heater whereby the ejection is aided,
means sensitive to the absence of ice in the molds for starting said timer motor, said plural circuit cam-switch further including the following contact means,
means for closing the motor holding circuit,

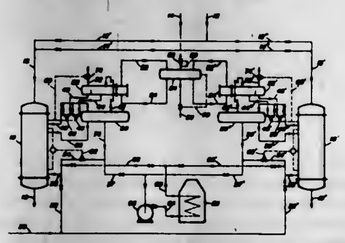
means for causing the reversible pumping means to return working fluid to the reservoir whereby the liners are restored to their normal positions,
and means for controlling the water supply means to supply water to said molds.

3,290,893
HOUSEHOLD REFRIGERATOR
Akis Haldopoulos, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1965, Ser. No. 491,130
4 Claims. (Cl. 62—187)



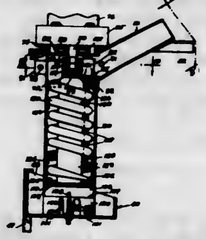
1. In a refrigerator including first and second storage compartments and means for supplying refrigerated air to both of said compartments, the improvement which comprises a fluid amplifier in said air supplying means, said fluid amplifier including a main inlet for refrigerated air, a first outlet communicating with said first compartment, a second outlet communicating with said second compartment, a control port and means responsive to the temperature in one of said compartments for controlling air flow through said control port to change the balance of air flow to said compartments.

3,290,894
COOLING SYSTEM FOR REACTOR
Utah Tsao, Jersey City, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 426,752
8 Claims. (Cl. 62—216)



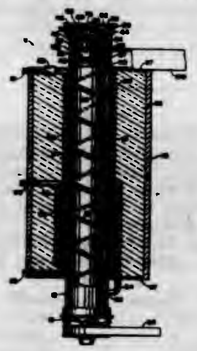
1. Cooling system for reactor tubes that comprises, shell means surrounding said reactor tubes;
inlet means for supplying liquid coolant to said shell and outlet means for withdrawing vaporized coolant from said shell;
condenser means for receiving said vaporized coolant, said condenser means including a first portion having sufficient cooling surface to condense gases at normal operating temperature and pressure and a second portion having sufficient cooling surface to condense gases of extraordinary temperature and pressure;
conduit means for withdrawing liquid coolant from said condenser means;
surge drum means for receiving liquid coolant from said condenser and conduit means and vaporized coolant from said outlet means, and allowing direct heat exchange therebetween;
means for supplying said vaporized coolant to said condenser means from said surge drum means; and
means for supplying liquid coolant to said inlet means from said surge drum means.

3,290,895
APPARATUS FOR MAKING FLAKE ICE
Louis J. Schneider and Russell F. Hackman, Chicago, Ill., assignors to Ross-Temp, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 18, 1959, Ser. No. 794,010
16 Claims. (Cl. 62—298)



2. In an ice-making apparatus comprising an upright cylindrical vessel for containing water to be made into ice, the vessel containing an upright refrigerated ice-making cylinder surrounded by an ice remover which is turnable to remove ice formed around the cylinder, a vane fixed with the vessel, said vane extending radially inwardly of said vessel and extending upwardly therein for a substantial portion of the height of said vessel upwardly outside the ice remover in an out-of-contact relation therewith during normal operation of said apparatus and in a position to engage removed ice carried around between the ice remover and the vessel, one of the items comprising the said one vane and the said ice remover being of a spiral form to raise the last said ice by screw action.

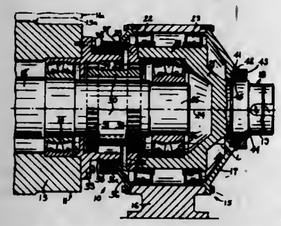
3,290,896
SALT WATER ICE MAKING MACHINE HAVING CLEANING PIN
Leonard A. Stiller, Fort Lauderdale, Fla., assignor to Lasco Industries, Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed Oct. 21, 1965, Ser. No. 499,815
5 Claims. (Cl. 62—320)



1. An ice making machine comprising an upright cylinder defining an elongated cylindrical freezing chamber therein, said cylinder having an inlet adjacent its lower end for the introduction of water to said chamber, means

for chilling said chamber to form ice on the wall thereof, said cylinder having an outlet adjacent the upper end thereof for the discharge of ice formed on said chamber wall, an auger mounted in said chamber for rotation and having a helical rib for removing ice formed on said chamber wall and delivering the same axially toward said outlet, a combined bearing and ice deflecting member secured to said cylinder within the upper end of said chamber and providing a bearing for the upper end of said auger, said member having a lower portion presenting a cylindrical surface opposite said outlet, said cylindrical surface being of smaller diameter than said chamber wall and concentric therewith to provide an annular space between said cylindrical surface and said chamber wall, said member having an outwardly and upwardly flaring frusto-conical surface at the upper end of said cylindrical surface extending outward to said chamber wall to deflect ice delivered upwardly by said auger in an outward direction through said outlet, and a disintegrating member carried by and rotatable with said auger and extending into said annular space for breaking up and preventing an accumulation of ice about said deflecting member and outlet.

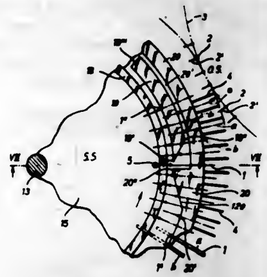
3,290,897
DRIVE FOR SHELL TYPE ROLLS
Howard E. Kuehn, Orange, Conn., assignor to Farrel Corporation, Ansonia, Conn.
Filed May 26, 1965, Ser. No. 458,996
12 Claims. (Cl. 64—9)



1. A drive mechanism for a shell type calender roll comprising a shaft, a hollow calender roll, bearing means rotatably mounting said hollow roll on said shaft, pedestal means, a driving member rotatably mounted within said pedestal means, bearing means disposed between one end of said shaft and said driving member supporting said end of said shaft on said pedestal through said drive means, torque transmitting means interconnecting said driving member and said hollow roll, and sealing means disposed about said transmitting member and defining with said pedestal means a reservoir for retaining lubricants for all of said bearing means and said torque transmitting means.

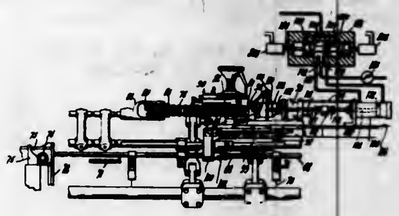
3,290,898
PATTERN CONTROL ARRANGEMENT FOR CIRCULAR KNITTING MACHINE
Johann A. Schaeder, Merzhausen, near Freiburg im Breisgau, and Richard Schmidt, Stuttgart-Vaihingen, Germany, assignors to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Apr. 20, 1964, Ser. No. 361,311
Claims priority, application Germany, Jan. 13, 1964, M 59,516
20 Claims. (Cl. 66—50)

1. A pattern control arrangement for a knitting machine, comprising, in combination, support means; carrier means supported on said support means for rotation, and turning during each revolution past at least one selecting station and operating station; a plurality of needle-influencing elements carried by said carrier means for rotation therewith, and for movement relative thereto between inoperative and operative positions, and adapted to cooperate in said operative position with needles located at the operating station; control means including pneumatic means located at the selecting station for causing movement of selected needle-influencing elements to said operative position so that said needles will be influenced when selected needle-influencing elements are at



the operating station in said operative position; and return cam means fixedly supported on said support means and acting on the selected needle-influencing elements while the same are moved by said carrier means from said operating station to said selecting station, and being constructed to return said selected elements from said operative position to said inoperative position before each element arrives at the selecting station.

3,290,899
CABLING LACE ATTACHMENT
Angel Kaltsas and Garabed Kinosian, Worcester, and Robert F. Javery, Oxford, Mass., assignors to M.K.M. Knitting Mills, Inc., Manchester, N.H., a corporation of New Hampshire
Filed June 30, 1964, Ser. No. 379,226
5 Claims. (Cl. 66—96)



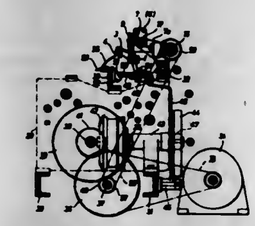
2. A lace attachment for a flat full-fashioned cotton-type knitting machine having knitting devices including a series of needles movable as a unit, a narrowing frame adapted for loop taking and loop return dipping movements in accordance with a loop transfer cycle, and a lace bar having needle engaging loop transfer points axially shiftable on said narrowing frame having, in combination, a lace point transfer assembly comprising a slide on the narrowing frame connected with the lace bar for shifting the lace bar, a stop on the narrowing frame, and means biasing the slide against said stop, a spacing device interposed between the slide and said stop having a normal position and an alternative shifted position in which said slide and lace bar are transferred a needle index toward said stop, a high speed shift device independent of said spacing device connected between said stop and said slide having a normal position and an alternative shifted position in which said slide and lace bar are transferred away from said stop a plurality of needle indexes, and actuating means timed with said narrowing machine dipping movements for rendering a selected one of said spacing device and said high speed shifting device operative to shift said slide and lace bar from the normal to the shifted position.

3,290,900
KNITTING MACHINE ELEMENTS
Richard H. Whitehead, Laconia, N.H., assignor to Scott & Williams, Incorporated, Laconia, N.H., a corporation of Massachusetts
Filed July 10, 1963, Ser. No. 293,980
5 Claims. (Cl. 66—115)



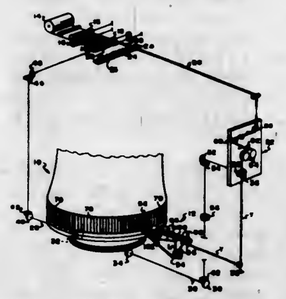
1. A slotted member for supporting and guiding movable stitch handling elements in a knitting machine comprising, means forming individual slot elements, means defining a passage through each said slot element, means defining spaces because said slot elements, said spaces and passages being interconnected, and means forming a matrix of bonding material filling said spaces and passages, to secure said slot elements to one another and to maintain said slot elements in a fixed space relationship with one another.

3,290,901
SHOCK ABSORBING APPARATUS FOR STRAIGHT BAR KNITTING MACHINES
Hans Scheller, Fauradau, Germany, assignor to Firma Gebr. Scheller Textilmaschinenfabrik, Ebelingen-Fils, Germany
Filed June 2, 1964, Ser. No. 372,025
Claims priority, application Germany, June 6, 1963, Sch 33,383
20 Claims. (Cl. 66—130)



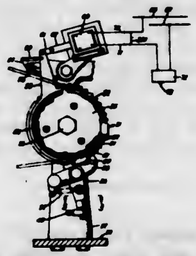
1. Shock absorbing apparatus comprising, in combination, control shaft means; means for rotating said control shaft means at a selected speed; supporting means; shock absorbing means mounted on said supporting means for turning movement; an overrunning clutch connecting said shock absorbing means with said control shaft means and having a position of rest in which said overrunning clutch is disengaged; and a reciprocable member driven to move in one direction at a speed having a predetermined ratio to said selected speed of said control shaft means and engaging said shock absorbing means near the end of a reciprocating stroke whereby said shock absorbing means is turned at such a speed that said overrunning clutch is engaged and said control shaft means turns said shock absorbing means at said selected speed whereby the speed of further movement of said reciprocable member cannot exceed the speed component of the rotary speed of said shock absorbing means in said direction of movement of said reciprocating member.

3,290,902
KNITTING APPARATUS AND METHOD
William P. Warthen, Spartanburg, S.C., assignor to Dearing Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Jan. 14, 1964, Ser. No. 337,576
13 Claims. (Cl. 66—132)



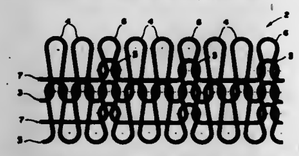
1. Apparatus for knitting fabric comprising: a knitting machine, said knitting machine including means to form loops of predetermined size, means supplying yarn to said knitting machine at a substantially constant rate, means forming an elongated loop of yarn in said yarn between said knitting machine and said constant yarn supply means and means to vary the loop size in the fabric being knit in response to the rate of take-up of yarn by the knitting machine, said loop varying means including a lever arm, one portion of said lever arm being connected to said loop forming means, another portion of said lever arm engaging and being moved by said elongated loop whereby a change in depth of said elongated loop will change the position of said loop forming means.

3,290,903
PATTERN CHAIN CONTROL MEANS FOR KNITTING MACHINES
James D. Moyer, Wyomissing, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1964, Ser. No. 335,514
24 Claims. (Cl. 66—155)



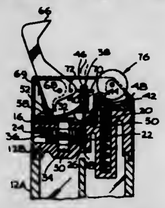
1. In a circular knitting machine having a course counting chain for controlling the formation of stocking fabrics on said machine, means for advancing said chain through a course counting cycle during the formation of each stocking fabric, and control means for said advancing means including a member having a first position for causing said chain to be advanced by said advancing means in steps of one extent and a second position for causing said advancing means to advance said chain in steps of another extent, a first means for normally moving said member to said first position, a second means for moving said member to said second position, and adjustable means independent of the chain for controlling operation of said second moving means to move said member from said first position to said second position.

3,290,904
COMPRESSIVE HOSE AND METHOD OF MAKING SAME
Melvin E. Snyder, Lenoport, Pa., assignor to Camp and Mclintock, Inc., Reading, Pa.
Filed Apr. 17, 1964, Ser. No. 360,519
1 Claim. (Cl. 66—200)



A circular compressive rib fabric comprising,
(a) alternating courses of elastic yarn and intermediate courses of relatively inelastic yarn,
(b) said elastic yarn knitted in the rib wales, and floating behind a plural number of plain wales,
(c) said inelastic yarn knitted into elongated plain stitches between said normal stitches in said rib wales.

3,290,905
LIGHTER
Patrick R. J. Court, 360 Bonhill Road, Los Angeles, Calif.
Filed Sept. 25, 1964, Ser. No. 399,314
13 Claims. (Cl. 67—7.1)



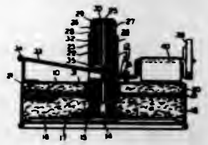
1. In a lighter arrangement, a fuel tank arranged to contain a volatile fuel, said lighter arrangement having a first passage extending in one direction through one side of said tank to afford the escape therefrom of vaporized fuel, said first passage having disposed therein a flow regulating element comprising compactible fibrous material providing a plurality of erratic paths therethrough to accommodate said flow of said vaporized fuel, and a second passage extending substantially at right angles to said first passage and intersecting said first passage, said second passage including means to controllably vary the compaction of said material and thereby control the rate of flow of the vaporized fuel through said passage means.

3,290,906
MINIATURE LAMP
Werner Schilling and Hans Wiedenmann, Heidenheim (Brenz), Germany, assignors to Patent-Treuhand-Gesellschaft fur Elektrische Gluhlampen m.b.H., Munich, Germany, a corporation of Germany
Filed July 6, 1964, Ser. No. 380,208
Claims priority, application Germany, July 16, 1963, P 32,213
5 Claims. (Cl. 67—31)



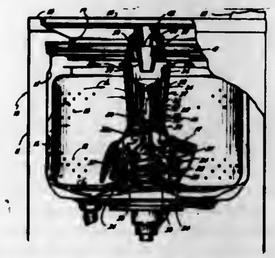
1. A miniature lamp with a glass envelope and integral flattened press serving as the base, characterized in that pinched into the flattened press in direct and permanently sealing contact with the glass thereof there is a thin-walled tubulation of copper through which the lamp is filled with gas, said copper tubulation having a mechanical pinch near the place at which it comes out of said flattened press thereby providing a closure for said tubulation.

3,290,907
APPARATUS FOR BURNING SPIRIT AND SIMILAR LIQUID FUELS
Karl Oskar Arne Bolj, Vasagatan 18, Tranas, Sweden, and Bertil Karl Axel Johansson, deceased, late of Tranas, Sweden, by Ake Erik Alexander Almqvist, administrator, Dunderbacksgatan 2, Eksjo, Sweden
Filed Dec. 26, 1963, Ser. No. 334,689
Claims priority, application Sweden, Dec. 31, 1962, 14,179/62
2 Claims. (Cl. 67—80)



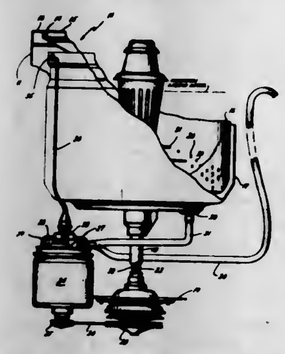
1. Apparatus for burning spirit or similar fuel, comprising a fuel container containing a fuel absorptive usually porous mass and a wick in contact with the absorptive mass and adapted to transfer fuel from the absorptive mass to the point of combustion, in which there is disposed within the fuel container a lower fuel absorptive filling layer and superposed thereon a filling layer having relatively large pores, and between the large-pored filling layer and the top wall of the fuel container a second fuel absorptive layer, the said second fuel absorptive layer communicating through a wick with the bottom layer of fuel absorptive material.

3,290,908
WASH-CONDITIONER DISPENSING MEANS FOR CLOTHES WASHING MACHINES
William E. McAllister, Atco, N.J., and Joseph Martella, Jr., Philadelphia, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,178
9 Claims. (Cl. 68—17)



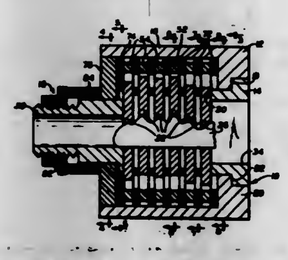
9. In a washing machine having a wash basket adapted to be filled with wash fluid to a predetermined level, and hollow agitator means within said basket, apparatus for automatically adding rinsing agent liquid to wash fluid in said basket, comprising: hollow post means mounted on said basket and extending upwardly from said agitator means, said hollow post means further being disposed to be partially immersed in wash fluid within the basket; means defining a fluid flow path leading from said basket, downwardly through said post means and said hollow agitator, outwardly of the bottom of said basket and inwardly of lateral wall portions of said basket; and means contained within said post means and adapted to receive and to retain rinsing agent liquid, and further operable to dispense the same into said agitator for entrainment by wash fluid traversing the recited fluid flow path.

3,290,909
LAUNDRY APPARATUS
Joseph A. Schwing, Penndel, Pa., and Ivan J. Danylenko, Somerdale, N.J., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,193
7 Claims. (Cl. 68—23)



1. In a washing machine including a tub adapted to contain liquid, and a drain pump for said tub disposed at a level below the minimum liquid level in said tub, said pump including an impeller and a housing for the latter provided with an inlet port connected to a portion of said tub disposed below said minimum level and an outlet port adapted for connection to a drain disposed above the maximum liquid level in said tub, means for preventing air locking of said pump, comprising: an air bleed port for an upper portion of said housing; and open ended conduit means extending from said air bleed port and having its open end disposed for air flow communication with the ambient atmosphere, during operation of said pump, at a level substantially above the level of said inlet port of said pump housing, said conduit means including one portion that extends upwardly to a region adjacent the upper portion of said tub, and another portion that extends downwardly and has its open end communicating with said tub through a lateral wall portion thereof.

3,290,910
ADJUSTABLE KEY LOCK ASSEMBLY
Lawrence J. Laviana, Kensington, Conn., assignor to M. H. Rhodes, Inc., Hartford, Conn., a corporation of Connecticut
Filed June 12, 1964, Ser. No. 374,723
5 Claims. (Cl. 70—383)



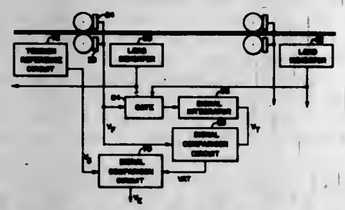
1. An adjustable lock comprising, a shell having a hollow interior chamber, a rotatable cylinder disposed within said chamber substantially centrally thereof, said cylinder being rotatable to and from a locked position and from and to an unlocked position perpendicular to said locked position, a plurality of tumblers carried by said cylinder and being movable transversely of the axis of rotation thereof, and a plurality of planar housings within said chamber, one housing for each tumbler, said housings each having an oval central aperture with the major axis thereof aligned with the position of the tumbler in the unlocked position of said cylinder, a pair of notches in each of said housings aligned along the minor axis of said oval, the dimension of said central apertures along said minor axis, excluding said notches, being slightly larger than the lengths of said tumblers, each tumbler being disposed within the central aperture of its associated housing, and being adapted to bear against the surface of said housing defining said central aperture, each housing being proportioned relative to said shell chamber to permit bodily movement of the housing along the minor axis of said aperture, a movable plate for closing said shell chamber, a compression spring between said movable plate and said housings for exerting a releasable holding force on said housings, and adjustable means for moving said movable plate longitudinally toward said spring to exert a force for fully compressing said spring and for holding said movable plate within said shell, whereby to exert a holding action on said housings for fixedly positioning said housings in said shell chamber, and where reducing said fully compressing force to a light holding force, by releasing said adjustable means, permits said bodily movement of said housings.

3,290,911
KEY RETAINERS
Samuel Segal, deceased, late of New York, N.Y., by Leonard Segal, executor, New York, N.Y., assignor to Segal Products Corp., New York, N.Y., a corporation of New York
Substituted for abandoned application Ser. No. 145,050, Oct. 16, 1961. This application Oct. 21, 1964, Ser. No. 406,975
5 Claims. (Cl. 70—459)



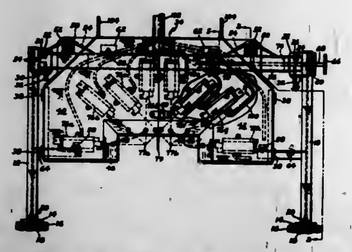
1. A key holder comprising a wire having a straight end section, a section extending at an angle slightly less than 90° to said straight end section, said angularly disposed section intersecting the longitudinal axis of said straight section in spaced relationship to the outer end of said straight end section, a sleeve having a closed end and an open end, said sleeve slidably mounted on said straight end section, a wire spring within said sleeve, said open end of said sleeve having an internal annular shoulder to prevent removal of said spring, a portion of said spring projecting inwardly from the inner surface of said sleeve beyond the inner edge of said internal annular shoulder and engaging said straight end section, said spring urging said closed end of said sleeve axially outwardly relative to said straight end section, whereby said closed end of said sleeve is held in abutment with said angularly disposed section.

3,290,912
ROLLING MILL CONTROL APPARATUS
Warren Reid, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 20, 1964, Ser. No. 346,270
5 Claims. (Cl. 72—9)



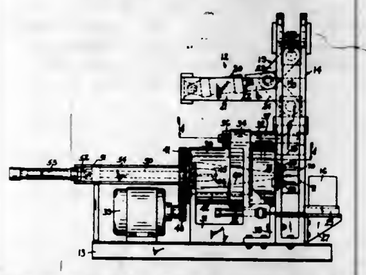
1. In strip tension control apparatus for a rolling mill having a first stand and a second stand, with each stand including a frame and having top and bottom rolls between which the strip passes, the combination of force sensing means operative with said first stand and being positioned between said frame and at least one of said rolls of the first stand for providing a control signal that varies in accordance with the force between said frame and said one roll when the strip is passing between the top and bottom rolls of the first stand, signal providing means operative with said first control signal and being responsive to the strip being present between the rolls of the first stand and being responsive to the strip being present between the rolls of the second stand to provide a second control signal in accordance with the difference in said force prior to the strip being between the rolls of the second stand and after the strip is between the rolls of the second stand, and strip tension control means operative with at least one of said stands for controlling in accordance with the second control signal the tension in said strip passing between the first stand and the second stand.

3,290,913
INFRARED MICROMETER MOUNTING MEANS
Norman A. Wilson, Westboro, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Feb. 4, 1964, Ser. No. 342,444
8 Claims. (Cl. 72—12)



1. In a multi-strand rolling mill, means for continuously gauging each strand comprising the combination of: a fixed supporting structure mounted adjacent the pass line; a rod gauge carrying element adjustably mounted on said supporting structure in a position overlying said pass line; means for vertically and horizontally adjusting said rod gauge carrying element on said supporting structure in order to accommodate lateral and vertical shifts of the pass line; a plurality of rod gauging devices protectively mounted within said carrying element; and adjusting means for aiming and focusing each of said gauging devices in order to gauge each of said strands from a plurality of directions.

3,290,914
METHOD AND APPARATUS FOR FORMING CYLINDRICAL SHAPES
John L. Vaill and Frank W. Scans, Waterbury, Conn., assignors to The Vaill Engineering Company, Waterbury, Conn.
Filed Aug. 28, 1963, Ser. No. 305,126
10 Claims. (Cl. 72—117)

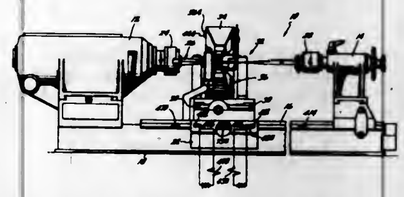


1. The method of shaping a portion of a cylindrical article radially outwardly against a circular die seat of a die comprising the steps of clamping a cylindrical article in the die with a portion thereof adjacent the die seat, guidably moving force-producing members radially outwardly from the center of the die to produce equal and opposite radially directed forces on the inner surface of the article adjacent the die seat, imparting equal angular velocities to the force-producing members while moving the force-producing members outwardly, and ceasing outward movement of said force-producing members after forming the portion and continuing rotation of said force-producing members for a period of time to work the portion against the die seat.

ERRATUM

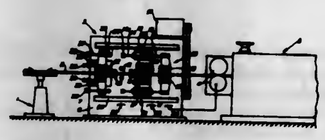
For Class 72—203 see:
Patent No. 3,290,936

3,290,915
MACHINE FOR COLD-ROLLING A NONUNIFORM SURFACE
Robert W. Cornell, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,941
10 Claims. (Cl. 72—240)



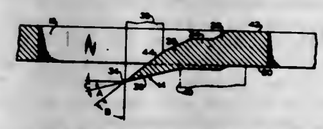
1. A machine adapted to increase the fatigue strength life of a metallic blade having a nonuniform surface comprising means for supporting the blade in a rotary and nonrotary position, a saddle movable in sliding longitudinal relation with respect to the blade, an oscillating fixture slidably mounted on the saddle and movable in lateral relation to the blade, squeeze rollers carried by the oscillating fixtures adapted to engage the blade, means including a hydraulic actuated piston for applying pressure to said squeeze rollers and control means for regulating the pressure at a schedule when the oscillating fixture moves laterally with respect to the blade when in a nonrotating position, and additional control means for regulating the pressure at a predetermined schedule when the saddle moves longitudinally with respect to the blade when in a rotating position.

3,290,916
WIRE DRAWING APPARATUS
Claus Louis, Solingen, and Karl Hilgers, Duesseldorf, Germany, assignors to Friedrich Karl Koch, proprietor of Peltzer & Ehlers K.G., Krefeld, Germany
Filed July 13, 1962, Ser. No. 209,658
Claims priority, application Germany, July 27, 1961, P 27,612
8 Claims. (Cl. 72—285)



1. A wire-drawing apparatus for substantially intermittently advancing a wire for further processing while reducing its cross-section, said apparatus comprising:
intermittently operable feed means engageable with said wire upon reduction of its cross-section for displacing same in a forward direction;
support means rearwardly of said feed means forming a substantially linear guide path in said direction;
drawing-die means movably mounted on said support means for reciprocation along said guide path;
clamping means mounted upon said drawing-die means and reciprocable relatively thereto in said direction for releasable entrainment of said wire through said drawing-die means;
fluid-responsive means on said drawing-die means connected with said clamping means for reciprocably displacing the latter relatively to said drawing-die means; and
drive means connectable with said feed means for advancing said wire in said direction together with said drawing-die means and said clamping means.

3,290,917
METHOD OF PRODUCING A CUTTING TOOL
Jules M. Dos, Naugatuck, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed July 24, 1963, Ser. No. 297,249
4 Claims. (Cl. 72—333)



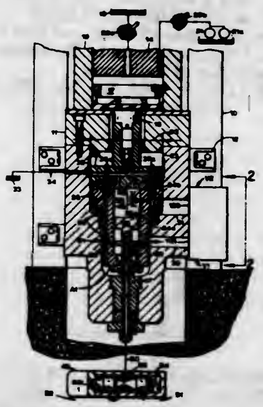
1. In a method of forming a cutting tool, the steps comprising punching a plurality of openings in a metal sheet, swaging the portions of the sheet immediately rearwardly of the holes to provide an initial tooth form having a root portion integrally joined to the metal sheet and bent downwardly and forwardly at an acute angle thereto and a shank portion integrally joined to and extending forwardly from the root portion at an angle thereto, and compacting and deforming said shank portion at its forward end to form a forwardly projecting tapering tongue portion, grinding the lower surface of at least the tongue portion to form a sharp cutting edge at the forward end of the tongue portion, and thereafter bending the tongue portion to project the cutting edge below said lower surface thereby forming the desired rake and clearance angles.

3,290,918
METHOD OF MANUFACTURING A SHAFT COUPLING
Anthony V. Wenzler, 603 Ridge Road, West Bend, Wis.
Original application Dec. 6, 1963, Ser. No. 328,745. Divided and this application Sept. 13, 1965, Ser. No. 486,954
3 Claims. (Cl. 72—340)



1. A method of making a female coupling element, which method consists in cutting splines in the interior of said element, and swaging the ends of the respective splines to form lateral surfaces which are convergent toward said ends, the metal of the swaged ends of the splines being displaced and compacted.

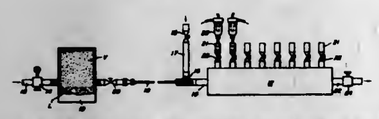
3,290,919
HIGH PRESSURE HYDRAULIC FORMING PRESS
Frank J. Mallouk, Hamilton, and Charles L. Mitchell, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 18, 1963, Ser. No. 331,531
5 Claims. (Cl. 72—453)



1. In a hydraulic press
(a) a bed,
(b) a ram,
(c) a pair of cylinders in end-to-end relation inside the bed,
(d) an actuator connected to the ram, said actuator defining two pistons received respectively in said cylinders and having different effective areas,
(e) a pressure line,
(f) a pair of constant volume pumps connected to the pressure line, said pair consisting of a low pressure pump and a high pressure pump,

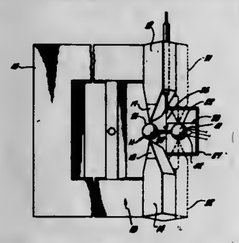
(g) means responsive to pressure in the pressure line to disconnect the low pressure pump from the pressure line at a predetermined pressure,
(h) means selectively to connect one or the other or both of said cylinders to the pressure line,
(i) and means sequentially to change the cylinders connected to the pressure line in response to the magnitude of the pressure in the pressure line.

3,290,920
APPARATUS FOR CALIBRATING VAPOR-RESPONSIVE DETECTORS
Stephen R. Novak, Baldwin Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 7, 1964, Ser. No. 343,412
2 Claims. (Cl. 73—1)



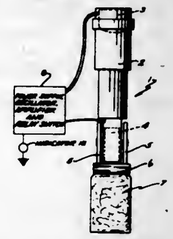
1. An apparatus for calibrating vapor-responsive detectors comprising a pressure vessel adapted to contain a supply of vapor-forming liquid of relatively low vapor pressure and a mass of vapor-saturated air above the liquid, a header, a plurality of feeder tubes extending from said header and adapted to have detectors mounted thereon for calibration under identical conditions, a clean air inlet and an exhaust connected to opposite ends of said header for passing an air stream therethrough, and means connecting said vessel and said inlet for introducing a relatively small controlled quantity of vapor-saturated air to the air stream, whereby a mixture of air and vapor of known concentration passes through the detectors.

3,290,921
SENSING APPARATUS FOR DETERMINING THE PARTIAL PRESSURE OF PARAMAGNETIC GASES IN A MIXTURE OF GASES
Malbone Watson Greene, Covina, and Ray Irving Wilson, La Habra, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Dec. 9, 1963, Ser. No. 328,829
4 Claims. (Cl. 73—27)



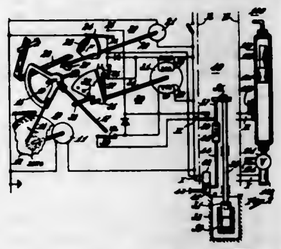
4. In apparatus for determining the partial pressure of a paramagnetic gas in a mixture of gases by suspending a test body in an inhomogeneous magnetic field and measuring the rotational displacement of the body from an equilibrium position when the environment includes such gas mixture, the improvement in detection means comprising,
a test body made of a heat absorbing material;
temperature-sensitive resistance elements supported in spaced-apart relation immediately adjacent the path described by said test body as it rotates; and
a Wheatstone bridge including said resistance elements, the output of said bridge being correlatable with the rotational displacement of said test body from its equilibrium position.

3,290,922
PRESSURE AND VACUUM DETERMINATOR
Robert C. Thompson, Muskegon, Mich., assignor to Technrand Corporation of America, a corporation of Michigan
Filed Jan. 22, 1964, Ser. No. 339,384
14 Claims. (Cl. 73—52)



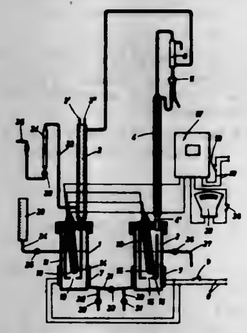
6. Apparatus for determining the fluid pressure of a space enclosed within an enclosure having at least a flexible wall portion comprising:
means for vibrating said flexible wall by flexing it at a specified frequency;
means for converting sound waves emitted by the vibrating flexible wall into electrical signals; and
frequency classification means for determining whether the electrical signals fall within a predetermined frequency range.

3,290,923
VISCOSIMETER CONTROL APPARATUS
Austin S. Norcross, % Norcross Corp., 247 Newtonville Ave., Newton, Mass.
Filed Feb. 14, 1964, Ser. No. 344,893
10 Claims. (Cl. 73—57)



1. In viscosity measuring apparatus having a detecting station with a body arranged to perform a viscosity depending measuring movement between a restored position and a measuring position within a vessel carrying samples of the fluid to be measured, with electrically controlled body cycling means capable of periodically effecting movement between said positions, and with measuring switch means for transferring connection when the body has reached the measuring position,
said apparatus further having an indicating station with timing means for actuating said body cycling means, and with indicating means including an actuator for starting said measuring movement of the body from the restored position, and electrically controlled means for stopping said indicating movement,
the improvement which comprises:
first two wire electrical linking means for directly interconnecting said measuring switch means of the detecting station and said stopping means of the indicating station for terminating consecutive viscosity dependent movements of the body; and
second two wire electrical linking means for directly interconnecting said body cycling means of the detecting station and said timing means of the indicating station for actuating the cycling means;
whereby the detecting and indicating stations, respectively, can be arranged remotely from, and related to, each other with a minimum of electric interconnection.

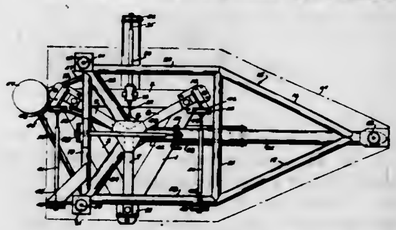
3,290,924
PROCESS AND APPARATUS FOR THE ANALYSIS OF MIXTURES OF LIQUIDS
Heinrich Ebner, Linz, and Anton Eisenkel, Traun, Upper Austria, assignors to Heinrich Fringe Maschinen- und Apparatebau, Bonn, Germany
Filed Dec. 4, 1963, Ser. No. 334,959
11 Claims. (Cl. 73—61.3)



1. Process for the quantitative determination of the lowest boiling component of a mixture of liquids, by measuring the difference between the boiling temperatures of said mixtures of liquids and a liquid used for comprising continuously supplying a first sample of said mixture of liquids to constant boiling and refluxing all vapors formed to said first sample; simultaneously heating a second sample of said mixture of liquids to constant boiling under equal pressure and distilling off from said second sample said lowest boiling component by fractionation and refluxing all remaining vapors formed during said constant boiling to the distillation residue thus formed of said second sample so that said second sample will then consist of the original mixture of liquids minus said lowest boiling component, and measuring the difference between the boiling temperatures of said distillation residue of the second sample and of said unchanged mixture of liquids of the first sample.

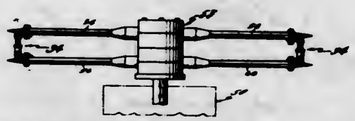
3,290,925
WEIGHT MEASURING AND CENTER OF GRAVITY LOCATING APPARATUS
La Verne F. Wallace, Marion, Mass., assignor to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware
Original application Feb. 11, 1963, Ser. No. 257,522, now Patent No. 3,246,506, dated Apr. 19, 1966. Divided and this application Sept. 7, 1965, Ser. No. 485,163
3 Claims. (Cl. 73—65)

1. Apparatus for determining the weight and center of gravity of a specimen comprising, in combination,
A. a substantially rigid floating frame having a table, with a normally vertical axis, for supporting the specimen the weight of which produces
(1) a vertical weight force component along the normally vertical axis,
(2) the specimen, when supported on the table with its center of gravity eccentrically located with respect to said normally vertical axis, producing
(1) eccentric moment components of force which tilt the table so that its said normally vertical axis is inclined to the normally vertical axis of the untilted table,
(2) the tilting of the table thereby producing an additional eccentricity of the center of gravity with respect to said normally vertical axis of the untilted table,
B. a base,
C. tension force weight responsive means supported by said base and
(1) supporting said frame on said base in tension in direction of said normally vertical axis and
(2) allowing the table to tilt so that its normally vertically axis becomes inclined in response to a component of force arising from the eccentric center of gravity of the specimen,
(a) said tilting of the table causing the tension force responsive means to produce a horizontal component of force acting on said frame to partially resist the horizontal



components of force which create said tilting,
D. a plurality of horizontally setting stay means operatively connected to said frame and said base to provide two-directional lateral stability to the table and stability against rotation of the table about said normally vertical axis,
E. and a plurality of eccentric moment measuring means disposed substantially vertically and operatively connected to said frame and said base and being responsive to and opposing the remaining portion of components of force tending to tilt the table,
F. whereby if the center of gravity of the specimen is so located as to produce said tilting action the said components of force of the tension force responsive means tending to resist said tilting is of such magnitude and direction as to cause said remaining components of force to be substantially the same as if no tilting action existed, thereby making the sensitivity of said eccentric moment measuring means substantially independent of the tilting of said table so that the actual eccentricity of the specimen can be determined.

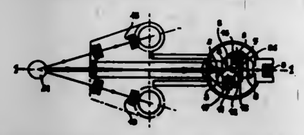
3,290,926
FATIGUE TESTING APPARATUS
Albert J. Montano, Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 23, 1964, Ser. No. 377,285
4 Claims. (Cl. 73—67.3)



1. An apparatus for fatigue testing substantially identical specimens comprising:
a holding mechanism for mounting the specimens in

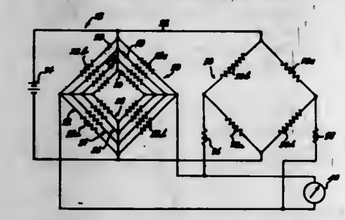
aligned parallel positions in which the specimens have a single degree of freedom in a common plane;
adjustable means interconnecting said specimens for forcing said specimens toward or away from each other in the plane of free movement so as to stress each member in a similar manner; and
means for vibrating said holding mechanism so as to cause said specimens to oscillate as a single member in the plane of free movement
whereby said specimens may be oscillated at their resonant frequencies with a minimum of power.

3,290,927
OPHTHALMOMETER HAVING AFOCAL LENS SYSTEM
Paul Frederic Marie Gambs, 4 Rue President Carnot, Lyon, France
Filed July 6, 1959, Ser. No. 825,305
Claims priority, application France, Dec. 26, 1958, 38,966, Patent 1,211,981
4 Claims. (Cl. 73—80)



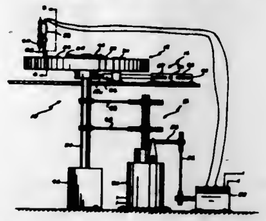
1. In an ophthalmometer, the combination of two mires lying in a plane passing through the location of the line of vision for the patient's eye, symmetrically of said line and to the front of the location of the patient's eye, an afocal optic system lying along the location of said line of vision to the front of the location of the patient's eye and an image-doubling system extending on the side of the afocal system opposed to said location of the patient's eye and including a first beam-splitting surface and two series of reflecting surfaces adapted to act on each fraction of the split beam passing out of the first surface, two parallel-sided transparent plates inserted each in the path of the beam fraction passing through the corresponding series of reflecting surfaces, an eyepiece located directly beyond the image-doubling system adapted to collect at least part of each fraction of the split beam for simultaneously observing the images of the mires reflected by the patient's cornea and passing through the afocal system and through the corresponding series of reflecting surfaces and associated parallel-sided plates, means for adjusting the relative angular setting of the two parallel-sided plates.

3,290,928
TEMPERATURE COMPENSATED STRAIN GAGE AND CIRCUIT
Truman M. Curry, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed June 10, 1964, Ser. No. 374,039
6 Claims. (Cl. 73—88.5)



1. A temperature compensated strain gage circuit for measuring strain in a body comprising:
(a) a plurality of strain gages secured to the body at spaced locations and electrically coupled in parallel to one another;
(b) each of said strain gages having a temperature sensitive electrically conductive element secured and arranged in close proximity to said gage;
(c) said temperature sensitive electrically conductive elements coupled to form a temperature gradient responsive bridge circuit with said elements comprising arms of said bridge circuit;
(d) means coupled to said strain gages for generating an electrical signal in each of said gages in response to the strains; and
(e) circuit means parallel coupling said strain gages and said temperature gradient responsive bridge circuit, whereby temperature gradient strain induced electrical signals are effectively cancelled.

3,290,929
CENTRIFUGAL TENSILE TESTING APPARATUS
William H. Sheldon, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 29, 1965, Ser. No. 429,189
12 Claims. (Cl. 73—95)



1. A centrifugal tensile testing apparatus for determining the tensile strength of an elongated test specimen and comprising: a support platform journaled for horizontal rotation about a vertical axis and having an elongated radial guide means on a horizontal axis passing through the vertical axis of rotation and extending diametrically to be on both sides of the vertical axis, anchor means circumferentially and radially restrained on said support platform to be at counterbalanced equidistance on opposing sides of the vertical axis and coaxial with the elongated guide means on said support platform, two inertial blocks one each of which is slidably restrained on opposite sides of the vertical axis of rotation of said support platform by the elongated radial guide means on said support platform, at least one of said inertial blocks and the adjacent anchor means being adapted for restraining the two opposing end portions of the unbroken test specimen in parallel relationship to the horizontal axis of said guide means on said support platform, and variable speed drive means operably joined to said support platform for rotating and accelerating said support platform within a known speed range until the test specimen ruptures due to tensile force applied thereon through centrifugal force acting on the vertical block restraining one end of the test specimen.

3,290,930
ACOUSTIC WIRE STRAIN GAUGES
John W. Drinkwater, Upton-by-Chester, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 29, 1964, Ser. No. 371,221
Claims priority, application Great Britain, June 4, 1963, 22,161/63
3 Claims. (Cl. 73—136)

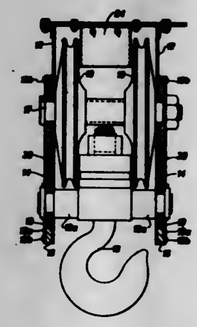
1. An apparatus for measuring the torque of a rotating shaft comprising:

an acoustic wire strain gauge, said wire strain gauge being operably attached to said shaft;
a feedback coil, said feedback coil being disposed adjacent said wire strain gauge;
a pickup coil, said pickup coil being disposed adjacent said wire strain gauge;
a radio transmitter, said radio transmitter being mounted on said shaft, said pickup coil being coupled to said radio transmitter to modulate the signal transmitted by said radio transmitter, said feedback coil being coupled to said pickup coil;



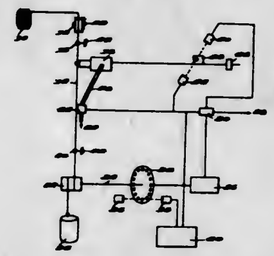
an antenna, said antenna being mounted on said shaft and coupled to said radio transmitter;
a radio receiver, said radio receiver being mounted adjacent said shaft, said radio receiver receiving the signal transmitted by said radio transmitter, demodulating said transmitter signal and supplying said signal as a pulse wave; and
means coupled to said radio receiver for recording a sum related to the frequency of said pulse wave.

3,290,931
WEIGHT SENSING CRANE HOOK
Ronald Fowkes, Saltash, Campbell Dean Beadle, Caerleon, and David Warwick Lloyd Clamp, Cwmbran, England, assignors to Girling Limited, Birmingham, England, a British company
Filed Oct. 30, 1963, Ser. No. 320,119
Claims priority, application Great Britain, Oct. 31, 1962, 41,123/62
13 Claims. (Cl. 73—141)



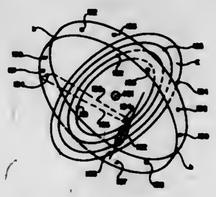
1. A falling block for a crane comprising a sheave running on a hoisting cable, a pair of side plates, a crane hook supported from the sheave between said side plates, weight-carrying members housed in recesses in said plates and forming load bearing connections between said sheave and said crane hook, load-limiting means carried by said side plates and operative to prevent overloading of said weight-carrying members, load sensing means in each weight-carrying member carried in a gap adjacent a portion of reduced cross-section, the load sensing means being capable of measuring the load supported as a function of the elastic deformation under load of said portions of the weight-carrying members, a radio-frequency transmitter mounted in the falling block and coupled to said load sensing means for transmitting a radio signal corresponding to the load supported.

3,290,932
DEVICE FOR TESTING MULTIFILAMENT YARNS
Ira V. Hitt, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,259
5 Claims. (Cl. 73—160)



1. A system for measuring the degree of filament interlacing in multifilament yarn, comprising means passing the yarn along a path, probe means projecting into the interlaced portions of said yarn and movable therewith, and means responsive to the movement of said probe means a predetermined distance for indicating the length of yarn passing along said path before said probe means moves said predetermined distance.

3,290,933
NAVIGATION SYSTEMS
Robert L. Lillestrand, Minneapolis, Minn. (7104 Down Road, Edina, Minn.); Joseph E. Carroll, 4261 Queens Way, Minnetonka, Minn.; and Charles J. Purcell, 1216 W. Sheryer Ave., St. Paul, Minn.
Filed Oct. 18, 1965, Ser. No. 497,435
15 Claims. (Cl. 73—178)

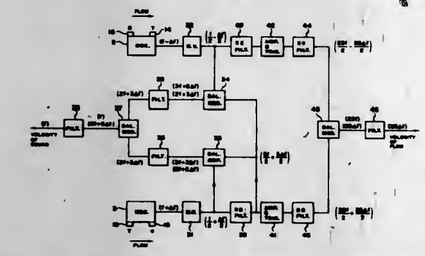


1. The method of determining the location of a vehicle in the ecliptic plane of the solar system including the following steps: scanning a sector of space about a scanning axis; identifying some of the stars in the sector and determining the attitude of the scanning axis; correcting the attitude of the scanning axis to dispose it normal to the ecliptic plane; scanning the ecliptic plane to view some of the planets lying substantially therein; identifying some of said planets; and determining the location of the vehicle with respect to known positions of the identified planets as recorded in an ephemeris.

3,290,934
ACOUSTIC FLUID METERING DEVICE
Alvin E. Brown, Cupertino, Fred J. Snellenbrger, Sunnyvale, Eric Rule, Palo Alto, and Donald J. Hodgson, Sunnyvale, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 27, 1962, Ser. No. 226,512
3 Claims. (Cl. 73—194)

1. In a fluid metering device comprising a first supersonic transmitter and a first receiver located in acoustic

contact with a fluid stream such that signals are transmitted through such stream from said transmitter to said receiver in a direction generally upstream of said fluid flow, a first feedback path coupling the output of said receiver to the input of said transmitter, a second supersonic transmitter and a second receiver located at such spaced points in said fluid stream that signals are transmitted through said stream to said second receiver in a direction generally downstream of said fluid flow, a second feedback path coupling the output of said second receiver to the input of said second transmitter, means in said first feedback path for deriving an output signal therefrom, means in said second feedback path for deriving a signal therefrom, the improvement being a first harmonic generating means operatively connected to said first feedback path, a second harmonic generating means operatively connected to said second feedback path, a first



frequency multiplier operatively connected to said first harmonic generating means for multiplying the output signal therefrom, a second frequency multiplier operatively connected to said second harmonic generating means for multiplying the output signal therefrom, said first frequency multiplier including a bandpass filter centered in a selected harmonic frequency of the output from said first harmonic generating means and said second frequency multiplier including a bandpass filter centered in a selected harmonic frequency of the output of said second harmonic generating means and means including a balanced modulator operatively connected to the output of said first harmonic generating means and the output of said second harmonic generating means and the output of said second frequency multiplier for deriving an output signal proportional to the velocity of sound of said fluid stream.

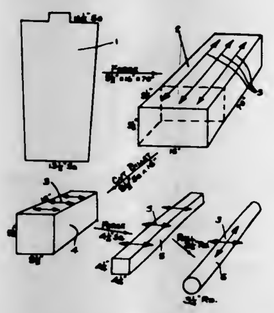
3,290,935
TREATER SEPARATOR METER ASSEMBLY
Arthur W. McCarter, Great Bend, Kans., assignor to O'Neill Tank Company, Inc., Great Bend, Kans., a corporation of Kansas
Filed Jan. 7, 1964, Ser. No. 336,305
3 Claims. (Cl. 73—200)

1. A treater separator meter assembly for treating petroleum well streams separating gas, water and oil and metering the water and oil production comprising, a well stream treating vessel having side, top and bottom walls, a horizontal partition in the upper portion of the vessel spaced from the top wall and defining a gas separation chamber, a vertical wall extending downwardly from said partition and defining with a minor portion of the vessel side wall a flow space extending from said gas separating chamber to adjacent the bottom wall of said vessel, a partition in the treating vessel below said first-named partition and defining with the vertical wall and the major portion of the vessel side wall a heating zone, and an oil outlet zone, said oil outlet zone being adjacent to and below the gas separation chamber, conductor means conducting the well stream to the gas separation chamber with liquid thereof collecting on said first-named partition and flowing downwardly in the flow space, heating means in the heating zone, means including a distributor communicating the flow space with the heating zone below the heating means for flow of said well stream liquid to the heating zone and distribution therein to be heated therein with free water collecting in the lower portion of the treating vessel and oil rising upwardly in the heating zone toward the oil outlet zone, an oil metering apparatus and a water metering apparatus each having a metering vessel in said treating vessel in the lower portion thereof, said metering vessels being spaced apart with each having a central portion with reduced volume sections forming upper and lower portions, said metering vessels being defined by outer walls spaced inwardly from all walls of the treating vessel whereby said metering vessels are substantially surrounded by liquids in said treating vessel, a duct for each of said metering vessels communicating the top portions thereof with the upper portion of the treating vessel for pressure equalization, an oil overflow line communicating with the oil outlet zone to maintain an oil level therein, said oil overflow line extending downwardly and communicating with the lower portion of the oil meter vessel, a water siphon assembly having an inlet in the lower portion of the treating vessel and an outlet disposed to maintain an oil-water interface in the upper portion of the heating zone, the water siphon outlet duct communicating with



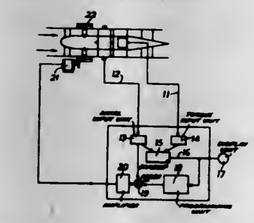
the lower portion of the water meter vessel for flow of water thereto from said water siphon, an oil discharge line, a water discharge line, a three-way valve in the oil metering vessel inlet line connected with the oil discharge line, a three-way valve in the water metering vessel inlet line and having connection with the water discharge line, means responsive to the rise of liquid level in the upper portion of the oil metering vessel and operatively connected with the three-way valve in the oil line to close the flow from the oil outlet zone and effect communication from the metering vessel to the oil discharge line for discharge of oil from said oil metering vessel, means responsive to lowering of the liquid level in the oil metering vessel and operatively connected with the respective three-way valve to actuate same to close the oil discharge line and effect communication from the oil outlet zone to the oil metering vessel for filling of said oil metering vessel and corresponding means responsive to rise of level in the upper portion of the water metering vessel and the lowering of level in the lower portion of said water metering vessel and operatively connected to the respective three-way valve in the water line for permitting filling of said water metering vessel and the discharge of the water therefrom through the water discharge line.

3,290,936
METAL PROCESSING
Richard F. Harvey, Dorseyville, Pa., assignor to Metalectronics, Inc., Pittsburgh, Pa.
Filed Sept. 5, 1962, Ser. No. 221,611
15 Claims. (Cl. 72—203)



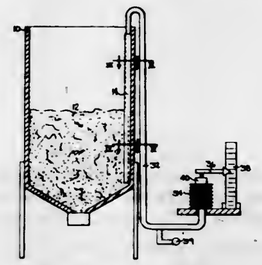
9. The process of cross rolling high alloy metal barstock to minimize segregation and directional effects therein which consists in first cogging a cast ingot to a first stage billet, said first stage billet having a direction of working along the length of the billet; and then cutting a smaller, cross grained, second stage billet from the first stage billet, said second stage billet being cut so that the directional properties or grain is across the length of the said second stage billet; and finally reducing the second stage billet to extend its length and to reduce it to a bar wherein the cross sectional area reduction from ingot to bar is less than about 60 to 1 and is greater than about 5 to 1.

3,290,937
APPARATUS FOR MEASURING THE MASS FLOW OF FLUIDS
Robert Barry Matthews, Eastleigh, England, assignor to Plessey-UK Limited, Ilford, England, a British company
Filed May 25, 1964, Ser. No. 371,873
Claims priority, application Great Britain, May 29, 1963, 21,522/63
2 Claims. (Cl. 73—231)



1. A mass-flow metering device comprising: stationary deflector means arranged in a duct to impart to fluid flowing along the duct a swirl about the axis of the duct, said deflector means including vanes which are adjustable as to their angle of attack with respect to the axial direction of the duct; rate-sensor means producing a digital output corresponding to the rate of swirl thus produced; torque-sensor means determining a torque reaction produced by the thus produced swirl of the fluid flowing through the duct and producing a digital output corresponding to the said torque reaction; digital computer means producing a digital output, means feeding to said computer means the respective digital outputs of the rate-sensor means and of the torque-sensor means, the computer means being constructed to determine the mass flow as the quotient of said digital outputs; a servomotor operatively connected to the deflector means to vary the angle of attack of the deflector vanes with respect to the axial direction of the duct; and control means for this servomotor, the said servomotor-control means including an algebraic adder to which the digital outputs of the computer means and of the rate sensor are differentially fed, and means sensitive to the sign of the adder output and operative to select the direction of operation of the servomotor.

3,290,938
PNEUMATIC DISPLACEMENT LEVEL INDICATOR FOR STORAGE BIN
Ralph R. Miller, 6730 Lakeside Drive, Charlotte, N.C.
Filed May 13, 1965, Ser. No. 455,387
10 Claims. (Cl. 73—290)

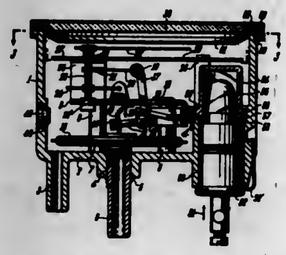


1. A device operating at substantially constant pressure for measuring and indicating the level of flowable granular or finely divided solid material in a container which comprises a readily collapsible fluid tight tube element adapted for being placed in the container so as to extend downwardly therein whereby to be immersed in the flowable material in the container, a fluid tight expansible element outside the container, and variable in volume with substantially no change in pressure therein, tube means connecting the said collapsible tube element to said expansible element in fluid exchange relation to form a closed fluid system, means for indicating the change in the degree of expansion of said expansible element as brought about by changes in the degree of collapsing of said collapsible tube element by changes in the level of the material in the container, and means for maintaining a substantially constant pressure in said fluid system.

3,290,939
LIQUID-LEVEL GAUGE
Walter Beck, Stuttgart-Mohringen, and Karl Roll, Leinfelden, near Stuttgart, Germany, assignors to Walter Beck K.G., Stuttgart-Mohringen, Germany, a firm of Germany
Filed Mar. 5, 1965, Ser. No. 437,392
Claims priority, application Germany, July 24, 1964, B 58,402, B 77,827
12 Claims. (Cl. 73—299)

1. A liquid-level gauge comprising a housing; a capsule diaphragm secured within said housing; a tubular member connected to said diaphragm and extending through a wall of said housing and adapted to connect the inside of said diaphragm to an immersion tube extending into a container holding a liquid the level of which is to be measured; indicating means in said housing; and transmitting means within said housing for transmitting the movements of said diaphragm to said indicating means, said transmitting means comprising a lever acted upon by said diaphragm, bearing means for pivotably mounting said lever, first adjusting means for adjusting the position of said bearing means within said

housing, second adjusting means for adjusting the transmission ratio of said lever independently of said first adjusting means, and a supporting plate secured within said housing and having an arm connected thereto at one end and resiliently pivotable about said one end in



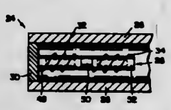
a direction at right angles to the direction of movement of said diaphragm, said first adjusting means comprising a setscrew adapted to bear upon said arm near the free end thereof for pivoting said arm and thus said bearing means and the pivot axis of said lever to different positions.

3,290,940

THERMAL MEASURING PROBE

Frank F. Hines, Litchfield, N.H., assignor to RdF Corporation, Hudson, N.H., a corporation of Massachusetts

Filed Dec. 27, 1963, Ser. No. 333,866
16 Claims. (Cl. 73—341)



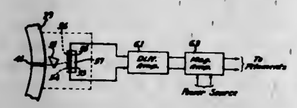
1. A tip sensitive temperature probe comprising: a composite core having a first end portion, an intermediate portion and a second end portion, each of said end portions having a thermal diffusivity at least two times greater than the thermal diffusivity of said intermediate portion; a primary temperature sensitive means secured to said first end portion and a secondary temperature sensitive means secured to said second end portion, said primary and secondary temperature sensitive means having electrical response sensitivities to temperature the ratio of which is substantially the inverse of the ratio of the total thermal transfer coefficient of said first end portion to that of the whole core.

3,290,941

ELECTRON DISCHARGE DEVICES WITH AUTOMATIC TEMPERATURE CONTROL

David M. Goodman, 3843 Debra Court, Seaford, N.Y.

Filed May 21, 1963, Ser. No. 282,027
5 Claims. (Cl. 73—355)



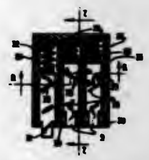
1. A charged particle discharge device comprising: a member for generating the charged particles, first means for heating said member and a dielectric light pipe for transmitting radiation from the said member, in combination with second means for heating said light pipe to prevent material from depositing thereon.

3,290,942

TEMPERATURE SENSING, INDICATING AND RECORDING MEANS

Don L. Carbaugh, Dutch Ridge Road, and Orus Howard Heckathorne, 1089 3rd St., both of Beaver, Pa.

Filed June 1, 1964, Ser. No. 371,367
4 Claims. (Cl. 73—358)



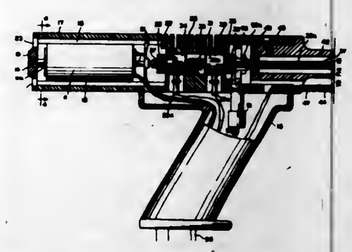
1. A temperature indicating device comprising a casing including plural internal divider walls forming plural substantially parallel elongated compartments within the casing, corresponding ends of the compartments having openings leading to the exterior of the casing, said openings being of reduced cross section, whereby each compartment has stop shoulders formed at its leading end, an indicator plunger within each compartment of the casing and movable longitudinally therein from a retracted non-indicating position to an extended temperature indicating position, each plunger having a reduced leading extremity projectable through the adjacent opening and shoulders engageable with said compartment stop shoulders to limit forward movement of the plunger, an expansible spring mounted within each compartment behind the plunger therein and bearing upon the rear end of the plunger, and a fusible detent pin for each plunger within the casing having mechanical interlocking engagement therewith prior to fusion of the detent pin and releasably securing each plunger in said retracted non-indicating position, each fusible detent pin upon fusion releasing its plunger for movement to the indicating position, and each detent pin having a specific precise fusion temperature different from the fusion temperatures of the other detent pins of the device, whereby the device may be used to monitor a range of temperatures.

3,290,943

METHOD AND APPARATUS FOR TEMPERATURE MEASUREMENT

Hsin L. Li, Wilmington, and Robert R. Moneymaker, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 2, 1964, Ser. No. 379,979
4 Claims. (Cl. 73—359)





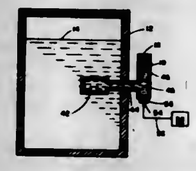
1. A method for measuring the temperature of running yarns, webs and the like comprising, in sequence, (1) rotating a thermocouple cyclically into and out of contact with an object the temperature of which is to be determined in a sense generally co-directional with the direction of travel of said object during a portion of each cycle of rotation followed by exposing said thermocouple to the heat output of a reference heater during at least a portion of the remainder of said cycle of rotation, (2) removing said thermocouple from cyclic contact with said object but continuing said exposing of said thermocouple to said heat output of said reference heater, determining the direction and approximate magnitude of heat transfer occurring between (1) and (2) with respect to said thermocouple in the course of said cyclic contact of said thermocouple with said object, adjusting said heat output of said reference heater so that said thermocouple and said object are at substantially the same temperature level, and then obtaining an indication of said temperature level as a function of the E.M.F. output of said thermocouple.

3,290,944

REMOTE TEMPERATURE MEASURING APPARATUS

Lawrence Altman, New York, and Donald Gertz, Carle Place, N.Y., William F. Salfeld, Arnold, Md., and Charles P. Patterson, Arlington, Va., assignors, by direct and mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 24, 1964, Ser. No. 340,115
1 Claim. (Cl. 73—368)



Temperature measuring apparatus for connection to a main vessel containing a fluid, comprising sensing means located in said fluid within said vessel, a conduit open to said sensing means extending out through the wall of said vessel, a vertically extending auxiliary vessel having a bottom surface and having said conduit open thereinto adjacent said bottom surface, a temperature responsive liquid filling said sensing means, said conduit, and partially filling said auxiliary vessel so that changes in temperature of said liquid within said sensing means will result in expansion and contraction of said liquid therein followed by changes in the level of said liquid in said auxiliary vessel, transmitting and receiving transducer means attached to the bottom surface of said auxiliary vessel for emitting a sound pulse through the vessel wall into said liquid, stationery reflector means partially immersed in said liquid within said auxiliary vessel, the latter said means having a series of vertically staggered reflective surfaces facing said transducer means for reflecting from the reflective surfaces located beneath the surface of said liquid the sound pulse arriving from said transducer means, the number of reflected sound pulses thereby indicating the level of said liquid within said auxiliary vessel and the temperature of said fluid in said main vessel.

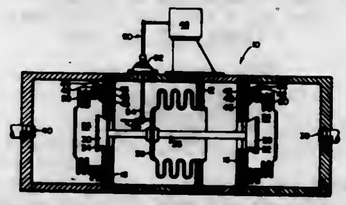
3,290,945

DIFFERENTIAL PRESSURE RESPONSIVE DEVICE

Yao Tzu Li and Shih-Ying Lee, both of Huckleberry Hill, Lincoln, Mass.

Original application Aug. 21, 1961, Ser. No. 132,926. Divided and this application June 4, 1965, Ser. No. 473,265
7 Claims. (Cl. 73—407)

1. In combination: a force sensing transducer, a displaceable member providing the input to the transducer, and means connecting the displaceable member and transducer including a force limiting connector comprising a pair of elongated resiliently flexible members extending parallel to each other, at least one of said members having a convexo-concave cross section, means joining one end of one of said members to the corresponding end of the



other member for movement therewith in a direction longitudinally thereof, and means connecting the other ends of said flexible members between said displaceable member and transducer for transmission of force through said connector in a direction extending parallel to said flexible members.

3,290,946

PIPETTING DEVICE

Alfred R. Purcell, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 25, 1964, Ser. No. 369,865
7 Claims. (Cl. 73—425.6)



1. In a syringe employed as a manual pipette filling and dispensing device and having a hollow cylindrical plunger and a complementary barrel, said plunger and barrel fitting together in sliding, sealing relation, and said barrel having a dispensing end, the improvement which consists in:

(a) spring means adapted to resiliently urge the plunger outwardly of the barrel of the syringe throughout a substantial stroke relative to the barrel;

(b) an adapter sealingly attached to the dispensing end of the barrel, said adapter being adapted to receive and hold a pipette in sealing relationship in an opening therein;

(c) and a first opening through the finger-engaging top of the plunger for fingertip control of dispensing, said first opening communicating through the hollow plunger with a second opening provided through the bottom of the plunger, said second opening in turn communicating through the barrel with an opening through the dispensing end of said barrel, and said opening through the dispensing end of the

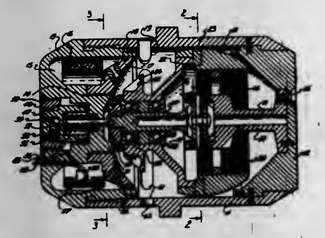
barrel communicating with a channel in the adapter which communicates with the pipette receptive opening.

3,290,947
CONTROL APPARATUS
Richard J. Reilly, St. Paul, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 3, 1963, Ser. No. 270,290
6 Claims. (Cl. 73—505)



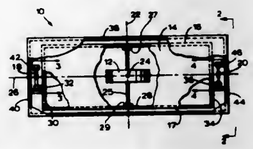
1. A vortex rate sensor comprising: a first member having a plane surface thereon; a second member having a plane surface thereon; coupling means positioned between said plane surface of said first member and said plane surface of said second member so as to form a chamber symmetrical about an axis; an outlet passage within said first member surrounding said axis; pickoff means located within said outlet passage; means for providing a high density fluid flow through said coupling means, said chamber and said outlet passage; a first annular passage within said first member and a second annular passage within said second member, said first and said second annular passages being in communication with said chamber at the periphery thereof; means for providing a flow of a low viscosity fluid through said first and second annular passages, said low viscosity fluid forming a layer intermediate said high density fluid and said plane surfaces so as to substantially reduce the viscous losses in the flow of said high density fluid through said chamber; and first and second removal passages located within said first and second members, said removal passages being in communication with said chamber at the center thereof and functioning to remove said layer of low viscosity fluid.

3,290,948
GYROSCOPE
George F. East, Whittier, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Original application Dec. 4, 1961, Ser. No. 156,839, now Patent No. 3,142,184, dated July 28, 1964. Divided and this application Aug. 9, 1963, Ser. No. 301,038
3 Claims. (Cl. 74—5)



1. A gyroscope comprising a hollow rotor, a support rotatably supporting said rotor for movement about a spin axis, said support having spaced arms extending within said rotor on opposite sides of said spin axis, a universal pivot member, bearings in said arms supporting said pivot member between said arms for movement about a second axis intersecting said spin axis, said second axis extending at right angles to said spin axis, said pivot member having a passage extending therein coaxially of one of said bearings, a support element having spaced arms on opposite sides of said spin axis, bearings in said last mentioned arms supporting said pivot member between said last mentioned arms for movement about a third axis intersecting said spin axis, said third axis extending at right angles to said second axis, said support element having a passage extending therein, means responsive to angular movement between said support and said pivot member for indicating said angular movement, and a flexible conductor extending serially through said passages and operatively connected to said last mentioned means for conveying said indication.

3,290,949
FLEXURAL PIVOT
Frank Samet, New York, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,613
6 Claims. (Cl. 74—5)



1. In a precision instrument:
a movable member;
a support structure; and
means supportively connecting said member to said structure for limited angular displacement about an axis fixed with respect to said member and structure, said means constituting the sole mechanical connection between said member and structure and comprising:
a pair of one piece flexure bars, each having its longitudinal axis disposed transversely to said fixed axis and having one end portion fixedly connected to said member and an opposite end portion fixedly connected to said structure, each said flexure bar having a segment of reduced cross-section defining an axis of flexure transverse to its longitudinal axis and substantially coincident with said fixed axis, at least one of said flexure bars having second and third segments of reduced cross-section, spaced along the length of the bar, defining respective second and third axes of flexure, parallel to each other, and disposed substantially at right angles to a plane including the longitudinal axis of said bar and said fixed axis.

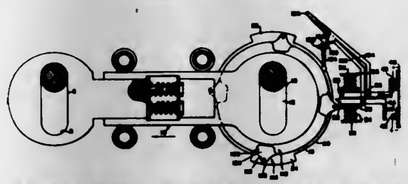
3,290,950
MECHANICAL MOVEMENT FOR TRANSLATING RECTILINEAR MOVEMENT INTO ROTARY MOVEMENT, AND ENGINE INCORPORATING THE SAME
Clarence W. Carlson, 11314 Hugginsmeyers Road, Tacoma, Wash.
Filed July 22, 1965, Ser. No. 473,963
23 Claims. (Cl. 74—52)

14. A mechanical movement for disposing a first and a second revoluble crank arm so that a momentary force directed along the second thereof is applied substantially perpendicularly to the instantaneous revolved position of the first thereof, said mechanical movement including a pin carried by the outer end of each crank arm, a third crank arm joining said pins and freely revoluble bodily with respect to the second thereof, a bearing pin reciprocable rectilinearly between two limit positions equidistantly at opposite sides of the axis of the first crank arm, the second crank arm being mounted upon said bearing pin to revolve 360° about the axis thereof, from an initial limit position wherein the first and second crank arms are thus disposed, means constraining said third crank arm to revolve once about the axis of the first pin,



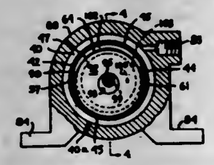
and means constraining the first two crank arms to revolve generally through equal angles, each about its axis.

3,290,951
QUICK REVERSING MECHANISM
Francis H. Gindroz, Jr., Torrance, Calif., assignor to Electronic Specialty Co., Los Angeles, Calif., a corporation of California
Filed Nov. 13, 1964, Ser. No. 411,072
8 Claims. (Cl. 74—68)



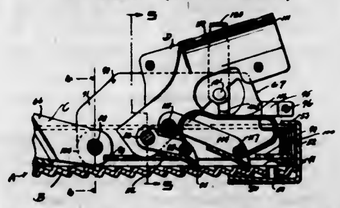
1. In combination with parallel drive and driven shafts, means for transmitting rotary motion from the drive to the driven shaft and for reversing the direction of rotation of the driven shaft without reversing the direction of rotation of the drive shaft, such means comprising main driving means fixed eccentrically to the two shafts to transmit rotory movement therebetween, auxiliary driving means fixed eccentrically to the drive shaft and mounted eccentrically and rotatably on the driven shaft to transmit rotary motion therebetween, and means operable sequentially on the auxiliary driven shaft driving means and then on the main driven shaft driving means at dead spot positions thereof to sequentially reverse the direction of rotation of first the auxiliary and then the main driven shaft driving means to thereby reverse the direction of rotation of the driven shaft.

3,290,952
VIBRATION MECHANISM AND METHOD
Carl G. Matson, Kewanee, Ill., assignor to Vibrator Manufacturing Company, Neponset, Ill., a corporation of Illinois
Filed Aug. 21, 1964, Ser. No. 391,241
8 Claims. (Cl. 74—87)



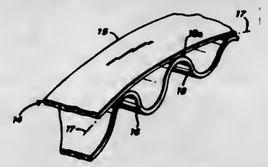
1. A pressurized-fluid-driven vibrator comprising a housing having a pressurized-fluid inlet, a pair of side closure members for said housing, said housing and closure members together forming a generally cylindrically walled and at least partially flat and parallel-ended closure, a perimetrically-cylindrical disc-shaped centrally-perforated rotor confined for rolling movement upon the perimetrical edge of same upon the cylindrical wall of said enclosure, said centrally perforated rotor being greater in perimetrical diameter than the radius of the cylindrical wall of said housing, and means carried by at least one of said closure members forming an outlet for fluid from said enclosure.

3,290,953
PAWL MECHANISM FOR HORIZONTAL TYPE LIFTING JACKS
Russell Keith Ulm, Butler, Ind., assignor to Universal Tool & Stamping Company, Inc., Butler, Ind., a corporation of Indiana
Original application Dec. 26, 1961, Ser. No. 162,087, now Patent No. 3,173,660, dated Mar. 16, 1965. Divided and this application Dec. 3, 1964, Ser. No. 415,694
4 Claims. (Cl. 74—141.5)



1. In a jack mechanism the combination of a jack slide casing comprising a pair of spaced side walls rigidly connected together, a jack actuating pawl mechanism operatively mounted between and upon said side walls, said side walls at an end of the casing being provided with lateral outwardly extending guides at the lower portions of said side walls, said side walls above said guide extensions having inturned rigidly connected flanges bracing said side walls in their relatively spaced positions.

3,290,954
V-BELT AND METHOD OF MANUFACTURE
Walter E. Huber, Springfield, Mo., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed May 21, 1963, Ser. No. 281,935
4 Claims. (Cl. 74—233)

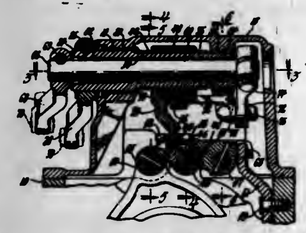


1. In a V-belt comprising tension and compression sections, said tension section consisting of a thin sheet member of plastic material, and said compression section consisting of a corrugated member of similar material, the outer corrugated surfaces of said compression section bonded to the inner surface of said tension section, the common plane of the inner surface of the tension section and the outer corrugated surfaces of the compression section defining the neutral axis of said belt.

3,290,955
TRANSMISSION
Robert C. Keller, Birmingham, and John F. Weber, Roseville, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 337,932
9 Claims. (Cl. 74—335)

1. In a selecting and shifting mechanism for a vehicle transmission change speed gearing including a transmis-

sion casing, a control housing mounted on said casing, a selector shaft adapted to control the selection of the desired speed gearing, and a shifter shaft adapted to control the shifting movement into the desired speed gearing, one of said shafts being tubular and being rotatably



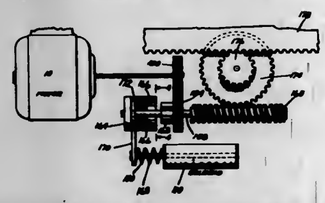
mounted in said control housing the other of said shafts being rotatably mounted within the tubular shaft and selecting and shifting means movably mounted on said shafts for selecting movement in response to movement of the selector shaft and shifting movement in response to movement of the shifter shaft.

3,290,956

FUNCTION SELECTING MECHANISM

Warren R. Black and Robert L. Knapp, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey

Filed Dec. 10, 1963, Ser. No. 329,430
15 Claims. (Cl. 74—365)



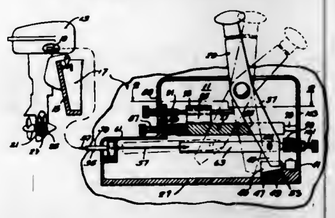
1. A function-selecting device comprising a reversible electric motor having a forward-running circuit and a reverse running circuit; a first relay switch having a pair of normally open contacts, a pair of normally closed contacts and a relay coil; a second relay switch having a pair of normally open contacts and a relay coil; said normally closed contacts being connected in series with said normally open contacts of said second relay switch, a source of power, said series connected closed and open contacts being series connected between said source of power and said forward-running circuit, said normally open contacts of said first switch being connected in series with and between said reverse-running circuit and said power source whereby closure of said second switch contacts causes said motor to run in a forward direction and closure of the normally open contacts of said first switch causes said motor to run in a reverse direction, third, fourth, fifth and sixth manually operable switches each having a pair of normally open contacts and a pair of normally closed contacts, each third, fourth, fifth and sixth switches including means for closing the open contacts thereof when the closed contacts thereof are opened; seventh and eighth manually operable switches each having a pair of normally open contacts; first, second and third solenoids; a source of unidirectional voltage; said first solenoid being connected in series with said first relay coil, the normally open contacts of said third switch, and said source of voltage; said first solenoid also being connected in series with said second relay coil, the normally open contacts of said fourth switch and said source of voltage; said second solenoid being connected in series with said first relay coil, the normally open contacts of said fifth switch, the normally closed contacts of said third and fourth switches, respectively, and said source of voltage; said second solenoid also being connected in series with said second relay coil, the normally open contacts of said sixth switch, the normally closed contacts of said third and fourth switches, respectively, and said source of voltage; said third solenoid being connected in series with said first relay coil, the normally open contacts of said seventh switch, the normally closed contacts of said third, fourth, fifth and sixth switches, respectively, and said source of voltage; said third solenoid also being conected in series with said second relay coil, the normally open contacts of said eighth switch, the normally closed contacts of said third, fourth, fifth and sixth switches, respectively, and said source of voltage; whereby said solenoids and said relay switches may be selectively energized in response to selective operation of said third, fourth, fifth, sixth, seventh or eighth switches.

3,290,957

SINGLE LEVER SHIFT CONTROL

Clay A. Crist, Salem, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Feb. 6, 1964, Ser. No. 343,094
9 Claims. (Cl. 74—472)



1. A single lever control for an engine having a throttle and an electrically controlled clutch, said control comprising a frame, a single lever, ball and socket means on said frame and on said lever for mounting said single lever for movement of said lever from a given position in which the throttle is set at minimum speed and said clutch is in neutral, switch means for controlling an electrical clutch, means mounting said switch means on said frame in position for actuation in response to movement of said lever along a path from said given position, means on said lever for actuating said switch means in response to movement of said lever from said given position along said path, said lever being adapted for controlling the advancement of an engine throttle from minimum speed in response to movement of said lever in a direction from and normal to said path, and means on said frame for guiding the movement of said lever in said direction normal to said path.

3,290,958

SELF-BRAKING HYDRAULIC TRANSMISSIONS FOR MOTOR VEHICLES

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France

Filed July 10, 1964, Ser. No. 381,729
Claims priority, application France, July 15, 1963, 941,490, Patent 1,370,742
8 Claims. (Cl. 74—472)

1. A hydraulic transmission system for motor vehicles, comprising a first normally generating element connected to the vehicle engine and a second normally driving element mechanically connected to the vehicle wheels and hydraulically connected to said first element through an oil delivery duct and an oil return duct, utilizable as a brake by insertion into the oil return circuit of a hydraulic impeder which is progressively adjustable by the brake pedal, characterized in that said hydraulic impeder is inserted into an auxiliary circuit connected between two points located along said oil return duct and between



which is provided, within said duct, a hit-or-miss type valve which is controlled in such manner as to cause said auxiliary circuit to be connected or not into said oil return circuit accordingly as said vehicle is travelling on the overrun or under traction, respectively.

3,290,959

FLEXIBLE CONNECTOR SYSTEM

Duane L. Hicks and LaVerne E. Morgan, both of Orange, Calif., assignors to Pacific Scientific Company, San Francisco, Calif., a corporation of California

Original application July 2, 1964, Ser. No. 379,921, now Patent No. 3,233,465, dated Feb. 8, 1966. Divided and this application Dec. 3, 1965, Ser. No. 511,475
3 Claims. (Cl. 74—501.5)



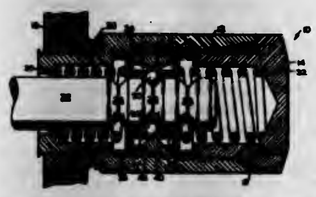
1. A control system comprising a control flexible connector connected to and extending between controlled and controlling members that are subject to relative displacements, a compensating flexible connector extending substantially parallel to said flexible connector and attached at its ends to structures supporting said controlled and controlling members, and deflecting means acting on said connector, said deflecting means being responsive to varying tension in said compensating connector due to relative displacements of the supporting structures, and hence of said members due to extraneous causes, to maintain a desired position of said controlled member independently of said displacements.

3,290,960

DETENT MECHANISM

Frank V. McCoy, Jr., 1376 Logan Ave., Salt Lake City, Utah

Filed Dec. 15, 1964, Ser. No. 418,507
11 Claims. (Cl. 74—527)



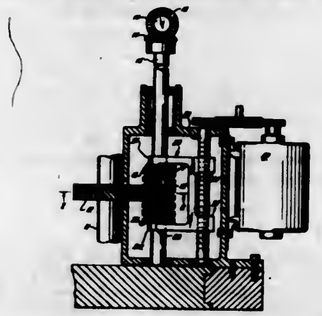
1. A detent mechanism including: an element movable into a plurality of positions, a recess in said element, a ball having a portion selectively positionable in said recess, an apertured element having said ball received in the aperture thereof, a member having a projection thereon, the said projection engaging said ball through the said aperture, and means yieldingly opposing motion of said apertured element.

3,290,961

SPEED ADJUSTMENT DEVICE

Frank W. Broderick, P.O. Box 2, Stirling, N.J.

Filed Dec. 4, 1963, Ser. No. 328,681
2 Claims. (Cl. 74—665)



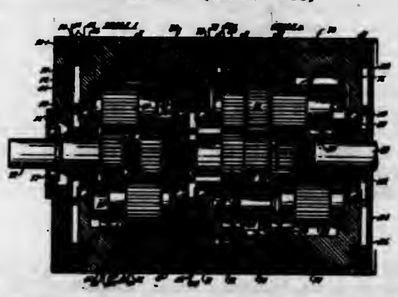
1. A speed adjustment device for selectively momentarily adjusting the speed of one of a pair of constantly engaged shafts each normally running at constant speed comprising a relatively narrow helical gear fixedly secured to the driven shaft, the speed of which is to be adjusted; a relatively wide helical gear having a keyway slot in its aperture; a driver shaft having a longitudinal channel therein; a key disposed in said driver shaft channel and in said wide helical gear slot permitting longitudinal movement of said wide gear on said keyway; and bifurcated means for selectively sliding said wide helical gear having respective forks of which slidingly engage the respective opposing end walls of said wide gear and actuating means actuated by an electric eye for moving said bifurcated means parallel to the axis of the driver shaft, whereby the speed of said driving gear is adjusted by frictional sliding on the incline plane surfaces of said wide helical gear.

3,290,962

PLANETARY TRANSMISSION

Walter L. McCann and Gordon H. Jones, Fond du Lac, Wis., Walter G. Muller, Baden, Vienna, Austria, and John T. Reader, deceased, late of Fond du Lac, Wis., by Mary J. Reader, executrix, Fond du Lac, Wis., assignors to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin

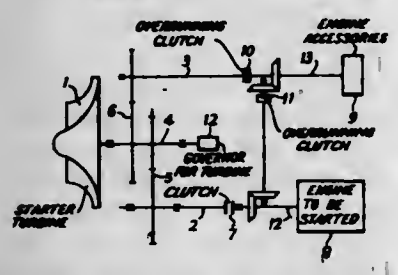
Filed Oct. 17, 1962, Ser. No. 232,339
11 Claims. (Cl. 74—760)



3. For use in multistage transmissions, a transmission unit to serve as an input stage thereof to provide a selection of four different speed ratios comprising a plurality of annular sections adapted to be stacked in abutting relation to each other and to an adjacent output unit to form a housing, a planetary gear train in said housing including a reaction sun gear and three reaction ring gears rotatably mounted in said housing and adapted to be selectively braked against rotation to obtain said four different input

to output speed ratios from said planetary gear train, said planetary gear train further including four planetary gear sets supported by a common carrier with planet gears of two of said sets intermeshed, said sun gear being intermeshed with gears of one of said two sets and said reaction ring gears being intermeshed with gears of other sets, coaxial input and output shafts connected in torque transmitting relation by said planetary gear train, annular brake cylinders defined between said annular sections so as to provide a brake cylinder for each reaction gear, annular pistons in said cylinders, and means connecting each piston with a reaction gear whereby the latter is braked against movement relative to the housing upon actuation of the piston in the cylinder.

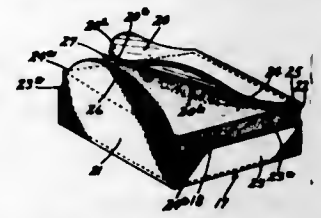
3,290,963
TURBINE DRIVEN GEAR TRAIN FOR ENGINE STARTING AND ENGINE ACCESSORY DRIVE
Thomas Alfred Oldfield and Kenneth Gordon Wallace, Warrash, England, assignors to Plessey-UK Limited, Ilford, England, a British company
Filed May 1, 1964, Ser. No. 364,334
Claims priority, application Great Britain, May 3, 1963, 17,545/63
3 Claims. (Cl. 74—810)



1. A combined engine-starter and accessory-drive system, comprising an input shaft for connection to a starter motor, an engine shaft, a main output shaft, disengageable coupling means for connecting said main output shaft to the engine shaft, an accessory shaft, first drive-transmission means interconnecting said input shaft to said main output shaft for transmitting rotation thereto from the input shaft at a first speed ratio relative to the speed of said input shaft, second drive-transmission means, including a first overrunning clutch, operatively connecting the engine shaft to the accessory shaft for transmitting rotation of one predetermined direction from the engine shaft to the accessory shaft at a second ratio relative to the speed of the engine shaft but allowing the accessory shaft to overtake the speed thus transmitted from the engine shaft, and third drive-transmission means operatively connecting said input shaft to the accessory shaft at a third speed ratio relative to the speed of the input shaft, the third speed ratio being higher than the product of said first and second speed ratios, and said third drive-transmission means including a second overrunning clutch arranged to transmit rotation of said one direction from the input shaft to the accessory shaft but to allow the accessory shaft to overtake the speed thus transmitted from the input shaft.

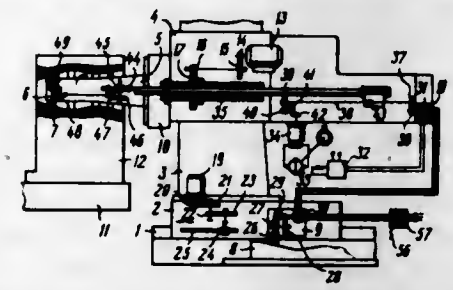
3,290,964
SHARPENER FOR SCOOP-TYPE ICE AUGERS
Harold R. Little, Montrose, Minn., assignor of fifty percent to Leo F. Munsenteiger, Rockford, Minn., and fifty percent to Glenn O. Harmer, Minneapolis, Minn.
Filed Feb. 19, 1964, Ser. No. 345,879
1 Claim. (Cl. 76—82)

A sharpening device for ice augers of the type having a spoon-like cutting head which is bevelled along its concave inner surface to define an arcuate cutting edge, said device comprising a box-like casing having upper and lower wall elements, front and rear wall elements, and opposed side wall elements, a rectangular abrasive block snugly received within said casing, upper edge portions of said side walls terminating below the plane of said upper work surface of said block so as to expose opposed upper side edge portions thereof, said top wall being integrally formed with said rear wall and projecting upwardly and forwardly therefrom in diverging relationship to said work surface from a point of substantial engagement of its rear portion with said work



surface, said front wall having a central portion which projects upwardly from the plane of said work surface and terminates below the projected plane of said top wall, the top edge of said front wall and the forward edge portion of said top wall each being arcuate in opposite directions whereby to define therebetween a cutting head receiving mouth which flares outwardly in opposite directions from a minimal central opening.

3,290,965
BORING MACHINE
Nickolai Nesterovich Gaev, Gesel Iljich Zhevelev, and Felix Davydovich Kochubievsky, all of Novosibirsk, U.S.S.R., assignors to Gosudarstvenny Novosibirsky zavod tjazhelykh stankov i Rrupaykh gidropressov, Novosibirsk, U.S.S.R.
Filed Apr. 26, 1965, Ser. No. 450,960
6 Claims. (Cl. 77—3)

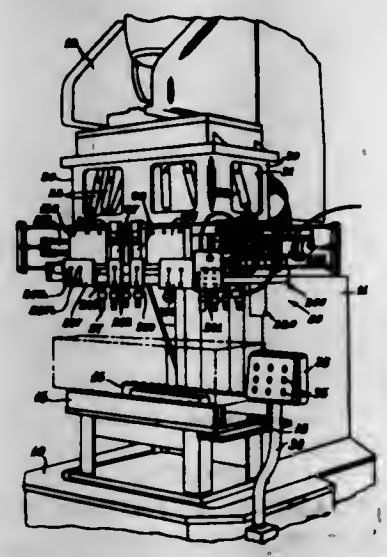


1. A boring machine for machining internal surfaces of workpieces which are non-rotatable during machining, comprising a bed; a slide mounted for movement along said bed; a column with a headstock fastened on said slide; a boring head with a toolholder rotating during operation and fastened on said headstock; a stationary master form adapted for being mounted on said bed and having a profile which corresponds to the preset profile to be obtained on the internal surface of the workpiece; a means for securing the workpiece; ways for said toolholder with the tool permitting travel of the latter in a direction transverse to the axis of the workpiece, said ways being formed in said boring head; a device for causing said toolholder with the tool to travel in said ways and having a follow-up system that contains a motor; a transmitter with a tracer sliding along said master form during relative motion of said boring head and workpiece along the axis of the workpiece and a repeater receiving pulses from said transmitter and kinematically connected with said toolholder and the motor of the follow-up system.

3,290,966
DRILL SPINDLE POSITIONING MEANS
Mack Gesko, Mount Clemens, Mich., assignor to D-M-E Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 16, 1964, Ser. No. 338,090
20 Claims. (Cl. 77—22)

1. Apparatus for positioning a plurality of parallel elongated tools comprising, at least two positioning heads

each of which is adapted to support at least one of the elongated tools, means mounting said heads for independent movement along a rectilinear path which is contained in a plane disposed generally normal of the longitudinal axes of the elongated tools, positioning means for moving said heads along said path, rotary selector rod



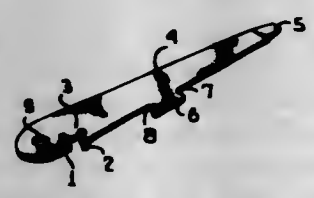
means including a selector rod rotatably mounted in parallel relation with said path, said selector rod having means along the length thereof serving through the medium of other means to actuate said positioning means for positioning said heads at predetermined locations along said path in response to the angular position of said selector rod.

3,290,967

TOOL FOR OPENING CONTAINERS HAVING REMOVABLE PLUG-TYPE CLOSURES

Karl Gunnar Stark, Malmo, Sweden, assignor to AB Platmanufaktur, Malmo, Sweden

Filed Oct. 30, 1964, Ser. No. 407,835
6 Claims. (Cl. 81—3.46)



1. A tool for opening a container, said container provided with a body having an opening and a removable plug type cover including a generally cylindrical inwardly facing friction wall engageable in the container opening, the container body and the cover each having an outwardly directed peripheral part which parts are disposed to closely oppose each other when the container is closed by the cover, said tool comprising a generally planar body having fulcrum means at one end and a handle portion at the other end, said fulcrum means providing fulcruming line contact with the inwardly facing friction wall of the cover with said planar body placed generally along a line in an axial plane through the cover and the container, and wedge means on said planar body located opposite said fulcrum means and between said fulcrum means and said handle portion, said wedge means being placed for disposition outwardly of the container opposite said fulcruming contact and including a wedge-like point directed towards said fulcrum means, whereby upon fulcruming of the tool body generally about said fulcruming line, said point will penetrate with a wedging action between the closely opposed peripheral parts of the cover and the container and lift the cover.

3,290,968

THREADED ELEMENT INSTALLATION TOOL

Robert F. Parnock, Long Beach, and Denny A. Hogan, Garden Grove, Calif., assignors to Newton Insert Co., Los Angeles, Calif., a corporation of California

Filed Mar. 19, 1965, Ser. No. 441,129
17 Claims. (Cl. 81—53)



1. A tool for installing a threaded element in a carrier part, comprising a first section adapted to be turned about an axis and having a first set of threads for engaging and holding said element, a second section mounted to rotate about said axis with and relative to said first section and adapted to apply axially inward force to said element when the latter is held by said first set of threads so that said element may be screwed by said sections into said carrier part, and a second set of threads on said first section and mating threads on said second section requiring relative axial movement of said sections upon said relative rotation thereof, one of said sets of threads of said first section being right hand threads and the other of said sets being left hand, whereby rotation of said first section relative to said second section in a direction to unscrew said first set of threads from said element will act through said second set of threads to retract said second section axially from said element.

3,290,969

REVERSIBLE RATCHET WRENCH HAVING LINEAR SLIDING MANUALLY ACTUATED PAWLS

Clifford A. Bergquist, Monterey Park, and John A. Over, Arcadia, Calif., assignors to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware

Filed Mar. 20, 1964, Ser. No. 353,493
4 Claims. (Cl. 81—63.1)



1. A ratchet wrench, comprising:
a driving head having a handle;
a driven body rotatable within the head and including a work-engaging member;
pawl means carried by the body and movable between two positions in each of which the pawl means engage the driving head to establish a torque transmitting relation between the head and the body in one direction of torque drive by the head and ratchet in the opposite direction;

a pawl actuator angularly movable to shift the pawl means from one position to the other, said angular movement normally being limited by said engagement of the pawl means and with the driving head;

a pair of diametrically disposed, arcuate shaped, overhanging shoulders on the body:

and a pair of radially projecting lugs on the actuator at diametrically spaced positions engageable with said shoulders to hold the body and pawl actuator against axial displacement;

said lugs being movable beyond and out of engagement with the shoulders by said angular movement of the actuator beyond that movement required to shift the pawl means between said two positions.

3,290,970

SLIDING JAW WRENCH HAVING CLAW HANDLE JAW ADJUSTMENT MEANS

Santo De Lucia, 41 Dodgingtown Road, Newtown, Conn.

Filed June 18, 1965, Ser. No. 467,190
11 Claims. (Cl. 81—127)



1. A ratcheting open end wrench comprising,

(a) a handle,

(b) a wrench head including a pair of complementary jaw members,

(c) means for slidably interconnecting said jaws for relative movement therebetween,

(d) means for pivotally connecting only one of said jaw members to the end of said handle whereby rotation of said handle in one direction imparts a turning force on a workpiece secured between said jaw members, and rotation of said handle in the opposite direction effects ratcheting of said jaw members about said workpiece,

(e) spring means for biasing said jaw members toward their closed position,

(f) means for effecting rotation of said wrench head against the bias of said spring,

(g) and said latter means includes a slider mounted on said handle means, and means connecting said slider to said wrench head.

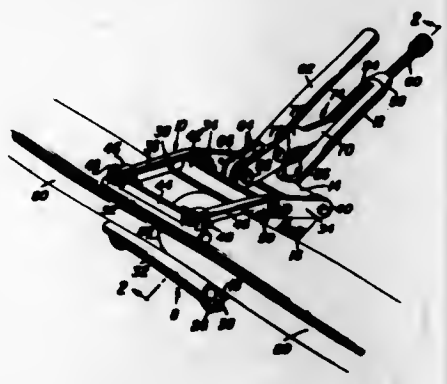
3,290,971

TOGGLE ACTUATED TOOL HAVING JAWS FOR PIPE ALIGNMENT AND CLAMPING

Donald E. Belval, Maysville, Ky.
(1246 Thurnridge Drive, Reading, Ohio)

Filed Dec. 11, 1964, Ser. No. 417,672
8 Claims. (Cl. 81—367)

1. A hand tool for aligning and holding a pair of end-abutting pipe sections, said tool comprising a pair of pivotally connected jaws for receiving the adjacent end portions of the pipe sections therebetween, said jaws including means for aligning the pipe sections, a fixed handle on one of the jaws, and means for actuating the other of said jaws, the first-named means including a plurality of spaced, parallel rods engageable longitudinally with the pipe sections at circumferentially spaced points and adapted to bridge the abutting ends thereof, certain of the rods being adjustable toward and away from others of the rods for accommodating pipe sections of different sizes, said jaws further including pairs of pivotally connected arms, and sleeves on said certain



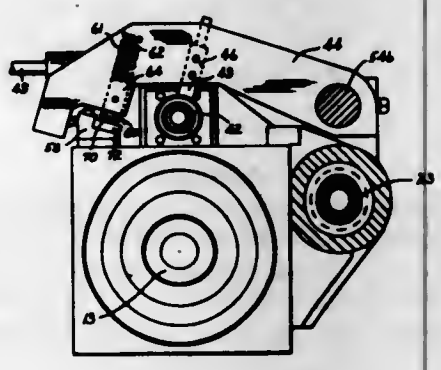
rods slidable on said arms for slidably mounting said certain rods thereon.

3,290,972

THREADING ATTACHMENT

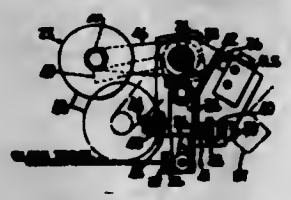
Nicholas A. Daroci, Maple Heights, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed June 4, 1964, Ser. No. 372,625
16 Claims. (Cl. 82—5.5)



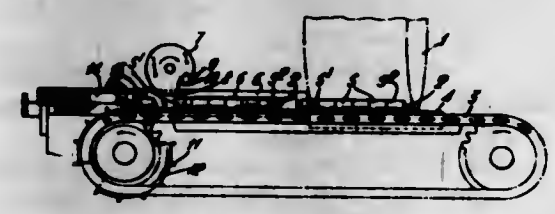
1. In a machine, a movable arm member, a support member for said movable arm member, means mounting said movable arm member for movement in a work pass from an initial position to an end position and for return to said initial position and for reciprocatory movement transversely of said work pass to said initial position and from said end position, first and second drive elements operatively connected to said movable arm and support members and engageable upon movement of said movable arm member transverse of said work pass toward said support member to said initial position and when engaged operable to effect movement of said movable arm member along said work pass and being separable by movement of said movable arm member transversely of said work pass away from said support member and from said end position, means biasing said movable arm member into its said initial working position when said movable arm and support members are positioned at the beginning of said work pass, latching means including cooperating parts on said movable arm and support members operable to hold said first and second drive elements engaged during movement of said movable arm member in said work pass, means for effecting release of said latching means and separation of said drive elements when the movable arm member arrives at its end position in said work pass, and means for returning said movable arm member to the beginning of said work pass at which said movable arm member is biased into its said initial position.

3,290,973
GLASS CUTTING APPARATUS
Alfred C. Oakes and Charles Hatfield, Mount Vernon, Ohio, and Wayne W. Oakes, deceased, late of Mount Vernon, Ohio, by Bernadette Oakes, executrix, Mount Vernon, Ohio, assignors to Pittsburgh Plate Glass Company, Allegheny County, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 8,549, Feb. 15, 1960. This application Jan. 21, 1965, Ser. No. 427,543
12 Claims. (Cl. 83—11)



1. An apparatus for cutting a moving glass sheet along parallel lines normal to the leading edge of the moving sheet which comprises a supporting structure, conveyor means to move a glass sheet in a horizontal path of travel, a pair of sheet-stopping means, said sheet-stopping means being spaced from each other in a vertical plane normal to the horizontal path of travel of the glass sheet, means mounted on the supporting structure to support each of said pair of sheet-stopping means, actuated power means to move said supporting means for said stopping means between a first position and a second position, said support means for said stopping means in the first position supporting said sheet-stopping means in the path of travel of the glass sheet and said support means in the second position supporting said sheet-stopping means above the path of travel, a first sensing means actuated by abutment of the glass sheet against one of said sheet-stopping means, a second sensing means actuated by abutment of the glass sheet against the other of said sheet-stopping means, means to actuate said power means in response to actuation only of both of said first sensing and said second sensing means for movement of said support means from the first position to the second position, cutter wheels, means to support said cutter wheels in position at least to score the glass sheet along lines parallel to the path of travel of the sheet, said wheel-supporting means being mounted on the supporting structure, and means to actuate said power means to move said support means for said stopping means from the second position to the first position.

3,290,974
MANUFACTURE OF MOUTHPIECE CIGARETTES
Tom Rowlands, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Mar. 5, 1965, Ser. No. 437,493
Claims priority, application Great Britain, Mar. 20, 1964, 11,900/64
4 Claims. (Cl. 83—23)



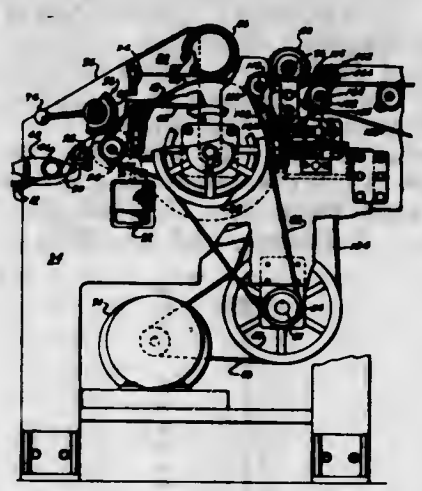
1. A method in the manufacture of mouthpiece cigarettes by assembling single length stubs with individual cigarette lengths, which comprises subdividing a length of stub rod to form a row of single length stubs, and turning end for end an end stub only of the row while maintaining the orientation of the other stubs in the row.

3,290,975
METHOD OF RE-REGISTRY OF NEGATIVES AND THE LIKE
Michael Caesar, Forest Hills Gardens, N.Y., assignor to Berkey Photo, Inc., New York, N.Y.
Filed Apr. 5, 1965, Ser. No. 445,631
2 Claims. (Cl. 83—33)



1. The method of punching a second negative in registry with a first negative having at least one prepunched hole therein without causing possible enlargement of said prepunched hole, using an easel supporting at least a punch having a die opening and cooperating bushing and members, the bushing member having an opening of the same size as said die opening and spaced a predetermined distance therefrom, the method comprising the steps of placing the prepunched hole of the first negative over the opening of the bushing member, then inserting the pin member through said prepunched hole into the bushing opening, thereafter punching at least one new hole in said first negative, then shifting the first negative so that the new hole is positioned over the opening in the bushing member, inserting the pin member through said new hole thereby aligning the first negative with its said prepunched hole over said die opening, securing said prepunched negative in position, placing said second negative over said prepunched negative, and punching a hole in said second negative through said prepunched hole in said first negative.

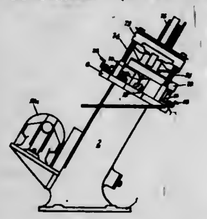
3,290,976
PAPER CUTTING MACHINE
Donald R. Grady, 6 Lee Road, Lenox, Mass.
Original application Jan. 5, 1962, Ser. No. 164,454, now Patent No. 3,182,537, dated May 11, 1965. Divided and this application Jan. 5, 1965, Ser. No. 423,490
4 Claims. (Cl. 83—302)



1. Machine for producing folio and cut size paper comprising a draw roll mounted on a shaft for feeding at least one web of paper along a predetermined path, means for continuously severing said web longitudinally, a cutter assembly inciuding a stationary bed knife disposed at a predetermined distance from said draw roll, and a rotary knife mounted on a second shaft parallel to the first shaft and disposed to cut the severed web transversely into sheets of predetermined size, a gear carried by the shaft said draw roll, a second gear affixed to said second shaft, said first and second gears being in direct mesh, means supporting said cutter assembly and movable toward and away from the draw roll shaft, and means for selectively shifting said cutter assembly supporting

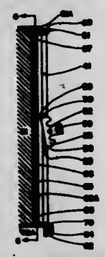
means toward and away from the draw roll shaft, thus permitting change in the gear ratio of said gears for cutting different lengths of paper.

3,290,977
DIE CUTTING MACHINES FOR LABELS AND THE LIKE
Clarence C. Brestel, Hamilton County, Ohio, and Howard R. Maschinot, Erlanger, Ky., assignors to The Printing Machinery Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 1, 1965, Ser. No. 484,385
10 Claims. (Cl. 83—467)



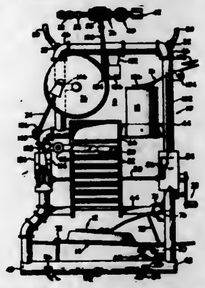
1. In a machine of the character described, a table, a powered anvil means operating through the table, die means supported above the table for cutting stacks of labels located upon the said anvil, and means for locating the said stacks of labels thereon, the said means comprising a first pusher element operating in the direction of the length of the table and serving to push into position on the anvil a stack of labels for die cutting, a first adjustable stop means located opposite the said first pusher means and serving to stop a stack of labels at a selected position on the said anvil, a second adjustable stop means for positioning the stack of labels in a transverse direction, and a second movable pusher means operating in the direction of the said second stop means to locate said stack of labels in a transverse direction.

3,290,978
CHART SEVERING MEANS FOR STRIP CHART TRANSPORT MECHANISM
Domenic Battaglini, Rochester, Richard G. Beach, Greece, and Harvey A. Klumb, Pittsford, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Original application June 24, 1960, Ser. No. 38,495, now Patent No. 3,199,109, dated Aug. 3, 1965. Divided and this application Feb. 11, 1965, Ser. No. 462,156
2 Claims. (Cl. 83—578)



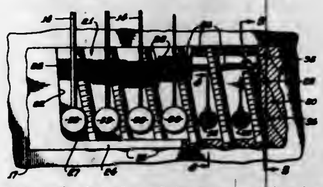
1. In a sheet material severing device of the type having a flat blade and means mounting said blade for motion in its plane along a guide extending over the surface of sheet material to be severed, and wherein said blade has a pair of intersecting edges and said means is operable to position said blade so that said edges both intersect the plane of said sheet material as said blade moves along the said guide, the improvement wherein one of said intersecting edges is a square-edged surface, a square edge of which whose length extends along the said plane and said square edge is burred along its said length; the width of said square-edged surface being the thickness of said blade.

3,290,979
MUSICAL DEVICE
Marvin I. Glass, Gordon A. Barlow, and Burton C. Meyer, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Mar. 3, 1965, Ser. No. 436,839
5 Claims. (Cl. 84—104)



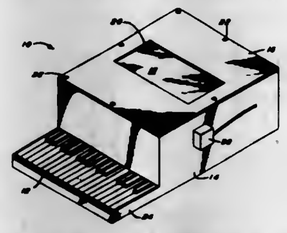
1. A musical device comprising a supporting frame structure adapted to be carried and supported by the body of the person operating said device, a plurality of percussion instruments mounted on said supporting frame, each of said percussion instruments including a sounding means movably mounted on said frame, actuating means mounted on said frame and operable to actuate said instrument sounding means in a predetermined sequence, and means for selectively locking out one or more of said instruments from operation by said actuating means.

3,290,980
BRIDGE CONSTRUCTIONS FOR GUITARS
Clarence L. Fender, Fullerton, Calif., assignor, by mesne assignments, to Columbia Records Distribution Corp., New York, N.Y., a corporation of New York
Filed Feb. 24, 1965, Ser. No. 439,506
41 Claims (Cl. 84—307)



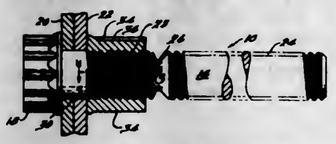
1. In an acoustical stringed instrument having a face and a plurality of strings extending over said face, a bridge for said strings comprising:
a base member secured to said face of said instrument,
said base member having a recess means therein facing said strings,
said recess having opposed side walls,
a plurality of barrels engaging said base member and disposed in said recess,
said barrels being in substantially end-to-end engagement with the outermost barrels engaging said side walls of said recess,
each string passing over one of said barrels and engaging the circumferential surface thereof,
means securing said strings to said instrument beyond said barrels,
and adjustable means engaging said barrels for controlling the positions thereof axially with respect to said strings.

3,290,981
MUSICAL INSTRUMENT
Robert Thibodeaux, St. Martinville, La., assignor of thirty-three and one-third percent to Huey P. Meaux, Winnie, Tex., and thirty-three and one-third percent to Harold B. Lipsius, Philadelphia, Pa.
Filed July 1, 1964, Ser. No. 379,620
12 Claims. (Cl. 84—326)



1. A musical instrument comprising a keyboard having a plurality of keys thereon, first pivot means for pivotally mounting said keys, a string mounting means associated with each key, second pivot means for pivotally mounting said string mounting means, connecting means for connecting each key with each string mounting means so that pivotal movement of each key causes a corresponding pivotal movement of the associated string mounting means, a musical string mounted on each said string mounting means, each string being tuned to vibrate at a different musical frequency, a damper extending transversely of said strings, said damper being mounted so that said strings rest against it in their inoperative position, a continuous bow extending transversely of said strings, motor means for causing said bow to move continuously past said string, whereby pivotal actuation of said key causes said strings to move out of contact with said damper and into contact with said bow.

3,290,982
LOCKBOLT CONSTRUCTION INCLUDING SWAGED NUT
Charles F. Marschner, Marietta, Ga., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 20, 1964, Ser. No. 353,511
3 Claims. (Cl. 85—1)



1. A fastener for securing a plurality of workpieces comprising: a pin and a tubular collar swaged onto said pin, said pin including a shank disposed in aligned openings through the plurality of workpieces and terminating at one end in an enlarged head which engages one side of the workpieces, said shank having a pintail portion at the end opposite from said head and located on the opposite side of the workpieces and adapted to be engaged by a tool for setting said fastener, a breakneck groove connecting said pintail portion to the remainder of said shank and being of a reduced section relative to the other portions of said shank, an intermediate portion located between said head and said breakneck groove and being threaded over at least a part of its surface with the threads extending up to said breakneck groove, said collar being deformed completely circumferentially over substantially its entire length into said threaded part with complementary threads being formed in said internal surface and with a plurality of closely, circumferentially spaced, axially extending ridges and generally V-shaped grooves being formed in said external surface over substantially its entire length, with said ridges and grooves adapted to be gripped by a wrench, a plurality of circumferentially disposed, axially extending discontinuities corresponding to the number of said grooves defined on said internal surface by the material of said internal surface in radial alignment with said grooves extending radially inwardly into the threads of said threaded part to an extent greater than the material of said internal surface in radial alignment with said ridges, said complementary threads gripping said threads of said intermediate portion with the force produced by swaging said collar into said intermediate portion while forming said ridges, grooves and discontinuities, said collar including means at one end for holding off the tool from swaging said collar until a selected tensile load is applied to the workpieces between said collar and said head, said pintail being severable from said shank at said breakneck groove after said collar is set on said pin at a tensile force greater than said selected force and with said collar being threadably removable from said pin by means of a wrench adapted to engage said ridges and grooves.

3,290,983
HELICAL PENETRATING FASTENING DEVICE
Thomas F. Peterson, Shaker Heights, Ohio; John D. Drinko and The Central National Bank of Cleveland, co-executors of said Thomas F. Peterson, deceased
Filed Mar. 28, 1962, Ser. No. 183,193
6 Claims. (Cl. 85—23)

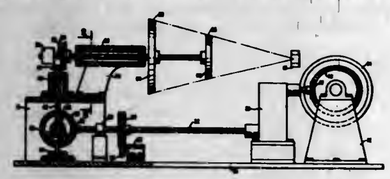


1. A penetrating fastening device comprising a plurality of penetrating elements at least one of said penetrating elements being helically formed to an open pitch length and internal diameter, said penetrating elements being disposed for portions of their lengths along a common axis, a relatively short portion of the length of said helically formed penetrating element adjacent its forward end being formed outwardly along a helix axis divergent from said common axis such that the piercing of a solid material by said fastening device causes said helically formed penetrating element to enter along an axis other than said common axis and where continued driving of said plurality of penetrating elements into said solid material will cause said helically formed element to untwist from the remaining elements and to continue to enter along said other axis.

3,290,984
BRAIDING MACHINE FOR STRAND STRUCTURES
Page E. Nolan, 3302 S. 106th St., Omaha, Nebr.
Filed Oct. 24, 1963, Ser. No. 318,690
7 Claims. (Cl. 87—51)

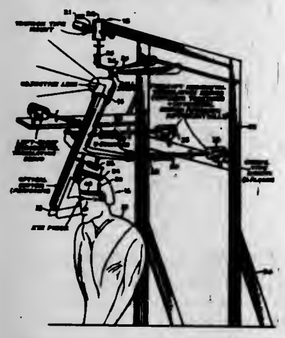
1. In a braiding machine, the combination comprising a plurality of rotatable braiding wheels disposed with peripheral portions adjacent each other, drive means for rotating said wheels, notch means disposed about each of said peripheral portions, magnetically attracted braiding tube means disposed for transfer from one notch means to another, electromagnetic means for each notch means and being energized to retain said braiding tube

means in its corresponding notch means, each notch means defining an air gap and each electromagnetic means defining opposite poles separated by said air gap whereby energization of each electromagnetic means imposes a magnetic field perpendicularly across said braiding tube



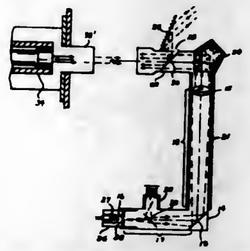
means, electrical circuit means for energizing said electromagnetic means, switch means sequentially controlling said circuit means, and electrical interlock means connected between said drive means and said circuit means being operative to deenergize said drive means upon failure of said circuit means.

3,290,985
HEAD MOTION SENSING SYSTEM
William R. Boiss, 12881 Woodlawn Ave., Tustin, Calif.; Felix W. A. Knoll, 6649 Michael John Drive, La Jolla, Calif.; and Irving J. Spiro, 4924 Mammoth Ave., Sherman Oaks, Calif.
Filed May 21, 1963, Ser. No. 282,178
4 Claims. (Cl. 88—1)



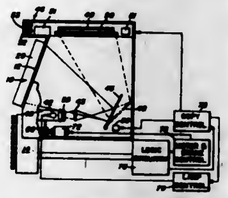
1. A device for realistic simulation of terrain images comprising: a light-weight brow device adapted to being mounted on a human head for movement therewith,
an optical viewer pivotally mounted upon a support for movement to position said viewer in front of the eyes of a human wearing the brow device,
a motion sensing device mounted upon said support and releasably engaging said brow device for sensing movements of the brow device and generating signals indicative of the direction and magnitude of the movement,
a first servo motor mounted upon said support and connected to said viewer and to said motion sensing device for moving said viewer in a vertical plane,
a second servo motor mounted upon said support and connected to said viewer and to said motion sensing device for moving said viewer in a horizontal plane,
third and fourth servo motors mounted upon said support and connected to said viewer and to said motion sensing device for selectively rotating said viewer and tilting said viewer in the azimuthal plane, whereby signals generated by said motion sensing device in response to movement of the wearer of the brow device will actuate the servo motors to continuously position the viewer before the wearer's eyes.

3,290,986
TARGET SIMULATING AND AUTO-COLLIMATING OPTICAL INSTRUMENT
Walter E. Woehl, Alamogordo, N. Mex., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 28, 1962, Ser. No. 227,681
2 Claims. (Cl. 88—14)



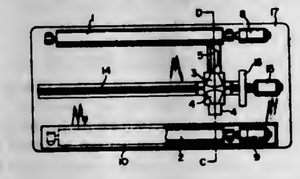
1. A target simulating and auto-collimating instrument comprising: a collimator defined by an L-shaped tube having an aperture portion containing a focal target aperture and a lens portion containing an objective lens, a reflector positioned at the junction of said portions of said L-shaped tube, a viewer in said aperture portion positioned proximate to said focal target aperture, said viewer comprising an eyepiece lens and associated reticle with an optical axis at an angle to the longitudinal axis of said aperture portion, a sleeve fitting over said lens portion and having an orthogonally related extension with a skylight therein, a variable light source provided at said focal target aperture, a reflector mounted on said extension to direct sky beams through said skylight, a pentareflector positioned in said sleeve between said collimator and extension to continue light therethrough; a beam splitter secured in said collimator between said focal target aperture and viewer to afford auto-collimating adaption; and a removable beam splitter mounted in said extension between said collimator and skylight to simultaneously pass and reflect light from said collimator and skylight respectively through said extension thereby presenting a simulated target star on a sky background.

3,290,987
AUTOMATIC SEARCHING FILM READER
Claire L. James and Raymond L. Nelson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 16, 1964, Ser. No. 338,140
6 Claims. (Cl. 88—24)



1. An automatic searching film reader for use with a film bearing document images, distinctive optical coding between adjacent series of images and a position mark associated with each image, the reader comprising:
means for driving a film at a relatively high velocity during a searching operation;
means for illuminating the coding and position marks on the driven film;
first photocell means receptive of light flux from the illuminated coding for generating signals in response thereto;
comparison circuitry receptive of the signals from said first photocell means;
means for encoding said comparison circuitry to be selectively responsive to the signals generated in response to a preselected coding on the film and to develop a hit signal when such preselected coding is detected;
control means responsive to a hit signal for de-energizing said driving means;
other photocell means receptive of light flux from the illuminated position marks for detecting the position marks as the film overruns the position of the hit signal;
means for counting the position marks detected; and
means for driving the film at a relatively low velocity in a reverse direction until the position marks are recounted.

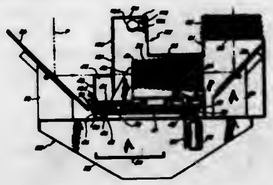
3,290,988
OPTICAL TRANSFER SYSTEM
Yoshio Murata, 63 Omori-cho, Nishinomiya, Japan
Filed May 13, 1964, Ser. No. 367,642
Claims priority, application Japan, May 18, 1963, 38/26,821
1 Claim. (Cl. 88—24)



An optical apparatus comprising a main frame; an original cylinder rotationally mounted on said main frame and bearing an original pattern thereon; a copy cylinder rotationally mounted on said main frame in parallel to said original cylinder and having a sensitizer applied thereon; drive means for simultaneously rotating said two cylinders in opposite directions and at the same angular speed so that their opposite peripheral surfaces may approach toward each other; an illuminating means disposed between said two cylinders for illuminating and spirally scanning said original pattern on the original cylinder; and an optical mechanism disposed between said two cylinders adjacent to said illuminating means for passing the reflected light from said illuminating means therethrough and producing a positive image which looks like a mirrored replica of the original pattern on said original cylinder, said optical mechanism including a group of lenses and a Dach prism located in front of said group of lenses.

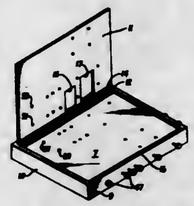
3,290,989
COPYING CAMERA
Kenneth B. Beattie, Pottersville, Roland P. Beattie II, Madison, and Robert F. De Santis, Colonia, N.J., assignors to Kenro Corporation, Cedar Knolls, N.J., a corporation of New Jersey
Filed Feb. 1, 1965, Ser. No. 429,459
24 Claims. (Cl. 88—24)

1. A copying camera comprising
a stationary support member carrying first and second horizontal transparent plates adapted to support copy and photosensitive sheet material, respectively;
an optical system including first and second plane mirrors arranged below said first and second transparent plates, respectively, and converging downwardly each at an angle of forty-five degrees from the horizontal, and an objective lens arranged between said mirrors and having its optical axis extending horizontally;
a frame carrying said mirrors and being vertically movable to vary the length of the light path from said first plate to said second plate;
a carriage mounting said objective lens on said frame and being movable horizontally relative to the latter for focusing an image of copy on said first plate in the plane of said second plate;
size ratio adjusting means operative to effect corresponding simultaneous horizontal and vertical movements of said carriage relative to said frame and of said frame relative to said stationary support



member, respectively, so as to vary the ratio of the size of the image focused at said second plate to the size of the copy on said first plate;
an assembly of elongated illuminating elements extending across said first plate below the latter and being reciprocable horizontally at right angles to the direction in which said illuminating elements extend; and
drive means operative to effect reciprocation of said assembly of illuminating elements for illuminating the entire area of copy on said first plate during exposure of photosensitive material on said second plate.

3,290,990
MULTIPRINT EASEL
Wendell L. Garlick, 4902 Soquel Drive, Soquel, Calif.
Filed Mar. 2, 1966, Ser. No. 536,532
2 Claims. (Cl. 88—24)



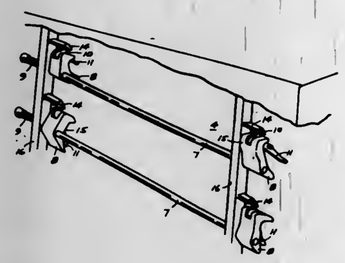
1. A multiple print easel comprising in combination:
(a) a top member;
(b) a masking cover hinged so that it can be rotated to a first position in contact with the top member and to a second position away from the top member;
(c) at least one opening in said masking cover, said opening being substantially smaller in size than the masking cover;
(d) a plurality of openings in said top member;
(e) means for raising and lowering a stop through each of the openings of said top member; and
(f) means for selectively raising said stops through said openings whereby said stops can locate a sheet of photographic paper lodged against said stop and said paper can be located against another stop to expose a different area, said stops comprising a plu-

rality of locating pins, said pins being grouped in pairs with each pair of pins being provided with an individual control.

3,290,991
CARTRIDGE MAGAZINE FOR A GUN

Carl Mauritz Christiansson, Bofors, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Filed May 10, 1965, Ser. No. 454,623
Claims priority, application Sweden, May 13, 1964, 5,880/64
4 Claims. (Cl. 89—34)

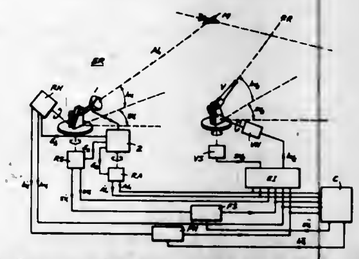


1. A cartridge magazine for a gun, said magazine comprising, in combination, a casing including a cartridge compartment for stacking therein a plurality of horizontally disposed cartridges in a vertical row and for discharging successive lowermost cartridges from the casing, a cartridge-retaining means, mounting means supporting said retaining means pivotal about an axis parallel to said vertical row of cartridges spaced apart therefrom, said retaining means including at least two retaining levers jointly pivotal into and out of the path of cartridges descending in said compartment, said levers being disposed on lengthwise opposite sides of the midpoints of the stacked cartridges, yieldable means biasing said levers into the path of descending cartridges, the weight of cartridges acting upon the levers biasing the same out of said path against the action of said yieldable means, a displaceable retaining member on each lever for controlling the pivotal position thereof, a stationarily mounted abutment member for each retaining member coacting with the same to block in a first position of the respective retaining member pivotal movement of the respective lever out of the path of the cartridges by the weight of a descending cartridge and against the action of the respective yieldable means, each of said retaining members including a release means disposed above the respective retaining lever and in the path of a cartridge descending toward said lever, said releasing means being actuated by a descending cartridge to release the respective retaining member shortly before an end part of a cartridge descending in the compartment at a slant engages the respective lever by displacing the retaining member into a second position in which the retaining member is freed of said abutment member, the distance of each of said releasing means above the respective retaining lever being at most such that a cartridge having engaged one of said retaining levers with said one end part and having actuated the release means associated therewith engages the other retaining lever with its other end part and actuates the releasing means associated with said other lever only after having been turned about its lengthwise axis into a position in which the slant of the cartridge in reference to the horizontal position is within a predetermined limit.

3,290,992
SMOOTHING FILTER FOR A FIRE CONTROL SYSTEM

Åke Hugo Petrus Blomqvist, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Filed Dec. 30, 1964, Ser. No. 422,125
Claims priority, application Sweden, Jan. 15, 1964, 499/64
7 Claims. (Cl. 89—41)



1. A fire control system, comprising a sight for determining the coordinates of a target in a polar coordinate system and the velocity components of the target in the coordinate directions of said coordinate system and for generating electric signals proportional to said target data determined by the sight, means for conveying said electric signals to an electric fire control computer for computing from said target data the point of aim for a weapon, which is to fire at the target, said signal conveying means comprising an electric filter device for each electric signal generated by said sight, which is proportional to an angular velocity of the target in an angular coordinate direction of said polar coordinate system, computer means for computing the angular accelerations of the target in said angular coordinate directions for the target in said angular coordinate directions for the assumption that the target is moving in a straight course, said filter device comprising amplifying means having input circuit means and output circuit means and a capacitive feedback from said output circuit means to said input circuit means and an integrating circuit having an output supplied to said input circuit means, a signal proportional to the computed angular acceleration of the target in the associated angular coordinate direction being supplied from said computer means to said input circuit means of said amplifying means and a signal being the difference between the signal supplied from the sight and proportional to the angular velocity of the target in the associated angular coordinate direction and the output signal of the amplifying means being supplied to said integrating circuit, the output signal of said amplifying means constituting the output signal of said filter device.

3,290,993
RELEASE MECHANISM FOR AUTOMATIC FIREARMS

Isaac Irusta, Eibar, Guipuzcoa, Spain, assignor to Star, Bonifacio Echeverria, S.A., Eibar, Guipuzcoa, Spain, a corporation of Spain

Filed June 23, 1964, Ser. No. 377,272
4 Claims. (Cl. 89—140)

1. A release mechanism for automatic firearms comprising

a spring-biased breech bolt mounted for longitudinal movement,

a frame disposed below said breech bolt and including two parallel side plates defining a chamber therebetween,

means for maintaining said side plates in space apart position,

a locking tooth member having a horizontal, longitudinal slot and pivotally mounted in said frame by means of a pin extending through said slot and having a projection disposed within the path of said breech bolt in the inoperative position of said locking tooth member and outside of the path of said breech bolt upon rocking of said locking tooth member about its pivot in its inoperative position,

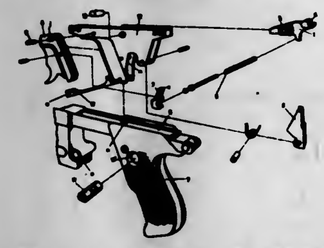
a hollow grip member receiving said frame therein, and having a bore disposed crosswise therein,

a safety catch extending crosswise through said hollow grip member and having an axial length greater than the width of said hollow grip member,

said lever including means for locating said chassis in said hollow grip member,

a spring-biased brace pivotally mounted on said frame,

a trigger having a horizontal, longitudinal slot and being pivotally secured to said frame by means of a pin extending through said longitudinal slot, as well as having two finger-engaging recesses therein,



a trigger tooth member pivoted in and engaging said trigger between and opposite to said finger-engaging recesses,

a pressure spring engaging said locking tooth member and said trigger tooth member and tending to maintain said locking tooth member in its inoperative, locking position,

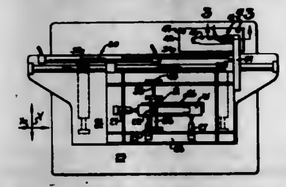
a push lever pivotally mounted on said hollow grip member and displacing said brace upon pushing said push lever in order to release said locking tooth member from its locking position, and

said trigger being rocked about its pin and subjected at first to a displacing movement prior to being rocked, respectively, depending upon selective engagement of the corresponding finger-engaging portion and to lock said breech bolt after each movement and to release said breech bolt for repeated shots, respectively, to obtain a single shot and a burst of shots, respectively.

3,290,994
CONTROL SYSTEM FOR MACHINE TOOLS

Robert C. Garrison and Allen M. Knight, both of Statesville, N.C., assignors to Garrison Machinery Company, Statesville, N.C., a corporation of North Carolina

Filed July 30, 1965, Ser. No. 475,927
24 Claims. (Cl. 90—13.5)

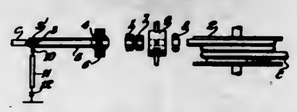


1. In a machine tool having a cutter member, a worktable member for supporting workpieces to be operated upon by the cutter member, a template having successive guide surfaces extending at different relative angles, follower means adapted to engage said guide surfaces, and means connecting said template in fixed relation with one of said members and connecting said follower means in fixed relation with the other of said members; the combination of a pattern device, spaced actuator means adjacent said guide surfaces adapted for successive registration with said follower means, means responsive to successive registration of said actuator means and said follower means and operatively connected to said pattern device for advancing the same, means responsive to said pattern device for effecting relative movement between said members and between said template and said follower means parallel to corresponding successive guide surfaces and to thereby effect successive registration of said actuator means and said follower means, and said last-named responsive means being operable to maintain said follower means and each successive guide surface in yieldable pressure interengagement during parallel movement therebetween.

3,290,995
METHOD AND APPARATUS FOR PRODUCING PLASTIC INSULATED ELECTRICAL CONDUCTORS

Ernest Harold Pull, London, England, assignor to Submarine Cables Limited, London, England, a corporation of Great Britain

Filed Dec. 4, 1964, Ser. No. 415,892
Claims priority, application Great Britain, Dec. 10, 1963, 48,837/63
17 Claims. (Cl. 90—24)

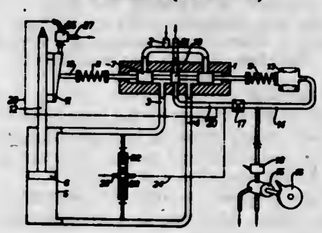


1. A method of shaving the extruded thermoplastic insulation of an electrical conductor having insulation thereon so as to leave a cylindrical surface having a predetermined diameter, the method including the steps of drawing the insulated conductor through a fixed cutting die to remove excess insulation material, slitting the resultant insulation swarf to permit removal of the latter in the form of at least one continuous ribbon, controlling the position and direction of approach of the insulated coinductor with respect to the die prior to its passage therethrough, and supporting the shaved insulated conductor in coaxial relationship with the die subsequent to its passage through the die.

3,290,996
REMOTE CONTROL OF FLUID VALVES

Terence John Floyd, Wellington, England, assignor to Anico Limited

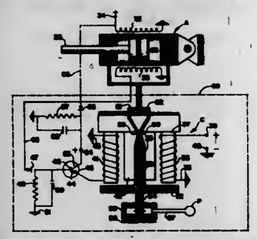
Filed Nov. 12, 1964, Ser. No. 410,422
Claims priority, application Great Britain, Nov. 13, 1963, 44,824/63
9 Claims. (Cl. 91—1)



1. In a remote control system for a hydraulic valve actuator, said system having means for connecting it to a source of hydraulic fluid under pressure and a remote

control station, means comprising a servo valve member movable in opposite directions to control the supply of hydraulic fluid under pressure from said source to opposite sides of said actuator for determining the position of said actuator, mechanical means connected for tending to urge said servo valve member in one direction with a force which varies in direct proportion to the position of said actuator, hydraulic fluid pressure means connected for tending to urge said servo valve member in the opposite direction at a pressure, the value of which is preset at said remote control station in accordance with the desired position of said actuator, further means operable, when said actuator has either reached or departed from a particular position, to open a circuit through which hydraulic fluid supplied at said pre-set pressure can leak, and a device located at said control station for indicating the presence of fluid flow in said circuit.

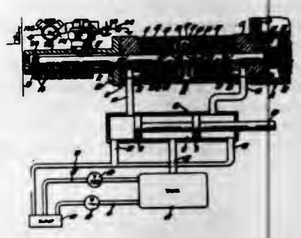
3,290,997
LOW PRESSURE PNEUMATIC PROPORTIONAL CONTROL SYSTEM
Elwood L. Jerome, Manhattan Beach, and Gene C. Burns, Palos Verdes Peninsula, Calif., assignors to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,904
10 Claims. (Cl. 91—3)



1. In a system of the character described, a cylinder assembly, piston means movable within said cylinder and including an externally projecting extension serving as a force output member, control means for variably supplying pressure fluid to the cylinder assembly at the respective sides of the piston means to actuate the latter, electrical windings included in the cylinder assembly in relatively insulated relation, energy means for exciting one of said windings, and another of said windings being in inductively coupled relation to such one winding and connected in a circuit to produce an electrical signal as a result of excitation of the one winding, the piston means being so constructed as to variably influence the coupling of the windings by movement of the piston means within the cylinder assembly.

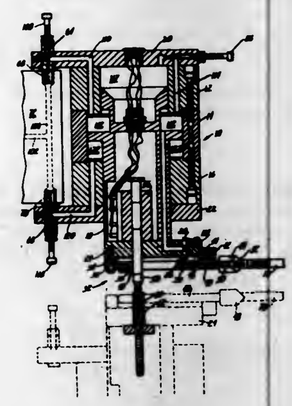
3,290,998
FLUID ACTUATOR
John A. Clements, Brownsburg, and Niles L. Dice, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,432
23 Claims. (Cl. 91—1)

1. In an actuator
(a) a pair of fluid motors having opposed motor output members which move in opposite directions upon selective and individual motor operation and retract when motor operation is discontinued,
(b) means operable to limit the movements of said motor output members to a predetermined stroke upon motor operation,
(c) an actuator output member capable of movement in the direction of movement of said motor output members,
(d) a pair of one-way devices individually operated by said motor output members each having engaging means, biasing means for retracting said motor output members and for normally holding said engaging means in a non-activated condition out of engagement with said actuator output member when said fluid motors are not being operated to permit free movement of said actuator output member,
(e) and said engaging means each being arranged to engage their operating motor output member so that



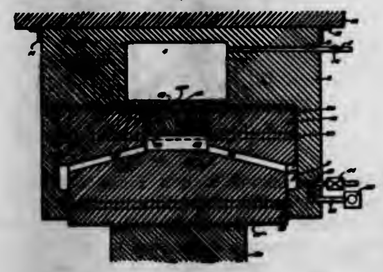
upon movement of their operating motor output member during motor operation they are conditioned from their non-activated condition to an activated condition in which they operatively engage said actuator output member and are effective to impart movement of their operating motor output member to said actuator output member and upon retraction of their operating motor output member being operable to release said actuator output member and be reconditioned in their non-activated condition.

3,290,999
PNEUMATIC SERVO ESPECIALLY USEFUL IN EXTENSOMETERS
James M. Deaker, Sclnsta, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts
Filed Oct. 19, 1964, Ser. No. 404,683
2 Claims. (Cl. 91—47)



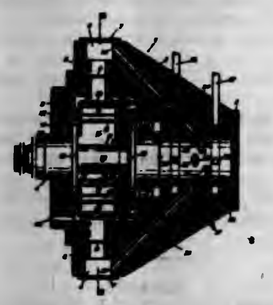
1. A pneumatic servo comprising a piston with a pair of oppositely directed ends and a housing supporting said piston for reciprocal movement, defining with said ends at least one pressure zone at each of said ends, and including conduits from a common conduit separately to each of at least one pressure zone at each of said ends, one of the separate conduits including a response restriction, and the total effective area of the piston end at least part of which is at the zone with which the last-mentioned conduit communicates being greater than the total effective area of the other piston end, the piston end of larger effective area being divided into two pressure zones in communication with each other through a stability restriction.

3,291,000
RAM APPARATUS WITH FAST ACTING VALVE CONSTRUCTION
Frederick D. Ezekiel, 73 Temple Road, Waltham, Mass.
Filed Nov. 17, 1964, Ser. No. 411,913
3 Claims. (Cl. 91—165)



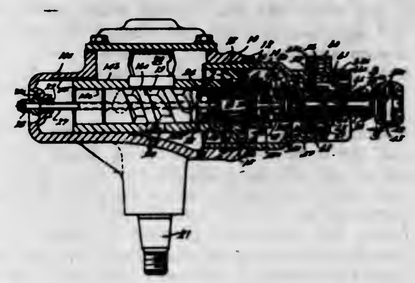
1. An apparatus of the class described comprising an accumulator having a source of stored fluid energy therein, a ram member located in the lower end of the accumulator for receiving fluid energy from the accumulator and applying said energy to a specimen to be stressed, valve means mounted between the accumulator and the ram member for controlling flow of fluid energy from the accumulator to the ram, said valve member being mounted within the confines of a recessed portion of the ram, means for exerting a backing fluid pressure through the ram and against one side of the valve means to hold it in a closed position and means for pressurizing the source of stored fluid energy.

3,291,001
HYDRAULIC MOTORS
Pierre Ernest Mayet, Orvault, and Jean Sylvain Bourdin, Nantes, France, assignors to Societe anonyme: Entreprise Bourdin & Chaneau, Nantes, France
Filed June 30, 1964, Ser. No. 379,320
Claims priority, application France, July 25, 1963, 942,633, Patent 1,371,345
6 Claims. (Cl. 91—189)



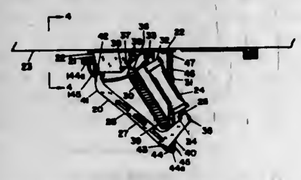
1. A hydraulic motor comprising a stationary casing, radially extending cylinders provided in said casing, a central chamber in said casing, said cylinders being closed outwardly and communicating inwardly with said chamber, pistons freely sliding in said cylinders, a rotor mounted in said central chamber and journalled in said casing, two stage planet gears revoluble in said rotor, said gears including a first stage adapted to cooperate with said pistons and a second stage including a pinion, an interiorly toothed annulus carried by said casing and meshing with the pinions constituted by the second stage of said gears, an output shaft rigid with the rotor, a chamber in said casing coaxially to the rotor, a rotary valve unit distributor housed in said last-named chamber and fixed to the rotor coaxially thereto, separate fluid inlet and outlet channels in said valve unit, said channels terminating on the periphery of said valve unit, and further channels formed in the casing and interconnecting said chamber coaxial to the rotor with the closed ends of the cylinders.

3,291,002
ROTARY VALVE WITH BYPASS
Walter E. Folkerts, Hazel Park, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed July 21, 1964, Ser. No. 384,164
11 Claims. (Cl. 91—375)



7. In a power steering gear, a housing having a cylindrical portion, a piston reciprocable in said cylindrical portion, a rotatable tubular driven shaft extending coaxially through said piston, means for interconnecting said piston and one end of said driven shaft to rotate the latter upon reciprocation of said piston, valve means carried by said shaft to rotate therewith, a cylindrical inner valve member rotatable coaxially within the bore of said shaft, said valve member having a chamber therein in communication with a source of pressurized fluid, rotatable driving means extending axially into the other end of said tubular shaft and coupled with said inner valve member to rotate the same relative to said shaft, a lost motion connection between said driving means and shaft for rotating the latter after predetermined rotation of said driving means, work conduit means in communication with opposite sides of said piston, drain conduit means, said work and drain conduit means being cooperable with said valve means and valve member for selectively interconnecting said cylindrical portion of said housing at one side or the opposite of said piston with said chamber and for simultaneously interconnecting said cylindrical portion at said opposite or one side of said piston with said drain conduit means, said driving means including a tube coaxial with said tubular driven shaft, means within said other end of said tubular driven shaft connecting said valve member with an inner end of said tube for rotation together as a unit, a torsion rod extending coaxially within said tube and having an inner end secured to said inner end of said tube for rotation as a unit therewith, and means integrally connecting the outer end of said torsion rod with said driven shaft for rotation as a unit therewith.

3,291,003
AUTOMATIC DOOR OPERATOR CONTROL SYSTEMS
John T. Lunenschloss, 5430 Lake Mendota Drive, and Dewane J. Busse, 210 Glenway St., both of Madison, Wis.
Original application Nov. 14, 1963, Ser. No. 323,723, now Patent No. 3,244,415, dated Apr. 5, 1966. Divided and this application Nov. 19, 1965, Ser. No. 508,772
4 Claims. (Cl. 91—459)



1. A control system for an automatic door operator having two positions corresponding to open and closed positions, respectively, for an associated door operated thereby, said control system comprising:
(a) a fluid-operated piston located in reciprocable relation within a cylinder,
(b) said piston and said cylinder being connected to said door operator such that when pressurized fluid is supplied to said cylinder said piston and said cylinder will initiate movement of said door operator from one of its said positions to the other said position,
(c) spring means having an inner end and an outer end, the inner end of said spring means and one end of said cylinder being connected to a frame, the outer end of said spring means and said piston being connected to a lever pivotally connected to said frame, said lever being pivotally connected to said door for operating same, said spring means providing force for exhausting said pressurized fluid from said cylinder when said door operator reaches the approximate midpoint of its travel from said one of its said positions to the other of said positions and for causing said operator to complete its movement to said other position,
(d) a source of fluid under pressure,
(e) a control valve having an inlet in communication with said fluid source, an outlet in communication with said cylinder and said piston and an exhaust in communication with the atmosphere,
(f) valve means located within said control valve,
(g) said valve means having a first position wherein said valve means permits the passage of fluid from said fluid source to said cylinder and piston and prevents the passage of fluid to said exhaust, and having a second position wherein said valve means prevents the passage of fluid from said fluid source to said cylinder and piston and permits the flow of fluid from said cylinder to said exhaust,
(h) actuating means associated with said control valve to cause movement of said valve means back and forth between said first and second positions,
(i) said actuating means comprising a two stage solenoid having a first coil which causes said valve means to move to said first position when an electric current is passed therethrough, and having a second coil which causes said valve means to move to said second position when an electric current is passed therethrough,
(j) a normally open energizing switch in series with said first coil which when closed will permit an electric current to pass through said first coil,
(k) at least one normally open de-energizing switch in series with said second coil which when closed will permit an electric current to pass through said second coil, and
(l) means associated with said door operator for closing said de-energizing switch when said door operator reaches the approximate midpoint of its travel from one of its said positions to the other of said positions.

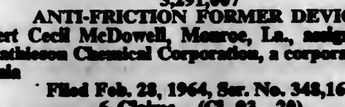
3,291,004
PNEUMATIC BRAKE SETTING MEANS WITH EMERGENCY MECHANICAL ACTUATOR THEREFOR
Billy E. Stevenson, Huntington Beach, and John T. Ostgaard, Los Angeles, Calif., assignors, by mesne assignments, to Royal Industries, Inc., a corporation of California
Continuation of application Ser. No. 289,966, June 24, 1963. This application Apr. 6, 1965, Ser. No. 448,558
2 Claims. (Cl. 92—63)



1. In combination with a brake operating booster, means for operating said booster mechanically comprising a housing attached to the booster, means therein including an operating connection to said booster to operate the latter upon failure of the normal operating means therefor, said last-mentioned means including a generally flat, imperforate flexible diaphragm, powerful coil spring means having one end seated against the interior wall of said housing and a bearing plate floatingly supported against the diaphragm by said spring means, said bearing plate being constructed and defined with temporary holding means for accepting a spring lockout tool when substantially aligned with the axis of the spring and facing toward the housing wall seating said spring end, said housing having an opening aligned with the axis of said spring and the temporary holding means for the bearing plate, a spring lockout tool for extending through said opening for engagement with the temporary holding means to allow the lockout tool to be operated for compressing the locking out the spring mechanically when the spring is either in a compressed or an expanded condition, a removable cap for said housing opening to seal off the interior of the housing when the lockout tool is disengaged from the temporary holding means and withdrawn from the housing, said lockout tool comprising a threaded shank insertable through said housing opening and having one end thereof constructed and defined to detachably interlock with the temporary holding means, said threaded shank having nut means on its other end engageable with the exterior of said housing and cooperating therewith as the nut means is tightened to compress said spring, said housing is provided with a tool storage pocket for receiving and storing the major portion of the lockout tool for protecting same from its environment to thereby maintain the tool in a convenient and readily accessible location in a useable condition when the spring is required to be locked out, said tool being tightly secured to the pocket to prevent loss of same during operation of the associated vehicle by the nut being tightened to the pocket and released from the pocket by untightening the nut and withdrawing the tool from the pocket.

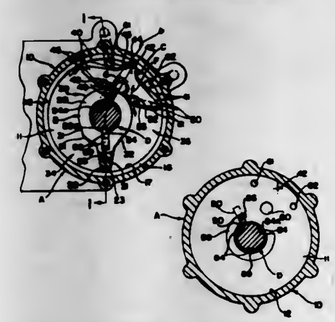
3,291,005
REINFORCED FLEXIBLE DIAPHRAGM
James H. Anderson, 1615 Hillock Lane, York, Pa.
Filed Apr. 21, 1964, Ser. No. 361,462
14 Claims. (Cl. 92—100)

1. A reinforced diaphragm comprising: a diaphragm member; an inner rigid member centrally disposed on and fixed to at least one face of said diaphragm; an outer coplanar rigid annular member fixed to said one face of said diaphragm and concentrically disposed with relation to said inner member, to define, in conjunction with said inner rigid member, an annular space therebetween; at least one axially extending annular spacing member disposed in said space in abutting relationship with said diaphragm;



and a network of elongated flexible members connecting the coplanar inner and outer rigid members together and disposed in tension over said spacer member, said network being further disposed to provide tensile resistance to axial displacement of said diaphragm while providing for axial displacement between said coplanar inner and outer rigid members.

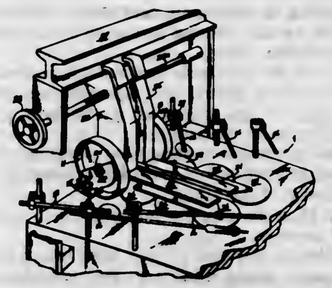
3,291,006
VANE TYPE OSCILLATING HYDRAULIC MOTOR
Robert Wesley Brundage, St. Louis, Mo., assignor to The Emerson Electric Company, St. Louis, Mo., a corporation of Missouri
Original application Aug. 22, 1963, Ser. No. 303,985, now Patent No. 3,242,703, dated Mar. 29, 1966. Divided and this application Jan. 6, 1964, Ser. No. 335,777
7 Claims. (Cl. 92—121)



1. In an oscillating type hydraulic motor, comprised of a housing, a vane piston member oscillatable about an axis on a limited arc of movement having a predetermined end, a shaft member oscillatable about said axis, means for positively engaging said members for simultaneous oscillation, the improvement which comprises other means for disengaging said means when said members are rotated beyond an end of said arc.

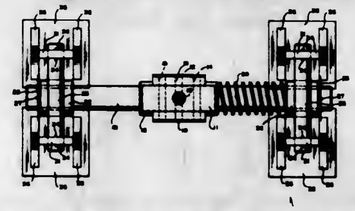
3,291,007
ANTI-FRICTION FORMER DEVICE
Robert Cecil McDowell, Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Feb. 28, 1964, Ser. No. 348,169
6 Claims. (Cl. 93—20)

1. A multi-wall tube former for simultaneously folding at least two plies of flat, flexible, coextensive sheet material into tubular bodies including a support frame, a plurality of heel rollers rotatably mounted adjacent one end of said frame, clearance guide rollers mounted adjacent said heel rollers to prevent frictional engagement of sheet material with the outer rims of said heel rollers, a plurality of former discs positioned downstream of said heel rollers, each of said former discs having a convex working surface, and means mounting said former discs at an angle inclined to the horizontal so that only the outer portion of the convex surface of each of said



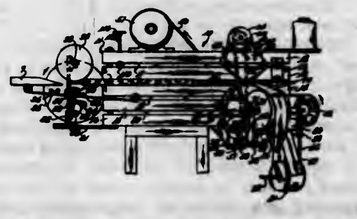
discs contacts said sheet material as the sheet material is folded into a tubular body about said former discs.

3,291,008
UNIVERSALLY ADJUSTABLE PRESSURE PAD
Frank D. Pierce, Salinas, Calif., assignor to Klemark, Inc., Salinas, Calif., a corporation of California
Filed Apr. 13, 1964, Ser. No. 359,268
3 Claims. (Cl. 93—36.3)



1. In an equalizing pressure pad in combination, a longitudinal crosshead bar, a block for securing said crosshead bar and a ram, transverse bars rotatably mounted adjacent each end of said crosshead bar, lateral members rotatably mounted at each end of said transverse bars, pressure pads mounted for swinging movement on said lateral members, and a ram for pressing said pads simultaneously against an object.

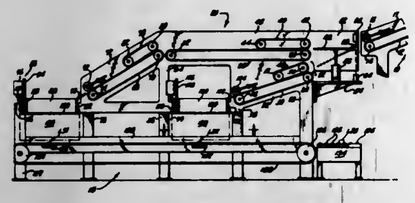
3,291,009
METHOD AND APPARATUS FOR MAKING DRINKING STRAWS
Harry E. Davis, 510 E. Cuyahoga Falls Ave., and Fred B. Pfeiffer, 270 Farndale Ave., both of Akron, Ohio
Filed Apr. 28, 1964, Ser. No. 363,178
15 Claims. (Cl. 93—80)



1. A method of making drinking straws of the character described composed of thin heat-sealable material comprising the steps of:
(a) continuously feeding a strip of said material to an elongated arbor and spirally loosely winding the strip thereon,

(b) heating the strip prior to its contact with the arbor and delivering the strip to the arbor while at heat-sealing temperature,
(c) forming a continuous permanent wrinkle in said strip at an edge thereof just prior to the strip's contact with the arbor,
(d) feeding the strip onto and about the arbor at such angle relative thereto as to provide an overlap at the edges of the strip such as to form a tube of multi-layers on the arbor,
(e) simultaneously rotating and twisting the tube around its longitudinal axis while advancing the tube lengthwise of the arbor,
(f) wrinkling the tube by subjecting it to radially inward pressure,
(g) gathering the wall of the tube into wrinkles of substantial height relative to the tube diameter, by crowding the wall axially thereof, and
(h) advancing the tube from said arbor into a severing station and there cutting the tube into predetermined lengths.

3,291,010
COUNTING AND STACKING APPARATUS
George H. Williamson, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,664
7 Claims. (Cl. 93—93)



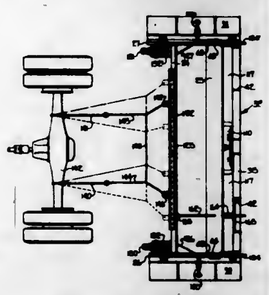
1. Apparatus for handling sheets of material continuously being deposited from the end of a conveyor, comprising
(1) a first accumulator,
(2) means to transport sheets from the conveyor to the first accumlator,
(3) a second accumulator,
(4) means to transport sheets from the conveyor to the second accumulator,
(5) each accumulator having sheet support surfaces movable between open and closed positions,
(6) means directing the flow of sheets from the conveyor alternately to the first and second sheet transporting means at predetermined intervals,
(7) conveying means positioned beneath the accumulators and operable to alternately start and stop,
(8) means causing the sheet support surfaces of the first and second accumulators to alternately open and close in timed relation to the operation of the sheet directing means whereby the support surface of one accumulator is in open position, permitting a stack of sheets to be dropped to the conveying means, while the support surface of the other accumulator is in closed position, to support sheets as they are being deposited into said other accumulator, and
(9) means for alternately starting and stopping movement of the conveying means in timed relation to the opening and closing of the sheet support surfaces of the accumulators whereby the conveying means is stationary at the time a stack of sheets is being deposited thereon from one of the accumulators.

3,291,011
REFLECTIVE SURFACE LAYERS
Hans-Peter Defregger, Munich, Georgi Georgieff, Duesseldorf, and Fritz Hoffmann, Ratingen, near Duesseldorf, Germany, assignors to Ingrid Vogt, Tegernsee, Upper Bavaria, Germany
Filed Jan. 31, 1964, Ser. No. 341,519
11 Claims. (Cl. 94—1.5)



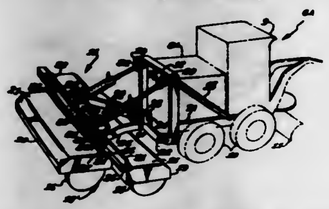
2. Method of producing a composition useful for forming the reflective surface layers on objects such as streets, roofs, and the like, which comprises uniformly mixing about 60–90 parts by weight of aluminum granules having a grain size of about 1–5 mm. with about 15–30 parts by weight of a stable distribution of bitumen in a liquid so as to form a uniform mixture thereof in which said bitumen adheres to said aluminum granules, and further mixing the resulting uniform mixture with about 10–40 parts by weight of aluminum powder having a size of less than about 0.2 mm. so as to cause said aluminum powder to be uniformly distributed on said aluminum granules to which said bitumen is adhered, thereby forming a pourable, reflective composition that can be adhered to objects to form reflective coating thereon.

3,291,012
PAVING MACHINE
Billy R. Lee, Rte. 6, Box 608 C3, Charlotte, N.C.
Filed Jan. 13, 1964, Ser. No. 337,205
13 Claims. (Cl. 94—44)



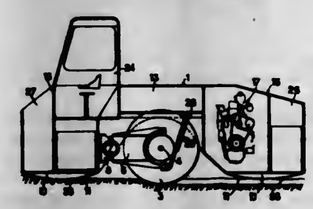
1. A paving machine adapted to be drawn behind a truck for depositing strips of paving material onto a surface to be paved, said paving machine comprising
(a) a hopper adapted to receive paving material therein and having a discharge opening therein for discharging the paving material onto the surface to be paved,
(b) a pair of spaced apart side members connected to said hopper and having surface engaging means carried thereby for supporting said hopper above the surface for movement thereover,
(c) screed means carried by said side members rearwardly of the discharge opening in said hopper for smoothing and compacting the paving material as said paving machine is drawn forwardly over the surface to be paved,
(d) flexible draft means connected at one end to the front portion of said paving machine and adapted to be connected at the other end to a truck, and
(e) means slidably mounted on the front portion of said paving machine for lateral sliding movement for shifting the point of connection of said one end of said flexible draft means laterally of said paving machine to guide the paving machine laterally as it is drawn forwardly.

3,291,013
WHEELED COMPACTOR OF THE TRAILER TYPES
Larry J. Stolp, Oronoco, Minn., assignor of one-half to Harry J. Stolp, Oronoco, Minn.
Filed Mar. 4, 1964, Ser. No. 349,272
6 Claims. (Cl. 94—50)



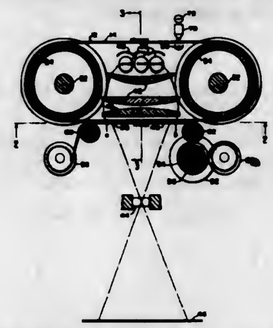
1. A compactor unit of the wheeled trailer type adapted to be used with and towed by a traction unit for power and control, said compactor unit comprising, in combination, a compactor wheel chassis frame, a plurality of compactor wheels rotatably mounted on said chassis frame for rotation about an axis transverse to the direction of travel of the traction unit, said compactor wheels independently sprung to permit each of the plurality of compactor wheels to follow ground contours, detachable hitch means affixed to the mounting frame and adapted to be attached on the rear end portion of the traction unit thereby affording a mounting station for said detachable hitch means, means operably connecting the traction unit with said compactor unit whereby said compactor unit and its mounted compactor wheels may be raised or lowered onto or off of ground engagement and shifting means operably connected to the traction unit and the compactor unit whereby said compactor unit and its mounted compactor wheels may be shifted laterally relative to the longitudinal center line of the traction unit in response to manipulation by the operator of the traction unit whereby the operator of the traction unit may raise, and laterally move, said compactor unit to permit turning of the traction unit without damage to the surface compacted by said compactor unit and to permit complete compaction by said compactor unit a predetermined transverse distance from the longitudinal center line of the traction unit.

3,291,014
SELF-PROPELLED COMPACTION ROLLERS
Jean Michel Parmentier, Rantigny, France, assignor to Societe Anonyme des Anciens Etablissements Albaret, Rantigny, France, a corporation of France
Filed Mar. 30, 1964, Ser. No. 355,717
Claims priority, application France, Apr. 19, 1963, 932,042
9 Claims. (Cl. 94—50)



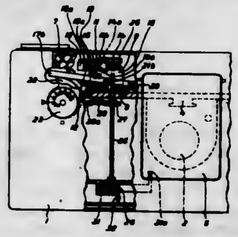
1. A self-propelled compaction roller comprising a chassis which rests on the ground through the medium of a plurality of wheels with pneumatic tires carried by at least one transverse axle, some of the said wheels being driving wheels, said plurality of wheels forming the main support for said chassis and being disposed substantially vertically in line with the centre of gravity of the chassis, each wheel being mounted at one extremity of an oscillating arm articulated on said chassis by its other extremity about a transverse horizontal axis, and a hydraulic jack having its oil supply circuit coupled to a pneumatic pressure accumulator mounted on said roller and being interposed between said chassis and a point on said oscillating arm distinct from said point of articulation on the chassis, said chassis being further provided at each of its extremities with a secondary supporting means, said supporting means being arranged on the longitudinal axis of said chassis.

3,291,015
TYPE COMPOSING APPARATUS
Louis M. Meyroud, 365 Middlesex Ave., West Medford, Mass.
Filed May 20, 1964, Ser. No. 368,839
17 Claims. (Cl. 95—4.5)



1. The method of composing type photographically, comprising the steps of causing a plurality of characters to pass in succession and in repetition along a base line, and photographing selected characters individually in spaced locations along said line, said photographing of each character including forming a movable light patch to define a region including a single character at an instant when its image is in a predetermined location on a photo-sensitive material.

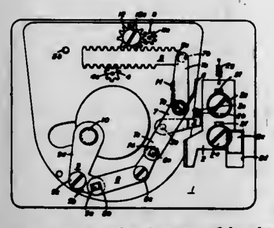
3,291,016
PHOTOGRAPHIC CAMERA WITH PHOTOELECTRIC LIGHT METER COUPLED THERETO
Adam Wagner, Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Nov. 7, 1963, Ser. No. 322,095
9 Claims. (Cl. 95—10)



1. In a camera; a case, an objective lens means movable in said case and spring urged toward operative position, a cover for said objective lens means movable on the case operable when closed to hold said objective lens means in retracted position and operable when opened to release said objective lens means for movement to

operative position, a photocell on the case, a meter in the case in circuit with the photocell having a pointer movable in accordance with the light falling on the photocell, clamp means operable for clamping said pointer in its respective position, feeler means movable in one direction in the path of the pointer for engagement with the pointer when the latter is clamped so as to be stopped by the pointer and thereby detect the position of the pointer, control means connected to said clamp means and said feeler means and having one position wherein said clamp means and said feeler means are retracted away from said pointer, said control means being spring urged away from said position for first releasing said clamp means to clamp said pointer and for then moving said feeler means in said one direction into engagement with said clamped pointer, means operated by movement of said feeler means for adjusting at least one of the diaphragm opening and shutter speed of said camera, and means interconnecting said cover and control means for moving said control means into its said one position when the cover is closed and for releasing said control means when the cover is opened.

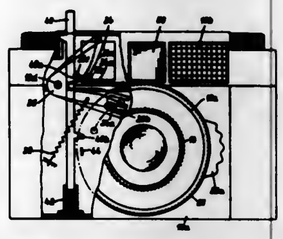
3,291,017
CAMERA WITH A MOVABLY MOUNTED PHOTOELECTRIC MEMBER
Kurt Steinlinger, Stuttgart-Hedelfingen, Germany, assignor to Eastman Kodak Company, Rochester, N.Y.
Filed Nov. 22, 1963, Ser. No. 325,569
Claims priority, application Germany, Jan. 5, 1963, K 48,630
4 Claims. (Cl. 95—10)



1. In a reflex camera having an objective lens, a cover flap movable from a viewing position to a taking position, a shutter, a manually operable camera actuating member, and a timing mechanism controlled by said actuating member to initiate exposure after a predetermined time of operation of said timing member, the combination comprising: a photocell; means normally supporting said photocell in the ray path of said lens, means for interrupting operation of said timing mechanism; and means controlled by said cover flap, upon movement thereof to its taking position for (1) disabling said interrupting means to permit said timing mechanism to resume operation, and (2) moving said support means to remove said photocell from said ray path a predetermined time prior to the beginning of exposure.

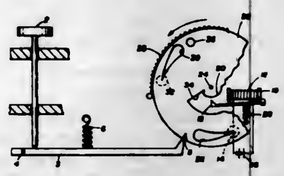
3,291,018
EXPOSURE TIME SETTER
Franz Singer, Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschraenkter Haftung & Company, Munich, Germany, a company of Germany
Filed Jan. 14, 1964, Ser. No. 337,607
Claims priority, application Germany, Jan. 18, 1963, C 28,945
1 Claim. (Cl. 95—10)

A device for setting the exposure time value for a photographic camera shutter comprising, a photo-electric meter, an automatic exposure time setter operably associated with photo-electric meter, said automatic exposure time setter including a pivotally mounted detector and a transmission pin and a transmission ring coupled to said transmission pin, a manually operable exposure time setter, said maually operable exposure time setter including a manually operable exposure setting ring and a control ring having a plurality of control slots for regulating the exposure time, said control ring being coupled to said exposure setting ring, a delay mechanism for determining the exposure time for the camera shutter, said delay mechanism having a setting pin having two ends



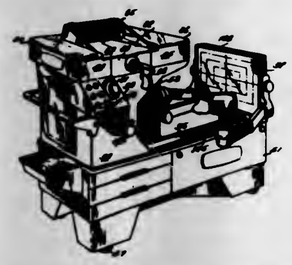
and coopertaing at a first end with the transmission ring of said automatic exposure time setter and cooperating at a second end with the control ring of said manually operable exposure time setter, and a change over member for disconnecting one end of said setting pin from the rig associated therewith when the other end is actuated to position said delay mechanism, said change over member including a pivotally mounted double arm locking lever for engaging said transmission ring when said exposure setting ring is rotated.

3,291,019
EXPOSURE CONTROL OVERRIDE FOR SUNLIGHT EXPOSURE
John H. Eagle, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 17, 1964, Ser. No. 390,065
4 Claims. (Cl. 95—10)



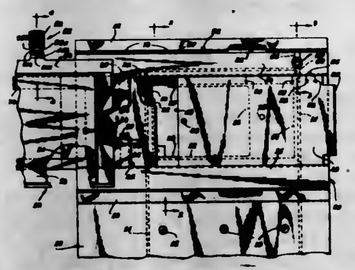
1. An exposure control system for use in a camera and comprising:
(a) a circuit including a photoresponsive device and an electromagnet energizable under control of said device as a function of scene brightness,
(b) an armature normally maintained in a first position and movable to a second position in response to a predetermined level of energization of said electromagnet,
(c) an exposure regulating member movable through a range of positions in which it conditions said camera for correct exposure at a corresponding range of values of scene brightness during normal operation,
(d) means for moving said regulating member, and
(e) means controlled by said armature and effective, upon failure of said circuit, for stopping said regulating member at a position corresponding to a predetermined intermediate value of scene brightness, said position being outside said range of positions.

3,291,020
PHOTO PRINTING AND PHOTO PROCESSING DEVICE
Murray Friedel, North Miami Beach, Fla., assignor to Visual Graphics Corp., New York, N.Y., a corporation of New York
Filed May 8, 1964, Ser. No. 365,926
2 Claims. (Cl. 95—13)



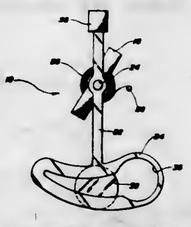
1. A photocopying device comprising a base, a copy holding assembly carried by the base, a housing carried by the base and spaced from the copy holding assembly, a photographic camera within the housing and adapted to photograph copy in the copy holder, means to store a supply of light sensitive material within the housing, a sensitive material holding frame disposed in the camera focal plane comprising a transparent support, a frosted focusing screen swingably carried above the transparent support to receive the sensitive material thereunder, at least one transparent fluid filled bag secured to the focusing screen and means to hold the said screen against the transparent sheet to retain the sensitive material therebetween during exposure, means to move the light sensitive material from the storage means into the focal plane of the camera for exposure, a developing assembly within the housing in which the sensitive material holding frame is swingably and horizontally secured within the housing, a mirror disposed in the camera to direct light coming through the camera lens upwardly upon the material in the frame and means to selectively swing the frame in front of the mirror to receive light directly from the camera lens and means to transport the exposed sensitive material through the developing assembly to produce a finished photographic print.

3,291,021
CAMERAS FOR DIFFERENT SIZE PICTURES
Charles F. de Mey II, West Redding, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed July 24, 1964, Ser. No. 384,972
8 Claims. (Cl. 95—36)



1. A device for photographing a desired area, containing at a certain time the particular desired image produced by a stationary instrument within a larger stationary image field, on an appropriately sized section of a film, comprising:
stationary support means, rigidly attached to said stationary instrument, for movably mounting a slide assembly;
a slide assembly movably mounted by said support means in a linearly movable manner relative to said stationary image field;
a first relatively stationary masking means rigidly attached to said slide assembly for framing one edge of that area of said image field desired to be photographed;
a second movable masking means movably mounted on said slide assembly for framing the edge of said desired image area opposite and substantially parallel to said one edge;
whereby the position of said slide assembly determines the framing of said one edge, and the position of said movable masking means determines the framing of said opposite edge, and therefore also the size, of said desired image area;
and means for adjustably positioning a film holder behind said two masking means, said film holder therefore being adjustable relative to said stationary image field, so as to allow photographing of said framed desired image area on an appropriate unexposed section of the film carried thereby.

3,291,022
EXPOSURE CONTROL SYSTEMS FOR CAMERAS
Morris E. Brown, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 13, 1964, Ser. No. 337,221
4 Claims. (Cl. 95—64)

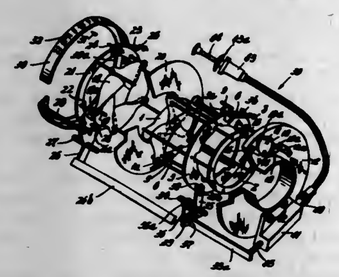


4. An exposure control system for a camera comprising an exposure regulating device having a range of operating positions, driving means coupled to said device for changing its position within said range, means providing current of either of two polarities to the driving means, and resilient means normally overcome by the driving means and coupled to said exposure regulating device tending to move said device toward a predetermined position intermediate the ends of said range of positions, so that when the driving means loses its force, the exposure regulating device will assume a position intermediate the ends of said range of positions.

3,291,023
PHOTOGRAPHIC CAMERA
Franz W. R. Starp, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Feb. 21, 1964, Ser. No. 346,459
Claims priority, application Germany, Feb. 23, 1963, G 37,136
2 Claims. (Cl. 95—64)

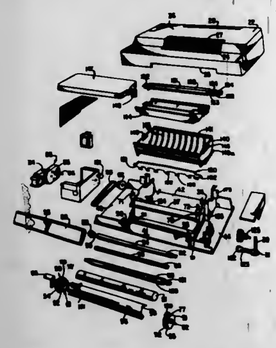
1. A photographic camera comprising: a shutter; a first ring connected to said shutter to operate the same between a closed position and an open position; an adjustable diaphragm; a second ring connected to said diaphragm to adjust said diaphragm between an open position and a range of stopped down positions; a first lever connected to said first ring to operate said first ring; a

manually operable actuating device engaging said first lever; a second lever connected to said second ring to control the setting of said diaphragm, means interengaging said first lever with said second lever so that after said first lever is moved by means of said manually operable



actuating device beyond a position corresponding to said open position of said shutter, said second lever is moved by said first lever to open said diaphragm for an intermediate observation of the scene to be photographed from a preset position to the open position of said diaphragm.

3,291,024
PHOTOCOPY MACHINE
Burton D. Elsner, Highland Park, and Philip J. Bernstein, Skokie, Ill., assignors to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed May 28, 1964, Ser. No. 370,937
3 Claims. (Cl. 95—77.5)



1. In a photocopy machine for office use, means for exposing an original and a copy sheet comprising in combination, a supporting frame, a fluorescent tube, an elongated transparent cylinder fitted over the fluorescent tube and mounted for rotation about its axis, a continuous flexible drive belt sufficiently wide to accommodate the width of the original and copy sheet trained about a pair of shafts journalled in the outer side of said frame so that said belt is in bearing engagement with said transparent cylinder, said belt being provided with an inwardly extending central rib and said shafts being provided with complementally formed and located grooves which receive said rib so as to prevent transverse displacement of said belt during rotation of the same, means for admitting an original and copy sheet between the transparent cylinder and the flexible belt for exposing the same to the light of the fluorescent tube, and a light shield provided around a portion of said fluorescent tube for concentrating the light on a predetermined zone of the original and copy sheet in the area of engagement by said flexible belt.

3,291,025
SHEET PROCESSING APPARATUS
James A. Ross and Deforest E. Ikley, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 15, 1964, Ser. No. 367,649
11 Claims. (Cl. 95—98)



1. In an apparatus for processing sheets of photosensitive material in a tank containing a processing solution, the combination comprising:

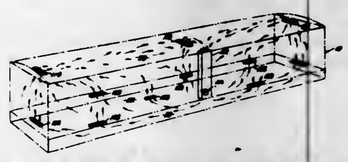
gas distributor means for dispensing a gas into said tank along a plurality of parallel, spaced apart planar zones for upward movement through said solution;

a basket for insertion into and removal from said tank;

said basket having means therein for receiving sheets of photosensitive material and guiding one of the ends thereof to a fixed planar position; and

positioning means on said tank and basket cooperating to position said basket when it is inserted into said tank with said ends of said sheets substantially in alignment with one of said zones whereby said gas during its upward movement passes along the surface of said sheets to provide solution agitation.

3,291,026
COMBINATION AIR DISTRIBUTION AND STRUCTURAL SUPPORT ASSEMBLY FOR HOUSING
Dewane B. Simpson, Carrollton, Mo.
(2528 W. Hayward, Phoenix, Ariz.)
Filed Mar. 23, 1964, Ser. No. 353,248
11 Claims. (Cl. 98—10)



1. In a mobile trailer having running gear, hitch and a hollow, enclosed body provided with a top and a bottom, the combination with said body of:

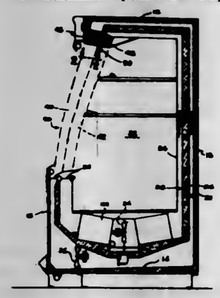
a first hollow member above the top of said body and presenting a first enclosed chamber, there being first vent means placing said first chamber in fluid communication with said body;

a second hollow member below the bottom of said body and presenting a second enclosed chamber, there being second vent means placing said second chamber in fluid communication with said body, said second hollow member having an open framework therein maintaining said second chamber open throughout its interior, providing structural strength for said second member and supporting the latter and the body sufficiently to permit the trailer to be moved from

place to place as an integral unit without substantial structural deterioration; and

means extending between said members for placing said chambers in fluid communication with each other.

3,291,027
AIR OUTLET NOZZLES FOR AN AIR CURTAIN DEVICE
Sterling Beckwith, Libertyville Township, Ill., assignor to Dual Jet Refrigeration Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 10, 1965, Ser. No. 431,500
9 Claims. (Cl. 98—36)



1. In a construction of the type defining an open side for access to the interior of the construction and including air inlet means and a plurality of air nozzles extending in side-by-side relationship across opposite edges of said open side, passages defined in said construction communicating each of the corresponding inlets and nozzles, and circulating means located in at least one of the inner ones of said passages for driving air streams through said passages and out of said nozzles for movement across said open side in the form of air curtains between corresponding inlets and nozzles, said air curtains crossing said open side in side-by-side contacting relationship, the improvement in said nozzles comprising thin sheet members overlying each other, said sheet members defining a plurality of elements extending outwardly from the faces thereof, said elements operating to maintain said sheet members in spaced-apart relationship with respect to each other, said elements extending outwardly a relatively short distance and being spaced apart a distance substantially greater than their outward extent whereby a plurality of channels which are relatively long and narrow in cross section are formed by said sheet members, said sheet members being aligned lengthwise of the outlet ends of said passages with said elements extending in the direction of air flow whereby said channels are adapted to carry the air streams in said passages for movement as said air curtains across said access openings.

3,291,028
DIFFUSER
Gordon C. Sylvester and John F. Newell, Verona, Wis., assignors, by mesne assignments, to Weir Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 31, 1964, Ser. No. 356,240
7 Claims. (Cl. 98—40)

7. The combination of a diffuser and duct means adapted to accommodate adjacent oppositely flowing air streams which are at relatively different temperatures and to deliver air at one temperature to an area to be conditioned and receive return air from said area at a different temperature, said combination comprising,

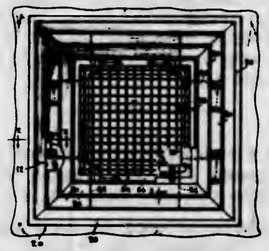
duct means defining first and second adjacent passages accommodating said oppositely flowing air streams and including common duct means separating said passages,

first means in registry with said first passage and defining an entrance end to said first passage for said return flow,

second means adjacent to said first means and in registry with said second passage defining a discharge end from said second passage for supply air flow,

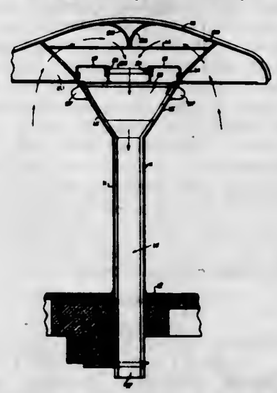
baffle means positioned between said entrance and discharge ends and presented to return flow into said first passage,

and means adjacent to said discharge and entrance ends but spaced from said discharge and entrance ends in a direction into said first and second passages and



defining an opening through said common duct means to provide communication between said first and second passages inwardly of said entrance and discharge ends, flow through said adjacent passages occurring on both sides of said opening and the diversion of flow into said entrance end into the flow from said discharge end producing a mixing of said flows at said baffle means and in the area of said opening, said mixed air being at a temperature between that of said return and supply air and a portion of said mixed air passing through said opening into said first passage and along said common duct means to prevent condensation within said passages.

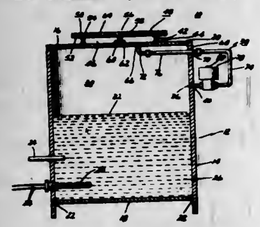
3,291,029
RANGE HOOD WITH FILTERING MEANS THEREIN
Fred M. Henne, 108 William Howard Taft Road, Cincinnati, Ohio
Filed Apr. 6, 1964, Ser. No. 357,680
8 Claims. (Cl. 98—115)



1. In combination, a substantially vertically disposed duct having an open upper end which terminates in a substantially horizontal plane, and having a lower end interconnected to an exhaust system, a relatively wide hood, means supporting said hood above and spaced from said open upper end of said duct, the hood extending a substantial distance laterally beyond a side of said duct

to overlie smoke producing means positioned adjacent to said side of the duct, said hood having opposite end walls provided with access means, means on the underside of said hood and over said open upper end of the duct for directing smoke rising from said smoke producing means inwardly and downwardly into said open upper end of said duct, filter holding and guiding means, means supporting said holding and guiding means in operative position over said open upper end of said duct, said filter holding and guiding means being connected to opposite sides of the duct, and filter means supported upon said holding and guiding means over the open upper end of said duct whereby said smoke is drawn downwardly by the exhaust means through the said filter and into the underlying open upper end of said duct, said filter means being changeable through said access means of said hood end walls.

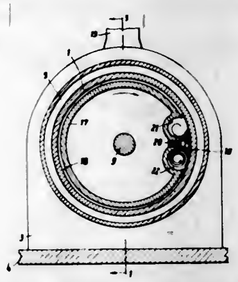
3,291,030
APPARATUS FOR STEAMING FOOD PRODUCTS
George D. Arnold, Peru, Ind., assignor to The Dewey Shepard Boiler Co., Inc., Peru, Ind., a corporation of Indiana
Filed Dec. 14, 1964, Ser. No. 418,223
16 Claims. (Cl. 99—234)



1. Apparatus for steaming food products comprising: a steam boiler having a wall defining a pressure vessel for converting water therein into steam, said wall having a steam outlet therein at a first location; a steam line having one end connected to said steam outlet; means on said wall at a second location spaced from said first location and defining an exterior recess; an apertured member for receiving food products to be warmed removably secured to said wall and closing said recess to define a steam chamber therewith, said apertures communicating with said chamber; said wall having a steam exhaust opening therein communicating with said chamber; said steam line extending through said wall into said vessel at a third location spaced from said first and second locations and having its other end connected to said exhaust opening, said steam line having a first portion on the exterior of said wall extending between said steam outlet and third location and a second portion within said vessel extending between said third location and said exhaust opening, and selectively actuable control valve means in said first steam line portion for selectively admitting steam from said vessel to said chamber for exhaust through the apertures in said member.

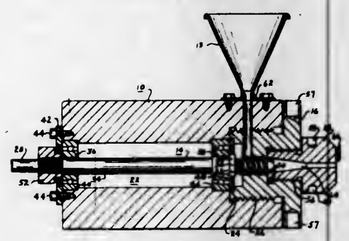
3,291,031
TEMPERING DEVICE FOR FLOWABLE CONFECTION MASSES
Werner Walldorf, Neuwied, Germany, assignor to Richard Winkler, Neuwied, Germany, and Kurt Dunebier, Gladbach, Germany
Filed May 12, 1965, Ser. No. 455,277
Claims priority, application Germany, July 18, 1964, W 37,188
12 Claims. (Cl. 99—236)

1. A device for tempering chocolate and similar fat-containing confection masses in a flowable state, said device comprising, in combination, a cylinder, means for maintaining the peripheral wall of said cylinder at a selected cool temperature, said cylinder having an inlet conduit for the mass to be tempered at one end and an outlet for the mass at the other end, roller means rotatably mounted within said cylinder, the outer peripheral wall of said roller means defining a narrow annular slot with the inner peripheral wall of the cylinder, scraper means mounted on the peripheral wall of the roller means in



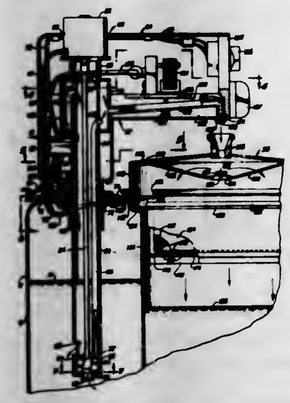
coaction with the peripheral wall of the cylinder, said peripheral wall of the roller means including a suction groove extending from said scraper means to said mass inlet conduit connected thereto and a pressure groove extending from said scraper means to said mass outlet conduit connected thereto, said suction groove being disposed posteriorly of the scraper means in a predetermined rotational direction of said roller means and said pressure groove being disposed anteriorly of the scraper means in said rotational direction.

3,291,032
CEREAL PUFFING MACHINE
George O. Graves, 802 S. Carlisle, South Bend, Ind.
Filed Aug. 22, 1962, Ser. No. 218,613
2 Claims. (Cl. 99—238)



2. A machine for producing puffed product from cereal, comprising a body having a bore therethrough and a cylindrical recess with threaded side walls in one end of said body in axial alignment with said bore, a stator having a cylindrical portion with a threaded surface for seating in said recess and threadedly engaging the threads in the walls thereof and having axial chambers therein on the internal and external sides thereof, a screw in said internal chamber, a shaft connected to said screw and extending through said bore, bearings at each end of said bore for said shaft, a head die secured to said stator in said external chamber and having a passage therethrough in axial alignment with said screw, said passage having a two-stage construction, including a first portion tapered inwardly from inlet to outlet and communicating with said internal chamber, and a second portion tapered inwardly from inlet to outlet and connected to the small end of said first portion and being larger at its large end than the small end of said first portion.

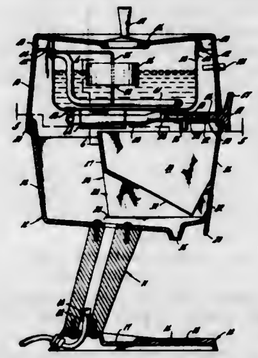
3,291,033
AUTOMATIC COFFEE BREWING MACHINE
Wilbur D. Curtis, Encino, and Thomas M. Lowry, Pico Rivera, Calif., assignors to Curtis Automatics, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 15, 1963, Ser. No. 302,345
21 Claims. (Cl. 99—283)



21. A machine for preparing beverages which comprises: supporting structure, a vessel on said supporting structure adapted to contain a quantity of hot water, receptacle means mounted on said supporting structure and adapted to have disposed therein material from which the beverage is prepared, a reservoir on said supporting structure and disposed at a higher elevation than said receptacle means, means for transferring a measured amount of hot water from said vessel to said reservoir, and a gravity flow conduit extending from said reservoir and opening above said receptacle means for delivering said measured amount of hot water by gravity feed from said reservoir to said receptacle means wherein the water gravity flows through the material to provide the beverage, said gravity flow conduit restricting the flow of hot water to a rate which is slower than the rate of transfer of said measured amount of hot water from said vessel to said reservoir, whereby the rate of flow of the hot water from said reservoir to said receptacle means is determined entirely by said gravity flow conduit and is independent of the rate of transfer of the hot water from said vessel to said reservoir, said vessel being disposed at a lower elevation than said reservoir, said transferring means including a motor driven pump and switching means connected to the pump for controlling the amount of hot water transferred by the pump from said vessel to said reservoir.

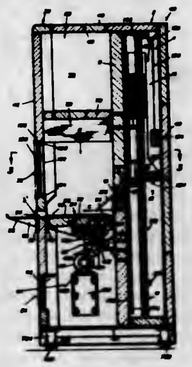
3,291,034
BEVERAGE DISPENSER
John P. Sohn and Robert E. Little, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Dec. 12, 1963, Ser. No. 330,162
13 Claims. (Cl. 99—291)

3. A beverage dispenser, comprising a housing having an opening formed in the lower portion of one of its side walls, a pair of laterally spaced ribs extending inwardly from said opening, a tray insertable into said opening on said ribs and having front and rear walls interconnected by a pair of end walls and a plurality of transversely spaced intermediate walls parallel to said end walls whereby said intermediate walls define a plurality of filter compartments, a meshed lower wall extending along the bottom of said tray and closing the bottom thereof, a water tank mounted in said housing above said tray, and a valved delivery conduit connected to said tank and selectively movable over said filter compartments for dispensing the water from said tank into said



compartments, said housing having a second opening formed therein below said tray for passage of the filtered brew from said filter compartments into a receptacle.

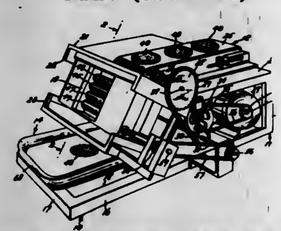
3,291,035
VENDING APPARATUS ADAPTED TO STORE AND PROCESS FOOD ITEMS
Eugene Ignelzi, 10697 W. 25th Ave., Lakewood, Colo.
Filed Sept. 7, 1965, Ser. No. 485,286
The portion of the term of the patent subsequent to Feb. 8, 1983, has been disclaimed
7 Claims. (Cl. 99—357)



1. In a food cooking and vending apparatus, the improvement comprising:
cooking compartment means within said apparatus;
said cooking compartment means including spaced apart insulated first and second side wall means, insulated bottom wall means extending between said side wall means, and insulated top wall means extending between said side wall means above said bottom wall means;
said first side wall means including inlet opening means spaced between said top wall means and said bottom wall means;
said second side wall means including outlet opening means having spaced apart top and bottom edges with said bottom edge being substantially coplanar with said bottom wall means;
conveyor means movable within said cooking compart-

ment means for moving a food item therethrough;
said conveyor means including an endless belt at least partially juxtaposed to said bottom wall means and movable linearly with respect thereto;
said bottom wall means including at least one opening therein between said first and second side wall means;
at least a portion of said endless belt extending through said bottom wall means opening and extending outside said cooking compartment means;
a driving element outside said cooking compartment means in driving engagement with said portion of said endless belt;
drive means coupled with said driving element; and,
radiant energy cooking means within said cooking compartment means for directing heat downwardly toward said coveyor means;
said drive means being operative to cause said driving element to move said endless belt whereby a food item introduced through said inlet opening means and deposited onto said endless belt will be moved through said cooking compartment means beneath said radiant energy cooking means and will thereafter be discharged from said cooking compartment means through said outlet opening means.

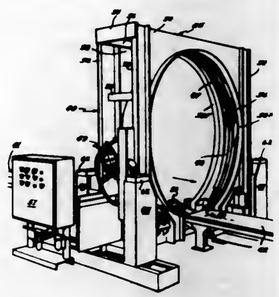
3,291,036
RESISTANCE HEATING COOKING DEVICE
Murray A. Perl, New London, Conn., assignor to International Food Machine Corp., New London, Conn., a corporation of Connecticut
Filed Mar. 17, 1965, Ser. No. 440,372
1 Claim. (Cl. 99—358)



Means for cooking generally planar articles by electrical resistance heating, comprising: a generally horizontally disposed transport means supporting and advancing uncooked articles to a position for cooking, said transport means including an endless belt and chute means communicating between said belt and a cooking means, said chute means being disposed at an angle to the horizontally disposed belt means, said cooking means including opposed electrically conductive rollers defining a generally planar interstice disposed at an angle with respect to the plane of movement of uncooked articles on said transport means wherein said rollers are connected in series to a source of electrical potential and having a normally open circuit closed by the entrance of food into said interstice to provide electrical communication between said rollers, collecting means disposed beneath said cooking means for receiving articles in cooked condition from said cooking means, and a single prime mover means for simultaneously advancing said transport and cooking means in synchronism.

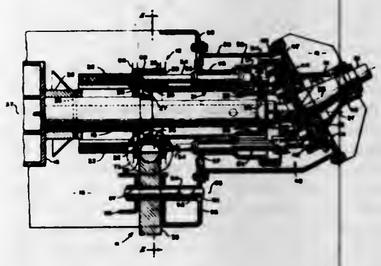
3,291,037
END ROLL STRAPPING APPARATUS
Bernard P. Kunka, Chicago Heights, and Paul W. Fawcett, Western Springs, Ill., assignors to Interlake Steel Corporation, a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,182
14 Claims. (Cl. 100—4)

1. Strapping station apparatus for an object that is to receive a band thereabout, said apparatus having support means mounting a movable frame that is to receive the object therewithin, said frame being equipped with strap applying and securing facilities operable, upon being energized, to apply and secure a band about the object disposed therein, object end locator means mounted



to move with said frame and responsive when the frame reaches a predetermined relation to one end of the object to maintain such relation, and means operable to energize said facilities when said predetermined relation exists between said object and said frame.

3,291,038
AGRICULTURAL MACHINE
Jack W. Crane, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,778
8 Claims. (Cl. 100—139)



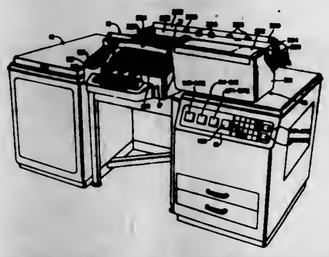
1. A pelleting machine comprising a die mounting ring having an annular series of material receiving cavities opening upon the exterior periphery of the ring, an annular series of pellet shaping dies on one side of said ring and opening into said cavities, a corresponding series of material compressing and extruding reciprocable plungers connected with said ring in axial alignment with said dies and operative to enter said cavities from the opposite side of said mounting ring to coact with said dies to form and extrude pellets of the material in the cavities, means mounting said ring, dies and plungers as a collective unit rotatable about a fixed axis, means for rotating said unit, roller means rotatable about an axis external to said die mounting ring and coacting with the cavity openings periphery of the ring to successively compress into the cavities pelleting material introduced between the ring and the roller, material precompressing means for introducing material, and means cyclically reciprocating said plungers in the succession in which the cavities are charged by said roller means.

3,291,039
PAPER CALENDER ROLL
De Witt J. Christie, Skaneateles, N.Y., assignor to John A. Manning Paper Co., Inc., Troy, N.Y.
Filed Apr. 20, 1964, Ser. No. 360,930
8 Claims. (Cl. 100—162)



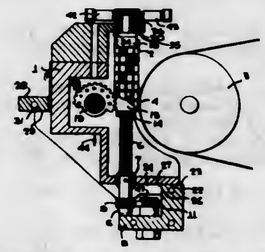
1. A composition roll for use in a calender that subjects the roll to elevated temperatures, said roll comprising
(A) a core for rotatably mounting said roll, and
(B) a plurality of sheets of cellulosic fibers
(1) chemically treated with an additive selected from the group of compositions that render such fibers resistant to increased brittleness and to loss of strength due to exposure to elevated temperatures, and
(2) forming a multi-layer cylindrical composition body covering said core.

3,291,040
PRINT READ-OUT IN COMPUTER SYSTEMS USING STORED PROGRAMS
Thomas P. Holleran, Brookville, and Patrick B. Close, Dayton, Ohio, and Froeland R. Goldammer, Yorktown Heights, N.Y., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Original application Dec. 15, 1959, Ser. No. 859,596, now Patent No. 3,112,394, dated Nov. 26, 1963. Divided and this application Oct. 7, 1963, Ser. No. 314,093
5 Claims. (Cl. 101—93)



1. In a machine of the class described, the combination comprising: recording means capable of selectively recording a plurality of characters of a plurality of different kinds on an associated medium with the characters of selected kinds each being recorded in a different order position along a recording line transversely oriented with respect to said medium; a storage device having a plurality of different order storage locations with each storage location corresponding to a different order position along said recording line and adapted to have stored therein a character manifestation corresponding to a character of a particular kind to be recorded on said medium; read-out means associated with said storage device for executing a reproduction cycle of operation with respect to said storage device such that the character manifestations stored at said storage locations thereof are serially reproduced in consecutive order, starting with the character manifestation stored in one extreme order position and ending with the character manifestation stored in the other extreme order position; means for initiating a succession of reproduction cycles of operation of said read-out means with the number of reproduction cycles of operation initiated being related to the number of different kinds of characters to be recorded along said recording line of said medium; means for successively designating a character of a different kind prior to the initiation of each reproduction cycle of operation of said read-out means; and means operatively connected to said recording means and responsive to those character manifestations reproduced during a reproduction cycle of operation of said read-out means which correspond to the character of a designated kind, for causing the character of said designated kind to be recorded in each of those order positions along said recording line which corresponds to a storage location at which the corresponding character manifestation was stored.

3,291,041
PAGE PRINTER MECHANISM WITH TILTING AND TRAVELLING PRINT HEAD
James A. Burchfield, Melbourne, James E. Bollinger, Jr., Eau Gallie, and John H. MacNeill, Indialantic, Fla., assignors to Sorobon Engineering, Inc., Melbourne, Fla., a corporation of Florida
Continuation of application Ser. No. 297,419, July 24, 1963. This application July 2, 1965, Ser. No. 469,260
9 Claims. (Cl. 101—93)

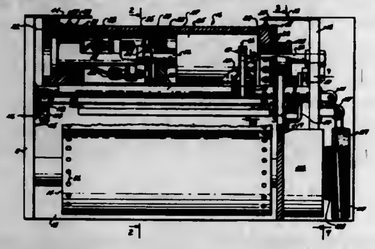


1. A type font mechanism comprising a hollow, cylindrical type font having a plurality of indicia arranged in rows and columns thereon, a splined shaft, said type font being positioned on said shaft for longitudinal movement thereon, said type font having internal splines engaging the splines of said splined shaft so that said type font rotates with said shaft, means for rotating said splined shaft to effect selection of a column of indicia, a pair of elongated members positioned on opposite sides of said type font generally parallel to its longitudinal axis, means interconnecting said members with said type font so that said members and said type front move as a unit longitudinally of said shaft, means for moving said elongated members to effect selection of a row of said indicia on said font, a type font carriage, said means for moving being mounted on said type font carriage for movement therewith, and means for mounting said splined shaft in said type font carriage for movement therewith and for rotation about an axis perpendicular to the axis of said splined shaft and parallel to a plane including said elongated members.

3,291,042
HIGH SPEED PRINTING MECHANISM
Chris A. Christof, San Gabriel, and John D. Gearheart, Covina, Calif., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California
Original application Sept. 16, 1963, Ser. No. 308,937, now Patent No. 3,253,539, dated May 31, 1966. Divided and this application Aug. 17, 1965, Ser. No. 487,649
10 Claims. (Cl. 101—93)

1. Printing mechanism comprising the combination of a type drum having a plurality of different type characters therearound, means for advancing said drum about its axis, a printing hammer having a platen portion, means

for guiding said hammer along the length of said drum, means for guiding a record medium between said drum and said hammer, an endless printing ribbon, means on said hammer guiding said ribbon thereover and past said platen portion in a direction at right angles to the length of said drum, said means constraining said ribbon to



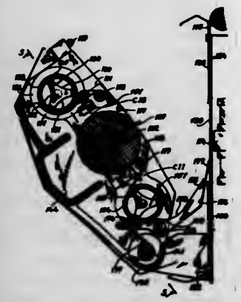
move bodily with said hammer along the length of said drum, means for actuating said hammer whereby to cause said ribbon and said platen portion to force said record medium into printing engagement with a said type character, and means for advancing said printing ribbon over said hammer.

3,291,043

CONTROL MEANS FOR DRIVING AND TENSIONING INK RIBBONS TO HIGH SPEED PRINTING MACHINES

Michel André Robert Bernard, Asnieres, France, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France

Filed Mar. 1, 1965, Ser. No. 436,108
Claims priority, application France, Mar. 19, 1964, 967,894
3 Claims. (Cl. 101—96)



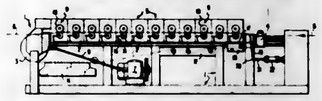
1. In a system for moving an inked ribbon in one direction or the opposite direction in a printing mechanism, the combination comprising a first driving roller and a second driving roller, an inked ribbon whose two ends are each secured to a supporting roller on which a portion of the said ribbon is wound, driving means for driving each roller separately in one direction and comprising for each roller an electric induction motor mechanically coupled to the said roller through a reversible speed reduction mechanism, an alternating-current source, a direct-current source, switching means comprising relays for controlling the movements of the ribbon by connecting the inductor of each motor to one of the said two current sources, the inductor of one motor being connected to the alternating-current source, and the armature of the said motor driving the supporting roller to which it is coupled and winding the ribbon on the said roller, while the inductor of the other motor is connected to the direct-current source and produces in the said motor a unidirectional magnetic field exerting a braking action on the armature of the motor driven by the movement of the ribbon and ensures tensioning of the said ribbon in the printing mechanism.

3,291,044

SCREEN PRINTING MACHINE WITH INTERCHANGEABLE CYLINDERS

Johannes Bernardus van der Winden, Amstelveen, Netherlands, assignor to Gebr. Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands

Filed Sept. 11, 1964, Ser. No. 395,880
Claims priority, application Netherlands, Sept. 12, 1963, 297,814
5 Claims. (Cl. 101—118)



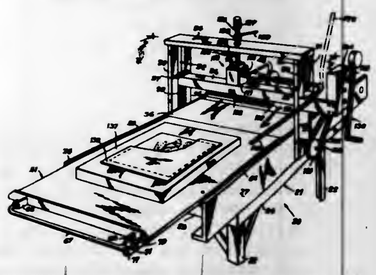
1. A screen printing machine comprising an endless belt for supporting material to be printed upon and movable in a continuous path about and between a driving pulley and an idler pulley, said path including a substantially straight operative portion, a number of stationary bearing devices each rotatably supporting a cylindrical screen and mounted along said operative portion of the path, said screens being adapted to print upon material carried on the supporting belt, a supporting roll located opposite each of the screens and on the other side of the belt from the screens for bearing and guiding the belt, and means for shifting each said roll to different fixed positions of its axis relative to the associated screen including means for adjustably varying said fixed positions to move the belt toward and away from the screen, whereby to adjust the friction of the belt and material with respect to said rolls and screens and to permit substitution of screens of different diameter in the stationary bearing devices.

3,291,045

LITHOGRAPHIC PRESS WITH RECIPROCATING BED AND PRESSURE MEMBER INTERRUPTER

Charles Brand, 1603 Macombs Road, New York, N.Y.

Filed Jan. 21, 1965, Ser. No. 426,904
3 Claims. (Cl. 101—146)



1. A lithographic press comprising a base, a pair of longitudinally extending laterally spaced supports fixed to said base, a generally horizontal main roller extending laterally between intermediate regions of said supports and rotatably carried thereby at a fixed and constant elevation, auxiliary rollers between said supports on opposite sides of said main roller and rotatable about axes generally parallel to that of said main roller, a pressure member directly above said main roller, mounting means mounting said pressure member for vertical movement toward and away from said main roller, and a table plate resting on said main and auxiliary rollers for reciprocatory movement thereon in a constant plane beneath and

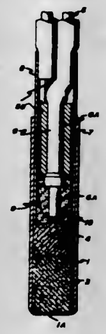
on opposite sides of said pressure member, drive means for effecting reciprocatory movement of said table plate on said rollers, said mounting means comprising upstanding guideways on said supports, a mounting bridge extending spacedly over the path of movement of said table plate and fixed to said guideways, a carrier extending between said guideways and mounted therein for upward movement toward said bridge and downward movement toward the plane of said table, said pressure member being carried on the underside of said carrier, operating means for effecting up-and-down movement of said pressure member and carrier, said operating means comprising a cam block fixed relative to said bridge and facing downwardly toward said carrier, a cam mounted on said carrier for vertical movement therewith and rotation relative thereto, said cam being engageable with said block upon cam rotation to lower said carrier, resilient means engageable with said carrier to urge the latter upward, lockable adjusting means for selectively raising and lowering said cam block, and an actuating lever connected to said cam for swinging the latter into and out of a stable position beyond dead center lowering said carrier.

3,291,046

ELECTRICALLY ACTUATED EXPLOSIVE DEVICE

Walter L. Dahl, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 10, 1963, Ser. No. 307,820
9 Claims. (Cl. 102—28)



3. An explosive initiator comprising a cylindrical metal shell open at one end and integrally closed at the other end, at least one explosive charge within the shell, and an ignition assembly tightly, peripherally engaged by and closing the shell at its open end, said ignition assembly being in propagating relationship to said explosive charge and comprising

(a) a substantially cylindrical insulating plug composed of a central cylinder of flexible insulating material and a rigid reinforcing sheath in snug peripheral engagement with said cylinder,

(b) a single electrical conductor extending substantially axially through the plug and having an exposed portion extending substantially axially from the end of said plug closest to the closed end of the shell,

(c) an electrically conductive element of high resistance affixed to the end of the exposed portion of the conductor and having a section of its length engaged between the reinforcing sheath and the shell, and homogeneously bonded directly to said shell, and

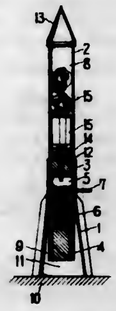
(d) a heat-sensitive ignition composition in intimate contact with the element of high resistance.

3,291,047

PROJECTILE APPARATUS FOR FLYING OBJECTS

Gichi Kitajima, 24–8 3-chome Asakusabashi, Taito-ku, Tokyo, Japan, and Hide Shidara, 638 Shimofujisawa, Musashi-machi, Iruma-gun, Saitama-ken, Japan

Filed Apr. 20, 1965, Ser. No. 449,459
4 Claims. (Cl. 102—34.1)



1. A projectile apparatus for flying objects comprising

a cylindrical hollow body,

a partition wall disposed within said cylindrical body intermediate its ends, and

a frustum shaped supporter member affixed to said cylindrical body and vertically supporting said body in a position spaced apart from the ground and defining a completely closed space between said cylindrical body and the ground,

a plug fitted in and received in the lower end of said cylindrical body and adapted to be removed downwardly from said cylindrical body during operation of said projectile,

an explosive means received in said cylindrical body between said partition wall and said plug, and

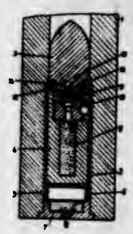
means for igniting said explosive means from the outside.

3,291,048

PRACTICE PROJECTILE FOR SUB-CALIBRE BARRELS

Willi Lubbers, Trittau, Bezirk, Hamburg, Germany, assignor to Nico-Pyrotechnik Hanns-Jurgen Diedericks KG., Hamburg, Germany

Filed Apr. 6, 1965, Ser. No. 445,935
3 Claims. (Cl. 102—41)



1. A practice cartridge adapted to be inserted into the firing barrel of a gun comprising a tubular cartridge case having a front end, a two part projectile including a rear part and a front part, said rear part being disposed axially in the case and having a front end formed with an axial bore providing a terminal front end, annular flat shoulder on said rear part, said front part having a rear end ter-

minating in a coaxially reduced rearward extension fitted in the bore of the front end of the rear part, said coaxial extension defining with the body of the front part at the rear end thereof an annular flat shoulder confronting and complementary to the shoulder on the rear part, means securing said front and rear parts together in axial alignment and said cartridge case being formed at its front end with an inturned annular flat flange tightly interposed between the shoulders and held therebetween by virtue of the means securing said parts together, said flange being disposed normal to the aligned axes of the parts and adapted to be sheared off upon firing of the projectile.

3,291,049
IMPACT SPOTTER BULLET
Aaron L. Hitchens, North Haven, Conn., assignor to the United States of America as represented by the Secretary of the Army
Filed May 22, 1952, Ser. No. 289,337
8 Claims. (Cl. 102—87)



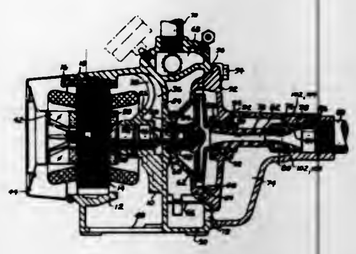
1. A spotting and observing bullet comprising a jacket tapering to a point at its forward end, said tapering point having a thinned out section for a portion of its length, a hermetically sealed capsule received within said tapering point having a portion of its length coextensive with said thinned out section, a smoke producing agent within said capsule, a long cylindrical case closely fitting the inside wall of said jacket and located rearwardly of said capsule, the forward end of said case struck inwardly to form a firing pin and having a hole therein, an inertia weight received within said case and having a counterbore in its forward end, a burster received within said counterbore, means detachably securing said inertia weight to said case under normal conditions whereby said inertia weight is released upon setback to move forward upon impact to thereby detonate said burster, and a rear plug for closing said jacket and said case.

3,291,050
APPARATUS AND METHOD FOR THE DEMOLITION OF OBJECTS
Wilhelm Ahlert, Ernst Krüger, and Paul Damm, Essen, Germany, assignors to Elektro-Thermit G.m.b.H., Essen, Germany
Filed Apr. 30, 1965, Ser. No. 452,193
10 Claims. (Cl. 102—90)



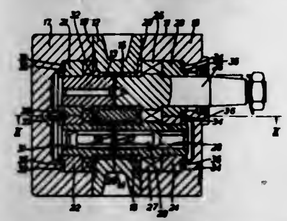
1. A demolition unit for producing a flow of a hot metallic mass capable of destroying an object to be demolished, comprising in combination:
(a) a thin-walled casing having a top end and a bottom end;
(b) a liner arranged within said casing and defining a reaction space;
(c) an aluminothermic mass arranged within said reaction space, said mass being capable of exothermically reacting to produce a hot liquid metallic mass;
(d) said liner being of a material which takes part in said reaction and forms upon reaction a high-melting slag layer;
(e) means for initiating the exothermic reaction of said aluminothermic mass;
(f) said unit including an outlet area adjacent said bottom end;
(g) closure means normally closing said outlet area and being of a material which melts below the temperature of said hot liquid metallic mass, and
(h) mounting means on said casing adjacent said bottom end and extending beyond said outlet area for mounting said unit in a substantially upright position on an object to be demolished with the outlet area being vertically spaced from said object,
whereby upon initiating said exothermic reaction said hot liquid metallic mass is formed within said reaction space, said mass causing melting of such closure means to flow by gravity through said outlet area, to fall through the space between the outlet area and the object to strike said object.

3,291,051
VENTURI AND NOZZLE CONSTRUCTION
William J. Ekey, Ashland, Ohio, assignor to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 335,895
3 Claims. (Cl. 103—5)



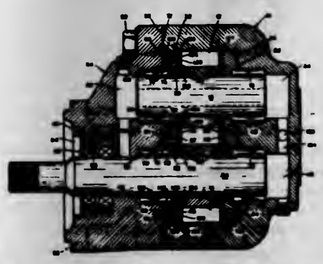
1. In a centrifugal pump; a casing having a pumping chamber open on one side and having wall means on the other side, an impeller rotatable in the chamber, a hub on the said wall means of the housing projecting toward the back of the impeller, a diffuser mounted on the hub and projecting outwardly to beyond the periphery of the impeller and axially about the periphery of the impeller, a suction head secured to said casing closing the open side thereof and clampingly engaging said diffuser, said suction head having an opening adjacent said impeller coaxial therewith and also having a suction inlet coaxial with said opening and spaced therefrom, said impeller having a flange surrounding the inlet thereof projecting toward said opening in the suction head, a wearing bushing in said opening surrounding said flange, a venturi tube mounted in said bushing having its discharge end telescopically engaging said flange, and a nozzle mounted in the venturi tube at the end thereof opposite said impeller, said suction inlet including a region telescopically receiving the nozzle end of said venturi tube.

3,291,052
GEAR PUMPS AND MOTORS
Cedric D. Weever, Shurdington, near Cheltenham, and Stuart L. Hayward, Cheltenham, England, assignors to Dowty Hydraulic Units Limited, Cheltenham, England, a British company
Filed Feb. 15, 1965, Ser. No. 432,525
Claims priority, application Great Britain, Feb. 27, 1964, 8,231/64
6 Claims. (Cl. 103—5)



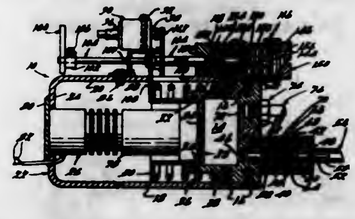
1. A tandem gear pump or motor unit comprising a common centre block carrying bushings for the gears of both pumps or motors of the unit, closure casings, one for each pump or motor, fitting upon the centre block and respectively carrying the other bushings of the pumps or motors, which other bushings are so constructed as to be capable of being urged in a direction towards the centre block by delivery pressure, (in the case of pumps) or supply pressure (in the case of motors), thereby substantially to afford sealing between the engaging faces of the bushings and gears on each side of the centre blocks, said unit being provided with a single input or output shaft formed with or connected to one gear only, the gear with which said one gear meshes being connected by a bar passing through the centre block to its corresponding gear co-axial therewith on the other side of the centre block, and the remaining gear which is coaxial with the shaft being in mesh with said corresponding gear but having no direct connection through the centre block with the shaft, and said bar incorporating clip means at a point intermediate its length to locate the bar in the axial sense.

3,291,053
THRUST BEARING FOR PUMP OR MOTOR
Richard O. Gordon, Mequon, Wis., assignor to Clark Equipment Company, a corporation of Michigan
Filed Jan. 14, 1965, Ser. No. 425,495
6 Claims. (Cl. 103—126)



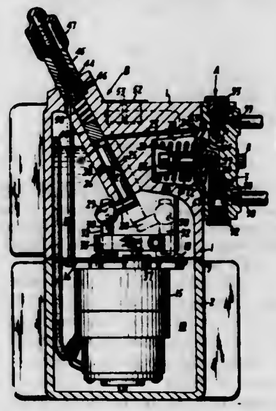
1. In a pump or motor of the type including a housing containing intermeshing gears and having an inlet leading to and an outlet leading from said housing, driving and driven shaft means mounting said gears in the housing, pressure responsive thrust means mounted on each of said shaft means on opposite sides of each of said gears for sealing the side faces of the respective gears from leakage of pressure fluid radially inwardly of said gears, and an annular end thrust bearing means mounted on each of said shaft means in contact with each side face of each of said gears and with a portion of the adjacent thrust means, said thrust bearing means comprising a roller bearing assembly having a plurality of radially extending rollers located circumferentially outwardly of the respective shaft means and circumferentially inwardly of that portion of the thrust means which is adapted to engage in sealing relation the side face of the gear.

3,291,054
PUMP
William G. McKenzie, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,233
10 Claims. (Cl. 103—40)



1. In a fluid pumping device,
a housing defining a pumping chamber,
piston means reciprocable within said chamber,
electrically heated expandable wax thermal motor means for moving said piston means within said chamber,
electrical switch means operated by said piston means for deenergizing said motor means, and
means for reenergizing said motor means.

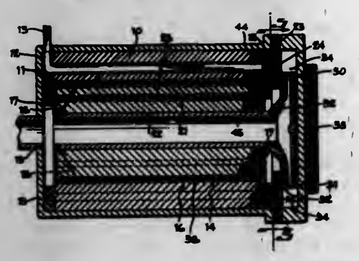
3,291,055
SELF-PURGING PROPORTIONING PUMP FOR CORROSIVE LIQUIDS
Alexander S. Lippert and Robin J. Lippert, both of 121 S. Clinton Ave., Bay Shore, N.Y.
Filed Aug. 2, 1965, Ser. No. 478,029
19 Claims. (Cl. 103—44)



1. A self-purging proportioning feed pump comprising, in combination, a housing having therein a pumping chamber and a hydraulic chamber, a flexible diaphragm forming at least a portion of a wall separating the chambers and adapted to flex from a normal position outwardly into the pumping chamber under pressure of hydraulic fluid in the hydraulic chamber; a fluid port at the highest point of the hydraulic chamber, pulsing means in fluid

connection with the fluid port for cyclically supplying hydraulic fluid under pressure to the hydraulic chamber and for exhausting hydraulic fluid from the hydraulic chamber, vent means for venting the hydraulic system to the atmosphere only during the exhaust portion of the cycle, diaphragm bias means within the hydraulic chamber for returning the diaphragm to a normal position during the exhaust portion of the cycle, and fluid inlet and outlet connections in the pumping chamber for supplying fluid to be pumped and delivering pumped fluid by flexing pulsation of the diaphragm.

3,291,056
ELECTRIC MOTOR PUMP
William W. Stelzmann, 2621 Fleetwood Ave., Cincinnati, Ohio
Filed Apr. 22, 1965, Ser. No. 450,100
3 Claims. (Cl. 103—87)



1. In a dielectric pumping mechanism, the combination of an electrically wound stator member substantially involving a rotor member inductively associated therewith, but without magnetic air gap separation therebetween, the combination of a stator, a hollow rotor, said stator having an inner surface comprising a plurality of cylindrical segments separated axially by grooves, said hollow rotor having an outer cylindrical surface with dielectric metallic oxide covering said surface to provide journal means operationally associated with said segments on said stator, a hollow tube secured to said rotor and extending axially therefrom and having its extremity substantially defining the inner circumferences of a pump impeller rear shroud, a plurality of ducts located on the inner surface of said tube substantially near the suction end with said ducts extending radially on planes perpendicular to the vertical axis and through the hollow tube and through the rotor journal surface.

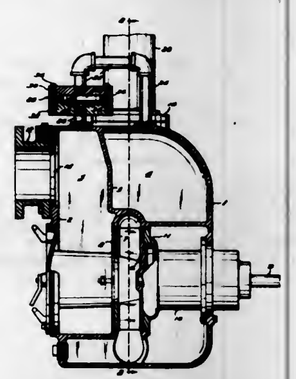
3,291,057
GAS SEPARATOR FOR SUBMERSIBLE PUMP
Joseph T. Carle, Tulsa, Okla., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Nov. 12, 1964, Ser. No. 410,637
14 Claims. (Cl. 103—113)

1. In a gas separator for a submersible well pump which separator includes, a gas separator housing defining a reservoir chamber and adapted for disposition within a well in operative association, with a submersed pump; means within the housing defining a passageway adapted to provide fluid communication between the reservoir chamber and the pump, and means defining at least one inlet opening in the housing adapted to provide fluid communication between the well and the reservoir chamber; means defining a retention chamber disposed in overlying relation to said inlet opening, said chamber defining means including means defining an inlet adapted to initially receive the fluid from the well, and said retention chamber having a fluid retaining capacity sufficient to momentarily retain well fluid flowing from the well to the reservoir chamber, said retention chamber defining means being disposed so as to permit entrained gas to



escape from the fluid in said retention chamber through said inlet and return to the well.

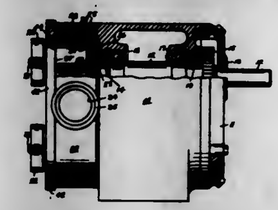
3,291,058
QUICK PRIMING CENTRIFUGAL PUMP
Stanley B. McFarlin, Jeromesville, Ohio, assignor to The Gorman-Rupp Company
Filed Apr. 16, 1965, Ser. No. 448,810
18 Claims. (Cl. 103—113)



1. The method of priming a self-priming centrifugal pump which comprises the steps of moving a quantity of liquid from the suction chamber of the pump into its discharge chamber, thereby causing liquid to rise in the inlet pipe of the pump, and then allowing approximately the same quantity of liquid to return from the discharge chamber of the pump into its suction chamber while maintaining the liquid in substantially its attained position in the inlet pipe and repeating said steps in sequence until the inlet pipe and suction chamber are filled with liquid.

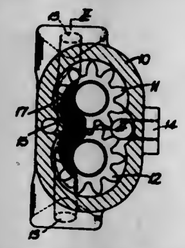
12. A centrifugal pump system comprising a self-priming centrifugal pump having suction and discharge chambers, an impeller, an inlet pipe, a valve to check back flow of liquid in said pipe, motor means to actuate said impeller, control means to actuate and deactuate said motor means, and means to bleed gas from said suction chamber while the impeller is deactuated.

3,291,059
ROTARY PUMPS
Bruno H. Werra, Kenosha, Wis., assignor to Ladish Co., Cudahy, Wis., a corporation of Wisconsin
Filed June 8, 1964, Ser. No. 373,153
4 Claims. (Cl. 103—126)



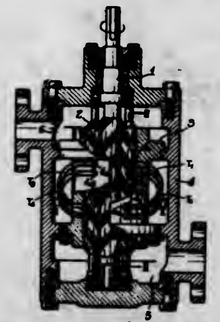
1. In a positive displacement pump having a stainless steel casing with opposite side walls and having spaced parallel impeller shafts, the improvement comprising an all metal impeller axially slidably mounted on each shaft and having end faces in close-fitting rotatable engagement with the stainless steel of said side walls of the pump casing, each impeller being of one-piece construction and formed of a copper base alloy containing 13.7–14.4 percent aluminum, 4.0–5.25 percent iron, and the balance substantially all copper, whereby an all-metal floating impeller construction may be used in a stainless steel casing with a minimum of galling action and with no deleterious effect on food material such as milk.

3,291,060
GEAR PUMPS
Harry Sinister Bottoms, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Mar. 21, 1966, Ser. No. 535,958
5 Claims. (Cl. 103—126)



1. A gear pump comprising a housing, a pair of meshing toothed wheels mounted for rotation in the housing, an inlet port in the housing at one side of the point of interengagement of the teeth of the pair of wheels, and an outlet port in the housing at the other side of said point, the inlet port being in a wall of the housing presented to the sides of the wheels, and having a cross-sectional shape which provides a main portion adjacent the sides of those teeth moving out of interengagement, and a pair of arcuate branches extending from the main portion beside the teeth of the two wheels respectively, each branch having an outer edge which tapers towards the root circle of the adjacent wheel, and there being an inlet passage in the body communicating with the inlet port, said inlet passage, at least in the region of the inlet port, extending in a direction which is inclined to the axes of rotation of the wheels, said inclination being such that liquid delivered through said inlet port has a component of movement in contra-direction to the direction of movement of that portion of the periphery of a wheel adjacent to the inlet port.

3,291,061
SCREW PUMP OR HYDRAULIC SCREW MOTOR
Kyuma Shinohara, Matsudo, Japan, assignor to Kosaku Kenkyusho Ltd., Tokyo, Japan, a corporation of Japan
Filed July 22, 1964, Ser. No. 384,344
Claims priority, application Japan, July 23, 1963, 38/39,336
6 Claims. (Cl. 103—128)



1. A screw pump or a hydraulic screw motor comprising a center screw shaft; at least two side screw shafts meshed with the center screw shaft; a housing sleeve for receiving the screw shafts; a casing surrounding said housing sleeve and provided with an inlet chamber and an outlet chamber; and radial load balancing means for the side screw shafts consisting of at least two pairs of interconnected holes bored in the wall of said housing sleeve, one hole of each pair opening to a higher pressure portion of the housing sleeve and the other hole of each pair opening to a lower pressure portion of the housing sleeve, the distance L between the holes in each pair being substantially given by the equation $L=(n+\frac{1}{2})P$, where P is the pitch of screw shafts and n is an integer.

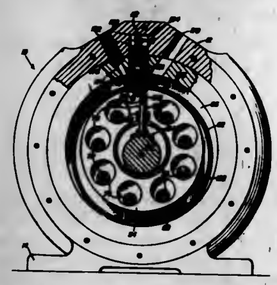
3,291,062
ROTARY FLUID PRESSURE DEVICE
Maurice Hermary, 519–602 W. Hastings St., Vancouver, British Columbia, Canada
Filed Feb. 21, 1966, Ser. No. 529,043
3 Claims. (Cl. 103—130)



1. A rotary fluid pressure device comprising an epicyclic gear train consisting of an internally toothed casing with an externally toothed pinion gear mounted coaxially in the casing to define a chamber between the pinion gear and the casing and a planetary gear in fluid tight intermeshing contact with the casing and the pinion gear, in combination with an externally and internally toothed split ring gear having a segment removed to provide spaced apart ends, such split ring gear positioned in the chamber eccentric to the casing and the pinion and in fluid tight intermeshing contact with the internal teeth on the casing and the external teeth on the pinion gear and with the planetary gear positioned between the spaced apart ends of the split ring gear, means closing the ends of the casing, such means having a fluid tight seal with the casing and the gears therein, an intake port in the

casing leading into the chamber on one side of the planetary gear and an outlet port in the casing leading to the chamber on the opposite side of the planetary gear and means to rotate the epicyclic gear train, such means including means to maintain the eccentric relationship of the split ring gear with the pinion gear and casing during rotation of the epicyclic gear train.

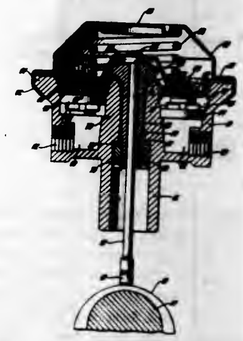
3,291,063
ROTARY PISTON PUMP WITH SINGLE CHAMBER
Albert J. Jacobs, Calgary, Alberta, Canada, assignor to Edward J. Carline, Edmonton, Alberta, Canada
Filed Mar. 16, 1964, Ser. No. 352,205
31 Claims. (Cl. 103—132)



1. An expansible chamber device of the positive displacement rotary piston type comprising a stator including a peripheral wall and a pair of side walls secured thereto and defining therewith a central chamber, a core disposed centrally of said central chamber, a ring piston, means mounting said ring piston in said central chamber for purely translational movement about said core and tangent to both said peripheral wall and said core and dividing said central chamber into radially spaced outer and inner working chambers of different axial dimensions respectively disposed between said ring piston and said peripheral wall and core, stabilizing means connected to said ring piston and stator and restraining said piston to translational movement in said central chamber about said core, intake means and exhaust means respectively supplying fluid to and discharging fluid from each of said outer and inner working chambers and partitioning means slidably mounted by the core and the stator for dividing the working chambers between the intake and exhaust means.

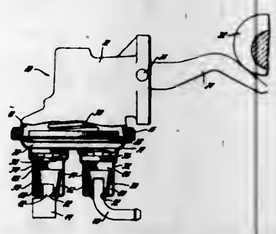
3,291,064
DIAPHRAGM PUMP WITH ANNULAR PUMPING CHAMBER
Michael R. Foster, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 25, 1963, Ser. No. 253,862
1 Claim. (Cl. 103—150)

A pump comprising a body and an annular diaphragm cooperating to define an annular pumping chamber, an inlet and outlet to said chamber, pressure actuated valves controlling said inlet and outlet, a pumping spring, an apertured cover member clamping the outer periphery of said diaphragm to said body and forming an open enclosure for said pumping spring, said body including an elongated passage with an upper curved opening and a lower passage opening, a retainer with an axial bore extending through said passage and having an enlarged head portion on one end and an external threaded portion on the other end, said retainer head portion having a curved surface conforming to the configuration of said curved passage opening to provide complementary surfaces for sealing the inner periphery of said diaphragm within said body passage and between said curved surfaces, securing means being mounted on said retainer threaded portion engaging an outer portion of said body adjacent said lower passage opening to seal the inner periphery of said diaphragm between said retainer and said body, a plate fixed to said diaphragm between said outer and inner peripheries and extending across the axis of said



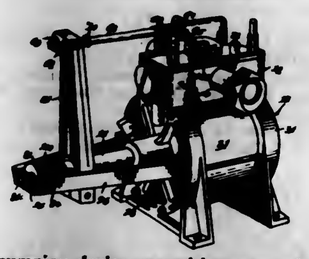
bore and clear of said retainer, a rod extending through said bore and fixed to said plate for actuating said diaphragm during suction strokes, said pumping spring acting between said cover member and said plate to effect pumping strokes, and said diaphragm constituting the sole resilient seal between said body and rod.

3,291,065
FUEL PUMP WITH INSERTED PULSATOR
Gordon B. Elder, Carl W. Norberg, and Dimiter Toschkoff, all of Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 29, 1964, Ser. No. 371,224
1 Claim. (Cl. 103—150)



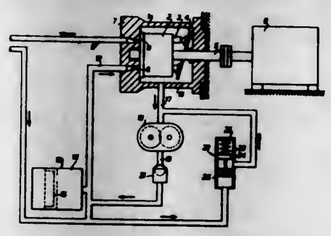
A pump for pumping liquid having a body defining a pumping chamber, a cup-shaped member having an annular portion which forms part of a flow passage communicating with said pumping chamber, a pressure actuated valve located in said flow passage and between the pumping chamber and said annular portion, a tube extending into said cup-shaped member and terminating a distance within said member, a resilient generally frusto-conical insert disposed within said cup-shaped member, one end of said insert having sealing means comprising inwardly facing annular ridges integral with its inner diameter for sealingly engaging said tube, the other end of said insert having outwardly facing annular ridges integral with the outer diameter of said insert for sealingly engaging said annular portion and thereby defining a closed annular pulse dampening chamber outside the flow passage and inside said cup-shaped member whereby fluid pulsations are damped as fluid is pumped through the flow passage.

3,291,066
PUMP APPARATUS WITH SCAVENGER FOR CHECK VALVE ASSEMBLY
Nat Cordis, deceased, late of Silver Lake, Wis., by Gladys S. Cordis, executor, Chicago, Ill., assignor of two-thirds to Carl F. Jensen and one-third to Gerald T. Dobie, both of Chicago, Ill.
Original application Nov. 14, 1961, Ser. No. 152,284. Divided and this application July 6, 1964, Ser. No. 380,695
4 Claims. (Cl. 103—153)



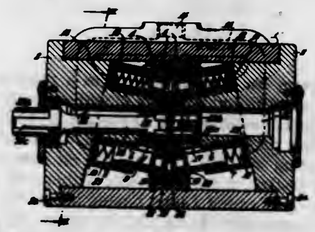
1. A pumping device comprising opposed check valve means including a dual-valve block, said block having an inlet and an outlet spaced therefrom, a transverse pumping chamber in said block communicating with said inlet and outlet, a pumping plunger operating in said pumping chamber, said plunger including a reciprocating shaft, an adjustable end plug threaded on said shaft, a shoulder on said shaft spaced from said end plug, and an expandable seal on said shaft between said shoulder and end plug, a first poppet valve interposed said chamber and said inlet and a second poppet valve controlling said outlet, said first poppet valve comprising a plug member having a first axial projection which extends into said inlet, an O-ring about said first projection, a second axial projection extending upwardly from said plug, and a compression coil spring having an end thereof about said second projection and normally urging said first projection and said O-ring into the inlet, and said second poppet valve comprising a second plug member, projection, and O-ring, and a second coil spring, both of said springs urging the associated poppet valves into normally closed positions.

3,291,067
HYDROSTATIC POWER TRANSMISSION
John Dudley North, Eversley, Bridgnorth, England, assignor to Boulton Paul Aircraft Limited, Cadnall, England, a British company
Filed Feb. 24, 1965, Ser. No. 434,862
Claims priority, application Great Britain, Mar. 2, 1964, 8,712/64
6 Claims. (Cl. 103—162)



1. A hydrostatic power transmission including a low pressure hydraulic accumulator connected to the transmission pump inlet, a low pressure boost pump arranged to pump liquid to the pump inlet, collecting means to collect leakage from the pump and to feed such leakage to the inlet of the boost pump, and a by-pass valve connected between the collecting means and the accumulator to maintain a substantially constant pressure in said collecting means, said by-pass valve comprising a cylinder, a piston within the cylinder spring-loaded to one end of the cylinder, vent means to connect the other end of the cylinder to atmosphere, and a valve member carried by the piston and cooperating with a seat located at the said one end of the cylinder, whereby the pressure in the collecting means acts on the piston against the loading of the spring and when excessive, seats the valve to close the by-pass and thus raise the effective pumping rate of the boost pump.

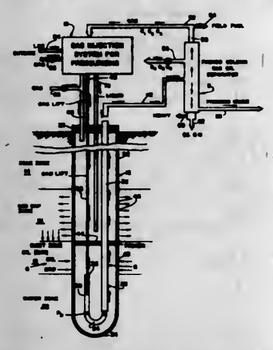
3,291,068
HYDRAULIC AXIAL-PISTON MACHINE
Georg Wiggermann, Krombrom, Germany, assignor of one-half to Walter Reimers, Monchen Gladbach, Germany
Application May 23, 1960, Ser. No. 30,791, now Patent No. 3,162,142, dated Dec. 22, 1964, which is a division of application Ser. No. 661,128, May 23, 1957, now Patent No. 2,968,286. Divided and this application Dec. 16, 1964, Ser. No. 457,884
Claims priority, application Germany, May 29, 1956, W 19,144
4 Claims. (Cl. 103—162)



1. A hydraulic machine of the axial-piston type, comprising a shaft, a stationary enclosure assembly having a housing structure around said shaft and having two axially spaced head members mounted on said housing structure, said head members having respective planar valve surfaces facing each other and inclined relative to the shaft axis, two multi-cylinder drums surrounding the axis of said shaft and rotatable on said respective valve surfaces, each drum having peripherally distributed cylinder bores parallel to the drum axis, said bores having respective ports adjacent to said valve surfaces to coact therewith, pistons reciprocable in respective bores, a single rotatable disc structure coaxially connected with said shaft and journalled in said housing structure for rotation between said two cylinder drums, ball-joint means joining said respective pistons of both said drums with said disc structure, said disc structure having coaxial hubs on opposite sides respectively and said head members having respective bearing bores in journalling engagement with said respective hubs, each two of the cylinder bores and pistons of said respective cylinder drums being located in a radial plane of said disc, said disc having for each two of said pistons a pair of spherical pans which form part of said ball joint means and have their respective center points define a line parallel to the disc axis, said disc having a hole between the pans of each pan pair, and said pistons and ball joint means having passages so that said two cylinder bores hydraulically communicate with each other through said passages and said hole, each of said ball joint means having an exteriorly spherical ring movably engaging one of said pans for universal motion, said ring having a planar front face facing the adjacent piston, and

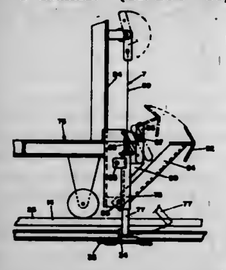
said piston having an annular shoulder in abutting engagement with said front face and being slightly displaceable in the plane of said front face, and each of said ball joints comprising a holder member located on the piston side of said ring and having spherical surface engagement in concentric relation to said pan, and connecting means extending through said hole of said disc and rigidly interconnecting the two holder members of said pair of pans.

3,291,069
CONTROLLED PVT OIL PRODUCTION
Eduardo Ospina-Racines, Apartado Aéreo 49—45, Bogota, Colombia
Filed June 15, 1964, Ser. No. 375,040
8 Claims. (Cl. 103—232)



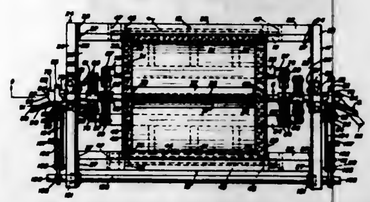
1. A system for oil recovery from a reservoir having a gas cap, comprising: a casing closed at the bottom and having a packer substantially at the gas-oil level, the casing including perforations above and below said packer communicating with the gas zone and oil zone above and below said packer, a gas lift device within said casing including an open ended J-tube having its shorter leg open to the oil within the casing and its longer leg extending without the casing; gas pressurizing means having an inlet and an outlet; a tubing connecting the outlet of said means with the open end of the shorter leg of said J-tube; a packed column gas and oil separator connected with the longer leg of said J-tube; and means to deliver separated gases from said separator to said pressurizing means.

3,291,070
TOW TRUCK
Lynn Bradt, Easton, Pa., and John G. Durrance, Phillipsburg, N.J., assignors to S. I. Handling Systems, Inc., Phillipsburg, N.J., a corporation of Pennsylvania
Filed July 23, 1962, Ser. No. 211,772
5 Claims. (Cl. 104—88)



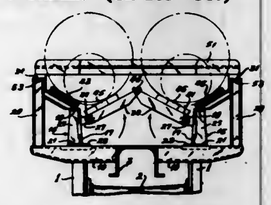
1. A tow truck comprising a truck body having wheel means, a tow pin guide on said body, a tow pin reciprocably supported by said guide, the lower end of said tow pin projecting downwardly for entry into a slot in a reference surface, means supporting said guide and pin for pivotal movement with respect to a horizontal axis transverse of said body, a latch means opposing said pivotal movement, a bumper, means supporting said bumper on said body for movement between first and second positions, and said bumper and latch means being oriented so that movement of said bumper to said second position prevents said latch means from opposing pivotal movement of said tow pin and its guide.

3,291,071
MULTIPLE CLOSURE TOGGLE ACTUATED HOPPER OUTLET ASSEMBLY
George B. Dorey, Westmount, Quebec, Canada, assignor to Enterprise Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 23, 1962, Ser. No. 239,692
7 Claims. (Cl. 105—253)



1. In combination, a railway hopper car having side and end walls and a centrally disposed hopper including an opening for downward discharge of lading centrally between the rails comprising:
(a) transversely extending frame members adjacent opposite sides of the opening,
(b) oppositely swinging doors for the opening pivotally mounted on said transverse members,
(c) said transverse frame members having projecting portions extending appreciably beyond the hopper toward the sides of the car,
(d) beam members extending between and connecting the distal ends of the projecting members to provide an open well between each beam and the facing hopper wall,
(e) bearings disposed midway of the beam members and carried thereby,
(f) a shaft journalled in said bearings to extend transversely of the car between the swinging edges of the doors and
(g) linkage mechanisms extending between the shaft and the ends of the doors and being disposed in the open wells.

3,291,072
STEEL-COIL CARRYING CAR
James B. Cunningham, St. Louis, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,291
6 Claims. (Cl. 105—367)



1. In a vehicle for carrying cylindrical objects, an underframe, first members adjacent the sides of said underframe and having transverse inwardly and downwardly

sloping surfaces forming the upper portions of the legs of a V-shaped trough extending lengthwise of the vehicle, second members disposed transversely inwardly of said first members and having surfaces forming the lower portions of both legs of said V-shaped trough, the inner margins of said second members converging along the longitudinal center line of said underframe and there being supported on said underframe, means rigidly mounted on said underframe and forming a support thereon for said first members along the outer and inner margins of the latter, said second members being pivoted about longitudinal axes along their margins to said means supporting the inner margins of said first members, and being swingable upwardly about said axes to form with each other an inverted V and with the upper members a pair of upright V-shaped troughs, and additional means for securing said second members in said raised position.

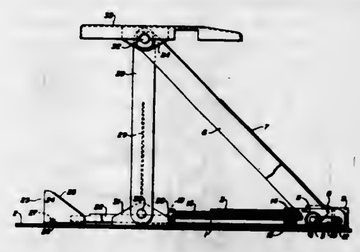
3,291,073
COIL SKID
Robert E. James, Parma Heights, Ohio, assignor to Shunk Manufacturing Company, Inc., Bucyrus, Ohio, a corporation of Ohio
Filed Dec. 14, 1964, Ser. No. 418,242
3 Claims. (Cl. 105—367)



1. A skid for supporting and retaining coils on a railway flat car, said skid adapted for relative movement longitudinal of the car and having a frame of generally rectangular form having a pair of oppositely disposed upstanding side members, said skid provided with longitudinally disposed skid runners adapted to extend longitudinally of the car, a plurality of transversely extending tie members secured to said skid and to said side members, rectangular web plates seated on certain of said tie members and disposed in spaced relation transversely of the skid, a plurality of L-shaped angle members, each of said angle members having a portion secured to the upper end of each of a pair of opposite spaced web plates, said angle members each having a portion descending at an acute angle from said upper secured portion and having a horizontally disposed portion, a pair of angle members cooperating to form said coil receiving pockets in said skid to receive the coils therein without additional restraining means, said descending surfaces bottoming opposite curved surfaces of said coils disposed transversely of the skid in said pockets.

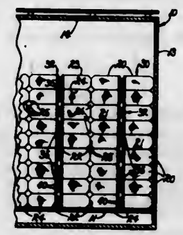
3,291,074
TRAILER HITCH FOR FLAT CARS
Nicholas D. Remy, Zionsville, and George J. Weiss, Bethlehem, Pa., assignors to Bethlehem Steel Company, a corporation of Pennsylvania
Filed Dec. 14, 1964, Ser. No. 417,909
1 Claim. (Cl. 105—368)

In a trailer hitch having a base, a rearward leg disposed uprightly when in operative position, a forward leg inclined at an angle relative to said rearward leg when in operative position, said legs being pivotally connected adjacent their upper portions, a trailer engaging platform pivotally supported by said legs, the lower end of one of said legs being pivotally fixed to said base, the lower end of the other leg being longitudinally movable along said base, the improved means for raising and lowering the upper portions of said legs to raise and lower said platform between a collapsed lowered inoperative position permitting longitudinal movement of a highway trailer thereover and an operative raised position supporting one end of a highway trailer comprising:
(a) a screw rotatably attached to said base,



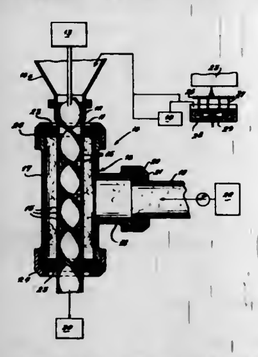
(b) a wedge operatively connected to the screw and adapted, on initial rotation of the screw, to engage the hitch in the area of said upper portion of said legs and elevate the platform, and
(c) a lost motion linkage operatively connected to the screw and the lower end of the other leg and adapted, on further rotation of the screw, to move the lower end of said other leg longitudinally along the base to further elevate the platform.

3,291,075
CAR LOAD
Luis M. Caratan, Rte. 2, Box 400, and Milan M. Caratan, Rte. 2, Box 255, both of Delano, Calif.
Filed Feb. 1, 1965, Ser. No. 432,066
12 Claims. (Cl. 105—369)



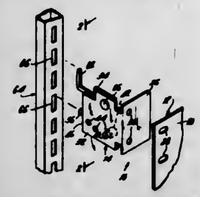
1. A car load adapted to be disposed within a vehicle having load confining walls comprising a plurality of boxes of a substantially uniform shape, each having opposite ends of substantially identical polygonal configuration and opposite sides interconnecting the ends, the boxes being arranged in vertical stacks and the stacks arranged in end-to-end relation in tiers and in side-by-side relation in rows in substantially filling relation within the walls of the vehicle but affording intervals of spacing at each end of a box adjacent the sides thereof thereby to form hollow chambers when the stacks are disposed substantially in side-by-side relationship, at least two adjacent stacks in each tier being disposed in spaced relationship transversely of the car, and a spacing member interposed said spaced adjacent stacks in a tier, said member having an elongated strut provided with opposite ends adapted individually to be received in said chambers of said adjacent stacks and stop means carried by said strut and adapted to engage the respective ends of the boxes in said adjacent stacks of a tier and prevent endward movement of said boxes toward each other transversely of the car.

3,291,076
BLENDER AND PROCESS
James D. Flanigan and Kenneth A. Hollowell, Greenville, Ill., assignors, by mesne assignments, to Air Products and Chemicals, Inc., Allentown, Pa., a corporation of Delaware
Filed Aug. 23, 1963, Ser. No. 304,200
6 Claims. (Cl. 107—1)



4. A blender comprising: a first tube, a second tube spaced from and surrounding at least a portion of the length of said first tube so as to form an annular chamber between said tubes, means closing the ends of said annular chamber, a plurality of perforations in said first tube, said perforations forming flow passages from said annular chamber into the interior of said first tube, an auger mounted for rotation within the interior of said first tube, said auger having blades located in the region of said perforations, means for rotating said auger, first inlet means for introducing a first material into the interior of said first tube, second inlet means for introducing a second material into said annular chamber under pressure whereby said second material flows through said perforations and is blended with said first material by rotation of said auger, and outlet means for discharging the blended material from the interior of said first tube.

3,291,077
BRACKET AND DISPLAY DEVICE
Daniel M. Gauz, Rockville Centre, and Harold J. Mahler, New York, N.Y., assignors to Darrol Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 8, 1965, Ser. No. 512,298
5 Claims. (Cl. 108—10)



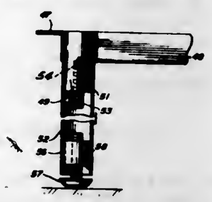
1. A greeting card display assembly for mounting on vertical supports of both the perforated wall board type and the vertical standard type, said assembly comprising a display tray and a pair of mounting brackets secured to said tray, each of said brackets including a duplex attachment means for attachment to both perforated wall board and vertical standards, said duplex attachment means including a lower section having a land portion extending rearwardly from said bracket and a hook portion extending downwardly from said lower section land portion, and an upper section having a land portion extending rearwardly from said bracket an amount equal to said lower section land portion and an elongated retainer portion extending upwardly from said upper section land portion, the lower edges of said respective land portions being spaced from each other in an amount corresponding to the spacing between the lower edges of the opening in said vertical standards and the holes in said perforated wall board, the length of said elongated retainer portion being greater than the vertical length of the opening in said vertical standards.

3,291,078
LOCKS FOR LEGS FOR FOLDING TABLE
William P. De Saussure, 215 Brinckerhoff Court, Englewood, N.J.
Filed May 20, 1965, Ser. No. 457,259
2 Claims. (Cl. 108—132)



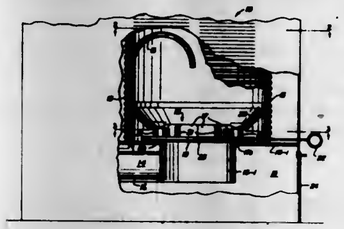
1. A latch for a folding table having a top and pairs of foldable and unfoldable legs, each pair of legs being connected by a cross-bar member at one end thereof and guides fixed to said table top and slidably receiving said cross-bar member, said latch comprising an elongated angle member having a tongue at one end thereof and an opposite free end, a member fixed to said table top having a slot therein pivotally receiving said tongue and spring means connected to said tongue and said table top and biasing said angle member against said cross-bar member to engage said free end with said cross-bar member when said legs are unfolded and retain them against movement to a folded position, said angle member having substantially right-angularly related flanges extending lengthwise thereof, one of said flanges being disposed substantially perpendicular to said table top and the other flange being substantially parallel with said table top and interposed between said table top and said cross-bar member when said legs are folded.

3,291,079
SUPPORT STRUCTURE FOR SUPPORTING FURNITURE
Edward P. Ruda, Bellwood, Ill., assignor to Garcy Corporation, a corporation of Illinois
Filed Aug. 23, 1965, Ser. No. 481,769
5 Claims. (Cl. 108—156)



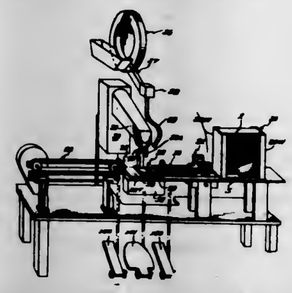
1. A support structure for supporting an article of furniture, said support structure comprising a frame member, a lug secured to said frame member and depending therefrom, the lower end of said lug having a threaded bore and a slot extending in an axial direction, a tubular leg telescoped over the outer end of said lug, said threaded bore being accessible through the lower end of said tubular leg, and a screw threaded into engagement with said bore to wedge said lug into holding engagement with said tubular leg.

3,291,080
CLINKER REMOVAL UNIT FOR SMALL, STOKER-FIRED, COAL-BURNING HEATERS
John L. Margetts, 2182 Berkley Ave., Salt Lake City, Utah
Filed July 6, 1965, Ser. No. 469,620
4 Claims. (Cl. 110—45)



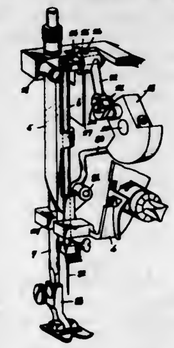
1. In a small, stoker-fired coal-burning heater, a housing; a firebowl mounted above the bottom of said housing; means for feeding coal upwardly through said firebowl; a heat exchanger surrounding said firebowl within said housing; a plate surrounding the firebowl and sloping downwardly from engagement with the heat exchanger to below the upper edge of the firebowl in annularly spaced relationship therewith; an ash ring spaced below the plate and surrounding the firebowl below the space between the plate and the firebowl; a circumferential series of mutually spaced pins fixed to said ring and extending upwardly therefrom between the firebowl and the plate and terminating in the vicinity of the upper edge of the firebowl and the lower end of the plate; means for rotating said ring around the firebowl; and an access door through said housing below the level of the firebowl.

3,291,081
APPARATUS FOR PACKAGING NAILS AND SIMILAR ARTICLES
Kenneth W. MacDonald, Bridgewater, Robert W. Nickelson, New Bedford, and Alan J. Maher, Bridgewater, Mass., assignors to The Independent Nail Corporation, a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,584
16 Claims. (Cl. 112—104)



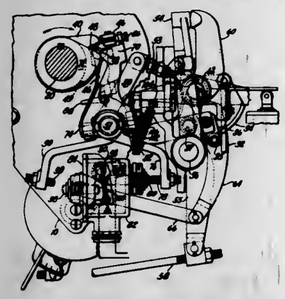
1. Apparatus for assembling loaded clips each comprised of an elongated carrier strip having a given number of successive generally crosswise directed receiving grooves disposed in regularly spaced side-by-side relation therealong and a separate nail secured in each groove by lengthwise stitching that includes a distinct loop encircling a separate strip portion adjacent each groove, said apparatus comprising means to advance the strip in single groove pitch steps along a travel path that includes a work station having thereat a nail delivery point and a stitch point located in successive integer groove pitch spaced relation along the strip travel path, a stitcher at said work station and repeatedly operable through a stitch cycle in synchronism with strip movement steps to form successive stitch loops in encircling relation to strip material at the stitch point, and nail counting and feed means operable in synchronism with said stitcher to supply one nail for each stitch cycle to discharge in predetermined orientation into the particular groove located at said nail delivery point, and said apparatus including means operable once during each stitch cycle for advancing said strip endwise in single groove pitch steps through said work station to establish each of successive grooves therein in registry with the nail delivery point at the time of nail discharge therefrom and in registry with the stitch point at the time of stitch loop forming.

3,291,082
ZIGZAG SEWING MACHINE
Toshiyuki Fukunaga, Tokyo, Japan, assignor to Sanshin Zigzag Sewing Machine Company, Limited, Tokyo, Japan
Filed Sept. 11, 1963, Ser. No. 308,104
Claims priority, application Japan, Apr. 16, 1963, 38/19,489
8 Claims. (Cl. 112—158)



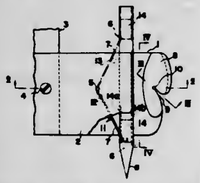
1. A zigzag sewing machine comprising, in combination, a frame; a horizontal main drive shaft rotatably mounted in said frame; a needle bar guide mounted in said frame for oscillation transversely of the stitching path; a needle bar reciprocable substantially vertically in said needle bar guide; a universal pivot connection on the upper end of said needle bar; a balance weight fixed to an end of said main drive shaft; a crank mounted on said balance weight, for adjustment to a selected fixed position thereon, about an axis in parallel eccentric relation to that of said main drive shaft; said crank having a radial arm extending therefrom; a vertical guide rail mounted in said frame in displaced perpendicular relation to that of said main drive shaft; a crank rod extending upwardly of said machine and having a lower end portion pivotally connected to the outer end of said radial arm, and an upper end pivotally connected to said universal pivot connection on the upper end of said needle bar and slideably connected to said guide rail; whereby the upper end of said crank rod will, during each revolution of said main drive shaft, provide a relatively high speed of upward movement of said needle bar in the upper range of the reciprocation thereof and a relatively low speed in the lower range of downward movement thereof; and oscillating means, connected to said needle bar guide and said main drive shaft, to simultaneously oscillate said needle bar guide.

3,291,083
PRESSURE RELEASE CONTROLS IN HYDRAULIC DRIVING AND STOPPING MECHANISMS
Joseph R. Ioannilli, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed June 24, 1964, Ser. No. 377,618
4 Claims. (Cl. 112—219)



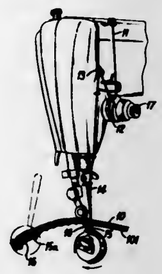
1. A machine for performing an operation having operation performing devices, a main shaft for actuating the operation performing devices, and hydraulic driving and stopping mechanisms for rotating the main shaft, including a displacement unit mechanically connected to the main shaft, a pump, a pressure conduit connected between the displacement unit and the pump, a flow restricting circuit hydraulically connected to the displacement unit to retard rotation of the main shaft and a positive stop for bringing the machine to rest in a predetermined position after the flow restricting circuit retards rotation of the main shaft, in combination with pressure venting means actuated by the main shaft separately from the positive stop to release the pressure in the pressure conduit as the main shaft is brought to rest by the positive stop.

3,291,084
NEEDLE EYE THREADING DEVICE
Yoshihiko Asahata, 151 2-chome Shimoshinjo-machi, Higashiyodogawa-ku, Osaka-shi, Japan
Filed Apr. 1, 1964, Ser. No. 356,423
1 Claim. (Cl. 112—225)



A device for passing thread through the eye of a needle, comprising in combination,
(a) a base plate having a bent back part provided with threading slots for holding thread and a cover plate disposed parallel and secured to said base plate with a suitable gap therebetween, confronting ends of said bent back part and cover plate being spaced apart so as to insert a needle to be threaded therethrough, said base and cover plates defining a guide groove to hold said needle therein towards the outer end of said cover plate and part of the base plate confronting said cover plate outer end;
(b) a guide lever including a hook portion pivotally supported in said gap between said plates, said hook portion being positioned to freely pass through the eye of a needle located in said guide groove, said guide lever being adapted to be rotated by said needle eye when the needle undergoes longitudinal movement, the length of the lever being selected so as to be rotated by said needle movement and passed first through the needle eye from one side of the needle to the other side thereof, and, as its rotation progresses, passed between said threading slots on the other side so as to hook onto thread therein, and back through said eye to said one side by further rotation of said guide lever thereby drawing and passing said thread through the needle eye;
(c) a latch member, supported on said base plate so as to project out and retract to lock said guide lever when the device is not used; and,
(d) a stop fixed to the base plate to limit the rotational range of the guide lever.

3,291,085
METHOD OF SEWING A FOOTWEAR CONSTRUCTION
David Levy, 105—38 63rd Drive, Forest Hills, N.Y.
Filed Aug. 14, 1964, Ser. No. 389,648
5 Claims. (Cl. 112—262)

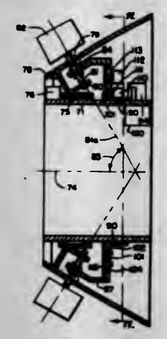


1. In the method of making a footwear construction from a formed leather blank, the steps comprising
placing the blank on the throat plate of a lock-stitch sewing machine having an oscillating needle, a supply of thread to the needle, means to tension the said needle thread, a supply of bobbin thread, means to tension said bobbin thread, and a feed dog means to feed the blank material across the throat plate,
adjusting the needle thread tension to a tension greater than that employed in sewing a normal lock-stitch and adjusting the bobbin thread tension to a tension greater than said needle thread tension to form a specially modified lock-stitch,
said specially modified lock-stitch after sewing consisting of the bobbin thread being under tension and lying substantially flat along the surface of the leather and the needle thread being under tension and having loops penetrating through the leather and holding the bobbin thread tightly in said loops, and
sewing a marginal edge portion of said blank with the said specially modified lock-stitch to thereby reduce its peripheral length.

3,291,086
TANDEM PROPELLER PROPULSION AND CONTROL SYSTEM
Frederick R. Haselton, 6001 Johnson Ave., Bethesda, Md.
Filed Mar. 17, 1965, Ser. No. 440,648
8 Claims. (Cl. 114—16)

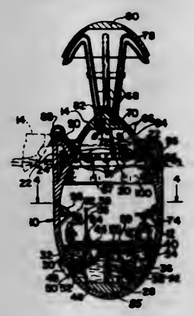
1. A submarine vehicle for operation in a fluid medium, comprising:
(a) an outer hull of general spheroid shape having an axis of generation;
(b) an inner pressure hull within said outer hull having a longitudinal axis generally coinciding with said axis of generation;

(c) first and second rotatable hubs on said inner hull having portions designed to be smooth continuations of said outer hull;
(d) a plurality of spindles on said first and second hubs having axes normal to said smooth continuation of said outer hull;
(e) blades individually mounted on said spindles; and



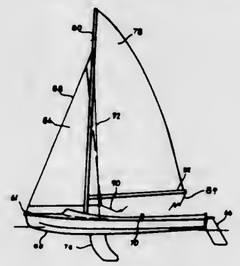
(f) means, including a plurality of control arms individually controlling the rotation of said individual spindles, individually and collectively driveable by drive means for collectively and individually controlling the pitch of said blades to provide maneuvering said vehicle independently in six degrees of freedom.

3,291,087
LIFE SAVING RESCUE CAPSULE
Pauline Kranznick, 1705 East-West Highway, Silver Spring, Md.
Filed June 29, 1965, Ser. No. 467,883
6 Claims. (Cl. 114—16.7)



1. A life saving escape capsule for victims of a sunken vessel or structure at sea, comprising
an ellipsoidal body large enough to accommodate at least one person, composed of a main body portion and a domed cover portion, said main body portion having an air belt around its upper end,
the domed cover portion forming the top of the capsule and being seated on a conically bevelled seat on the upper edge of the main body portion inside said air belt, and
breathing tubes extending upwardly from said domed cover portion and having outwardly and downwardly curved ends provided with normally opened check valves of water buoyant material, causing them to close inwardly upon movement of any water into the end of the tube,
a ballast weight in the lower end of the capsule to improve its upright stability while moving through or floating on the surface of the water, and
a floor spaced over the top of said ballast weight providing compartments under the floor for fresh water, food and equipment storage, and a battery, the battery and water compartments being on opposite sides of the vertical axis of the capsule to maintain substantial balance in this addition mass supplementing the ballast weight,
a sump substantially in the middle of the floor leading directly into the rear end of a pump cylinder which is inclined outwardly to the side of the capsule body where it is normally closed by a one way outlet check valve, and
a piston operated manually in said cylinder and having a substantially flat head with a hinged segment in its lower portion serving as a trap valve normally closed when the piston is moved outwardly on its pressure stroke to eject the contents of the cylinder through said trap valve in the side of the capsule body, and opened by the suction produced in the cylinder when the piston is moved inwardly, to allow the matter in the sump to enter the cylinder for ejection during the pressure stroke.

3,291,088
MULTI-PURPOSE BOAT
Hans-Peter Klose, 9326 Campbell Road, Vienna, Va.
Filed Oct. 24, 1965, Ser. No. 504,376
11 Claims. (Cl. 114—39)

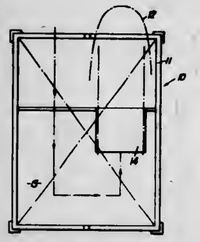


1. A multi-purpose boat of suitable length and width for use as a one to four passenger sailboat, rowboat, motorboat, canoe or Kayak comprising in combination a single integral one-piece hull having a daggerboard trunk in said hull forward of said hull's center of lateral resistance adapted to receive a removable rearwardly curved daggerboard, guiding means in said trunk to guide said daggerboard so that when in place said daggerboard is curved rearwardly to supply its lateral resistance approximately under the boat's center of lateral resistance, fastening means integral with said boat to receive a plurality of interchangeable accessory means to adapt said boat for use with a plurality of propulsion means and steering control means.

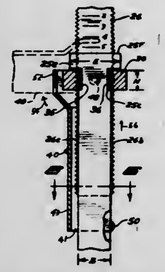
3,291,089
SHIP CONSTRUCTION
William James Lithgow, Gleddoch House, Langbank, Scotland
Filed Feb. 1, 1965, Ser. No. 429,295
Claims priority, application Great Britain, Feb. 1, 1964, 4,373/64
6 Claims. (Cl. 114—65)

1. A method of constructing a ship, including mounting a mobile shed over a ship's berth of substantially greater length than the shed, fabricating successive sec-

tions of the ship, securing the sections into position on the ship in the shed, and progressively moving the shed towards one end of the berth as the completed portion of the ship increases in length.



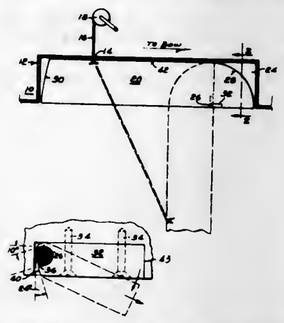
3,291,090
STAY TENSIONING APPARATUS
Robert H. Sevey, Rte. 2, Box 136, Excelsior, Minn.
Filed Oct. 20, 1965, Ser. No. 498,308
23 Claims. (Cl. 114—109)



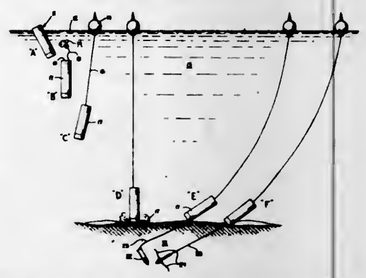
1. Apparatus for connecting one end of a stay to a base member and selectively adjusting the tensioning in the stay comprising a longitudinally elongated travel bar having opposite longitudinally extending surfaces and a first end portion, means for connecting said travel bar first end portion to the stay, a first guide bar, a second guide bar, said guide bars each having first end portions, means for connecting said guide bars first end portions to the base member, and means rotatable mounted on the guide bars for retaining the guide bars in abutting relationship with said opposite surfaces and selectively translating the travel bar relative the guide bars as it is rotated.

3,291,091
LEAK-PROOF CENTERBOARD CONSTRUCTION FOR SAIL BOATS
Francis L. Koenig, 5295 Old Dominion Drive, Arlington, Va.
Filed Dec. 22, 1964, Ser. No. 420,277
3 Claims. (Cl. 114—132)

1. A centerboard construction for boats, including a pivot pin fixedly sealed in an open-bottom centerboard trunk, said pin being disposed athwart said trunk near its connection with the hull of the boat and forward of the lengthwise center of said trunk; said centerboard being arcuate at its forward corner with an arc center at the pin axis; said pin passing within a downwardly open recess in the lower edge of said centerboard and substantially in contact with one vertical wall of said recess; an edge-notched bearing block substantially filling said recess with the margins of its edge notch substantially encompassing said pin about its region away from said wall of said recess, and fastener means for removably securing said bearing block in said recess, and for thereby securing the centerboard to the pivot pin and to the boat.



3,291,092
MOORING APPARATUS
Paul V. Halberg and Clinton S. Myers, Fort Wayne, Ind., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 420,005
15 Claims. (Cl. 114—206)



7. In a mooring device, the combination comprising:
an elongated container having top and bottom openings;
a first cable packed in said container, said cable having a first portion connected to said container, and a second portion extending out of said container through the top opening thereof, portions of said cable between said first and second portions being payable out of said container through one of said openings from locations in said container moving progressively outwardly toward an outer longitudinally extending wall of said container;
and an anchor assembly disposed in said container, said anchor assembly including an anchor firing gun, encircled by the pack of said first cable, said anchor assembly including an anchor in said gun;
a second cable packed in said container and having a first portion connected to said container and a second portion connected to said anchor, said anchor being dischargeable from said gun through the bottom one of said openings of said container by firing said gun.

3,291,093
ANCHORS
John M. Wood, Jr., Box 394, Island Heights, N.J. 08732
Filed Mar. 26, 1965, Ser. No. 443,036
4 Claims. (Cl. 114—208)

1. In an anchor of the twin fluke type the combination of
a stock,
a pair of flukes secured along their rear marginal edges to the stock with their inner edges in spaced relation,
a crown between said flukes having a forward vertex and diverging wall plates extending rearwardly from said vertex,
said wall plates each having slots therein bounded by vertical marginal edges and extending rearwardly from said vertex,
said crown having a pair of spaced parallel cheek plates



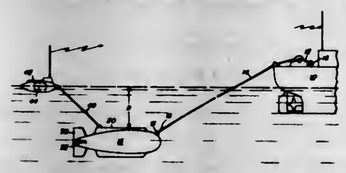
connected to said diverging wall plates and through which said stock extends,
said cheek plates having their forward marginal edges spaced rearwardly from said vertex thereby to provide transverse openings at said vertex, and
a shank pivotally mounted on said stock between said cheek plates and movable in said slots,
the margins of said slots along said transverse opening providing guiding surfaces for said shank.

3,291,094
CLEAT DEVICE FOR WATER BORNE VESSEL
Roderick W. Beebe, Huntington, N.Y., assignor of one-third to Albert C. Nolte, Jr., New York, N.Y.
Filed May 17, 1965, Ser. No. 456,161
5 Claims. (Cl. 114—218)



1. A cleat device for a water borne vessel, comprising a suction cup of plastic material; and a cleat of plastic material harder than that of said suction cup and of one piece with said suction cup, said cleat, being of substantially T configuration, having a substantially wide portion spaced from said suction cup and a substantialy narrow neck portion extending from and joining said suction cup and the wide portion of said cleat.

3,291,095
TOWED SURFACE BUOY
Archer M. Nicherson, Jr., Weymouth, Mass., assignor to The Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,164
2 Claims. (Cl. 114—235)



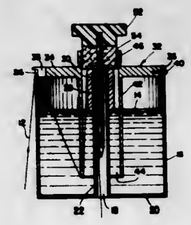
1. The method of controlling the depth of a submerged barge which is towed by a mother vessel, comprising the steps of: mounting a depth sensor on the submerged barge, securing a buoy by an electrical transmission tow line to said barge, transmitting the output of said depth sensor to a said buoy through said line, transmitting said output to said mother ship via radio transmission and altering the length of a tow cable between said barge and said mother vessel in response to the output transmitted.

3,291,096
EXPANDABLE SIGNAL
Cletus Neal Walter, San Diego, Calif., assignor of thirty-seven and one-half percent to the firm of McCormick, Barstow, Sheppard, Coyle & Best, Fresno, Calif.
Filed Apr. 10, 1964, Ser. No. 358,880
10 Claims. (Cl. 116—63)



1. A signal comprising a housing having separable portions of substantially rigid material releasably interconnected for movement between opened and closed positions, constraining means adapted to be mounted on the housing releasably to hold the housing in said closed position, a signal element adapted to be releasably disposed within the housing having a plurality of normally divergent resilient fingers tightly compressed within the housing when in said closed position and exerting a force sufficient automatically to motivate said separable portions of the housing to said open position completely to liberate said signal element and to display the fingers in divergent signaling relation upon an impact of a force against the housing sufficient to disengage said constraining means from the housing.

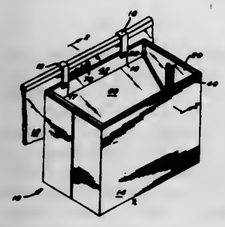
3,291,097
THREAD COATING DEVICE
John Howard Atkins, Lexington, and John McGowan, Jr., West Roxbury, Boston, Mass., assignors to Oversewing Machine Company of America, Medford, Mass., a corporation of Massachusetts
Filed Apr. 2, 1963, Ser. No. 270,881
3 Claims. (Cl. 118—169)



1. A device for applying a coating of liquid to a length of travelling thread, comprising a container for receiving a quantity of said liquid, a first tubular member mounted in fixed position to a bottom wall of said container, said bottom wall being formed with an opening in register with the lower end of said first tubular member, the opposite end of said first tubular member extending above the normal surface level of said liquid, a cover detachably mounted to said container, a second tubular member mounted to said cover member and telescoped over said first tubular member, said second tubular member having an inside diameter greater than the outside diameter of said first tubular member to define an annular passage between said tubular members, the lower end of said second tubular member defining a space between the lower end thereof and said bottom wall, said container being formed with an opening above said normal surface level whereby a length of thread fed into said container through said

opening above the surface level and through said first tubular member will have a section thereof drawn below the surface of said liquid by the end of said second tubular member engaging said thread.

3,291,098
CONVERTIBLE FISH DISPLAYER AND BREEDER FOR AQUARIUMS
Abby Halpert, Brooklyn, N.Y., assignor to Halvin Products Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Feb. 25, 1965, Ser. No. 435,238
10 Claims. (Cl. 119—5)



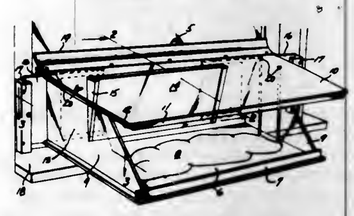
10. Apparatus for use in an aquarium tank comprising a rectangular frame having side walls of net material with a sufficient number of openings to permit free flow of water from and into said frame, said frame having a bottom wall of net material, partitions extending between and supported by opposite end walls of said frame, said partitions converging downwardly toward the bottom wall with a slot between adjacent edges of said partitions, said slot providing communication between the space above said partitions and the space below said partitions, and means for supporting said frame in an aquarium tank.

3,291,099
ANIMAL EXERCISER
Carl J. Crane, San Antonio, Tex., and Theron Dale Crews, 213 St. Andrew, Gonzales, Tex.; said Crane assignor to said Crews
Filed June 18, 1965, Ser. No. 465,100
6 Claims. (Cl. 119—29)



1. Animal exerciser comprising a plurality of vertical stanchions, said stanchions arranged whereby each stanchion is at a point along the periphery of a geometric figure, pulley means rotatably mounted on said stanchions, endless flexible means in cooperative operation with said pulley means, means for driving said endless flexible means, tethering means secured to said endless flexible means for attachment to an animal, a substantially U-shaped member encompassing said pulley means, one leg of said U-shaped member secured to a stanchion, the other leg extending outwardly from said geometric figure over and beyond said pulley means, rigid means connecting each of said other legs to maintain them in spaced relationship and forming a guide rail beyond said pulley means for said tethering means upon upward movement of said tethering means.

3,291,100
BIRD FEEDER
Everett O. Negaard, 833 15th Ave. S., St. Cloud, Minn.
Filed Sept. 23, 1965, Ser. No. 489,616
1 Claim. (Cl. 119—51)

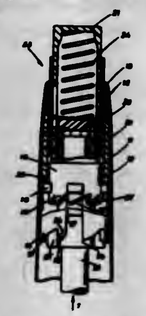


A bird feeder of the character described, comprising a horizontally disposed rectangular bottom board that rests on the sill of the window of a building, and a rectangular board the same length as that of the said bottom board, the said rectangular board being secured in a vertical position to the upper and outer longitudinal edge of the said bottom board in order to prevent any bird food that is placed on top of the said bottom board from falling off the said bottom board, and a horizontally disposed rectangular top the same length as that of the said bottom board but of greater width than that of the said bottom board with the said top thereof extending outward beyond the outer edge of the said bottom board, the said top being held in equal and parallel spaced relation above the said bottom board by a trapezoidal shaped board-like member extending vertically upward from the upper surface of each end of the said bottom board and two spaced and parallel bolts extending downward through each end of the said top and the said bottom, and a nut screwed on the lowermost end of each one of the said bolts thereby firmly securing the said top to the said bottom, and a vertically disposed rectangular back secured to the inner longitudinal edge of the said top and said bottom of the said bird feeder, the said back having a rectangular opening in the center thereof, and an inclined rectangular transparent mirror glass covering the outward side of the opening and triangular shaped end members firmly securing the said mirror glass covering in place in the said bird feeder, and a rectangular vertically disposed sliding member secured to each end of the said back, the outer edge of each one of the two said sliding members being adapted to engage a vertically disposed end post that is secured to the outer surface of the said window in which the said bird feeder is mounted.

3,291,101
BALL PENS
Jules Victor Robert Helitas, Asnieres, France, assignor to Le Foyer et Cie, a corporation of France
Filed Dec. 3, 1963, Ser. No. 327,709
Claims priority, application France, May 2, 1963, 933,466
6 Claims. (Cl. 120—42.03)

1. In a ball-pen with a ball support-member retractable relative to the body of the ball-pen under the action of a push-button having the same position both in the operative and in the retracted condition of the ball: visual indicator means attached to said ball support-member and having two different positions with respect to said body depending on whether the ball is in the operative or in the retracted position, mechanical means between

said indicator means and support-member, said visual indicator means being operated by said mechanical means



to obscure the push-button in one position and to expose the push-button in the other position.

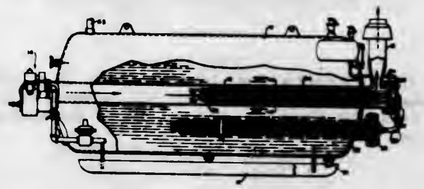
3,291,102
FOUNTAIN PEN
David Wolf, Newton, Mass.
(185 Devonshire St., Boston, Mass.)
Filed May 16, 1966, Ser. No. 551,113
3 Claims. (Cl. 120—46)



1. A fountain pen comprising means forming a refillable ink reservoir, a pen nib, means forming an ink conduit and support for securing said nib at one end of said reservoir whereby ink may flow from said reservoir to said nib when said pen is in use, spring means extending from said support for filling said reservoir from an ink supply into which said nib is dipped, and a casing enclosing each of said means and substantially enclosing said nib, said casing including an upper part rotatably secured to said spring means and a lower part open at each end and enclosing the lower portions of said pen with the tip of said nib projecting outwardly therefrom, said lower part formed with an inner surface devoid of projections engaging said nib whereby said lower part may be completely removed from enclosing said lower portions.

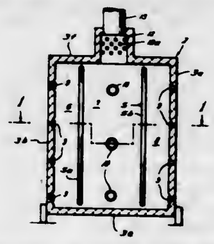
3,291,103
WATER HEATER
John J. Fischer, East Stroudsburg, Pa., assignor to The Patterson-Kelley Co. Inc., East Stroudsburg, Pa.
Filed Jan. 27, 1964, Ser. No. 340,348
5 Claims. (Cl. 122—33)

4. A water heater comprising, in combination,
a temporary storage and heating tank having a cold water inlet and a hot water outlet,
a heating gas duct disposed within said tank,
means for delivering hot gases into one end of said duct and stack means in communication with the other end of said duct,
means for extracting the major heat content of the gases passing through said duct to minimize direct transfer of heat from the hot gases to the water within the tank, the heat extracting means including a first tube bundle disposed within said duct and directly contacted by the hot gases therein,
means for heating the water in said tank comprising a second tube bundle within said tank exterior to said duct,



a scale-free fluid filling said first and second tube bundles,
means forming a closed path between said first and second tube bundle for circulating the scale-free fluid,
a wrapper surrounding said first tube bundle and spaced inwardly of said duct, and baffle means at the gas inlet of said wrapper spanning the space between said wrapper and said duct to force the gases to flow through said wrapper, and said wrapper being open at its other end to deliver spent gases to said stack means.

3,291,104
TUBULAR HEATER
Merle A. Zimmerman, Shreveport, La., assignor to Waste Heat Engineering Corp., a corporation of Texas
Filed Sept. 30, 1965, Ser. No. 491,625
7 Claims. (Cl. 122—240)

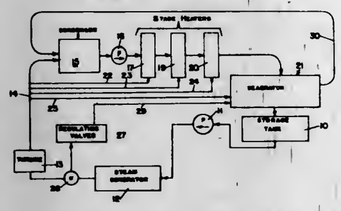


1. The combination of burners and tube banks in a fired heater enclosure having four side walls for controlled heating of process streams comprising:
(a) a pair of spaced horizontal tube banks, each of said banks having an inner and outer side and positioned in the enclosure parallel to two of the side walls wherein said outer sides of each of said pair of tube banks face one of each of the parallel side walls;
(b) said tube banks thereby forming three combustion chambers in the enclosure wherein one of said chambers is adjacent one of the parallel side walls and the second of said chambers is adjacent the other of the parallel side walls and the third of said three chambers is intermediate said first and second chambers;
(c) a plurality of short flame radiant type burners secured to both of the parallel side walls for heating said first and second chambers, respectively, and for heating said outer sides of each of said pair of

parallel tube banks facing the parallel side walls, respectively; and

(d) a plurality of long flame burners mounted with the other two of the four side walls of the enclosure at spaced intervals, said long flame burners being positioned adjacent said intermediate third chamber to enable said burners to thereby uniformly heat said third chamber and said inner side of each of said tube banks which thereby enables substantially uniform heating of said inner and outer sides of each of said tube banks which facilitates substantial uniformity of heating throughout said three chambers of the fired heater enclosure.

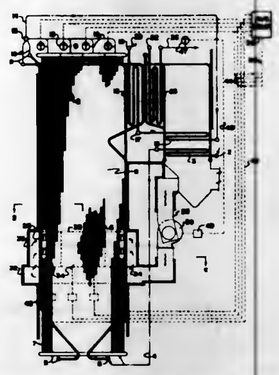
3,291,105
DESUPERHEATING DEAERATING HEATER
Robert K. Steward, Garden City, N.Y., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 12, 1960, Ser. No. 62,125
7 Claims. (Cl. 122—406)



1. A steam system comprising a steam generator, a steam-utilizing apparatus, a condenser, a desuperheater-deaerator means and a condensate storage tank connected in series by conduit means in circuit, a steam by-pass conduit means connected through a pressure responsive valve means to said conduit means interconnecting said steam-utilizing apparatus and said steam generator, said steam by-pass conduit means communicating with said desuperheater-deaerator means, said pressure responsive valve means so constructed and arranged to permit the flow of steam from said steam generator to said steam-utilizing apparatus until the pressure of said steam exceeds a pre-determined pressure and then to direct said steam through said steam by-pass conduit to said desuperheater-deaerator means, said desuperheating-deaerator means comprising a tank having a deaerating zone and a desuperheating zone, said desuperheating zone being above said deaerating zone and communicating therewith, a deaerated water outlet connected to the bottom of said tank, means for spraying condensate from said condenser into said desuperheating zone, said deaerating zone being below said spraying means to receive said condensate from said high temperature steam zone, means for supplying steam to said deaerating zone, said steam by-pass conduit means communicating with said desuperheating zone and steam outlet means for removing steam from said desuperheating zone and said deaerating zone.

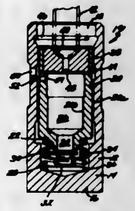
3,291,106
VAPOR GENERATOR WITH GAS RECIRCULATION
David Falchik, Bloomfield, and William H. Clayton, Jr., Windsor, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,321
9 Claims. (Cl. 122—479)

1. A once-through vapor generator having a furnace, burners for burning fuel within said furnace; a flue for conveying combustion gases away from said furnace, and steam heating surface located in said flue, comprising: furnace wall tubing lining the walls of said furnace, said furnace wall tubing being divided into a plurality of parallel sections; means for passing fluid flow through the furnace wall tubes; means for determining the relative heat absorption of each of the parallel sections; means for recirculating gas from the flue downstream of said steam heating surface with respect to gas flow into the furnace at a plurality of locations; each



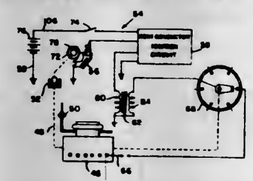
of said locations being associated with a corresponding furnace wall section so that introduction of gases at said location decreases the heat absorption of the corresponding wall section; means responsive to the relative heat absorption of each section to regulate the relative quantity of gases introduced at each location; and means to regulate the quantity of gas recirculation in accordance with the distribution of heat absorption between the furnace wall tubing and the steam heating surface.

3,291,107
TEMPERATURE COMPENSATING HYDRAULIC TAPPET
Richard D. Cornell, Muskegon, Mich., assignor to Johnson Products, Inc., Muskegon, Mich., a corporation of Michigan
Filed June 16, 1965, Ser. No. 464,449
2 Claims. (Cl. 123—90)



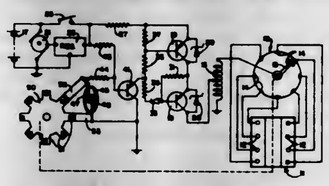
1. In a temperature compensating hydraulic tappet for an internal combustion engine, having a hollow tappet body having one closed end with an outer cam follower surface, and one open end, and axially movable plunger in said body, said plunger having an outer peripheral surface spaced slightly from said body to form an oil passage therebetween, said plunger being hollow, with an inner peripheral surface, and having a passageway opening and an integrally formed valve seat on its inner end and a push rod seat receiving opening on its opposite end adjacent said body open end; said tappet body comprising a cast iron body having a relatively low thermal expansion rate; said plunger having an aluminum core with a relatively high thermal expansion rate, and having an integral, hard surface, enveloping case jacket of 0.0005 to 0.0025 inch thickness of aluminum oxide over its entire surface area including said valve seat, said jacket effecting strength reinforcing for the entire plunger.

3,291,108
TRANSISTOR IGNITION
Alfred Schneider and Ralph L. Slitti, Jr., Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Jan. 8, 1964, Ser. No. 336,418
13 Claims. (Cl. 123—148)



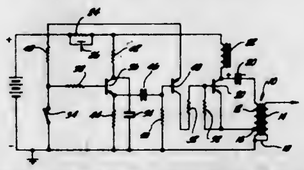
1. A pulsed semi-conductor ignition system which is breakerless in series with an ignition coil for converting a usual ignition system of an existing internal combustion engine having breaker points and a cam to a semiconductor ignition system, which semi-conductor ignition system includes pulse producing means substituted for the breaker points and operated by the existing distributor cam connected to and driven by the engine in accordance with the speed thereof and an existing source of electric energy, and which ignition system is adapted to be connected between the existing source of electric energy, distributor and engine.

3,291,109
ELECTRONIC SYSTEM
Nicholas T. Neapolitakis, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 10, 1964, Ser. No. 388,640
4 Claims. (Cl. 123—148)



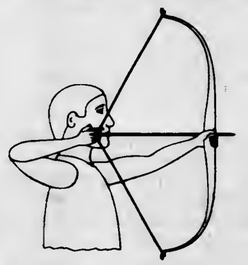
1. An ignition system for an internal combustion engine including in combination, an ignition coil for providing high voltage firing pulses for the internal combustion engine, semiconductor switching means having a portion providing a conductive path and a control portion for selectively rendering said path conductive, means connecting said conductive path portion of said semiconductor switching means in series with at least a part of said ignition coil across potential supply means, and control means connected to said control portion of said semiconductor switching means for controlling the conduction thereof, said control means including magnetic reed switch means and a magnetic structure for operating the same, said magnetic reed switch means including first and second magnetic reed elements having portions with contacts adapted to engage each other to complete a circuit therethrough and a sealed enclosure about said portions, said reed elements having portions extending outside said enclosure, said magnetic structure including pole pieces connected to said portions of said magnetic reed elements extending outside said enclosure, and a rotor having a permanent magnet and discrete magnetic poles with alternate poles being of opposite polarity, said rotor being movable to align adjacent ones of said poles thereof with said pole pieces and then displace said poles from said pole pieces, whereby the flux through said magnetic reed switch means changes suddenly and reverses in polarity to provide rapid switching action.

3,291,110
HIGH VOLTAGE CIRCUIT FOR AUTOMOBILE ENGINE IGNITION
William Y. Peters, Tucson, Ariz., assignor to Jasper N. Cunningham, San Pedro, Calif.
Filed Sept. 2, 1965, Ser. No. 484,676
8 Claims. (Cl. 123—148)



1. An internal combustion ignition circuit controlled in response to the opening and closing of a switch for generating a high voltage pulse from a standard battery source, said circuit comprising a transformer having a saturable core and primary and secondary windings, the secondary having a large number of turns in relation to the primary, the primary having an intermediate tap, one end of the primary and secondary windings being connected to one side of the battery source, a capacitor and inductor connected in series between the other end of the primary and the other side of the battery source with the capacitor being connected between said other end of the primary winding and the inductor, normally closed switch means connecting the series connection point between the inductor and capacitor to said tap, and means for momentarily opening the switch means to start the generation of a high voltage on the secondary.

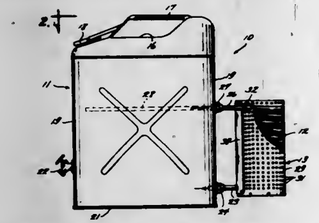
3,291,111
MOUTH SUPPORTED ANCHOR NOCK FOR BOW STRING
Martin L. Smith, 733 Mayfield Ave., Norfolk, Va.
Filed Sept. 11, 1963, Ser. No. 308,207
1 Claim. (Cl. 124—23)



For an archery bow string, an integral anchor lock nock comprising a grip portion adapted to be gripped between the upper and lower teeth of an archer, a pair of oppositely extending ribs along said grip portion and spaced from the inner edge thereof to engage the outer sides of said teeth and locate said grip portion relatively thereto, a flat support portion extending from said grip portion on a plane therewith and beyond the said ribs to project between the upper and lower lips of said archer, a vertical post portion extending from said support portion, and a flat horizontal plate portion extending from said post

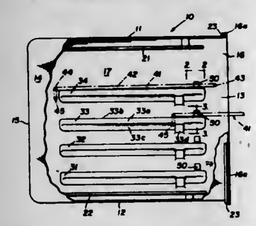
portion; said plate portion having a notch in the front edge portion thereof and spaced from its inner edge to receive and locate said bow string.

3,291,112
PORTABLE WATER HEATER
Kenneth E. Springer, 1627 Monona, Boone, Iowa
Filed Jan. 25, 1965, Ser. No. 427,634
2 Claims. (Cl. 126—5)



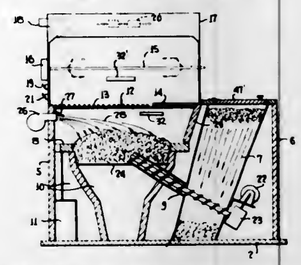
1. A portable fluid heater comprising:
a tank for fluid having side walls and top and bottom walls forming a chamber therein, said tank having a closeable opening formed in a wall thereof for normally filling the chamber with a fluid;
a heating coil disposed externally of the tank with terminal portions rigidly connected to said side wall and communicating with upper and lower portions of said chamber; and
a firepot including a perforated member enclosing the sides and bottom of said coil, said terminal portions extended through said member and adapted to support said member and said coil.

3,291,113
HOUSEHOLD COOKING OVENS PROVIDED WITH SLIDABLY SUPPORTED RACKS
George A. Scott, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed June 7, 1965, Ser. No. 461,958
6 Claims. (Cl. 126—19)



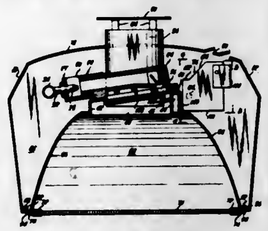
1. In a household oven including a metal liner defining a cooking cavity, a heating system operative to heat said liner and the air in said cooking cavity, whereby normal food-cooking operations may be carried out in said cooking cavity in the normal food-cooking temperature range extending from about 150° F. to about 550° F. and whereby food soils accumulated upon the interior surfaces of said liner may be cleaned therefrom in the heat-cleaning temperature range extending from about 750° F. to about 950° F., said liner being of box-like form including a pair of laterally spaced-apart upstanding side walls and having an open front, a pair of elongated metal rails respectively carried by said side walls and respectively projecting inwardly therefrom into said cooking cavity and arranged in a generally horizontal plane, and a metal rack arranged in said cooking cavity and mounted upon said rails for sliding movements into and out of said cooking cavity through the open front of said liner; the combination comprising a pair of supports respectively carried by said side walls and respectively arranged adjacent to the front portions of said rails and respectively engaging and supporting the opposite sides of said rack in its sliding movements; each of said supports being of composite construction and comprising an inner backing member formed essentially of material selected from the class consisting of stainless steels and nickel-copper alloys, an outer bearing member formed essentially of fine silver, and an intermediate layer bonded both to said inner backing member and to said outer bearing member and formed essentially of a silver-copper alloy that consits essentially of about 72% silver and about 28% copper by weight.

3,291,114
CHARCOAL BARBECUE UNIT
Gerald B. Metcalf, 2 Grant Place, Mount Vernon, Ill.
Filed Oct. 15, 1964, Ser. No. 404,075
5 Claims. (Cl. 126—25)



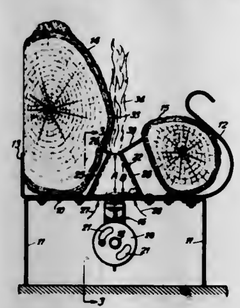
1. A charcoal barbecue unit comprising in combination: an upwardly opening firebox; open grille food supporting means disposed above said firebox so that food support thereon is in contact with combustion products; a charcoal storage hopper; a conveyor adapted to feed charcoal from said hopper to said firebox; power means for operating said conveyor; a temperature sensing element in the region of said food supporting means; and a thermostat actuated by said sensing element to control operation of said power means, whereby said power means is energized and deenergized by temperature variations in the region of the food supporting means to regulate feed of charcoal to the firebox to maintain a predetermined temperature in the region of said food supporting means.

3,291,115
INFRA-RED HEATERS
Philip M. Forniti, Cleveland, Ohio, assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Feb. 27, 1962, Ser. No. 176,021
10 Claims. (Cl. 126—92)



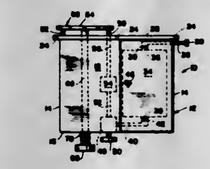
1. An infra-red heater comprising a plurality of infra-red burners mounted in side-by-side relation on a frame, said burners each having an infra-red generating surface, a reflector assembly mounted on said frame and extending away from said burner surfaces, a honeycomb screen extending across the open end of said reflector assembly, an essentially imperforate windproof shroud assembly enclosing said burners and said reflector assembly, the marginal edges of said shroud assembly and said reflector assembly being spaced to provide a restricted inlet passage for combustion air and said shroud having an outlet for combustion products, and a pilot assembly positioned within said shroud adjacent said burners.

3,291,116
GAS LOGS
Lorimer P. Brooks, Briarcliff Manor, N.Y.
(165 Broadway, New York, N.Y.)
Filed Aug. 4, 1964, Ser. No. 387,385
9 Claims. (Cl. 126—92)



1. A gas burning assembly comprising an elongated gas burner having ports directed in a predetermined direction, said ports being adapted to provide a gas flame of a predetermined cross-sectional area, and a tubular flame accelerator mounted over said burner with its bore aligned with said predetermined direction and with one end adjacent said ports, said accelerator having an upwardly converging continuous wall with a bottom opening at said one end which is larger than the periphery of said ports, whereby the inner surface of said accelerator at said one end is spaced from said ports and said accelerator having a top opening at its opposite end which is less in area than said predetermined flame area.

3,291,117
AIR-CONDITIONING APPARATUS
Hubert B. Sheaklin, 4 Rock Court, Park Ridge, N.J.
Filed June 7, 1965, Ser. No. 461,762
13 Claims. (Cl. 126—113)

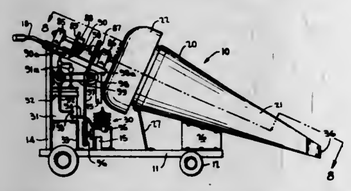


1. Air-conditioning apparatus particularly adapted to efficiently disseminate desired and variable quantities of moisture into the air to be delivered to within an enclosure, such as a room, and the like, comprising, in combination:
a casing having a front wall, a plurality of side walls, and a bottom and top wall, said top wall comprising:
a hinged door enabling access to be had interiorly of said casing; and
a flange extending completely peripherally about said casing, enabling said casing to be fixedly positioned upon the warm air plenum of a heating system;
the rear of said casing being open and unobstructed, enabling communication to be had between said casing and the plenum;
a system of conduits disposed within said casing for conveying a liquid from a source thereof to the plenum, said system comprising:
a first conduit extending through one of the side walls of said casing from exteriorly thereof, and having:
a quick-disconnect coupling at each end thereof;
a second, third and fourth conduit;
said second conduit having a quick-disconnect coupling at one end thereof, and at another end thereof communicating with a shut-off valve;
said shut-off valve comprising:
an operating handle extending outwardly of said casing through the front wall thereof;
said third conduit communicating at one end thereof with said shut-off valve, and at another end thereof with a normally closed electrically energizeable solenoid valve;
said fourth conduit communicating at one end thereof with said solenoid valve, and at another end thereof, terminating in a nozzle;
said nozzle being so constructed and arranged as to disseminate desired and variable quantities of moisture into the air circulating within the plenum in the form of a mist or fog, and comprising:
an annular groove;
an annular O-ring disposed within said groove;
a demineralizer removably disposed within said system of conduits between the first and second conduits thereof, and in series relationship with respect to said shut-off valve, the solenoid valve, and said nozzle; and comprising:
a bed of an ion exchange resin, enabling said demineralizer to soften the water conveyed therethrough through the medium of the first and second conduits of said system of conduits, further enabling a substantial, if not complete, elimination of formation of harmful deposits of calcium, magnesium, and the like, or scale, on the shut-off and solenoid valves, on the nozzle, and in the remaining conduits of the systems;
said demineralizer being removably connected to said first and second conduits through said quick-disconnect couplings, enabling it to be repaired or replaced with extreme facility through the medium of said hinged door;
a variable orifice assembly for varying the quantity of moisture to be disseminated into the plenum, comprising:
a rotatable orifice plate disposed in spaced substantially parallel relationship with respect to the opened and unobstructed end of said casing; and having:
a plurality of apertures of varying diametral dimensional extent;
a rotatable shaft fixed upon said plate, and extending through and outwardly of said casing through the front wall thereof;
said shaft having a knob enabling said orifice plate to be rotatably translated from a location frontally of said casing between positions in which any desired one of the apertures extending therethrough are disposed substantially in alignment with said nozzle;
a compression spring disposed between the front wall of said casing and said knob for maintaining said orifice plate in firm mutual co-operative engagement with said nozzle;
a standard fixed to said orifice plate and extending towards and into a groove disposed within an annular extension directed inwardly from said flange to preclude wobbling of said orifice plate;
said O-ring insuring that the quantity of liquid conveyed into the nozzle by the system of conduits is directed into and through the aperture disposed in

alignment therewith, and precluding any leakage between the nozzle and said orifice plate;

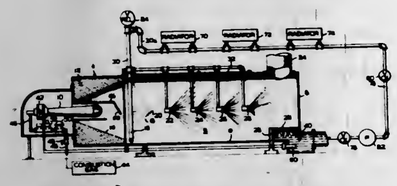
said knob having indicia thereupon corresponding with similar indicia on said orifice plate, enabling an operator to visually determine which of the apertures, when disposed in alignment with the nozzle, will present the desired quantity of moisture dissemination.

3,291,118
SNOW MELTER
La Roy A. Wilson, 9641 Accord Drive, Potomac, Md.
Filed Oct. 9, 1964, Ser. No. 402,814
14 Claims. (Cl. 126—271.2)



1. A snow and ice melting and removing machine or the like, comprising a wheeled truck, a blast chamber mounted on said truck and having a nozzle adapted to be directed toward the material to be melted or removed, a liquid fuel burner within said chamber and comprising a perforated casing, a rotary fuel nozzle within said casing, a two-stage fan device carried by said truck and adapted to supply air to said burner, and means on said truck for powering said fuel nozzle and said fan.

3,291,119
DIRECT-FIRED WATER HEATING APPARATUS
Timothy J. Sullivan, Butte, Mont., assignor to Sullivan Valve and Engineering Company, Butte, Mont., a corporation of Montana
Filed Sept. 21, 1964, Ser. No. 397,878
4 Claims. (Cl. 126—350)



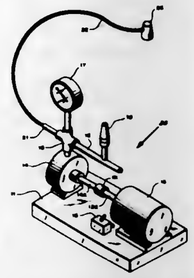
1. Water heating apparatus, comprising

a housing containing a combustion chamber having a horizontal axis, said housing including a vertical end wall defining one end of said combustion chamber, the upper and lower portions of said housing containing immediately adjacent said end wall combustion gas vent and hot water discharge openings, respectively;

fuel burner means connected with said housing directly opposite said end wall for directing a horizontal flame axially of said combustion chamber in the direction of said end wall; and

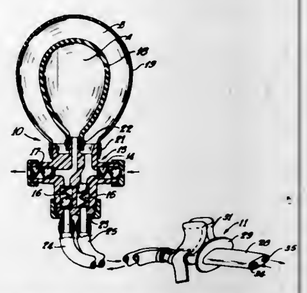
water spray means between said burner means and said end wall for spraying water axially of said combustion chamber solely in the direction of said end wall, said spray means including parallel with and spaced from said end wall an annular nozzle coaxially arranged relative to, and having a greater diameter than, the flame produced by said burner means, said annular nozzle providing a convergent conical spray pattern directed toward said end wall and having an apex colinear with the axis of the burner flame.

3,291,120
CAPILLARY FRAGILITY TESTING APPARATUS
Nubar A. Karakashian, 539 E. Allegheny Ave., Philadelphia, Pa.
Filed July 19, 1963, Ser. No. 296,318
2 Claims. (Cl. 128—2)



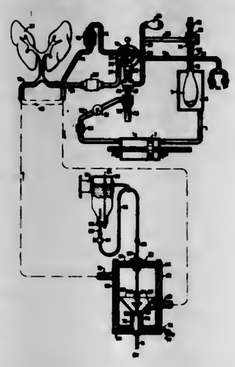
1. Apparatus for testing capillary fragility comprising a base, an electric motor on said base, a constantly, rotatable vacuum pump providing a continual steady vacuum when said pump is running, said pump being mounted on said base and connected to said motor, a switch to control said motor, a suction side on said pump, a T on and opening into said suction side, said T having connected thereto (a), a vacuum gauge to directly read the degree of vacuum in said suction side, (b) a bleeder line equipped with an adjustable bleeder valve to selectively admit different flows of air from the atmosphere to said suction side to control the degree of vacuum, and (c) an operating line connected to a flexible tube, said flexible tube being connected to and opening into a vacuum cup, said vacuum cup having an open face adapted to be placed against a hairless area of skin of a patient in a sealing relationship.

3,291,121
RESUSCITATIVE DEVICE
Gordon H. Vizneau, 3612 W. Laskey Road, Toledo, Ohio
Filed Aug. 29, 1963, Ser. No. 305,294
5 Claims. (Cl. 128—145.7)



1. A resuscitative apparatus comprising a valve assembly in a suitable housing and secured to one end of said housing a pair of squeeze-bulbs arranged one within the other, a mouthpiece and nose-clamp assembly, and secured to the other end of said housing opposite said pair of squeeze bulbs at least one tube interconnecting said mouthpiece and nose-clamp assembly and said valve assembly, said valve assembly consisting of two pairs of check valves, one pair of check valves being interconnected by a port with the outermost squeeze bulb to regulate inflow and exhaustion of fluid to the outermost bulb, the other pair of check valves being interconnected by a port to the innermost squeeze bulb to regulate inflow and exhaustion of fluid to the innermost bulb, one check valve of each pair being disposed to interconnect its port with the atmosphere, said pairs of check valves being disposed in relationship to each other whereby when said pair of bulbs is squeezed said one pair of check valves admits fluid to said mouthpiece and nose-clamp assembly while said other pair of check valves exhausts fluid to the atmosphere.

3,291,122
RESPIRATOR WITH NEBULIZER
Carl-Gunnar Daniel Engström, Aladdsvagen 3, Stockholm, Sweden, and Paul Herzog, Nybodagatan 7, Solna, Sweden
Filed Oct. 24, 1963, Ser. No. 318,716
Claims priority, application Sweden, Oct. 25, 1962, 11,485/62
15 Claims. (Cl. 128—145.8)



1. Respirator for artificial breathing and for narcosis of the type comprising a conduit system for the respiratory gas, including a lung attachment adapted to connect said system with the lungs of a patient; a gas propelling means promoting the flow of respiratory gas in the system and lungs, thereby periodically establishing in at least a high pressure portion of said system including said lung attachment alternatively a relatively high gas pressure and a relatively low gas pressure; a nebulizer incorporated in said high pressure portion of said system, said nebulizer comprising a nebulizing chamber including a gas space, a gas inlet and a gas outlet connecting said gas space with said gas propelling means and said lung attachment, respectively, a supersonic vibrator located in said chamber, a liquid supply conduit for supplying liquid to be nebulized to said chamber, said conduit having an opening into said chamber exposed to pressure variations in said chamber, and means for hampering reverse flow in at least that portion of said liquid supply conduit which is adjacent its opening in said chamber.

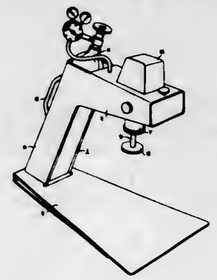
3,291,123
MASSAGE APPARATUS FOR BREAST WITH ADAPTOR RING FOR CHANGING SIZE
Ryugo Terauchi, 236 3-chome Ogikubo, Suginami-ku, Tokyo, Japan
Filed May 12, 1965, Ser. No. 455,252
Claims priority, application Japan, Nov. 2, 1964, 39/85,242
4 Claims. (Cl. 128—36)

1. A massage apparatus for women's breasts which comprises at least one cup made of elastic material adapted to fit over a breast, means for vibrating said cup to impart vibrations to said breast, an auxiliary ring attached to said cup, said auxiliary ring having a diameter at one end thereof which is larger than the diameter of said cup, and a diameter at the other end thereof which is smaller than the diameter of said cup, said auxiliary ring being adapted to be attached to said cup at either



end of said auxiliary ring to accommodate breasts which are larger or smaller than the diameter of said cup.

3,291,124
PNEUMATICALLY CONTROLLED PORTABLE HEART MASSAGE APPARATUS
Charles H. Jennings and Everett W. Vaughn, Ellicott City, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 21, 1963, Ser. No. 260,189
3 Claims. (Cl. 128—53)



1. A portable heart massage unit comprising a C-shaped frame having a bottom plate for insertion under the victim's back, a vertical column projecting upwardly from said bottom plate, and an arm secured to said column and extending horizontally over said bottom plate; a gas-operated heart massage cylinder vertically disposed on said arm, including a plunger constructed and arranged for application of pulses of chest-compressing force to the patient locally in the area of his sternum for heart resuscitation; gas-operated control means for controlling periodically-varying gas pressurization of said cylinder to cause periodic actuation of said plunger; a compressed gas bottle connected to said control means as a source of gas supply for operating both said controls and said massage cylinder; and hollow means in said frame removably supporting said gas bottle.

3,291,125
INTRAUTERINE U-SHAPED PESSARY
Ralph R. Robinson, 2024½ Cumberland Ave., Middlesboro, Ky.
Filed Sept. 23, 1965, Ser. No. 489,693
6 Claims. (Cl. 128—130)

1. An intrauterine device comprising:

a generally U-shaped loop of resilient material having a bight for disposition across the cervix and a pair of arms extending upwardly from the bight,

each arm having an upper terminus for disposition at the mouth of the corresponding Fallopian tube,

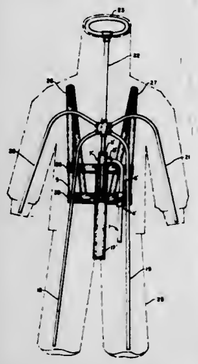
there being an outwardly bulged portion in each arm respectively at said bight disposed for engagement with the uterus and for actuation inwardly by interaction between said portions and the uterus at the zone of engagement therebetween during contrac-

tion of the uterine muscles into a position of interabutment of said portions subjacent the bight,
said bight and said portions forming a closed ring when the portions are in abutment, presenting a fulcrum at the zone of abutment, whereby said termini are



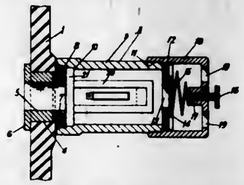
pressed outwardly into engagement with the uterus in said mouths as said muscular contraction continues to act inwardly on said portions, thereby impeding expulsion of the device from within the uterus.

3,291,126
AIR COOLING UNIT FOR PROTECTIVE CLOTHING AND THE LIKE
Raymond R. Mesnick, Aiken, S.C., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 2, 1963, Ser. No. 292,797
7 Claims. (Cl. 128—142.4)



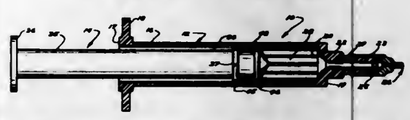
3. A device for supplying cooling and breathing air to a person wearing a protective suit comprising, a suit of impervious material completely enveloping the wearer, a source of air under pressure, flexible conduit means for conducting said air under pressure, a vortex tube for cooling the air, means for coupling said conduit means to the inlet of said vortex tube, means for connecting the cold discharge end of the vortex tube to the suit, means for distributing air from the cold discharge end of the vortex tube to positions within the suit to provide adequate cooling and breathing air, means to muffle the air noise produced by the vortex tube, valve means in the hot discharge end of the vortex tube to control the cold and hot air, means to insulate the hot discharge end of the vortex tube, means for supporting said coupling, vortex tube, and muffler means on the body of the person and within the suit, said hot discharge end extending through the suit to the exterior thereof.

3,291,127
AUDIO EXHALATION VALVE FOR ANESTHETIC NOSE MASK
Lee R. Elmer and Betty Elmer, both of 100 Robinson Road, Highland Heights, Ky.
Filed Oct. 30, 1963, Ser. No. 320,191
2 Claims. (Cl. 128—207)



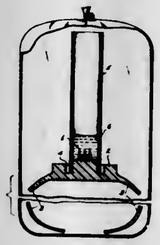
1. In an anesthetic nose mask having a fitting defining an exhalation opening therein, the improvement which comprises an exhalation valve having a substantially tubular body, means at one end of said tubular body engageable with said fitting to secure said exhalation valve to the nose mask, said tubular body having an internal shoulder adjacent the said one end thereof, an elongated hollow member inserted in said tubular body and of a size to fit therein with substantial clearance, said hollow member being closed at one end and having a flange at its opposite end seated against said shoulder so as to be clamped between said shoulder and the fitting on the nose mask with the interior of the hollow body in air tight communication with the exhalation opening defined by said fitting, at least one elongated opening in a wall of said hollow member, a reed secured to said hollow member and lying in said opening, a closure means for said tubular body at the opposite end thereof, an exhalation aperture in said closure means, a valve retaining element on said tubular body, and a valve member retained by said retaining element and adapted to overlie said aperture, means secured to said retaining element for yieldably urging said valve member against said aperture to close the same, and means mounted on said retaining element for adjusting the force with which said valve member is urged against said aperture, whereby upon exhalation from the nose mask, the exhaled air flows past said reed and causes the same to vibrate, giving an audible signal, and also raises said valve member from said aperture to permit the escape of exhaled air, said urging means forcing said valve member against said aperture upon cessation of exhalation.

3,291,128
HYPODERMIC SYRINGE CONSTRUCTION WITH SEALABLE VENT MEANS
John G. O'Neil, 5156 Sheridan Ave. S., Minneapolis, Minn.
Filed Jan. 24, 1964, Ser. No. 340,054
6 Claims. (Cl. 128—218)



1. A hypodermic syringe of the type described having in combination,
a cylindrical barrel,
a plunger extending within said barrel,
a piston carried at the inner end of said plunger,
said barrel having a plurality of longitudinally extending grooves formed in the inner wall thereof,
said piston having an annular flexible rib thereabout,
said rib being oversized sufficiently in diameter with respect to the diameter of said barrel to have sufficient compression upon being received within said barrel to initially deform into sealing engagement with said grooves, and
said rib being formed of an elastic material on the order of rubber of such a durometer that upon rotation of said rib in breaking said initial sealing engagement, a lag time for venting is allowed during which said rib establishes a resealing engagement with said grooves and said barrel in its changed position.

3,291,129
SCARIFICATOR FOR USE IN VACCINATION, SKIN TESTS, OR THE LIKE
Pierre Laurent Raymond Borella, 93 Avenue Lacassagne, and Charles Francisque Paul Merieux, 14 Avenue Grande-Bretagne, both of Lyon, France
Filed Aug. 8, 1963, Ser. No. 300,777
Claims priority, application France, Aug. 10, 1962, 906,711, Patent 1,349,909
3 Claims. (Cl. 128—253)



1. Means for scarifying the human body comprising a support, a group of scarifying points projecting in the same general direction from said support, a groove in said support encircling said points, and a capillary tube having two open ends, one of which is a force fit into said groove so as to be releasably retained in said groove after insertion therein, in a position encircling said points.

3,291,130
CATAMENIAL TAMPON
Howard A. Whitehead, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Original application Nov. 24, 1964, Ser. No. 416,951. Divided and this application Mar. 15, 1965, Ser. No. 444,497
2 Claims. (Cl. 128—285)



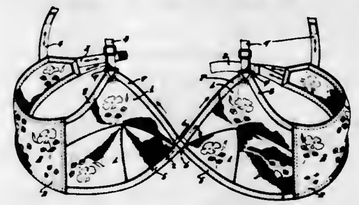
1. In a compressed catamenial tampon comprising a self-sustaining cylinder of compressed absorbent sponge-like material having a withdrawal string extending from the anterior thereof, the improvement in structure wherein the material in the forward portion of said tampon is highly compacted becoming gradually less compacted toward the anterior portion, wherein the sponge-like structure of the material is in undamaged condition in said compacted form, and wherein the major direction of the compactive force is transverse and substantially diametric whereby said tampon is adapted to re-expand in use substantially only in a single diametric direction.

3,291,131
SANITARY NAPKIN, DIAPER, OR HOSPITAL PAD OR THE LIKE
Curt G. Joa, Green Ridge, Fla. (P.O. Box 1121, Boynton Beach, Fla.)
Filed July 19, 1963, Ser. No. 296,288
5 Claims. (Cl. 128—290)



1. A pad for a sanitary napkin or the like which comprises a heat sealable moisture barrier ply, laminae above and below the barrier and each comprising fluff bats and tissue webs, each said lamina including web portions substantially enveloping the upper and lower surfaces of the respective bat and extending about opposite margins thereof, the heat sealable material of the barrier ply being fused to tissue web laminae having portions above and below the bat of at least one such lamina and providing a connection between said portions.

3,291,132
SELF-POSITIONING BRASSIERE
Frank V. Pulisdco, Bayonne, N.J., assignor to Maidenform, Inc., New York, N.Y., a corporation of New York
Filed Feb. 12, 1965, Ser. No. 432,343
2 Claims. (Cl. 128—483)

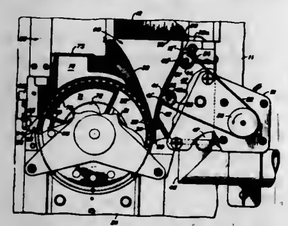


2. In a brassiere and in combination, a pair of cups and back bands for the same, connecting means for the back bands, reinforcing tape-like members seamed to the lower and upper-inner margins of the cups and forming an X-shaped configuration bounding said cup margins, a first connecting member for said tapes positioned intermediate the cups and substantially above the base line thereof, a tape like member seamed to the upper and outer margin of each cup, a shoulder strap for each cup, and a triangular connecting member for each cup, said triangular connecting member being positioned with its normally horizontal bar receiving a shoulder strap, and with two reversely inclined bars, one of said inclined bars having loop connection with the tape-like member at the upper-inner margin of said cup, and one of said inclined bars having loop connection with the tape-like member at the upper and outer margin of the cup, said first connecting member receiving the tape like members which are seamed to the lower and upper inner margins of the cups and holding them in an aperture extending transversely of the longitudinal line of each tape like member.

3,291,133
STRIP RANDOM-ACCESS SYSTEM
Peter S. Glaser, San Pedro, Richard T. Peters, Torrance, and James L. Deindoerfer, Hermosa Beach, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Oct. 14, 1963, Ser. No. 316,106
10 Claims. (Cl. 129—16.1)

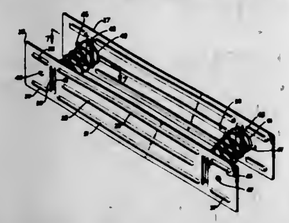
1. An apparatus for providing random access to any one of a group of elongated flexible strips, said apparatus

comprising: first means for supporting said strips by the upper end while said strips are disposed to hang in a vertical position, said first means including means for selectively dropping one strip at a time therefrom; a chamber disposed below said first means and having two oppositely disposed walls that converge towards each other to form a wide upper opening for receiving a strip dropped from any position of said first means, and a narrow lower opening by which the strip passes out of the chamber; second means including accelerating means disposed be-



low said chamber for engaging the lower portion of the strip as it drops through said narrow opening and for rapidly accelerating said strip out of said chamber; and pneumatic means in a wall of said passageway for causing a strip dropping through said chamber to reach and be engaged by said accelerating means while being urged towards one of said walls so as to prevent the upper portion of said strip from whipping and slapping against the wall of said chamber as it is being accelerated by said accelerating means.

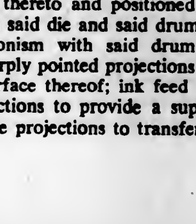
3,291,134
FILE PROP
William H. Novales, P.O. Box 8364, Oakland, Calif.
Filed Dec. 20, 1965, Ser. No. 522,009
1 Claim. (Cl. 129—26)



In combination a file drawer having a front wall and a bottom wall, a follower adjustable towards and away from the front wall, a file prop positioned on the bottom wall between the follower and front wall, said file prop comprising,

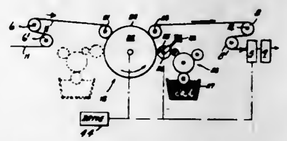
(a) first and second like plates arranged in spaced opposed relation, each of said plates having a rectangular configuration with parallel long sides and parallel short sides;
(b) the long sides of said plates being less than the width of a file drawer and the short sides of said plates being less than one-fourth the height of a file drawer;
(c) each of said plates having a pair of reinforcing corrugations running parallel and adjacent to the long edges;
(d) struck-out members formed integral with said plates, adjacent each end of the plates;
(e) a pair of like compression coil springs holding the plates in spaced, parallel relationship, said springs being held to said plates by said struck-out members, said springs serving as the sole means connecting the plates;
(f) said struck-out members for holding the springs comprising a pair of parallel slits cut in the plates with the material between the slits being forced to one side, forming a slot parallel to the surface of the plate with the end of the spring inserted in said slot and held from sidewise movement by projections of the material forming the plate; and wherein one of said plates of said file prop abuts the follower and the other plate is urged by the springs toward the front wall.

3,291,135
CIGAR PRESSING
John A. Dreher, Tracksville, Pa., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York
Original application May 9, 1962, Ser. No. 193,499, now Patent No. 3,189,033, dated June 15, 1965. Divided and this application Apr. 28, 1965, Ser. No. 456,603
3 Claims. (Cl. 131—20)



1. A method of shaping a cigar into a generally flat-sided configuration, which comprises applying uniformly and simultaneously to the entire length of said cigar radially inwardly directed uniform pressure simultaneously from four substantially equally spaced directions, holding said cigar under said pressure for a predetermined period of time to substantially set the configuration of said cigar, and then releasing said pressure to leave said cigar shaped in a generally flat-sided configuration.

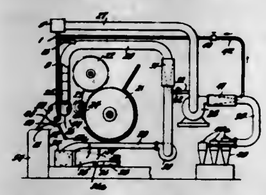
3,291,136
MANUFACTURE OF CIGARETTE-TYPE SMOKING MEDIA
James B. Boyer, 140 Cabrini Blvd., New York, N.Y.
Filed Mar. 28, 1962, Ser. No. 183,235
17 Claims. (Cl. 131—24)



3. A cigarette machine for the production of perforated ribbon cigarette paper comprising a main drive means; supply means for supplying cigarette ribbon wrapper paper, said supply means including a spindle, paper advancing means driven by the main drive means; printing and perforating means intermediate said paper supply means and said paper advancing means, said printing and perforating means comprising a back-up drum driven from said drive means, a cylindrical rotatable perforating die located adjacent to said back-up drum with its axis substantially parallel thereto and positioned for passage of the paper between said die and said drum, said die being driven in synchronism with said drum and including thereon raised sharply pointed projections extending from the cylindrical surface thereof; ink feed means for contacting said projections to provide a supply of printer's ink for coating the projections to transfer the ink to the

paper at the area of contact by the projections; and adjustment means to vary the relative spacing between the die and drum to control the projections in both the printing and the piercing of the perforations for the ribbon paper.

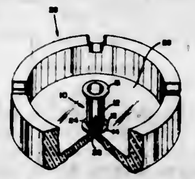
3,291,137
TOBACCO MANIPULATING MACHINERY
Francis Auguste Maurice Labbe, Paris, France, assignor to The Molins Organisation Limited, a British company
Continuation of application Ser. No. 89,554, Feb. 15, 1961, which is a division of application Ser. No. 787,954, Jan. 20, 1959, now Patent No. 3,008,468, dated May 7, 1963. This application Apr. 26, 1965, Ser. No. 456,020
Claims priority, application Great Britain, Jan. 21, 1958, 2,019/58
2 Claims. (Cl. 131—84)



1. In a continuous rod cigarette-making machine having apparatus for forming a tobacco filler, comprising an elongated air-pervious conveyor on which the filler is progressively built up and which is arranged to move lengthwise, passage means leading to the conveyor and extending along a substantial length of said conveyor, the conveyor conveying a built-up filler away from said passage, means defining an inlet to said passage, a first pump, a first conduit communicating with the first pump and the conveyor and through which the first pump draws air through the conveyor and the passage, means to feed tobacco particles into the inlet to said passage, suction means outside said passage and adjacent said inlet, a second pump, a second conduit communicating with the second pump and the suction means and through which the second pump draws air through said suction means across the path of the tobacco entering said passage, the improvement comprising first dust-extracting means in communication with the first pump to extract tobacco dust from air which has passed through the passage and the conveyor, second dust-extracting means in communication with the second pump to extract tobacco dust from air after it has been drawn into the suction means and across the path of the tobacco entering the passage, a third conduit to convey dust-laden air from the second dust-extracting means to the first dust-extracting means, a pipe to receive dust-laden air from the first dust-extracting means and to convey the dust-laden air to the conveyor outside of the passage at a position where the conveyor conveys the built-up filler away from the passage, whereby the extracted tobacco dust is conveyed into and incorporated in the built-up filler.

3,291,138
CIGARETTE-SNUFFING ATTACHMENT FOR ASH TRAYS
Monroe G. Thomson, 219 9th St., San Francisco, Calif.
Filed Apr. 20, 1964, Ser. No. 361,098
1 Claim. (Cl. 131—256)

A cigarette-snuffing device for ash trays, comprising: a hollow cylinder of non-combustible material closed at one end and open at the other end, fixed flange means extending radially of said open end, and flat planar flange means attached to and extending radially of the cylinder at the closed end thereof; said last-named flange means having adhesive means attached thereto for attachment of said device to a surface, and one face of said last-named flange means having a circular groove therein adjacent to the cylinder and of a strength such as to allow severance



of said last-named flange means from said cylinder by local application of a torsional stress exceeding the normal lateral operational stress on said cylinder when said last-named flange is adhered to a surface.

3,291,139
METHOD OF PURIFYING TOBACCO SMOKE
Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla., and Eldon E. Stahly, Pompano Beach, Fla.; said Stahly assignor to said Burke
No Drawing. Original application Aug. 13, 1963, Ser. No. 301,879. Divided and this application Aug. 7, 1964, Ser. No. 388,467
1 Claim. (Cl. 131—262)

A process for the purification of tobacco smoke from a smoking article by the removal of volatile metal compounds therefrom, which comprises passing said smoke through a filter into the mouth of the user down stream therefrom, said filter comprising a ligand compound which is an orthohydroxy aromatic compound containing transition metal chelating groups which are o-hydroxy-azo groups.

3,291,140
PROCESS FOR THE PURIFICATION OF TOBACCO SMOKE
Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla., and Eldon E. Stahly, Pompano Beach, Fla.; said Stahly assignor to said Burke
No Drawing. Original application Aug. 13, 1963, Ser. No. 301,879. Divided and this application Aug. 7, 1964, Ser. No. 388,468
1 Claim. (Cl. 131—262)

A process for the purification of tobacco smoke from a smoking article by the removal of volatile metal compounds therefrom, which comprises passing said smoke through a filter into the mouth of the user down stream therefrom, said filter comprising a ligand compound which is an orthohydroxy aromatic compound containing transition metal chelating groups selected from the groups consisting of o-hydroxy-nitroso, o-hydroxy-oxazone, and o-hydroxy-oxazine groups.

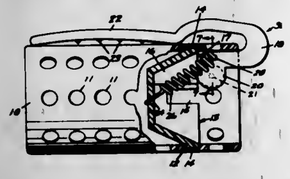
3,291,141
ELECTRICALLY HEATED CURLING IRON WITH MEANS FOR MAKING VARIOUS-SIZED CURLS
Frank Quinlo, 532 2nd Ave., Tarentum, Pa., and Louis Quinlo, Jr., 522 Beaver St., Sewickley, Pa.
Filed Feb. 15, 1966, Ser. No. 539,239
7 Claims. (Cl. 132—33)



1. In combination with an electric curling iron having a handle portion and a heating element with a surface for curling strands of hair, a cylindrical adaptor tube for making curls of a size larger than said heating element mounted on said curling iron, said adaptor tube being larger in diameter than said heating element and

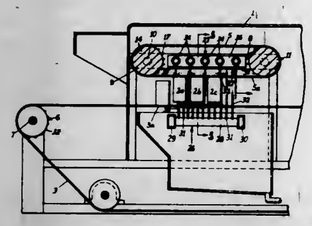
having a substantial portion of its cylindrical body spaced from the heating element when mounted thereon and said adaptor tube having heat transfer contact with and being frictionally engageable upon the hair curling surface of said heating element substantially the full length of said adaptor tube to conduct heat from said heating element through the entire body of the adaptor tube.

3,291,142
HAIR CURLING ROLLER WITH SELF-CONTAINED CLAMP
Sara Green and Jack Green, Baltimore, Md., assignors of one-half percent to Bernard M. Savage, Baltimore, Md.
Filed Jan. 29, 1964, Ser. No. 340,919
5 Claims. (Cl. 132—40)



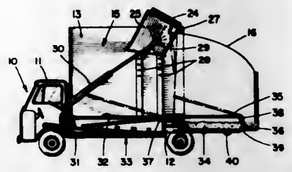
1. A device of the character described comprising an open-ended hollow cylindrical body having a plurality of openings therein and having an anular groove in the inner face thereof adjacent one end thereof, an insert having a split flange removably received in said groove, an apertured ear formed integrally with said insert and extending toward the adjacent open end of said body, a lever pivotally connected to said ear and extensible outwardly and longitudinally of said body and in abutting relation to the outer side of said body, and a tension spring connected at one of its ends to said insert and at its other end to said lever in over center relationship to the pivotal point of said lever.

3,291,143
CONVEYOR FOR HANDLING FRAGILE CONTAINERS IN SPRAY CLEANING APPARATUS
Harley E. Huddle, % Cincinnati Cleaning & Finishing Machinery Co., 3280 Hageman St., Cincinnati, Ohio
Filed Jan. 7, 1965, Ser. No. 424,020
4 Claims. (Cl. 134—68)



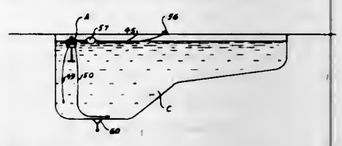
1. In a machine for cleaning lightweight fragile containers wherein the containers are subjected to a series of spray washing and rinsing operations, a lower conveyor having an upper flight on which the containers are placed for movement through the machine, a second conveyor overlying said first conveyor and having a lower flight moving in timed relation to said first conveyor, the lower flight of said second conveyor being spaced upwardly from the uppermost ends of the containers by a short distance so as to normally be free from contact therewith, whereby when the containers are seated on the first conveyor they will be out of contact with said second conveyor, said conveyors each being of perforate character so that sprays of washing and rinsing solution may pass therethrough, a set of spray nozzles lying beneath the upper flight of said first conveyor and positioned to direct sprays of solution upwardly through the overlying conveyor flight for contact with the containers being cleaned, said set of spray nozzles being arranged so as to maintain spray contact with the containers as they pass over the said set of spray nozzles, the sprays acting to lift the containers from the upper flight of the first conveyor and cause their uppermost ends to contact the lower flight of said second conveyor, whereby the containers are maintained in contact with said second conveyor and advance thereby while under the influence of said spray nozzles.

3,291,144
TRASH BIN WASHING APPARATUS
Jack Diamond, Los Angeles, Calif., assignor to Container Cleaners, Inc., a corporation of California
Filed Mar. 19, 1965, Ser. No. 441,272
8 Claims. (Cl. 134—104)



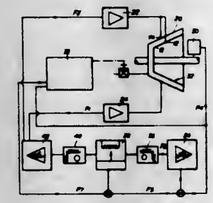
1. A trash bin washing apparatus comprising, in combination: a truck including first and second side walls extending upwardly to define an open top washing chamber; lifting means coupled to said truck for engaging and lifting a bin into a position adjacent to the upper portions of said side walls with the open end of said bin facing generally in a downwardly sloping direction; nozzle means carried on said truck for directing water into the interior of said bin; a water reservoir carried on said truck; pump means for supplying water from said reservoir to said nozzle means under high pressure; and a filtering means for receiving and filtering water from said bin while the same is being washed for recirculation to said reservoir.

3,291,145
SWIMMING POOL CLEANING DEVICE
Howard M. Arneson, 74 Woodland Ave., San Rafael, Calif.
Filed Mar. 8, 1965, Ser. No. 438,020
12 Claims. (Cl. 134—167)



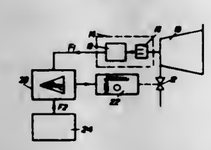
1. A swimming pool cleaning device comprising a buoyant housing, means supplying high pressure fluid to said housing, pendulant hose means mounted on said housing and in fluid communication with the high pressure fluid, a first fluid jet outlet on said housing directed in a first direction, a second fluid jet outlet on said housing directed in a direction opposite said first jet, and timing means alternating the fluid flow between said first and said second jet outlets at predetermined different timed intervals to cause the fluid to flow from one of said jet outlets for a greater period of time than the other.

3,291,146
AUTOMATIC CONTROL SYSTEMS FOR STARTING-UP AND SHUTTING-DOWN TURBINES
Herbert Oswald Walker, West Hartlepool, England, assignor to Richardsons, Westgarth & Co. Limited, Wallsend, England
Filed Feb. 26, 1963, Ser. No. 261,046
Claims priority, application Great Britain, Feb. 28, 1962, 7,885/62
9 Claims. (Cl. 137—17)



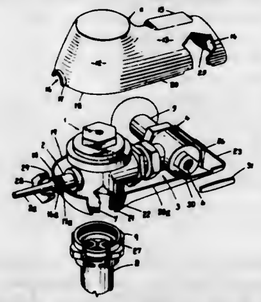
1. An automatic control system for controlling the starting-up or shutting-down of a machine or installation which operates at an elevated temperature, for example a steam turbine, comprising temperature-measuring means arranged to measure the temperature differential between the inner and outer surfaces of the casing wall, means for measuring the absolute temperature of the casing wall, said temperature measuring means adapted to produce a first signal and a second signal representative of the temperature differential and of the absolute temperature respectively, servo means operatively connected with said temperature measuring means for receiving said signals, said servo means being capable of producing a third signal which is dependent upon the value of said first signal and the rate of change of said second signal, and means controlling the starting-up or shutting-down of the machine operated in response to said third signal.

3,291,147
AUTOMATIC CONTROL SYSTEMS FOR STARTING-UP TURBINES
Herbert Oswald Walker, West Hartlepool, England, assignor to Richardsons, Westgarth & Co. Limited, Wallsend, England
Filed Feb. 26, 1963, Ser. No. 261,143
Claims priority, application Great Britain, Feb. 28, 1962, 7,884/62
4 Claims. (Cl. 137—17)



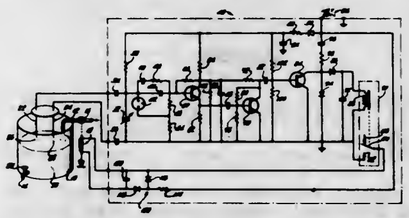
1. An automatic control system for controlling the operation of a steam turbine or the like comprising a speed sensitive device for measuring the speed of the turbine shaft, said speed sensitive device being capable of producing a first electrical signal representative of said speed, a differentiator which receives said first signal and produces a second signal representative of the acceleration of said turbine shaft, means for producing a third signal representative of the desired acceleration, means for comparing said second and third signals and for controlling said turbine in response to a predetermined difference between said second and third signals.

3,291,148
TAMPER PROOF ENCLOSURE FOR FLUSH VALVES
Charles William Sloan, Don Mills, Ontario, Canada, assignor to Josam Products Limited, Toronto, Ontario, Canada, a corporation of Ontario
Filed Feb. 19, 1964, Ser. No. 346,009
3 Claims. (Cl. 137—382)



1. For a flush valve for a water flushing system having a valve body with a tubular threaded inlet connection, and a tubular threaded outlet connection lying in a plane perpendicular to the plane of the inlet connection, a discharge pipe connectable to said outlet connection by a pipe union, a valve mechanism housed in said body between said inlet and outlet connections, a valve actuating member extending outwardly from the body, and a mounting for said valve actuating member carried by said body, the invention herein defined comprising a shell divided longitudinally into an upper shell portion and a lower shell portion, said shells having mating rims arranged and adapted to be brought together to form a unitary casing housing said valve, said lower shell portion having an opening for the outlet connection and a flange around said opening engageable between said union and the valve body adjacent said outlet connection whereby said lower shell portion is secured to and supported by said valve body, complemental interengaging fastening means carried by the rims, complemental recesses in the rims of the upper and lower shell portion forming an opening for said mounting and for said inlet pipe, one of said openings having a collar formed by complemental portions formed on the upper and lower shell portions and a removable locking member engaging said collar and said valve body, said locking member and the interengaging fastening means cooperating to retain the casing as a unitary assembly and secure it to the valve body.

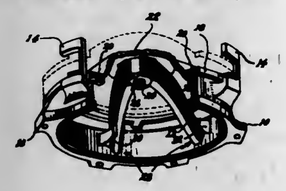
3,291,149
LIQUID LEVEL DETECTOR
Carl E. Atkins, Montclair, and Robert L. Ziolkowski, South Plainfield, N.J., assignors to Tung-Sol Electric Inc., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,175
7 Claims. (Cl. 137—392)



1. A liquid level detector comprising:
(a) two capacitive means connected end to end;

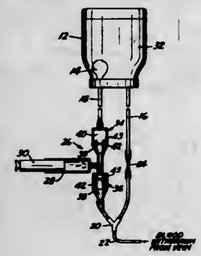
(b) two resistance means connected end to end and in series with said two capacitive means;
(c) charging circuit means for charging said two capacitive means;
(d) nonlinear breakdown means coupled across said two capacitive means for discharging said two capacitive means through said two resistance means when the voltage on said capacitive means exceeds a certain level so as to provide a pulsating differential output across said two resistance means;
(e) spaced electrically conductive members for contacting liquid to detect the level thereof; and
(f) means electrically coupling said spaced electrically conductive members across one of said two capacitive means for changing the impedance of said one of said two capacitive means when both the spaced electrically conductive means are in contact with a liquid body.

3,291,150
PRESSURE RELIEF VALVE ASSEMBLY
John D. Ricker, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 27, 1963, Ser. No. 305,010
6 Claims. (Cl. 137—541)



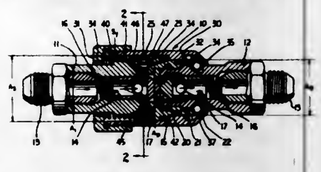
1. A pressure relief valve unit comprising a housing, an annular seat formed by a portion of said housing, a valve plate adapted to overlie said seat to be sealed thereagainst, and a spring secured to said valve plate and bearing against said housing for exerting a predetermined force, the overcoming of which allows the said valve plate to move to its open position, said spring having a negative stiffness factor and being comprised of a series of stacked leaves, wherein each successive leaf is rotated 90° apart with respect to its adjacent leaves.

3,291,151
FLUID EXCHANGE SYSTEM
Selmer M. Loken, 795 Arlington Ave. W., St. Paul, Minn.
Filed Nov. 6, 1963, Ser. No. 321,817
1 Claim. (Cl. 137—565)



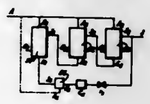
A pressure responsive, self-adjusting fluid exchange system comprising a fluid dispensing vessel of fixed volume having therewithin an expansible fluid collecting vessel, a fluid collecting tube leading from said collecting vessel and a fluid dispensing tube leading from said dispensing vessel, said tubes terminating at a fluid exchange point, normally closed fluid dispensing controlling pressure responsive valve means interrupting said dispensing tube, a pair of pressure responsive fluid exchange controlling valves interrupting said collecting tube, and pressure varying means operatively interconnecting said exchange controlling valves for opening the fluid exchange controlling valve between said pressure varying means and said exchange point upon decrease of pressure therewithin, and for opening the other of said exchange controlling valves and said dispensing controlling valve upon return of the original pressure thereto.

3,291,152
SELF SEALING QUICK DISCONNECT COUPLING
Robert C. Comer, Rockaway Boro, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a Delaware corporation
Filed Jan. 7, 1964, Ser. No. 336,240
9 Claims. (Cl. 137—614.04)



1. In a quick disconnect coupling for high pressure fluid lines having a receptacle and a probe seated therein and both including normally closed valves automatically moved to open position in said seated position to permit flow of high pressure fluid therethrough, and sleeve means mounted on and movable with respect to the receptacle to lockably engage the probe in the receptacle; passages formed in the receptacle to direct pressure fluid to either end of the sleeve means to effect locking and unlocking movement of the sleeve means, and valve means controlling said passage and operable by the sleeve means to selectively effect said movements.

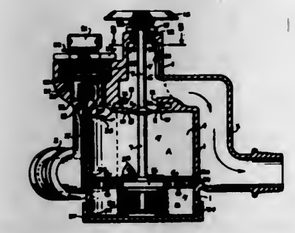
3,291,153
FLUID-ACTUATED OSCILLATORS
Henri Pierre Chabrier, Lyon, and André Saint Jeanis, Ste.-Foy-les-Lyon, France, assignors to Société d'Electro-Chimie, d'Electro-Metallurgie et des Aciéries électriques d'Ugine, a corporation of France
Filed Dec. 10, 1963, Ser. No. 329,505
Claims priority, application France, Dec. 11, 1962, 918,142
2 Claims. (Cl. 137—624.14)



1. A fluid actuated oscillator comprising an odd number of at least three successive actuated valve units, each valve unit consisting of a hollow body having at least four orifices, a first orifice being an inlet orifice adapted for connection to a source of pressure, a second being an active outlet orifice adapted for connection to a point of use, a third being a reference pressure outlet, and a fourth being a control pressure inlet, valve means movable between a first position connecting the first and second orifices while disconnecting the second and third orifices and a second position connecting the second and third orifices while disconnecting the first and second

orifices, motor means responsive to fluid pressure from the control inlet orifice and operatively connected to the valve means to move the latter from the first to the second position upon a predetermined increase in pressure at the control inlet orifice, the inlet orifice of each unit being connected to a common source of fluid pressure, the active outlet of each unit except the last being connected to the control inlet orifice of the next successive unit, the active outlet of the last unit being connected via time delay means to the control inlet of the first unit.

3,291,154
SEMI-AUTOMATIC VALVES
Wallace A. Bounds, 3726 135th Ave. SE., Bellevue, Wash.
Filed Apr. 22, 1960, Ser. No. 23,960
21 Claims. (Cl. 137—624.18)



21. In a flow timing device, the combination comprising a valve member having a flow passage therethrough with spaced inlet and outlet ports, valve means movable into an open position and a closed position to open and close said passage, respectively, to flow between said ports, means operatively associated with said valve means for causing a momentary pressure drop in the fluid leaving said flow passage during the period of movement of said valve means, and means connected to said valve means to move said valve means from said open position to said closed position.

3,291,155
FLUID FLOW CONTROL APPARATUS
Donald L. Klaus, Barrington, and Thomas W. Martinek, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Jan. 10, 1964, Ser. No. 336,979
11 Claims. (Cl. 138—46)
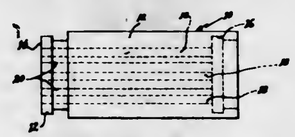


1. An apparatus for controlling the rate of fluid flow through a conduit comprising a conduit for confining a fluid under flow, rotor means disposed in said conduit for rotation by the axial flow of a fluid through said conduit and a drag brake including a rotatable member and a non-rotatable member having spaced, opposing surfaces between which a liquid from the group consisting of a dilatant liquid and a thixotropic liquid is confined, said rotatable member being mechanically connected to said rotor means such that the rotation of said rotor means results in the rotation of said rotatable member with respect to said non-rotatable member to shear the confined liquid, whereby the shearing of said liquid exerts a drag torque on said rotor means.

3,291,156
CLOSURE PLUG
Alfred Corcoran, Belle Mead, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Oct. 17, 1963, Ser. No. 316,911
7 Claims. (Cl. 138—89)



2. A closure plug for conduits comprising:
(a) an annular ring comprising a resilient material;
(b) a pair of cooperating plates for mounting said rings adjacent the inner surface of a conduit;
(c) at least one of said plates comprising a resistively flexible material and having at least a portion of its external periphery defined by a generally conical surface;
(d) said ring being positioned between said plates and in contact with said conical surface adjacent the portion having the smaller outside diameter;
(e) means for applying a force to said plates to cause relative movement between said plates to apply pressure to said ring through said conical surface so as to deform said ring into a sealing relationship between said plates, and the inner surface of said conduit; and
(f) means comprising the resistive flexing of at least one of said plates for limiting the amount of pressure applied in a generally radial direction by said force applying means to prevent injury to said conduit even though portions of said plates may continue their relative movement in response to a continued application of said force.

3,291,157
INTERNALLY GENERATED AND INTERNALLY COUPLED TUBING AND PIPE EXTENSIONS
John Christopher Kotelly, 176 Marine Road, South Boston, Mass., and Anthony Sciola, 509 Ferry St., Everett, Mass.
Filed Sept. 4, 1963, Ser. No. 306,641
6 Claims. (Cl. 138—119)

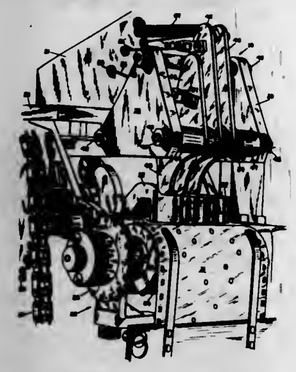


2. A conduit adapted to be temporarily reduced in cross-section comprising a form having series of longitudinally oriented lazy tong linkages, said linkages being interconnected and arranged to form an enclosure such that axial extension of the resultant linkage along the conduit axis causes a reduction in the cross-section of said enclosure while a compression expands said form, and a covering encompassing said enclosure.

3,291,158
PATTERN CONTROLLED MEANS FOR VARYING TERRY WEAVING OPERATIONS
Edward C. Nichols, Upton, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Dec. 28, 1964, Ser. No. 421,318
6 Claims. (Cl. 139—25)

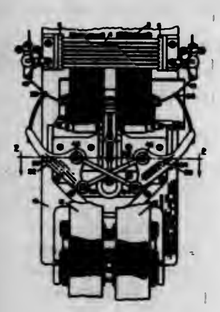
1. In a multiple selection pattern controlling device the combination of a slotted drum, an endless pattern tape encompassing said drum, means for imparting cyclic rotation to said drum and said tape, surface deformations

in said tape relating to a preferred pattern, pairs of pattern selecting fingers, a separate actuating lever for movement by each one of said pairs of selecting fingers, an individual locking lever for latching each said actuating



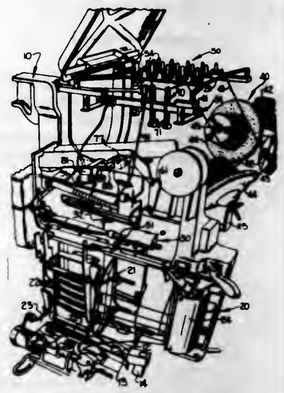
lever, one selecting finger of each of said pairs of fingers being adapted to move its said actuating lever to a locked selective position, and the second selecting finger of each of said pairs of fingers being adapted to release said actuating lever by contacting its said locking lever.

3,291,159
NEEDLE OPERATING MECHANISM FOR LOOMS
John P. Gagliardo, Shrewsbury, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed June 7, 1965, Ser. No. 461,620
3 Claims. (Cl. 139—124)



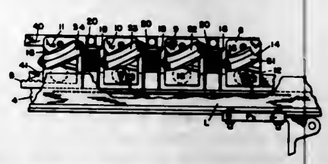
1. In a needle loom for weaving two fabrics side by side, a warp shed for each fabric, weft inserting means comprising:
(a) two weft needle members, one for each fabric, each needle member having a weft eye at the rear end thereof,
(b) two continuously rotating eccentric actuators having equal rates of rotation, one actuator for each needle member driving a portion of same in a circle,
(c) two crossing driving links connecting both weft needle members so that each weft needle member imparts an additional motion to the other member to move said weft eyes back and forth through their respective warp sheds once for each rotation of said actuators.

3,291,160
METHOD AND APPARATUS FOR WEAVING NOVELTY FABRIC
Silvio Carl Veney, Rutherfordton, and Buford M. Lancaster, Spindale, N.C., assignors to Stonecutter Mills Corporation, Spindale, N.C., a corporation of North Carolina
Filed Dec. 29, 1964, Ser. No. 421,859
5 Claims. (Cl. 139—224)



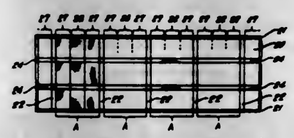
1. Apparatus in combination with a loom for facilitating the weaving of a novelty fabric having intertwisted filling yarns and wherein the twist in the filling yarns is more uniform throughout the fabric, said loom including a shuttle adapted to receive bobbins of filling yarn, a plurality of relatively large packages of filling yarn carried by the loom for supplying yarn to said filling bobbins, a filling bobbin winder also carried by the loom, separate means for individually tensioning a plurality of said filling yarns in their path of travel from said relatively large packages to said winder, common means to present the yarns in parallel side-by-side relation to the winder, said winder upon being actuated winding said filling yarns in parallel side-by-side relation onto successive filling bobbins, and means for automatically supplying the wound filling bobbins from said winder to said shuttle so that movement of said shuttle across the loom during weaving causes withdrawal of the filling yarns axially from the bobbin therein to intertwist the filling yarns.

3,291,161
WEFT STOP MOTION FOR NARROW WARE LOOM
William Frank Wagner, Cheltenham, Pa., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Oct. 29, 1964, Ser. No. 407,477
3 Claims. (Cl. 139—371)



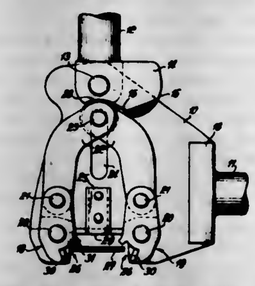
1. An electric weft detecting system for a narrow ware loom having a lay provided with a shuttle and a shuttle block having a surface which is substantially vertical when the lay is in forward position, and comprising, in combination:
(a) an electric switch on said surface secured to said block;
(b) a switch closing arm mounted for pivotal movement relatively to said switch extending along said surface and depressible to close said switch;
(c) pivot means on the shuttle having an axis extending lengthwise and over said arm when the shuttle is moving in said block;
(d) a detector comprising an elongated generally U-shaped member having end portions substantially perpendicular to said pivot means and aligned holes through which the pivot means passes, the portion intermediate said end portions generally diverging from said pivot means to a point fartherest removed from said pivot means thereby forming a yarn guiding surface on the side near said pivot means and a camming surface for said closing arm on the side remote from said pivot means; and
(e) means to stop the loom when the switch is closed.

3,291,162
DIAPER
Samuel James Jamison, East Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Oct. 23, 1965, Ser. No. 503,219
8 Claims. (Cl. 139—383)



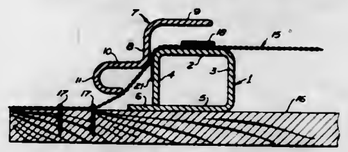
1. A woven diaper of zoned construction comprising at least one high shrink zone and at least one low shrink zone, said diaper being defined by the cross-hatched area of FIG. 19, having shape limitations defined by the upper shape limit (USL) and the lower shape limit (LSL) and having physical property limitations defined by a Z_L within the range of 0.4 to 0.78 and a Z_H within the range of 0.62 to 0.85, said diaper being adapted to form a predesigned parameter upon activation.

3,291,163
APPARATUS FOR JOINING THE OVERLAPPING END OF METAL PACKAGING STRIPS
Harald Timmerbeil, Schwelm, Westphalia, Germany, assignor to Titan Eisenwarenfabrik G.m.b.H., Schwelm, Westphalia, Germany
Filed Dec. 2, 1963, Ser. No. 327,372
Claims priority, application Germany, Dec. 5, 1962, T 23,131
15 Claims. (Cl. 140—93.2)



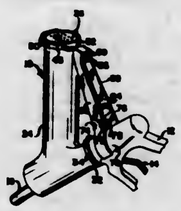
1. Apparatus for fastening overlapping ends of metal strip wrapped around a package by means of at least one fastening catch, comprising, in combination, a frame; at least one pair of first die means pivotally mounted spaced from each other on said frame and having strip engaging face portions adapted to engage the overlapping strips at one face thereof; a third die means carried by said frame and arranged substantially centrally between said pair of first die means and having an end face smaller than the width of said overlapping strips, and adapted to engage said overlapping strips on a face thereof opposite said one face; and means carried by said frame and cooperating with said die means for moving the latter relative to each other in such a manner that said face portions of said first die means move beyond said end face of said third die means so that the latter forms two slits through said overlapping strips extending substantially in longitudinally direction of said strips spaced from longitudinal edges thereof and presses out webs between said slits through said overlapping strips.

3,291,164
REMOUNTABLE SEPARATOR SCREEN AND METHOD OF MANUFACTURE
Douglas M. Swallow, Burlington, Ontario, Canada, assignor to Southwestern Engineering Company, Los Angeles, Calif., a corporation of California
Filed Nov. 26, 1963, Ser. No. 325,956
1 Claim. (Cl. 140—109)



A method of manufacturing separator screens, characterized by:
(a) placing a circular inner frame on a mounting board;
(b) placing a screen of larger diameter over said inner frame and mounting board;
(c) securing the periphery of said screen to said mounting board by a circular ring of staples secured through the mesh of said screen;
(d) additionally securing said screen to said mounting board progressively toward said frame to tension said screen thereover by fastening said screen with at least one additional ring of staples concentric to the ring of staples established in step (c);
(e) pressing a circular outer frame over said inner frame to wedge said screen between confronting peripheral portions of said frames to hold said screen under tension therebetween;
(f) and trimming the margins of said screen beyond said frames so that the completed separator screen is released from said mounting board without removal of said staples.

3,291,165
BACKWASH SHIELD ASSEMBLY
John R. Fraylick, Lakewood, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 1, 1963, Ser. No. 299,234
6 Claims. (Cl. 141—286)



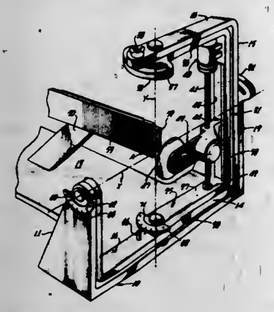
1. A backwash shielding device for hose nozzles for fueling automobiles or the like comprising a flexible tubu-

lar shield sleeve having a lower end portion adapted to engage the end of a fill pipe extending upwardly from the automobile fuel tank for filling the same, said shield sleeve having a tubular side extension through which said hose nozzle is adapted to extend, means for clamping said side extension around said hose nozzle, baffle means positioned within said shield sleeve at the opposite end thereof for preventing fuel flow outwardly of said shield sleeve and permitting egress of gas vapors therethrough, baffle clamp means for clamping said baffle means within said sleeve, frame means connected at one end to said clamp means and at its opposite end to said nozzle, whereby fuel backwash directed into said shield sleeve is confined therein by said baffle means, such backwash eventually flowing back to said fill pipe and said fuel tank.

3,291,166
POWER SAW

George L. Mayo, Fort Worth, Tex., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California

Filed Dec. 21, 1964, Ser. No. 419,734
14 Claims. (Cl. 143—6)



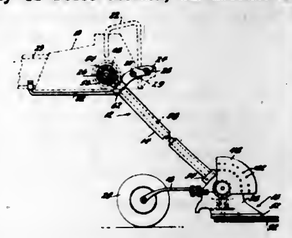
13. In a power saw,
the combination of a base,
a first generally U-shaped frame,
means on said base pivotally supporting the legs of said frame for movement about a first axis,
means for maintaining said first frame in different adjusted positions relative to said base,
a second generally U-shaped frame,
means on said first frame pivotally supporting the legs of said second frame for movement about a second axis at right angles to said first axis,
means for maintaining said second frame in different adjusted positions relative to said first frame,
a rotary saw blade,
means on said second frame for guiding said saw blade along said second axis between the legs of said second frame,
a workpiece support carried by said base, and
a linear tape on said support for indicating the length of a workpiece.

3,291,167
POSITIVE DRIVE CHAIN SAW ATTACHMENT

Billie J. Varden, P.O. Box 43, Calera, Ala.

Filed Feb. 26, 1964, Ser. No. 347,412
10 Claims. (Cl. 143—32)

1. For use with a portable, internal combustion power unit having grips for an operator and a power take-off, an attachment for brush cutting comprising a support arm, secured to said unit adjacent said power take-off and angled forwardly and downwardly of said unit, a chain saw drive housing secured to said arm at the lower end thereof, a wheeled support for said attachment secured to said saw drive housing, rearwardly thereof, a pair of sprocket wheels extending from said saw drive housing, one disposed horizontally therebeneath, the other disposed vertically therebeside, gear train means for driving said sprocket wheels from said power unit through said support arm and saw drive housing, an arcuate depending skirt attached to the forward end of said housing having a plurality of bores therein, an arcuate flange secured



adjacent said vertically disposed sprocket wheel and also having a plurality of bores therein, a horizontal chain saw holder, selectively engageable with said horizontal skirt as by bolts, a vertical chain saw holder selectively engageable with said arcuate flange, and at least one chain saw for mounting about said horizontal wheel and holder and about said vertical wheel and holder.

3,291,168
VERTICAL FEED CUT-OFF SAWS

Berthold R. Zitner, 3146 N. Lovers Lane Road, Milwaukee, Wis.

Filed July 6, 1965, Ser. No. 469,796
5 Claims. (Cl. 143—57)



1. A cut-off saw apparatus for cutting segments of elongated stock pieces, comprising: a rotatable stock-indexing turret having means for supporting a plurality of elongated stock pieces; power means for rotatably driving said turret; a pair of movable saw blades spaced from each other around said turret and positioned to intercept said rotating stock pieces; power means for driving said saw blades; stock-supporting means mounted adjacent said turret, said means including a pair of individually-adjustable sections against which the ends of stock pieces carried by said turret are adapted to abut, the individual adjustability of said sections permitting the same to be set so that stock segments of different lengths will be cut from the ends of stock pieces carried by said rotatable turret as they are intercepted by said saw blades; and means for alternately holding and releasing the stock pieces during the movement of the same from one saw to the next.

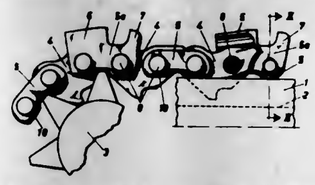
3,291,169
SAW CHAINS

Bengt Olof Johan Stellan Mörner, Goteborg, Sweden, assignor to Aktiebolaget Partner, Molndal, Sweden

Filed June 3, 1964, Ser. No. 372,183
Claims priority, application Sweden, June 17, 1963, 6,661/63
4 Claims. (Cl. 143—135)

1. In a motorsaw having a saw blade with an edge groove, a toothed wheel rotatably disposed at one end of said blade and a chain positioned along said blade edge

and around said toothed wheel, an improvement in said chain comprising center links, side links pivotally connected to said center links, each of said side links having a side slideably positioned on said blade edge along one

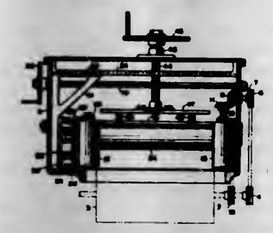


side of said blade edge groove when on said blade and each of said side links having an inside marginal portion adjacent said side thereof recessed relative to a plane coinciding with the inside of the link.

3,291,170
AUTOMATIC FEED DEVICE FOR HAND FED PLANING MACHINE

Atsumi Nishimura, 2074–1 Mukojima, Okawa, Fukuoka, Japan

Filed May 20, 1964, Ser. No. 368,826
Claims priority, application Japan, May 23, 1963, 38/27,054
2 Claims. (Cl. 144—117)

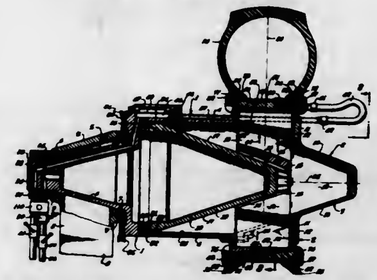


1. An automatic workpiece feed device for a hand fed wood planing machine including a table having a horizontal top surface, the combination of a machine frame, at least one feed roller disposed within the machine frame, with the longitudinal axis thereof perpendicular to the table surface, drive means coupled to said vertically disposed feed roller for rotating it, at least one guiding press roller mounted in said frame opposite to said vertically disposed feed roller and having the longitudinal axis thereof perpendicular to said table surface and movable toward and away from said feed roller, first control means coupled to said guiding press roller for manually controlling the distance between said vertically disposed feed roller and said guiding press roller in accordance with the width of the workpiece, said first control means including a horizontal screw-threaded transverse shaft rotatably supported by the machine frame and manually rotatable, a control member movable in either direction along the transverse shaft by rotation of the shaft, resilient means secured to the control member, and a bearing means operatively coupled to the resilient means and supporting guiding press roller, at least one displaceable press roller horizontally disposed within the machine frame opposite to said table surface and movable toward and away from said table surface, a second control means coupled to said displaceable press roller for manually controlling the distance between said horizontal press roller and said table surface in accordance with the height to which the workpiece is to be planed, said second control means including a screw-threaded manually rotated vertical shaft rotatably journalled by the machine frame, a horizontal control plate secured to the vertical shaft at the lower end thereof, and supporting means resiliently supporting said horizontal press roller on said plate, and horizontal press roller drive means coupled to said horizontal press roller and driving it, whereby the horizontal press roller cooperates with the vertically positioned feed roller to feed said workpiece in such a manner that the vertical surface of the workpiece is always maintained perpendicular to said table surface.

3,291,171
WHEEL HAVING EXPANDABLE BAND FOR QUICK MOUNTING AND DEMOUNTING OF PNEUMATIC TIRES

Walther E. F. Lehmann, Costa Mesa, Calif., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed June 16, 1964, Ser. No. 375,591
11 Claims. (Cl. 144—288)



1. A wheel having a radially expandable ring for mounting pneumatic tires and tire casings of different sizes on said wheel, said wheel having a wheel hub, said wheel hub including rear, middle and front portions, said middle portion compriaing a cylinder, said front portion including a plurality of radial slots having a rectangular cross-section, said slots being uniformly distributed around the circumference of said front portion, a piston member mounted in said cylinder, said piston member having a piston portion at one end and a front conical portion extending from said piston portion to the other end of said piston member, said conical portion extending through the greater length of said cylinder and projecting into said front portion through a portion of the lengths of said slots when said piston is in the inward position in said cylinder and adjacent to said rear portion of said hub, the lengths of said slots lying in respective radial planes passing through the longitudinal axis of said wheel, a shoe stem slidingly mounted in each slot, the inner end of said stem terminating in an inclined surface slidingly engaging the conical portion of said piston member, two slide surfaces at the outer end of said stem, and a shoe having a seat engaging said two slide surfaces when said shoe is mounted on said stem, said shoes forming a variable diameter circumference of said wheel and said expandable ring, the lengths and the longitudinal axes of said surfaces, seats and of said shoes lying in said respective radial planes, and an elastomeric band surrounding said shoes and keeping said stems in positive engagement with the conical portion of said piston member.

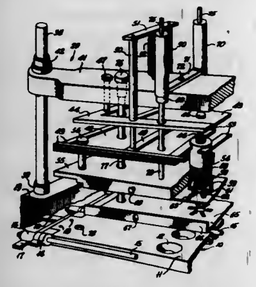
3,291,172
STONING MACHINE FOR CHERRIES AND THE LIKE

Giordano Tomelleri, 22 Via Montorio, Verona, Italy

Filed Nov. 29, 1963, Ser. No. 326,766
Claims priority, application Italy, Dec. 4, 1962, 24,196/62
5 Claims. (Cl. 146—19)

1. In a machine for stoning cherries and like fruit, a stoning head comprising ejector knives for the stones car-

ried by a reciprocable plate, centrally apertured cylinders effective to sheath the ejector knives until said knives come into contact with the surface of the fruit and mounted on a plate which is freely suspended from said knife-carrying plate, a cylinder-receiving plate freely suspended from said cylinder-mounting plate, said cylin-

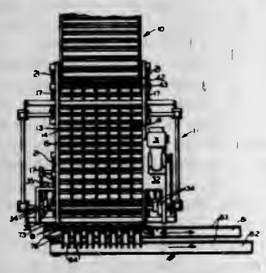


der-receiving plate comprising seatings for receiving said cylinders and apertured plates effective to guide said knives, a fruit-separating plate freely suspended from said cylinder-receiving plate, said fruit-separating plate being provided with apertures effective to guide said knives, and means effective to prevent lateral displacement of the stones whilst they are being ejected from the fruit.

3,291,173
SHUFFLE FEED END TRIMMER FOR VEGETABLES

Traver J. Smith and Ralph K. Daugherty, San Jose, Calif., assignors of one-half to Genevieve I. Magnuson and one-half to Genevieve I. Magnuson, Robert Magnuson and Lois J. Fox, as trustees of the estate of Roy M. Magnuson

Filed Jan. 22, 1965, Ser. No. 427,374
20 Claims. (Cl. 146—81)

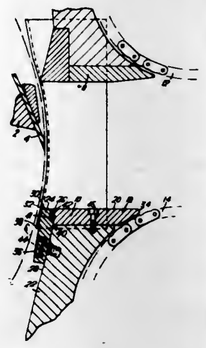


1. In a cutting mechanism for vegetable articles, a first member having a generally planar article supporting surface, a knife mounted adjacent one edge of said planar surface in position to sever an article advanced across said surface, a second member mounted for relative reciprocating movement with respect to said first member and having a planar article supporting surface and an article advancing surface, said advancing surface being effective to advance an article across said planar article supporting surface of said first member to effect severing of the article, and means for reciprocating said second member with respect to said first member to cause movement of said article advancing surface toward and away from said knife, a stop carried by one of said members for an article on a supporting surface, and means for advancing an article transversely of the direction of travel toward said knife and into engagement with said stop before engagement of said article with said knife.

3,291,174
LEAF TOBACCO CUTTING MACHINE

Harry Ward, near Andover, Hampshire, England, assignor, by mesne assignments, to AMF International Limited, London, England

Filed Mar. 30, 1964, Ser. No. 355,841
Claims priority, application Great Britain, Apr. 2, 1963, 13,045/63
6 Claims. (Cl. 146—117)



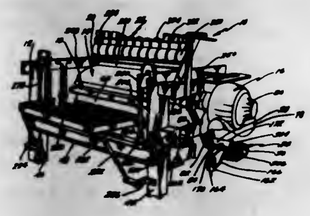
1. A tobacco cutting machine comprising a rotating cutter having a number of knives mounted upon it, a mouthpiece, and means for feeding tobacco between upper and lower conveyors to the mouthpiece through which it passes in order to be cut by the rotating cutter, the knives of the rotating cutter having cutting edges which move in a cylindrical part which nearly touches the front face of the mouthpiece, the mouthpiece comprising a bottom member including a dead plate extending from the top of the lower conveyor substantially horizontally towards the rotating cutter, a fixed support member situated underneath and supporting the dead plate, and lying between the front of the lower conveyor and the rotating cutter, and a knock-off member attached to the support member and forming the front of the bottom member, the rear face of the knock-off member having an upward pointing step with an upwardly inclined upper face formed in it, which step mates with a corresponding downwardly inclined step having a downwardly inclined lower surface formed in the front face of the dead plate, and the top surface of the knock-off member extending in the same plane as the top surface of the dead plate, the attachment of the knock-off member to the support member being capable of being broken by a downward blow from the rotating cutter if the cylindrical path of the cutting edges of the knives on the rotating cutter touches the front edge of the top surface of the knock-off member.

3,291,175
SKINNING MACHINE

Paul F. Burch, Rockford, Mich., assignor to Wolverine Shoe & Tanning Corporation, Rockford, Mich., a corporation of Michigan

Filed Mar. 4, 1964, Ser. No. 349,254
9 Claims. (Cl. 146—130)

6. In a hogside skinning machine having an elongated skinning blade, a hogside guide surface closely spaced from said blade and gripping means mounted to travel normal to said elongated blade to pull a hogside past said blade; the improvement comprising a clamping mechanism composed of three main components including first and second gripping jaws shiftable into and out of interengagement with each other, and an anchor and wipe-off element adjacent one of said jaws and shiftable toward and away from said jaws, said element including a plurality of spaced hogside puncturing pins, and said one jaw having a plurality of through-openings aligned with said pins to allow passage of said pins with shifting of

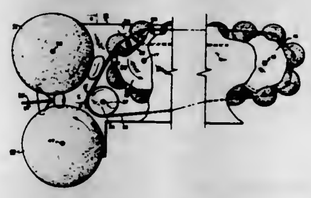


said element toward said jaws and withdrawal of said pins with shifting of said element away from said jaws, and power means to cause relative shifting of said jaws and said element.

3,291,176
SEED POTATO CUTTER

Soren Eskel Peterson, 1649 West 33rd South, Salt Lake City, Utah

Filed Mar. 27, 1964, Ser. No. 355,386
4 Claims. (Cl. 146—164)

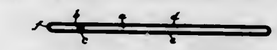


1. A potato seed cutting machine including, in combination, a conveyor having an operable upper course of travel and a forward end and including a pair of parallel, vertically oriented, horizontally spaced endless means, plural, parallel shafts disposed between and secured to said endless means in mutually spaced relationship, plural sets of revolvable roller means respectively disposed on each of said plural shafts and dimensioned to form individual potato receiving pockets between adjacent ones of said shafts, each of said sets of roller means comprising respectively aligned, plural, spaced rollers, means for revolvably constraining said endless means to mutually corresponding, operable, looped configurations, means for frictionally revolving said sets of roller means as they proceed forwardly along the conveyor's upper course of travel, means for driving said endless means, a driven roller, means coupled to said driven roller for driving said driven roller, said driven roller being disposed parallel to said shafts and beneath said upper course of said conveyor means, and mutually spaced, plural conveyor strap means looped around said conveyor means, interposed between adjacent rollers of each of said sets of roller means, and engaging and disposed over said parallel shafts and said driven roller for advancing potatoes in a downwardly and forwardly course of travel; cutting means disposed proximate said conveyor forward end, oppositely revolving, resilient, output pressure roller means constructed and arranged for receiving potatoes from said strap means and feeding them through said cutting means, and drive means for so oppositely revolving said pressure roller means.

3,291,177
METHOD AND STRUCTURE FOR RECLOSABLE CONTAINERS

Kakuji Naito, Kawasaki-shi, Japan, assignor to Kabushiki Kaisha Seisan Nikon Sha, Tokyo, Japan, a corporation of Japan

Application Oct. 23, 1963, Ser. No. 325,197, now Patent No. 3,246,672, which is a division of application Ser. No. 89,540, Feb. 15, 1961. Divided and this application Nov. 17, 1965, Ser. No. 508,270
Claims priority, application Japan, Apr. 11, 1960, 35/21,148, 35/21,149; June 3, 1960, 35/26,770
6 Claims. (Cl. 150—3)

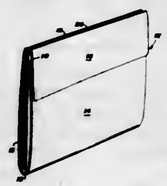


1. A structure for a reclosable container comprising,
a flexible closed integral one-piece tube of a flexible plastic film,
cross-seals at the ends of said tube forming a closed bag,
first and second interlocking elements integral with and one piece with the tube on the inner surface thereof shaped for cooperative pressure engagement and for forcible separation,
said elements spaced apart from each other in both circumferential directions,
said film including a body forming sheet portion between the interlocking elements at one side of the first element for forming the body of the bag,
and said film including a flange forming sheet portion between the interlocking elements at the other side of said first element with said flange portion extending over the top of the bag and adapted to be severed for access to the bag and providing separate opening gripping flanges for the elements.

3,291,178
PASS CASE

Orla S. Ellis, Nocona, Tex., assignor to Justin Leather Goods Company, Nocona, Tex., a corporation of Texas

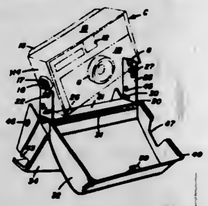
Filed Dec. 14, 1964, Ser. No. 418,019
2 Claims. (Cl. 150—39)



1. A pass case comprising, in combination with a strip comprising two juxtaposed thicknesses of transparent flexible sheet material forming between them a series of pockets each adapted to receive a small card, photograph, or the like, said strip being folded upon itself in one position thereof whereby said pockets are stacked one upon another, the combination of a case providing a substantial enclosure for said strip in its folded position, the case consisting of a single strip of flexible sheet material folded intermediate its ends to form an end portion and an adjoining intermediate portion which in use overlie opposite sides of the stack comprising said pockets, in the folded position of said first mentioned strip, the last mentioned strip having an end flap adjoining said intermediate portion which in use is folded over said first mentioned end portion, the intermediate portion of said last mentioned strip being relatively longer than the first mentioned end portion thereof, and said intermediate portion and said end flap extending beyond the end of said last mentioned

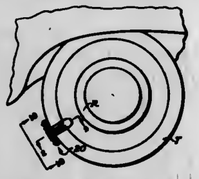
strip opposite said end flap, in the folded position of said last mentioned strip, and the material of said last mentioned strip being folded upon itself in opposite directions, in a series of three successive folds, at the juncture of said end flap whereby said end flap is extensible as necessary to compensate for variations in the thickness of such materials as may be contained in said pockets.

3,291,179
CAMERA CARRYING CASE
Vincent F. Lang, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 17, 1964, Ser. No. 345,307
7 Claims. (Cl. 150—52)



1. A carrying case for a photographic camera having a bottom wall, a pair of substantially parallel end walls, a front wall and a back wall which is separable from the camera to permit loading of film into the camera; and comprising a substantially U-shaped bracket defining a cross member adapted to engage the bottom wall of the camera when the camera is inserted in said bracket and defining upright arms adapted to engage and embrace the end walls of the camera to retain the camera within said bracket, first and second cup-shaped members individually hinged to opposite edges of said cross member to selectively move between a closed position, wherein they extend upwardly from said cross member and combine with said cross member to enclose the camera when the camera is positioned in said bracket, and an open position, wherein said first cup-shaped member extends downwardly from said cross member to expose the front of the camera and said second cup-shaped member extends downwardly from said cross member to expose the back wall of the camera.

3,291,180
CLAMP-TYPE TRACTION DEVICE
Sidney Gellman, 86 Farrell St., Long Beach, N.Y.
Filed Mar. 14, 1966, Ser. No. 534,085
10 Claims. (Cl. 152—225)



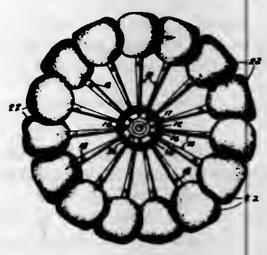
1. A traction device for use with a pneumatic tire mounted on a rim, the tire having a ground-engaging tread portion and side walls that bulge outwardly under a load, said traction device comprising:

(a) a generally U-shaped frame member having two, spaced, upright leg portions relatively movable with respect to each other and transverse sections joining said upright leg portions, said transverse portions being integral with said leg portions and in the assembled condition being disposed across the tire tread;

(b) cam-type tire gripping means eccentrically mounted in the opposed surfaces of each said leg portion, said gripping means being in engagement with the tire side walls in the assembled condition; and

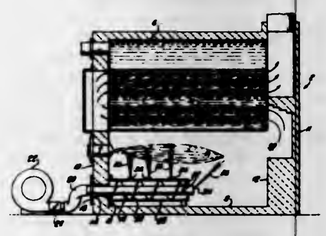
(c) locking means releasably joining said transverse sections to each other whereby said gripping means firmly engage the bulged side walls of the tire.

3,291,181
WHEELS FOR EXPLORING THE SURFACE OF THE MOON
Glenn G. Havens, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 14, 1965, Ser. No. 448,189
6 Claims. (Cl. 152—337)



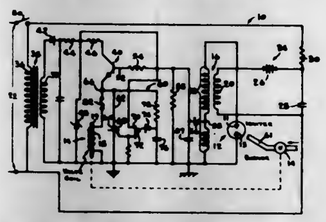
3. A device expansible to form a wheel comprising a hub, slidably mounted for circumferential movement on said hub a plurality of spokes, each of said spokes containing a deflated balloon within its outer end, said spokes being adapated to be arranged such that all of the spokes lie within a single 90° quadrant.

3,291,182
MEANS FOR IMPROVING COMBUSTION OF FUEL
Irving A. Dow, Jr. and Martin G. Aarflot, Elizabeth, N.J.; said Aarflot assignor to said Dow
Filed Feb. 23, 1965, Ser. No. 434,261
3 Claims. (Cl. 158—1.5)



1. The combination with a fuel burner furnace of a secondary air supply means comprising a source of air under pressure, a device within the furnace spaced laterally from the burner and having inner and outer cylindrical members defining a closed ended annular space therebetween, means coupling one end of said inner member to said source for reception of air under pressure therefrom, said inner member having openings therethrough adjacent its other end for passage of air into said annular space and said outer member having at least one orifice in its wall for emission of a jet of air therethrough, and means within said annular space for causing air therein to circulate about the inner member.

3,291,183
SPARK IGNITION AND FLAME SENSING CIRCUIT
Richard K. Fairley, Deerfield, Ill., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 487,009
16 Claims. (Cl. 158—28)



1. An ignition and fuel control circuit comprising, in combination,

an igniter including spaced electrodes,

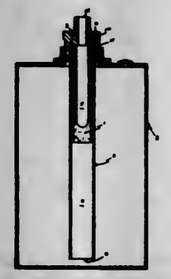
means applying a voltage to said igniter to operate said igniter, said igniter requiring a first voltage for operation thereof when no flame is present at said electrodes and a second reduced voltage when a flame is present at said electrodes,

valve means,

means connecting said valve means with said igniter for response to the voltage condition on said igniter, said valve means opening in response to said first voltage and remaining open in response to said second voltage,

and means connected to said valve means and said igniter and responsive to a continued condition of said first voltage on said electrodes to effect a closing of said valve means with a predetermined time delay after opening of said valve means.

3,291,184
FUEL SUPPLY SYSTEM
Harold E. Varvel, Dayton, Ohio, assignor to Master Consolidated, Inc., Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 112,344, May 24, 1961. This application Aug. 23, 1965, Ser. No. 481,878
7 Claims. (Cl. 158—36.3)



7. In combination with a space heater including a burner head having a siphon nozzle, a fuel storage tank, a delivery line from said tank to said nozzle, said tank having a delivery opening in the upper part thereof, said delivery line being arranged in absence of suction to drain fuel from said nozzle back to said tank, a vertical tube dependent within said tank from said delivery opening and extending to near the bottom of said tank, the lower end of said tube being normally below the fuel level in said tank, the opposite ends of said tube being open, and a filter installed in the upper part of said tube having a cavity in free and open communication with said delivery line through said delivery opening and defining a chamber therebelow and means for creating a suction in said delivery line to draw fuel from said tank through said tube and said delivery line to said nozzle, discontinuance of said means allowing fuel in said delivery line and at said nozzle to drop back into said tank to and through said filter with resultant purging effect, said filter being a cylindrical element having a head end interengaged with the upper end of said tube and a body portion extending into said tank in spaced concentric relation to said tube, said filter element terminating at its end opposite said head end within the tube a substantial distance from the lower end thereof to define with the tube beneath the said opposite end of said filter element an open space of substantial volume, said cavity being in said body portion and opening through said head end.

3,291,185
PILOT BURNER FOR GAS HEATER OR THE LIKE
Harold A. McIntosh, South Pasadena, and Houston Rehrig, Pasadena, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,744
5 Claims. (Cl. 158—113)



1. A pilot burner comprising:

a pilot body having a passage therethrough, said pilot body being adapted at one end for connection to a gas supply line and having an orifice for discharging gas at the other end thereof;

a pilot head attached to said pilot body, said pilot head extending longitudinally of said orifice for a first portion of its length and then extending laterally of said orifice for a second portion of its length; and

a protuberance on said first portion of said pilot head spaced from said second portion and projecting laterally inward from said first portion into the path of gas flow from said orifice for deflecting at least a portion of the gas discharged from said orifice prior to deflection by said second portion and to mix said gas with the air.

3,291,186
CONTROL DEVICE
Birger A. Lindberg, Santa Monica, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,736
2 Claims. (Cl. 158—113)

1. In a safety pilot assembly of a non-aerated type, the combination comprising:

target means including an inclined plate upon which fuel is adapted to impinge to form a single spreading sheet of flame;

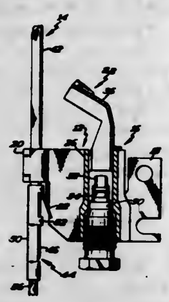
a thermoelectric unit including:

a plurality of thermocouples with the hot junctions thereof disposed at one end and the cold junctions thereof disposed at the other end;

a sheath having a substantially flat, thin, closed end portion enclosing said hot junctions, and

an insulator rod positioned lengthwise between said end portion of said sheath and said hot junctions, and

bracket means spacing said thermoelectric unit with said end portion of said sheath laterally and slightly above said target means so that said flame will strike said sheath at an oblique angle to divert the flame in such a manner that said end portion of said sheath is enveloped by the flame and heated substantially uniformly independent of fuel pressure variations.



3,291,187

CATALYTIC METHANE BURNER FOR PRODUCING INFRA-RED HEAT

Vladimir Haensel, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Mar. 2, 1964, Ser. No. 348,581
10 Claims. (Cl. 158—116)

1. Apparatus for effecting catalytic burning of a gaseous methane rich stream to provide infra-red heat generation, which comprises in combination, a gas distributing manifold section having a gas inlet port thereto and a gas permeable catalytic element comprising metallic screening coated with an oxidizing catalyst extending across an outlet face therefrom, and spaced apart flow restricting means adjacent the inlet face to said catalytic element whereby there is a reduction in the gas flow rate to at least a part of the upstream portion of the catalyst element and a maintenance of the catalytic oxidation of the methane rich stream passing therethrough.

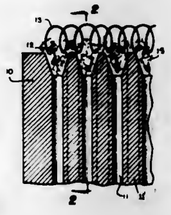
3,291,188

DEEP COMBUSTION RADIANT ELEMENTS

Maurice Partiot, 12 Rue du Plateau Saint Antoine, Le Chesnay, France

Continuation of application Ser. No. 43,803, July 19, 1960. This application Mar. 23, 1964, Ser. No. 354,508
7 Claims. (Cl. 158—116)

1. A burner member comprising, a block of refractory material defining a multiplicity of small bore passages extending in generally parallel relation to one another from a first boundary surface of said block toward a second boundary surface thereof, said passages adapted to conduct a combustible gas mixture from said first boundary surface toward said second boundary surface for combustion adjacent to said second boundary surface, at least some of said passages opening into said second boundary surface, said second boundary surface defining therein a plurality of indentations each having a peripheral wall substantially longer than the bore diameter of any one of said passages, means for at least some of said passages for conducting at least some of said combustible gas mixture away from said passages at an angle to the axes of said passages and through said peripheral wall into an adjacent indentation, and a radiation and gas pervious metallic matting overlying at least a portion of said second boundary surface and extending outwardly from said second boundary surface beyond the region of burning of said gas mixture to thereby cause a layer of exhaust gases to stagnate in close proximity to said second boundary surface.

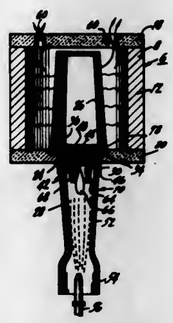


3,291,189

GAS BURNER

Otto H. Schade, Jr., North Caldwell, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 9, 1965, Ser. No. 438,235
5 Claims. (Cl. 158—116)



1. A gas burner comprising a burner head including a gridwork providing a plurality of ports therethrough, said gridwork having a high thermal conductivity, a fuel injector having a fuel path therethrough leading to said gridwork, said fuel injector having a large heat dissipating capacity in comparison with said gridwork and being engaged with said gridwork in good thermal conductivity relation therewith, a heat absorbing and dissipating element mounted on the other side of said burner head in spaced and surrounding relation with said gridwork and in poor heat transfer relation therewith, and baffle means disposed on the injector side of said burner in the path of said fuel for providing a uniform and equal rate of fuel flow to each of said ports.

3,291,190

GASEOUS FUEL BURNERS

Stewart Albert Radley, Elstree, England, assignor to Radiation Limited, London, England, a British company

Filed Aug. 28, 1963, Ser. No. 305,133
Claims priority, application Great Britain, Aug. 30, 1962, 33,389/62
2 Claims. (Cl. 158—117)



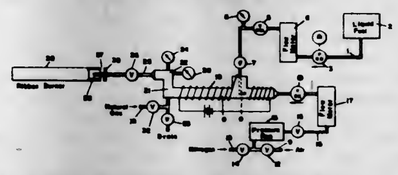
2. A gaseous fuel burner comprising in combination an outer tube, a set of burner orifices in said outer tube and an inner tube within the outer tube, the inner tube being adapted to be connected to a source of gaseous fuel, and at least one set of orifices in said inner tube whose spacing is the same as that of the orifices in the outer tube but whose orifice size is different from that of the orifices in said outer tube, in which the inner tube is movable relatively to the outer tube in such manner as to bring into and out of registration the set of orifices in the outer tube and a set of orifices in the inner tube, and in which the inner tube has an end wall having a shank which projects through an aperture in an end wall of the outer tube and is screw threaded over the projecting part, the inner tube being located in position by means of a lock nut screwed over the projecting part.

3,291,191

METHOD OF MAKING A NORMALLY LIQUID FUEL INTERCHANGEABLE WITH GAS

James W. Stoops, Thornbury, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Jan. 28, 1966, Ser. No. 530,761
5 Claims. (Cl. 158—117.5)



1. A method of operating a gas burner in interruptible service comprising the steps of

a. terminating the flow of gas to the burner,

b. supplying a normally liquid paraffinic light petroleum hydrocarbon fraction from storage,

c. mixing the fraction at a temperature in the range of 30° to 300° F. with primary air,

d. and burning the fraction in the burner to provide a clean blue radiant flame having characteristics and quality generally equivalent to the gas flame,

said petroleum hydrocarbon fraction having an end boiling point of up to about 450° F., and containing at least 75 volume percent saturated hydrocarbons containing 5 or more carbon atoms and less than 25 volume percent aromatics and olefins.

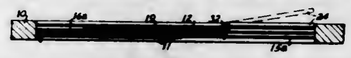
3,291,192

SCREEN DOOR FOR SLIDING GLASS DOORS

Harold D. Jones, Jr., % Newton, Hopkins, Jones & Ormsby, 711 Candler Bldg., Atlanta, Ga.

Continuation of application Ser. No. 184,193, Apr. 2, 1962. This application May 14, 1965, Ser. No. 455,822
6 Claims. (Cl. 160—91)

1. In a doorway enclosure having a plurality of slidable closure elements mounted between upper and lower tracks and slidably movable independently of each other in parallel planes of motion, a selectively slidable and pivotable closure element mounted between said upper and lower tracks, said selectively slidable and pivotable closure elements being pivoted on upper and lower track grips each having a track engaging groove for slidably receiving one of said tracks, and said selectively slidable and pivotable closure element being slidably movable in a plane of motion substantially parallel to said planes of motion of said other slidable closure elements and pivotably movable independently of its slidable motion about an axis laterally displaced from said tracks so as to afford an unobstructed opening when pivoted away from a closed position.

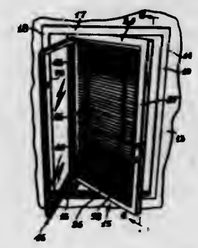


3,291,193

VENETIAN BLIND WINDOW

Andrew T. Hagerty, Mahlon H. Wilson, Theron F. Breneeman and Charles M. Miller, Elkhart, Ind., assignors, by mesne assignments, to The Adams & Westlake Company, Elkhart, Ind., a corporation of Illinois

Filed Dec. 31, 1963, Ser. No. 334,801
5 Claims. (Cl. 160—107)



3. A window comprising a rectangular supporting frame seated in an opening in a wall of a building, a rectangular sash assembly mounted in said supporting frame on vertically aligned pivot members for swinging movement into and out of the plane of said supporting frame whereby the assembly may be swung to a position where the faces thereof are reversed, a pair of laterally spaced continuous weather seals interposed between confronting edges of the supporting frame and sash assembly so as to provide an airtight seal when the sash assembly is disposed in either normal or reversed position in the plane of the supporting frame, said sash assembly including a hollow tubular frame of generally rectangular cross section, a pane of glass having its margins secured in a glazing channel in the inner edge adjacent the outside face of said tubular frame and normally positioned on the outside of the building, a panel forming rectangular frame hinged to one side of said hollow tubular frame adjacent the inside edge thereof, a pane of glass mounted in said panel forming frame, said tubular sash frame and said glass panes defining a compartment for accommodating a Venetian blind, pivotally mounted latch members concealed in the side of said tubular frame which is opposite the hinge connection with said panel forming frame, keeper members on said panel forming frame which extend through apertures in said tubular frame when said panel forming frame is closed for cooperation with said latch members, and said tubular frame having apertures between said weather seals in the outer peripheral edge thereof which provide access to said latches for manual operation thereof when said sash assembly is swung out of the plane of said supporting frame.

3,291,194
CLAMP AND HOUSING APPARATUS
Clarence M. Kirtley, 5000 Woodland, Des Moines, Iowa; and Richard J. Eldredge, Jr., 920 28th St., West Des Moines, Iowa
Filed Dec. 5, 1963, Ser. No. 328,433
3 Claims. (Cl. 160—181)



1. In a louver assembly including vertical louvers, apparatus for releasably clamping each end of each louver to a stationary member, also at each end thereof, comprising in combination:

a housing including a unit releasably engaged with an end of a louver, said housing having a U-shaped structure with legs extending parallel to each other and in the same direction;

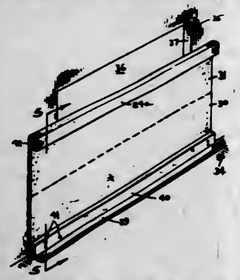
shoulders formed on the inside of said legs by reversely bending equal outer portions of the legs so that said shoulders are of equal height; and

clamp means including a base and an arm pivotally mounted on said base for rotatable movement over said base;

said base insertable between said legs and the stationary member, and secured to the stationary member with said end edges of said legs placed flat thereon to support the U-shaped structure, said arm having a portion at said pivotal mounting with opposite end tips extending normally laterally towards said legs, said portion movable from a first position with said end tips spaced laterally from the leg end edges to a second position contiguous with said end tips extending over and in frictional engagement with said shoulders, said end tips clamping said shoulders and thus said housing toward and against said base;

said arm having further a finger portion extending outwardly and away from said base and with an exposed free end thereof always disposed laterally outwardly from one of the legs.

3,291,195
TAPE REINFORCED GRAIN DOOR PANEL
David H. Blatt, Melrose Park, Pa., assignor, by mesne assignments, to Walnut Industries Company, Philadelphia, Pa., a partnership
Filed Dec. 31, 1963, Ser. No. 334,835
3 Claims. (Cl. 160—368)



1. A grain door installation in a grain car for closing a door frame opening therein comprising in combination, a main panel section vertically disposed against and fixedly secured along its side edges to the opposite sides of the door frame, a floor flap integral with and extending substantially the full width of the main panel substantially straight thereto along the lower edge of the latter seated down upon and fixedly secured to the floor of the grain car, a rigid elongated member fixedly secured across the door frame opening to back up the grain door at the upper edge of its main panel, said main panel section and floor flap of the grain door being formed of corrugated paperboard having an inner core of corrugated paper and paper facings adhesively secured to opposite surfaces of said core, and a top flap secured to and extending upwardly beyond the upper edge of the corrugated inner core of the main panel substantially the full width of the latter as a continuation of one of said paper facings of the corrugated board, said top flap being turned tautly over the top of and fixedly secured to the rigid back-up member for substantially its full width to thereby secure the upper edge of the grain door against outward deflection.

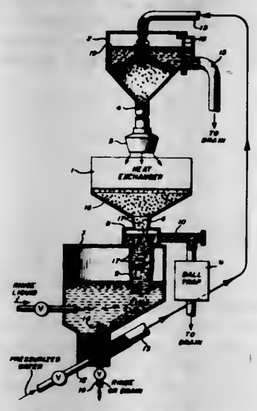
3,291,196
OIL PAINTING STRETCHERS
Sam Kupersmith, 5305 Avenue D, New York, N.Y.
Filed Oct. 7, 1964, Ser. No. 402,167
6 Claims. (Cl. 160—374.1)



1. In an oil painting stretcher of the character described, the combination with a frame comprising bars of rectangular cross section, a cleat overlapping the back surfaces of two of said bars which are adjacent each other, said cleat comprising a V-channel; the inner surfaces of the walls of said channel, being in obtuse angled relation; each of said channel surfaces contacting one of said overlapped frame bars respectively and a wedge within said channel and extending along the line of intersection of the planes of said channel wall surfaces, adapted to be entered between said two frame bars by movement of said cleat whereby said two frame bars are shifted apart; each of said channel walls having a lengthwise slot therethrough along the converging surfaces of said wedge respectively; said wedge being positioned between said slots and a screw in each of said slots respectively, releasably securing said cleat to said two frame members whereby said two bars are in surface contact with the walls of said channel respectively; the direction of convergence of the converging walls of said wedge, being along said channel.

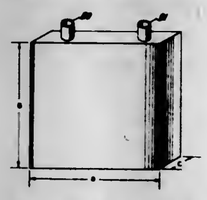
3,291,197
SHOT CLEANING METHOD FOR HEAT EXCHANGERS
Vagn Kollerup, Copenhagen, Denmark, assignor to Aktieselskabet Burmeister & Wain's Maskin-OG, Copenhagen, Denmark, a Danish company
Continuation of application Ser. No. 287,013, June 11, 1963. This application Dec. 21, 1965, Ser. No. 515,307
Claims priority, application Denmark, June 13, 1962, 2,614/62
3 Claims. (Cl. 165—1)

1. In the method of cleaning surfaces of gas swept transmission units by means of solid cleaning shot which are periodically delivered from an upper container so as to rebound by gravity against said surfaces for loosening dirt particles therefrom, and then pass to a lower collecting container from which the cleaning shot are returned to said upper container, the step of using a first liquid fluid flow for separating off and carrying away the dirt particles from said cleaning shot and a second liquid fluid flow for returning the cleaning shot to the upper



container, said first liquid fluid flow being directed against the flow of said shot as they are collected, said liquid fluid having a velocity less than the velocity of the falling shot in the liquid but greater than the velocity of said dirt particles.

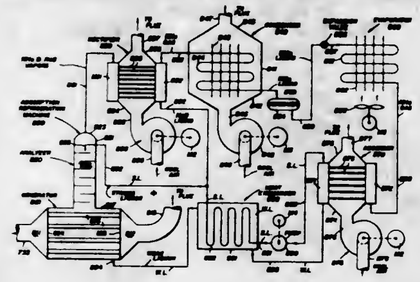
3,291,198
BOILING HEAT TRANSFER SYSTEM
William J. Thason, Belmont, Mass., assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 6, 1963, Ser. No. 329,350
7 Claims. (Cl. 165—2)



7. A process for treating biological substances comprising the steps of providing a container for storing such substances; applying a thin water soluble insulating film coating on the outer walls of said container; introducing said biological substance into said container; contacting the outer walls of said coated container with a boiling liquid refrigerant whereby the rate of heat transfer is at least 14,000 B.t.u./(hr.)(sq. ft. of container surface) and continuing the refrigeration contact for sufficient duration to freeze the biological substance; storing the frozen substance; and thereafter thawing said substance by contacting the container with water, thereby removing the insulating coating.

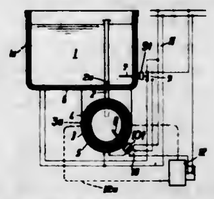
3,291,199
COMBINATION HEATING AND COOLING SYSTEM INCORPORATING A FLAMELESS COMBUSTION HEATER OF THE CATALYTIC TYPE
Gregoire Gutzeit, Highland, Ind., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Sept. 25, 1963, Ser. No. 311,457
13 Claims. (Cl. 165—27)

1. In an absorption refrigerating machine including an evaporator and an absorber and a generator and a condenser connected in a operative circuit, said generator containing a body of strong liquor that consists essentially of a liquid absorbing medium and refrigerant absorbed by the liquid absorbing medium, a tube having an adit and an exit, the adit of said tube communicating with the atmosphere, means for producing flow of an air stream through said tube, an injector operatively associated with an upstream section of said tube and operative to inject into the air stream passing therethrough a combustible substance in order to produce a combustible mixture in the gas phase, a porous catalytic bed arranged in a downstream section of said tube and accommodat-



ing the ready passage therethrough of the combustible mixture in the gas phase and characterized by producing flameless catalytic combustion thereof in order to produce hot flue gases, and a conduit having an adit connected to the exit of said tube and an exit communicating with the atmosphere, whereby a stream of the hot flue gases passes through said conduit, said generator being arranged in good heat-exchange relation with said conduit, whereby heating of the strong liquor in said generator effects the liberation of the refrigerant in the vapor phase from the liquid absorbing medium of the strong liquor in a known manner.

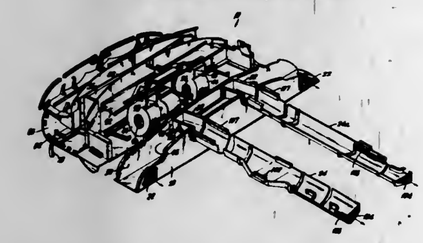
3,291,200
FOOD ICE MACHINE WITH HEATING MEANS THEREFOR
Hans Georg Lutz, Hans-Hacker-Str. 9, Kulmbach, Germany
Filed Sept. 18, 1964, Ser. No. 397,476
Claims priority, application Germany, Sept. 23, 1963, L 45,931
8 Claims. (Cl. 165—12)



1. In a food ice machine for dispensing food ice in portions of the type comprising a freezing compartment, a supply container for ice mix, an intake passage intermediate said supply container and said freezing compartment and freezing means comprising a refrigerating unit for supplying coolant to said freezing compartment and having a compressor, heating means including heating elements in said freezing compartment and in said supply container operative to heat the contents to a degerminating temperature, preferably between 70 and 75° C. and current supply means connected to a current source for supplying current to said compressor and to said heating means, including separate temperature responsive switch means, one associated with said freezing

compartment and one with said supply container, each said switch means having a pair of contacts in one position thereof connecting said heating elements in parallel to said current source, and having a pair of contacts in another position connecting said compressor in series with said current source.

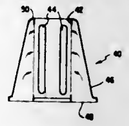
3,291,201
AIR CONDITIONING APPARATUS FOR VEHICLES, ESPECIALLY FOR BUSES
Milton E. Spatt, % Wayne Cooling Equip. Corp., 25 Jay St., Brooklyn, N.Y.
Filed Mar. 3, 1964, Ser. No. 349,080
26 Claims. (Cl. 165—42)



1. In combination, a vehicle having a top wall, a rear wall, and spaced side walls, an air conditioning evaporator section mounted against said top wall and rear wall and between said side walls, said evaporator section including means forming a chamber having an inlet and an outlet, an evaporator of an air conditioning system positioned in said chamber, means for passing air from said vehicle into said evaporator chamber, said air passing means comprising means forming an air chamber positioned at said inlet of said evaporator chamber, said air chamber forming means including a bottom wall having an opening therein in communication with the interior of said vehicle and having an outlet in communication with the inlet of said evaporator chamber, a filter positioned at said outlet of said air chamber, means forming another chamber at said outlet of said evaporator chamber and in communication with the latter, blower means positioned in said other chamber for inducing air flow into and from said evaporator chamber and having outlet means, and means in communication with said outlet means and in communication with the interior of said vehicle for distributing air to the interior of said vehicle, said air distribution means comprising means forming a plenum chamber having a first wall having an opening in communication with said outlet means of said blower means, a second wall spaced from said first wall and having an opening in communication with the interior of said vehicle and having another opening, an air distribution duct extending through said other opening in said second wall and having an outlet opening in communication with the interior of said vehicle, and said duct extending between said first and second walls and having one end in communication with said opening in said first wall.

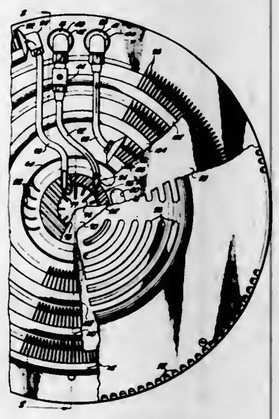
3,291,202
COOLANT DISTRIBUTOR DEVICE
George J. Agule, Stamford, Conn., and Alfred L'Eplattenier, Katonah, N.Y., assignors to The Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut
Filed Aug. 12, 1963, Ser. No. 301,462
3 Claims. (Cl. 165—80)

1. A coolant distributor device for electron discharge devices and the like having an element which becomes heated and which requires a greater volume of coolant flow over a selected area than over other areas thereof, said distributor device comprising an elongate hollow member adapted to enclose the element to be heated and having a first opening at one end for the ingress of a cooling medium introduced under pressure, and having an elongate second opening on a side wall thereof directed toward said element and extending substantially the length thereof for the egress of such cooling medium, said hollow member having an inclined side wall directly opposite



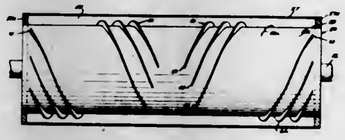
said second opening thereby providing the member with a cross sectional area which decreases with increasing distance from said first opening, the portion thereof having smallest cross sectional area being adapted to be positioned adjacent said element opposite said area thereof requiring greater volume of coolant flow, the volume of the cooling meduim expelled from said second opening being greatest at the end thereof remote from said first opening.

3,291,203
SYSTEM FOR HEATING AND COOLING CHAMBERS
Edward W. Gough, 5757 Ravenspur Road, Palos Verdes, Calif.
Filed Mar. 6, 1964, Ser. No. 349,898
8 Claims. (Cl. 165—85)



1. A heating-cooling conditioning unit for an enclosure comprising:
a pancake shaped support structure,
means mounted on the support structure for attaching the unit to an enclosure,
inlet and outlet fluid conduits protruding within the support structure,
heat exchange coils arranged in a flat spiral array with an opening centrally located in the array engaged with the inlet and outlet coils,
a rotatively mounted fan supported by the support structure protruding within the coil opening such that air moved by the fan would be directed across the coils,
a fluid turbine engaged with the fan and having inlet and outlet ports thereon communicating with the inlet fluid conduit,
whereby pressurized fluid flowing through the inlet conduit will transfer thermal energy as it passes through the coils and will drive the turbine and the fan to move air across the coils to thereby condition an enclosure.

3,291,204
HEAT TRANSFER ROLL
William H. Norton, Mundelein, Ill., assignor to Thermel Incorporated, Franklin Park, Ill., a corporation of Delaware
Original application Mar. 16, 1961, Ser. No. 96,313, now Patent No. 3,216,489, dated Nov. 9, 1965. Divided and this application Aug. 13, 1965, Ser. No. 487,647
3 Claims. (Cl. 165—89)



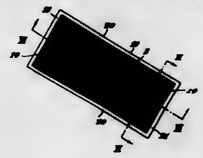
1. A heat transfer roll comprising:
an outer roll shell,
an inner roll shell concentric with said outer roll shell,
annular spacers spacing said roll shells apart and forming an annular liquid tight chamber containing a heat transfer liquid in the space between said roll shells,
heating means heating the inner of said roll shells and the heat transfer liquid in said annular chamber,
bearing means supporting said heat transfer roll for rotation,
at least two oppositely disposed helical fins within said chamber and extending radially of one of said shells toward the other shell and terminating in radially spaced relation with respect to the other shell,
said fins extending helically along said one of said shells in opposite directions from locations disposed on opposite sides of the transverse center of said one of said shells toward said annular spacers, to circulate the hot liquid toward the cooler ends of said outer shell and return the liquid toward the transverse center of said outer shell.

3,291,205
APPARATUS FOR ALKALI METAL CONDENSATION IN CEMENT KILNS
Philip H. Harris, Upland, and David A. Johnson, San Bernardino, Calif., assignors to American Cement Corporation, Los Angeles, Calif., a corporation of Delaware
Filed May 21, 1964, Ser. No. 369,226
1 Claim. (Cl. 165—94)



Apparatus for condensing condensible vapors of alkaline compounds from exhaust gases passing from a cement kiln through a duct comprising a plurality of hollow condenser and condensate collector members disposed in the duct, the exterior surfaces of the members collectively defining a condensing surface exposed to gases moving through the duct, each condenser and collector member having a diamond-shaped cross-sectional configuration transversely of a central axis thereof and being normally disposed so that at least one edge thereof is disposed in substantial registry with a similar edge of the next adjacent member so that the condensing surface is essentially continuous, means for mounting the condenser and collector members in adjacent parallel relation for rotation about the central axes thereof, means for circulating water through the members to cool the condensing surface so that vapors of alkaline compounds present in the exhaust gases flowing through the duct condense upon the condensing surface to form a deposit of condensate material, and means for synchronously rotating the members about the central axes thereof for fracturing and removing said deposit from the condensate surfaces.

3,291,206
HEAT EXCHANGER PLATE
Terence Peter Nicholson, Craigmillar, Stocksfield, Northumberland, England
Filed Sept. 13, 1965, Ser. No. 486,982
8 Claims. (Cl. 165—166)



6. A rectangular plate for use as a primary heat exchange element in the construction of a heat exchanger of the stated type, with two parallel narrow flat margins and a zone between said margins comprising continuous corrugations integrally formed in the plate and having alternate half waves projecting on opposite sides of the median plane of said plate, the corrugations extending parallel to said margins and terminating short of each end of the plate on two parallel, oblique lines, one of said oblique lines extending from adjacent the end of one of said flat margins to an intermediate point in the length of the other of said margins, and the other of said lines extending obliquely from adjacent the end of said other margin to an intermediate point in the length of said one margin, each of said oblique lines and a narrow, flat margin of the adjacent end of the plate defining one of two integral flat triangular end zones of the plate in the plane of said narrow margins, and triangular portions of wholly corrugated sheet metal welded on one side of the plate to the surface of each end zone, the total depth of the corrugations of said triangular portions being equal to the projections of the corrugations from the surfaces of both sides of the plate.

3,291,207
WELL COMPLETION METHOD
James L. Rike, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Dec. 19, 1960, Ser. No. 76,715
9 Claims. (Cl. 166—4)

6. A method of depth control for a well operation in a well penetrating at least two productive formations and containing at least two juxtaposed pipe strings, one of which contains in at least one pipe collar thereof a detectable marker consisting of a radioactivity absorbing substance comprising: running in said other pipe string a radioactivity survey tool together with a collar locator tool and preparing therefrom a correlation log showing the locations of said formations, the locations of the pipe collars of said other pipe string, and the position of said marker relative to each other; running in said one pipe string a well tool together with a collar locator tool and preparing a log showing the pipe collars of said one pipe string; moving said well tool and said collar locator tool vertically to the pipe collar in said one pipe string nearest in depth to the

depth of said marker as shown on said correlation log; and then moving said well tool and said collar locator tool the distance between one of said formations and



said marker as shown on said correlation log to position said well tool in said one pipe string adjacent said one formation.

3,291,208

DEPTH CONTROL IN WELL OPERATIONS

John W. Kenneday, Corpus Christi, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Dec. 19, 1960, Ser. No. 76,717
8 Claims. (Cl. 166—4)



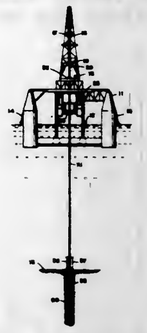
4. A method of depth control for a well operation in a well penetrating at least two productive formations and containing at least two juxtaposed pipe strings, one of which contains in at least one pipe collar thereof a radioactivity marker comprising: running in said other pipe string a radioactivity survey tool together with a collar locator tool and preparing therefrom a correlation log showing the locations of said formations, the locations of the pipe collars of said other pipe string, and the position of said radioactivity marker, relative to each other; running in said one pipe string a well tool together with a collar locator tool and preparing a log showing the pipe collars of said one pipe string; moving said well tool and said collar locator tool vertically to the pipe collar in said one pipe string nearest in depth to the depth of said radioactivity marker as shown on said correlation log; and then moving said well tool and said collar locator tool the distance between one of said formations and said radioactivity marker as shown on said correlation log to position said well tool in said one pipe string adjacent said one formation.

3,291,209

METHOD FOR DRILLING UNDERWATER WELL

Norman E. Montgomery, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Original application Oct. 9, 1963, Ser. No. 315,026. Divided and this application July 19, 1965, Ser. No. 482,971
5 Claims. (Cl. 166—.5)



1. A method of drilling an underwater well from a floating drilling vessel having a retary table opening therein and provided with well-drilling apparatus including a rotary table adapted to the positioned below apparatus for lowering equipment to the ocean floor and above apparatus for supporting a well base on the vessel, said method comprising:

supporting temporarily on said drilling vessel below the lowering apparatus thereof a well base having a large-diameter vertical central opening therethrough,

suspending from the lowering apparatus of said vessel a vertically-positioned large-diameter well pipe extending down through the central opening of said supported well base,

lowering said large-diameter well pipe from said vessel and inserting it into the ocean floor so that the upper end of said pipe is adjacent to the ocean floor,

reducing the diameter of the central opening through the supported well base at the vessel,

drilling a hole in the ocean floor through the well pipe positioned therein,

running a string of well casing through the reduced central opening of said well base of said vessel until the lower end of said casing is in said hole and the upper end of said casing is at said supported well base,

connecting said well base to the well casing near the upper end thereof, and

lowering said casing into the hole until the well base connected to said casing is positioned adjacent the top of the well pipe set in the ocean floor.

3,291,210

DRILLING AND PRODUCTION METHOD

Robert D. Johnstone, Anchorage, Alaska, and Charles E. Wakefield, Jr., Long Beach, Calif., assignors to Richfield Oil Corporation, Los Angeles, Calif., a corporation of Delaware

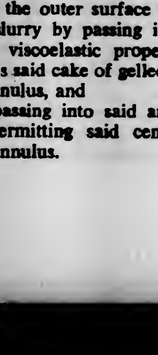
Original application July 10, 1961, Ser. No. 122,918. Divided and this application Oct. 20, 1965, Ser. No. 498,964
5 Claims. (Cl. 166—.6)

1. In a method for drilling and completing a well in a formation underlying a body of water from a vessel floating on said body of water wherein an apertured landing base is positioned on said formation, the steps comprising:

(a) operating a drill string in said well from said vessel to drill said well sufficiently to receive a surface pipe,

(b) assembling at said vessel, said surface pipe, a drilling and production mandrel having a tubing flow line connector, and a blowout preventer,

(c) lowering said assemblage into said well through said apertured drilling base with said mandrel landing adjacent said base,



(d) operating drilling tools through said mandrel to deepen said well,

(e) lowering a water string into said well through said mandrel,

(f) landing said water string,

(g) landing a production tubing string in said mandrel,

(h) operatively connecting said production tubing string to a tubing flow line through said tubing flow line connector of said mandrel,

(i) removing said blowout preventer,

(j) and producing said well through said production string and said production mandrel tubing flow line connector.

3,291,211

CEMENTING OF WELLS IN AN EARTH FORMATION

Joseph G. Savins and William R. Foster, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Sept. 11, 1963, Ser. No. 308,223
15 Claims. (Cl. 166—22)

1. In a process for cementing casing in a well in the earth wherein a cement slurry is placed within the annulus between said casing and the wall of said well and permitted to set therein, said well having been drilled employing a drilling mud containing a liquid phase and a solid constituent and a cake of gelled drilling mud remains within said annulus following the drilling operation in said well, the steps comprising:

(a) removing said cake of gelled drilling mud from said annulus to thereby effect contact of the wall of said well and the outer surface of said casing with said cement slurry by passing into said annulus a liquid having viscoelastic properties whereby said liquid displaces said cake of gelled drilling mud from within said annulus, and

(b) thereafter passing into said annulus said cement slurry and permitting said cement slurry to set within said annulus.

3,291,212

PROCESS FOR TREATING EARTH FORMATIONS TO BE RELATIVELY IMPERMEABLE TO FORMATION WATER

Dixon W. Peacock, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 27, 1963, Ser. No. 283,607
7 Claims. (Cl. 166—32)

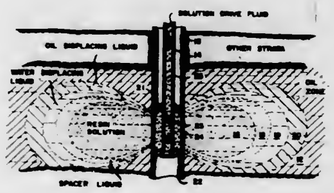
1. A method for treating a permeable earth formation containing oil and water which penetrate the formation and enter the oil well bore comprising introducing a high pH water through said bore into the formation under sufficient pressure to force the formation water back out of the formation being treated, thereafter introducing a high pH additive solution into said formation through said bore, and thereafter lowering the pH of said additive solution in situ so as to precipitate said additive in the formation, said additive solution being a solution of tannin, said high pH of said high pH water being sufficiently high to prevent precipitation of the tannin from solution.

3,291,213

METHOD FOR TREATING A PERMEABLE MASS

Cornelis Bezemer, Franciscus H. Melis, and Marinus van Zanten, all of Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 20, 1964, Ser. No. 361,013
Claims priority, application Great Britain, Apr. 22, 1963, 15,776/63
7 Claims. (Cl. 166—33)



1. In the method of treating a permeable earth formation which comprises

(a) preparing a solution comprising a solvent, a resin-forming polyepoxide and a curing agent for said polyepoxide;

(b) injecting said solution into said formation; and

(c) retaining said solution in said formation for a sufficient time to permit the resulting epoxy resin to adhere to the sand grains of said formation and cure to a hard, cross-linked, hydrocarbon-insoluble resin;

the improvement which comprises preparing as said solution a mixture of:

(1) a hydrocarbon solvent containing at least 80 percent by weight of aromatic hydrocarbon;

(2) a resin-forming polyepoxide;

(3) bis(4-aminophenyl)methane; and

(4) a lower aliphatic ketone;

in proportions selected such that:

(i) the total amount of said hydrocarbon solvent is between 30 and 95 percent by volume of said solution;

(ii) the total amount of polyepoxide and bis(4-aminophenyl)methane is between 3 and 50 percent by volume of said solution

(iii) the total amount of said ketone is between 2 and 20 percent by volume of said solution and is sufficient to keep bis(4-aminophenyl)methane in solution; and

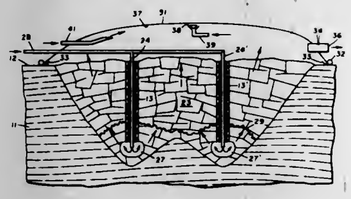
(iv) the composition of said solution is predetermined to maintain the partial reaction product of said poly-

epoxide and bis(4-aminophenyl)methane dissolved for the time required to inject said solution into said formation.

3,291,214
DISPERSION METHOD OF SAND CONSOLIDATION
Wayne F. Hower, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Aug. 19, 1964, Ser. No. 390,730
20 Claims. (Cl. 166—33)

1. A method of consolidating sand in a fluid producing earth formation, comprising the steps of: physically mixing an amount of consolidating solution with a nonmiscible oil having a viscosity at least as low as about that of diesel oil, whereby said consolidating solution is dispersed in said oil thereby forming a dispersion fluid; maintaining the dispersion fluid of the previous step; introducing said dispersion fluid into the sand formation desired to be consolidated; and, allowing the consolidating solution to set into a hard permeable mass.

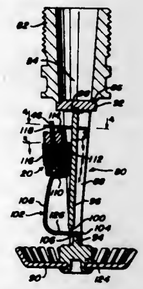
3,291,215
CANOPY METHOD FOR HYDROCARBON RECOVERY
Dean P. Nichols, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 15, 1964, Ser. No. 374,898
17 Claims. (Cl. 166—36)



1. A method for recovering hydrocarbons from a carbonaceous deposit adjacent the surface of the earth, comprising the steps of:
(a) positioning explosives a vertical distance within the deposit below the surface of the earth.
(b) detonating the explosives to uplift a portion of such deposit sufficiently to disrupt the surface of the earth thereabove as a result of the volume increase in such portion,
(c) enclosing the rubble mass in that portion of the deposit uplifted to disrupt the surface of the earth with a substantially impermeable canopy superimposed thereabove and sealed to fluid flows about its perimeter to the earth,
(d) in situ retorting the rubble mass by injection of combustion supporting fluid thereinto at a location spaced from the bottom of the rubble mass and ignition of the carbonaceous materials therein at said location for releasing hydrocarbons from the deposit, and
(e) recovering hydrocarbons from the fluids collecting in the rubble mass beneath the canopy.

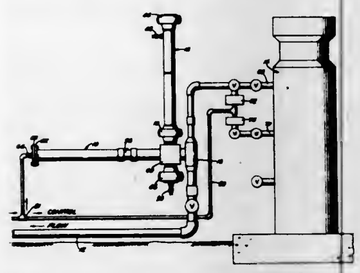
3,291,216
THERMAL TRIGGER AND MEMBER TRIGGERED THEREBY
Phillip Edward Merrill, 4457 Lotz Road, Kettering, Ohio
Filed Mar. 11, 1965, Ser. No. 438,862
19 Claims. (Cl. 169—39)

1. In combination: a cylindraceous casing having a closed pellet receiving bottom and an open bushing receiving upper end; a cylindraceous eutectic pellet in said casing held in said pellet receiving bottom; a plunger in said casing having a plunger head connected transversely to a bottom end of a longitudinal plunger shaft, with the



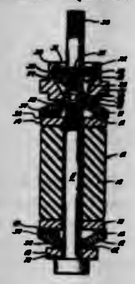
upper end of said shaft extending out of said open casing end, said plunger exerting a pressure on said top pellet surface; and a cylindraceous open center bushing held in said bushing receiving upper end of said casing, with said plunger shaft passing through said open center.

3,291,217
FLOW LINE PIG INJECTOR
Charles E. Wakefield, Jr., Long Beach, Calif., assignor to Richfield Oil Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 9, 1964, Ser. No. 350,208
4 Claims. (Cl. 166—75)



3. Apparatus for injecting cleaning pigs into a flow line arranged to receive flow from an underwater well through a well head, said well head having apparatus adapted for actuation with a control fluid, comprising in combination:
an injector barrel in communication with said flow line,
said barrel having a cylinder section and a plunger section,
a pig storage chamber having an opening through which a pig may be discharged from said storage chamber into said barrel in said plunger section,
a piston positioned in said cylinder section,
plunger means movable in said barrel plunger section and operatively connected to said piston and arranged to eject said pig discharged into said barrel from said storage chamber into said flow line,
means including a control fluid line in fluid communication with said well head apparatus and said cylinder section, for operating said piston with said control fluid to eject a pig into said flow line simultaneously with the actuation ot said well head apparatus, and
means for retracting said plunger means from said opening so that a pig may be discharged from said storage chamber into said barrel.

3,291,218
PERMANENTLY SET BRIDGE PLUG
Maurice P. Lebourg, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 17, 1964, Ser. No. 345,246
5 Claims. (Cl. 166—134)



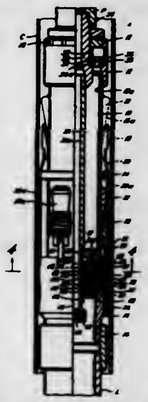
1. In a packer device having a packing element operatively mounted around a mandrel where the packing element is adapted for expansion into sealing engagement within a well bore, the improvement comprising: an annular member slidably mounted around said mandrel and operatively engaged with an end of said packing element; integrally-formed, deformable annular anchor means slidably mounted around said mandrel and initially coaxially disposed in a frusto-conical configuration around the central axis of said mandrel with the apical portion of said anchor means being directed away from said expander member and the base portion of said anchor means member being arranged for engagement with said expander member, said base portion having wall gripping portions; and means on said mandrel engaging said apical portion, for deforming said anchor means in response to relative longitudinal advancement of said engaging means toward said wall gripping portions of said expander member to expand said base portion into anchoring engagement with the wall of a well conduit.

3,291,219
WELL TESTER
Benjamin P. Nutter, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 6, 1964, Ser. No. 410,828
34 Claims. (Cl. 166—145)



9. A well tool comprising: a tubular body member adapted for connection to a pipe string and having a bore therethrough; packer means secured to said body member for lateral expansion to seal off a zone of a well bore; hydraulic means for expanding said packer means; valve means providing fluid communication between the bore of said body member and said hydraulic means whereby said packer means may be expanded by fluid pressure applied through said well pipe and said valve means; a retrievable sampling assembly adapted to be lowered through the well pipe into a seated position within the bore of said body member and opening said valve means, said assembly including means to permit fluid communication between the interior of said assembly and the sealed-off zone of the well bore when said assembly is seated within said body member; and mean in said body member retaining said valve means closed when said sampling assembly is raised from said seated position whereby said sampling assembly can be retrieved without retracting said packer means.

3,291,220
HYDRAULIC SET LINER HANGER
James D. Mott, Houston, Tex., assignor to Cicero C. Brown, Houston, Tex.
Filed Apr. 17, 1964, Ser. No. 360,700
6 Claims. (Cl. 166—208)



5. A liner hanger, comprising a tubular body connectible into a liner string, a tubular slip cage slidably mounted on the mandrel, means releasably securing the slip cage to the body, two vertically spaced sets of circumferentially spaced pipe-gripping slips mounted in fixed longitudinal relation on the cage about the body, downwardly tapering slip expander members mounted on the body in positions to expand both sets of slips in response to relative longitudinal movement of the slips and expander members toward each other, fluid pressure-actuated means mounted on the body for moving the slip cage longitudinally of the body whereby to move said slips toward said expander members, and means for directing pressure fluid from the interior of said body to said fluid pressure-actuated means.

ERRATUM

For Class 169—39 see:
Patent No. 3,291,216

3,291,221
VANE ADJUSTING MECHANISM FOR VARIABLE PITCH MIXED FLOW PUMPS AND TURBINE WHEELS
Andre Kovats, Livingston, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Jan. 5, 1966, Ser. No. 518,867
13 Claims. (Cl. 170—160.44)

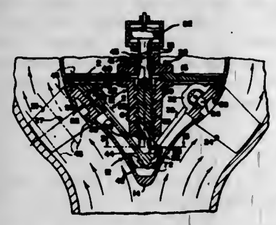
1. In a variable pitch mixed flow impeller having an impeller housing, said impeller housing including a bear-

ing defining an impeller axis of rotation, a blade mechanism comprising:

a blade rotatably connected to the impeller housing and defining a blade axis of rotation;

blade turning means rigidly connected to said blade for rotating the blade;

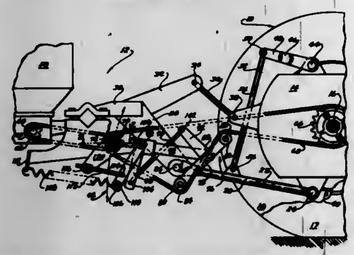
a rotatable means axially disposed in the bearing and extending therefrom for axial rotation and translation relative to the bearing and the impeller housing;



a connecting rod pivotally connected to the blade turning means at a first joint and to the rotatable means at a second joint, said joints aligned in a plane perpendicular to the blade axis;

moving means for axially rotating and axially translating the rotatable means relative the bearing and impeller housing.

3,291,222
AGRICULTURAL IMPLEMENT
Harold A. Ralston, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 13, 1964, Ser. No. 337,235
9 Claims. (Cl. 172—75)



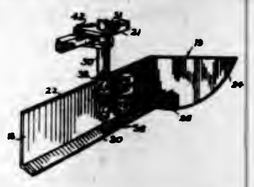
1. In a tractor mounted implement of the distributor type including means for raising and lowering the implement and an endless flexible element extended from the tractor to the implement,

means responsive to the tension in said flexible element, feeding means on said implement actuated by said flexible element, and

control means connected to and actuated by said tension responsive means to start and stop the actuation of said feeding means by said flexible element.

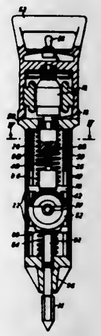
3,291,223
CULTIVATOR PLANT HOE
Frank Hammons, P.O. Box 83, Glen Allan, Miss.
Filed Apr. 1, 1964, Ser. No. 356,608
2 Claims. (Cl. 172—686)

1. A cultivator hoe including, a guide member adapted to be disposed in a vertical plane substantially parallel to the normal direction of travel of the hoe and spaced laterally from a crop row while in operation, said guide member comprising a straight upper horizontal edge and defining an arcuate leading front cutting edge extending from said upper horizontal edge to a rear vertical edge of said member, a single generally rectangular backplate formed integrally with said guide member extending in a vertical plane from the vertical plane rearwardly of the rear vertical edge of said guide member at an obtuse angle with respect to the plane of said guide member, and an integral elongate blade inclined downwardly at an obtuse angle



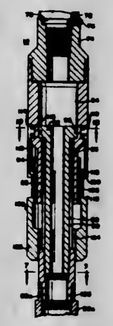
from the lower edge of said backplate and outwardly within the obtuse angle formed between said back plate and said guide member and engaging the vertical face of said guide member at the end of the cutting edge of the guide member adjacent the rear vertical edge of the guide member.

3,291,224
PERCUSSIVE HAMMERS AND THE LIKE
Max Arnold Stutz, 45 Clifton Way, London, England
Filed May 4, 1964, Ser. No. 364,640
Claims priority, application Great Britain, May 10, 1963, 18,613/63
3 Claims. (Cl. 173—49)



1. Percussive apparatus comprising a tubular casing, a driving motor mounted in the upper part of said casing, an axially-slidable drive shaft drivingly connected to said motor, a drive pinion on said drive shaft, a pair of coaxial, spaced-apart, substantially parallel bevel gear wheels arranged on opposite sides of the axis of said drive shaft in meshing engagement with opposite portions of said drive pinion whereby said bevel gear wheels are rotatable in opposite senses at the same speed of rotation, a reciprocatory tool-striker arranged between said bevel gear wheels, said casing having a bore in the lower part thereof, a reciprocatory percussive tool mounted in said bore for striking by said striker, means in said casing for guiding said tool-striker during reciprocatory movement thereof, a transverse bore in said striker, a rotatable transverse sleeve located at least partially in said transverse bore and having one end portion fixed to and supporting a first one of said bevel gear wheels, a rotatable transverse shaft located at least partially in said sleeve and having one end portion fixed to and supporting said second bevel gear wheel, a first fly-weight carried by said first bevel gear wheel, a second fly-weight fixed to and supported on said end portion of said transverse shaft on the outer side of said second bevel gear wheel, a third fly-weight fixed to and carried by said sleeve and located between said striker and said second bevel gear wheel, a fourth fly-weight fixed to and supported on the other end portion of said transverse shaft on the outer side of said first bevel gear wheel, said four fly-weights being of substantially equal mass and having substantially the same throw from the axis of said transverse shaft, said first and third fly-weights having the same angular position as each other on said sleeve, said second and fourth fly-weights also having the same angular position as each other on said transverse shaft.

3,291,225
DRIVE COUPLING FOR DRILL STRING
Charles D. Ferm, Dallas, Tex., assignor to Gardner-Denver Company, a corporation of Delaware
Filed July 3, 1964, Ser. No. 380,137
7 Claims. (Cl. 173—164)



1. A coupling device between a rotary driving member and a rotatably driven member comprising:

(a) a drive shaft axially shiftable but nonrotatable with respect to said driving member;

(b) said drive shaft being detachably secured to said driven member in driving relation thereto and for axial shifting therewith, detachment of said drive shaft and said driven member being effected by relative rotation therebetween;

(c) wrench means axially shiftable with respect to said driving member, said driven member and said drive shaft, but said wrench means being nonrotatable with respect to said driving member and said drive shaft;

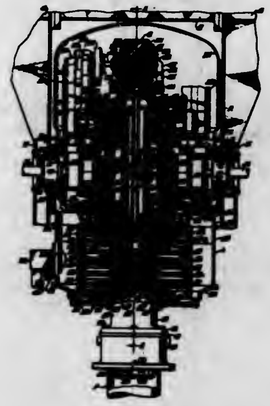
(d) said wrench means being conditioned for shifting with respect to said driven member and into nonrotatable engagement therewith in response to axial shifting of said drive shaft and said driven member relative to said driving member.

3,291,226
APPARATUS AND MATERIAL FOR CORE ORIENTATION
David E. Whakel, Rte. 1, Box 541, Laramie, Wyo.
Filed Dec. 24, 1964, Ser. No. 421,062
15 Claims. (Cl. 175—44)



1. A material for use in the determination of the direction of weak magnetic fields which comprises a liquid having the property of solidifying at the end of a predetermined time and a mass of finely divided magnetizable ceramic particles mixed in said liquid, said particles being substantially permanently magnetized upon subjection to a relatively strong magnetic field whereby after magnetization of said particles and when said liquid and mixed ceramic particles are subjected to a weak magnetic field the particles will align themselves with the field and upon solidification of the liquid will be retained in such alignment.

3,291,227
OSCILLATOR MEANS FOR SONIC PILE DRIVERS
Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed Jan. 28, 1965, Ser. No. 428,728
5 Claims. (Cl. 175—55)



1. A vibratory pile drive comprising an oscillator for generating an alternating force in the direction in which a pile is to be driven, said oscillator having a power input shaft and a vibrating body, a coupling for coupling said vibrating body to the pile and a motor and transmission for driving said power input shaft, wherein a vibration absorbing support is provided which is connected to said vibrating body and which supports said motor and transmission, substantially isolating said motor and transmission from said alternating force, said transmission including an output coupling shaft which is substantially perpendicular to the direction in which the pile is to be driven, which is axially aligned with said power input shaft and which has universal joint couplings at its opposite ends, and which oscillator has a large roller orbiting around a bearing race in said vibrating body, and which power input shaft is arranged to deliver drive force within a coaxial bore in said massive roller.

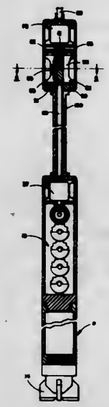
3,291,228
SONIC TECHNIQUES AND APPARATUS FOR EARTH BORING
Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif.
Filed Feb. 23, 1965, Ser. No. 434,423
14 Claims. (Cl. 175—65)

1. A method for earth boring by means of a drill bit attached to the end of a rod member comprising

longitudinally vibrating said rod member and said bit at a sonic frequency,

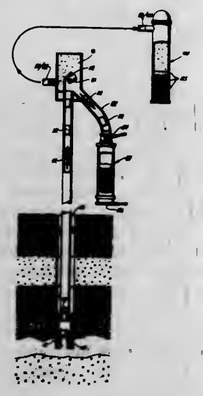
while said rod is being longitudinally vibrated tor-

sionally oscillating said bit to and fro at a substantially lower frequency than the longitudinal vibra-



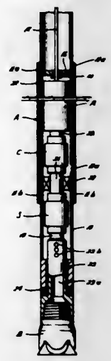
tion and through at least a substantial fraction of a revolution in each rotational direction.

3,291,229
DRILLING AND CORING APPARATUS AND METHOD
Reese T. Houston, Santa Susana, Calif., assignor to Spencer Webb, Los Angeles, Calif.
Filed Nov. 4, 1963, Ser. No. 321,243
6 Claims. (Cl. 175—60)



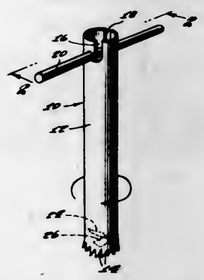
3. An apparatus of the type described, including a hollow drill stem; a hollow drill bit carried at the lower end of said drill stem; cutters carried at one end of said drill bit; means disposed within said hollow drill bit for deflecting a core sample which extends upwardly into the same; means for rotating the drill stem and drill bit; means providing a vacuum at the upper end of the hollow drill stem to draw cuttings upwardly through the drill stem, said cuttings including core fragments provided by said deflecting means breaking off a portion of said core sample and including core particles; and means associated with the top of the drill stem for collecting such cuttings, said means including a deflector for separating said core fragments from said particles by deflecting such fragments.

3,291,230
WELL DRILLING APPARATUS
Roy H. Cullen, Charles H. Elliott, Jimmie R. Aker and Thomas J. Gilchrist, Houston, Tex.; said Elliott, said Aker, and said Gilchrist, assignors to said Cullen
Original application Nov. 12, 1963, Ser. No. 323,024. Divided and this application Oct. 18, 1965, Ser. No. 496,988
8 Claims. (Cl. 175—101)



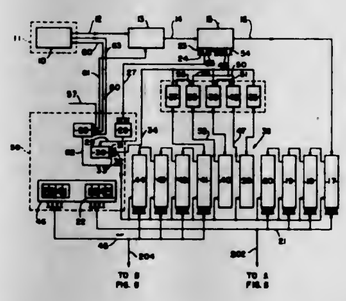
1. A drilling apparatus, comprising:
(a) a tubular body adapted to be supported in a well bore,
(b) upper and lower seal means in said body for confining oil therein to form an oil chamber,
(c) a flexible sleeve in said body between said lower seal means and said upper seal means,
(d) said flexible sleeve forming at least a portion of the wall of the oil chamber, and
(e) means establishing communication between the area in said body externally of said flexible sleeve and the area externally of said body for exposing the flexible sleeve and the oil therein to the pressure of the fluid in the area externally of said body to substantially equalize the pressure of said oil with that of said fluid.

3,291,231
POST HOLE DIGGER
Andrew E. Kammer, 407 Eldert Lane, Brooklyn, N.Y.
Filed Dec. 29, 1964, Ser. No. 421,800
3 Claims. (Cl. 175—170)



1. A post hole digger device comprising:
(a) a cylindrical sleeve for coring, retaining and releasing soil,
(b) a circumferential row of cutting teeth on the lower terminal end of said sleeve,
(c) at least one cutting blade interiorly of said sleeve having a cutting edge adjacent the base of said cutting teeth,
(d) a handle bar removably connected to the upper end of said sleeve,
(e) said cutting teeth are each deflected outwardly of the outer cylindrical surface of said sleeve, and
(f) the removable connection of said handle bar with said sleeve comprising a pair of diametrically positioned reverse bayonet slots formed in the upper end of said sleeve and opening into the upper terminal end of said sleeve, whereby said handle bar is inserted horizontally simultaneously into both bayonet slots and retained therein by a slight turning movement,
(g) a flat blade portion,
(h) a curved bracket portion corresponding in curvature to the inside cylindrical wall curvature of said sleeve,
(i) a leading cutting edge on said blade portion extending transversely thereof, and
(j) means rigidly securing the bracket portion of said cutting blade to the inside wall of said sleeve.

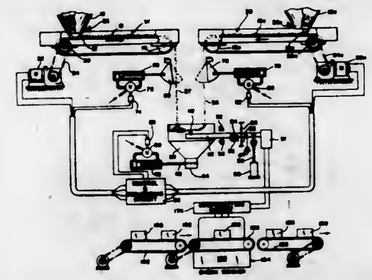
3,291,232
COMPUTING, PRINTING AND LOGGING WEIGHING SCALE SYSTEM
Robert E. Bell, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Continuation of application Ser. No. 363,856, Apr. 30, 1964. This application Mar. 3, 1966, Ser. No. 536,536
9 Claims. (Cl. 177—3)



9. A weighing scale system comprising, in combination, first means for weighing and recording the weight of a commodity, printing type for printing the name of the commodity, second means for logging and adding weight data made available by said first means relating to the commodity, and commodity name means for both setting up the printing type and providing information for the second means identifying the logged weight data in accordance with the respective commodity name.

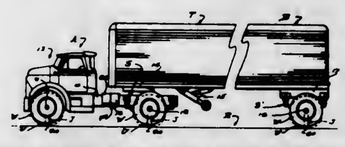
3,291,233
WEIGHING APPARATUS
Gerald C. Mayer, Wayne, N.J., assignor to Howe Richardson Scale Company, Clifton, N.J., a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,317
18 Claims. (Cl. 177—31)

1. In combination with a pre-weighing apparatus for weighing out discrete measured drafts of material, means for delivering material to said apparatus, checking weighing means for detecting deviations in the weights of said drafts from a pre-selected weight range, and means controlling the cutoff of material being delivered to said apparatus and being responsive to the detection of weight deviations by said check weighing means for compensatively adjusting the amount delivered to said pre-weighing apparatus only when said check weighing means de-



tects weight deviations in the same direction from said range in a plurality of consecutive weighed-out drafts.

3,291,234
VEHICLE WEIGHER USING HYDRAULIC JACKS WITH ELECTRIC LOAD CELLS
Charles R. Woodburn, 440 Terraine, Long Beach, Calif.
Filed Apr. 12, 1966, Ser. No. 542,141
13 Claims. (Cl. 177—136)

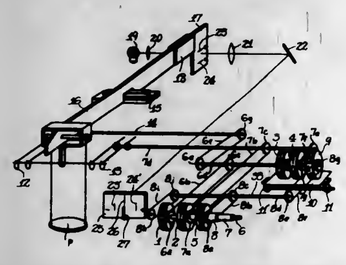


1. An apparatus for weighing an elongate truck having a plurality of longitudinally spaced, transversely extending axles with roadbed engaging wheels at their opposite ends, said apparatus comprising a jack unit fixed to each end portion of each axle, each jack unit including a cylinder and ram unit, means at one end of the cylinder pivotally supporting the cylinder and ram unit for movement between an unactuated horizontal portion to an actuated vertical position below the axle, a roadbed engaging pad at the free end of the ram, electric means interposed in the cylinder and ram and the ram unit for responding to the magnitude of the load imposed therethrough, and drive means to shift said cylinder and ram unit between said normal and actuated positions, control means connected to said drive means of the jack units to selectively and simultaneously shift said cylinder and ram units to from one of said positions to the other, fluid supply means connected with the several cylinder and ram units to simultaneously and selectively conduct fluid to and from said cylinder and ram units when said units are in their actuated position to extend and retract said unit.

3,291,235
DIGITAL INDICATING DEVICE FOR BALANCE
Hideo Mishima and Nobuyuki Okamoto, Kyoto, Japan, assignors to Shimadzu Seisakusho Ltd., Kyoto, Japan, a corporation of Japan
Filed Jan. 29, 1965, Ser. No. 429,962
4 Claims. (Cl. 177—178)

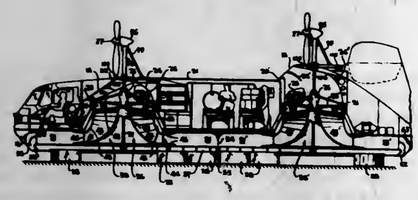
1. In a digital indicating device for a beam type balance, using a series of weights for balancing, the combination comprising a screen, an optical means projecting onto said screen images which are shifted in accordance with inclination of the beam element of said balance, an indicating wheel including on the periphery thereof a train of numerals for indicating respectively fractional values of the smallest weight used for beam balancing, a member movable with reference to said images pro-

duced on said screen, and transmitting means provided between said movable member and said indicating wheel for effecting rotation of said indicating wheel in accord-



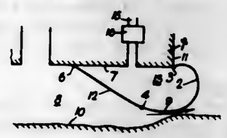
ance with the displacement of said movable member to show said fractional value digitally by one of said numerals.

3,291,236
GROUND EFFECT MACHINE
William F. Foshag, Westmoreland, Md., and Gabriel D. Boehler, Washington, D.C., assignors to Aerophysics Company, Washington, D.C., a corporation of the District of Columbia
Filed Oct. 12, 1961, Ser. No. 144,777
13 Claims. (Cl. 180—7)



1. A ground-effect machine comprising a body having a bottom surface containing a peripheral nozzle for the delivery of an annular jet of air to confine air under pressure to support said machine, a centrifugal fan having a rotor mounted for rotation on a substantially vertical axis, said rotor having a hub with a small diameter upper portion forming a substantially vertical walled cylindrical surface and flaring continuously to a large diameter lower portion with the surface of said lower portion substantially horizontal, a set of impeller blades each secured along one edge to said hub and having the opposed edge generally parallel to the contour of said hub, a flared shroud conforming to the contour of said opposed edges and attached thereto to form a central intake opening around said cylindrical surface and a peripheral exit opening between said shroud and the horizontal portion of said hub, said hub, shroud and blades forming a plurality of closed conduits between said central intake opening and said peripheral exit opening, conduit means for conducting air delivered from said peripheral exit opening to said peripheral nozzle, said shroud and the horizontal portion of the hub extending radially beyond the ends of the respective impeller blades and defining therearound an annular rotary diffuser at said exit opening, the maximum diameter of said shroud being no greater than that of said diffuser, and means for driving said rotor, said last-mentioned means including a rotary output member and gearing connecting said member in driving relation to said rotor, said last-mentioned means constituting the sole means for driving the fan.

3,291,237
VEHICLES FOR TRAVELLING OVER A SURFACE
Leslie Arthur Hopkins, Hythe, and Alan Ritson Tripp, Southampton, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed Oct. 17, 1963, Ser. No. 316,852
Claims priority, application Great Britain, Oct. 18, 1962, 39,546/62
17 Claims. (Cl. 180—7)

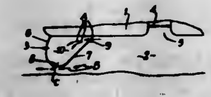


1. A vehicle for travelling over a surface of the type which is supported above the surface by at least one cushion of pressurised gas formed and contained in a space beneath the vehicle, including a flexible skirt attached to the lower part of the vehicle containing the cushion for at least part of its periphery, said skirt comprising at least one inflatable, gas-retaining thin walled flexible member having first and second edges, the cross-sectional shape of said member normal to the periphery of the cushion space being a substantially continuous curve extending from said first edge initially in a direction outwardly away from the cushion space, thereafter extending downwardly and then inwardly and then upwardly, ending in said second edge, so as to present on its lower surface a continuous convex face which is presented towards the surface over which the vehicle is supported, the first edge of said flexible member being attached to the bottom surface of the vehicle and the second edge thereof lying below and being movable relative to said bottom surface, and flexible means connecting the second edge of said flexible member to the bottom surface of the vehicle at a position inwards towards the centre of the cushion space relative to the position of said second edge, means for supplying gas directly to the cushion space without passing through the space within said flexible member, said flexible member being normally inflated to a pressure substantially equal to the cushion pressure and being free of internal restraint, whereby, under the action of the inflation pressure within said member and the flow of gas outwardly from the cushion space beneath the convex lower surface of said member, said member assumes a profile having a pressure distribution tending to maintain said lower surface clear to the surface over which the vehicle is supported, said flexible member being free to deflect both upwardly and downwardly from a normal position and to change in shape upon variations in the distance between the bottom surface of the vehicle and the surface over which the vehicle is supported, an upwards deflection of any portion of said flexible member also causing an outward deflection thereof so that the centre of pressure of the vehicle supporting cushion moves outwardly towards said portion and thereby exerts a stabilising effect on the vehicle.

3,291,238
AIR CUSHION BORNE VEHICLES
Wilfred James Eggington, Buffalo, N.Y., assignor to Vickers-Armstrongs (Engineers) Limited, London, England, a British company
Filed Feb. 21, 1964, Ser. No. 346,584
Claims priority, application Great Britain, Apr. 24, 1963, 16,202/63
7 Claims. (Cl. 180—7)

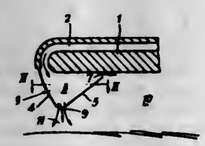
1. A vehicle that is adapted to be supported at least partially by an air cushion, the vehicle comprising a vehicle body having a space therebeneath in which the air

cushion is formed and located, a skirt depending from the underside of the vehicle body to minimize leakage of air laterally from the air cushion in said space which is arranged to be supplied inwardly of the skirt with air for the cushion, said depending skirt being of inflatable form and having inner and outer walls, the inner wall extend-



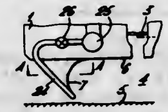
ing in a direction downwardly and outwardly from the vehicle body, said walls defining a space therebetween arranged to be supplied at the top of the skirt with air from the air cushion to inflate the skirt, an air outlet at the bottom of the skirt permitting escape of air from said space between said inner and outer walls.

3,291,239
AIR CUSHION BORNE VEHICLES
Wilfred James Eggington, Buffalo, N.Y., and Gordon Victor Watts, Swindon, England, assignors to Vickers-Armstrongs (Engineers) Limited, London, England, a British company
Filed May 19, 1964, Ser. No. 368,611
Claims priority, application Great Britain, May 24, 1963, 20,950/63
2 Claims. (Cl. 180—7)



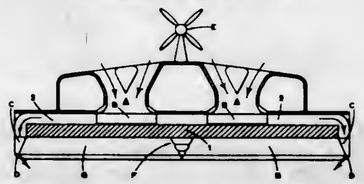
1. A vehicle adapted to be supported at least partially on an air cushion, the vehicle comprising a vehicle body having a peripheral part; a flexible skirt on the underside of the vehicle body and constituting a side of a space that receives air from forming the air cushion, said skirt including an outer wall of flexible material extending downwardly and inwardly and having its upper edge effectively carried by the peripheral part of the body of the vehicle, said skirt also comprising an inner wall extending downwardly and outwardly relative to the vehicle body and spaced from the outer wall, upright flexible webs located between and spaced at intervals along said walls, the webs being attached to the inside surfaces of the walls along lines extending upwardly and downwardly of said surfaces, said webs extending inwardly substantially perpendicular to the general direction of the adjacent part of said outer wall along said peripheral part of the vehicle body and being effectively connected to the underside of the vehicle body thereby to limit outward displacement of said outer wall; and ducting for supplying air under pressure for the skirt and air cushion, said ducting being positioned to supply air to the upper part of the inside surface of the outer wall, the space between said inner and outer walls communicating with the air cushion space to enable air to flow from the former space to the latter space, and the bottom edges of said walls forming an air outlet through which air supplied by the ducting flows downwardly to form an air curtain below the skirt.

3,291,240
AIR CUSHION VEHICLES HAVING DEFLECTABLE WALL STRUCTURES
Frederick Kenneth Driver, Lymington, England, assignor to Hovercraft Development Limited, London, England, a company of Great Britain
Filed July 1, 1964, Ser. No. 379,462
Claims priority, application Great Britain, July 31, 1963, 30,449/63
12 Claims. (Cl. 180—7)



1. A vehicle for operating over a surface and which, in operation, is supported above that surface, at least in part, by a cushion of pressurised gas formed and contained in a space beneath the vehicle, in which the space is bounded for at least part of its periphery by a deflectable wall structure comprising a flexible diaphragm extending downwardly from the bottom surface of the vehicle at the periphery of the cushion space for the full height of the wall structure to contain said cushion, and a series of struts extending between the bottom surface of the vehicle and the lower edge of the diaphragm, outboard of the diaphragm and outside the cushion space, and having their lower ends connected to the lower edge of the diaphragm to hold the diaphragm in position against the cushion pressure, each strut being normally inclined downwardly and inwards towards the cushion space and at least part of each strut being deflectable relative to the vehicle upon contact of the strut with the surface over which the vehicle is operating, the outboard surface of the diaphragm being exposed to a pressure less than the pressure in the cushion space, whereby the diaphragm normally assumes an outwardly convex curved shape and rolls upwardly over the inboard faces of the struts when the struts are deflected inwards towards the cushion space, the cushion pressure exerted against the rolled up portion of the diaphragm acting to deflect the struts outwardly towards their normal positions.

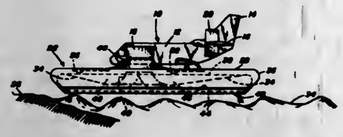
3,291,241
FLEXIBLE UNDERSTRUCTURES FOR GROUND EFFECT VEHICLES
Richard Stanton Jones, Cowes, Isle of Wight, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed July 15, 1964, Ser. No. 382,866
Claims priority, application Great Britain, July 27, 1963, 29,882/63
10 Claims. (Cl. 180—7)



1. A ground effect machine of the type which, during at least one mode of operation, is wholly or partly supported by a pressurized gaseous cushion formed and contained beneath the machine, said machine having at least one keel which comprises an elongated flexible container depending downwardly from the machine within the cushion area, the vertical cross-section of said keel being bulbous over at least a substantial portion of the length of the keel, the bulbous cross-section presenting two or

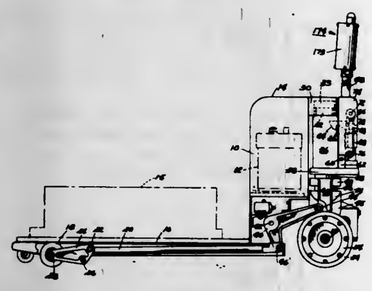
more superimposed bubbles, adjacent bubbles being separated by a substantially horizontal web, and each bubble except the uppermost one having a smaller cross-sectional area than the one immediately above, said flexible container being constructed and arranged to be inflated by gaseous fluid under pressure, and being provided with rearwardly opening and continuously open vents for the escape of said gaseous fluid and of any water that may find its way into the container.

3,291,242
COMBINED VTOL AIRCRAFT AND GROUND EFFECTS MACHINE
Anibal A. Tinajero, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 23, 1965, Ser. No. 450,555
6 Claims. (Cl. 180—7)



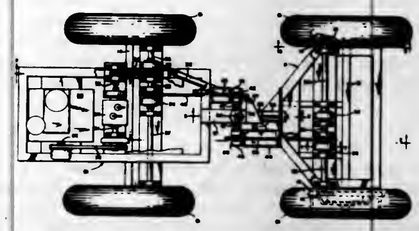
1. A landing platform for a VTOL aircraft comprising an unpowered ground effects machine, said ground effects machine having downward lift flow confining means disposed substantially above the top surface of said ground effects machine adapted to be secured to the engine ducts of a VTOL aircraft for receiving the discharge therefrom and for powering said ground effects machine from the discharge of said ducts.

3,291,243
POWER OPERATED VEHICLE
Walter E. Friesser, Richton Park, Ill., assignor to O. F. Jordan Company, Inc., East Chicago, Ind., a corporation of Indiana
Filed July 5, 1963, Ser. No. 293,035
14 Claims. (Cl. 180—19)



14. In an industrial truck the combination comprising a frame, a drive assembly pivotally connected to said frame including a shaft, a drive wheel rotatably mounted on said shaft, a driving member rotatably mounted on said shaft, the rim of said drive wheel surrounding said driving member, a clutching member, said driving member having a peripheral flattened portion for accommodating said clutching member in the space thereby provided between said driving member and said rim, a clutch control member, said clutching member being positioned within said space by said clutch control member, said clutch control member having a first position with respect to said driving member but adapted to selectively assume a second position in which said clutching member is brought into engagement with both said driving member and said rim, electromechanical means for selectively causing said clutch control member to assume said second position, and switch means connected to said frame and operative to actuate said electromechanical means in response to a predetermined motive force applied to said frame.

3,291,244
CHAIN-DRIVEN ARTICULATING FRAME VEHICLE
Dwight A. Garrett, Enumclaw, Wash., assignor to Garrett Enumclaw Co., a corporation of Washington
Filed Mar. 31, 1965, Ser. No. 444,138
7 Claims. (Cl. 180—51)

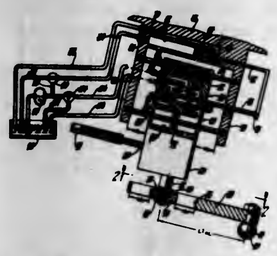


7. A steerable vehicle comprising: a front frame section supporting a power plant, a rear frame section hinged to said front section for swing movement about a vertical axis, means for swinging the rear section relative to the front section about said hinge axis for steering the vehicle, a respective set of two traction wheels carried by each frame section for rotation about a coinciding transverse horizontal axis, one wheel at each of the two sides of the section, a cross-shaft on each frame section journaled for rotation about an axis paralleling the rotary axis of the related traction wheels, stub shafts journaled at the inner ends of the frame sections for rotation about transverse horizontal axes which traverse the hinge axis of the sections and coincide when the longitudinal median lines of the frame sections are in an in-line relation, said stub shafts having their inner ends spaced apart, a spindle extending between and connected by universals with said inner ends of the stub shafts, driving connections from the power plant to both the cross-shaft and the stub shaft of the front section, a driving connection from the stub shaft of the rear section to the cross-shaft of the rear section, and intermeshing means on the cross-shafts and the traction wheels producing a reduction final drive to each of the wheels, said reduction final drives comprising a respective sprocket wheel fixed to each end of each cross-shaft and having the teeth engaging in the interstices of a ring-shaped length of chain rigidly secured to the inside face of the related traction wheel concentric to the rotary axis of the wheel.

3,291,245
VEHICLE VARIABLE RATIO STEERING SYSTEM
Lubomyr O. Hewko, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,683
17 Claims. (Cl. 180—79.2)

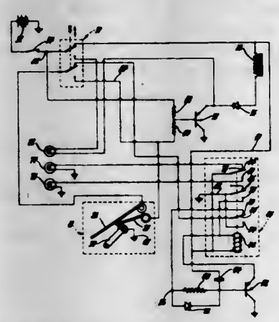
1. In a vehicle having steering linkage including an angularly moveable member, a linkage member whose effective length is a function of the overall steering linkage ratio, means operatively connecting said members for conjoint angular movement and for permitting relative transverse movement to vary the effective length of said linkage member, a servomechanism operatively connected to one of said members operable to effect relative

transverse movement between said members and said servomechanism including means responsive to vehicle



speed to control the operation of said servomechanism so that the overall steering linkage ratio is varied as a function of vehicle speed.

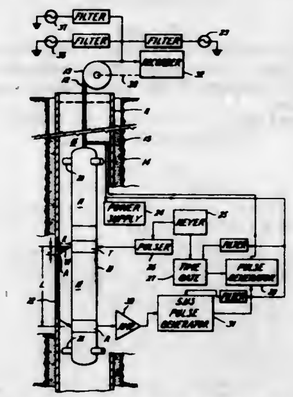
3,291,246
DELAYED AUTOMATIC LOCK-UP SPEED CONTROL AND SPEED WARNING SYSTEM
Ronald L. Colling, Davison, and Jack H. Perry, Fenton, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 400,090
15 Claims. (Cl. 180—82.1)



1. An automatic lock-up speed control system for a motor vehicle, said system comprising a source of power, vehicle throttle control means for controlling the speed of said vehicle, on-off switching means connected between said source and said throttle control means, speed transducer means responsive to the speed of said vehicle for controlling said on-off switching means and for maintaining the speed of said vehicle at a predetermined set speed, additional control means responsive to the speed of said vehicle for controlling said speed transducer means whereby said speed transducer means is initially rendered incapable of controlling said on-off switching means until said vehicle speed is above said set speed.

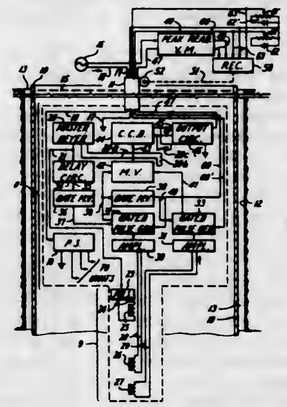
3,291,247
ACOUSTIC LOGGING SYSTEMS
Pierre Majani, Maracaibo, and Alan V. Rushton, Caracas, Venezuela, assignors, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Jan. 26, 1960, Ser. No. 4,635
13 Claims. (Cl. 181—.5)

1. In a method of detecting the quality of acoustic coupling at a location of material intermediate of a casing and a borehole traversing earth formations the steps of: generating a pulse of acoustic energy within a casing to travel along said casing between spaced first and second locations, intercepting at the second location the pulse of acoustic energy traveling along said casing and deriving an indication of an amplitude characteristic of a preselected portion of said intercepted acoustic pulse occurring during a predetermined time interval following



the first arrival of acoustic energy at said second location indicative of the quality of acoustic coupling of material intermediate of the casing and the borehole between the spaced locations.

3,291,248
ACOUSTIC LOGGING SYSTEMS
Pierre Majani, Maracaibo, and Alan V. Rushton, Caracas, Venezuela, assignors, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 4,809, Jan. 26, 1960. This application Mar. 30, 1960, Ser. No. 18,767
2 Claims. (Cl. 181—.5)



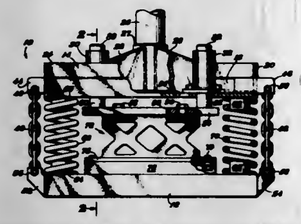
1. The method of investigating the quality of the bonding of an annulus of cement to a metallic casing which has been cemented in a borehole comprising the steps of: probing intervals of the casing with acoustic energy traveling between spaced locations; setting the energy level at which acoustic energy is detected to obtain sensible indications of the travel time of acoustic energy through the casing between the spaced locations at an interval along the bore where the casing is not bonded to the cement; re-setting the energy level at which acoustic energy is detected to obtain sensible indications of the travel time of acoustic energy through the casing between spaced locations at an interval along the bore where the casing is bonded to the cement; and thereafter finally setting the energy level at

which acoustic energy is detected to obtain sensible indications differentiating between the travel time of acoustic energy between said spaced locations through a cement bonded casing and a casing which is not bonded to the cement.

3,291,249
VIBRATION ISOLATION DEVICE

Marvin G. Bays, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed Mar. 16, 1964, Ser. No. 352,027
3 Claims. (Cl. 181—.5)



1. In combination with a seismic transducer having a baseplate, vibration isolation device for applying the weight of a transporting vehicle as a static load to the baseplate to hold the baseplate against the ground while isolating the motion of the baseplate from the vehicle or, alternatively, for lifting the baseplate and transducer for transport, comprising:

an elongated member spaced from and disposed generally parallel to the baseplate,

a pair of flexible tension members interconnecting the ends of the elongated member and the baseplate for maintaining the member within a maximum spacing from the baseplate,

a pair of spaced coil springs compressively disposed between the baseplate and the elongated member and contacting each,

a bulk spring means connected to the baseplate between the coil springs and between the baseplate and the elongated member,

at least one pin means connected to the bulk spring means and extending away from the baseplate,

an aperture in the elongated member slidably receiving each of the pin means for transmitting lateral loads on the elongated member to the bulk spring means while permitting movement of the elongated member away from the bulk spring means, and

the flexible tension members, the coil springs and the pin means being dimensioned such that when the tension members are taut to lift the baseplate, the pin means will be retained in the respective apertures and the coil springs will be at least slightly compressed, and when both the coil springs and the bulk spring means are compressed, the tension members will be loose to permit vertical movement of the baseplate.

3,291,250
ANALOGUE DEVICE FOR GEOPHYSICAL PROSPECTING

Park H. Miller, Jr., Del Mar, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed July 13, 1964, Ser. No. 382,085
5 Claims. (Cl. 181—.5)

1. A seismic signature generator comprising a long hollow cylindrical body, gas confined within said body, means responsive to an electrical signal for producing continuous waves in said gas at one end of said body, a plurality of selectively operable means for producing acoustic discontinuities in said gas at respective selected points along said body, thereby causing reflection of said acoustic waves, and means responsive to said reflected acoustic waves returning to said one end of said body

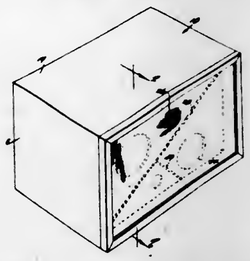


for producing a simulated seismic waveform, the velocity of sound in said gas and the distances of said selected points from said one end being such that the times of reflection of said acoustic waves in said gas are of the same order as the times of reflection of seismic waves from the reflecting strata being simulated.

3,291,251
DIVIDED PANEL BOARD FOR HI-FI SPEAKER SYSTEMS

Edmund A. Zemrowski, Michigan City, Ind., assignor of fifty percent to Stanley A. Strzelecki, Sr., Michigan City, Ind.

Filed Mar. 14, 1966, Ser. No. 533,987
1 Claim. (Cl. 181—31)

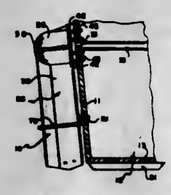


A divided panel board for hi-fi speaker assembly kit systems comprising a cabinet for a set of three speakers, an inner molding mounted in a common plane from the inner periphery of the inside surface of the cabinet forming a hollow frame member therefor, and extending throughout the entire periphery thereof, a set of three panels forming a composite coplanar arrangement and mounted from the inner molding, a free space disposed between each of the panels, and each of said panels being sized in ascending order to form large, intermediate and small resonance panels, a bass speaker mounted generally centrally of the large panel, a mid-range speaker mounted generally centrally of the intermediate panel, a treble speaker mounted generally centrally of the small panel and a back resonance panel being mounted from the rear of the cabinet and in substantially parallel relation thereto, the panels mounting the bass and the treble speakers are generally of triangular configuration, the intermediate panel and the treble speaker panel having at least two free and unsupported sides.

3,291,252
UNDERWATER EXHAUST MUFFLER

John S. Davis, Vancouver, British Columbia, Canada, assignor to A. C. Rubber Manufacturing Co. Ltd., Vancouver, British Columbia, Canada

Filed Oct. 20, 1965, Ser. No. 498,468
12 Claims. (Cl. 181—39)



8. An exhaust muffler adapted to be mounted on the transom of a boat over an exhaust pipe thereof and to extend down into the water, comprising a body having an upper section and a lower section depending therefrom, a horizontal passage in the upper section having an entrance at an end thereof opening out from the upper section and into which an end of the exhaust pipe extends when the body is secured to a boat transom, two passages of circular cross section in the vertical section communicating at upper ends thereof with the horizontal passage and opening outwardly from a lower end of said vertical section, the combined cross sectional area of the two passages being substantially equal to the area of said entrance, said lower section having a vertical leading edge and diverging in cross section rearwardly from said leading edge to a maximum width and converging rearwardly from said width.

3,291,253
TRACTOR FRONT LOADER

Vernon W. Wible, 10307 74th St., W., Shawnee, Kans.

Filed July 6, 1965, Ser. No. 469,803
16 Claims. (Cl. 182—2)

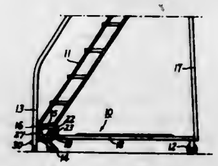


1. A front loader attachment for tractors having a fluid power circuit, comprising base plates mounted on each side of the tractor; a pair of parallel angularly shaped loader arms pivotally connected at their rear ends to said base plates respectively, and having their rear legs normally extending substantially horizontally and parallel with the longitudinal axis of the tractor, the front legs of the arms extending forwardly and downwardly beyond the front end of the tractor to points adjacent the ground level; means interconnecting the arms to form a rigid unit; an axially disposed platform; converging pairs of parallel struts pivotally connecting the front and rear end portions of the loader arms with coaxial pivots disposed at the rear end of the platform; means for raising and lowering said loader arms; a shaft journaled in the loader arms; an arm keyed to said shaft; a link pivotally connected to the arm and pivotally connected to the front end of said platform; and means for revolving said shaft to control the angle of tilt of the platform in any adjusted height of the platform.

3,291,254
MOBILE LADDERS

Robert J. Mihalik, Uniontown, Pa., assignor to Harsco Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 5, 1965, Ser. No. 477,442
4 Claims. (Cl. 182—15)



1. In a mobile ladder assembly the combination which includes a base having at its front end laterally spaced supporting legs and at its rear end laterally spaced supporting casters, a mounting step constituting the actuating arm of a bellcrank fulcrumed at the front end of said base and normally biased counter-clockwise, said actuating arm having a latch arm extending downwardly from front end portions thereof, a catch lever pivoted at its rear end to said base and positioned with its front end extending forwardly between said front legs, a swivel caster mounted on and depending from an intermediate portion of said catch lever, a catch bar transversely arranged on said catch lever in operative relation to said latch arm, said latch arm including a hook portion arranged and adapted to be operatively engaged with and to be disengaged from said catch bar whereby, when the rear end portion of the actuating arm of the bellcrank is deflected downwardly by pressure applied on rear portions of said step, said latch arm is actuated clockwise to disengage said hook portion thereof from said catch bar and thus free the front end of said catch lever to rock clockwise into inoperative position thereby to release said legs into base supporting condition and, when the front end of said catch lever is pressed downwardly from said inoperative position, said catch bar is returned to operative hook engaging position, thereby to move said caster to and retain the same in operative position to support the front end of said base in mobile condition and to retain said legs in raised non-supporting position.

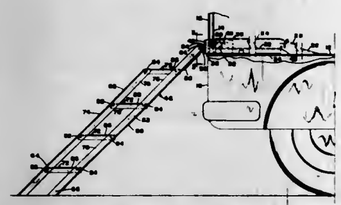
3,291,255
BUS EMERGENCY STEPS

Carl S. Glatfelter, 1630 Monroe St., York, Pa.

Filed July 20, 1964, Ser. No. 383,796
4 Claims. (Cl. 182—88)

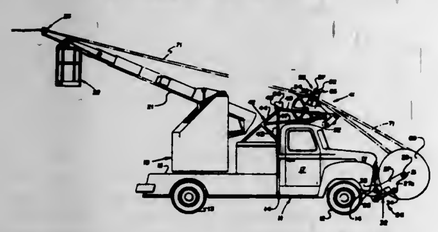
1. A step device comprising a support and a folding step assembly, said support including a transversely extending yoke having a pivotal mounting intermediate its ends for pivotal movement thereof about a longitudinally extending axis, said folding step assembly including a pair of transversely spaced lower side rails each pivotally connected at one end to a respective end of said transversely extending yoke, a pair of transversely spaced

upper side rails, a plurality of rectangular steps, each of said steps at one pair of opposed corners having a pivotal connection with a respective lower side rail and at the other pair of opposed corners having a pivotal connection with a respective upper side rail, said pivotal connections



being spaced along said rails to define parallelograms between said steps and the side rail portions therebetween, whereby said folding step assembly is adapted to be pivotally folded to a collapsed position and pivotally unfolded to a distended position of use.

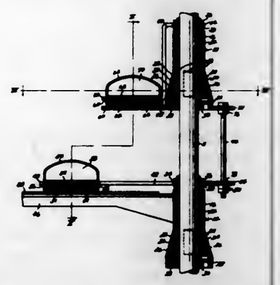
3,291,256
APPARATUS FOR PLACING AERIAL FLEXIBLE ELONGATE MEMBERS
Jay M. Ettel, Los Altos, Calif., assignor to Telsta Corporation, San Carlos, Calif., a corporation of California
Continuation of application Ser. No. 308,852, Sept. 13, 1963. This application Oct. 18, 1965, Ser. No. 497,425
8 Claims. (Cl. 182—129)



1. In apparatus for placing an aerial flexible elongate member such as cable, a self-propelled vehicle, a boom structure having a workman's platform on its outer end, the boom structure being mounted on the vehicle and including means for rotating the outer end of the boom structure and the workman's platform secured thereto about a vertical axis, raising and lowering the same about a horizontal axis and moving the same toward and away from the vehicle, guiding mens mounted on the outer end of the boom structure and movable with the outer end of the boom structure, reel carrying means mounted on the vehicle forward of the boom structure, additional guiding means mounted on the vehicle between the reel carrying means and the boom structure, a reel removably carried by and rotatably mounted in the reel carrying means, a length of flexible elongate member coiled on said reel and being guided by said first named guiding means and said additional guiding means as it is payed off of the reel, said reel being free to rotate as the flexible elongate member is unwound and means mounted on the vehicle adjacent the reel carrying means for loading reels into and unloading reels from the reel carrying means.

3,291,257
CLIMBER-TYPE SCAFFOLD
Forest M. Ellis, 2301 N. 59th St., Kansas City, Kans.
Filed May 19, 1965, Ser. No. 456,918
7 Claims. (Cl. 182—134)

1. A climber-type scaffold comprising:
(a) a vertical standard,
(b) a pair of gripper devices mounted slidably on said standard one above the other, each of said gripper devices including a toe stall for receiving a foot of the operator whereby he may lift one gripper device while supporting his weight on the other, each of said toe stalls including a weight-supporting step block and a strap affixed at its ends to said block and extending thereover to form a toe hole therebetween through which the operator may insert his foot, said step block and strap being sufficiently narrow, in a direction axial to said toe hole, that the operator may rock his foot vertically in said toe hole to lower a portion of his foot below the surface of said step block,



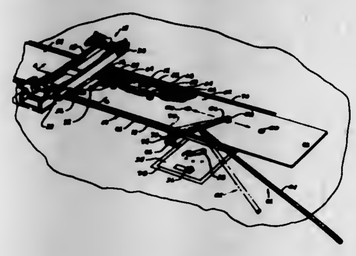
(c) locking means included in each of said gripper devices and normally operable to permit elevation of said gripper device on said standard but to prevent lowering of said gripper device on said standard,
(d) manually operable means for releasing said locking means whereby to permit lowering of said gripper device on said standard, said releasing means including an arm extending adjacent said step block slightly below the surface thereof, and being operable by downward movement thereof relative to said step block to release said locking means, and
(e) a work platform carried by one of said gripper devices.

3,291,258
TELESCOPIC LADDERS
Archie J. Twilley, 2280 Viewmont Way W., Seattle, Wash.; Ruth I. Twilley, executrix of said Archie J. Twilley, deceased
Filed Nov. 24, 1964, Ser. No. 413,524
18 Claims. (Cl. 182—211)



1. A telescopic extension ladder comprising a top section, a bottom section, and at least one intermediate section, each of said sections including a pair of parallel, laterally spaced stiles and a single tier of rungs extending between and interconnecting said stiles, with the stiles of the top and intermediate sections being telescopically received in the stiles of said bottom section, with the tiers of rungs of the top and intermediate sections being in parallelism with each other and with the tier of rungs of the bottom section, with the stiles of the bottom and intermediate sections being of channel form and each comprising a web, a pair of side flanges formed integral with and extending inwardly from the edges of said web, a rung mounting flange formed integral with and extending inwardly from one of said side flanges and extending in spaced parallelism with said webs, and a stiffening lip formed integral with and extending inwardly from the other one of said side flanges, and also extending in spaced parallelism with said webs, with the stiles of the top section each comprising a web that extends in closely spaced parallelism with the webs of the stiles of said bottom and intermediate sections, with the ends of the rungs of the said top section being secured to the webs of that section's stiles, and with the ends of the rungs of said intermediate and bottom sections being secured to the rung mounting flanges of the stiles of said sections.

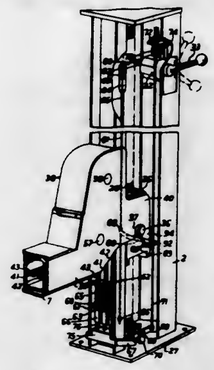
3,291,259
VEHICLE LIFT
Ion V. K. Hott and David M. Goldswig, Dayton, Ohio, assignors to The Joyce-Cridland Company, Dayton, Ohio, a corporation of Ohio
Filed Oct. 20, 1965, Ser. No. 498,951
4 Claims. (Cl. 187—8.41)



1. In a vehicle lift installation of the type having a lift post mounted for sliding movement along a floor pit, means for moving said lift post along said pit comprising: a plate connected to said lift post and at least partially overlying said pit, said plate having a plurality of detent surfaces spaced along the length thereof; a fixed abutment spaced horizontally from said detent surfaces and located beside and adjacent the top of said pit; and a manually operated leverage tool having horizontally spaced working surfaces simultaneously engaged with one of said detent surfaces and a surface portion of said fixed abutment, said leverage tool pivoting about a generally vertical axis against said fixed abutment when said plate is moved along said pit.

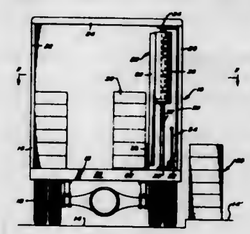
3,291,260
VEHICLE LIFTS OR HOISTS
Denis Frederick Woor, Derriford, Plymouth, and Ronald Edward Farnfield and Thomas Eric Greenwood, Laira, Plymouth, all of Devon, England, assignors to Tecalemit (Engineering) Limited, Devon, England
Filed June 25, 1965, Ser. No. 467,026
Claims priority, application Great Britain, June 26, 1964, 26,613/64
3 Claims. (Cl. 187—8.47)

1. A lift for vehicles and the like, said lift comprising a platform, means including a plurality of cables for supporting said platform in a substantially horizontal position, a drive for raising and lowering said platform, and safety mechanism, which mechanism includes at least one actuating member, means responsive to operation of said actuating member to stop the said drive, a plurality of end members each of which is connected to one end of one of said cables, and means biasing each of the said end members against the tension of its cable in a direction



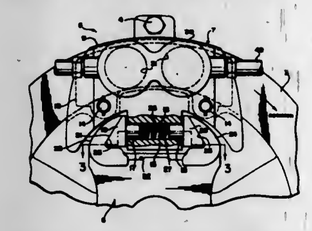
to operate said actuating member, such that a loss of tension in said cable causes its said end member to operate said actuating member to stop the drive.

3,291,261
TRUCK ELEVATOR
Morrison L. Robb, 1708 Wynnam St., Philadelphia, Pa.
Filed Sept. 22, 1965, Ser. No. 489,284
4 Claims. (Cl. 187—9)



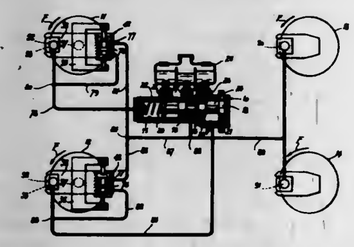
1. A truck elevator comprising a cylinder surrounding a piston rod, said piston rod extending through and beyond the ends of said cylinder, a piston fixed to said rod within said cylinder, whereby said cylinder may be reciprocated along said rod, said piston defining end walls of an upper and lower chamber in said cylinder, conduit means connected to the upper chamber in said cylinder, conduit means connected to the lower chamber in said cylinder, means associated with each of said conduit means for controlling the flow of hydraulic fluid through said conduit means, a first passage extending through said rod and opening into said upper chamber on one side of said piston, a second passage extending through said rod and opening into said lower chamber on the other side of said piston, said passages being in communication with said conduit means, mounting brackets securing the ends of said rod in an upright disposition, said cylinder being mounted for rotation about its longitudinal axis, load support means secured to said cylinder for movement with said cylinder, and said load support means including at least one support plate extending in a direction substantially perpendicular to the longitudinal axis of said cylinder.

3,291,262
SPOT TYPE DISC BRAKE
Oswald Josef Rosmowski, Haus 161, Lindau-Rehlings, and Horst Hasigek, 1 Seeftenau, Lindau, Germany
Filed Feb. 11, 1965, Ser. No. 431,943
8 Claims. (Cl. 188—73)



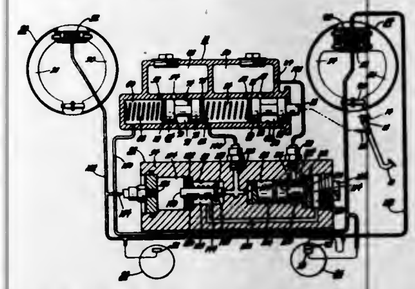
1. In a disc brake, the combination comprising:
a rotatable shaft;
a hub secured to said shaft;
a ring disc spaced from and secured at its outer periphery to said hub;
a stationary member;
a braking unit comprising a support having primary and secondary braking elements disposed on opposite sides of said disc;
means supporting said braking unit on said stationary member for slidable and swivelling movement relative thereto;
said last-mentioned means comprising a pair of coaxial swivel bolts rotatably received in and projecting from either end of said brake unit with the longitudinal axis of said bolts being parallel to the plane of said rotatable disc;
means on said stationary member in engagement with the projecting ends of said bolts supporting said bolts for slidable movement toward and away from said disc;
biasing means operatively associated with said swivel bolts to maintain said bolts in engagement with said slidable supporting means on said stationary member; and
an actuator operable to cause progressive engagement of said primary element and said secondary element with said disc.

3,291,263
SERVO ACTUATED DISC-BRAKES
Pierre André Georges Lepelletier, Chatou, France, assignor to Societe Anonyme Francaise du Ferodo, a corporation of France
Filed Nov. 18, 1964, Ser. No. 412,137
Claims priority, application France, Dec. 19, 1963, 957,773
9 Claims. (Cl. 188—152)



1. A disc-brake comprising a disc, a stub axle or the like on which the disc is mounted for rotation, a plate rotatably mounted on the brake for rotation about the axis of the disc, a pair of brake shoes carried by the plate for gripping the disc, so that the plate tends to rotate about said axis when the shoes grip the disc, at least one gripping cylinder carried by the plate, means for supplying fluid under pressure to said cylinder to grip the disc between the shoes, and a balancing device interposed between said stub axle and said plate and acting on said plate to urge said plate to rotate about said axis under braking conditions and comprising cylinder and piston means spaced from said axis and forming a primary chamber and a secondary chamber that vary in volume in opposite senses when the plate rotates relative to the axle, said primary chamber communicating with said gripping cylinder to vary the pressure in said gripping cylinder upon rotation of said plate and said secondary chamber providing a cushion receiving the braking reaction.

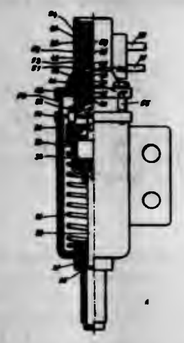
3,291,264
BRAKE SYSTEM
Jack T. Cornillaud, Dearborn, and Douglas J. Wing, St. Clair Shores, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,292
13 Claims. (Cl. 188—152)



1. In a brake system comprising a master cylinder assembly with first and second fluid pressurizing chambers and first and second fluid reservoirs respectively supplying fluid for said chambers, a first brake system actuated by pressurized fluid from said first fluid pressurizing chamber, a second brake system including a pressure generating cylinder assembly actuated by brake reaction of said first brake system, means controlled by pressure from said second fluid pressurizing chamber for venting said second brake system to said second reservoir until pressure in said second fluid pressurizing chamber reaches a predetermined pressure level, and means supplying fluid to said second system from said second fluid pressurizing chamber until pressure generated by said pressure generating cylinder assembly approaches pressure from said second fluid pressurizing chamber to a predetermined pressure differential, and cutting off fluid from said second system so long as the predetermined pressure differential is at least maintained.

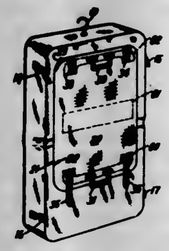
3,291,265
LOAD RESPONSIVE VEHICLE BRAKE SYSTEM
Ingmar Valentin Larsson, Malmo, Sweden, assignor to Svenska Aktiebolaget Bromsregulator, Malmo, Sweden
Filed July 9, 1964, Ser. No. 381,496
Claims priority, application Great Britain, July 13, 1963, 27,860/63
5 Claims. (Cl. 188—195)

5. In a vehicle brake system having a fluid servo-motor for changing the braking ratio between a higher and a lower value, a control valve for said fluid servo-motor comprising, in combination, a valve housing, a valve member in said valve housing and movable between inoperative and operative positions with a hysteresis effect, resiliently yieldable and corrective lost motion actuating means for said valve member, and hydraulic movement damping means interposed between said actuating means and a part fast with said valve housing, said actuating



means being operable in response to relative movements occurring between two parts of the vehicle as a result of change in vehicle load.

3,291,266
CONVERTIBLE GARMENT BAG
Paul Kosnoff, 390 Broadwell Ave., Union, N.J.
Filed Sept. 1, 1965, Ser. No. 484,309
6 Claims. (Cl. 190—1)



1. The improvement in a garment bag of the type foldable for carrying with interior access through a flap when in its extended position comprising:
means removably coupling the entire perimeter of said flap to said bag;
means on said flap for forming a pair of sides when said flap is folded in a U;
engageable means disposed at both ends of said flap for the joinder thereof when said flap is in said U-shape;
and means disposed at least at one end of said flap for carrying the thus formed luggage piece.

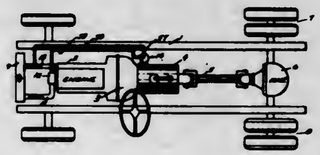
3,291,267
FRAME CONSTRUCTION FOR LUGGAGE
Joseph Pelavin, Brooklyn, N.Y., assignor to Droutman Manufacturing Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 26, 1965, Ser. No. 428,033
14 Claims. (Cl. 190—49)

1. An article of luggage comprising wall means having a closed position defining an enclosure of a given volume and an open position giving access to the interior of said enclosure, said wall means including top and bottom walls, a pair of opposed end walls, and a pair of opposed side walls, at least said end and side walls being sufficiently flexible to provide relatively easy bendability of said end and side walls when the article of luggage is subjected to compressive shocks or loads, upper frame means fixed to said top wall and extending therefrom along said end walls part of the way toward said bottom wall, and lower frame means fixed to said bottom wall and extending therefrom part of the way along said end walls toward said top wall, said upper and lower frame means being of substantially greater



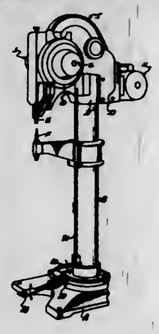
rigidity than said side and end walls and defining between themselves along said end walls a substantial space to which the greater part of the bending of said end walls is restricted.

3,291,268
TRANSMISSION AND TURBINE RETARDER
William S. Nagel, Bloomfield Township, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 10, 1964, Ser. No. 391,827
16 Claims. (Cl. 192—4)



1. Means for retarding the speed of an automotive vehicle having an engine cooling system, ground-engaging wheels and a transmission including a housing and gears normally shiftable to high ratios at low vehicle speeds and low ratios at high vehicle speeds and having a power take-off connected to said transmission at a point having at least one pair of ratio gears between said power take-off and the output shaft of said transmission and means operatively connecting said wheels and said transmission, the combination comprising:
an impeller housing and an impeller rotatably mounted within said impeller housing;
means driving said impeller from said power take-off, said driving means including a selectably engageable clutch located in the power train between said power take-off and said impeller and means mounting said impeller housing rigidly with respect to said transmission housing;
sealing means isolating the interior of said impeller housing from the interior of said transmission housing;
inlet and outlet ports for said impeller housing and a conduit connecting said inlet port to the low temperature side of the engine cooling system and another conduit connecting said outlet port to the high temperature side of said engine-cooling system whereby the energy absorption medium for said impeller is circuited completely independently of conditions within said transmission housing.

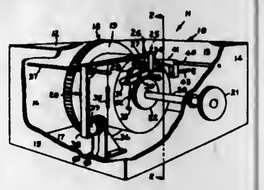
3,291,269
ONE REVOLUTION CLUTCH STOP MEANS
George Merta, Los Angeles, Calif., assignor to Trojan Rivet Corp., Glendale, Calif., a corporation of California
Filed Feb. 1, 1965, Ser. No. 429,251
5 Claims. (Cl. 192—27)



1. In a clutch mechanism for effecting a one revolution engagement between a constantly rotating driving component and a normally stationary driven component and which includes a driving member of the constantly rotating component, a shaft and a driven member secured thereto, and normally restrained, spring actuated devices connected to the driven member operative upon release of the restraint imposed thereon to effect one revolution interengagement of the driving and driven members with resultant rotation of the shaft, the combination of means for insuring stoppage of the driven member and shaft at the end of each one revolution excursion thereof, said means comprising an element fixed to and rotatable with the shaft and having a stop face extending radially of the axis of revolution and facing in the direction of rotation, a stop member movable into and out of the path of rotation of said face, a manually movable latch means normally engaging said stop member, manually operable means for bodily moving said latch means while engaged with said stop member with resultant retraction of said stop member out of said path of rotation of said stop face, a spring normally urging said stop member into the path of said stop face, a cam rotatable with said driven member and devices operated by said cam responsive to rotation of the shaft imparted by said driven member and operative during a rotative excursion thereof to disengage said latch means at a time when said stop member is retracted from said path with resultant release of said stop member to the bias of said spring with resultant spring induced return of said stop member into said path of rotative movement of said stop face.

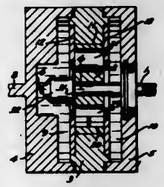
3,291,270
LATCH OPERATED GEAR CLUTCH
Donald J. Abel, 712 Summit Ave., Franklin Lakes, N.J.
Filed July 20, 1964, Ser. No. 383,660
4 Claims. (Cl. 192—30)

1. A clutch device requiring external support positioned along and in combination with a rotatable shaft comprising, a sun cogwheel rotating with said shaft, a rotary output member freely mounted on the shaft and aligned with said sun cogwheel, a planet cogwheel engaged with the sun cogwheel and pivotly mounted to said rotary output member, an arm attached rotatable at the planet cogwheel's pivot, a locking cogwheel mounted rotatable to said arm and engaged with said planet cogwheel, a spring with one end attached to said arm and a second end attached to said rotary output member at a spring post to engage said locking cogwheel with said sun cogwheel, a stop lever mounted rotatable in the support with one end in contact with the rotary output member and the arm to disengage the locking cogwheel from the sun cogwheel, means to position said stop lever in front of and away from said arm, a stop pin fixed in said rotary output



member to limit the backward motion of said arm, a backstop lever mounted rotatable in the support and forcefully positioned against said rotary output member to engage an opening for prevention of backward rotation.

3,291,271
ROTARY FLUID TRANSMISSION
Russell S. Trimmer, 14703 Gibson Ave., Compton, Calif.
Filed Dec. 11, 1964, Ser. No. 417,569
11 Claims. (Cl. 192—58)



1. A rotary fluid transmission comprising a housing,
a rotor rotatably mounted in said housing,
said housing having a plurality of compression chambers therein, said compression chambers being arranged between the outer surface of the rotor and the inner surface of the housing,
said housing having a sump therein adjacent said rotor, and a plurality of holes in said rotor extending from the sump to each of said compression chambers through which holes fluid passes to and from the compression chambers and the sump,
and valve means in the rotor and within said holes to control fluid passage through said holes,
and means governing the movement of the valve means to control the flow of fluid through said holes.

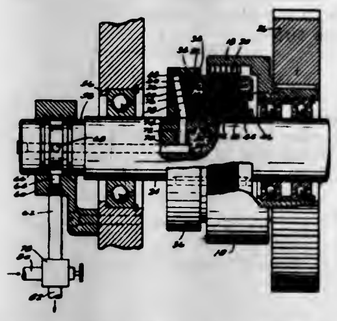
3,291,272
DRIVE CUP IN MAGNETIC CLUTCH OR BRAKE
Thomas L. Fawick, Shaker Heights, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Sept. 2, 1964, Ser. No. 393,858
6 Claims. (Cl. 192—84)



1. A drive cup for use in a multiple-disc clutch or brake having interleaved first and second sets of friction discs and means for bringing the discs of said first and second sets into torque-sustaining frictional engagement with each

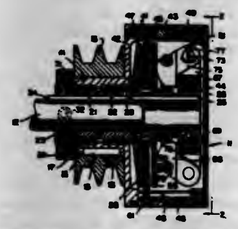
other, said drive cup comprising an end plate and a plurality of separately formed tempered spring steel fingers, and means securing said separately formed tempered spring steel fingers individually to said end plate at circumferentially spaced locations thereon and projecting from said end plate longitudinally for driving engagement with the friction discs of the second set.

3,291,273
HYDRAULICALLY OPERATED CLUTCH
Quinten A. Hansen, 4338 Highway 38, Franksville, Wis.
Filed Oct. 20, 1964, Ser. No. 405,141
3 Claims. (Cl. 192—85)



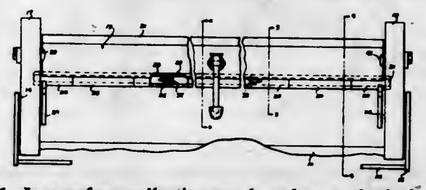
1. A clutch comprising inner and outer elements, the inner element comprising a hub, a series of interleaved annular disks respectively connected with different elements, an abutment ring between said elements and detachably fixed to one of said elements at one end of said series of disks as a means of confining said disks, an annular piston opposed to said abutment ring at the other end of the series of disks, and means including a head on the hub element and an annular flange connected with the head and radially spaced from the hub element and providing a cylinder in which said piston is reciprocable, said flange and hub element having outer and inner cylinder wall bearing surfaces between which the piston is guided, inner and outer packing rings between the piston and the cylinder, one of said rings being mounted on the piston and the other being mounted on the cylinder, the piston having an external peripheral channel in which the outer packing ring is disposed, said hub having a channel in which the inner packing ring is disposed, spline grooves of said hub to which respective clutch disks are keyed being in communication with said last mentioned channel.

3,291,274
CENTRIFUGAL CLUTCH
Richard M. Wyman, 63 Summer St., Framingham, Mass.
Filed Sept. 4, 1964, Ser. No. 394,410
7 Claims. (Cl. 192—105)



1. A centrifugal clutch adapted to be coupled to the drive shaft of a drive means and to rotate therewith comprising a cylindrical input element adapted to surround said drive shaft and to be attached thereto, an anti-friction bearing means mounted on said input element in a position overlying said drive shaft, a cylindrical output element mounted for independent rotation on said bearing means coaxial with said input element, said output element having power output means surrounding said drive shaft and having a cylindrical housing portion of enlarged diameter surrounding said input element and extending beyond the end of said drive shaft, a plurality of disk-like clutch plates arranged within said housing, a portion of said plates mounted on said input element in such manner as to rotate therewith but to slide axially relative thereto, the remaining said plates mounted in said housing in such manner as to rotate therewith but to slide axially relative thereto, said input element mounted plates alternating with said housing mounted plates in said arrangement with the two end plates of said arrangement both being input element mounted plates, spring means surrounding said input element and normally acting to urge adjoining input element mounted plates apart and out of contact with the intervening housing mounted plate in each instance, abutting means associated with said input element abutting the end plate adjacent said bearing means and arranged to keep the end said input element mounted plate adjacent thereto out of contact with any portion of said output element, and plate compression means associated with said input element adjacent the other end of said arrangement of plates adapted to force said input element mounted plates and said housing mounted plates toward said abutting means and into contact with each other whenever said input element rotates above a predetermined velocity said plate compression means comprising a spider having a plurality of outstanding arms mounted on said input element, a fly weight pivotally mounted on each arm of said spider, each said fly weight adapted to rotate about its pivot into direct and displacing contact with the end plate of said arrangement of plates in response to the rotation of said input element, and spring means associated with said fly weights, said spring means normally acting to urge said fly weights to a normal position out of displacing contact with said end plate.

3,291,275
GUARD PLATE FOR REFUSE TRUCK
Albert Engle, Miamisburg, Ohio, assignor to H. & E. Trucking Company, Miamisburg, Ohio, a corporation of Ohio
Filed Feb. 10, 1964, Ser. No. 343,534
7 Claims. (Cl. 193—3)



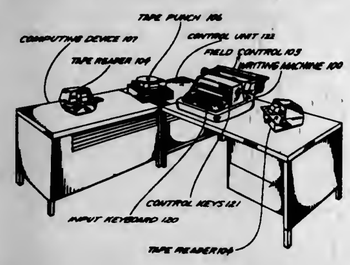
1. In a refuse collecting truck, a hopper body having a loading opening through the rear thereof, a container adapter plate disposed transversely of said body adjacent to said opening, means for mounting said plate to said body for pivotal swinging motion to a position parallel to a horizontal plane passing through the hopper body and to another position inclined to said plane, and means for locating said plate in said positions, said last named means projecting rearwardly from said body to support said plate in said parallel position and further including a stop member pivotally dependent from said plate and a socket on said body, said member being engageable in said socket in an inclined position of adjustment of said plate to hold said plate so adjusted.

3,291,276
PRINT HEAD HAVING CUP SHAPED PROTECTIVE MEMBER
James F. Milne, Penfield, N.Y., and Philip E. Norgren, Stamford, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,215
11 Claims. (Cl. 197—1)



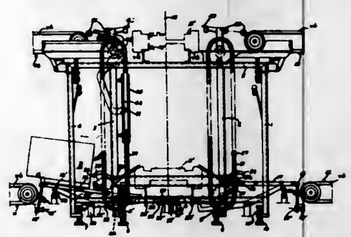
1. In stylus printing apparatus for electrically printing on chemically treated record material in the form of a tape which is movable longtiudinally past a printing station, a printing head having a plurality of styli electrodes in continuous contact with one surface of said tape, said styli electrodes being electrically insulated one from the other, means for moving said printing head in transverse excursions with respect to said tape at said printing station, electric circuit means energizable for selectively causing pulses of current to flow simultaneously from a predetermined combination of said styli electrodes through said tape to produce distinct marks on said record surface, and electrode shielding means surrounding said print head and having a plurality of apertures in alignment with said styli electrodes, through which said electrodes protrude, said electrode shielding means having an outer surface portion in contact with said one surface of said tape, and adapted for slidable engagement therewith during said excursions.

3,291,277
DATA PROCESSING SYSTEM HAVING VARIABLE RATE READER
Ronald N. Borrelli, Moraga, and Stanley R. Olson, Oakland, Calif., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Filed Oct. 26, 1964, Ser. No. 406,321
28 Claims. (Cl. 197—20)



1. In a data processing mechanism, the combination of a record medium having recorded thereon character and functional control data relating to operation of corresponding mechanisms of a recorder together with other control data not related to operation of said recorder;
a reader for said record medium;
means for detecting said other control data as a class, including inverter means for indicating absence of detection of said other control data;
a signal generator providing first timing signals at a fixed frequency;
means operable in response to each said first timing signal to enable said reader to sense the data in the record medium and provide output signals in accordance therewith;
means responsive to said output signals for selecting a particular circuit corresponding to the data sensed;
means responsive to a first timing signal for producing an actuating signal on said selected circuit;
electromechanical means responsive to said circuit signal to actuate the selected one of said recorder mechanisms corresponding to the sensed one of said character and functional control data;
means operable in response to the presence of a first timing signal and an output from said inverter means, to provide a second timing signal of duration greater than the time required for completion of said operation of the selected recorder mechanism; and
means operable in response to said second timing signal to inhibit production of said actuating signal on said circuit.

3,291,278
ELEVATORS
Georg Meinas, Munich, Germany, assignor to Ossakki A.G., Zug, Switzerland, a Swiss body corporate
Filed June 22, 1965, Ser. No. 465,952
8 Claims. (Cl. 198—20)



1. In a system of generally horizontal conveyors comprising a plurality of such conveyors converging at each of two levels towards a common vertical axis, the invention which consists in the provision of an elevator for vertical transport of objects from one conveyor level to another, comprising; a generally horizontal support for receiving at the bottom of said elevator an object to be elevated; a tilting ramp placed between an end of one of the horizontal conveyors and the support; linkage means between this tilting ramp and the support for causing the support to tilt upward as the ramp is tilted downwards to bring the top of said support into alignment with the top of said ramp; abutment means for arresting the tilting when the ramp and the support are coplanar; means for moving an object from the support along the vertical axis; means for holding the object at a level above the level of one of the horizontal conveyors by a predetermined amount; and means for tilting the holding means towards this last-named conveyor.

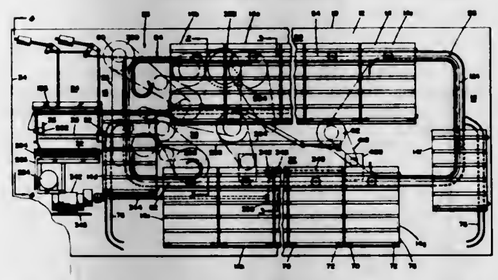
3,291,279
DIVERTING CONVEYOR
Maynard J. De Good and Clyde L. Bowman, Grand Rapids, Mich., assignors to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed July 26, 1965, Ser. No. 474,570
7 Claims. (Cl. 198—20)

1. Conveyor apparatus comprising: means forming an article conveyor surface and means forming an article receiving surface at an angular intersection to said conveyor surface, along one side thereof; article diverting means from said conveyor surface to said receiving surface, including article propelling means overlapping said surfaces at an angle to said conveyor surface and projectable above said conveyor surface to engage the bottom of an article thereon; rotatably driven article pivot means at said intersection at said one side of said conveyor surface, spaced from said propelling means with respect to said conveyor surface; and power drive means operably associated with said pivot means and said pro-



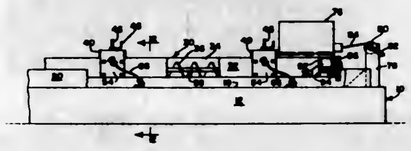
pelling means to drive said rotating pivot means at a slower advancing speed than that of said propelling means, causing said propelling means to turn an article through an angle about said pivot means as the article is diverted.

3,291,280
CONTINUOUS PROOFER
Joe E. Thomas and Julian Rappaport, York, Pa., assignors, by mesne assignments, to Baker Perkins Inc., New York, N.Y., a corporation of New York
Original application Dec. 23, 1963, Ser. No. 350,135. Divided and this application Dec. 22, 1964, Ser. No. 436,973
3 Claims. (Cl. 198—24)



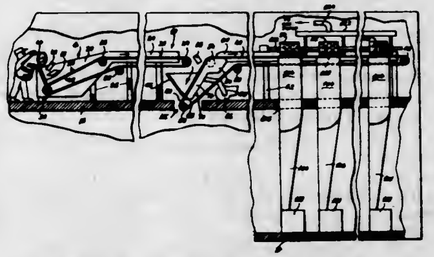
1. In farinaceous product handling apparatus: means for conducting a succession of racks in a loop, including upper and lower longitudinally extending track means for supporting on each a row of multi-shelved racks, and an endless elevating conveyor means at one end of said track means having rack engaging means for raising racks from the lower track means substantially to the upper track means; means for operating said elevating conveyor means; transfer means for loading products on said racks and removing them therefrom; rack advance conveyor means disposed adjacent the lower end of said elevating conveyor means and the adjacent end of said lower track means, said rack advance conveyor means having rack engaging means; and means for imparting forward movement to said rack advance conveyor means at a faster rate of speed than said elevating conveyor means moves to cause said rack engaging means on the rack advance conveyor means to move racks along said lower track means and into position to be engaged and elevated by said elevating conveyor rack engaging means and imparting rearward movement to said rack advance conveyor means to return said rack advance conveyor means to an original position in which the rack engaging means thereon does not interfere with the movement of successive racks into position on the lower track means.

3,291,281
ADJUSTABLE LIVESTOCK FEEDER
Guy R. Midtbo and Raymond S. Wilkes, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 406,807
7 Claims. (Cl. 198—64)



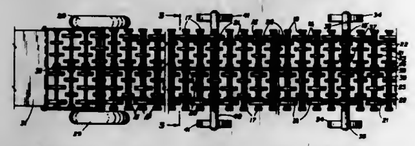
1. A material distributing device comprising a longitudinally extending floor, a longitudinally extending auger type conveyor means disposed above the floor, means for vertically adjustably supporting the conveyor means above the floor comprising a plurality of elastically flexible, longitudinally spaced support members having one end affixed to the floor and the other end longitudinally offset from the floor end and attached to the conveyor means, the support members deflecting in a longitudinal vertical plane under the weight of the conveyor to allow the conveyor to seat approximately on the floor and exerting a substantial upward force on the conveyor, and control means operatively connected to the conveyor means for selectively raising or lowering the conveyor from or to the floor.

3,291,282
MAIL FEEDING EQUIPMENT
Antonio D. Pedagno, 588 Henry St., Brooklyn, N.Y.
Filed June 10, 1965, Ser. No. 462,975
12 Claims. (Cl. 198—66)



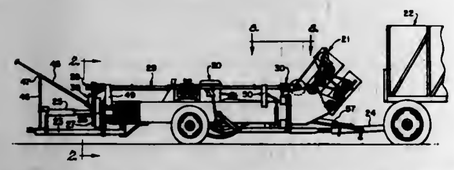
1. Equipment for effecting a first culling followed by delivery to final collection receptacles of flat articles such as pieces of mail or cards, comprising: a first trough receiving mail promiscuously; a first receiving movable endless belt for carrying said mail forwardly in position to be manually culled; a second trough at the inner end of said endless belt disposed in a plane below the end of the belt; a second movable receiving perforated endless belt having one end movable through said second trough and adapted to carry mail from said second trough; air suction means in said second trough for sucking mail from the second trough onto said one end of the perforated belt; means for moving said second endless belt; a series of space transverse movable perforated endless belts disposed across the top of the second endless belt and closely spaced therefrom; air suction means associated with said transverse belts for sucking mail off of the second endless belt onto said transverse belts; means for moving said transverse belt, a gravity chute at the end of each transverse belt adapted to receive the mail carried by said adjacent transverse belt; and a slide chute operatively connected to each gravity chute for guiding mail to a movable endless belt, said latter belt leading to a collection receptacle.

3,291,283
FLEXIBLE CONVEYORS
Milroy A. Keith, 1873 S. Alcott St., Denver, Colo.
Filed Mar. 22, 1965, Ser. No. 441,571
3 Claims. (Cl. 198—109)



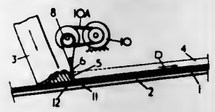
1. A flexible conveyor structure comprising:
(a) a series of frame links articulated together on vertical axes to form a horizontal, flexible frame member;
(b) a cross member medially mounted on each of said links, said cross members extending oppositely outward from said frame member in normally horizontal parallel relation;
(c) bearing support extending upwardly from each extremity of each of said cross members and supporting a shaft bearing thereover;
(d) a roller shaft rotatably supported between the shaft bearings of each cross member in parallel relation to the latter;
(e) a plurality of circular disc-like rollers fixedly mounted on each roller shaft in spaced relation therealong, the plurality of rollers on each shaft successively diminishing in diameter from a large roller adjacent one extremity of the shaft to a small roller adjacent the other extremity thereof, adjacent shafts along said frame member being oppositely positioned so that the large rollers will alternate with the small rollers along each side of said conveyor;
(f) means for simultaneously rotating all of said shafts in a common direction;
(g) means for portably supporting said flexible frame member; and
(h) horizontal pivot means tiltably mounting the cross members on their respective links so that the former may tilt vertically on the latter.

3,291,284
MECHANICAL DRIVE FOR BALE THROWER
Patrick L. May, Memphis, Tenn., and Doyle A. Bumpious, Huntsville, Ala., assignors to International Harvester Company, a corporation of Delaware
Filed Mar. 4, 1964, Ser. No. 349,234
5 Claims. (Cl. 198—128)



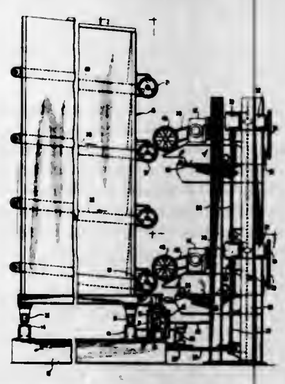
1. For a bale thrower pivotally mounted on a baler at the bale discharge thereof, a power take-off drive comprising: a jack shaft on said bale thrower, a pulley attached to said jack shaft, a lineshaft, a pulley on one end of said lineshaft, resilient support means joining said lineshaft to said baled, a belt-type mule drive joining said lineshaft pulley and said jackshaft pulley, said resilient support means maintaining said belt taut as said bale thrower pivots, a variable diameter pulley on the other end of said lineshaft, a main power supply shaft for said baler, a pulley on said main power supply shaft, a endless power transmission belt engaging said variable diameter pulley and said main power supply shaft pulley, idler pulley means for said last-named belt pivotally mounted on said baler and engaging said last-named belt, and means joined to said idler pulley means for controlling the pressure with which said idler pulley engages said last-named belt.

3,291,285
CONVEYING OF PARTICULATE MATERIAL
Ronald Gray, Birtley, England, and David Gruffydd Jenkins, Cardiff, Wales, assignors to Coal Industry (Patents) Limited, London, England
Filed June 25, 1965, Ser. No. 467,008
Claims priority, application Great Britain, June 30, 1964, 26,998/64
4 Claims. (Cl. 198—161)



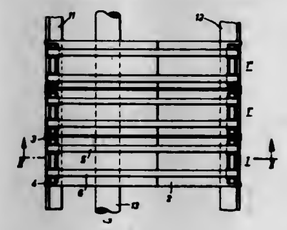
1. Apparatus for spreading particulate material on a moving conveyor into a layer of a predetermined thickness, the apparatus comprising means for screeding material on the conveyor to a required depth, the screeding means comprising a plurality of wires arranged transversely of the direction of conveyor travel, means for supporting the wires so that they form at least one line of wires, and means for mounting the supporting means for movement towards and away from the conveyor, the mounting means being such that said line extends along the direction of conveyor travel; and said apparatus further comprising means for reciprocating at a predetermined rate the screeding means towards and away from the conveyor.

3,291,286
CONVEYOR UNLOADING APPARATUS
Robert E. Adams, Hudson, N.Y., assignor to Gifford-Wood, Inc., Newton, Mass., a corporation of Massachusetts
Filed Oct. 19, 1965, Ser. No. 497,838
10 Claims. (Cl. 198—185)



1. Conveyor unloading apparatus comprising in combination a main continuously moving conveyor element, an article storage truck connected with and moving with the main conveyor element, power take-off gearing engaging the main conveyor element and continuously driven thereby, a continuously rotating element driven by said power take-off gearing, a clutch and brake unit connected with said continuously rotating element, additional gearing connected with the clutch and brake unit and held against movement when said brake is active and released and driven when the clutch is active and the brake is inactive, a fixed guide member extending longitudinally of the main conveyor element and spaced therefrom and paralleling the path of movement of said truck, a carriage pivotally and slidably mounted upon said guide member, means interconnecting said carriage and last-named gearing so that powering of the last-named gearing causes reciprocation of the carriage on the guide member, cam means near and spaced from the guide member and connected with the carriage to cause vertical swinging of the carriage on the guide member during movement thereof along the guide member, a friction drive element on the carriage and power means on the carriage to operate the friction drive element, a cooperating friction drive element on said truck to cause unloading of the truck while engaged with the friction drive element of the carriage, said vertical swinging of the carriage causing engagement and disengagement of said friction drive elements, and control means on said apparatus in the path of movement of said truck and last-named gearing and operable upon approach of the truck to initiate reciprocation of the carriage and to halt the carriage at the end of its reciprocation on said fixed guide member.

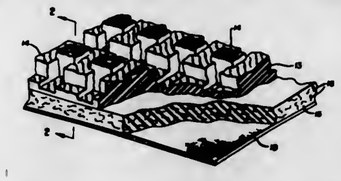
3,291,287
CONVEYOR
Karl Rehm, Konstanz, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Dec. 16, 1964, Ser. No. 418,743
Claims priority, application Germany, Dec. 24, 1963, T 25,356
7 Claims. (Cl. 198—190)



1. In a document handling machine, particularly a document sorting machine, having a plurality of endless conveyor belts or groups of such conveyor belts which are arranged parallel and side by side and which serve, in particular, for conveying stacks, formed in the individual stacking devices of the machine, from the stacking compartment to an extraction position, the improvement wherein there is a plurality of conveyor units, each of which can be inserted in the machine and removed therefrom individually without interfering with the operation of the other units and in which the conveyor belts or groups of belts are each mounted and each of which includes a plurality of guide rollers on which the belt of a unit is mounted, and a common shaft mounted in the machine frame transversely of the conveyor belts serving as a drive member of the conveyor belt or belts in these conveyor units which are arranged side by side.

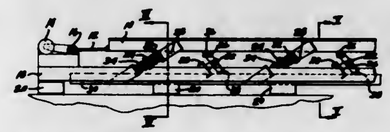
3,291,288
CONVEYOR BELT
Paul F. Haustovich, Youngstown, Ohio, assignor to Aeroquip Corporation, Jackson, Mich., a corporation of Michigan
Filed Aug. 31, 1964, Ser. No. 393,190
6 Claims. (Cl. 198—193)

1. A conveyor belt for receiving and conveying material on the face thereof, said conveyor belt consisting of a body of cracked tire cord material consisting of a soft high-grade rubber-like material having dispersed therein a plurality of randomly oriented short lengths of filament cord, a bottom layer of woven fabric and a cover of rubber-like material, said conveyor belt being



cured in situ to form an integral unit having an adhesion between said body and said cover of at least 15 p.s.i.

3,291,289
NATURAL-FREQUENCY CONVEYOR
Donald J. Savage, Aurora, Ill., assignor to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Apr. 14, 1965, Ser. No. 448,153
2 Claims. (Cl. 198—220)

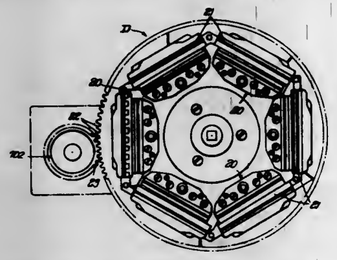


1. A dynamically-balanced natural-frequency conveyor, having a trough portion having a predetermined and known weight for holding the objects to be conveyed, a base mounting frame, a counterbalance having a predetermined and known weight, and a plurality of rocker arm support, each of said arms being pivotally connected at its center to said base frame and pivotally connected at opposite ends to said trough and said counterbalance, respectively, the improvement in said conveyor comprising: a first set of spring means connected at one end to said trough and at the other end to said base frame; said first spring means and the said weight of the trough establishing a first natural frequency of vibration thereof; and a second set of spring means connected at one end to said counterbalance and at the other end to said base frame; said second spring means and the said weight of the counterbalance establishing a second natural-frequency of vibration; said first and second spring means being aligned with the connection thereof to said base frame being between the adjacent ends of said first and second spring means, causing all of said spring means to be alternately simultaneously compressed and simultaneously extended; said trough, said counterbalance and said first and second sets of spring means being selected to make said first and second natural frequencies substantially equal to each other.

3,291,290
AUTOMATIC MOLD DISK CONTROL MECHANISM FOR LINECASTING MACHINES
Frederick P. Netzsik, Skokie, and Patrick J. McCauley, Glenview, Ill., assignors to Mohr Line-Saw Company, Skokie, Ill., a corporation of Illinois
Filed May 28, 1965, Ser. No. 459,792
26 Claims. (Cl. 199—48)

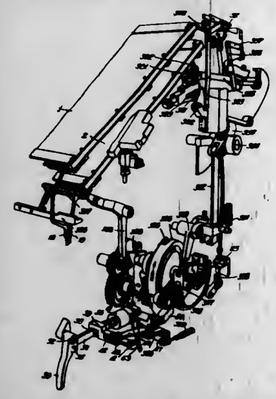
1. In a linecasting machine, the combination of a rotatable mold disk which is operable to cyclically move a selected mold between a plurality of positions including a slug-casting position and a slug-ejecting position in a casting operation, a plurality of molds mounted in said disk, operating mechanism for rotating said mold disk to bring any desired one of said molds into position, for use in a

casting cycle, a coded tape having a different code for selecting the different molds for use in the casting cycle, a tape reader adapted to read said tape, and control means



connected to said tape reader for rotating said mold disk to bring the mold indicated by said signal on said tape into casting position for use in a subsequent casting cycle.

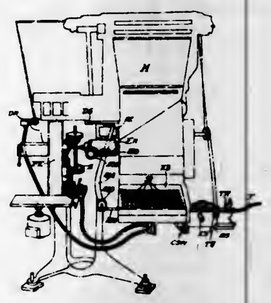
3,291,291
AUTOMATIC MAGAZINE CONTROL MECHANISM FOR LINECASTING MACHINES
George Robert Jackson and Patrick J. McCauley, Glenview, Ill., assignors to Mohr Lino-Saw Company, Skokie, Ill., a corporation of Illinois
Filed Sept. 13, 1965, Ser. No. 486,638
32 Claims. (Cl. 199—16)



1. In a linecasting machine, the combination of a plurality of superposed matrix magazines movable into and out of operative position, a channel entrance mechanism movable into and out of operative position, a tape reader adapted to read a coded tape, and control means responsive to the signals from said tape reader including means for moving said channel entrance mechanism out of operative position, and means for presenting the magazine indicated by said signals in the operative position during the period said channel entrance mechanism is out of the operative position.

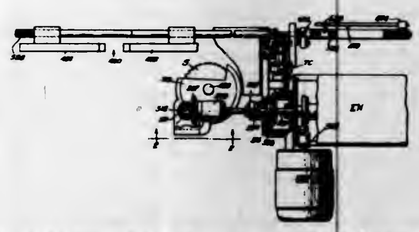
3,291,292
TAPE CONTROLLED SAW POSITIONING MEANS FOR LINECASTING MACHINES
Frederick P. Netzalk, Skokie, and Joseph Gardberg, Chicago, Ill., assignors to Mohr Lino-Saw Company, Skokie, Ill., a corporation of Illinois
Filed Oct. 28, 1964, Ser. No. 407,200
48 Claims. (Cl. 199—59)

1. In a linecasting machine having assembling mechanism for assembling the matrices and having casting mechanism for casting type slugs therefrom, the combination therewith of a tape member having coded signals for any one of a plurality of different saw cutting positions required in the linecasting operations of the machine, and coded signals for any one of the matrices required for the desired slugs a tape reader adapted to read code signals from said coded tape, output means for said tape reader, a first actuated mechanism for providing automatic operation of said matrix selecting and assembling mechanism normally responsive to said output means, a second actuated mechanism for adjusting associated equip-



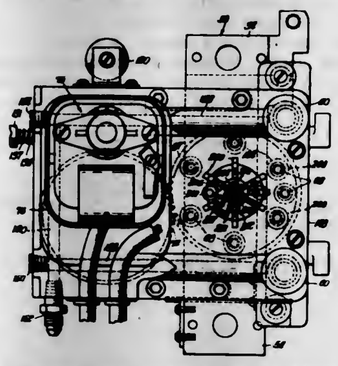
ment to different positions to vary the characteristics of the slug to be produced normally non-responsive to said output means, and selector means for preventing selection of a matrix by said first actuated mechanism in response to readout of certain of said code signals, and for enabling said second actuated mechanism to effect adjustment of said equipment without effecting the selection of a matrix responsive to the same code signals normally used to effect a matrix selection.

3,291,293
AUTOMATIC SAW CONTROL MECHANISM FOR LINECASTING MACHINES
Frederick P. Netzalk, Skokie, Ill., assignor to Mohr Lino-Saw Company, Skokie, Ill., a corporation of Illinois
Filed May 28, 1965, Ser. No. 459,720
11 Claims. (Cl. 199—59)



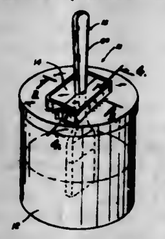
4. In an automatic slug cutting saw control means for linecasting machines, vise jaw and assembler mechanisms, a slug cutting saw having saw adjustment means for effecting axial adjustment of said saw, reversible power means, drive mechanism for coupling said reversible power means to said vise jaw and assembler mechanisms and said saw adjustment means to operate said mechanisms and said saw to different positions, said drive mechanism comprising a first shaft, drive means connecting said power means to said first shaft and said saw adjustment means, a second shaft connected to drive said vise jaw and assembler mechanism, clutch means providing a driving connection between said shafts during rotation thereof in one direction and effective for disconnecting said shafts responsive to holding of said second shaft against rotation in a reverse direction, and means for holding said second shaft against rotation in said reverse direction responsive to adjustment of said vise jaw and assembler mechanisms to a predetermined one of said positions.

3,291,294
AUTOMATIC KNIFE BLOCK CONTROL MECHANISM FOR LINECASTING MACHINES
Frederick P. Netzalk, Skokie, and Patrick J. McCauley, Glenview, Ill., assignors to Mohr Lino-Saw Company, Skokie, Ill., a corporation of Illinois
Filed May 28, 1965, Ser. No. 459,845
28 Claims. (Cl. 199—59)



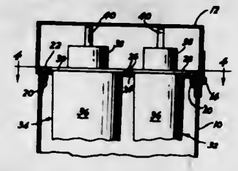
1. In trimming knife means for a linecasting machine, a stationary knife, a knife block, a slidably mounted knife carrier, a knife assembly movable with said carrier yieldingly urged toward the latter and comprising an adjustable knife opposed to said stationary knife and movable with said carrier toward and away from said stationary knife, adjustable stop means having a plurality of different positions for varying the extent of movement of said carrier away from said stationary knife, means yieldingly holding said carrier in pressure contact with said stop means, means for providing signals indicating the desired one of said different positions to which the adjustable stop means is to be moved, power operated means effective for moving said carrier and the adjustable knife toward the stationary knife, and drive means for operating said adjustable stop means to the position indicated by said signals, control means responsive to said signals to operate said drive means and said power operated means, and means operative with movement of the adjustable stop means to the desired position to terminate operation of said drive means and said power operated means to release said carrier for reverse movement thereof into contact with said stop means.

3,291,295
PAINT CONTAINER AND BRUSH HOLDER
Gerald J. Caligiuri, 3205 SE. Fairlane Drive, Des Moines, Iowa
Filed May 13, 1964, Ser. No. 367,025
10 Claims. (Cl. 206—15.3)



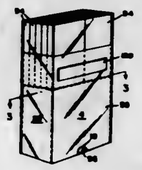
1. A paint brush container and brush holder, comprising,
a paint container having a lid with an enlarged opening formed therein,
a continuous frame member on said lid over said opening,
adhesive means holding said frame member in sealing relationship to said lid,
resilient sheet material positioned in said frame and secured to the inner peripheral edge thereof closing said opening in said lid, and
an opening provided in said sheet of reailient material receiving the handle of a paint brush and yieldingly holding it in an upstanding position with its brush portion in said paint container and said handle extending upwardly through said opening in said resilient material and upwardly thereabove and said opening in said sheet material being substantially smaller than the area of said sheet material.

3,291,296
PIPE NIPPLE HOLDER
Russell Lemkelde, R.D. 1, York, Pa.
Filed Oct. 26, 1964, Ser. No. 406,375
10 Claims. (Cl. 206—16)



3. A pipe nipple holder comprising a supporting member, a plurality of socket means supported by said member and each being arranged to receive a set of graduated diameters of pipe nipples of similar lengths and sufficiently different diameters to permit the same to be disposed in nested and coaxial relationship, said socket means being of graduated depths respectively to receive nested sets of pipe nipples of graduated lengths but the nipples of each set being similar in length, positioning means in the bottom of each socket means engageable by the nipples of each set in a manner to position the upper ends of said nipples of each set at different vertical levels with respect to each other, the innermost nipple being highest and the outermost one lowest in each set to facilitate manually grasping any desired diameter of nipple desired among said plurality of sets of nested nipples when supported by said holder.

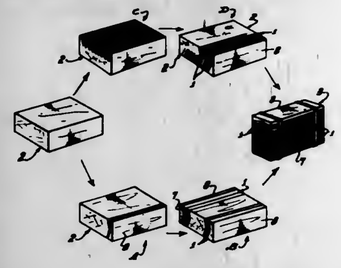
3,291,297
SHIPPING AND DISPLAY CONTAINER
Anthony S. Regensburg, Mamaroneck, N.Y., assignor to Bayuk Cigars Incorporated, Philadelphia, Pa., a corporation of Maryland
Filed June 8, 1964, Ser. No. 373,330
4 Claims. (Cl. 206—44)



3. In combination, a two-compartment collapsible display and shipping container comprising a rear panel, a front panel, side panels and a self-erecting partition intermediate the top and bottom of the container, said partition comprising a partition panel hingedly connected to each side panel, a partition panel hingedly connected to each of the front and rear panels, interlocking tabs on the panels connected to the front and rear panels to prevent inadvertent collapsing of the container, one of the partition panels connected to a side panel being hingedly

connected to the partition panel hingedly connected to the rear panel along a line substantially bisecting the adjacent container corner and the partition panel connected to the other side panel being hingedly connected to the partition panel hingedly connected to the front panel along a line substantially bisecting the adjacent container corner, and a box of cigars within said container and abutting against the lower surface of the partition and a plurality of cartons each containing cigars supported in the container and abutting against the upper surface of the partition.

3,291,298
HIP SHINGLE PACKAGE AND METHOD OF PACKAGING
James H. McCue, 2200 N. Arroyo Blvd., Altadena, Calif.
Filed Mar. 31, 1964, Ser. No. 356,212
6 Claims. (Cl. 206—46)



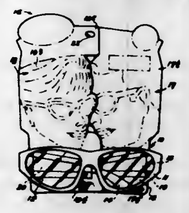
1. As an article of manufacture, a rectangular package comprising a plurality of one piece wood hip shingles disposed in nested relation to each other and with the butt ends of alternate shingles disposed at opposite sides of the package, a base piece having a side surface complementary to the exposed internal V-shaped surface of said nested plurality of singles and an oppositely disposed flat surface, a cap piece having a side surface complementary to the exposed external V-shaped surface of said plurality of shingles and an oppositely disposed flat surface parallel to said parallel surface of said base piece and band means securing said nested plurality of shingles and said base and cap pieces in a rectangular package.

3,291,299
DISPENSING DEVICE
Joseph F. Minnotte, Jr., 155 E. 50th St., New York, N.Y.
Filed Aug. 18, 1965, Ser. No. 480,733
4 Claims. (Cl. 206—58)



4. A dispensing device for a continuous strip of material of the type having successive length portions detachable along transversely oriented perforated lines provided at spaced intervals in said material comprising a hollow body member having an outer wall defining a protective enclosure for a supply roll of said material, end closure members for said body member each having axial projections thereon for mounting a material supply roll therebetween in a position of clearance from said wall for free rotation of said supply roll within said body member to unwind a length portion of said material from said supply roll, one of said closure members being removable from said body member to uncover an opening into said enclosure for loading a supply roll of material therein, said body member having an exit opening therein for said unwound material length portion, and said wall of said body member being fabricated of a pliable material such that pressure applied externally of said wall is effective to urge said wall from said clearance position about said supply roll into frictional contact therewith to hold said supply roll against rotation during detachment of the said unwound length portion of said material from said supply roll along one of said perforated lines in said material.

3,291,300
EYEGLASS PACKAGE
Sidney S. Rosen, Mount Vernon, N.Y., assignor to Sea Maid Inc., New York, N.Y., a corporation of New York
Filed Jan. 26, 1966, Ser. No. 523,156
10 Claims. (Cl. 206—80)

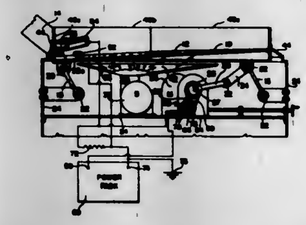


1. The combination of eyeglasses having a frame containing lens elements and temple bars hingedly connected to the opposite sides of the frame for movement between stored positions at which the temple bars extend laterally and overlap in back of said frame and operative positions at which the temple bars extend rearwardly from said sides of the frame in generally parallel, spaced planes; and a display card including at least one substantially rigid, planar sheet element having an end portion of a width less than the length of one of said temple bars, and means securely attaching said one temple bar to said end portion of said sheet element with said one temple bar extending across said end portion and the remainder of said sheet element projecting upwardly from the temple bar, each said sheet element of the display card being movable with the temple bar attached thereto to lie flat in back of the eyeglasses in said stored position of the respective temple bar and to lie substantially flat in said plane of the respective temple bar in said operative position of the latter so as to avoid interference with the trying-on of the eyeglasses and viewing of said frame, the overall dimensions of said sheet element being sufficiently large to substantially prevent pocketing of said eyeglasses with said display card attached thereto.

3,291,301
CLASSIFYING APPARATUS AND PROCESS
William A. Brastad, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,291
18 Claims. (Cl. 209—12)

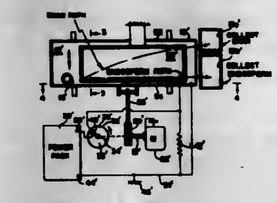
1. An apparatus for classifying particulate material comprising a first and second fraction, said first fraction being in the operation of said apparatus more susceptible to electrostatic force as compared to said second fraction thereof, said apparatus comprising, in combination:
(*a*) a carrying member presenting an upwardly disposed carrying surface for said material, said member having an infeed edge and an outfeed edge,

(*b*) means for admitting material onto said member proximate the infeed edge,
(*c*) said outfeed edge permitting said material to be discharged from the carrying member,
(*d*) reciprocating means to move said carrying member cyclicly along a path substantially perpendicular to an axis extending from the infeed edge to the outfeed edge,
(*e*) a barrier positioned on said carrying surface so as to be upstanding from said surface at a predetermined general location on said surface, and



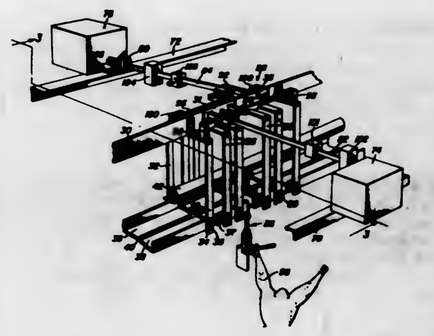
(*f*) means for cyclicly establishing an electrostatic field of a predetermined intensity at the location of said barrier only during a selected portion of each cycle of reciprocal movement of the carrying member, the lines of force of said field having a substantial component perpendicular to said carrying surface, said electrostatic field being periodically established in timed relationship with the reciprocating means and causing an electrostatic force of a predetermined intensity to be exerted on said material, so that portions of said first fraction of said material are separated from the second fraction and lifted over said barrier.

3,291,302
CONVEYING AND SEPARATING APPARATUS AND PROCESS
William A. Brastad, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,324
14 Claims. (Cl. 209—12)



1. An apparatus for conveying particulate material, said apparatus comprising:
(a) a lower electrode having an upwardly disposed carrying surface for said material, said electrode having a feed end and a discharge end,
(b) means for admitting material onto said electrode at the feed end,
(c) said discharge end permitting said material to be discharged from said electrode,
(d) reciprocating means to move said lower electrode cyclicly along a predetermined path having a substantial horizontal path component with sufficient acceleration to at least cause sliding of said material with respect to said carrying surface,
(e) an upper electrode,
(f) means for positioning said upper electrode generally above said lower electrode,
(g) means for energizing said upper electrode thereby establishing an electrostatic field between said electrodes, the lines of force of said field having a substantial component perpendicular to said carrying surface of said lower electrode, and
(h) means operatively connected to the energizing means for cyclicly establishing a voltage of a predetermined intensity between said electrodes only during a selected portion of each cycle of movement of said lower electrode, said voltage being established in timed relationship with the reciprocating means and causing an electrostatic force of a predetermined intensity to be exerted on said material.

3,291,303
POULTRY SELECTOR CONVEYOR ASSEMBLY
William F. Altenpohl, Jr., West Conshohocken, Pa., assignor to W. F. Altenpohl, Inc., a corporation of Pennsylvania
Filed Mar. 13, 1963, Ser. No. 264,967
13 Claims. (Cl. 209—121)

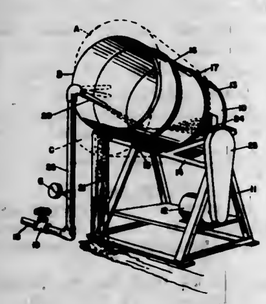


4. In combination with a conveyor system for conveying articles in spaced relation at a predetermined speed to a delivery station, means for removing articles between preset maximum and minimum weight limits from said conveyor system prior to arrival at said delivery station comprising, at least two closely spaced weight sensing stations in the conveyor system through which the articles sequentially pass, means responsive to the sensing of articles exceeding one of said preset weight limits for discharging such articles only at one of said weight sensing stations, and disabling means responsive to sensing of articles exceeding the other of said preset limits at the other of said weight sensing stations for preventing discharge of such latter articles at said one of the weight sensing stations.

3,291,304
PROCESS OF RECLAIMING METALLIC PARTICLES FROM FOUNDRY SAND
Joseph E. Fuchs, 3023 Feasler Ave., Erie, Pa.
Filed Apr. 12, 1965, Ser. No. 447,432
1 Claim. (Cl. 209—155)

A process for separating a material containing foundry sand and metallic particles comprising
placing said material in a cylindrical open topped and rounded bottom container having its central axis inclined at approximately thirty degrees to the horizontal,
rotating said container at approximately 16 r.p.m. around its central axis,

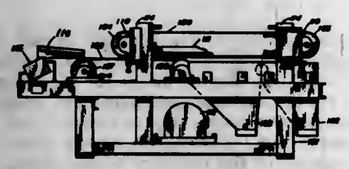
projecting a stream of water into said container laterally at an angle of approximately thirty degrees to the central axis of said container and downwardly at an angle of approximately thirty degrees to the vertical to strike the side of the drum just above the bottom and swirl the water over the bottom and back toward the open top of said drum,



and progressively and intermittenly decreasing the angle of inclination of said central axis of said container to approximately twelve degrees while rotating it,

thereby separating said metallic particles from said foundry sand.

3,291,305
MAGNETIC SEPARATOR FOR MIXTURES OF MAGNETIC AND NON-MAGNETIC MATERIAL
Emerson J. Tempas and Raymond A. White, Erie, Pa., assignors to Eriez Manufacturing Co., a corporation of Pennsylvania
Filed July 17, 1963, Ser. No. 295,646
8 Claims. (Cl. 209—219)



1. A magnetic separator for separating magnetic and non-magnetic mixtures comprising:

an upper conveyor and a lower conveyor supported one above the other and closely spaced to each other,

one end of said upper conveyor being disposed intermediate the ends of said lower conveyor,

one end of said lower conveyor being disposed intermediate the ends of said upper conveyor,

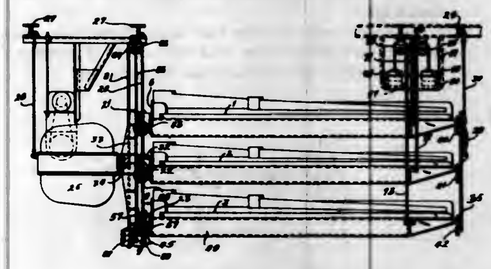
magnetic means spaced along said upper conveyor adjacent said lower conveyor,

said magnetic means having poles extending from one side of said conveyors to the other and of alternate polarity along said upper conveyor,

a feeder for feeding material onto said lower conveyor,

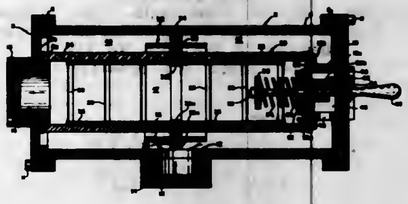
and a receptacle for magnetic material adjacent the end of said upper conveyor, said lower conveyor being supported on a drum adjacent said feeder, said drum having spaced permanent magnetic pole means under said lower conveyor spaced adjacent said feeder having like poles extending from one side of said drum to the other.

3,291,306
CONCENTRATING TABLE
Spencer A. Stone, Fort Wayne, Ind., assignor to The Deister Concentrator Company Inc., Fort Wayne, Ind., a corporation of Indiana
Filed June 28, 1965, Ser. No. 467,407
6 Claims. (Cl. 209—441)



1. In a multiple-deck pendantly supported concentrating table of the character in which the reciprocating motion is generated by a pendantly supported head motion of the polyeccentric flywheel type having quicker reversal of thrust at one end of its stroke than at the other end, the improvement which comprises, each deck having, independently of other decks, a flexible cable extending substantially vertical from its corner most remote from the head motion and movable means for exerting an upward force on said flexible cable.

3,291,307
REMOVABLE TUBULAR FILTER AND BAFFLE CONSTRUCTION
Nils O. Rosaen, Bloomfield Hills, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Sept. 24, 1963, Ser. No. 311,164
8 Claims. (Cl. 210—90)



1. A filtering apparatus comprising:

(a) a sectional housing containing a generally cylindrical cavity,

(b) said housing including a separable end member which defines an end wall of said cavity,

(c) said housing containing also an inlet, communicating with said cavity intermediate its ends, and an outlet,

(d) tubular filter means mounted coaxially in said cavity and radially spaced from the cylindrical wall thereof to define isolated cylindrical inner and annular outer chambers; and

(e) generally annular baffle means coaxially mounted in said cavity opposite said inlet, the outer diameter of said baffle means corresponding with the diameter of said cavity, the longitudinal dimension of said baffle means being less than the cavity length,

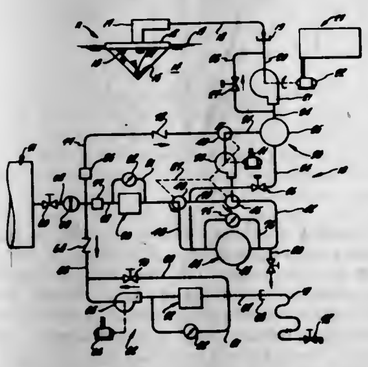
(f) said baffle means including diverter means for diverting toward each end of said outer chamber fluid entering said cavity through said inlet,

(g) said filter means comprise a pair of tubular filter elements coaxially arranged on opposite sides of said baffle means,

(h) means connecting said baffle means and said filter elements to define a rigid filter cartridge, said filter cartridge being axially removable from said cavity upon separation of said separable end member, and

(i) said baffle means comprising a tubular sleeve portion coaxially arranged relative to and spaced from the cylindrical wall of said cavity, and a generally annular diverter flange extending radially outwardly from said sleeve portion intermediate the ends thereof, said flange having an outer diameter that corresponds with the cavity diameter, at least a portion of said diverter flange being directly opposite the center of said inlet, said flange and sleeve portions having longitudinal dimensions that are less and greater, respectively, than the corresponding dimension of said inlet.

3,291,308
WATER PURIFICATION SYSTEM
Richard T. Hendrick, 916 Courtfield Ave., Duarte, Calif., and Edward E. Hendrick, 4900 Crown Ave., La Canada, Calif.
Filed May 15, 1964, Ser. No. 367,806
14 Claims. (Cl. 210—101)



1. Apparatus for purifying and rendering potable water drawn from a source of contaminated water comprising:

(1) intake means for drawing water from the source of contaminated water,

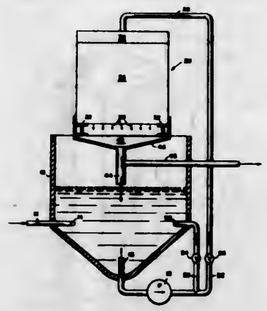
(2) proportioning means having an outlet and an inlet coupled to the intake means and operable for adding to water introduced thereinto a substantially water insoluble predetermined quantity of a particulate bacteriocidal agent in proportion to the quantity of the introduced water,

(3) first filter means having an outlet and an inlet coupled to the proportioning means outlet and operable for removing from water circulated therethrough the insoluble particulate bacteriocidal agent and particulate matter dispersed and suspended in the water,

(4) duct means coupled between the first filter means outlet and the proportioning means for recirculating a selected portion of the water circulated through the first filter means to the proportioning means for addition of the bacteriocidal agent thereto, and

(5) second filter means coupled to the first filter means outlet for further bacteriocidally treating and filtering the remainder of the water circulated through the first filter means to render the same potable.

3,291,309
SYSTEM FOR THE TREATMENT OF SEWAGE OR THE LIKE
Gibson T. Hutchison, Maple Glen, Pa., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 9, 1963, Ser. No. 314,900
2 Claims. (Cl. 210—151)



1. A purification system comprising a recirculation tank having an inlet for the reception of liquid to be purified, a liquid purification unit, means withdrawing liquid from said recirculation tank and directing at least a part thereof to the top of said purification unit, means directing at least a part of the effluent from said purification unit back to said recirculation tank, including an upright conduit receiving liquid from said purification unit and having a delivery end extending into said recirculation tank at a location below the top thereof, said upright conduit being open to permit uninterrupted flow therethrough at all times during operation of the system, means directing part of the effluent from said purification unit away from said recirculation tank including a laterally extending branch of said upright conduit having its connection to said upright conduit at a level above said delivery end of said upright conduit and below the top of said recirculation tank so that the level in the recirculation tank may rise above the delivery end of said upright conduit to a level above the level of the connection of said branch to said upright conduit, whereupon effluent will be discharged from said upright conduit through said laterally extending branch, said liquid purification unit being a biological oxidizer tower, means for delivering the liquid to be purified into said recirculation tank along the wall thereof, and means directing part of the liquid withdrawn from said recirculation tank back into the same along the wall thereof, said last-named delivering means and said last-named directing means being arranged to cause circulating movement of the liquid in the recirculation tank to reduce the possibility of settling within said recirculation tank.

3,291,310
FILTER AND POROUS SUPPORT CORE
Harvey E. Marvel, Pierceton, Ind., assignor to Bowser, Inc., Cookeville, Tenn., a corporation of Indiana
Filed Apr. 24, 1964, Ser. No. 362,441
6 Claims. (Cl. 210—169)

3. In a swimming pool filter having a filter agent adapted to form a filter cake on the filter element comprising, in combination:

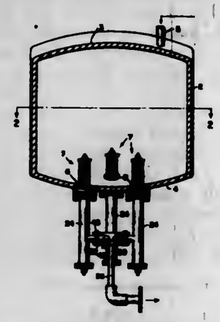
(a) a porous filter sleeve of flexible woven material having openings smaller than that of said filter agent so that said filter sleeve will support the filter agent which forms as a filter cake over the outer surface of said filter sleeve,

(b) a supporting core having a continuous hub with outwardly radially extending arms and disposed within said filter sleeve to provide a uniform backing therefore, and comprising a fluid pervious fused aggregate having a greater porosity than said sleeve to provide less resistance to fluid flow therethrough than said filter sleeve,



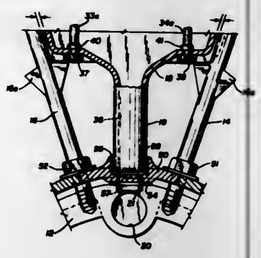
(c) said woven filter sleeve being substantially larger in diameter than the supporting core so that it will balloon outwardly during the backwash cycle to break the filter cake away from said filter sleeve, and
(d) means for supporting said filter element while providing fluid flow in each of opposite directions during the filtering and backwash operations respectively.

3,291,311
UNDERDRAINS
Jack B. Pratt, Millside Heights, N.J., and Louis Sloan, Philadelphia, Pa., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 30, 1964, Ser. No. 341,268
5 Claims. (Cl. 210—172)



1. A tank underdrain comprising means forming a tank bottom having a plurality of openings therein, a strainer associated with each opening, means removably mounting each of said strainers on said tank bottom for ready removal from the exterior of said tank and to extend through its associated opening vertically into the interior of the tank, each of said strainers having a tubular fluid straining wall one side of which communicates with the interior of the tank and the other side of which defines an outlet passage from said tank, each strainer having a flange secured to and extending around one end of said straining wall and a plate member at the other end of said straining wall, said mounting means including a mounting pad extending around each opening fixedly secured to said tank bottom and means at each opening engaging a strainer flange and an associated mounting pad for removably securing the strainer to said tank bottom, said engaging means being accessible from the exterior of the tank for removal from its engaging position whereby said strainers may be removed and disassembled from the exterior of the tank, conduit means communicating with said outlet passages for conveying fluid from said tank, and a manifold, said conduit means being connected from each outlet passage to said manifold for delivering fluid thereto.

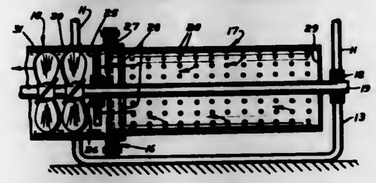
3,291,312
DISC FILTER ASSEMBLY
C. Lynn Peterson, Salt Lake City, Utah, assignor to Peterson Filters & Engineering Company, Salt Lake City, Utah, a corporation of Utah
Filed May 27, 1963, Ser. No. 283,188
9 Claims. (Cl. 210—345)



1. In rotary disc filter construction wherein a plurality of sectors are mounted on a filter shaft in side by side relation to form at least one filter disc the improvement which comprises a plurality of radial uprights secured to the filter shaft and extending outwardly therefrom, a sector including a tubular outlet mounted between each adjacent pair of uprights and extending into said shaft, means associated with each said sector for supporting it for free radial reciprocable motion toward and away from said shaft in position between said pair of uprights, stop means associated with each sector and said adjacent pair of uprights for permitting limited radial movement of the sector, and means including flexible means between each said tubular outlet and said shaft sealing said tubular outlet and said shaft in fluid flow relation during reciprocable movement of said sector and preventing radial compressive forces on said sector at least while said sector is reciprocating toward said shaft, while maintaining a leak proof fluid flow communication therebetween.

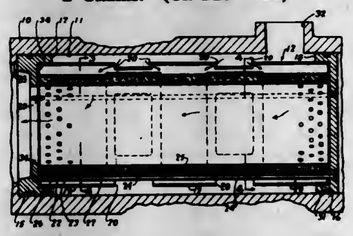
9. The method of mounting a sector on a rotary disc filter shaft which includes fluid flow passages therein which comprises mounting a sector including an attached hollow sector neck for free radial movement of limited extent in radial position extending outwardly from said shaft, mounting the sector neck for reciprocable movement in a passage interconnected with a fluid passage in said shaft, supporting the sector in its radial position for a floating movement so as to permit free expansion and contraction and radial movement of the sector toward and away from the shaft, and reciprocally sealing said sector neck to said shaft to maintain a leak-proof seal during such radial movement of said sector and to prevent radial compressive forces on said sector at least while said sector is moving toward said shaft.

3,291,313
SUCTION PIPE STRAINER
Wendell W. Davis, % Davis Welding & Blacksmith Shop, Box 64, St. Paul, Nebr.
Filed Oct. 8, 1963, Ser. No. 314,670
3 Claims. (Cl. 210—354)



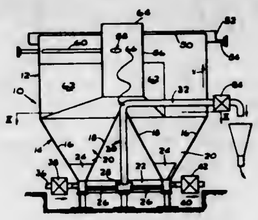
3. In a high capacity suction strainer of the class adapted to be connected to a means for inducing a high volume of fluid flow therethrough, the combination comprising;
(a) a housing having inlet and outlet ports;
(b) a strainer rotatably disposed over said inlet port, said strainer comprising a solid walled cylinder having alternate raised and depressed portions therein, a plurality of perforations in said cylinder located only between the outermost extremities of the raised portions and the innermost extremity of the depressed portions, each perforation further being located downstream of the outermost extremity of its respective raised portion with respect to the direction of rotation of said cylinder whereby a turbulent flow of fluid is caused in proximity to said perforation upon rotation thereof; and
(c) driving means disposed intermediate the inlet and outlet ports of said housing and drivingly connected to said strainer, said driving means being responsive to a predetermined high volume of induced fluid flow through said housing to rotate said strainer, said driving means and said perforations being so constructed and arranged to provide a tangential pressure component at the periphery of said strainer that is substantially higher than the radially inwardly directed component of pressure provided by said fluid flow whereby the fluid flow in proximity to the perforations in said strainer is effective to tend to prevent the accumulation of undesired material thereon and to dislodge any such material that may accumulate on said perforations.

3,291,314
BAFFLED CARTRIDGE ASSEMBLY
Nils O. Rossen, Bloomfield Hills, Mich., assignor to The Rossen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Nov. 14, 1962, Ser. No. 237,518
2 Claims. (Cl. 210—456)



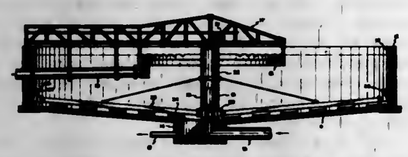
1. In a high velocity fluid system, a filtering device comprising:
(a) a housing having a substantially cylindrical chamber and an inlet opening radially to said chamber and an outlet opening axially to said chamber,
(b) a substantially cylindrical filter cartridge assembly carried in said chamber and having an interior portion communicating with said outlet and an exterior portion communicating with said inlet,
(c) said filter cartridge assembly comprising a substantially cylindrical outer sleeve member spaced radially inwardly from said housing, a substantially cylindrical perforated inner sleeve member disposed concentric with said outer sleeve member and spaced radially inwardly therefrom and a filter element disposed radially inwardly of said inner sleeve member and surrounding said outlet and end caps on opposite ends of said cartridge assembly maintaining said filter element and said sleeve member in concentric relationship,
(d) said outer sleeve member being provided with a plurality of axially and annularly spaced openings,
(e) concentric baffle means carried on the outer surface of said inner sleeve member underlying and in radial alignment with said openings in said outer sleeve member whereby flow from said inlet to said openings in said outer sleeve member is deflected axially by said baffle means before passing through said filter element and said outlet, and
(f) said inlet being positioned to direct flow against the outer surface of said outer sleeve member.

3,291,315
SETTLING TANK
Angelo Joseph Rossi, 6 Erith St., Mount Road Township, Port Elizabeth, Cape Province, Republic of South Africa
Filed May 19, 1964, Ser. No. 368,594
Claims priority, application Republic of South Africa, May 22, 1963, 2,240/63
1 Claim. (Cl. 210—519)



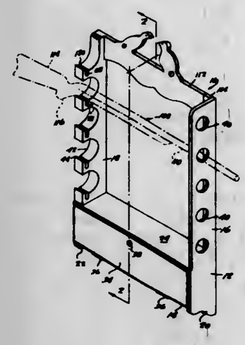
A settling tank which includes: a vessel having an upper part having charging means and an overflow and adapted to contain liquid having suspended matter; and a lower part defined by an outer wall converging downwardly and by an inner wall converging upwardly, the outer and inner walls thereby defining a downwardly converging cavity of annular ring form in plan view the lower part having a plurality of circumferentially spaced openings at the bottom of the cavity; an upwardly extending discharge pipe having its discharge opening at a level below the overflow; and a plurality of circumferentially spaced outlet conduits connecting the bottom of the downwardly converging cavity to the discharge pipe; the charging means including a centrally disposed downwardly extending charging well having a bottom opening at a level higher than the top of the upwardly converging inner wall, the wall extending upwardly beyond the height of the overflow and having an inlet opening arranged to discharge about the axis of the well; whereby suspended matter in liquid in the vessel will settle out into the lower part, and whereby such suspended matter will be discharged via the discharge pipe under the static head in the vessel.

3,291,316
FEED MEANS FOR CLARIFICATION APPARATUS
Earl M. Kelly, Hillsborough, Calif., assignor to The Elusco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 311,391
4 Claims. (Cl. 210—520)



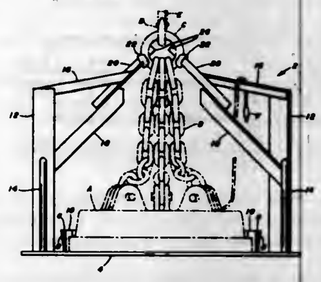
1. In a clarification apparatus of the type including a sedimentation tank, a sluge outlet in the lower portion thereof, a liquid-level defining effluent outlet in an upper central portion thereof and feed introduction means, the improvement comprising a feed introduction means having a rotatably mounted hollow arm extending radially from the center of the tank in closely overlying relationship to the bottom of the tank and terminating upwardly adjacent the periphery of the tank, and a plurality of feed inlet ports located at the upwardly extending end of said hollow arm to introduce feed at a medium elevation intermediate the effluent outlet and bottom of said tank and sufficiently above the tank bottom to prevent agitation of settled sludge, said ports adapted to discharge feed liquid adjacent the tank wall and in a plane substantially perpendicular to the tank axis.

3,291,317
GUN RACK WITH LOCKING MEANS
Dudley H. Bowen, 2649 Henry St., Augusta, Ga.
Filed July 31, 1964, Ser. No. 386,704
13 Claims. (Cl. 211—4)



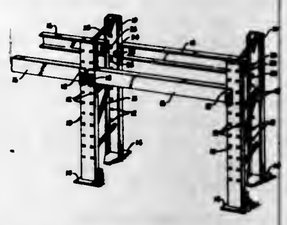
1. Firearms support means comprising a gun rack for supporting a plurality of firearms adjacent the breech and muzzle ends thereof and each having a trigger guard, said rack comprising a plurality of vertically-spaced and supported brackets, each of said brackets having a downwardly-opening trigger guard-receiving slot formed therein, a pin for each bracket mounted for reciprocation thereon for extension and retraction of one end thereof across each slot, respectively, and for extension and retraction through said trigger guard, means supporting the muzzle ends of said firearms, and means on said bracket connected with the other end of each pin to effect simultaneous movement of said pins.

3,291,318
APPARATUS FOR STORING HOISTING EQUIPMENT
Stephen Simko, Homestead, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,991
6 Claims. (Cl. 211—13)



1. Apparatus for storing an electromagnet and its associated bull ring, comprising a plate for supporting a magnet, bull ring support means mounted on said plate and extending over a magnet, means on said bull ring support means for holding a bull ring in an upright position, and guide walls extending upward from said plate on either side of a magnet for guiding a magnet into its proper resting position beneath said bull ring support means.

3,291,319
SELF-LOCKING SHELVING FRAME MEMBERS
William H. Novales, P.O. Box 8364, Oakland, Calif., and Jacques K. Kayarian, 5726 Tehama Ave., Richmond, Calif.
Filed Mar. 4, 1965, Ser. No. 438,473
5 Claims. (Cl. 211—177)



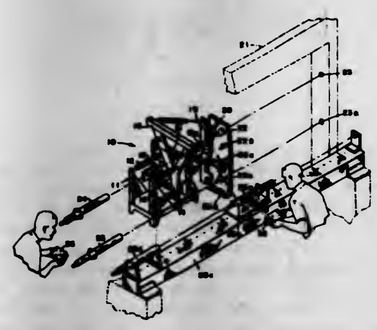
1. In a rack frame having horizontal beam members and vertical rail members, the improvements comprising:
(a) means for joining a horizontal beam member and a vertical rail member, said rail member having perpendicular first and second surfaces, said means comprising:
(1) at least a single hole in said first vertical surface of said vertical rail;
(2) at least a single lug integral with said horizontal beam, said lug being sized to register with said hole in said vertical rail; and
(3) a pivotally mounted latch on said horizontal beam, said latch having at least two positions including a first raised position wherein said lug may be placed in said hole in said vertical rail and a second lowered position wherein said latch prevents said lug from being removed from said hole, said latch and said lug being horizontally spaced from one another on said beam whereby the said lug registers with said hole in said first vertical surface and said latch registers with the second of the said vertical surfaces when the said latch is in the second lowered position.

3,291,320
UNCOUPLING ARRANGEMENT
Paul P. Greif, New York, N.Y., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 21, 1960, Ser. No. 37,703
21 Claims. (Cl. 213—162)



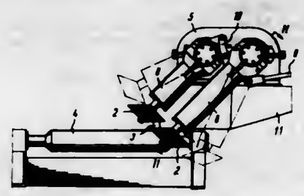
2. In a railway car the combination of, an underframe, a sliding center sill longitudinally slidably mounted in said underframe and having ends extending past the ends of said underframe, flexible means secured at one end to said sliding center sill inwardly of the ends of said underframe and extending endwardly to the end of said center sill, a link adjacent the end of said sliding center sill and connected to said flexible means at its other end, said link being pivotally connected adjacent the end of said sliding center sill, pivotal means connected adjacent the end of said sliding center sill and operable by the pivotal movements of said link, guide means on said underframe intermediate said ends of said flexible means and the end of said underframe, said guide means underlying said flexible means, flexing means pivotally mounted by said underframe and overlying said flexible means longitudinally inwardly of said guide means, means for pivoting said flexing means to bear the same down upon said flexible means to flex the same partially around said guide means and to thereby shorten the effective length of said flexible means and to pivot said link and pivotal means at the end of said center sill.

3,291,321
HYDRAULIC POSITIONER
Ralph A. Hamilton, Glendale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 31, 1964, Ser. No. 356,182
16 Claims. (Cl. 214—1)



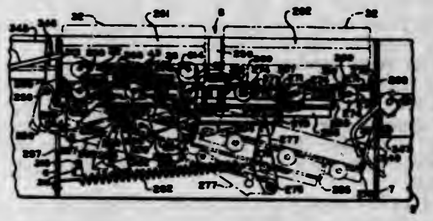
1. A hydraulic locator comprising:
(a) a frame;
(b) hydraulic pressure-responsive means connected to said frame;
(c) carriage means connected to said power means opposite said frame and adapted to be moved by said power means and to support structure to be located; and
(d) control means for causing hydraulic pressure to be selectively introduced to said power means in a predetermined manner whereby said carriage and any structure attached thereto may be moved in any one or a combination of movements of six degrees of freedom said control means including separate rapid action and slow action controls forming portions of said control means for providing an initial fast movement of said power means and relatively slower incremental movement for final and precise positioning of structure supported upon said carriage means.

3,291,322
MANIPULATOR FOR ROLLED STOCK
Iosif Lvovich Zajats, Elektrostal, U.S.S.R., assignor to Elektrostalsky ordena Lenina Zavod Tjazhelogo Machinostroenia, Elektrostal, U.S.S.R.
Filed May 7, 1964, Ser. No. 365,732
7 Claims. (Cl. 214—1)



1. A manipulator for rolled stock adapted for being mounted on the side guard of a roughing mill, said manipulator comprising a pair of spaced rollers having cylindrical surfaces adapted to engage opposite sides of rolled stock passing there-between, the said rollers being mounted for rotation about parallel axes inclined relative to the generatrices of the surfaces of said rollers, whereby the rolled stock passing between the rollers in contact therewith is rotated about its longitudinal axis during rotation of said rollers, means for rotating said rollers about their longitudinal axes in opposite directions at the same angular speed, and means for swinging said rollers between an operative position for gripping said stock and in inoperative position for releasing the rolled stock.

3,291,323
TAPE CARTRIDGE CHANGER MECHANISM
Sheldon Lee Pastor, St. Paul, Minn., and Myron Zarr, Chicago, Ill., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application May 8, 1961, Ser. No. 108,352, now Patent No. 3,149,797, dated Sept. 22, 1964. Divided and this application July 13, 1964, Ser. No. 382,321
6 Claims. (Cl. 214—6)



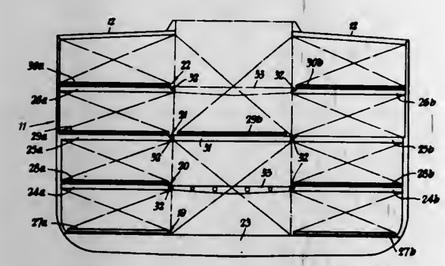
1. In combination, means defining first and second open bottomed magazines in side-by-side relation, a platform mounted for movement between a horizontal first

position closing the bottom of both magazines and a second position below said magazines wherein it is inclined in the direction of alinement of said magazines and the portion thereof subtending said second magazine is lower than that subtending said first magazine, and actuating means for effecting movement of said platform from said first to said second position to afford a transfer path for travel of a unit from a first position on said platform within said first magazine transversely and downwardly along said inclined platform to a second position on said platform below said second magazine and for effecting subsequent return of said platform to said first position for introduction of a unit thus transferred into the lowermost position in said second magazine.

3,291,324
METHOD AND APPARATUS FOR CARGO HANDLING

James Riches Fulcher, Ste. Foy, Quebec, Canada, and Alan G. Hopper, Hull, England, assignors to Vickers-Armstrongs (Shipbuilders) Limited, London, England, a British company

Filed Mar. 17, 1964, Ser. No. 353,299
Claims priority, application Great Britain, Mar. 18, 1963, 10,677/63
9 Claims. (Cl. 214—15)



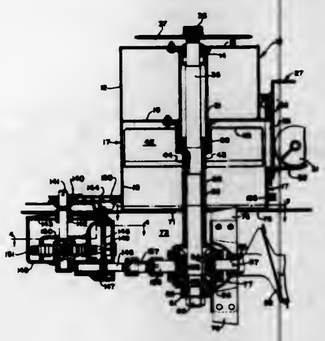
1. A ship having a hold for the stowing of cargo, a deck structure covering said hold and formed with a hatchway, said hold comprising an open frame structure defining a plurality of deck levels and located in said hold subjacent to, and at opposite sides of, said hatchway, said frame structure also defining a loading and discharging space in subjacent registry with said hatchway, a plurality of movable pallet decks located at each deck level and mounted for movement on said frame structure between a position in said loading and discharging space and a stowage position within said frame structure, the movable pallet decks located at each deck level being arranged in a row on the deck structure thereof along each longitudinal side of the ship, each row consisting of a number of pallet decks respectively aligned with the pallet decks of the opposite row, the width of the loading and discharge space and the width of each row of movable pallet decks constituting approximately one-third of the width of the hold, means for moving each of said pallet decks between said positions, and support means for releasable engagement with, and adapted to extend between, frame members disposed at one deck level but at opposite sides of said space, so as to provide support for said pallet decks during the aforesaid movement thereof and when in said loading and discharging position.

9. In the loading of a ship having a hold for the stowing of cargo, and including a deck structure covering said hold and provided with a hatchway, said hold comprising an open frame structure defining a loading and discharging space in subjacent registry with said hatchway and also defining a stowage space including a plurality of deck levels, said frame structure being located in said hold subjacent to said hatchway and at opposite sides of said loading and discharge space, a row of movable pallet decks located along each longitudinal side of the hold on the deck structure at each deck level, each row consisting of a number of pallet decks respectively aligned with the pallet decks of the row along the opposite side of the hold, support means for releasable engagement with, and adapted to extend between frame members disposed at one deck level but at opposite sides of said loading and discharge space, so as to provide support for said pallet decks during the movement thereof and when in said loading and discharging space, moving pallet decks respectively from said rows into the loading and discharging space but from alternate longitudinal positions in said rows so that alternate pallet decks are in the loading and discharging space from the opposite sides of the hold, loading cargo onto the pallet decks of the resulting row in said loading and discharging space, and thereafter moving the loaded pallet decks into their original positions in the hold at the respective sides of said loading and discharging space, whereby loaded pallet decks of each of the opposite rows alternate with unloaded pallet decks in the hold.

3,291,325
SILO UNLOADER

Etlar A. Henningsen, Geneseo, and Raymond S. Wilkes and Arnold B. Skromme, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Apr. 15, 1964, Ser. No. 359,948
11 Claims. (Cl. 214—17)

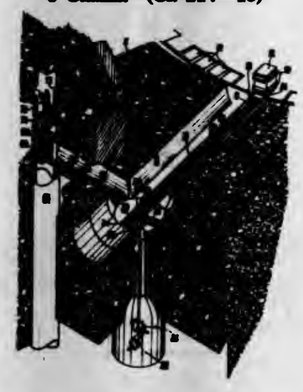


1. A silo unloader for use with an upright silo wall having a side discharge opening comprising: an upright drive shaft centrally located in the silo; wall structure around the shaft defining an upright and downwardly opening material receiving chamber; a radial auger structure extending from the chamber to the wall and adapted to move material from the surface of the silage inwardly to the underside of the chamber, said structure including an overhead laterally extending plate disposed under and for closing the underside of the chamber, said plate having an opening offset to one side of the shaft; conveyor means extending from the chamber to the side discharge opening; impeller means drivingly connected to the shaft for impelling the material from the inner end of the auger structure upwardly through the plate opening and to the conveyor means; and drive means connecting the auger structure to the shaft for causing rotation of the auger structure around the shaft.

3,291,326
CHARGING DEVICE FOR A NUCLEAR REACTOR REFUELLING FACILITY

Bernard Leclerc, Massy, Georges Lemoalle, Paris, and Jean Vivien, Versailles, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Feb. 3, 1964, Ser. No. 341,870
Claims priority, application France, Feb. 28, 1963, 926,413
8 Claims. (Cl. 214—18)

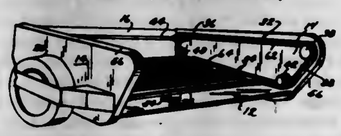


1. A device for the introduction of fuel element magazines in a servicing chamber in the pressure vessel of a gas-cooled nuclear reactor and for the withdrawal of the magazines from the chamber comprising a station in the chamber, a transfer compartment, a first shaft between said transfer compartment and said station, first means rectilinearly movable within said first shaft to transfer the magazines between said station and said transfer compartment, a second shaft, a second station in communication with the exterior of the vessel, second means rectilinearly movable within said second shaft to transfer the magazines between said transfer compartment and said second station, first sealing members disposed between said first means and said first shaft separating said transit compartment from the vessel when said first means are in a position in which the magazines are located within said transit compartment and second sealing members disposed between said second means and said second shaft separating said transit compartment from the exterior of the vessel when said second means are in a position in which the magazines occupy said second station.

3,291,327
MINE TRAILER

Bernard R. Simmons and Bobby J. Myers, Richlands, Va., assignors to S & S Machinery Company, Inc., Richlands, Va., a corporation of Virginia

Filed July 2, 1964, Ser. No. 379,909
4 Claims. (Cl. 214—83.36)

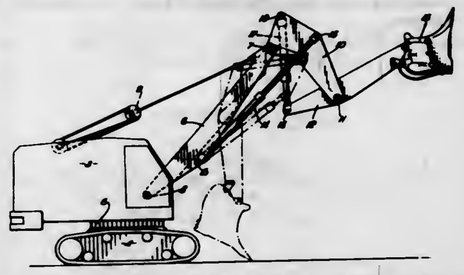


1. A mobile vehicle for use in underground mines for hauling material from a loading location to a discharge location and for discharging material at the latter location, said vehicle comprising: an open-top vehicle body adapted to be loaded from above and to discharge material from one end in a longitudinal direction, said vehicle body having spaced apart side walls and a bottom wall terminating at said one end; conveyor means mounted in said body, said conveyor means including a looped endless member mounted in a vertical plane near the inner surface of each side wall, each endless member having a lower run extending along the length of the upper surface of said bottom wall and an upper run disposed at a level near the upper edges of said side walls, said conveyor further including a plurality of transverse, spaced-apart, material-moving flights extending between said endless members, said flights being disposed along only a portion of the length of said endless members, the remaining length of said endless members being free of flights and of a magnitude such that a substantial area of the open top of said vehicle body is free of flights when said endless members are revolved to a load position at which at least some of said flights are positioned adjacent the upper surface of said bottom wall; and drive means carried by said vehicle for intermittently revolving said endless members in a direction to move said flights along said bottom wall toward said one end of said body whereby material in said vehicle body will be discharged from said one end during operation of said drive means and whereby material may be toploaded into said vehicle body without interference from said flights when said endless members are revolved and stopped in said load position.

3,291,328
CROWD SHOVEL EXCAVATORS

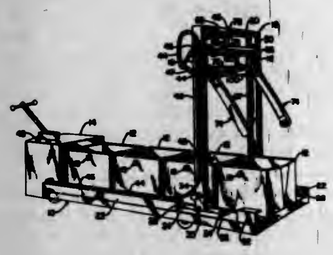
Norman Brocklebank, Beverley, England, assignor to Priestman Brothers Limited, Yorkshire, England, a British company

Filed Oct. 4, 1965, Ser. No. 492,469
Claims priority, application Great Britain, Oct. 9, 1964, 41,339/64
1 Claim. (Cl. 214—138)



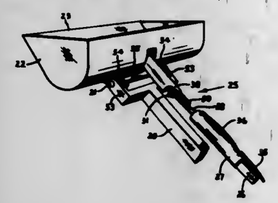
A crowd shovel comprising a base machine, a boom pivotally mounted on said base machine, means adapted to luff said boom relatively to said base machine, a crowd arm having first and second ends, means pivotally mounting said first end of said crowd arm on the outer end of said boom for rocking movement in a vertical plane thereabout, a dipper handle having first and second ends, means pivotally mounting said dipper handle intermediate its said ends on said second end of said crowd arm for swinging movement thereabout, a digging bucket mounted on said first end of said dipper handle facing away from said base machine, first fluid operated ram means interconnecting said crowd arm and said second end of said dipper handle whereby upon operation thereof said dipper handle and bucket are caused to perform a forward and upward scooping action, second fluid operated ram means interconnecting said boom and said crowd arm intermediate said first and second ends of said crowd arm whereby said crowd arm is swingable in a vertical plane between a position in which said crowd arm extends backwards along and beneath said boom and said second end of said dipper handle extends upwards through said boom and a second position in which said crowd arm extends transversely away from said boom to perform a crowding action.

3,291,329
MATERIAL HANDLING TRUCK
Thomas E. Ord, 4210 Cook St., Denver, Colo.
Filed Nov. 5, 1964, Ser. No. 409,110
12 Claims. (Cl. 214—313)



1. Material handling apparatus comprising: a mobile platform for supporting material to be handled; a vertically aligned mast mounted for horizontal and rotational movement on said platform, said mast including opposed channel members each having a rack mounted internally thereof; a skip mounted on said racks for vertical movement; at least two lift arms mounted by one end to said skip for vertical pivotal movement; article engaging means mounted at the free ends of said lift arms; and means for moving said article engaging means relative to said lift arms.

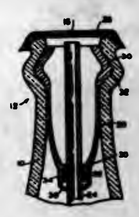
3,291,330
POWER LOADER
Eddie B. Wagner, Portland, Oreg., assignor to Wagner Manufacturing, Inc., Portland, Oreg., a corporation of Oregon
Filed June 1, 1965, Ser. No. 460,049
6 Claims. (Cl. 214—775)



1. In a power loader, a boom pivotally mounted for vertical movement, a bucket pivotally mounted on said boom, a linkage connected with said bucket for pivoting the bucket to scooping, carrying and dumping positions, a hinged joint in said linkage having pivotal movement in one direction for tilting the bucket to dumping position, and over-center stop means in said joint arranged to prevent pivotal movement in the opposite direction and make said joint rigid for scooping and carrying.

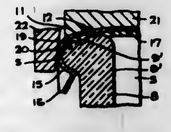
3,291,331
BEVERAGE CONTAINING AND DISPENSING ENCLOSURE
Charles R. Grisham, 1915 S. Cheyenne, and Lee D. Stansberry, 2414 E. 7th, both of Tulsa, Okla.
Filed Feb. 21, 1966, Ser. No. 528,756
5 Claims. (Cl. 215—1)

1. A beverage containing and dispensing enclosure comprising:
an upright bottle having an opening in the top and reduced diameter neck portion adjacent the opening;
a tubular flexible straw holder having an upper portion of an outside diameter snugly fitting the inside diameter of said bottle neck portion, and a lower flexible invaginable portion of reduced diameter having in the bottom thereof a smaller diameter axial opening;



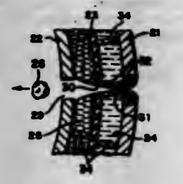
a drinking straw received by said opening in the lower portion of said holder, the major portion of the length of said straw extending within said bottle below said holder; and
a removable cap closing said bottle.

3,291,332
CLOSURE DEVICE
Virginia Morris, 745 24th St., Santa Monica, Calif.
Filed Sept. 13, 1965, Ser. No. 486,749
3 Claims. (Cl. 215—39)



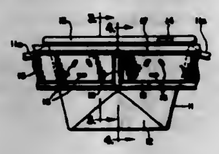
1. A closure for an open ended container,
(1) said container having an end surface and an interior wall, defining the open mouth of said container, said surface having an exterior convex surface adjacent one end of said wall defining a locking head;
(2) a groove in said end surface spaced from said interior wall;
(3) a crown seal cap having a cap top, a depending skirt and a locking flange;
(4) said cap mounted over the said end wall with the locking flange in locking relation to said locking head;
(5) a polyolefinic plastic gasket, a portion of said gasket pressure clamped between said cap top and said end surface and between said depending flange and the exterior convex surface of the said locking head, the clamped portion of said gasket extending in contact with and across the end surface and said cap top and between the exterior convex surface of said locking head and said depending flange, the space between the exterior convex surface of said locking head and said depending flange having a wedge volume, and the edge portion of said clamped portion of said gasket extending into said wedge volume and clamped between said depending flange and the exterior surface of said locking head across the entire surface of said gasket in said wedge volume;
(6) said gasket having a depending solid circumferential bead integral with said gasket and extruded into said groove,
(7) said groove being positioned exteriorly of the center line of said locking head.

3,291,333
SELF-SEALING CONSTRUCTION FOR SPACE VEHICLES
Phillip A. House, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 23, 1962, Ser. No. 175,375
5 Claims. (Cl. 220—15)



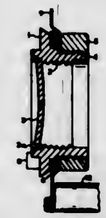
4. A self-sealing construction for space vehicles comprising a hollow-walled closure unit having an outer fluid-impervious wall and an inner fluid-imperivous wall spaced from said outer wall; a pierceable fluid-impervious membrane within the hollow wall spaced from said outer wall and said inner wall and dividing said hollow wall into at least two fluid-tight chambers, a high viscosity fluid in one of said chambers and a relatively low viscosity fluid in the other of said chambers, one of said fluids being a polymerizable material consisting of polypropylene oxide toluene diisocyanate adduct having a viscosity of approximately 10,000 poises and the other of said fluids being triethylene tetramine having a viscosity below 400 centipoises; a honeycomb construction of interconnecting strips of rigid, fluid-impervious material positioned in said outer chamber; the edges on one side of said strips being in fluid-tight association with said outer wall and the edges on the opposite side of said strips being in fluid-tight association with said membrane.

3,291,334
BAKE PAN UNIT
Morris Kaufman, Morton Grove, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 524,993
1 Claim. (Cl. 220—23.2)



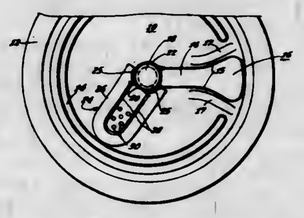
A bake pan unit adapted for use with high speed loaf moulding and automatic panning equipment wherein loaf placement in said unit is timed with arrival of said unit between indexing fingers movable between advanced and retracted positions relative to and at opposite sides of a fixed path in which said pan unit travels enroute to and from said equipment, said pan unit comprising a series of duplicate open top pans, and duplicate strap members securing said pans in fixed aligned relation in a row extending lengthwise of said path of travel, each strapping member having top and bottom edges defined by an outwardly beaded rim coextensive with the dimension of said unit measured lengthwise of and occupying uniformly vertically spaced apart positions parallel to said path of travel, each strap member presenting a substantially planar upright surface throughout the entire exposed area of said strap member between said beads except for an outwardly offset upright rib formed integrally with said strap member at locations spaced apart a distance matching the center-to-center distance of said pans to thereby provide means engageable with said indexing fingers to stop movement of said pan unit along said path of travel when said fingers are in advanced position.

3,291,335
CONTAINER CLOSURE
Harry Vaness, Homebush, New South Wales, Australia, assignor to Rheem Australia Pty. Limited, Royalmere, New South Wales, Australia, a corporation of Victoria, Australia
Filed Mar. 19, 1965, Ser. No. 441,161
10 Claims. (Cl. 220—27)



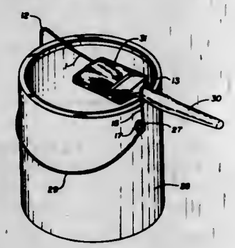
1. A container having a threaded opening formed through its wall, and a hollow bushing of non-metallic material, screwthreaded internally at least near its outer end and screwthreaded externally at least near its inner end and having an external flange near its outer end, the bushing being screwed into and secured in the container opening with the flange outside the container and against the container wall.

3,291,336
CAN TOP
Ernst C. Franz, 355 W. Stroop Road, Dayton, Ohio
Filed Jan. 22, 1965, Ser. No. 427,424
10 Claims. (Cl. 220—54)



1. In an easy opening container having a wall made of sheet material, wherein the wall is weakened by a groove, the bottom wall of which forms a thin residual web of material defining a tear strip that may be manually lifted from the plane of the wall for severance of the tear strip by stressing the residual web in shear, the improvement comprising:
a solid extruded rib formed integrally in the sheet material along the residual web on the longitudinal side of the residual web away from the tear strip to stiffen the sheet material adjacent the residual web against flexure in response to lifting of the tear strip thereby to cause the shearing stress across the residual web to rise abruptly when the tear strip is lifted.

3,291,337
BRUSH HOLDER AND WIPER
Tobie W. Jenkins, 3330 Ash St., Denver, Colo.
Filed Sept. 8, 1964, Ser. No. 394,741
1 Claim. (Cl. 220—90)



As an article of manufacture, a paint-brush-holder and bristle-wiper arranged to be used with a variety of sizes of paint cans, paint roller trays, and the like, and adapted for both brush-clamping and brush-supporting cooperation with paint cans of the type having equispaced, generally, circular, bail-supporting bosses, a single continuous length of wire bent and curved to form an inter-connected series of sections, substantially symmetrical about a vertical bisector thereof, and comprised of:

(A) an elongate first straight section as an intermediate element (1) arranged to be suspended below the lip of a paint can upon which the article is mounted;

(B) each respective opposed end of the intermediate element having two sequential bends (2, 4, 3 and 5) at substantially right angles to each other, all said bends (2, 4, 3 and 5) being in a common vertical plane with the intermediate section (1) and interconnecting the intermediate element between two oppositely-extending second straight sections (6, 7);

(C) said second straight sections (6, 7) being in a common plane substantially parallel to the horizontal plane in which the intermediate element (1) rests, said straight sections (6, 7) being substantially smaller than the intermediate element (1),

(i) said second straight sections (6, 7) arranged to seat on the lip of a paint can when the article is in use therewith;

(D) each said second straight section (6, 7) terminating in an upwardly-directed bend (8, 9) interconnecting a said second straight section to a third straight section (10, 11),

(i) a said bend (8, 9) interconnecting a second and third straight section being at an angle obtuse to a said second straight section,

(ii) each said third straight section lying in the same common vertical plane as the second straight sections (6, 7) and the intermediate element (1);

(E) each said third straight section (10, 11) interconnected through an additional bend (12, 13) with a fourth straight section (14, 15),

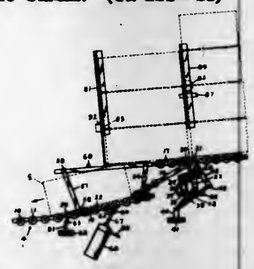
(i) each said fourth straight section (14, 15) being longer than a third straight section (10, 11) with which it is interconnected and in a vertical plane substantially perpendicular to the vertical plane in which a said third straight section appears,

(iii) a said fourth straight section (14, 15) being of sufficient length as to allow a terminal portion thereof (16, 17) to be seated about a bail-boss (27) of a paint can when a second straight section is resting on the rim of a said paint can;

(F) each said fourth straight section having a terminal portion in the form of a substantially closed but partially open loop (16, 17),

(i) a said loop being open sufficient to allow hooking cooperation with a circular bail-boss, a can rim, or an upstanding edge of a roller paint tray.

3,291,338
AUTOMATIC WAREHOUSE ESCAPEMENT APPARATUS
Fred C. Gleason, Cannondale, Conn., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,191
18 Claims. (Cl. 221—11)



1. An automatic escapement device for a stack of cases, said device comprising:

a composite floor adapted to support a stack of cases, said composite floor comprising:

(a) a retaining floor section and a juxtaposed discharge floor section in operative association with said retaining floor section;

(b) pivotal means mounting said retaining floor section at the rear thereof;

(c) releasable locking means for maintaining said retaining floor section in upper, generally horizontal case-supporting position;

(d) actuatable means for releasing said locking means and permitting said retaining floor section to be pivoted downwardly on said pivotal means; and

(e) cradle means mounting said discharge floor section for movement from an upper generally horizontal position in juxtaposition with said retaining floor section when the latter is in said generally horizontal case-supporting position, downwardly and forwardly with respect to said rear of said retaining floor section while maintaining the generally horizontal disposition.

3,291,339
PAPER SHEET DISPENSER
Lester W. Hein, 1526 E. Alton, Independence, Mo.
Filed June 18, 1965, Ser. No. 465,094
4 Claims. (Cl. 221—45)



4. A sheet dispenser comprising:

(a) a container having a pair of spaced apart oppositely disposed upwardly extending side walls with upper and lower edges, said side walls extending horizontally inwardly of said container at said upper edges forming opposed strip members, said strip members extending across and partially covering the top of said container,

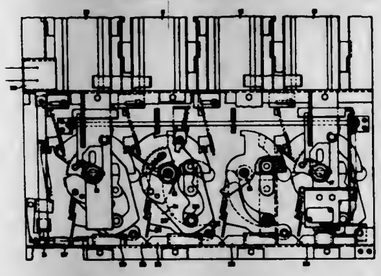
(b) said container having a pair of oppositely disposed end walls having upper edges and cooperating with the side walls to define a rectangular sheet receiving compartment, said end wall upper edges being arranged with the strip members positioned adjacent to and spaced thereabove whereby an uppermost sheet in said compartment may slide laterally between said end wall upper edges and a strip member,

(c) said side walls being respectively divided into laterally spaced apart sections forming at least one pair of opposed vertically extending elongated slots, elongated tubular portions disposed externally of said container and adjacent each of said slots with the interior of said tubular portions having communication through said slots with the paper receiving compartment,

(d) a bar extending between said side walls and having opposite ends extending through said opposed side wall slots and into said respective tubular portion interiors for vertically movement in said container,

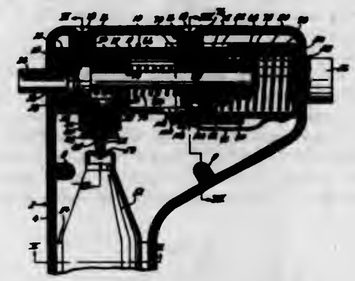
(e) vertically extending helical compression springs in said respective tubular portions, said springs operatively engaging said bar ends for resiliently urging said bar upwardly to retain a stack of sheets of varying height between said bar and said strip members and urge the top sheet of said stack into slidable contact with said strip members.

3,291,340
VENDING MACHINE INTERLOCK MECHANISM
Meigs W. Newberry, East Longmeadow, Springfield, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1965, Ser. No. 503,972
4 Claims. (Cl. 221—125)



1. In a vending machine having a plurality of storage columns and a plurality of respective vend mechanisms for each respective column, the combination of interlock mechanism for preventing simultaneous operation of more than one of said vend mechanisms, comprising a plurality of interlock blades having wedge shaped surfaces at end portions thereof, means positioning said blades in general alignment with each other and with the wedge ends of adjacent blades overlapping each other, a projection extending from a face of one of each pair of overlapping blades in a position to abut the end surface of the other of each pair of overlapping blades whereby lengthwise movement of any one blade causes lengthwise movement of a next adjacent one of said blades, a plurality of respective interlock blade moving members connected to respective ones of said vend mechanisms for movement between the wedge ends of respective overlapping ones of said interlock blades to cause lengthwise movement of said blades, and means limiting the lengthwise movements of said blades to prevent the simultaneous movement of more than one of said blade moving members between the wedge ends of respective overlapping ones of said interlock blades to thereby prevent simultaneous operation of more than one vend mechanism.

3,291,341
FLUID GUN FOR CLEANING ELECTRIC RAZORS
Ernest P. Simmons, 2510 Lafayette, Kansas City, Kans.
Filed June 30, 1965, Ser. No. 468,266
2 Claims. (Cl. 222—4)



1. A fluid gun comprising:

(a) a housing,

(b) a reservoir for gas and fluid under pressure carried by said housing and constituting a normally sealed container removably insertable in said housing and having a wall thereof capable of being pierced by a needle,

(c) a nozzle carried by said housing and opening outwardly therefrom,

(d) means providing a flow passage interconnecting said reservoir and said nozzle and including a tubular needle rigidly mounted in said housing, and a chamber of very small volume as compared to said reservoir container, said chamber being disposed intermediate said needle and said nozzle, the passageway through said needle being of such small area as to constitute a sharp restriction to the flow of gas and fluid from said reservoir to said chamber,

(e) means carried by said housing and operable to move said container therein to force the pierceable wall of said container over the sharp end of said needle,

(f) a normally closed valve controlling the flow of gas and fluid through said passage and disposed intermediate said chamber and said nozzle,

(g) a valve spring biasing said valve toward its closed position,

(h) an abutment member carried by said valve,

(i) a hammer carried movably in said housing and operable when moved in one direction to strike said abutment member to open said valve momentarily against said valve spring,

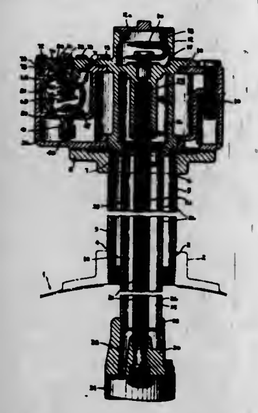
(j) a hammer spring biasing said hammer in said one direction but not with sufficient force to open said valve, and

(k) manually actuated operating means operable when actuated to move said hammer in the opposite direction against said hammer spring, and to release said hammer when said hammer spring has been compressed to a predetermined degree.

3,291,342
FLUID DISPENSING APPARATUS
Paul A. Mankin, North Muskegon, Mich., assignor to John Wood Company, East Orange, N.J., a corporation of Delaware
Filed June 16, 1965, Ser. No. 464,327
3 Claims. (Cl. 222—26)

1. In a liquid dispensing system which includes a liquid dispenser unit having an outer housing, a meter having a liquid inlet and a liquid outlet, conduit means operatively connected to said meter outlet, a dispensing hose, having a dispensing nozzle at its distal end, connected to

said meter outlet, a tank source of supply of liquid remotely positioned from said dispenser unit, a submerged pump positioned in said tank source of supply, an oulet conduit means operatively connected at one end to the outlet of said submerged pump, and operatively connected at its other end to a body member assembly, said body member assembly including a chamber for a check and relief valve assembly adapted to be seated on a seat formed in said body member assembly, and conduit means connecting the outlet of said body member assembly to said inlet of said meter; the invention comprising a spring member normally tending to move said check and relief valve onto its seat, said check and relief valve being normally adapted to be moved off its seat when the fluid pressure of thel iquid from said submerged pump assembly on the underside of said check and relief valve assembly



is of a sufficient predetermined value to move said check and relief valve off its seat against the effective forces of said spring member to permit the flow of liquid therethrough; manually operative means adapted to be moved into engaging contact with the upper portion of said check and relief valve assembly to hold said check and relief valve assembly on its valve seat in closed position at liquid pressures considerably in excess of the normal pressure of the fluid on the underside of said check and relief valve assembly; whereby said check and relief valve assembly will remain tightly seated on its valve seat when the fluid pressure within said body member passageways and said conduit means connecting said body member to said submerged pump assembly is increased by a considerable value for the purpose of testing said conduit means and various conduit connections for leaks within the system prior to any burying of said conduit means beneath the ground level.

3,291,343
DISPENSER UNIT
Gerald T. Tracy, Clarendon Hills, and Richard D. Zenger, Lisle, Ill., assignors to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,452
7 Claims. (Cl. 222—52)

1. A carbonated beverage dispenser unit comprising, in combination,

(a) spout and valve body means for dispensing a liquid,

(b) valve means movably disposed in said valve body and in communication with said spout for controlling the flow of said liquid,

(c) handle means attached to said valve means whereby pivotal movement of said handle means actuates said valve means and controls the flow of liquid through said valve means and said spout means,

(d) gas cartridge receiving means in said handle for accommodating a gas cartridge therein,

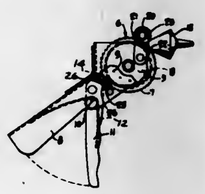
(e) a piston-operated regulator in said handle means for regulating the pressure of the gas from said



cartridge on the contents of a container attached to said dispenser unit, and

(f) clamp means for attaching said dispenser unit to a liquid container.

3,291,344
TUBE DISPENSING DEVICE
Robert W. Meyer, 199 E. Ozaula, Elmhurst, Ill.
Filed Feb. 23, 1965, Ser. No. 434,277
1 Claim. (Cl. 222—98)



In a dispensing device of the class described, in combination, a U-shaped body, a hand width support handle extending therefrom, a drum rotatably mounted between the outer walls of said body, said drum having means to engage a tube to be dispensed, squeezing means comprising a roll member swingably mounted on the body for movement toward and from the surface of the drum, means for rotating the drum including a ratchet on the drum, an operating handle pivoted to the support handle, a ratchet dog operable by the operating handle, the support handle being connected to the body at one end of the latter, the ratchet on the drum being adjacent said support handle, the operating handle is substantially the same size as and is pivoted on the support handle, said device being thereby arranged for one handed manipulation, spring means to separate the extremities of the handles remote from the pivotal connection, the ratchet dog on the operating handle engaging the drum ratchet, and releasemeans extending from the dog for finger engagement, the means for rotating said drum causing the tube to wrap around the same between said drum and squeezing means to force the tube contents outwardly from the tube.

3,291,345
COLLAPSIBLE TUBE DISPENSER
Donald E. McCombs, 3203 Chancer, St. Ann, Mo.
Filed July 2, 1965, Ser. No. 469,226
1 Claim. (Cl. 222—183)



For use with a collapsible tube for expelling the contents thereof, a dispenser adapted for slideable mounting on said tube for travel relatively therealong from the closed end thereof toward the discharge end during the dispensing operation comprising:

(a) a flat base,

(b) a pair of transversely aligned mounting flanges substantially intermediate said base and projecting upwardly therefrom,

(c) means defining a bearing located in each of said mounting flanges upwardly of said base,

(d) a presser member disposed between said mounting flanges in overlying relationship to said base,

(e) pivot pins operatively engaging said presser member and being journaled in said bearings for defining a transverse pivot axis for permitting rockable movement of said presser member with respect to said base, said pivot axis being presented substantially intermediate the ends of said presser member,

(f) said presser member having an outer surface and an inner surface,

(1) said inner surface confronting said base,

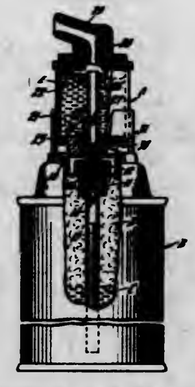
(2) said inner surface being arcuate and downwardly convex, the lowermost portion of which being spaced from said base at a distance substantially coincident with the thickness of a collapsed tube engaged by said dispenser,

(3) said inner surface forwardly of said mounting flanges defining with the underlying portion of said base a mouth for reception of a portion of a tube to be collapsed, and

(g) a spring member having a transverse portion extending across said outer surface forwardly of said mounting flanges, said transverse portion being in parallel relationship with said transverse pivot axis and disposed forwardly thereof, the ends of said spring member being coiled about each of said pivot pins, said spring being adapted to bias the forward portion of said presser member downwardly toward said base whereby when said tube is received within said mouth it will be retained in proper attitude for operation.

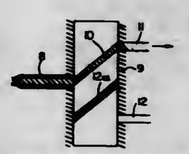
3,291,346
HOT LATHER SHAVE BLENDER
Leonard L. Marraffino, 121 Sunset Road, Massapequa, N.Y.
Filed Sept. 2, 1964, Ser. No. 393,860
4 Claims. (Cl. 222—136)

1. A blending and dispensing device for mixing a liquid with a gaseous propelled creamy substance dispensed from a pressurized container to produce a wetted foam, comprising a reservoir for holding a blending liquid, a dispensing spout connected to said reservoir, channel means for guiding to said dispensing spout pressurized creamy substance released from said container, and bleed means for bleeding off into said liquid a portion of the gaseous propellant entrapped in said released creamy substance to pressurize and create a turbulence of said liquid sufficient to blend said liquid with said creamy substance at said dispensing spout to produce and dispense said creamy substance as a moist foam, said channel means including a hollow tube extending into said reservoir



with one end in communication with a dispensing valve on said pressurized container and with its opposite end disposed adjacent said dispensing spout and wherein said bleed means is an orifice in said tube.

3,291,347
APPARATUS FOR DISPENSING MEASURED VOLUMES OF FLUID
Alfred Nigel Blades, Dorchester, England, assignor to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Filed Sept. 1, 1965, Ser. No. 484,304
Claims priority, application Great Britain, Sept. 10, 1964, 37,837/64
10 Claims. (Cl. 222—136)



1. A measuring and dispensing apparatus for directing measured quantities of fluid to a predetermined location comprising, two members arranged to move one with respect to the other, at least first and second fluid sources for first and second fluids respectively, at least first and second independent conduit systems communicating between the respective fluid sources and the predetermined location solely through said two members, one member having a pair of spaced, parallel through-ducts formed therein and the other member communicating with part of each of said independent conduit systems, said one member arranged to move relative to the other between first and second positions, the first position being defined with one of said through-ducts in communication with the first fluid conduit system, and the second position being defined with said one through-duct being blocked from communication with the first fluid conduit system, and means for establishing a pressure differential for moving said first and second fluids to introduce first fluid into said one through-duct from said first fluid conduit system when said one member is in the first position and to cause the second fluid to enter the other one of said through-ducts to discharge a measured quantity of first fluid to said predetermined location when said one member is in the second position, at least one of said members having a measuring duct of precise bore formed therein

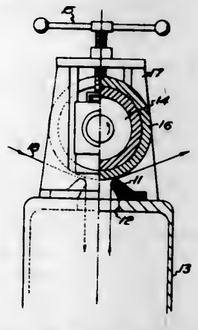
and said discharged first fluid is introduced into said measuring duct when said one member is in the first position and discharged therefrom when said one member is in the second position.

3,291,348
METHOD FOR PACKAGING, MIXING AND DISPENSING A PLURALITY OF SUBSTANCES
Jean Chibret and René Chibret, Puy de Dome, France, assignors to Laboratoires Chibret, Puy de Dome, France, a company of France
Filed Sept. 26, 1963, Ser. No. 311,813
Claims priority, application France, Sept. 27, 1962, 910,591
2 Claims. (Cl. 222—145)



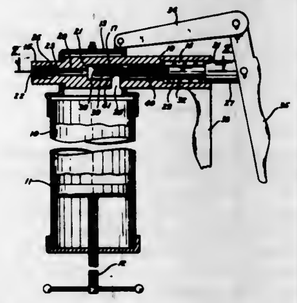
1. A method for packaging, extemporaneously mixing and then dispensing under a decreasing dispensing pressure, two substances of which at least one is a liquid, said method comprising the steps of:
providing two containers of identical size and shape, one of said containers being a dispensing container and the other of said containers being an auxiliary container;
providing at one end of said dispensing container, a valve having an outlet piece displaceable by manual pressure from a first closed position to a second opened position;
providing at one end of said auxiliary container, a valve having an outlet piece displaceable by manual pressure from a first closed position to a second opened position;
one of said outlet pieces being formed as a male part and the other of said outlet pieces being formed as a female part, said outlet pieces thereby being interconnectable with one another;
introducing a measured volume of the liquid substance into said auxiliary container and introducing a measured volume of the other substance into said dispensing container, the combined volumes of said two introduced substances being substantially smaller than the capacity of said dispensing container;
further introducing into said dispensing container an inert gas under a pressure higher than atmospheric pressure but lower than the required initial dispensing pressure value;
further introducing into said auxiliary container an inert gas under a pressure capable of completely expelling the liquid from said auxiliary container into said dispensing container and of thereby increasing the gas pressure in said dispensing container to said initial dispensing pressure value;
coupling said auxiliary container and said dispensing container together with the interior of one of such containers communicating with the interior of the other, such coupling being effected by connecting said male and female valve outlet pieces and exerting a manual pressure thereupon for displacing said valve pieces toward their respective opened positions, thereby entirely expelling the liquid substance from the auxiliary container into said dispensing container, and simultaneously increasing the gas pressure in said dispensing container to said initial dispensing pressure value;
uncoupling said two containers from each other;
mounting a spray head on the outlet piece of said dispensing container valve; and,
actuating said spray head to thereby dispense the mixture of said two substances from said dispensing container in the form of an aerosol spray.

3,291,349
PRESSURE SEALING ARRANGEMENTS
Duncan Campbell McKellar and Graham William Robertshaw, Altrincham, England, assignors to Sentrex Development Company Limited, a company of Great Britain, Northern Ireland, and the Isle of Man
Filed June 19, 1964, Ser. No. 376,481
Claims priority, application Great Britain, June 22, 1963, 24,926/63
15 Claims. (Cl. 226—200)



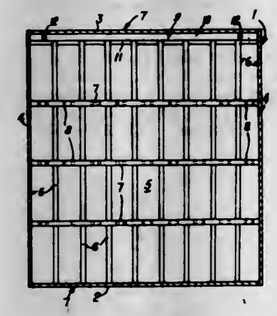
1. A pressure seal arrangement comprising an orifice in the container to be sealed, a lip formation about the periphery of such orifice, a moving surface adapted to contact said lip formation over substantially the full extent thereof and means for pressing said lip and surface against each other sufficiently to create a positive pressure between them, at least one of the mutual contacting surfaces defined by the moving surface and the lip formation being resiliently deformable thus to allow passage therebetween of a web or the like whilst retaining an effective seal over the full extent of the said lip formation.

3,291,350
FLUID PUMP
Jerry P. Malec, 3125 S. 41st St., Omaha, Nebr.
Filed Nov. 5, 1963, Ser. No. 321,619
10 Claims. (Cl. 222—318)



1. In a fluid pump means,
a housing having a first bore and second bore having its rear end communicating with the forward end of said first bore; said second bore having a diameter less than that of the diameter of said first bore, a matter exit port in said housing communicating with the forward end area of said second bore, a matter inlet port in said housing communicating with the inside of said first bore, a first piston slidable in said first bore, a second piston connected to said first piston and capable of entering and sliding in said second bore, means for reciprocating said pistons, and a means for the relief of trapped matter in said first bore after said second piston has entered said second bore; said means for the relief of trapped matter comprising in part a relief passageway in said first piston in communication with said matter inlet port.

3,291,351
UNLOADING OF BULK LIQUID OR PULVERULENT CARGOES FROM CARGO SHIPS
Charles Henderson Carslaw, Yoker, Glasgow, Scotland, assignor to Drysdale & Company Limited, Glasgow, Scotland, a corporation of Great Britain and Northern Ireland
Filed Nov. 27, 1964, Ser. No. 414,235
Claims priority, application Great Britain, Nov. 27, 1963, 46,812/64
5 Claims. (Cl. 222—464)



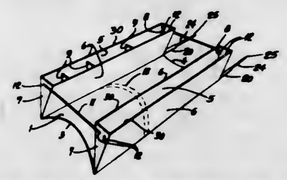
1. A cargo ship having cargo tanks in which there are first structural members disposed in the fore-and-aft direction, further structural members disposed athwartships, tank bottom means attached to the undersurfaces of said structural members, a plurality of cells defined by said structural members, at least one trunk extending substantially from side to side of the tank in either of the directions comprising the athwartships direction and the fore-and-aft direction, the trunk being in communication with the interior of the cargo tank along the longitudinal edge thereof which is adjacent to said tank bottom means, a discharge pump having a suction inlet thereto which is in communication with said trunk, and limber holes formed in the structural members which are substantially parallel to said trunk, with the exception of the structural members which bound the tank.

3,291,352
MACHINE FOR FORMING DECORATIVE ARTICLES
Raimonds Grikis, Chicago, Ill., assignor to CPS Industries, Inc., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,484
11 Claims. (Cl. 223—46)

1. A machine for forming decorative articles comprising a frame, a first set of fingers mounted in a fixed position on said frame, a second set of fingers, a movable support element mounting said second set of fingers for movement in interdigital relation with said first fingers from a first position at one side of said first fingers, through a position of interengagement with said first fingers, to a second position on the opposite side of said first fingers to draw ribbon engaged between said fingers into loops of varying length, and first means between said first set of fingers and said second position for retaining an end of such ribbon engaged between said fingers during such movement of said movable fingers.

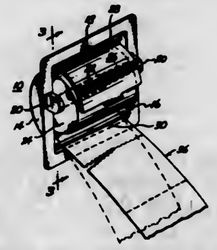


3,291,353
SERVICE TRAY FOR USE IN AUTOMOBILES AND THE LIKE
Alexander Sobczak, 4690 Victoria Ave., Montreal, Quebec, Canada
Filed Oct. 24, 1965, Ser. No. 504,391
7 Claims. (Cl. 224—42.42)



1. A service tray for use in automobiles and in other relations, comprising a flexible bottom wall adapted to be fitted over a convex surface with added steel spring bar for secure fitting, such as an automobile shaft hump, elongated compartments upstanding from and secured to opposite marginal portions of said bottom wall and adapted to extend longitudinally of said convex surface, means to hold said compartments in upstanding position and spring-loaded prongs protruding from an end of said tray to abut against an automobile fire wall and the like abutment surface upstanding from said convex surface, and engaging said tray securely against driver's seat, permitting at the same time free seat adjustment means.

3,291,354
PAPER ROLL HOLDER
Herbert W. Zieharth, Seattle, Wash., assignor of one-half to Emmett A. Zieharth, Seattle, Wash.
Filed Oct. 18, 1965, Ser. No. 497,091
5 Claims. (Cl. 225—79)



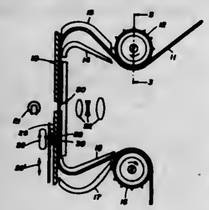
1. In combination with a dispenser for a paper roll, means to facilitate the parting of a strip unreeled from said roll, comprising:
a bar fixedly associated with the dispenser and located beneath and behind the roll axis so that a paper strip

being unreeled from the rear of a roll passes the back side of said bar relative said roll,

said bar having spaced apart first and second parallel strip-contacting edges on its backside, the first of said edges to be contacted by an unreeling strip being smooth, and the second of said edges being roughened to impart appreciable friction on a paper strip upon contact therewith,

said roughened bar edge being located out of the normal path of the strip as the same is being unreeled, but contactable by said strip upon a flattening of said path to produce strip-parting outward of said bar.

3,291,355
FILM SPROCKET SLIP CLUTCH OPERATION FOR SINGLE FRAME PROJECTION
Clarence William Pribus, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 10, 1964, Ser. No. 395,442
7 Claims. (Cl. 226—66)



1. A film drive arrangement for a motion picture projector allowing periodic stoppage of the film for extended illumination and projection of selected frames, comprising:

a film gate having a framing aperture through which individual frames of the film are illuminated for projection;

a pulldown claw for engaging and moving the film sequentially through said gate, frame by frame;

means for temporarily rendering said claw ineffective to engage and move the film;

drive means for advancing the film to said gate;

drive means for removing the film from said gate; and

slipping clutch means associated with each of said drive means operative to slip in response to the torque applied to said drive means when said claw is ineffective to engage and move the film to thereby render said drive means ineffective to advance and remove the film.

ERRATUM

For Class 226—200 see:
Patent No. 3,291,349

3,291,356
WIRE INSTALLING MACHINE
Robert M. Armstrong, 6350 El Paseo Court, Long Beach, Calif.
Filed Nov. 19, 1963, Ser. No. 324,687
9 Claims. (Cl. 227—82)

1. An installation structure for affixing heating wire to a room surface by means of spaced apart holders, comprising: an elongate support means, movable relative said surface for positioning a length of said wire contiguous to said surface from a supply of said wire carried on said support means; means on said support means for fixing said holders to said surface whereby to anchor said wire thereto; and control means for actuating said means



for fixing said holders in accordance with the length of wire extending to the last past fixed holder.

3,291,357
BLIND CLINCH MECHANISM
Henry Ruskin, Cranford, N.J., assignor to Swingline, Inc., Long Island City, N.Y., a corporation of New York
Filed Mar. 31, 1965, Ser. No. 448,907
3 Claims. (Cl. 227—83)



1. A tacker having a casing, a magazine within said casing adapted to hold a plurality of staple elements, staple feeding means within said magazine, a reciprocatingly movable driver blade operatively connected with said magazine adapted to drive the leading staple from said magazine, said driver blade having a face portion thereupon, a single guide member carried by said casing having a face portion adapted to springably abut the face portion of said driver blade, said guide member also having an offset portion spaced from said casing and provided with a plurality of spaced recesses therewithin, each of said recesses having an upper portion in said offset portion and a connecting lower portion in said face portion, the upper portion being of greater width than the lower portion, the lower portion of each of said recesses extending obliquely from the corresponding upper portion, each of said recesses adapted to accommodate the leg of a staple therewithin and to bend it into clinched position.

3,291,358
STAPLE MAGAZINE
Emil Rabelow and Harry William Bauer, Jr., Butler, and Paul Regis Saxon, Gibsonia, Pa., assignors to International Staple & Machine Company, Butler, Pa., a corporation of Pennsylvania
Filed Apr. 7, 1965, Ser. No. 446,244
6 Claims. (Cl. 227—126)

1. In a staple magazine having a staple track on which sticks of staples are stacked on each other in a direction

at right angles to the track, a holder for said staples comprising,

(A) a plate,

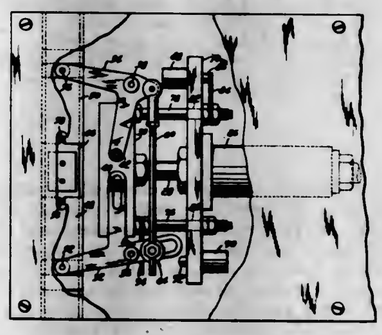
(B) means for swingingly mounting said plate for movement to a first position against the stick of staples in a stack furthest from said track and to



a second position away from said track to permit loading of stacked sticks of staples on said track, and

(C) means for resiliently pressing said plate against the stacked sticks of staples when the plate is in said first position and for releasably holding said plate in said second position.

3,291,359
COMPONENT INSERTION MACHINE
Harry S. Butterworth, Beverly, and Norman F. Smith, Methuen, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,825
6 Claims. (Cl. 227—155)



1. A component insertion machine for attaching components to printed wiring boards wherein the leads of the components extend through the boards comprising:

base means,

driving means mounted in said base means,

means including a track therein mounted in said base means,

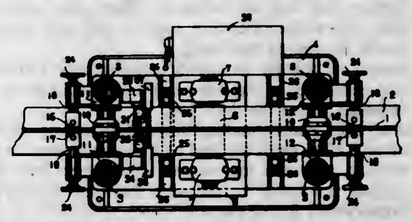
first and second block means slidably mounted in said track, said first and second block means each including a roller thereon,

first and second lever means mounted to said base means in spaced relationship with each other, said first and second lever means each being connected to its respective first and second block means,

linkage means interconnecting said driving means with said first and second lever means and operable, upon activation of said driving means, to move the first and second block means each in a predetermined direction, the rollers thereon engaging the respective leads of a component to bend the leads in respective predetermined directions and clinch them to a surface of the printed wiring board, and

means for modifying the operation of the linkage means so that the first block means is moved in a direction opposite to the predetermined direction causing the roller thereon to bend and clinch one lead of a component in the said opposite direction while the roller on the second block means bends and clinches the other component lead in the predetermined direction.

3,291,360
MACHINE FOR THE MANUFACTURE OF BEAMS AND THE LIKE
Carl Eric Linnander, Goteborg, Sweden, assignor to Pullmax Aktiebolag, Goteborg, Sweden, a corporation of Sweden
Original application Mar. 19, 1962, Ser. No. 180,621, now Patent No. 3,171,375, dated Mar. 2, 1965. Divided and this application Jan. 18, 1965, Ser. No. 426,275
5 Claims. (Cl. 228—44)



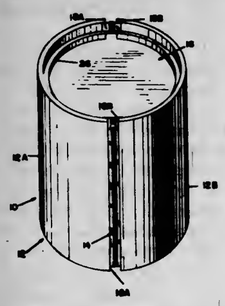
1. In a machine for manufacturing unsymmetrical beams composed of web and flange elements welded together while being advanced along a path of travel, said beams having a tendency to deform after the welding operation, means for feeding and positioning said elements comprising at least two sets of supporting and guide rollers for the side faces of a web plate and at least two sets of supporting and guide rollers for a flange plate, said web and flange supporting and guide rollers being spaced along said path of travel and arranged to hold said elements in proper mutual position for welding, one of said sets of supporting and guide rollers for said flange plate being positioned to back up the underside of the flange plate and another of said sets of supporting and guide rollers for said flange plate being positioned to support the lateral faces of the flange plate, means comprising an intermediate backing roller for setting up of pre-stresses of beam plates opposing and compensating for the tendency to deform caused by the welding, said supporting and guide rollers for the side faces of said web plate comprising at least one set of movable rollers disposed at the adjacent portion of the inlet end and at least one set of movable rollers disposed at the adjacent portion of the outlet end of said machine, said backing and guide rollers for the lateral faces of said flange plate comprising a first pair of rollers disposed adjustably on either side of said flange plate at a first point of the path of travel and a second pair of rollers disposed adjustably on either side of said flange plate at a second point of the path of travel, each of said pairs of rollers being adjustable to fit various widths of said flange plate, said one of said sets of supporting and guide rollers for said flange plate being comprised of a first roller disposed at the adjacent part of the inlet end and a second roller disposed at the adjacent part of the outlet end of said machine so as to support said flange plate and press to engage with the underside of said flange plate, said means for setting up of pre-stresses comprising a first grooved guide roller disposed at the inlet end and a second grooved guide roller disposed at the outlet end of said machine so as to guide the top edge of said web plate, said intermediate backing roller being arranged so as to engage the underside of said flange at the intermediate position between said two grooved guide rollers and being movable upward and downward so as to provide the desired bending of said web plate.

3,291,361
CONTAINER RIM FORMATION
Andre F. Commeyras, Concord, Mass., assignor to Sweetheart Plastics, Inc., Guildware Park, Wilmington, Mass., a corporation of Maryland
Filed Jan. 7, 1965, Ser. No. 423,985
12 Claims. (Cl. 229—1.5)



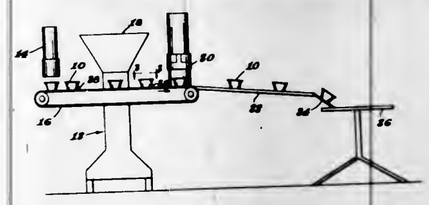
1. A thin walled one-piece plastic container comprising
a bottom wall and an outwardly flared side wall,
a first outwardly extending step in the side wall adjacent the top of that wall,
a second outwardly extending substantially horizontal step provided in the side wall and spaced from and disposed above the first step,
and a rolled rim extending through an arc of approximately 270° from the end of the second step and extending over the top of the second step and down against the inside of the side wall and terminating immediately above the first step.

3,291,362
FIBREBOARD HOGSHEAD
Reavis C. Sproull, Richmond, William A. McIntosh, Salada, and Donald D. Sedberry, West Point, Va., assignors to The Chesapeake Corporation of Virginia, a corporation of Virginia
Filed Dec. 14, 1964, Ser. No. 417,963
10 Claims. (Cl. 229—4.5)



1. A disassemblable hogshead for holding, processing, shipping and storing tobacco, comprising:
a wound tubular fibreboard body longitudinally split into at least two arcuate sections, each having a pair of longitudinal edges;
a slide fastener means disposed between adjacent longitudinal edges on said respective sections to selectively connect said sections together to form a tubular body;
said slide fastener means including a pair of elongated tape sections, each having teeth along one elongated edge thereof;
one of said tape sections being attached to the interior of each body section along each longitudinal edge thereof;
each of said attached tape sections having the toothed edge thereof extending beyond its respective body longitudinal edge;
said slide fastener means further including a slide member for each pair of tape sections whereby, when a set of opposed teeth are inserted into said slide member, said slide member may be selectively moved longitudinally to mesh said opposed teeth into interlocking engagement;
said slide member longitudinal movement in one direction being operative to assemble said body sections into an assembled tubular housing;
said slide member longitudinal movement in an opposite direction being operative to disassemble said tubular housing into individual disassembled body sections which may be compactly nested with one another;
said hogshead further being adapted to have a pair of end closures mounted at opposite open longitudinal ends thereof to define a closed chamber within said body wherein tobacco can be contained; and
means for removably attaching said end closures to said hogshead ends whereby said end closures may be removed when said hogshead is disassembled.

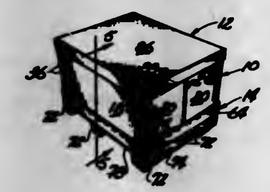
3,291,363
TRACTION ELEMENT FOR FORMED CONTAINERS
Robert J. McCormick and Robert J. Turner, Findlay, and Willard J. Rathbun, Haskins, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 5, 1964, Ser. No. 342,665
4 Claims. (Cl. 229—5.5)



1. A container adapted to be conveyed for filling and capping on a conveyor comprising a plurality of endless bands each formed of spiralled adjacent coils of wire with the legs of said coils being inclined with respect to the vertical, said container having a side wall and a bottom wall, a traction element integral with said bottom wall and having a cross-sectional configuration of a truncated substantially right triangle, the truncate base of said triangle forming the bottommost extent of said container, said base having a width less than the space between adjacent coils of said bands, the outer wall of said element forming one leg of said triangle and being inclined upwardly from said base towards said side wall at an angle intermediate the horizontal and vertical but greater than the inclination of the legs of said coils, the inner wall of said element forming the substantially vertical leg of said triangle, whereby said container will be readily movable by said bands when said element is engaged between adjacent coils thereof but will permit said band readily to slip by said element when said container is purposely stopped by other means while on said moving bands.

3,291,364
PALLET CONTAINER
John P. Fischer, Wausau, Wis., assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed July 2, 1964, Ser. No. 379,852
5 Claims. (Cl. 229—6)

1. A container comprising a bottom section and a body section, said bottom section including a horizontal deck and retaining walls extending upwardly from the periphery of said deck, adjacent pairs of said retaining walls being secured together at their ends in perpendicular relationship, means attached to said horizontal deck for maintaining said bottom section vertically spaced from the ground, said body section having a pair of foldable walls and a pair of non-foldable walls and being receivable when in fully folded condition between said retaining walls, and cooperating means on said retaining walls and side walls for interlocking said bottom and body sections when said



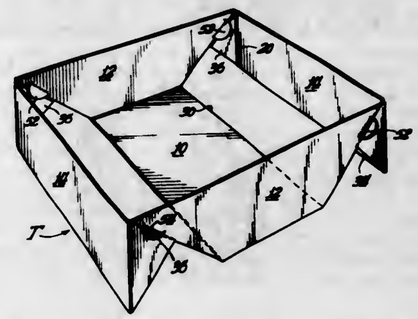
body section is in expanded condition for storage of contents in said container, said cooperating means including a first set of horizontal strips secured to said walls of said body section along the bottom edges thereof and a second set of horizontal strips secured to said retaining walls at a distance above said deck slightly greater than the width of said first set of horizontal strips.

3,291,365
CONTAINER FOR BREAKABLE ARTICLES
Hendrik Dirk Pieter Keone, Julianastraat 89, Egmond aan Zee, Netherlands
Filed Apr. 5, 1965, Ser. No. 445,330
Claims priority, application Netherlands, Apr. 8, 1964, 64/03771; June 10, 1964, 64/06541
8 Claims. (Cl. 229—28)



1. A container to be folded from a single sheet of thin material for a number of fragile articles to be accommodated therein in a row, the said container comprising at least one compartment with two downwardly converging supporting walls, each of said supporting walls being provided with a row of cutouts serving to receive these articles, each supporting wall adjoining at its upper edge an adjacent outer wall, each outer wall extending as far as the bottom of the container and enclosing an acute angle with the said supporting wall, and a bottom wall joining the lower edges of said outer walls, the cutouts being formed by symmetrical and oppositely situated pairs of curved incisions, provided in the material in such manner that their ends directed towards each other do not touch each other, the tops of said cutouts being directed towards the upper edge of the associated supporting wall, the supporting walls at a short distance from the bottom being mutually connected by flat connecting parts formed by the material intermediate the ends of the cutouts, supporting tabs being provided on either side of these connecting parts, the ends of the said tabs contacting the adjacent outer wall, the tabs being obtained by pushing outwardly the material removed from said cutouts.

3,291,366
PAPERBOARD TRAY
Paul A. Nemoede, Los Gatos, and Louis C. Michetti, Santa Clara, Calif., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,782
15 Claims. (Cl. 229—30)



1. A collapsible tray formed from a unitary blank of foldable paperboard, comprising:
(a) a generally rectangular, horizontal, bottom wall panel having opposed end edges free from attachment to any other portion of the tray;
(b) a pair of opposed, vertical side wall panels having lower edges with central portions hingedly attached to opposed side edges of said bottom wall panel and with end portions adjacent said central portions free from attachment to any other portions of the tray;
(c) a pair of opposed, generally rectangular, vertical end wall panels having lower edges free from attachment to and spaced from respective end edges of said bottom wall panel;
(d) gusset means hingedly interconnecting adjacent end portions of related side and end wall panels at the corners of the tray;
(e) said gusset means including at least one triangular gusset defined by three edges, including:
(i) a first edge free from hinged attachment to either of said related side and end wall panels;
(ii) a second edge operatively attached to one of said related wall panels;
(iii) a third edge operatively attached to the other of said related wall panels;
(f) said gusset being disposed in parallel, abutting engagement with one of said related wall panels;
(g) means integral with said tray for maintaining said gusset in parallel, abutting engagement with said one related wall panel.

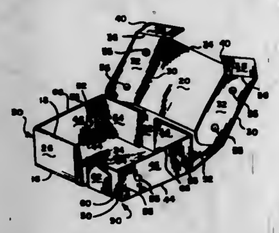
3,291,367
SELF-LOCKING-CLOSING CARTON
Eugene H. Carter, Little Rock, Ark., assignor to Hoerner Boxes, Inc., Keokuk, Iowa, a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,596
5 Claims. (Cl. 229—33)

1. A self-locking-closing carton including a base panel, end flaps extending outwardly from each side margin of said base panel and adapted to be folded along their lines of junction with the base panel into planes normal to the base panel,
spacer flaps extending outwardly from one end of each of said end flaps and folded to a plane normal to the end flaps and to the base panel,

overlap flaps extending outward from the spacer flap and adapted to be folded to an overlapping position with respect to the spacer flap with one end of said overlap flap spaced a predetermined distance from the junction of the spacer flap with the end flap,

a front panel extending outwardly from the base panel and folded to a plane normal to the base plane and parallel to the outside surface of the overlap flap,

an overlap panel extending outward from the front panel and folded back toward the inside surface of the front panel with the spacer flap and overlap flap



positioned between the overlap panel and the front panel,

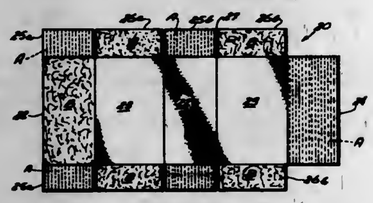
a top panel closed in spaced overlying relation to the base panel,

side flaps extending outward from each side margin of said top panel and folded along their lines of junction with the top panel into planes normal to the top panel,

lock flaps extending outward from one end of each of said side flaps and folded to a plane normal to the plane of the side flap,

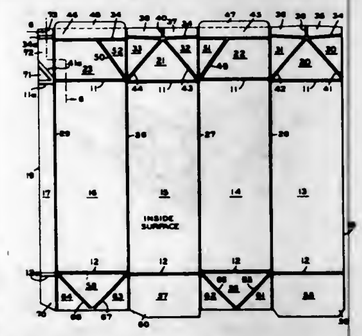
whereby on folding said side flaps downward to the normal plane, said lock flaps will be inserted into the gap between the front panel and overlap panel.

3,291,368
SELF-SEALING CONTAINER AND BLANK THEREFOR
Rolland Hess, Colby, Wis., assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed Sept. 25, 1964, Ser. No. 399,147
4 Claims. (Cl. 229—37)



1. A collapsible self-sealing type of container comprising a plurality of foldably connected wall panels forming a tubular member, a plurality of flaps foldably connected to said wall panels at one end of said tubular member, said flaps including inner and outer flaps in overlying relation and closing said tubular member one end, a first type pressure-sensitive adhesive applied throughout substantially the entire surface of each inner flap in contact with said outer flap, and a second type pressure-sensitive adhesive applied throughout substantially the entire surface of each outer flap in contact with said inner flap; said second type adhesive being bondable only with said first type adhesive.

3,291,369
MEANS FOR SCORING CONTAINERS
Duncan J. Crawford, Franklin, Mich., assignor to Ex-Cell-O Corporation
Filed June 17, 1965, Ser. No. 464,654
7 Claims. (Cl. 229—37)



1. A one-piece blank for a liquid-tight tubular container of rectangular cross section formed of foldable paperboard having an overall surface coating of thermoplastic material, said blank comprising in combination:

(a) four rectangular side panels and a side seam flap joined along four spaced vertical score lines,

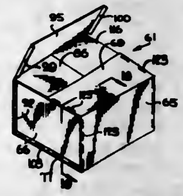
(b) a plurality of bottom closure panels connected to said side panels as extensions thereof along a horizontal score line extending the full width of said side panels,

(c) a side seam flap extension secured to one of said bottom closure panels,

(d) a wide score line located adjacent said side seam flap and said side seam flap extension and collinear with said horizontal score line, and

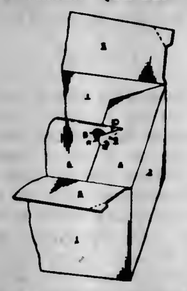
(e) said wide score line indented in a common direction with said horizontal score line and having a groove width at least twice the groove width of said horizontal score line.

3,291,370
TWO OPPOSED RECESSED END PANEL CARTON WITH CLOSURE FLAPS
Robert T. Elias, Downers Grove, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Nov. 6, 1963, Ser. No. 321,757. Divided and this application Oct. 24, 1965, Ser. No. 504,686
10 Claims. (Cl. 229—37)



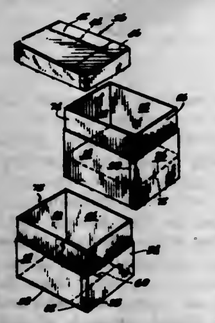
1. A container comprising a plurality of upstanding panels including a pair of side panels and a pair of recessed end panels, each of said end panels being of rectangular shape and being provided along the edges thereof with integrally connected and outwardly extending flange forming panels, said upstanding side panels having end portions that overlie adjacent ones of said flange forming panels, first closure flaps formed integrally with said side panels along the top and bottom edges thereof, and second closure flaps integrally formed with upper and lower ones of said flange forming panels; said first closure flaps being provided along opposite edges thereof with integrally attached ears, said first closure flaps being disposed outwardly of said second closure flaps, said ears being reversely folded and disposed between said first closure flaps and said second closure flaps, whereby said container is provided with a quadruple-thickness flange.

3,291,371
CARTONS
William G. Atkinson, London, Ontario, Canada, assignor, by mesne assignments, to Unipak Cartons Ltd., Vancouver, British Columbia, Canada
Filed May 27, 1965, Ser. No. 459,199
Claims priority, application Canada, Mar. 30, 1965, 926,917
3 Claims. (Cl. 229—39)



1. An enclosed carton having opposed side and end walls, top closure flaps associated with said side and end walls, and a partition extending between a pair of opposed walls of said carton defining a plurality of article receiving compartments within said carton, the top closure flaps associated with said pair of opposed carton walls being provided with means positioned and adapted to encounter the upper edge of said partition and releasably engaged said partition, releasably interlocking said top flaps and said partition to retain the carton in erected condition during placement of articles into the carton from the bottom thereof, said interlock being releasable upon engagement and displacement of said top closure flaps by said articles.

3,291,372
LAMINATED AND RECLOSABLE CARTON
William R. Seidel, Park Forest, Ill., assignor to Integral Packaging Corporation, Chicago Heights, Ill., a corporation of Illinois
Filed June 12, 1963, Ser. No. 287,343
5 Claims. (Cl. 229—51)



1. A carton comprising a first outer blank including a plurality of integral articulated outer side panels, a marginal flap integrally joined with a side edge of one of said side panels and overlapping and being secured to an outer surface of an adjacent side marginal portion of an adjacent side panel, end flaps integrally articulated to end edges of and respectively extending from each of said outer side panels and providing an end structure, an inner blank completely separate from said outer blank and including integral articulated side panels disposed along inner surfaces of said outer side panels, said inner blank including a marginal flap integrally joined with one side edge of one of said inner side panels and being disposed in overlapping relationship with an inner surface of an adjacent inner side panel, and means extending around said outer side panels adjacent to but spaced substantially from said end edges and said end flaps for separating end portions of said outer side panels from the remainder of said outer side panels, said inner blank including an end portion extending within said outer panel end portions, said outer side panel end portions and said end flaps providing a removable and replaceable end closure for said carton, said marginal flap of said outer blank including a portion secured to said adjacent side panel between said end edges and said means extending around the outer side panels for separating end portions therefrom.

3,291,373
PAPER GROCERY BAG
James E. Joyce, Battle Creek, Mich., assignor to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed June 3, 1965, Ser. No. 460,956
4 Claims. (Cl. 229—53)



1. A grocery bag including; sides comprising pleated means for forming a plane wall of each of said sides when said receptacle is fully expanded, said pleated means including pleats extending about said receptacle, said pleats comprising a plurality of endless outwardly extending folds extending about said receptacle and a plurality of inwardly extending folds alternately interspaced between said outwardly extending folds, and a base portion attached to the lower extremities of said receptacle to form a bottom, said base portion being integral with said first, second, third and fourth sides and being formed by inwardly folded portions of said first, second, third and fourth sides respectively.

3,291,374
MULTI-PLY BAG AND PROCESS FOR THE MANUFACTURE THEREOF
John G. Lapiste and William J. Tilton, Middletown, Ohio, assignors to Albemarle Paper Manufacturing Company, Richmond, Va., a corporation of Virginia
Filed Mar. 30, 1965, Ser. No. 443,854
2 Claims. (Cl. 229—55)

1. A multi-ply bag comprising:

(a) a plurality of concentrically arranged tubular plies of material;

(b) the outer ply of material having a window opening provided adjacent one end;

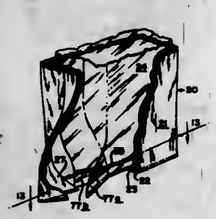
(c) a sheet of transparent material positioned over said window opening between said outer ply and the next innermost ply of material, said sheet being in the form of a strip extending over the length of said tubular plies;

(d) adhesive means attaching said sheet of transparent material to said outer ply adjacent to said window opening;
(e) transversely extending adhesive means attaching said outer ply and said sheet of transparent material to said next innermost ply between said window opening and the end opposite said adjacent



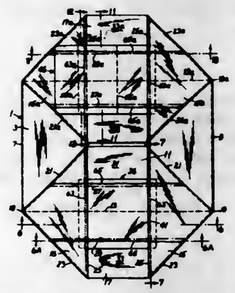
one end, said outer ply and said next innermost ply together with said adhesive attaching means providing a pocket in one end of said bag adapted to receive and retain an object which can be viewed through said window opening; and
(f) means closing said tubular plies of material at one end thereof to form said multi-ply bag.

3,291,375
MULTI-PLY BAG
John G. Lepisto, Middletown, Ohio, assignor to Albemarle Paper Manufacturing Company, Richmond, Va., a corporation of Virginia
Filed May 11, 1965, Ser. No 454,903
5 Claims. (Cl. 229—55)



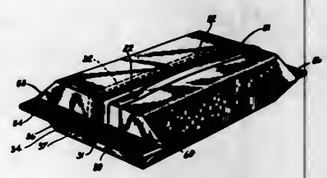
2. In a gusseted multi-ply bag the combination comprising:
(a) a plurality of nested, tubular concentrically arranged outer plies of sheet material,
(i) said plies being in the form of flattened tubes having front, back and side surfaces;
(ii) said flattened tubes having longitudinally extending, spaced apart fold lines on each side thereof along which the side portions of said tube are infolded to provide at least one generally V-shaped gusset in each of the side portions of said tube;
(b) an inner, seamless tubular ply of plastic material received in and conforming to the shape of said outer plies of sheet material;
(i) said inner, seamless tubular ply of plastic material being transversely sealed adjacent one end thereof, said seal extending along the double folded portions in each side portion of said plastic material where said plastic material extends into the gussets of said outer plies to provide a seal having a cross-sectional shape of a Y at each side portion; and
(c) means closing the end of the bag having the seal.

3,291,376
BAGS
Ralph C. Goodwin, Wayzata, Minn., assignor to Bemis Company, Inc., a corporation of Missouri
Filed May 5, 1965, Ser. No. 453,247
9 Claims. (Cl. 229—62.5)



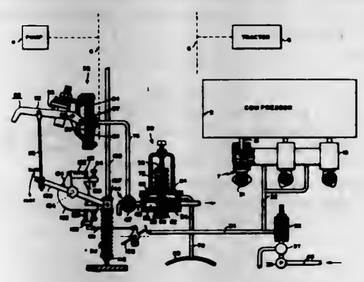
1. A bag formed from a flat tube of heat-sealable sheet material, said tube having a closure formation at one end comprising inwardly directed end flaps and first and second side flaps, and an insert of heat-sealable sheet material extending between the end flaps and having its outer end margins lapping the inner end margins of said end flaps, said insert being heat-sealed at least at one end margin thereof to the inner end margin of the respective end flap at one end of said closure formation, said side flaps being folded over to overlie the end flaps and said insert, and being heat-sealed together, said bag having a coating of heat-seal-inhibiting material on the inside of the inner of said lapping margins at said one end of said closure formation where said one end margin of the insert is heat-sealed to the inner end margin of said respective flap to inhibit blocking of said closure formation along this heat seal.

3,291,377
PACKAGING
Rex M. Eggen, Northbrook, Ill., assignor to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,532
9 Claims. (Cl. 229—87)



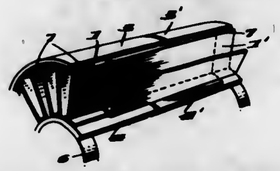
1. A gas and moisture impervious package for enclosing a generally rectangular block of a comestible, said package comprising a generally rectangular sheet of tough substantially gas and moisture impervious material having a thermoplastic heat sealable coating on the inner surface thereof, said sheet including a central body portion for enclosing the top, bottom and side surfaces of said block, a wing attached to and coextensive with each of the opposed longitudinal sides of said body portion, one of said wings being wider than the other wing, a flap attached to and coextensive with each of said wings, said flaps being folded interiorly of said wings forming tabs, said sheet having a length sufficient to extend beyond the ends of said block to cover the end surfaces of said block in face-to-face contacting relation and to provide end sealing areas, said sheet being disposed about said comestible block with said heat sealable material in contact with said comestible block and said body portion encircling said comestible block, said wings being arranged in abutting face-to-face relation along the length of said block with the outer edges of said tabs spaced apart, a continuous longitudinal heat seal extending along the length of said abutting wings closely adjacent to said block, and continuous end fin heat seals along said end sealing areas, whereby a gas tight, moisture impervious package is provided which is easily opened and which may be reclosed and resealed after opening.

3,291,378
COMPRESSOR CONTROL SYSTEM
Joseph P. Yarnall, Jr., West Chester, Pa., assignor to Schramm, Inc., West Chester, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 262,112, Mar. 1, 1963. This application Mar. 8, 1965, Ser. No. 437,906
17 Claims. (Cl. 230—9)



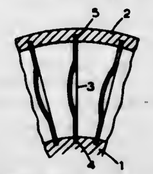
1. In combination, a receiver for compressed gas, a compressor connected to said receiver to deliver gas thereto, said compressor being of the reciprocating type including a piston reciprocating in a cylinder, an inlet valve for the cylinder and an exhaust valve for the cylinder, an engine driving said compressor, pressure responsive means for unloading said compressor proportionately in response to a controlling pressure, pressure responsive means for operating the engine throttle to vary the engine speed in response to variations in said controlling pressure, means for supplying said controlling pressure including means for delivering fluid under pressure to a control line, said fluid supplying said controlling pressure, control means connected in pressure responsive communication with said receiver for varying said controlling pressure in accordance with said receiver pressure, conduit means connecting said control line to said unloading means for delivering said controlling pressure thereto, means for delivering said controlling pressure to said engine speed varying means, said control means being responsive to increases in receiver pressure to vary said controlling pressure in a direction which actuates said unloading means to unload said compressor and which actuates said throttle operating means to decrease the engine speed, said control means including a pilot valve means for regulating the rate of flow through said control line to vary the fluid pressure in said control line, said pilot valve having a control chamber in pressure responsive communication with said receiver, and a selector valve controlling fluid flow from said control line to said pilot valve and said engine throttle operating means, said selector valve having one selective position in which said control line is connected to both said pilot valve and said throttle operating means.

3,291,379
PRESSURE WAVE MACHINE
Hans Herger, Ennetbaden, and Alfred Wunsch, Wettingen, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden Switzerland, a joint-stock company of Switzerland
Filed July 20, 1964, Ser. No. 383,882
Claims priority, application Switzerland, Aug. 14, 1963, 10,067/63
13 Claims. (Cl. 230—69)



1. A rotor structure for a pressure wave machine for effecting a change in pressure of gaseous media, said rotor structure including a shaft mounting the rotor for rotation about its axis, and a cylindrical assembly of open-ended cells, each said cell of said cell assembly being secured at only one end thereof to one end only of said rotor and extending longitudinally towards the other end of said rotor in an unsecured manner thereby to permit unrestricted thermal expansion of the cell walls in the direction of but not reaching to said other rotor end, and thereby maintaining constant the overall length of said cell assembly notwithstanding a change in temperature of the cell walls.

3,291,380
PRESSURE EXCHANGER CELL RINGS
James Brown, Fleet, and James Alan Costick, Whitstable, England, assignors to Power Jets (Research & Development) Limited, London, England, a British company
Filed Oct. 20, 1965, Ser. No. 498,749
Claims priority, application Great Britain, Mar. 12, 1965, 10,647/65
3 Claims. (Cl. 230—69)

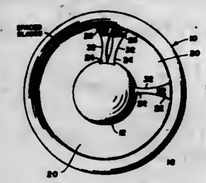


1. A pressure exchanger cell ring including an inner member, an outer member and a plurality of cell walls extending between the inner and outer members, the axially extending inner and outer edges of the cell walls being secured to the inner and outer members respectively and the free-ends of the cell walls being unsupported except where they are secured to the inner and outer members, the free-ends of each cell wall being shaped in such manner that the rigidity of each free-end is increased with respect to the rigidity of the cell wall at a position intermediate the free-ends.

3,291,381
HIGH ENERGY AXIAL FLOW APPARATUS
Theodor H. Troller, Ava Ranch, Portal, Ariz.
Filed Apr. 15, 1966, Ser. No. 542,804
13 Claims. (Cl. 230—120)

1. An axial flow apparatus for adding energy to a flowing fluid comprising: a rotor member; a hollow housing member encompassing said rotor member and laterally spaced therefrom to define a fluid flow passageway therebetween; a plurality of blades carried by said rotor

member, each of said blades having a portion thereof extending radially through said passageway, each of said blades having inner and outer portions, each of said inner portions having an impulse blade shape and extending radially outwardly from said rotor member a distance of no less than 10% of a radius of said rotor member



extending through the region of said rotor member where said blades are carried, each of said outer portions extending radially outwardly from the radial outer section of each of said inner portions to adjacent the inner surface of said housing member, and each of said outer portions having at least the radial outer expanse thereof of a reaction blade shape.

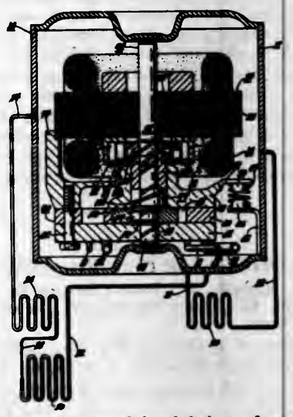
3,291,382
BLADED STRUCTURE, FOR EXAMPLE, FOR A GAS TURBINE ENGINE COMPRESSOR
Robert Vaughan Blackhurst, Ripley, and Gordon Cyril May, Allestree Park, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Mar. 26, 1965, Ser. No. 443,008
Claims priority, application Great Britain, May 8, 1964, 19,406/64
6 Claims. (Cl. 230—133)



1. A bladed structure comprising concentric inner and outer cylindrical casings, the inner casing comprising inner and outer layers of synthetic resin material with wire mesh interposed therebetween, and the inner casing having a plurality of angularly spaced apart holes therein, a honeycomb structure interposed between said casings and secured thereto, and a plurality of angularly spaced apart aerofoil shaped blades which are mounted in and secured to the honeycomb structure and which extend radially through the holes in the inner casing.

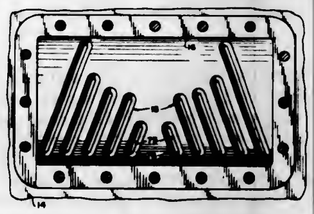
3,291,383
REFRIGERATING APPARATUS
Mervin R. Butts, West Milton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,049
15 Claims. (Cl. 230—139)

1. In a refrigerant apparatus, the combination of, refrigerant compressor means including a piston, electric motor means including a stator and a rotor, first drive connection means including means fixedly connected to said rotor, second drive connection means including means fixedly connected to said compressor piston, said first and second drive connection means including means for forming a fluid chamber, fluid coupling means within said fluid chamber for operatively connecting said drive rotor to said compressor piston when said drive rotor attains a predetermined speed, a shell enclosing said compressor and electric motor and including a lubricant containing sump



region, and means for supplying lubricant from said sump region to said fluid chamber upon energization of said electric motor means.

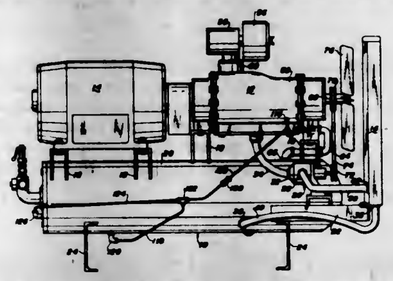
3,291,384
ROTARY COMPRESSOR
Milton W. Garland and Moshe Y. Dreksler, both of Waynesboro, Pa., assignors to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 286,837, June 6, 1963. This application Sept. 15, 1965, Ser. No. 487,443
10 Claims. (Cl. 230—152)



1. In a rotary sliding vane compressor having spaced inlet and discharge ports in a circumferential wall of a cylinder, and a cylindrical rotor eccentrically mounted within said housing and in proximity to said wall at a location between the discharge and inlet ports in the direction of rotor travel, said rotor having a plurality of radial grooves and vanes slideable therein, the improvement comprising inlet ports having an area which varies along the path of travel of the vanes such that initially the rate of increase of the inlet port area varies directly with the volume increase of the corresponding pocket and that during decrease of said port area the rate of decrease is substantially constant.

3,291,385
RECEIVER-SEPARATOR UNIT FOR LIQUID-INJECTED COMPRESSOR
Raymond F. Williams, Sylvester L. Anerino, and Harry W. Allen, Quincy, Ill., assignors to Gardner-Denver Company, a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,382
4 Claims. (Cl. 230—207)

1. A receiver-separator unit for a liquid-injected gas compressor, comprising:
(a) an elongated tank having a cylindrical wall which defines a bore;
(b) partition means dividing said tank longitudinally into first and second compartments;
(c) said partition transversely closing a major portion of said cylinder bore and coacting with a portion of said tank to define a liquid reservoir in said first compartment;
(d) gas inlet means opening to said first compartment;



(e) gas outlet means opening from said second compartment;
(f) said first and second compartments being in gas communicating relationship;
(g) a cylindrical liquid separator unit disposed entirely in said second compartment in coaxially spaced relation with said tank wall; and
(h) said separator defining a third compartment which is in gas communicating relation with said second compartment and with said gas outlet means.

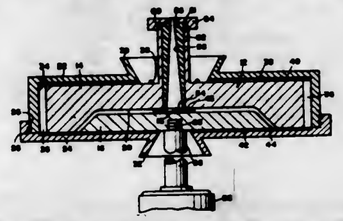
3,291,386
INCOMING MAIL INDICATING SIGNAL
Paul T. Van Fleet, 777 Mooreland Ave., Harrodsburg, Ky.
Filed Apr. 29, 1965, Ser. No. 451,765
3 Claims. (Cl. 232—35)



1. An attachment for a mail box comprising a channel shaped bracket, a plate mounted in said bracket, a spring loaded L-shaped trigger latch pivotally mounted on said plate and provided at one end with a crank, said crank being provided with a coil spring which is attached at one end thereto and anchored at the other end on said plate, an incoming mail signal comprising a disk-like member provided with a radial marginal shank, said shank being interposed between the flanges of said channel-shaped bracket and being pivotally mounted with one end arranged for releasable engagement with a coacting part of said trigger latch, a coil spring having one end engaging said signal and the other end engageable with shoulder means provided on one of the flanges of said bracket, and actuating means for tripping said trigger latch.

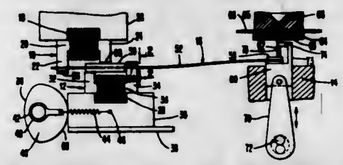
3,291,387
CONTINUOUS CENTRIFUGAL SEPARATOR
Jean Billen, Brabant, Belgium, assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Jan. 16, 1964, Ser. No. 338,157
8 Claims. (Cl. 233—28)

2. Apparatus for the analysis of each of a plurality of samples for a constituent thereof comprising: centrifugal separating means having an inlet means for receiving samples to be separated, a first outlet receptacle means for receiving the denser fraction of a separated sample, and a second outlet means for passing the less dense fraction of such separated sample; sample and wash liquid supply means for transmitting the samples successively and in



alternation with quantities of a wash liquid as a flowing stream to said inlet of said centrifugal separating means; analysis means; carrier liquid supply means for transmitting a flowing stream of a carrier liquid to said first outlet receptacle of said separating means and thence to said analysis means for transporting therewith any denser fraction of each such separated sample.

3,291,388
ELECTROMAGNETIC INTERPOSER MECHANISM
Andrew B. Pataki, Lansdale, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1965, Ser. No. 517,289
8 Claims. (Cl. 234—115)



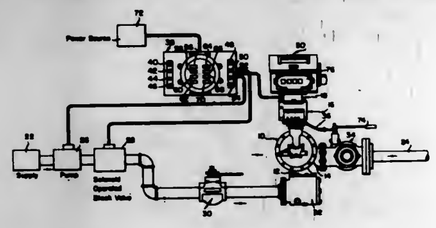
1. An electromagnetic interposer mechanism comprising:
(A) a first electromagnet;
(B) a second electromagnet;
(C) a common armature for said first and second electromagnets;
(D) an interposer fixed to said armature;
(E) means for effecting relative movement between said electromagnets; and
(F) means for selectively energizing said electromagnets whereby said armature may be retained by one or the other thereof during said relative movement, and said interposer may be moved thereby selectively between retracted and advanced, inoperative and operative positions.

3,291,389
METERING SYSTEM AND COMPONENTS THEREOF
Benjamin L. Binford, Statesboro, Ga., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 9, 1963, Ser. No. 279,072
12 Claims. (Cl. 235—94)

1. In combination with a fluid meter,
(a) an electrical signal generating device actuated in predetermined relation to the flow of fluid through said meter,
(b) a plurality of electrical signal responsive registers,
(c) switch means magnetically actuable to connect said signal responsive registers individually to said signal

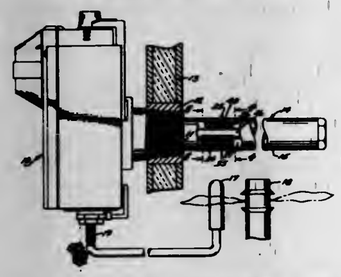
generating device for actuation of the former in response to a signal generated by the latter and

(d) key operated lock controlled magnetic means for



selectively actuating said switch means to connect a selected one of said responsive registers to said signal generating device.

3,291,390
THERMALLY OPERATED SWITCH
Ralph E. Solomon, Los Angeles, Calif., assignor to Deutsch Controls Corp., Los Angeles, Calif., a corporation of California
Filed Feb. 26, 1965, Ser. No. 435,643
5 Claims. (Cl. 236—21)



2. In combination with a rod-and-tube assembly of a thermostat, said rod-and-tube assembly including a rod of a material of relatively low coefficient of thermal expansion and a tube of a material of relatively high coefficient of thermal expansion circumscribing said rod so as to provide an annular space between said rod and said tube, a thermally actuated switch comprising

an annular body of dielectric material circumscribing said rod within said space,

said body having a radially extending face on one end thereof,

a bimetal element,

said bimetal element being curved about the axis of said rod in a plane normal to said axis and being substantially flat in said plane,

said bimetal element having a first principal surface on one side of said bimetal element adjacent said radially extending face of said body,

and a second principal surface on the opposite side of said bimetal element,

said first principal surface being expansible under rising temperature at a greater rate than the opposite principal surface of said bimetal element,

means attaching one end of said bimetal element to said body,

said attaching means being adapted for electrical connection in an electrical circuit,

and a screw threadably received in said body and extending substantially parallel to the axis thereof,

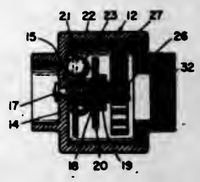
said screw having a contact surface on one end thereof adjacent said radially extending face,

said contact surface of said screw being substantially diametrically opposed to said attaching means,

said bimetal element having an electrically conductive contact portion on said first principal surface at the opposite end portion of said bimetal element normally engaging said contact surface of said screw for forming an electrical connection therewith at ambient temperatures below a predetermined temperature,

said opposite end portion of said bimetal element being movable outwardly away from said contact surface at said predetermined temperature as a result of said more rapid expansion of said first principal surface for interrupting said electrical connection at said predetermined temperature.

3,291,391
THERMALLY CONTROLLED SHUT-OFF VALVE FOR SHOWER HEADS
Bernard Mesco, 3903 S. Orange Drive, Los Angeles, Calif.
Filed Dec. 17, 1964, Ser. No. 418,975
4 Claims. (Cl. 236—93)

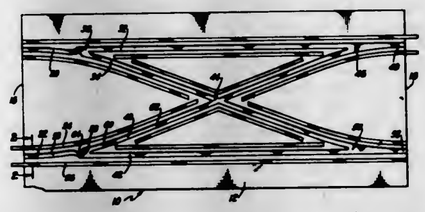


1. A thermally controlled shut-off valve for shower heads comprising, in combination: a cylindrical housing adapted to be inserted between a shower outlet pipe and a shower head normally connected to said outlet pipe, said housing including a central partition having at least one hole therein of given diameter for passing water below a predetermined temperature from said pipe through said housing to said shower head; a ball member adapted to roll on the inside surface of said partition from a first position free of said hole to a second position covering said hole to shut-off water flow therethrough; caging means holding said ball adjacent to said partition normally in said first position; means mounting said caging means for rotation about a given axis passing normally through said partition; and a thermally responsive bi-metallic strip formed into a coil and having one end stationarily secured within said housing and its other end secured to said caging means for rotating said caging means in response to water passing thereover of a temperature exceeding said predetermined temperature to thereby move said ball from said first to said second position.

3,291,392
ROAD RACE CAR SWITCH TRACK
Allen Lee Cramer, Garden Grove, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California
Filed Mar. 5, 1965, Ser. No. 437,453
6 Claims. (Cl. 238—10)

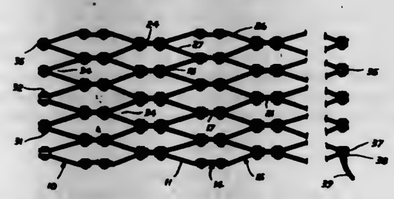
1. A road race car switch track structure, said road race car switch track structure comprising:

a switch track section, said switch track section having an entrance slot and first and second exit slots, each of said slots being adapted to be occupied by the guide shoe on a road race car and having first and second side walls arranged for the guidance of the road race car guide shoe, said entrance slot having its walls formed as curved walls, said first exit slot having its walls formed as curves aligned with said walls of said entrance slot, said second exit slot having its walls directed to be tangent to said walls of said entrance slot, said entrance slot and said first and second exit slots intersecting each other at a juncture;



a projection positioned on said first side wall at said juncture, said projection projecting outwardly from said first side wall to form an interruption of the curved shape of said first said wall between said entrance slot and said first exit slot, said projection being arranged to direct the shoe of a road race car toward said second exit slot.

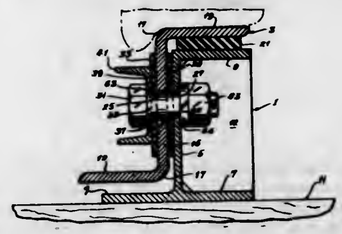
3,291,393
TRACTION MAT
Ian A. May, 1329 Pemberton Ave., North Vancouver, British Columbia, Canada
Filed Apr. 13, 1964, Ser. No. 359,347
1 Claim. (Cl. 238—14)



A traction mat adapted to be interposed between a driving wheel of a vehicle and the ground, the mat comprising a rectangular lattice-like strip having a plurality of sections, each section including transversely spaced and parallel side links and inclined bars, ground contacting edges and driving wheel contacting edges of the inclined bars being provided with serrations, upper and lower edges of the side links being provided with teeth with some of said teeth projecting beyond the serrations on the inclined bars, said side links extending longitudinally of the mat and having rounded ends, said inclined bars having parallel ends and defining triangular-shaped pockets at the ends of the sections, pivot means securing the rounded ends of the side links between the parallel ends of adjoining bars, said pivot means applying a predetermined clamping pressure to the connected ends and the lattice-like strip being moldable into an irregular-shaped trough substantially conforming to the contour of a part of the driving wheel.

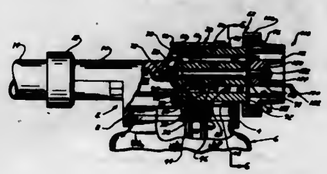
3,291,394
COMPOSITE RAIL
William C. Wheeler, 10642 Langford Drive, St. Louis County, Mo.
Filed Nov. 16, 1964, Ser. No. 411,226
6 Claims. (Cl. 238—143)

1. A composite rail comprising an elongated base portion section having an upright web formed with a double horizontal flange along its lower margin and a single horizontal flange along its upper margin, a first elongated pad of elastomeric material seated on said upper flange, a second elongated pad of elastomeric material seated against the surface of said upright member facing away from said upper flange, an elongated head portion section having an upright web with a horizontal flange along its upper margin mounted on said base portion section with said last-named web and flange engaging, respectively, said second and first elastomeric pads, aligned holes formed in said upright webs and spaced apart longitudinally thereof, bolts passing through said holes, the holes in one of said upright webs snugly receiving said bolts



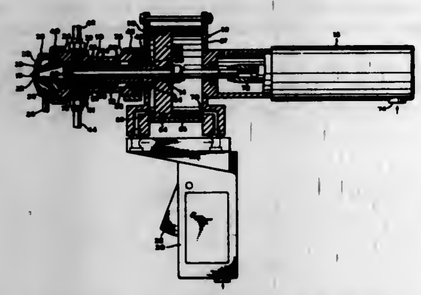
and the holes in the other upright web being substantially larger than said bolts, a third elongated pad of elastomeric material positioned against the surface of said other upright web remote from said second pad, a plate elongated lengthwise of the rail engaging said third pad and formed with holes aligned with the holes in said upright webs, said bolts having means on their opposite ends engaging said plate and one of said upright webs and maintaining said plate and said upright webs in compressive relation with said second and third pads.

3,291,395
ASPIRATION SPRAY DEVICE
Bernard C. Sharp, White Plains, N.Y., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York
Filed Nov. 19, 1964, Ser. No. 412,429
12 Claims. (Cl. 239—318)



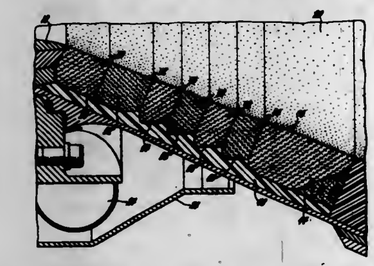
9. A spray nozzle comprising a member having a fluid flow passage therethrough terminating at an exit opening formed in an end surface thereof, an open-ended housing portion extending in a given direction from said end surface, said housing portion having at least one fluid flow opening therethrough, a control element received in said housing portion, exposed at the open end of said housing portion and mounted so as to be rotatable relative to said member about an axis substantially parallel to said given direction, said element having a plurality of fluid flow passages therethrough adapted to be selectively brought into registration with said exit opening, at least one of said passages having a branch passage communicating therewith which registers with said fluid flow opening in said housing portion when said one of said passages is registered with said exit opening.

3,291,396
SELF-PURGING MIXING AND SPRAYING APPARATUS
John Walter, 32 Fairview Ave., Kitchener, Ontario, Canada
Filed Nov. 30, 1964, Ser. No. 414,552
8 Claims. (Cl. 239—412)



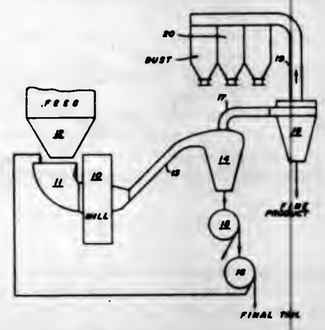
1. A self-purging mixing and spraying apparatus comprising an elongated barrel having a longitudinal internal bore terminating at one end in a conical outlet, a plunger received in said bore and mounted for longitudinal reciprocation and rotation about its axis, a conical forward tip carried at one end of said plunger and adapted to seal the bore outlet by engaging the inside surface of said outlet, means for rotating said plunger, means for reciprocating said plunger, a first inlet through the wall of said barrel adapted to receive a first conduit for feeding a first fluid component to said bore, and a second inlet through the wall of said bore adapted to receive a second conduit for feeding a second fluid component to said bore.

3,291,397
ROCKET NOZZLE LINER RING MOUNTING
Kenneth O. Johnson, Camby, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 11, 1963, Ser. No. 258,665
3 Claims. (Cl. 239—591)



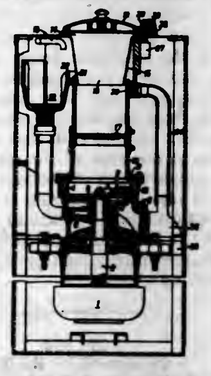
1. A rocket engine having a nozzle liner load balancing system, comprising, in combination, a combustion chamber, an exhaust nozzle located to receive hot propulsive gases from the combustion chamber, and a nozzle liner carbon ring insert support arrangement including a plurality of carbon ring inserts lining the exhaust nozzle to define a surface configuration, the ring inserts being shaped to absorb axial loading by thermal expansion thereof caused by the hot gases flowing through the nozzle, the last two downstream rings providing a ring spring device in which one ring has a conical surface mounted within a mating conical surface of the other, the angle of taper of the conical surfaces being such that one ring can be forced to slide axially into the other ring with elastic deformation of the rings, thereby absorbing the axial loading in the nozzle.

3,291,398
BENEFICIATION OF MAGNETIC IRON ORES
David Weston and Robert R. Turner, Toronto, Ontario, Canada, assignors, by direct and mesne assignments, to Aerofall Mills Incorporated, Columbus, Ohio
Filed Feb. 3, 1964, Ser. No. 342,194
3 Claims. (Cl. 241—24)



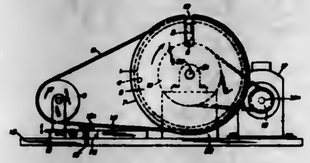
1. A method of beneficiating magnetic iron ores containing aggregates of substantially barren gangu particles and a non-uniform distribution of aggregates and free individual crystals of the mineral to be recovered, said method consisting in; passing the ore through a dry comminution circuit, which is adapted to produce a substantial proportion of product in a size range larger than the primary crystal size of the contained mineral; collecting separately all of that portion of the milling circuit product which is primarily of a particle size larger than the primary crystal size of said ore; subjecting said collected product to dry magnetic concentration to produce a coarse concentrate consisting essentially of aggregates and free individual crystals of the mineral to be recovered, a middling consisting essentially of aggregates of primary crystals of mineral and gangue and a discardable tailing; and returning the middling to the inlet said of said milling circuit.

3,291,399
WASTE DISPOSAL APPARATUS
Thomas Cropper Ryley Shepherd, Arbour Hill House, Ross-on-Wye, England
Filed Dec. 19, 1963, Ser. No. 331,756
Claims priority, application Great Britain, Dec. 21, 1962, 48,367/62
5 Claims. (Cl. 241—36)



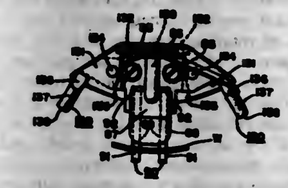
1. Waste disposal apparatus comprising a casing defining a chamber therein, a set of stationary teeth within the casing, a rotary impeller within the casing which co-acts with said set of teeth, an electric motor to drive the impeller, a chute extending into said chamber and having an upper inlet opening through which the waste material to be disposed of is introduced to the apparatus, said chute extending from said opening downwardly to the casing, a closure for said opening, a switch means actuated by closing of the closure, means for supplying water to the apparatus, electrically-actuated valve means to control the supply of water to the apparatus, a circuit incorporating said switch means and the electric motor, so that the motor is started when the cover is closed, a circuit incorporating said switch means and the electrically-actuated valve means so that water is supplied to the apparatus when the cover is closed, duct means for conveying water supplied to the apparatus to said chamber, the chamber having a wall over which the water from the chamber spills into a shallow channel around the chute to flow down the interior wall thereof and a conduit for conveying water supplied to the apparatus to the impeller which has water passages therethrough and a water-discharge opening which directs water under centrifugal force to flow over the lower part of the chute and over the stationary teeth.

3,291,400
BACTERIA DISINTEGRATOR
Wayne I. Jensen, Brigham City, Utah, assignor to the United States of America as represented by the Secretary of the Interior
Filed Sept. 23, 1963, Ser. No. 310,957
6 Claims. (Cl. 241—172)



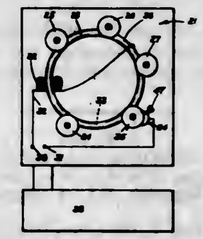
1. An apparatus for disintegrating microorganisms held in a liquid suspension comprising: (1) a grinding material in a flexible, continuous, closed tube containing said suspension of microorganisms; said tube being mounted on (2) a rotatable flywheel having a flat outer edge and means for containing the tube on said outer edge; (3) a belt mounted over said tube on the flywheel; said belt also extending over (4) a pulley located at a distance from the flywheel sufficient to apply pressure to the flexible tube; (5) means for adjustably locating the pulley to adjust the tension on the belt; and (6) means for rotating the flywheel.

3,291,401
POLYPHASE STATOR WINDING APPARATUS
Paul B. Greene, Lewis H. Le Valley, Albert B. Mewhinney, and Emmet C. Nevin, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original applications Dec. 4, 1962, Ser. No. 242,236, now Patent No. 3,218,820, dated Oct. 5, 1965, and Nov. 2, 1964, Ser. No. 408,949. Divided and this application Oct. 7, 1965, Ser. No. 493,629
6 Claims. (Cl. 242—1.1)



6. Wire guiding shoe means for use in a machine for winding coils on a stator core, said guiding shoe means having oppositely disposed end portions, a pair of wing members pivotally mounted on each of said end portions, each of said wing members having a curved outer edge, stop means integral with each of said wing members for limiting the pivotal separation of the wing members of each pair, a pair of parallel, vertically oriented pin means reciprocably mounted on each of said end portions substantially intermediate the wing members of a pair.

3,291,402
WIPING CONTACT FOR A TOROIDAL CORE WINDER
Paul J. Post, Acton, Mass., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Sept. 10, 1964, Ser. No. 395,495
8 Claims. (Cl. 242—4)

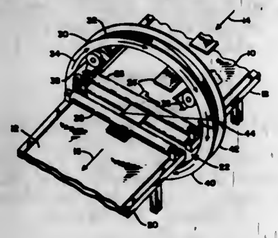


1. In combination with a toroidal core winder of the type having an annular, electrically conducting, wire carrying shuttle rotatably supported on a plurality of rotatable, V-groove sheaves, said shuttle being interlinked in a core, and having an inductance measuring device with two terminals, one connected to the start lead of the coil to be wound on the shuttle and the other connected to a wiping contact on said shuttle;
improved wiping contact means comprising:
one of said V-groove sheaves having at least an annular peripheral portion on one side thereof formed of electrically conducting material, said conductive portion having an inclined face in engagement with the exterior of said shuttle and a brush-contact face normal to the axis of rotation of said sheave, and
spring loaded brush means of electrically conducting material mounted alongside the path of said annular, peripheral portion of said sheave, and electrically connected to said other terminal, said brush means including an end face bearing against said brush-contact face of said sheave;
said electrically conducting portion of said sheave and said brush means connecting the coil wound on said shuttle and core into the circuit of said inductance measuring device throughout the entire winding operation of said winder.

3,291,403
TAPE WRAPPING MACHINE
Kent Montgomery, Bloomington, Minn., assignor to Gould-National Batteries, Inc., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,533
9 Claims. (Cl. 242—7)

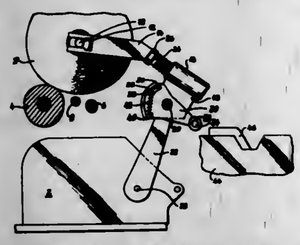
7. In a machine for wrapping tape or the like around an article wherein the article passes generally along the axis of an annular bobbin while the latter revolves about said axis unreeling and wrapping material and winding it about the article, guide means for the wrapping material comprising: a pair of clips for frictionally engaging one peripheral edge of the bobbin, said clips displaced from one another along the line of travel of said one edge; an eyelet through which the wrapping material slidably passes from the bobbin to the wrapping station, said eyelet extending beyond said one edge between and

resiliently attached to said clips for changing the degree of frictional engagement between the clips and the bobbin inversely as the tension of the wrapping material changes; said clips and said eyelet being formed from a unitary



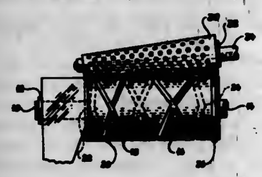
piece of spring wire, with the clips being at least in part of general U-shape configuration and the eyelet being a single turn coil between one extremity of each of the clips.

3,291,404
WINDING MACHINE
Richard I. Walden, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Oct. 9, 1964, Ser. No. 402,807
11 Claims. (Cl. 242—18)



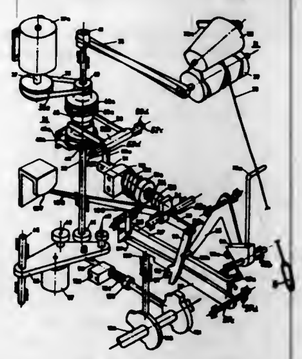
1. In a winding machine for winding yarn upon a rotating package wherein rotation of the package is halted by frictional contact with a braking member and means are provided for movement of said package to and from a braking position wherein said package contacts said braking member, the improvement comprising, biasing means for urging said package against said braking member at said braking position, and means operable in response to movement of said package to said braking position, for actuating said biasing means, whereby to arrest rotation of said package.

3,291,405
WINDING MACHINE
William H. O'Brien, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Oct. 30, 1964, Ser. No. 407,737
4 Claims. (Cl. 242—18)



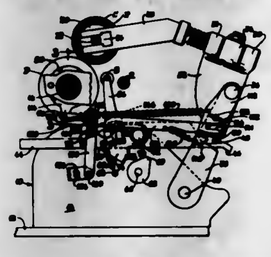
1. In a winding machine, the combination comprising, a mandrel adapted to support a core for rotation, a traverse roll having formed intermediate its opposite ends at least one helical groove defining a traversing zone for traversing yarn longitudinally of said core, means for supporting said mandrel for movement toward and away from said traverse roll, means for rotating said traverse roll, a resilient annular member expandable to a greater diameter than the outside diameter of said traverse roll, said annular member being located adjacent one end of said traverse roll and spaced from said traversing zone, said annular member having a surface of rotation supporting and engaging said core, and biasing means for expanding said annular member to a diameter greater than the diameter of said traverse roll to position said core a predetermined distance from said traverse roll.

3,291,406
CONTROL DEVICE FOR A WINDING MACHINE
Rudolf Jenny, Thalwil, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland, a corporation of Switzerland
Filed Oct. 18, 1965, Ser. No. 496,895
Claims priority, application Switzerland, May 9, 1962, 5,570/62; June 1, 1962, 6,680/62
15 Claims. (Cl. 242—35.5)



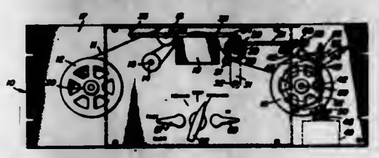
1. Control device for the winding units of a winding machine of the type wherein a yarn is delivered from a supply cop and wound in a yarn package onto an associated winding unit, and if the breakage of the yarn during winding onto the winding unit occurs the broken yarn ends are subjected to a knotting operation, comprising, in combination: at least one winding unit, a supply cop for delivering yarn to said winding unit to be wound thereon in a package, drive means for driving said winding unit at a predetermined normal speed in a first direction of rotation for normally winding yarn into a package, at a speed slower than said predetermined normal speed also in said first direction of rotation for winding yarn into a package upon said winding unit to take up the slack in the yarn between the supply cop and said winding unit produced by a knotting operation, and at a speed slower than said predetermined normal speed in a second direction of rotation opposite said first direction for unwinding a portion of yarn from the package upon said winding unit upon breakage of the yarn during winding onto the winding unit, means for controlling operation of said drive means to enable the later to drive said winding unit at any of the aforementioned speeds and direction of rotation in a predetermined sequence, said controlling means including a coupling mechanism, and feeler means operatively connected with said controlling means responsive to the presence of yarn to operate said controlling means for changing the speed of said drive means.

3,291,407
WINDING MACHINE
Raymond V. Tuin, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed July 1, 1964, Ser. No. 379,632
5 Claims. (Cl. 242—37)



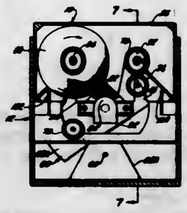
1. A winding machine for winding supply yarn onto a rotating package comprising, a rotatable drive roll, an arm for supporting said package, said arm being adapted for movement between an operative position with said package in driving contact with said roll to rotate the package and wind the supply yarn thereon and an inoperative position with said package removed from driving contact with said drive roll upon interruption of the supply yarn, drive means for rotating said roll, connecting means arranged to normally engage said roll with said drive means, a control member movable between a retracted position spaced apart from said connecting means and a projected position engaging said connecting means to thereby disengage said roll from said drive means, a spring for biasing said control member to its projected position, detent means adapted to yieldably hold said control member in its retracted position when supply yarn is being wound on said package, trip means operable in response to an interruption in the supply yarn to trip said detent means and release said control member for movement to said projected position, and cam means operative to initiate movement of said arm to its inoperative position when said control means is in its projected position.

3,291,408
TAPE TRANSPORT MECHANISM
Robert W. Beins and John E. Whatley, Shreveport, La., assignors to United Gas Corporation, a corporation of Delaware
Filed July 10, 1963, Ser. No. 293,956
1 Claim. (Cl. 242—55.12)



A tape transport for a magnetic tape recorder having a recording head comprising: a tape driving capstan mounted on one side of the recording head, means including an electric motor for driving said capstan, a pressure roll, means rotatably mounting said pressure roll and supporting said roll movable toward and away from said capstan, means for resiliently biasing said pressure roll toward engagement with said capstan for increasing the driving friction of tape with said capstan, a tape take-up reel drive mounted on the same side of said recording head as said capstan for driving a take-up reel concurrently with the driving of said capstan and including a slip clutch having drive and driven parts for continuously exerting a driving torque on the take-up reel during the driving of said capstan by said capstan driving means and having a brake drum, a brake shoe, an actuating sleeve having an actuating arm and a pair of operating arms extending outwardly from said sleeve, means for rotatably mounting said actuating sleeve on the same side of said recording head as said capstan, means operably connecting said brake shoe to one of said operating arms and supporting it for operably engaging said brake drum, means operably connecting said pressure roll supporting means to the other of said operating arms, electromagnetic actuating means connected to said sleeve actuating arm for rotatably turning said sleeve to apply said brake shoe into braking engagement with said brake drum and concurrently to move said pressure roll away from said capstan and alternatively concurrently to disengage said brake shoe from said brake drum and to move said pressure roll toward said capstan whereby said take-up reel driving torque immediately effects take-up of tape when it is driven by said capstan and maintains it taut at all times, and means for independently controlling the energizing of said electromagnetic brake-actuating means and said motor.

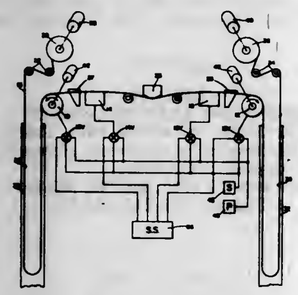
3,291,409
MAGNETIC TAPE RECORDER
Clarence S. McClellan, Woodland Hills, Calif., assignor to United Electronics Incorporated, Humacao, Puerto Rico, a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,869
6 Claims. (Cl. 242—55.12)



1. In a tape recorder, a tape transport system for winding tape from a first rotatably supported tape roll to a second rotatably supported tape roll until said second tape roll attains a predetermined size at which time said tape transport system winds said tape from said second tape roll to said first tape roll, said tape transport system comprising a first and a second tape drive roller, means for rotatably driving said first and second tape drive rollers in opposite directions, support means for holding said first and second tape drive rollers adjacent the respective first and second tape roll peripheries, means for pivotally supporting said support means between said first and second tape rolls whereby pivoting said support means in one direction brings said first tape drive roller in contact with the tape layer on the periphery of said first tape roll to wind tape thereon from said second tape roll and pivoting said support means in the opposite direction brings said second drive roller in contact with the tape layer on the periphery of said second tape roll to wind tape thereon from said first tape roll, and means responsive to a tape roll reaching a predetermined size for pivoting said support means from a position holding one of said tape drive rollers in contact with the periphery of said filled tape roll to a position holding the other of said tape drive rollers in contact with the periphery of the other tape roll, said last named means comprising spring means having one end attached to said means for pivotably supporting said support means at a point on a center line between said two drive rollers and to one side of said drive rollers, a pull rod having one end connected

to the other end of said spring means and the other end pivotably connected to said support means at a point on said center line and on the other side of said two drive rollers, a movable post positioned in the path of motion of said pull rod and substantially on said center line, means for sensing when a tape roll is filled, and means for withdrawing said movable post from the path of motion of said pull rod responsive to said means for sensing when a tape roll is filled.

3,291,410
FLUID TAPE DRIVE SYSTEM
Richard E. Berryman, King of Prussia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,188
7 Claims. (Cl. 242—55.12)



1. A magnetic tape system for moving tape in either of two opposite directions past a magnetic transducer for reading or writing of information on the tape, comprising:

(A) a supply of tape;

(B) tape take-up means to which tape is fed from said tape supply and vice versa; and

(C) means for moving said tape from one to the other of A and B selectively during which movement it passes in operative relation with said transducer which is positioned in the path of movement of said tape; said tape moving means comprising:

(a) a first pneumatic capstan means positioned on one side of said transducer and over which said tape is fed to and from said supply;

(b) a second pneumatic capstan means positioned on the opposite side of said transducer and over which said tape is fed to and from said take-up means;

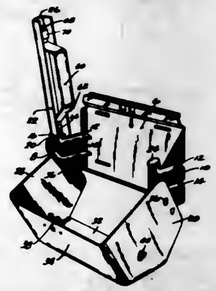
(c) means for rotating said first and second capstan means continuously in opposite directions, counterclockwise and clockwise respectively;

(d) a first pneumatic brake means positioned in the path of tape movement between said transducer and said first capstan means and over which said tape is fed;

(e) a second pneumatic brake means positioned in the path of tape movement between said transducer and said second capstan means and over which said tape is fed; and

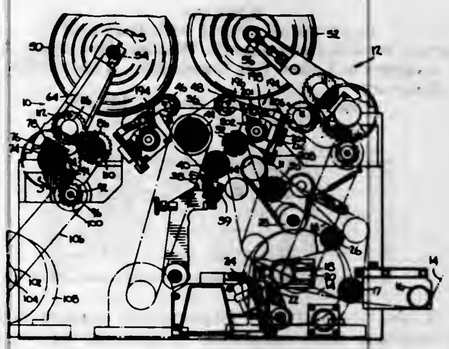
(f) means for selectively applying vacuum to one only of said pneumatic means and pressure to all the others simultaneously therewith whereby said tape may be moved at high speed in one direction, quickly and smoothly stopped and then moved at high speed in the opposite direction.

3,291,411
PAPER DISPENSER
Archie S. Krueger, Norman J. Skye, and Bernard E. Blanchard, Green Bay, Wis., assignors to Alwin Manufacturing Company, Green Bay, Wis., a corporation of Wisconsin
Filed Mar. 22, 1965, Ser. No. 441,434
6 Claims. (Cl. 242—55.53)



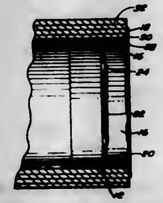
1. In a dispenser the combination with a wall mounting comprising spaced forwardly extending supporting arms having upward projections, of a channel-shaped mandrel extending from one arm to the other for support of a core on which a web is wound, the channel of the mandrel embracing the upward projections of both arms, said mandrel having pivotal connection with one of said projections and having a free end portion swingable upwardly and downwardly about said pivotal connection and releasably engageable with the projection of the other arm.

3,291,412
MULTIPLE INDIVIDUAL REWIND MACHINE
Leonard Rockstrom, Madison, Charles Aaron, West Caldwell, and Thomas J. Crowe, Dover, N.J., and Joseph Pundyk, New York, N.Y., assignors to Cameron Machine Company, Dover, N.J., a corporation of New York
Filed Oct. 2, 1964, Ser. No. 401,016
13 Claims. (Cl. 242—65)



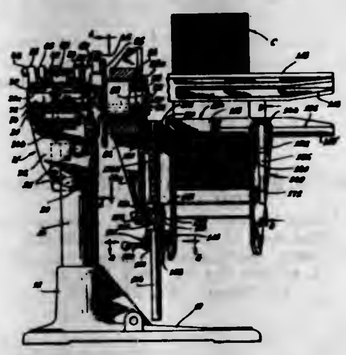
10. A rewind machine comprising a pair of rewind arm supporting shafts, a plurality of pairs of rewind arms for each shaft, each pair being mounted on said shafts at their inner ends, means carried by each pair of said rewind arms at their outer ends for receiving a strip of sheet material to be wound into a rewind roll, means for driving said last named means, a tracking roll for each rewind roll, supporting means for each of said tracking rolls, means for pivoting said supporting means to maintain peripheral engagement between said tracking rolls and said rewind rolls respectively, fluid piston means for successively rotating each of said rewind arm supporting shafts in increments of a revolution, fluid valve means operable by movement of at least one of said supporting means for actuating said fluid piston means.

3,291,413
CAP FOR PAPER CORE
Phillip S. Cushing and Harris E. Stone, both of 293 Lenox St., Norwood, Mass.
Filed Dec. 19, 1963, Ser. No. 331,860
2 Claims. (Cl. 242—68.6)



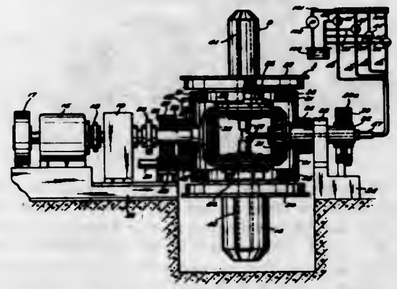
1. A cap for a paper core consisting of a metal tubular member having a body portion having an upper end, said upper end having a rim, said rim comprising an outward projecting socket element and a flange, said flange extending outward from said body portion and varying in extent from zero extent at each side of said socket element to a maximum extent at a point diametrically opposite to said socket element, the juncture between said flange and said body portion forming a smooth curved surface, and a cylindrical reinforcing insert closely fitted within said upper end of said body portion, said insert having an upper portion including a rim, the rim of said insert being flared and nestingly engaging said curved surface between said flange and said body portion, the plane of said insert rim being flush with the plane of said flange.

3,291,414
AUTOMATIC REEL
Pierre de la Motte, Trumbull, Conn., assignor to The U. S. Baird Corporation, Stratford, Conn., a corporation of Connecticut
Filed Apr. 26, 1965, Ser. No. 450,720
16 Claims. (Cl. 242—78.6)



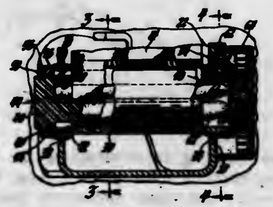
1. A reel for supporting coils of stock which comprises: a base; a housing mounted on said base; a main shaft supported in said housing; a bevel drive gear mounted on said main shaft and including an outer bearing surface; means for rotatably driving said bevel drive gear about the longitudinal axis of said main shaft; a swivel head including a hub portion rotatably mounted on said bearing surface and a plurality of arms extending radially outward therefrom; an adjusting shaft means rotatably supported on each arm and extending radially therealong, each of said adjusting shaft means including a threaded portion; a bevel pinion gear mounted on the radially inner end of each adjusting shaft means in operative engagement with the teeth of said bevel drive gear; fork means mounted on each of said adjusting shaft means for radial movement therealong, each of said fork means including threaded guide means engaging the threaded portion of its corresponding adjusting shaft means and an axially extending coil support arm; and shaft locking means operable to selectively prevent rotation of at least one of said adjusting shaft means about its longitudinal axis.

3,291,415
STRIP COILING APPARATUS
Max H. Burak, Fribourg, Switzerland, assignor to Lee Wilson Engineering, S.A., Fribourg, Switzerland
Filed Feb. 17, 1965, Ser. No. 433,421
10 Claims. (Cl. 242—80)



1. Apparatus for processing and handling coils of strip metal including a frame member mounted on a pair of shafts for pivotal movement about a substantially horizontal axis, releasable locking means for holding said frame member against such pivotal movement, a pair of oppositely directed mandrels mounted for rotation on said frame member and having their axes extending at 90° to said horizontal axis of said frame member, and drive means adapted selectively to rotate said mandrels about their axes, while said frame member is held stationary by said locking means or to turn said frame member together with said mandrels as a unit about said horizontal axis of said frame member when said locking member is released.

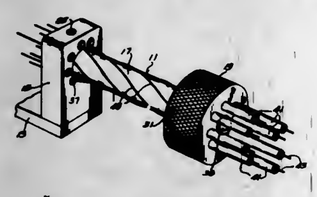
3,291,416
RETRACTING DEVICE
Edward C. Giosta, Bristol, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 24, 1964, Ser. No. 420,905
6 Claims. (Cl. 242—107)



1. A retracting device comprising support means, a drum rotatably supported by said support means and including a passageway for receiving one end of a tension

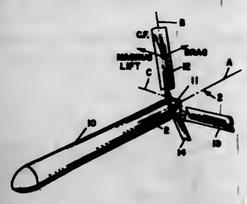
element, retaining means mounted within said drum and including three flexible prongs extending from a common base, said tension element having a loop formed on said one end and extending between two of said prongs and around the other prong whereby said tension element is securely coupled to said drum, spring means normally yieldingly urging said drum in a direction to wind said tension element thereon.

3,291,417
WIRE TENSION DEVICE
Robert W. Peters, Menomonee Falls, Wis., assignor to Lincoln Tool and Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 5, 1964, Ser. No. 349,684
3 Claims. (Cl. 242—147)



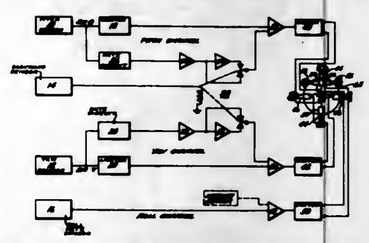
1. The combination of a support having an aperture therein, an arbor fixed to said support with one portion of the arbor periphery adjacent to said aperture, a member having a bore therein, means for adjustably rotatably mounting said member on said arbor in spaced relation to said support and with said bore in adjacent relation to the periphery of said arbor, whereby to afford placement of a filament through said aperture, around said arbor through a selectable distance depending upon the angular position of said member and the number of full turns around the arbor, and through said bore, a disk having a bore therein, and means for mounting said disk in adjacent relation to said member and for affording displacement of said disk relative to said member relative to a position wherein said bore in said member and said bore in said disk are in alignment.

3,291,418
FREE SPINNING ARTICULATED ROTOR
James E. Brunk, 1266 Coast Village Road, Santa Barbara, Calif., and Abraham Flatau, P.O. Box 657, Edgewood, Md.
Filed May 28, 1964, Ser. No. 370,889
10 Claims. (Cl. 244—3.23)



1. A free spinning rotor structure for coupling to a missile comprising: a rotor blade means; bearing means mounting said rotor blade means for free spinning rotation about its own longitudinal axis; and hub means coupling said bearing means and rotor blade means for revolving movement about the longitudinal axis of said missile.

3,291,419
ATTITUDE CONTROL SYSTEM WITH MAGNETOMETER SENSORS
Lewis David Montague, Menlo Park, and John J. Rodden, Los Altos, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed May 28, 1964, Ser. No. 371,159
3 Claims. (Cl. 244—14)



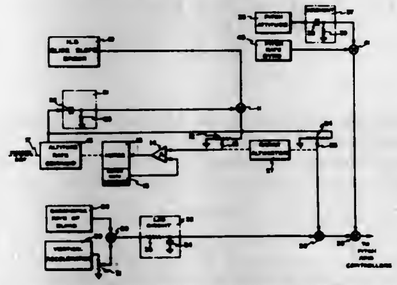
1. A closed loop, null sensing attitude control system for a vehicle comprising a magnetometer whose output is proportional to the cosine of the angle between the field vector and the instrument sensitive axis, circuitry associated with said magnetometer, said circuitry comprising a limiting circuit connected with the output of said magnetometer, a differentiating circuit connected with said output of said magnetometer, a summing amplifier connected to add the limited position signal from said limiting circuit and the rate signal from said differentiating circuit, control means connected with the output from said summing amplifier for changing the forces acting on said vehicle to effect a desired orientation of said vehicle, a second magnetometer and associated cricuitry identical to said first-mentioned magnetometer and associated circuitry, said second magnetometer being mounted with its instrument sensitive axis perpendicular to said first-mentioned magnetometer, said second magnetometer and associated circuitry being connected to said control means to control the forces acting on said vehicles to reflect a desired orientation of said vehicle with respect to the instrument sensitive axis of said second magnetometer, and a third magnetometer for sensing forward or reverse direction of said vehicle, a relay connected with said third magnetometer, plus and minus rate amplifiers between each of the differentiating circuits and the summing amplifiers of the associated circuits of said first and second magnetometers, said third magnetometer being connected to operate said relay to connect one of the outputs of said plus or minus rate amplifiers with the summing amplifier of the associated circuits.

3,291,420
WING STRUCTURE AND DUCT MEANS FOR AIRCRAFT
Nikolaus Laing, Hofener Weg 35–37, Aldingen, Germany
Filed Aug. 11, 1964, Ser. No. 388,802
Claims priority, application Germany, Aug. 12, 1963, L 45,588; Oct. 29, 1963, L 46,191
23 Claims. (Cl. 244—42)



1. In an aircraft, in combination, a wing structure including duct means opening in the region of the leading edge of said wing structure; crossflow blower means having an axis extending substantially in the direction of the elongation of the wing structure and mounted on the same in the region of the trailing edge for producing a stream of air in said duct means; and means in the region of the leading edge of said wing structure for causing a downwardly directed outflow from said duct means whereby a nose-up moment is produced.

3,291,421
PITCH CONTROLLER FOR AUTOMATIC LANDING
Kenneth C. Kramer, Woodland Hills, Calif., and Harold N. Tobie, Mercer Island, Wash., assignors to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Continuation of application Ser. No. 148,628, Oct. 30, 1961. This application Sept. 20, 1965, Ser. No. 488,665
17 Claims. (Cl. 244—77)



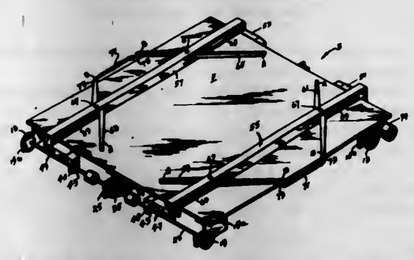
16. In an automatic landing approach control system for aircraft for use with a glide path signal provided along the desired path of approach to a runway by transmitter means located at the runway,

(a) first control means responsive to the glide path signal for controlling the pitch of the aircraft to cause the aircraft to follow the glide path,

(b) means for progressively reducing to substantially zero the effect of the glide path signal on the pitch of the aircraft as the aircraft descends below a first predetermined altitude, and

(c) second control means independent of said first control means and said signal reducing means, and responsive to the aititude of the aircraft for progressively modifying the pitch angle of the aircraft during the terminal portion of approach to a runway to provide flareout for the aircraft.

3,291,422
ALIGNING AND CENTERING DEVICE FOR HELICOPTER
James F. VanValkenburg, Primos, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 5, 1965, Ser. No. 453,528
7 Claims. (Cl. 244—114)



1. Apparatus for positioning an object on a surface in a predetermined manner, said apparatus comprising:

(a) a pair of elongated bars which are positioned in a parallel relationship at opposite ends of the surface;

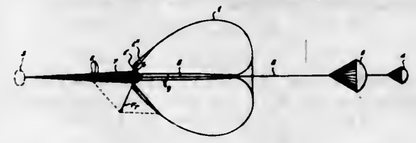
(b) means for controlling movement of the elongated bars toward and away from each other along the surface;

(c) a pair of levers pivotably mounted on each elongated bar, the levers of each pair of levers being pivoted at intermediate points on their respective elongated bars at predetermined points adjacent opposite ends thereof, one end of each lever normally extending inwardly between the elongated bars and the other end of each lever extending outwardly in the opposite direction away from its respective elongated bar;

(d) means normally biasing each pair of levers so as to increase the projected angle therebetween;

(e) and means secured to the said other ends of each pair of levers for engaging the adjacent ends of the surface and rotating the levers about their pivot points on their respective elongated bars as the elongated bars move along the surface.

3,291,423
SELF-COMPENSATING POWER-SPREAD PARACHUTE APPARATUS
Thomas M. Britton, Jr., Asheville, N.C., assignor to Stencel Aero Engineering Corporation, Asheville, N.C., a corporation of North Carolina
Filed Mar. 15, 1965, Ser. No. 439,569
6 Claims. (Cl. 244—149)



6. In a parachute apparatus capable of operation at both high relative air speeds and low relative air speeds, the combination of

a parachute canopy having a skirt and an apex;

a ballistic spreading gun comprising

a housing,

a plurality of projectiles connected to said skirt and carried by said housing for projection therefrom to effect positive spreading of said canopy, and

power means for projecting said projectiles;

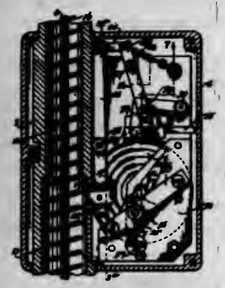
anti-squidding line means having one end connected to said canopy at at least one point remote from said skirt; and

releasable means connecting the other end of said anti-squidding line means to said gun and operative to release said anti-squidding line means upon firing of said gun.

3,291,424
PARACHUTE RELEASE MECHANISM
John Edward Hatfield, Stotfold, and Ernest Dennis Keanie, Royston, England, assignors to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York
Filed Apr. 19, 1965, Ser. No. 449,012
Claims priority, application Great Britain, May 4, 1964, 18,473/64
14 Claims. (Cl. 244—149)

1. In a parachute release mechanism the combination of a frame and casing structure, a rip cord mounted on the frame and casing structure, a plunger movably carried in the frame and casing structure having means to connect the rip cord thereto, spring means in the frame and casing structure normally urging the plunger into rip cord pulling position, lever means mounted upon the frame and casing structure, a pawl movably carried by the lever means having means to releasably connect with

said plunger to hold the plunger spring means biased, a barometric motor mounted on said frame and casing structure having a detent on the atmospheric affected portion thereof, a trip lever movably mounted on said frame and casing structure positioned to releasably engage the detent of the barometric motor, means biasing the trip lever to normally position it in a neutral posi-



tion with respect to the barometric motor detent, said trip lever when in neutral position holding the lever means attached to said pawl inoperative to release the pawl from its plunger holding position until the barometric motor detent is moved by the atmospheric pressure action of the barometric motor out of the path of movement of the trip lever.

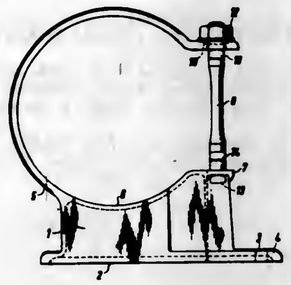
3,291,425
SYSTEM FOR ELIMINATING VIBRATION
Charles Leavell, 206 S. Fairfield Ave., Lombard, Ill.
Filed Apr. 9, 1962, Ser. No. 185,988
3 Claims. (Cl. 248—22)



1. In combination, a vibratory element subject to 3-dimensional vibratory displacements, an element in which the occurrence of vibration is undesirable, and connecting linkage for effectuating a necessary transmission of force between said elements in the planes of such 3-dimensional vibratory displacements including means for automatically adjusting the value of such transmitted force to maintain a predetermined relation between the vibratory and second mentioned elements, means for maintaining any such adjusted value relatively constant throughout any cycle of the vibratory motion of said vibratory element, said linkage being automatically operative to determine the direction of such transmitted force along such planes in its application to said elements.

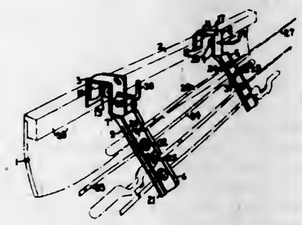
3,291,426
PIPE MOUNTING
Vincent Charles William Joyner, Doddinghurst, near Brentwood, Essex, and Thomas Henry Weed, Walthamstow, London, England, assignors to Celanese Building Components Limited, Glasgow, Scotland, a British company
Filed Dec. 3, 1965, Ser. No. 511,506
6 Claims. (Cl. 248—74)

1. A mounting for attaching pipework on to a surface comprising a base capable of being secured to the surface and an open ended band, integral with the base, capable of encircling incompletely but throughout at least a major arc of the periphery thereof, a portion of the pipework to be mounted, and a separate closing device having near one end two longitudinally spaced abutments for selec-



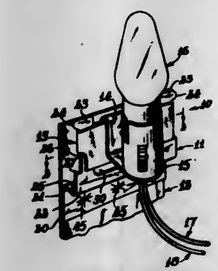
tively engaging one end of the band and tightening means adjacent its other end for engaging the other end of the band and for being tightened to a limited extent to clamp the band around a portion of the pipework.

3,291,427
FISHING ROD RACK
Elmer L. Hutchings, 1014 E. 24th Ave., North Kansas City, Mo.
Filed Aug. 9, 1965, Ser. No. 478,276
7 Claims. (Cl. 248—201)



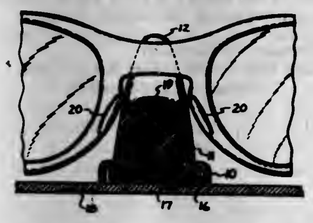
1. In combination a holding device for fishing rods having tip and rear ends and mounted on a support comprising,
(a) a pair of rod racks,
(b) each of said racks including a U-shaped portion for engaging said support and securing said rod racks to said support in spaced relation,
(c) a threaded clamp rod carried by said U-shaped portion and having a portion engaging said support, each of said rod racks having an elongated arm portion,
(d) an elongated resilient member of substantially the same length of said arms,
(e) means on said arms for securing said resilient members to said arms, and
(f) one of said resilient members having spaced alternate openings within the member and slots extending therein from an outer edge and the other resilient member having spaced alternate slots extending therein from the outer edge and openings within the member, the openings in one resilient member being in longitudinal alignment with the slots on the other resilient member, whereby the tip end of the rod is inserted through one of said openings and the rear end of the rod is inserted in the slot in alignment with said last named opening.

3,291,428
SHOCK MOUNT
Michael S. Sinnott, Chicago, Ill., assignor to Rock-Ola Manufacturing Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,146
4 Claims. (Cl. 248—294)



1. Shock mounting means comprising, a mounting frame having a portion adapted to be fixedly attached to support means, spaced coplanar arm means formed on said frame and separated by an open space therebetween, and unitary elastic mounting means connected to and extending between said arm means and comprising an endless band of elastic material providing a resilient planar shock absorbing platform suspended in said space between and substantially coplanar with said arm means whereby items to be shock protected may be attached to said platform and substantially insulated from shock and vibrational forces imposed on said frame.

3,291,429
EYEGLASSES HOLDER
Nick C. Neanhouse, Chicago Ridge, Ill. (7133 W. 109th, Worth, Ill.)
Filed Oct. 24, 1965, Ser. No. 504,817
3 Claims. (Cl. 248—286)



2. An eyeglasses holder comprising, in combination, a magnetic base attachable by magnetic attraction to a relatively flat metal mounting surface, and a tapered upright substantially cone-shaped pillar secured to said base and having a pair of spaced fingers insertable between the nosepieces of a pair of eyeglasses, said fingers defining a notch which is deeper than the level of the bridge of a pair of eyeglasses retained in the notch when said eyeglasses are resting on and supported on both sides of said bridge by the mounting surface.

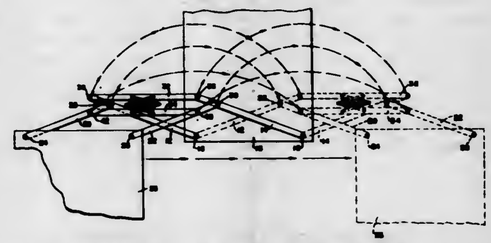
3,291,430
CORNICE MOUNTING FOR SHOWER CURTAINS
Harold Grossman, 4723 N. Pulaski Road, Chicago, Ill.
Filed Mar. 10, 1965, Ser. No. 438,523
3 Claims. (Cl. 248—264)

1. A cornice-mounting for shower-bath curtains comprising a traverse bar channel-shaped in cross section with parallel parts disposed transversely of the base for inverted horizontal disposition between the walls defining a bath area to provide a raceway for shower-curtain suspension means and having an ornate, vertically-disposed front face, a pair of wall brackets L-shaped in cross-section for inverted positioning with one leg attached to a wall to dispose the other leg horizontally, the long leg being of a width less than the width of the base part of the bar, a pair of anchoring members channel-shaped in cross-section with parallel parts disposed transversely of



the base and slidably supported in inverted positions on the bar, having an ornate front face to match the front face of the bar, and oppositely shiftable along the bar into positions embracive of the overlapping end portions of the bar base and the other leg of the respective brackets to secure the bar in curtain-suspension position, and means on each anchoring member for keying the members in use position on the bar.

3,291,431
STRAIGHT LINE CARRIER DEVICE
James A. Daniel, Jr., R.D. 2, Box 66, Newton, N.J. 07860
Filed July 2, 1965, Ser. No. 469,175
25 Claims. (Cl. 248—277)

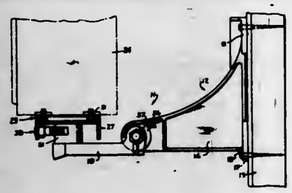


1. A straight line carrier device, including a base and a traveller comprising a first arm pivotally mounted on said base; a second arm pivotally mounted on said base and spaced apart from said first arm; a third arm pivotally mounted on said first arm; a fourth arm pivotally mounted on said second arm in the same manner as said third arm is mounted on said first arm; said traveller being pivotally mounted on said third and fourth arms, said third and fourth arms being spaced apart from each other a distance equal to the spacing on said base of said first and second arms; a first spacing rod pivotally mounted between said first and second arms to maintain said first and second arms parallel; a second spacing rod parallel and coplanar with said first spacing rod and pivotally mounted between said third and fourth arms to maintain said third and fourth arms parallel; and means to maintain said first and second rods in aligned relationship.

3,291,432
MOUNTING ARRANGEMENT FOR TELEVISION RECEIVERS AND THE LIKE
Joseph A. Lucasey, 1917 Clement Ave., Alameda, Calif.
Filed Jan. 22, 1965, Ser. No. 427,286
8 Claims. (Cl. 248—278)

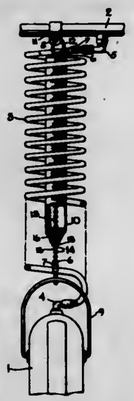
1. A mounting assembly for television sets and the like comprising mounting means adapted for unremovable attachment to a support surface, a support plate disposed

upon said mounting means, fasteners extending through said plate for securance to a television set or the like, a cover disposed adjacent said plate between said plate and said mounting means in covering relation to the engaging portions of said fasteners and retained in engagement with said plate by engagement with said mounting means,



and a locking mechanism extending between said support plate and mounting means to secure them together and prevent removal of said cover, said locking mechanism being actuatable by means of a key or the like to permit authorized separation of said support plate and mounting means and removal of said cover plate to expose the engaging portions of said fasteners.

3,291,433
SPRING ASSEMBLY
Frank J. Rodgers, 78 North Ave., Fanwood, N.J.
Filed Oct. 7, 1965, Ser. No. 493,805
5 Claims. (Cl. 248—317)



1. A coil spring comprising a plurality of coils, said spring having a free end with an opening therein, a linkage mechanism mounted within said coil spring and extending through the opening in the free end of the spring, said free end being conical with said opening at the smaller end thereof and being squeezed around said linkage to prevent movement thereof relative to the spring.

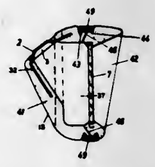
3,291,434
CLOTHES RACK
Thomas Joseph Whitechester, 3806 Nob Hill Blvd., Yakima, Wash.
Filed June 18, 1965, Ser. No. 464,932
5 Claims. (Cl. 248—356)

1. A clothes rack or the like comprising an upper standard member and a lower standard member each having upper ends, lower ends, side surfaces and opposed face surfaces, guide means secured to one of said standard members and slidingly receiving the other standard member with face surfaces of each standard member juxtaposed to each other, elongated longitudinally extending grooves defined in said last mentioned face surfaces of each standard member in opposed relation, tension spring means received in said grooves and having opposite ends secured to said upper end of said lower standard member and said lower end of said upper standard member, re-



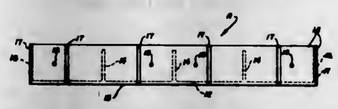
spectively, a transversely extending groove defined in said last mentioned face surface of said lower standard member spaced from said upper end thereof, and a crossbar slidingly received in said transversely extending groove with end portions extending beyond both side surfaces of said standard members.

3,291,435
TWO PIECE VEHICLE REAR VIEW MIRROR
Gerhard Herr, Wuppertal-Vohwinkel, Germany, assignor to Gebr. Happich G.m.b.H., Wuppertal-Elberfeld, Germany, a company of Germany
Filed Feb. 5, 1963, Ser. No. 257,051
1 Claim. (Cl. 248—481)



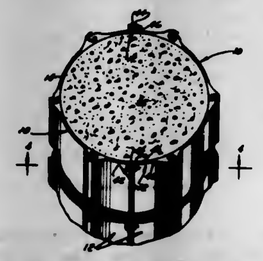
A rear-view automobile mirror for mounting on a ball, comprising a mirror pane; a sectional carrier of resiliently yieldable foam material including a front frame part extending circumferentially about the peripheral edge of said pane and having an internal groove receiving said pane, and a hollow forwardly facing rear body part having its front edge conformably engaging the rear side of said frame part; a sheet-metal insert embedded in the material of said body part rearwardly of said pane and formed with a central socket portion for receiving a mounting ball and arms extending toward opposite portions of said frame; and a clamping strap of generally U-shaped cross-sectional configuration extending about and clamping together said body and frame parts and exerting through said frame part a holding force on said pane.

3,291,436
PANEL FORM FOR CONCRETE CONSTRUCTION
Edward P. Bergbammer, 9540 Beverly Place, Wauwatosa, Wis.
Filed June 27, 1963, Ser. No. 290,993
7 Claims. (Cl. 249—26)



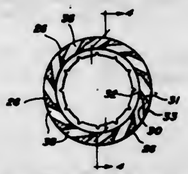
3. A unit panel assembly comprising a plurality of filler members disjointly arranged in a predetermined panel frame array, a face member disjointly disposed in abutment with said filler members, and a resin and Fiberglas envelope over the remaining exposed surface of said filler members and said face member whereby the entire assembly is formed into an integrated whole.

3,291,437
FLEXIBLE PANEL WITH ABUTTING REACTION SHOULDERS UNDER COMPRESSION
George F. Bowden, Des Plaines, and Richard C. Capek, Downers Grove, Ill., assignors to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,513
4 Claims. (Cl. 249—48)



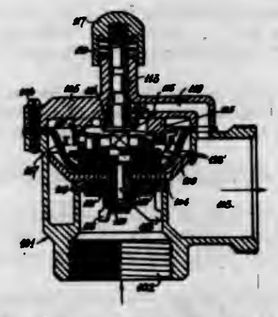
1. As a new article of manufacture, a closed tubular structure comprising a series of ordinarily substantially flat flexible and resilient panels disposed in interlocking and edge-to-edge relationship, each panel constituting an arcuate circumferential section of such structure, one side edge portion of each panel being outwardly but not inwardly thickened and presenting a wholly outwardly offset goose-neck tongue portion which has an appreciable circumferential direction of extent, leads the adjacent side edge of the panel, comprises an outer enlarged head-like part and an inner comparatively narrow neck-like part, and has on the inner side of the head-like part and on opposite sides of the outer end portion of the neck-like part a pair of substantially flat and coplanar interlock shoulders, the other side edge portion of each panel being outwardly but not inwardly thickened and presenting a wholly outwardly offset groove-equipped portion, said groove-equipped portion having formed therein a longitudinal groove which is in cross section shaped substantially conformably to the head-like and neck-like parts of the aforementioned goose-neck tongue portion, comprises an enlarged inner part for slidably receiving the outer enlarged head-like part of the goose-neck tongue portion of the adjacent panel and, in addition, a narrow outer entrance part for slidably receiving the neck-like part of the goose-neck tongue portion of the adjacent panel, and has at the sides of the enlarged inner part a pair of substantially flat and coplanar interlock shoulders for abutment against the interlock shoulders on the inner side of the head-like part of the goose-neck tongue portion of the adjacent panel, the goose-neck tongue portion of each panel being interlocked with the groove-equipped portion of the adjacent panel, the medial region of each panel between said goose-neck tongue portion and said groove-equipped portion being of substantially uniform thickness, the opposed meeting side edges of adjacent panels being provided with abutting reaction shoulders which are disposed radially inwards of the interlocked goose-neck tongue portions and the groove-equipped portions, the panels existing under circumferential flexion so that the goose-neck tongue portions are under tension, the interlock shoulders are maintained in firm abutting relation, and the abutting reaction shoulders are under compression in order to produce a sealed relationship.

3,291,438
WELDING FERRULE
Lewis J. Logan, 11820 Edgewater Drive, Lakewood, Ohio
Filed Apr. 26, 1961, Ser. No. 105,611
8 Claims. (Cl. 249—83)



4. A welding ferrule including in combination a member having wall means defining a bore therethrough, wall means defining a plurality of legs on the bottom edge of said member, each of said legs being circumferentially spaced from each other, each said leg being defined by first and second side walls, said first side wall of one leg and said second side wall of the next adjacent leg defining an opening through the wall of said bore, each said opening extending at an angle with respect to all radii lines extending through said opening, whereby substantially all radii extending through said opening will impinge against a first wall of said opening.

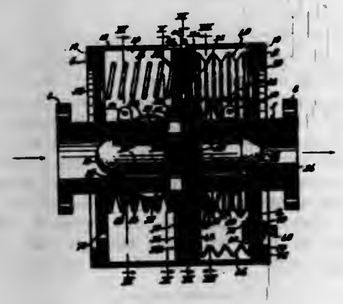
3,291,439
PUSH-BUTTON FLUSHING VALVE
Zeev Goldstein, Givataim, Israel; Mira Goldstein, administratrix of the estate of Zeev Goldstein, deceased
Filed Dec. 16, 1963, Ser. No. 330,837
Claims priority, application Israel, Feb. 8, 1963, 18,695
3 Claims. (Cl. 251—46)



1. A flushing valve, comprising: a valve housing including an inlet opening and an outlet opening; a valve seat disposed within the valve housing between said inlet and outlet openings; a flexible membrane within the housing and forming a substantially closed chamber therein; said membrane movably supporting a valve member per-

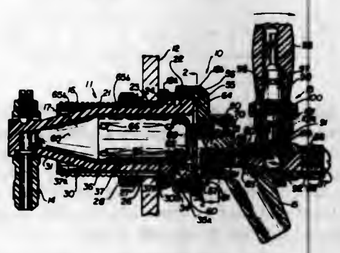
mitting the latter to be moved into and out of engagement with the valve seat for closing and opening the valve; said valve member having a bore providing communication between the inlet opening and said chamber; a bypass channel leading from the said chamber into the outlet opening; an auxiliary valve member normally urged by the pressure of water in the chamber for closing said bypass channel; a depressible and rotatable push-button, adapted, upon depression, to move said auxiliary valve member to its open position and thereby to open said bypass channel; and a pressure member disposed so as to be mechanically connected to said push-button when the latter is depressed and to be moved by the rotation of the depressed push-button into engagement with said membrane for locking said valve member in closed position on said valve seat.

3,291,440
FLUID-OPERATED VALVE
Farley J. Archer, 18503 Oakmoor, Sunqus, Calif., and Charles R. Archer, 2715-C Santa Monica Blvd., Santa Monica, Calif.
Filed June 1, 1964, Ser. No. 371,696
6 Claims. (Cl. 251—61)



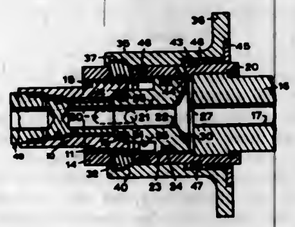
1. A valve comprising:
(a) a tubular body member having an axially opening valve seat formed therein,
(b) a valve plunger carried for axial movement in said body member to and from said seat to close and open said valve,
(c) a housing surrounding said body member and including a pair of spaced apart end walls extending outwardly from said body member and affixed thereto,
(d) a rod carried by said plunger and extending laterally therefrom through an aperture of said body member into said housing intermediate said end walls thereof,
(e) means sealing said body member aperture around said rod,
(f) an annular plate surrounding said body member and being axially slidable therealong intermediate said housing end walls, said rod being engaged by said plate,
(g) compression springs interposed between said plate and one of said end walls whereby to bias said plate in one direction, and
(h) an expansible fluid bellows disposed between said plate and the other of said end walls, whereby to move said plate in the opposite direction against said springs whenever fluid under pressure is supplied thereto.

3,291,441
DISPENSING DEVICE
Howard J. Hansen, Bay Village, Ohio, assignor to The Hansen Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed May 21, 1964, Ser. No. 369,186
23 Claims. (Cl. 251—122)



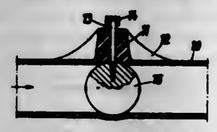
1. A dispensing apparatus comprising a member having a flow restrictor chamber therein, said chamber having an outlet end opening into one end of said member and an inlet end at the other end of said member, a flow restrictor in said chamber, means providing a cylindrical chamber at the outlet end of said member having a diameter larger than said flow restrictor chamber, said cylindrical chamber being coaxial with the axis of said member and having a wall disposed opposite and spaced from the outlet end of said flow restrictor, faucet means having a dispensing outlet and a dispensing passageway opening into the lower part of said cylindrical chamber and connected to said dispensing outlet, a valve cooperating with said passageway to control the dispensing of the beverage and having an open position in said cylindrical chamber with at least a portion of said valve being disposed below the flow restrictor chamber.

3,291,442
GAS OR VACUUM-OPERATED COUPLINGS
Bidwell C. Cranage, Ferguson, Mo., assignor to Stile-Craft Manufacturers, Inc., St. Louis, Mo., a corporation of Missouri
Filed July 27, 1964, Ser. No. 385,276
3 Claims. (Cl. 251—149.1)



1. In a coupling:
(a) a tubular nipple,
(b) a tubular body providing a socket adapted to receive the nipple,
(c) latch means carried by the body,
(d) a sleeve slidably mounted on and externally of the body and selectively movable to a locking position to urge the latch means into locking engagement with the nipple,
(e) a tubular plug having a sealing surface thereon, said tubular plug being slidably mounted in the body and extending into the socket, said sealing surface engaging the nipple sealingly upon insertion of the nipple, whereby to provide a flow passage through the nipple and plug, said tubular plug having a pressure surface upon which the line pressure fluid acts to maintain said sealing surface of said plug in sealing engagement wtih said nipple,
(f) the sleeve and body having a fluid tight chamber therebetween externally of the body,
(g) means placing the chamber externally of the body in communication with the flow passage internally of the body, and
(h) the external sleeve including a surface partially defining the chamber externally of the body which is subjected to the pressure of the fluid in the flow passage tending to move the external sleeve to the locking position and to maintain the nipple latched.

3,291,443
SHUT-OFF DEVICE FOR PIPELINES
Joachim Schulz, Martin-Rieffert-Str. 33, Duesseldorf, Germany, and Werner Fehr, Klosterstr. 45, Krefeld, Germany
Filed Nov. 21, 1962, Ser. No. 239,242
Claims priority, application Germany, Nov. 22, 1961, Sch 30,996
3 Claims. (Cl. 251—305)



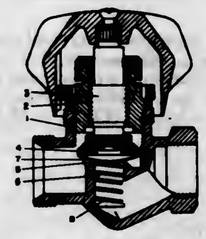
1. A pipe of elastomeric material having a boss integral therewith, a cylindrical opening through the boss communicating the inside of the pipe with the outside, a thin metallic valve element of larger cross-section than the pipe mounted therein, and a spindle of greater cross-section than said opening secured to the valve element and extending from the periphery of the valve element through the opening, said spindle forming the only projection from the periphery of the valve element.

3,291,444
BUTTERFLY VALVES
Harold Victor Willis, Solihull, England, assignor to David F. Wiseman & Sons Limited, Birmingham, England, a British company
Filed Feb. 21, 1964, Ser. No. 346,464
Claims priority, application Great Britain, Mar. 28, 1963, 12,237/63
7 Claims. (Cl. 251—306)



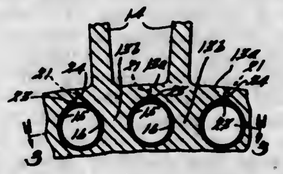
1. A butterfly valve comprising a valve body formed by two co-axially apertured members having a pair of abutting diametral faces, a closure member supported by a spindle located on each side of the closure member in a pair of complementary channels in said diametral faces with the closure member free for rotation in a flow passage defined by the apertures in said members, a seating ring mounted in a continuous recess defined between said diametral faces and surrounding said flow passage in offset relation to said channels in the direction of the axis of said flow passage, said ring serving to provide a resilient mouth for sealing engagement with the periphery of the closure member, and means for fastening together said two members.

3,291,445
RESILIENT VALVE DISC
Olof Lundberg, Hagersten, Sweden, assignor to AGA-Platforadling Aktiebolag, Halsingborg, Sweden, a corporation of Sweden
Filed May 7, 1964, Ser. No. 365,827
Claims priority, application Sweden, May 31, 1963, 6,035/63
5 Claims. (Cl. 251—334)



1. A valve comprising an annular valve seat and a thrust plate in opposing relationship to said valve seat, a resilient valve disc member mounted in the valve between the said annular seat and the thrust plate and of such a size as to at least cover the opening within the annular seat, said disc being bent about one diameter towards the said thrust plate in its free state and resiliently movable to a flat shape, so that when the thrust plate is moved towards the annular seat the resilient disc flattens against the seat, and when the thrust plate is moved away from the annular seat the portions of the disc remote from the said diameter move away from the seat before the portions of the disc closer to the said diameter, and a pair of opposed notches in the said resilient disc at each end of the said diameter.

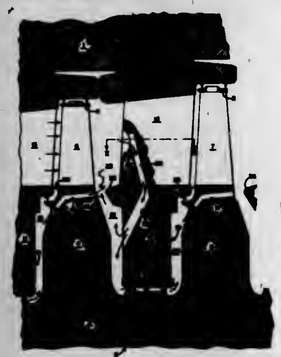
3,291,446
TURBINE WHEEL
George J. Huebner, Jr., Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Apr. 13, 1965, Ser. No. 447,656
10 Claims. (Cl. 253—77)



1. In a rotor for a gas turbine engine, a disc body, an axially enlarged rim defining the periphery of said body, means operable by hot motive gases at sonic velocities for rotating said rotor comprising a plurality of circumferentially spaced blades comprising a unitary structure with said rim and extending radially therefrom, said blades terminating radially outwardly in free standing ends, means for relieving cyclic stresses in said rim and for facilitating thermal expansion and contraction of the radially outer portions of said rim between said blades and also for reducing the vibration frequency of said blades comprising a plurality of circumferentially spaced holes extending generally axially in said rim at locations between said blades and radially inwardly of

said radially outer portions, the circumferential dimension of each hole being on the order of magnitude of the circumferential spacing between said blades, and the minimum circumferential dimension of said rim between successive holes being on the order of magnitude of the maximum circumferential thickness of each blade, means for preventing the passage of gases axially through said rim at said holes, and means for damping the amplitude of vibration of said blades and the portions of said rim adjacent said holes comprising a separate tubular insert tightly fitting within each hole, said rim engaging the inserts force tending to compress the latter during all normal operating conditions of said rotor.

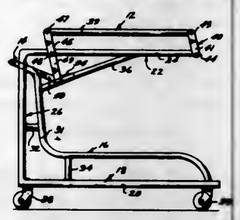
3,291,447
STEAM TURBINE ROTOR COOLING
Ronald E. Brandon, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 15, 1965, Ser. No. 432,741
6 Claims. (Cl. 253—39.1)



1. In a multistage axial flow elastic fluid turbine the combination of:
a turbine wheel portion extending radially from a rotatable shaft portion, said wheel portion having a plurality of turbine buckets on its periphery,
a stationary annular diaphragm member having a plurality of nozzle partitions thereon disposed to receive fluid from said buckets, said diaphragm member also including packing means closely surrounding the shaft portion, and
means defining a cooling fluid passage having an inlet defined in the leading edge of a selected nozzle partition of said diaphragm so arranged as to collect elastic fluid after it has passed through said buckets and having an outlet discharging into the space between said wheel portion and said diaphragm member, whereby a portion of the collected fluid flows between the packing means and the shaft portion after having been cooled by passing through the preceding turbine buckets.

3,291,448
HOISTING TRUCK FOR A TABLE HAVING A SINGLE-THROW LEVER AND PARALLELOGRAM MEMBERS
James R. Beebe, 6731 S. Lindsey, Pico-Rivera, Calif.
Filed Sept. 13, 1965, Ser. No. 486,987
8 Claims. (Cl. 254—10)

8. A table lifter and mover, comprising:
a wheel supported frame for rolling over the floor;
a pair of laterally separated table lifting mechanisms including a pair of coplanar, horizontal elevating members, a pair of front lifting members pivotally connected to said frame and to front end portions of said elevating members for movement in parallel vertical planes, a pair of rear-lifting members parallel to said front lifting members and each pivotally connected to said frame and to rear end portions of said elevating members for movement in parallel vertical planes, one of said rear-lifting members in-



cluding a longitudinal extension below its pivotal connection to said frame;
means rigidly connecting said rear-lifting members;
and stop means connected to said frame and located forward of a vertical plane of said pivotal connection of said rear lifting members for there engaging said longitudinal extension to prevent forward movement of said longitudinal extension beyond said stop means.

3,291,449
CABLE PULLERS
Leon Q. Hughes, 1934 Placentia Ave., Costa Mesa, Calif.
Filed Dec. 10, 1964, Ser. No. 417,416
7 Claims. (Cl. 254—134.3)

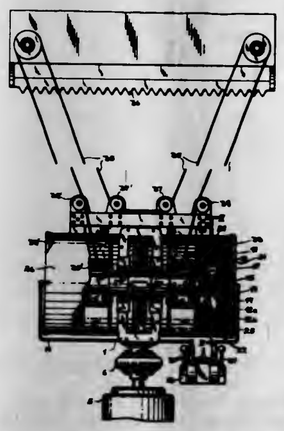


1. A cable puller comprising in combination a tripod frame comprising three tubular support members the upper ends of which are held in fixed relation by a yoke, a first pulley rotatably mounted on said yoke to receive a flexible line thereover, a second pulley adjustably mounted on two of said support members intermediate the ends thereof to receive said flexible line, an adjustable brace connected relative to said last mentioned two support members to be positioned generally along the flexible line being pulled, a platform mounted between and connected to said three support members intermediate the length of said tripod, and a power unit on said platform including a power operated drum to which said line is attached, whereby operation of said drum causes said line to be pulled around said pulleys, said adjustable brace supporting said tripod frame in a direction opposite to the pulling of said line.

3,291,450
DRAG-LINE WINCH
Alfred Schlechter, Essen-Heisingen, Germany, assignor to E. Wolff G.m.b.H., Essen, Germany, a company of Germany
Filed July 7, 1964, Ser. No. 380,859
Claims priority, application Germany, Dec. 19, 1963, W 35,849
5 Claims. (Cl. 254—185)

1. A drag-line winch comprising a frame, a shaft rotatably journaled in said frame, a pair of cable reels coaxial

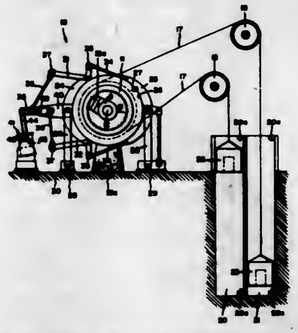
with said shaft and journaled on opposite ends thereof for independent rotation thereabout, a generally cup-shaped carrier member rigid with each of said reels, said member having an end wall extending generally transversely of said shaft beyond a respective extremity thereof and an apertured annular peripheral wall surrounding said extremity, a clutch mechanism for each reel including first coupling means rigid with said extremity and co-operating second coupling means supported on said end wall, said second coupling means being provided with a fluid-responsive actuating element including a hydraulic cylinder having an input connection at a location of said end wall in line with the shaft axis,



a source of hydraulic fluid for said cylinder provided with a conduit terminating at said input connection, and control means individual to each reel for selectively admitting hydraulic fluid from said source to said input connection via said conduit to urge said second coupling means into frictional contact with said first coupling means, restoring means for disengaging said second coupling means from said first coupling means in the unoperated condition of said control means, and drive means between said reels for continuously rotating said shaft, said first coupling means comprises a drum with an outer cylindrical surface embraced with clearance by said peripheral wall.

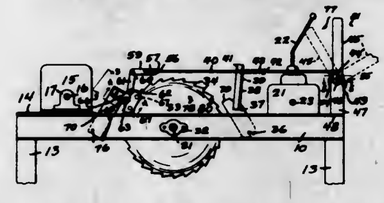
3,291,451
BRAKING CONTROL FOR MINE HOIST
William G. A. Trollope, Terrasse Vaudreuil, Quebec, Canada, assignor to Canadian Ingersoll-Rand Company Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed June 8, 1965, Ser. No. 462,176
14 Claims. (Cl. 254—185)

1. A hoist apparatus comprising:
a support;
a shaft mounted for rotation on said support;
motor means operatively connected to said shaft for effecting rotation thereof;
a hoist drum carried by said shaft for rotation therewith;
rope means around said hoist drum and carrying a load thereon, said rope means being wound on said hoist drum to effect movement of said load upon rotation of said hoist drum;
primary braking means operatively connected to said hoist drum for preventing rotation thereof;
secondary braking means operatively associated with said hoist drum for preventing rotation thereof; and means operatively connected to said secondary braking means for delaying application thereof until after



said hoist drum has been braked by said primary braking means.

3,291,452
POWER WINCH CONTROL
Carl Rau and Edward A. Rau, both of Hudson, S. Dak.
Filed Oct. 21, 1965, Ser. No. 499,710
3 Claims. (Cl. 254—186)

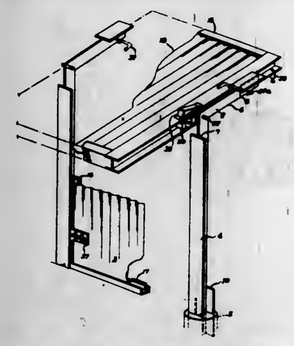


1. A power winch control comprising a framework, a toothed ratchet mounted in said framework, a reel attached to said ratchet, a pawl pivotally secured to said framework and adapted to engage said ratchet, said pawl including an extending portion attached thereto, a rod passing through said extending portion, a spring receiving said rod, a collar attached to said rod bearing against said spring for urging said pawl against the teeth of said ratchet, a braking element adapted to engage said ratchet, said rod being secured to said braking element, a lever pivotally attached to said rod, a post to which said lever is pivoted, abutment members attached to said post for limiting movement of said lever, movement of said lever toward said pawl causing said pawl to engage said ratchet teeth, movement of said lever away from said pawl causing braking action of said braking element with said ratchet.

3,291,453
COMBINED WALL AND AWNING STRUCTURE
John C. Dashio, Gibsonia, Pa., assignor of thirty-three and one-third percent to William B. Jaspert, Pittsburgh, Pa.
Filed May 11, 1964, Ser. No. 366,339
6 Claims. (Cl. 256—1)

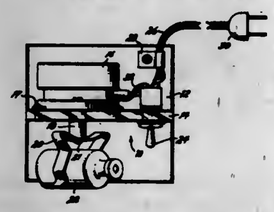
1. A sectional closure of swimming pools, patios and the like comprising panel units mounted between retaining elements of self-sustaining uprights to form a continuous wall, each of said uprights being a common support for adjacent panels and having guideways for the sides of said panels, said uprights having inclined rafter-like extension portions at the top constituting continuous guideways for movement of the panels therebetween, said uprights having slide mounts on which the panels slide freely first in an upward vertical direction and continuing in a sub-

stantial horizontal direction to make vent openings in the panel wall and form awning-like shade structures in their



raised position, and said uprights and their extension portions having means for retaining the panels in alignment with their guideways.

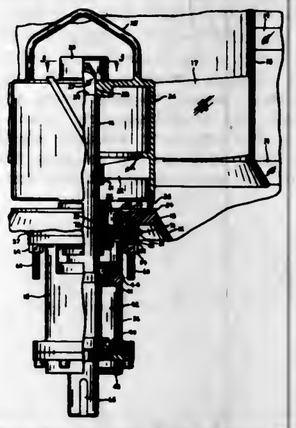
3,291,454
INSULIN MIXING APPARATUS
Henry Rosenblatt, Queens, N.Y. (% Triton Electronics, Inc., 6285 13th Ave., Woodside, N.Y.)
Filed June 17, 1964, Ser. No. 375,865
2 Claims. (Cl. 259—89)



1. Mixing apparatus comprising a horizontal base, an upright support upon said base, means supported on one side of said upright support for frictionally holding a medicine bottle whose contents are to be agitated, said means including a clip having a pair of resilient arms which are biased towards each other, each of said arms adapted to contact said bottle over a substantial portion of the surface of said bottle, electric motor means supported by the other side of said upright support for rotation of said friction holding means in a plane parallel to said upright support thereby causing the medicine bottle to be rotated end over end, said motor means including a shaft connected to said friction holding means, speed reduction means coupled to said shaft for rotating it at a speed between 5 r.p.m. and 20 r.p.m., switch means mounted on said upright support for actuating said motor means, wherein said base and said upright support are formed from a resinous material.

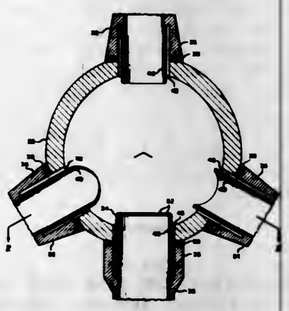
3,291,455
PUMP WITH REMOVABLE BEARING AND SEAL ASSEMBLY
Robert G. Hamrock and William D. Huntting, Portland, Oreg., assignors to Guy F. Atkinson Company, San Francisco, Calif., a corporation of Nevada
Filed Apr. 19, 1965, Ser. No. 449,088
4 Claims. (Cl. 259—108)

1. In a tank having a bottom opening, a vertical shaft extending through said opening, a bearing and seal assembly for said shaft mounted on the bottom of said tank, an impeller having a sliding fit on said shaft within said tank and arranged to seat on the bottom of said tank and close said opening when said shaft is withdrawn, a vertical peripheral wall defining the edge of said opening, a seal ring on said assembly having sliding engagement with



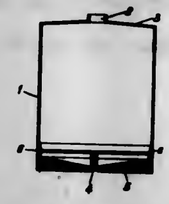
said wall when said assembly is installed on said tank and removed from the tank, a drain passageway in said assembly having an innner end within said opening, and a removable plug in the outer end of said passageway.

3,291,456
SELF-AGITATING, STABILIZED FLOW MIXING VESSEL
William J. Deane, Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,697
3 Claims. (Cl. 259—4)



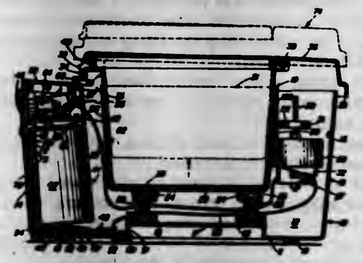
1. Apparatus for mixing high pressure fluids that are at substantially different temperatures, comprising a spherical housing, a first input line connected to the top of the spherical housing for introducing a stream of first fluid into the spherical housing interior in a direction coinciding with the vertical axis thereof, a plurality of second input lines connected to the spherical housing for introducing streams of a second fluid, which is at a substantially different temperature than the first fluid, into the spherical housing, said second input lines all being connected to the spherical housing in the same horizontal plane, and being equidistantly spaced, all of the second input lines being positioned such that all of the streams of second fluid are directed tangentially of an imaginary cylinder, the axis of which coincides with the vertical axis of the spherical housing, and an output line connected to the bottom of the spherical housing being diametrically opposed to the first input line, through which the mixed fluid is discharged.

3,291,457
HOMOGENIZING SILO FOR POWDERY OR FLOURY BULK MATERIAL
Wilhelm Hermanns, 6–14 Frankfurter Strasse, Porz-Urbach, Germany
Filed July 31, 1964, Ser. No. 386,696
Claims priority, application Germany, Aug. 2, 1963, H 49,891
5 Claims. (Cl. 259—18)



1. In a homogenizing silo for powdery or floury bulk material having a finely porous layer covering the silo bottom, compressed air being pressed through said layer into the material in the silo, the finely porous layer covering the silo bottom consisting of hoses arranged directly adjacent one another, directly lying on the silo bottom, kept flat by means of insert means, closed at their one end, and having air pervious walls, said hoses being connected to one or more compressed air supplying conduits extending along the periphery of the silo bottom, with their other ends, and being suppliable with compressed air in groups.

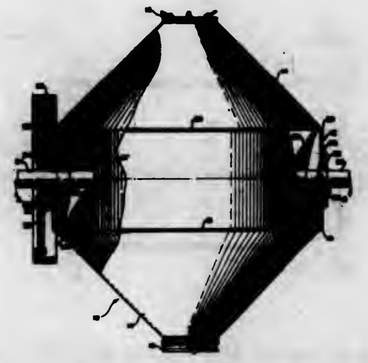
3,291,458
VIBRATORY ARTICLE WASHER
Opal G. Hamm, Center Square, Pa., assignor to Hedot Company, a corporation of Pennsylvania
Filed Feb. 24, 1965, Ser. No. 434,920
7 Claims. (Cl. 259—72)



1. In a small article washer the combination with an open top casing having a transverse bottom and an encompassing sidewall, and a tray supported in said casing by supporting spring means for vibration therein with said tray having an encompassing sidewall defining a nesting cavity; of

(a) an electric motor mounted in said casing and having a rotor shaft,
(b) an arm extending from one side of and fixed on said shaft for rotation by the latter adjacent a portion of the tray sidewall for vibrating said tray,
(c) a washing tank removably nested in said tray for vibration with the latter,
(d) a battery compartment in said casing housing a battery source of power for said motor,
(e) an electrical power-supply circuit connected between said motor and said battery source of power, and
(f) a switch in said circuit having depressible operating means exposed at the top of said casing laterally of said tray for manual engagement.

3,291,459
TUMBLING MILL TRUNNION SHAFT MOUNTING
John J. Fischer, East Stroudsburg, Pa., assignor to The Patterson-Kelly Co., Inc., East Stroudsburg, Pa.
Filed May 13, 1965, Ser. No. 455,414
2 Claims. (Cl. 259—89)



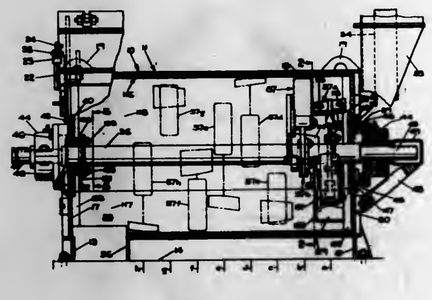
1. A materials mixing mill comprising, in combination,

a shell having a cylindrical central body portion and a pair of frusto-conical shell portions having their bases joined to opposite ends of said central body portion,
a pair of stub shafts fixed to said central body portion at diametrically opposite points thereon and substantially midway between said opposite ends of the central body portion, said stub shafts being axially aligned and each having an inner end portion projecting into said shell and an outer end portion projecting outwardly from said shell,
means for rotating said shell about a horizontal axis defined by the axes of said stub shafts,
a cone-shaped baffle member for each dead space region of the central body portion surrounding the point of intersection of said horizontal axis with the shell, each baffle member having its apex end portion fixed to said inner end portion of an associated stub shaft adjacent the inner extremity thereof and each baffle member having a base of a diameter substantially equal to the length between said opposite ends of the central body portion, each such base of the baffle members being circumferentially fixed to the inner surface of the shell not only to rigidly support a respective stub shaft but also to block and deflect material from said dead space regions of the shell.

3,291,460
CONTINUOUS MULLER
Karl H. Andrae, Columbus, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Mar. 17, 1964, Ser. No. 352,579
10 Claims. (Cl. 259—109)

1. Apparatus for continuously mulling material comprising, a receptacle disposed on a laterally extending axis, said receptacle extending along said axis to define a path of flow for material through the receptacle in a longitudinal direction from one end of the receptacle to the other end of the receptacle, said receptacle comprising a wall having an inwardly facing mulling surface on which the material is to be mulled, said mulling surface being disposed about said axis, mulling means in said receptacle to mull the material between the mulling means

and said mulling surface as the material flows through the receptacle, and longitudinally extending plow means inclined towards said one end of the receptacle and movable about said axis to engage the material as it flows through the receptacle and to disperse the material about the axis on the mulling surface and to retard the



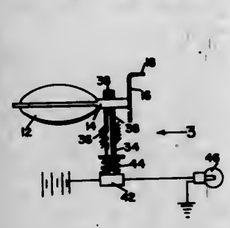
flow of the material from said one end of the receptacle to said other end of the receptacle for retention of the material in the receptacle during a sufficient time interval to effectively mull the same.

3,291,461

MANUALLY OPERATED HEATING MEANS FOR CONTROLLING AUTOMATIC CHOKES

John G. Pope, 12 Phillips Court, Shrewsbury, Mass.

Filed Feb. 11, 1965, Ser. No. 431,894
1 Claim. (Cl. 261—39)



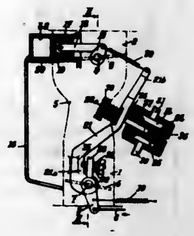
An internal combustion engine carburetor having an automatic choke including a movable valve in the air intake, a rod to operate the valve, a lever to operate the rod, a bimetallic strip which contracts and expands under different degrees of heat, said bimetallic strip having a free end connected to said lever and operating the same to move the valve, a heating element located in close proximity to said bimetallic strip, and means convenient to the operator of the vehicle for energizing the heating element so as to heat the bimetallic strip and thereby cause the valve to open, and an electric signal device, a plunger having a position to energize the signal device, means including pins connecting the plunger to said valve for movement of the plunger according to the valve position, an electric switch actuated by the plunger in its signal energizing position which in turn energizes the signal, said valve thereby causing the signal device to be energized in its position wherein the automatic choke valve is completely closed, and means including spring deenergizing the signal when the automatic choke valve becomes completely open.

3,291,462

CARBURETORS COMPRISING AN AUTOMATIC AUXILIARY STARTING DEVICE

André Louis Meanessou, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets & d'Etudes S.I.B.E., Neuilly-sur-Seine, France, a society of France

Continuation of application Ser. No. 184,787, Apr. 3, 1962. This application May 18, 1966, Ser. No. 551,068
Claims priority, application France, Apr. 15, 1961, 858,876
2 Claims. (Cl. 261—39)



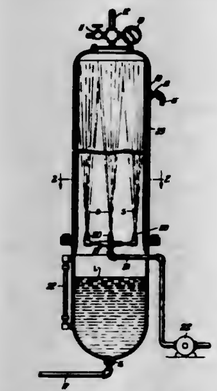
1. An internal combustion engine carburetor which comprises, in combination,
an induction pipe,
a choke valve in said pipe,
a throttle valve in said pipe downstream of said choke valve, said throttle valve being rotatable about an axis fixed with respect to said pipe,
a projection rigid with said throttle valve,
a lever pivoted to said pipe about said axis and having a portion thereof arranged to form an abutment adapted to cooperate with said throttle valve projection for controlling the idling running position of said throttle valve,
throttle valve return spring means for urging said throttle valve projection toward contact with said abutment,
a casing mounted in fixed position with respect to said induction pipe, close thereto,
a mass of material enclosed in said casing capable of undergoing a great variation of volume when passing from one physical state to another in a reversible manner, in response to variation of its temperature from one given value to another one,
a push-piece partly embedded in said mass of material and movable with respect to said casing transversely to said axis, said push-piece directly bearing against one side of said lever for pivoting it in one direction in response to variations of volume of said mass of material,
means for subjecting said casing to one temperature when the engine is cold and to another temperature when the engine is warm,
lever return spring means operable on said lever in the other direction for pivoting it about said axis in said other direction in response to reverse variations of the volume of said mass of material,
said lever return spring means being capable, upon such reverse variation of volume of said mass of material of moving said lever against the action of said throttle valve return spring means,
and a spring interposed between said lever and said choke valve to urge said choke valve in the closing direction in response to said reverse variations of volume of said mass of material.

3,291,463

APPARATUS FOR CHARGING A LIQUID WITH A GAS

Roy S. Rousseau, Mount Prospect, Ill., and Robert L. Solling, Madison, Wis., assignors to The Kartridg Pak Co., Davenport, Iowa, a corporation of Iowa

Filed Dec. 26, 1963, Ser. No. 333,599
3 Claims. (Cl. 261—100)



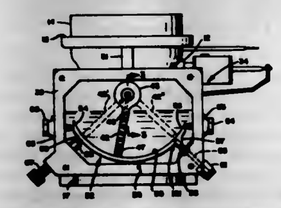
2. Apparatus for charging a liquid with a gas which comprises a tank forming a vertically extending chamber for receiving a gas under pressure and having a charged liquid accumulating area at the bottom thereof, means for supplying a gas to the upper portion of the tank so as to provide a compressed gas atmosphere in the tank, a nozzle mounted within the tank adjacent the bottom of the chamber and above the liquid accumulating area, a liquid supply line connected to said nozzle, said nozzle being constructed to direct a fine spray of the liquid toward the top of the tank so that it will travel upwardly and then fall freely downward through the gas atmosphere to the bottom of the tank, a single relatively fine mesh screen mounted within the upper portion of the tank and spaced a small distance from the inner side wall surfaces so as to form a lining for breaking up any liquid which would otherwise fall on and run down the side wall surfaces, the area above the nozzle which is encompassed by the screen being free of obstructions which would interfere substantially with the travel of the liquid spray, and an outlet for withdrawing the accumulated charged liquid from the bottom of the chamber.

3,291,464

CARBURETOR HAVING ADJUSTABLE PRECISION FUEL METERING MEANS

Rudolph L. Hammerschmidt, 912 Jeffery Drive, Pleasant Hill, Calif., and Billie R. Sullivan, 25 Poco Lane, Walnut Creek, Calif.

Filed Nov. 27, 1964, Ser. No. 414,099
14 Claims. (Cl. 261—142)



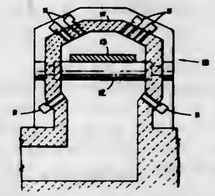
1. In a carburetor of the class in which fuel is transmitted to the barrel through a passage within the throttle shaft which extends thereinto, the combination comprising means defining a fuel chamber adjacent said barrel, an arm attached to said throttle shaft and having a free end extending into the fuel volume within said chamber, said arm being pivotable upon rotation of said throttle shaft and having a fuel passage connecting an axial opening at said free end of said arm with said fuel passage of said throttle shaft, and an adjustable curved metering bar disposed adjacent the curved path travelled by said opening of said arm as said arm pivots, means variably spacing and adjusting said bar from said opening at different positions of said arm to vary the effective size of the fuel passage therethrough at said different positions of said arm.

3,291,465

FURNACE AND BURNER ARRANGEMENT FOR HEATING STEEL SLABS

James D. Wilde, Weston, Ontario, Canada, assignor to Salem-Brosius (Canada) Limited, Rexdale, Ontario, Canada, a corporation of Ontario

Filed Sept. 11, 1964, Ser. No. 395,794
3 Claims. (Cl. 263—6)



1. A continuous reheating furnace including a plurality of laterally opposed high velocity burners spaced along the length of the furnace and grouped in surrounding relationship to conveying means therein; said burners being generally directed towards the longitudinal centre line of said furnace; said plurality of high velocity burners including:
(i) a pair of parallel, longitudinally extending upper rows, each burner in one row of said pair lying on a common transverse line with a corresponding burner in the other row of said pair of rows,
(ii) a lower pair of burner rows below the conveying means,
(iii) an outer pair of parallel, longitudinally extending upper rows in longitudinally staggered relationship to the first mentioned upper pair of burner rows,
to effect direct flame impingement on work-pieces carried by said conveying means.

3,291,466

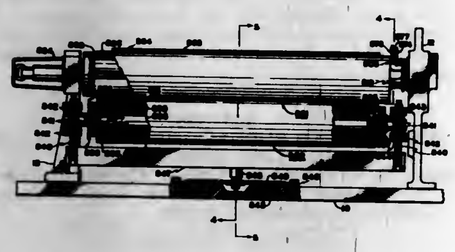
XEROGRAPHIC FIXING DEVICE

Gilbert A. Asor, Rochester, Robert H. Figler, Webster, and Thomas P. Redding, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 30, 1964, Ser. No. 400,498
2 Claims. (Cl. 263—6)

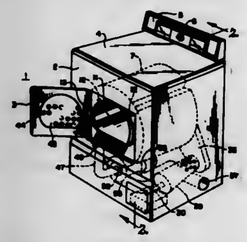
1. A contact heat fusing device for fixing thermoplastic resin material carried on a support material in image configuration, said device including
frame means,
a first roll journaled in said frame means,
a second roll having deformable material and an outer protective coating of offset preventing material, said second roll being supported in said frame means for rotation and movement from a first position out of contact with said first roll to a second position in cooperating pressure contact with said first roll,
actuator means connected to said second roll for moving said roll from said first position wherein said roll is out of operative relation with said first roll to

said second position wherein said second roll is in cooperative relation to said first roll,
the peripheral surface of said first roll being covered with a coating of an offset preventing material,
means to apply an offset preventing liquid to said offset preventing material on said first roll,
means to heat said first roll having direct contact with resin material carried on the support material,



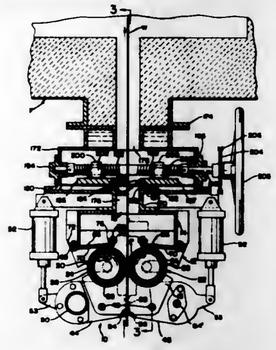
driving means connected to said first roll and to said second roll rotating said rolls to advance a support material therebetween, said first roll being driven at a predetermined fixed speed,
said driving means including overriding torque means connected to said second roll enabling the same lineal speed at the point of contact of said first and second rolls to be maintained when said second roll is in pressure contact with said first roll.

3,291,467
CLOTHES DRYER WITH SLANTED COMBUSTION CHAMBER
Clifford E. Erickson, Chicago, Ill., assignor to General Electric Company, a corporation of New York
Filed Nov. 2, 1964, Ser. No. 407,963
5 Claims. (Cl. 263—33)



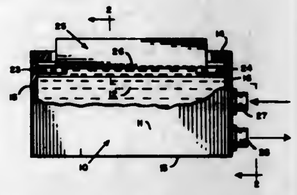
1. A clothes drying machine comprising:
(a) a clothes receptable;
(b) gas-operated heating means arranged for a flame to issue substantially horizontally therefrom, said heating means being positioned below said receptacle;
(c) inlet and outlet conduit means leading respectively to and from said receptacle, said inlet conduit means including first and second portions;
(d) said first portion extending upwardly into communication with said receptacle;
(e) said second portion being formed as a substantially tubular combustion chamber having one end positioned to receive the flame from said heating means and its other end connected to the base of said first portion;
(f) said combustion chamber having its axis and walls slanting up at an angle from said heating means to said first portion thereby to minimize contact of the flame with the walls of said combustion chamber.

3,291,468
FURNACE SEAL MEANS
Willard Albertson and David Cope, Salem, and Ralph J. Perrine, Columbiana, Ohio, assignors to The Electric Furnace Company, Salem, Ohio, a corporation of Ohio
Continuation of application Ser. No. 249,834, Jan. 7, 1963. This application May 5, 1965, Ser. No. 456,035
23 Claims. (Cl. 266—3)



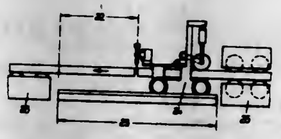
1. In a furnace for continuous thermal treatment of metallic strip having an opening therein for passage of strip, the improvement in seal means to seal said strip and furnace at said opening and comprising: housing means secured to said furnace and surrounding said opening; a pair of rolls, each having shafts extending from opposite ends and mounted in side plates of said housing means transverse to and on opposite sides of the pass line of said strip; each side plate having means for receiving one of the oppositely extending shafts of the same one of said rolls to permit shifting of said one roll toward and away from said other roll; means to shift said one roll into and out of sealing contact with said strip; means to seal the ends of said rolls with the inwardly facing surfaces of said side plates, and means to seal the peripheries of said rolls with said housing.

3,291,469
CHILL BOX
Marshall W. Stevens, Long Hill, Conn., assignor to The Ballard Company, Bridgeport, Conn., a corporation of Connecticut
Filed Sept. 30, 1963, Ser. No. 312,396
1 Claim. (Cl. 266—6)



A chill box for chilling at a substantially uniform rate the bottom portion of a cast iron test specimen, comprising an outer housing having an upper wall portion; an inner housing having an upper wall portion disposed within said outer housing and cooperatively forming therewith separate inner and outer chambers within said outer housing; an opening in the upper wall portion of said inner housing having a horizontally disposed upper surface spaced vertically downwardly from an aligned opening in the upper wall portion of said outer housing to provide a flow path from said inner chamber to said outer chamber within said outer housing; means disposed within said outer housing for supporting a test specimen with the bottom portion thereof disposed entirely over said opening in the upper wall portion of said inner housing and adjacent said flow path and with a lowermost surface of said bottom portion disposed substantially on a level with said horizontally disposed surface; and means for chilling said bottom portion at a substantially uniform rate by directing a substantially constant flow of liquid past said bottom portion and along said flow path, said chilling means including means for introducing cooling liquid at a substantially constant flow rate and temperature into said inner chamber and means for withdrawing liquid from said outer chamber at said constant flow rate.

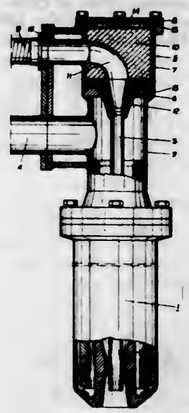
3,291,470
CUTTING DEVICE FOR CONTINUOUS CASTING INSTALLATIONS
Horst K. Lotz, Frankfurt am Main, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 3, 1965, Ser. No. 511,477
Claims priority, application Germany, Dec. 3, 1964, M 63,340
5 Claims. (Cl. 266—23)



1. A cutting device for continuous casting installations including a carriage, means for clamping said carriage to the cast workpiece, cutting means supported on said carriage, said carriage being movable in a cutting area, movable workpiece support means in said cutting area, characterized in that said carriage and said movable workpiece support means form a common structural element, conveying roller means drives the workpiece outside the cutting area, and said clamping means includes driving roller means which acts as a stamp when the workpiece is driven by said conveying roller means and acts as friction roller means when the conveying roller means is inactive in driving the workpiece.

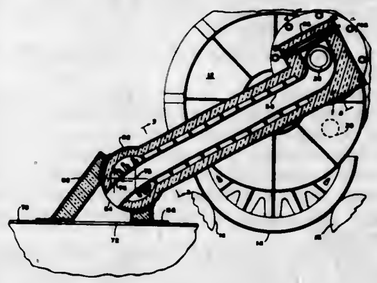
3,291,471
BLOWING LANCE FOR CARRYING OUT TOP-BLOWING PROCESSES
Klaus Heyer, Linz, Austria, assignor to Vereinigte Oesterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Dec. 9, 1963, Ser. No. 329,117
Claims priority, application Austria, Dec. 14, 1962, A 9,799/62
5 Claims. (Cl. 266—34)

1. A blowing lance for carrying out top-blowing processes, comprising two concentrically arranged tubes, the outer of said tubes being connected to a blowing gas supply conduit and the central inner tube being connected to a supply conduit carrying a suspension of finely divided solid substances in a blowing-gas, the head of the blowing lance being designated to form a gas-tight housing in which an insert member made of wear-resisting material is replaceably inserted, said insert member having a curved



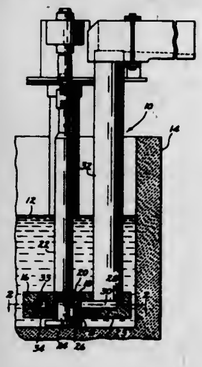
bore which connects said suspension supply conduit with said central inner tube.

3,291,472
DRUM TYPE INDUCTION FURNACE
James L. Hoff, Trenton, N.J., assignor to Inductotherm Linemelt Corporation, Delanco, N.J., a corporation of New Jersey
Filed July 20, 1961, Ser. No. 131,955
9 Claims. (Cl. 266—38)



1. A drum type induction furnace comprising a drum, means supporting said drum for rotation about a substantially horizontal axis, means associated with said drum for melting metals within said drum, a discharge conduit having first and second ends, means rotatably connecting said first end of said conduit to an upright end wall of said drum at a point spaced from the axis of rotation of said drum, means providing communication between the interior of said drum and said first end of said conduit, the longitudinal axis of said conduit extending at an angle with respect to the longitudinal axis of said drum, the second end of said conduit being disposed below said first end of said conduit in all rotative dispositions of said drum, means slidably supporting said second end of said conduit, and means for rotating said drum so that said first end of said conduit may be disposed below the level of molten metal in said drum to effect a discharge of molten metal from said drum through said conduit to a vessel disposed to one side of said drum.

3,291,473
NON-CLOGGING PUMPS
Victor D. Sweeney, Euclid, and Walter U. Kaji, Chagrin Falls, Ohio, assignors to Metal Pumping Services, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 6, 1963, Ser. No. 256,634
14 Claims. (Cl. 266—38)



1. In a pump comprising a hollow body defining an inlet opening and an outlet opening and a chamber providing liquid communication between said openings, and pumping means cooperating with said chamber and openings to draw a liquid stream into said inlet opening and through said chamber and to discharge the same through said outlet opening, the improvement in said combination wherein an imperforate deflector disk is mounted for rotation about an axis of said inlet opening, the disk and the periphery of said inlet opening being spaced apart by a distance less than the maximum dimension of solid particles capable of passing into and through said pump with said liquid stream, said disk being substantially normal to said axis.

14. In a pump for molten metal comprising the combination of:

(a) a lower foot body in the form of a refractory slab adapted to be immersed in molten metal or other liquid of high temperature, having upper and lower faces and defining a pump chamber therein, and having coaxial upper and lower axially vertical bores of the same diameter extending into the pump chamber through said upper and lower faces of the slab, respectively;

(b) a refractory centrifugal impeller body having a periphery of cylindrical contour and an inlet that opens axially into one end only thereof, said impeller body projecting into said pump chamber and being journalled in said bores; and

(c) a vertically disposed refractory pump shaft connected in coaxial driving relationship with said impeller body;

the improvement in said combination wherein the bottom face of said slab is flat and defines a plane perpendicular to the axis of said bores and wherein said shaft extends beyond said plane with an imperforate disk mounted coaxially thereon and spaced outwardly from said plane, said disk being normal to said shaft, the space between said plane and said disk being less than the maximum dimension of solid particles capable of passing into and through said pump with said liquid stream, the diameter of said disk being slightly less than the diameter of said portion permitting withdrawal of the shaft mounted disk through said vertical portion, whereby said disk acts to restrict particles and agglomerates of solid and semi-solid materials larger than the spacing of said disk from passing through said pump.

3,291,474
HEAT-SENSITIVE, NON-CUMULATIVE FORCE SPIRAL SPRING AND SPRING MOTOR
Philip C. Clarke, Lansdale, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1964, Ser. No. 403,795
11 Claims. (Cl. 267—1)



1. A heat-sensitive, non-cumulative force spiral spring comprising a length of thermosensitive laminated metal set to form a plurality of tightly wound convolutions with successive convolutions in contact in which the length of metal has an inner and an outer lamination with one lamination having a higher coefficient of thermal expansion than the other lamination.

3,291,475
OLEOPNEUMATIC SUSPENSIONS HAVING SELF-ACTING PUMPING
Fernand Stanislas Allinquant, 53 Ave. le Notre, Sceaux, Seine, France
Filed Feb. 12, 1965, Ser. No. 432,181
Claims priority, application France, Mar. 28, 1964, 969,129; Sept. 29, 1964, 989,742
18 Claims. (Cl. 267—64)



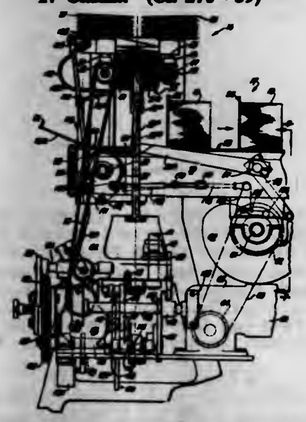
1. A suspension element including a pneumatic device and a pump operable to increase the pressure in said device, said device comprising a suspension cylinder and piston and said pump comprising a pump cylinder and piston which are movable into relative positions in which they have a clearance between them in the axial direction, the respective cylinders and pistons being operatively associated with one another in such a way that the pump cylinder and piston occupy said clearance positions when the suspension cylinder and piston occupy their relative positions corresponding to the normal mean-level condition of the suspension element.

3,291,476
SOLDERING TOOL FOR ELECTRICAL CONNECTIONS
Freeman B. Calkin, Fremont, Ohio, assignor to Clauss Cutlery Company, Fremont, Ohio, a corporation of Ohio
Filed Feb. 3, 1964, Ser. No. 342,118
3 Claims. (Cl. 269—254)



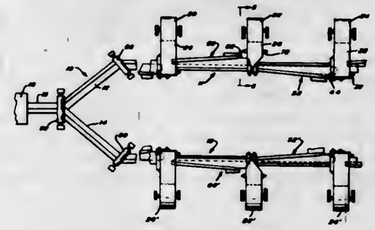
1. A soldering tool to aid in soldering an insulated conductor to an electrical component, said tool comprising two handles connected for pivotal movement toward and away from one another, means urging said handles away from one another, and legs connected to said handles and extending away from the connection between the handles, said legs having substantially symmetrically identical jaws at corresponding ends thereof, said jaws being urged together by said urging means, each of said jaws comprising a thin flange extending outwardly from the corresponding leg in a plane generally perpendicular to said leg, said flange having substantially parallel opposed major surfaces and having a straight, mating edge located to cooperate with the corresponding straight, mating edge of the other jaw, said jaws lying in a common plane when said mating edges are together, each of said jaws also having a semicylindrical recess at a corresponding point along the mating edge with the axis of the recess lying on the mating edge and extending substantially parallel to the longitudinal extent of said tool, said recesses having diameters such that said flanges are adapted to extend completely around the periphery of the conductor immediately adjacent the conductor insulation with the mating edges of said flanges in contact with one another, whereby said flanges prevent the flow of solder beyond said jaws.

3,291,477
TOWEL COLLATOR
Henry W. Rehr, Concord, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Aug. 28, 1964, Ser. No. 392,805
17 Claims. (Cl. 270—39)



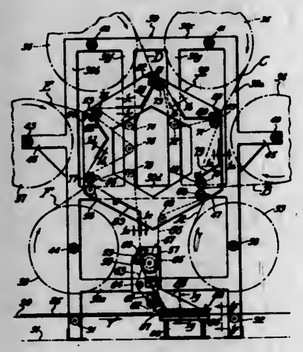
1. In combination with an interfolder in which sheets of material in interfolded relation are discharged therefrom, a plurality of rotatable conveyor elements together providing an axially extending collection conveyor operative to advance such interfolded sheets of material axially therethrough, each of said conveyor elements having a continuous spiral flight therealong leading axially from the infeed end to the discharge end of said collection conveyor, an elevator movable between the discharge end of said collection conveyor whereat it receives the discharge therefrom and a remote location for transferring thereto such discharge from said collection conveyor, a separator mechanism movable into said collection conveyor from a position laterally outwardly therefrom and also being axially movable therethrough so as to be insertable into the interfolded material discharged from said interfolder to divide the material into individual stacks of which the material disposed between said elevator and one side of said separator mechanism constitutes one such stack and the material collecting along the opposite side of said separator constitutes another stack, and drive mechanism including means for synchronously rotating said conveyor elements, also including means for reciprocating said elevator in timed relation therewith and further including means for cyclically moving said separator mechanism into and out of the path of such interfolded material and axially through said collection conveyor in timed relation with the rotational movement of said conveyor elements to effect such separation of the interfolded material into stacks.

3,291,478
APPARATUS FOR PRODUCING Z-FOLDED WEB MATERIAL
Reginald Courzens, Wallingford, Pa., and Michael M. Young, Philadelphia, Pa. (both % Deitz Machine Works, 3105 W. Alleghany Ave., Philadelphia, Pa.)
Filed May 25, 1964, Ser. No. 369,730
4 Claims. (Cl. 270—40)



1. Apparatus comprising a conveyor means for conveying a rope formed from superimposed layers of cellulose product, means for supporting a plurality of rolls of web material, means associated with each roll for folding one edge of the web material from each roll with a J-fold, means for associating each folded web into superimposed relation to a preceding folded web, said associating means including a separate folding pan associated with each folding means, each folding pan being constructed and arranged to fold the free edge of said web material around the folded edge of the next adjacent J-folded web to thereby form a rope of interleaved webs, successive folding pans being of opposite hand, said means for supporting a plurality of rolls of web material including means for supporting said rolls so that said rolls are rotatable about an axis parallel to the direction of movement of the rope by the conveyor means, rollers mounted for rotation about an axis parallel to the axis of rotation of said rolls, said rollers being disposed above said conveyor means, wherein even numbered ones of said rollers are in line with one another, odd numbered ones of said rollers are in line with one another, said even numbered rollers and said odd numbered rollers being offset with respect to each other, and each layer of web material extending around one of said rollers.

3,291,479
WEB INTERFOLDING MACHINE
Charles J. Greiner and Thomas P. Van Iten, Menasha, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,244
5 Claims. (Cl. 270—40)



1. A folding device for folding a web of sheet material which is drawn over the device and emerges from the device in a longitudinally folded condition in a predetermined path, comprising a first folding edge extending from a point at an edge of the path transversely of the path and to the other edge of the path and half the width (W) of the web, a second folding edge extending from said point outwardly with respect to the path and at an obtuse angle $(90°+M)$ with respect to said first folding edge and at an obtuse angle $(180°-L)$ with respect to the direction of movement of said web in said path, and a third folding edge extending from said point obliquely of said path to the other edge of the path to have an acute angle (N) with respect to the other edge of the path, whereby a longitudinal fold of the web may be drawn over said first folding edge in said path and another fold of the web may be drawn over said second and third folding edges to be thereby folded over said first named fold to provide a folded web, wherein the sizes of the angles L, N and M are substantially as follows:

$$\cos L = \text{one} - W^2/2fl$$

and

$$\tan N = W/2e$$

and

$$\tan M = W/2f$$

wherein f is the distance from said first folding edge to a line intersecting with said second folding edge and parallel with said first folding edge and having the length (W) and overlying said path, e is the component of said distance f along said path, and l is the distance from said first folding edge to the point at which said third folding edge crosses said other edge of said path.

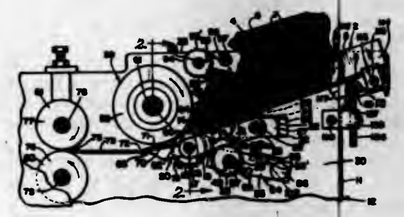
3,291,480
FABRIC SHEET FEEDING DEVICE
Manuel Haddad, Tezuitlan, Puebla, Mexico
Filed June 3, 1964, Ser. No. 372,297
8 Claims. (Cl. 271—1)

1. In a sheet fabric feeding device, a sheet material receiving means, a clamping means removably holding one edge of the sheet material in nonmovable position in the receiving means and leaving the remaining portion of the material free, a material receiving platform located adjacent and above the receiving means, said platform being provided with a nonskid surface thereon, the free portion of the material extending upwardly and in reverse direction and being receivable on the nonskid surface of said platform, material feeding means supported above



said platform and engaging said material, and operator controlled means for actuating the material feeding means.

3,291,481
FEEDING MECHANISM
Edward S. Godlewski, Melrose Park, Ill. (531 Walnut St., Des Plaines, Ill.)
Filed Apr. 6, 1965, Ser. No. 446,823
20 Claims. (Cl. 271—10)

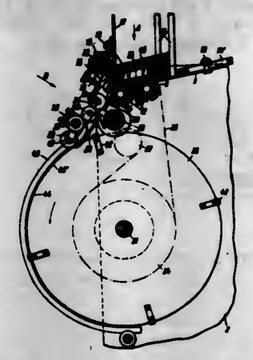


1. A feeding mechanism comprising a tray having an inclined bottom with a lower discharge edge, retard means disposed along said edge and comprising a stationary element and a sponge-like rotary element of soft rubber-like material extending radially outwardly of the periphery of the stationary element, a metering roller rotatable on an axis extending transversely of the tray along the discharge edge thereof and having a body with a cylindrical surface disposed in deforming engagement with said sponge-like element and driving the same and slightly spaced from said stationary element, said rotary element disposed in intercepting relation to articles on said tray for advancing the same to said metering roller.

3,291,482
MECHANISM FOR FEEDING ENVELOPES, CARDS OR OTHER SHEETS FROM UNDER A PILE INTO A MACHINE FOR THEIR PROCESSING
Kurt Stemmler, Irlich, near Neuwied, Germany, assignor to Richard Winkler, Rengsdorf über Neuwied, Germany and Kurt Dunckler, Glashütten, Germany
Filed July 2, 1964, Ser. No. 379,867
Claims priority, application Germany, July 19, 1963, W 34,916
6 Claims. (Cl. 271—11)

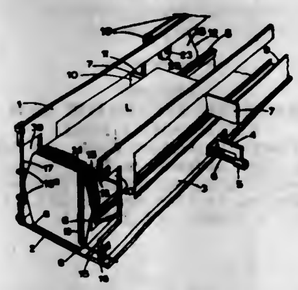
1. A mechanism for feeding envelopes, cards or other sheets from under a pile into a machine for their processing, wherein the bottom sheet in each case is pulled individually right out from under the pile and is supplied to means for adjusting the successive sheets to the same

mutual spacing and same position, comprising several suction rolls mounted below the pile and situated one behind



the other in the conveying direction and which rotate at the same peripheral speed.

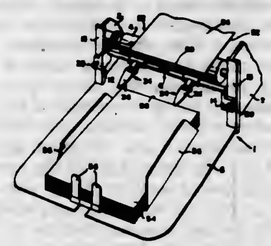
3,291,483
MAGAZINES FOR HOLDING PACKS OF SHEET MATERIAL
Dennis Stanley Silver, London, England, assignor to Purdy Machinery Company Limited, London, England
Filed June 22, 1964, Ser. No. 376,963
Claims priority, application Great Britain, July 5, 1963, 26,730/63
13 Claims. (Cl. 271—62)



9. A magazine for holding packs of sheet material and wherein perssure is applied to the back of the pack so that the foremost sheet is always in a predetermined position, in which it can be picked from the magazine to be delivered to a point at which it is required, the magazine including an elongated container for the pack of sheets arranged so that the said predetermined position is located substantially at one end of the container, a pressure member for exerting a thrust on the end of the pack remote from the predetermined position, means for causing the pressure member to exert the said thrust, and means for periodically gripping a pack of sheets in the magazine, at or near the forward end of the pack, and withdrawing these sheets towards the rear of the magazine, enabling the front label to be picked while the withdrawal of the labels at or near its rear face prevents any partial vacuum from arising behind the front label.

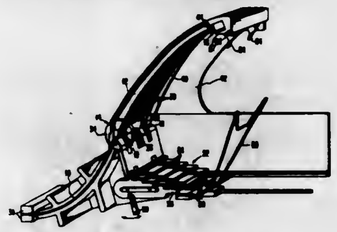
3,291,484
SHEET GUIDING DEVICE
James A. Gibb, 142 W. Hills Road, Huntington Station, N.Y.
Filed Aug. 14, 1964, Ser. No. 389,717
7 Claims. (Cl. 271—63)

5. A paper guiding device for sheet handling machines, comprised of an expansible elongate bar formed of two relatively movable connected sections, means at each end of said bar for securing the device to the machine, and



a plurality of substantially horizontally extending guide fingers removably and slidably connected to said bar.

3,291,485
RECORD CARD STACKING APPARATUS
Daniel P. Darwin, Saratoga, and William L. Wilcox, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,929
6 Claims. (Cl. 271—71)



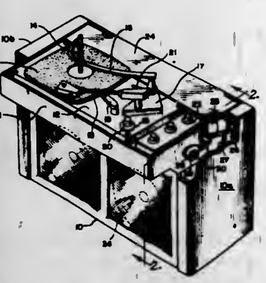
1. A record card stacking apparatus, comprising:
a first and a second guide means defining a card path;
drive means mounted at the intersection of said guide means for driving a record card along the card path, said first guide means having a convex shape disposed to guide said record card in a substantially upward direction, said second guide means having a concave shape so that the moving record card is forced to conform to said concave shape;
card gating means comprising a member having a first portion normally engaging said guide means to close said card path and a second surface inclined away from said guide means; and
a resilient stop mounted substantially one card length from said card gating means, said record card being separated from said second guide member by being deflected along said inclined second surface of said card gating means as said record card rebounds from said resilient stop to provide positive separation between succeeding record cards.

3,291,486
SKI SLOPES HAVING A SURFACE COATING COMPRISING A PARTICULATE RESINOUS COMPOSITION
Douglas D. Applegath and Robert E. Erickson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 26, 1962, Ser. No. 205,352
7 Claims. (Cl. 272—56.5)

1. A ski slope having a particulate coating on the surface thereof, said particulate coating consisting essentially of a plurality of particles of an irregular shape similar to crushed stone and glacial stone, said particles passing

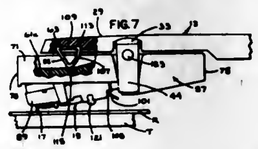
through a 1 inch mesh and being retained on a 3/8 inch mesh, each of the particles having a specific gravity of at least 0.9, said particles being a generally homogeneous synthetic resinous thermoplastic composition containing a light colored opaque filler, the thermoplastic resinous composition when molded requiring a force of up to 2 pounds to draw a rectangular face of molded composition, the face measuring 2.8 by 5 centimeters horizontally across a flat chromium plated surface, the molded composition being forced against the chromium plated face by a force of 4.2 pounds, the surface of the composition and the chromium plated surface being abraded uniformly by a 400 grit abrasive material to provide a plurality of generally parallel grooves in each of said surfaces, the surfaces being placed together in such a manner that the grooves in both surfaces are parallel and the force being exerted in the direction of the grooves.

3,291,487
PHONOGRAPH
Melvin H. Boldt, Glenview, and Richard A. Hathaway, Des Plaines, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 356,107
4 Claims. (Cl. 274—2)



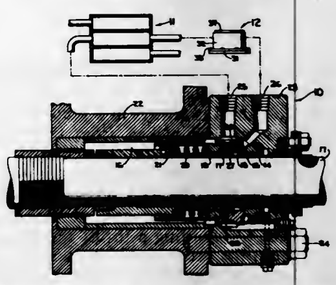
1. In a phonograph having a record playing mechanism supported on a mounting plate and including components which overhang beyond said mounting plate under certain operating conditions, and further having apparatus for processing audio signals developed by said record playing mechanism from a record disc;
a cabinet having a main portion for housing said audio signal processing apparatus and having a recess at the top;
an auxiliary cabinet portion substantially filling said recess and having a first surface to which said mounting plate is affixed, and an opposite surface conforming to said main cabinet portion;
means pivotally securing said auxiliary cabinet portion to said main cabinet portion for rotation within said recess between a playing position in which said record playing mechanism is upwardly presented for playing of said record disc and a second position in which said opposite surface is upwardly presented and said record playing mechanism is stored upside down within said recess of said main cabinet;
said components also overhanging beyond said auxiliary cabinet portion under said certain operating conditions;
and means responsive to said rotation of said auxiliary cabinet portion from said first position to said second position for retracting any such overhanging components wholly within the confines of said auxiliary cabinet portion.

3,291,488
TONE ARM AND CARTRIDGE COMBINATION
Roy Dally, Warrensburg, Ill., assignor to General Electric Company, a corporation of New York
Filed Apr. 2, 1964, Ser. No. 356,814
3 Claims. (Cl. 274—24)



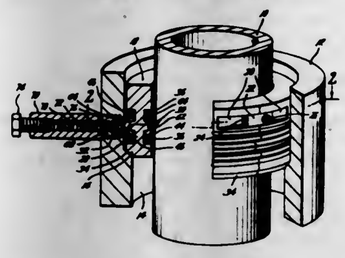
1. A tone arm and cartridge assembly comprising an elongated tone arm, means adjacent one end of said tone arm for mounting said tone arm for pivotal movement about a substantially horizontal first axis, a carrier member supported by said tone arm adjacent the other end thereof for pivotal movement about a substantially horizontal second axis, said second axis being generally perpendicular to said elongated tone arm adjacent said other end thereof, a cartridge including a record-tracking stylus secured to said carrier member and substantially disposed on one side of said second axis, means on the other side of said second axis for counterbalancing said carrier member by an amount requisite to allow said carrier member to pivot in seesaw fashion upon said tone arm about said second axis, thereby to allow said cartridge to float freely about said second axis relative to said tone arm, and resilient elastomeric damping means arranged between adjacent surfaces of said carrier member and said tone arm for cushioning relative movement of said carrier member with respect to said tone arm.

3,291,489
MAGNETIC SEPARATOR AND MECHANICAL SEAL
Herbert E. Tracy, Los Angeles, Calif., and Lee J. Alley, Cleveland, Ohio, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 14, 1963, Ser. No. 251,322
1 Claim. (Cl. 277—15)



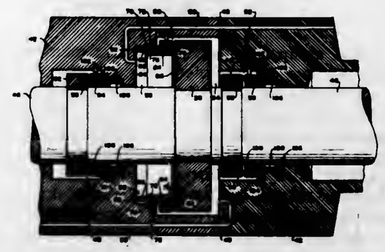
In combination, a mechanical seal for sealing a rotating shaft within a housing, a heat exchanger, and a magnetic separator for removing magnetic particles from fluid circulating in said seal,
said mechanical seal comprising,
sealing means within the housing to prevent flow along the shaft outwardly thereof,
said seal means including a part that rotates with the shaft,
said part having impeller means formed on its periphery,
a fluid inlet passage into said housing,
a fluid outlet passage out of said housing,
said fluid outlet passage being spaced from said fluid inlet passage,
an annular chamber formed within the housing immediately adjacent said impeller means whereby, upon rotation of said rotating part, fluid entering said fluid inlet passage is impelled out said fluid outlet passage,
said magnetic separator comprising,
a casing,
permanent magnets within the casing,
a gap between the magnets,
means for supporting said magnets in said casing,
inlet and outlet connections leading to and from the gap to convey the fluid bearing the magnetic particles entering said inlet connection into contact with the magnets and out said outlet connection,
said casing being made of separable parts,
one part having said inlet and outlet connections and the other part comprising a base removable from said first mentioned part and arranged to permit removal of said magnets without disturbing the said inlet and outlet connections,
a first conduit arranged to conduct fluid from said fluid outlet passage to said inlet connection,
a second conduit arranged to conduct fluid from said outlet connection to said fluid inlet passage,
whereby the fluid that is impelled out of said fluid outlet passage is conveyed into contact with said magnets and is returned to said fluid inlet passage, and
said heat exchanger being arranged to cool the fluid flowing through one of said conduits.

3,291,490
SEALING ASSEMBLY
Thomas A. Balmer, Beaumont, Tex., assignor to Gulf Coast Machine & Supply Company, Beaumont, Tex., a corporation of Texas
Filed June 12, 1963, Ser. No. 287,327
4 Claims. (Cl. 277—21)



1. An assembly for sealing an annular space between concentric tubular members, comprising, an annular body receivable in the annular space, said body having axially spaced upper and lower pairs of annular grooves in the external and internal peripheries of said body, arcuate resilient seal-forming elements mounted in each of said annular grooves, said elements in said upper grooves being separate from said elements in said lower grooves and being substantially identical in shape, one end of each of said seal-forming elements having an annular recess defining radially spaced annular inner and outer sealing lips projecting from said one end, the lip-bearing ends of each of said pairs of seal-forming elements being disposed in axially opposed spaced apart relation to define an annular outwardly opening chamber therebetween, said body axial surfaces being closely adjacent said concentric tubular members with a minimum tolerance, said body being formed of a plurality of arcuate segments having opposed longitudinally extending end faces in abuttting relation, a passage extending continuously across each of said faces and joining together said respective external and internal grooves, said elements including an integral end portion interconnecting said element portions in said external and internal grooves, and defining in part, a passageway interconnecting said radially inner and outer grooves in said body, said element end portion being positioned in said passage at said faces to provide fluid communication between said external and internal grooves and being so positioned to seal against leakage of fluid out of said chamber, means for introducing pressurized fluid into said annular chambers from the exterior of said body including a passage extending through said outer tubular member and terminating adjacent said external body periphery between said lip-bearing ends, to urge the radially inner ones of said lips into sealing engagement with the adjacent surfaces of said body and the radially outer ones of said lips into sealing engagement with the opposed surfaces of said tubular members, and valve means maintaining said fluid under pressure in said chamber.

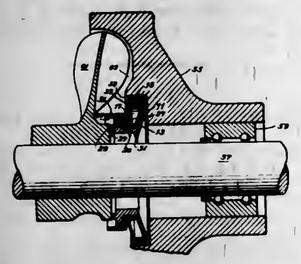
3,291,491
SUBMARINE SHAFT SEAL AND THRUST COMPENSATOR
Watt V. Smith, 315 Old County Road, Severna Park, Md.
Filed Jan. 28, 1966, Ser. No. 523,804
7 Claims. (Cl. 277—27)



1. A shaft seal and thrust compensator for use on a shaft having one end thereof subjected to an environment of high pressure and the other end thereof subjected to an environment of relatively lower pressure, said shaft thereby being normally under the influence of an axial thrust directed toward said end subjected to said relatively low pressure, said shaft seal and thrust compensator comprising:
a shaft housing having an interior chamber;
a shaft extending through said housing and chamber;
first seal means between said shaft and housing sealing said chamber from said high pressure environment;
second seal means between said shaft and housing sealing said chamber from said lower pressure environment;
thrust compensating means fixedly mounted on said shaft intermediate said first and second sealing means;
third seal means between said thrust compensating means and said housing sealing a first sub-chamber within said chamber from a second sub-chamber within said chamber, said first sub-chamber being located between said first and said third seal means and said second sub-chamber being located between said second and said third seal means;
means for maintaining a pressure in said first sub-chamber; and
means for maintaining a pressure in said second sub-chamber;
said pressure maintained in said first sub-chamber being less than said pressure maintained in said second sub-chamber;
said thrust compensating means having a substantial radial area facing on said second sub-chamber, whereby the action of the difference in pressure between said first sub-chamber and said second sub-chamber on said thrust compensating means pro-

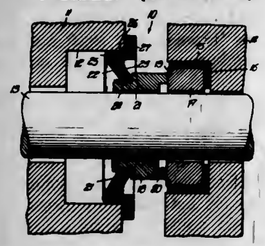
duces an axial compensating thrust directed toward said high-pressure end of said shaft thereby partially or wholly counter-acting the effect of said normal axial thrust.

3,291,492
SEAL WITH DEFLECTOR MEANS
Sylvan J. Becker, Crete, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 22, 1964, Ser. No. 376,950
3 Claims. (Cl. 277—42)



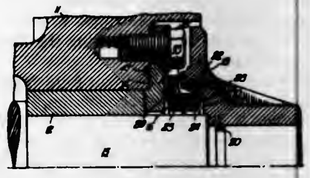
1. A seal comprising an elastomeric member having an outer portion, an intermediate portion and an inner portion; a sealing washer carried by said inner portion adapted to shift axially with respect to said outer portion; said sealing washer having a radially disposed sealing face on the forward end thereof; a tubular shroud formed integral with said elastomeric member extending forwardly over said sealing washer in a zone to provide a deflector means for said radially disposed sealing face; and a resilient spring washer interposed between said outer portion and said inner portion whereby said sealing washer is normally urged away from said outer portion.

3,291,493
END FACE SEAL
Richard W. Blair, Arlington Heights, Ill., assignor to Chicago Rawhide Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed July 27, 1965, Ser. No. 475,213
7 Claims. (Cl. 277—92)



1. In an end face seal wherein an elastomeric drive and secondary sealing member has a first periphery thereof mounted in a rearwardly opening seat of a sealing ring, said seat being defined by divergent generally axially and radially directed surfaces, said elastomeric member having an effective frusto-conical body portion extending from said first periphery to a second periphery and subject to distortive axial and radial deflection upon installation of said seal on a machine part with said sealing ring in end face sealing engagement with a mating ring, the improvement comprising said elastomeric member between said peripheries having a ratio of radial thickness of a half section relative to half section thickness measured normal to the neutral axis of said frusto-conical body portion which is in the range of from about 2.25 to about 5.00, and said frusto-conical body portion having a molded angle which is in the range of from about 20° to about 45°, whereby to provide constant force characteristics throughout the range of operative deflection of said elastomeric member.

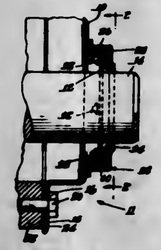
3,291,494
END FACE SEAL ASSEMBLY
Seymour A. Hatch, Forest Park, James P. Morley, Morton Grove, and Richard W. Blair, Arlington Heights, Ill., assignors to Chicago Rawhide Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 501,709
2 Claims. (Cl. 277—92)



1. In an end face seal sasembly for installation in a shaft assembly, said seal assembly including a pair of sealing rings each having a radial outer end face sealing surface for positioning freely about a shaft in mutual end face surface sealing engagement, a periphery of each of said sealing rings axially rearwardly of said sealing surface defining divergent generally axially and radially directed surface portions presenting circumferential continuity, said surface portions defining therebetween a rearwardly opening seat for readily accessible force loading of said sealing rings, and a pair of secondary sealing and driving members formed solely from distortively resilient solid rubber material and each in the form of a ring provided with an effective frusto-conical shape removably and solely frictionally and slidably mounted in said seats, the cross sectional configuration of each of said secondary sealing members further generally conforming to a parallelogram having radially inclined side surface portions and an end surface portion extending in an axial direction and being in rearwardly unconfined removable frictional and slidable engagement with the axially directed surface portion of a sealing ring seat, said secondary sealing members extending rearwardly from said sealing rings in inclined relation thereto with a leading edge of each of said end surface portions in abutting but radially unconfined engagement with the radially directed surface portion of a sealing ring seat, said secondary sealing members being adapted for similar axial and radial engagement by the other end surface portions thereof with parts of said shaft assembly spaced radially and rearwardly from said divergent surface portions of each of said sealing rings for unrestricted axial and radial distortive resilient spring action of said secondary sealing members upon operative mounting of said seal assembly in said shaft assembly to supply a face loading force to each of said sealing rings and simultaneously frictionally interlock said sealing rings, secondary sealing members and shaft assembly parts, and the axially directed surface portions of said sealing ring seats being at least coextensive with said first named end surface portions of said secondary sealing members for unrestricted transmission of loading force to said sealing rings upon operative mounting of said seal assembly, the improvement which comprises the effective frusto-conical shape of each of said secondary sealing members being formed on a molded angle which falls between about 25° and about 35°, and the ratio of radial thickness of each of said secondary sealing members measured perpendicular to the longitudinal axis thereof to

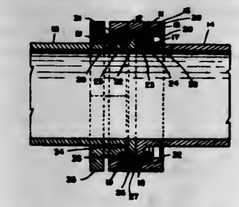
the average effective thickness measured normal to the effective frusto-conical shape of said secondary sealing members being between about 1.25 to about 2.25 to provide stable operation of said seal assembly.

3,291,495
SELF-ALIGNING SEAL
Joseph M. Liebig, Wheaton, Ill., assignor to Illinois Milling, Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 7, 1964, Ser. No. 380,779
10 Claims. (Cl. 277—152)



1. An oil seal construction for a housing having an opening in a face thereof through which a rotatable shaft projects, said face having a plurality of arcuately spaced bores therein, said seal construction comprising in combination: an annular body of resilient elastomeric material having a front face and a rear face, said body having a hub having a rear circular inner edge and a front circular edge, the inner diameter of said annular body being less than the outer diameter of said shaft, said rear face having a plurality of rearwardly directed protuberances adapted to fit loosely within said housing bores to located said seal about said shaft; and means to hold the oil seal sealingly against said housing face, said means maintaining said seal resiliently in position concentrically about said shaft with the inner edge of said hub in sealing position about said shaft.

3,291,496
SEALING RING
Sumner D. White, Detroit, Mich., assignor to Vibraseal Corporation, Detroit, Mich., a corporation of Michigan
Original application Apr. 16, 1964, Ser. No. 360,244, now Patent No. 3,218,095, dated Nov. 16, 1965. Divided and this application May 4, 1964, Ser. No. 364,402
3 Claims. (Cl. 277—164)



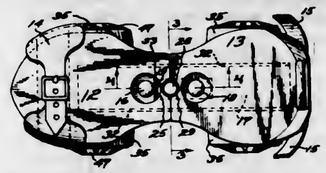
1. A composite sealing ring comprising an annular solid body of uniform hexagonal radial cross section throughout its circumference providing only six exterior planar surfaces, said annular solid body having a longitudinally extending circular center line, adjacent circumferentially extending edges of said planar surfaces meeting each other whereby the six planar surfaces are symmetrically arranged about the longitudinally extending circular center line of said annular solid body and form the complete exterior surface of said annular solid body, and an annular reinforcing helix entirely embedded within said annular solid body, said annular reinforcing helix being provided throughout its circumference with a uniform circular radial cross section smaller than the uniform hexagonal radial cross section of said annular solid body and being concentric with the circular center line of said annular solid body, said reinforcing helix having circumferentially spaced interconnected helical convolutions of uniform diameter extending substantially radially of said annular solid body and entirely disposed in spaced relation to the six planar surfaces thereof.

3,291,497
PISTON RINGS AND PISTON-AND-RING ASSEMBLIES
Roland Claude Cross, 33 Midford Road, Combe Down, Bath, Somerset, England
Filed July 8, 1963, Ser. No. 293,410
Claims priority, application Great Britain, Feb. 14, 1963, 5,995/63
2 Claims. (Cl. 277—169)



1. A piston and piston ring assembly for internal combustion engines, comprising a piston having a peripheral groove, and a solid metal piston ring partly in the groove and being resiliently compressible into metal-to-metal contact with the sides of the groove, the ring having in a radial plane containing the axis of the piston a cross-section consisting of a stem positioned between said sides of the groove and of a cross piece externally of the groove and symmetrical relatively to the stem, the cross piece comprising two oppositely extending ears which as seen in cross-section in said plane are oppositely tapered away from said stem to provide a sharp tip at each of the extreme boundaries of the ears, the ears together presenting a radially outermost smooth cylindrical cylinder-engaging surface and each ear presenting a radially inner annular surface to make metal-to-metal engagement with the piston when the ring is compressed into the groove.

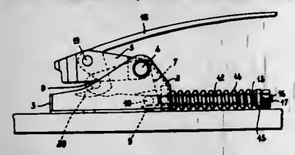
3,291,498
EXTENSIBLE ROLLER SKATE
Marshall H. Frisbie, Branford, Conn., and Howard G. Healey, Hollis, N.H., assignors to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed Oct. 6, 1964, Ser. No. 401,946
3 Claims. (Cl. 280—11.26)



1. In a roller skate the combination of, toe and heel platform sections relatively slidable toward and away from a meeting line at which said sections abut edgewise, an elongate strike plate having a lengthwise extending cutout attached to one of said platform sections at one side of said meeting line and projecting from said one section across said line into underlapping relation to the other of said platform sections, strike shoulders on

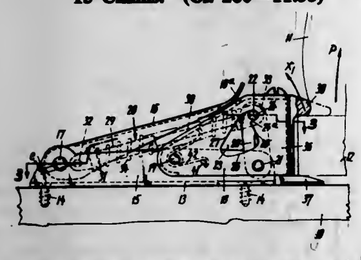
said plate spaced apart lengthwise thereof, a leaf spring carrying a catch positioned thereon to extend into detentive engagement selectively with said strike shoulders, a manually operable actuator operatively related to said leaf spring in a manner to shift said catch into and out of detentive engagement with said strike shoulders, and a stud extending through said cutout fastening one end of said leaf spring fixedly to said other platform section.

3,291,499
SAFETY SYSTEM FOR SKIER'S SHOES
André Lucien Jean Artru, Lyon, France, assignor to Louis Lachenal, Dominique Lachenal, and André Gromelle
Filed June 30, 1964, Ser. No. 379,086
Claims priority, application France, July 12, 1963, 43,834, Patent 1,386,233
4 Claims. (Cl. 280—11.35)



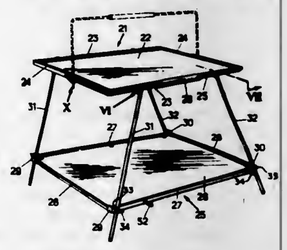
1. In combination with a ski, the provision of an arrangement securing a skier's shoe heel to the ski, comprising a forwardly facing hood-shaped support rigid with the ski, a transverse horizontal spindle carried by said support, a heel grip adapted to pivot around the axis of said spindle and to engage the upper rear edge of the skier's shoe, a control lever pivotally secured to said grip, a securing member directed rearwardly and adapted to pivot around the axis of said spindle, cooperating projections on the lever and on said member to operatively interengage said lever and said member, a stirrup coupled with the securing member and including two threaded legs extending rearwardly through the support, nuts fitted adjustably over said threaded legs, a plate extending over the front ends of the nuts, springs fitted between said plate and the rear surface of the support to adjust the position of the securing member through the stirrup to hold the latter in a position for which the lever holds the grip engaged thereby in its operative heel-engaging position as long as the thrust exerted by the heel on the grip does not rise above a predetermined value.

3,291,500
HEEL-HOLDING DEVICE FOR SKI SAFETY BINDING
Reinhold Vöster, Stuttgart-Degerloch, and Eugen Schnell, Leonberg, Württemberg, Germany, assignors to Vereinigte Baubeschlagfabriken Gretsch & Co. G.m.b.H., Leonberg, Württemberg, Germany
Filed Apr. 9, 1965, Ser. No. 446,867
Claims priority, application Germany, Apr. 14, 1964, V 25,800
15 Claims. (Cl. 280—11.35)



1. A heel-holding device for a ski safety binding comprising a heel-depressing lever having means thereon adapted to engage over the heel of a ski boot for pressing the heel upon the ski, means for mounting said lever on the ski so as to be pivotable about an axis extending substantially parallel to the upper surface of the ski, spring means adapted to press said lever into a position in which the heel is depressed upon the ski, a locking element, means for pivotably mounting said locking element on the ski, first locking means on said locking element, second locking means on said lever and operatively associated with said first locking means, said spring means adapted to hold said first and second locking means in locking engagement with each other when said lever is in said depressed position, said first and second locking means being movable relative to each other so that, when said lever is pivoted upwardly by the heel, said locking means will be released from their locking engagement with each other against the action of said spring means.

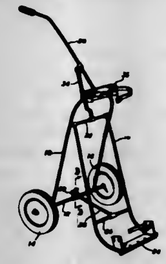
3,291,501
FOLDING TEA CART
Jacques-Dominique Stelnicеanu, 6 Rue Beaurepaire, Paris, France
Filed Sept. 11, 1964, Ser. No. 395,853
Claims priority, application France, Sept. 18, 1963, 947,914, Patent 1,383,814; Jan. 30, 1964, 962,124
9 Claims. (Cl. 280—36)



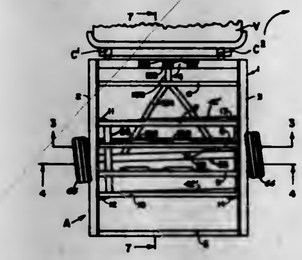
1. A folding table comprising upper and lower trays which are horizontal when said table is set up, at least two supporting members connecting said trays to each other, said supporting means being pivotally and independently connected to each tray for swing movement about parallel axes and horizontally spaced apart from each other in a direction perpendicular to said axes when said table is set up, separable connecting means connecting one of said trays to one of said supporting members, said connecting means comprising at least two parts which are separable by movement of one of said parts in a single predetermined direction relative to the other part, means for exerting against said one supporting member a pressure which biasses a part of said separable connecting means in a direction at least 90 degrees away from the direction in which the parts thereof can be separated, said pressure exerting means comprising stop means positioned to engage at least one of said supporting members and the other tray when said table is set up.

3,291,502
GOLF CARTS
Hugh O. England, London, Ontario, Canada, assignor to Hurok Manufacturing Limited, London, Ontario, Canada
Filed Mar. 11, 1965, Ser. No. 438,870
4 Claims. (Cl. 280—41)

1. A foldable golf cart comprising a main frame pivotally attached at its lower end to a transverse axle carrying wheels at its outer ends, a second frame pivotally attached at its upper end to said main frame and adapted to be folded into general parallelism therewith, sling means carried at the top of said first frame for supporting the upper end of a golf bag, a platform carried at the lower end of said second frame for supporting the lower end of a golf bag, a locking rod pivotally connected at one end to the second frame adjacent the lower end thereof, and slidingly and pivotally connected at its other end to said axle, and means releasably locking said lock rod against sliding movement relative to said axle.

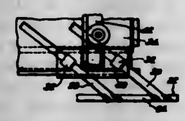


3,291,503
AUTOMATICALLY STEERABLE TRAILER
Manford S. De Lay, 2117 Gravois Ave., St. Louis County, Mo.
Filed Nov. 12, 1964, Ser. No. 410,646
15 Claims. (Cl. 280—81)



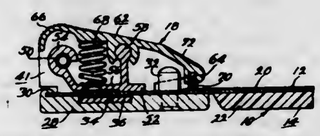
1. A vehicular trailer adapted to be tractively drawn by a principal vehicle; said trailer comprising a load-carrying frame, an underframe having steerable wheels, means operatively connecting the load-carrying frame and the underframe so that the load-carrying frame is supported by the underframe in such a manner that the load-carrying frame is free to shift laterally with respect to the underframe responsive to turning movements of the principal vehicle, and means operatively connected to the load-carrying frame and to the steerable wheels for changing the position of the wheels responsive to said lateral shifting movements of the load-carrying frame.

3,291,504
SAFETY DEVICE FOR VEHICLES
Antonio Irizarry, New York, N.Y. (P.O.Box 361, Dover, N.J.)
Filed Feb. 4, 1965, Ser. No. 430,260
2 Claims. (Cl. 280—166)



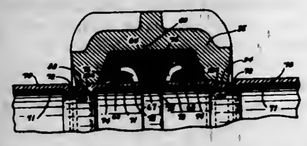
1. A safety device for a vehicle having a door frame with steps at the bottom of the frame, said steps including a plurality of horizontal treads, said device comprising a horizontal plate, first means to secure said plate from the bottom of the lowest of said treads in such manner that said plate always remains in horizontal position, said first means including first and second vertical members positioned at opposite ends of said plate, each member having first and second parallel inclined slots, first and second inclined arms secured at each of said opposite ends of the plate and each being associated with a corresponding slot, each inclined arm having an element slidably connecting said each inclined arm to the corresponding slot and first and second horizontally connecting arms, each connecting arm being joined between the corresponding pair of inclined arms and having an upward vertical extension and second means which, when actuated, raises said plate to a position immediately below said lowest tread, said second means when deactuated permitting said plate to fall by gravity to ground level, said second means including a horizontal shaft rotatable about one end thereof in a horizontal plane, the other end of said shaft bearing against one of said extensions when said second means is actuated to cause said plate to be raised, and third means coupled to said second means to actuate said second means under the manual control of the operator of the vehicle.

3,291,505
MOUNTING BOARD FOR ACCOUNTING FORMS
Vincent G. Bell, Jr., Strafford, Wayne, Calvin Durrell Cassel, Gardenville, and John A. Gwilliam, Perkasie, Pa., assignors to Safeguard Corporation, Lansdale, Pa., a corporation of Pennsylvania
Filed Apr. 7, 1965, Ser. No. 446,227
6 Claims. (Cl. 282—29)



1. A mounting board for accounting forms comprising a plate, a form clamping assembly mounted along an edge of said plate, said assembly comprising an aligned row of spaced studs spaced from and parallel to said plate edge, a hinge base pivotally mounted on said plate between said studs and plate edge for pivotal movement about an axis parallel to said row of studs, latch means for selectively securing said hinge base in a locked position against said plate, said latch means including a latch bar slideably disposed beneath said plate, latch fingers of said latch bar extending through slots in said plate and disposed between the edge of said plate and said row of studs, slots in said hinge base adapted for engagement by said latch fingers, and means for slideably actuating said latch bar to secure or release said hinge base, a clamp element pivotally mounted on said hinge base, a form securing portion of said clamp element extending over said studs when said hinge base is secured relative to said plate, and spring means associated with said hinge base for urging said form securing portion toward said plate for securing forms thereon, said form securing portion adapted to be pivoted away from said plate against the bias of the spring means to expose said studs and permit insertion of forms, the pivoting of said hinge base away from said plate permitting insertion and removal of perforated forms from said studs.

3,291,506
PIPE JOINTS AND THE GASKETING THEREOF
James Blakeley, Don Mills, Ontario, Canada, assignor to Victaulic Company of America, Union, N.J., a corporation of New Jersey
Continuation of application Ser. No. 801,007, Mar. 23, 1959. This application May 18, 1965, Ser. No. 456,674
8 Claims. (Cl. 285—112)



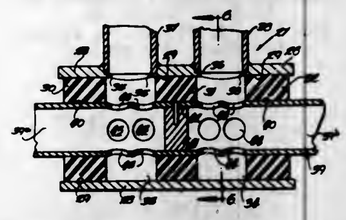
1. A pipe joint comprising a pair of sections of grooved end pipe positioned for coupling, an annular coupling housing overlying portions of said sections of pipe adjacent the ends thereof, said housing bridging the ends of said pipe sections and carrying radially inwardly extending annular key members engaged with the groove in said sections of pipe to hold said sections of pipe together, said coupling housing being formed with an interior annular channel, said channel being in overlying relationship with respect to said pipe ends and the portions of said pipe between said grooves and said ends, a continuous annular resilient gasket within said channel, said gasket having a base portion, radially inwardly extending side portions extending from the opposite sides of said base portion and lip portions extending towards each other from the radially innermost portions of said side portions, said base portion, side portions, and lip portions of the gasket defining an integral body which is C-shaped in transverse section, said lip portions terminating in spaced apart ends and said lip portions having the inner surfaces thereof engaged with the surfaces of said pipes within said coupling housings, an elastomeric annular member carried by said gasket and extending radially inwardly from the base portion of the gasket between the side portions and lip portions thereof, the radially inner edge portion of the annular member lying between the end surfaces of said pipe sections, the end surfaces of said pipe sections extending into compressive engagement with the respective end surfaces of the annular member so as to deform the annular member and form seals therewith.

3,291,507
SUPPORT DEVICE
Albert L. Clay, Mystic, Conn., assignor to The Kellems Company, Incorporated, Stonington, Conn., a corporation of Connecticut
Filed Mar. 10, 1964, Ser. No. 350,710
7 Claims. (Cl. 285—114)



1. In a coupling, a pair of separate coupling means adapted to be interengaged in coupled relation to connect together a pair of separate members, a ring split into a plurality of sections adapted to be placed in encircling relation on an attaching surface associated with one of said separate members and having a combined circumferential dimension less than the outside circumferential dimension of said attaching surface, and said ring having an annular clamp supporting section provided on its exterior surface, a clamping device mounted on said clamp supporting section and encircling said ring sections and adapted to clamp said ring sections to said attaching surface, gripping means connected at one end to and extending outwardly from one end of said split ring and enclosing the other of said separate members, and means provided on the sections of said split ring for connecting said connected end of said gripping means to said split ring, said gripping means being composed of a plurality of wire strands extending from and connected in circular relation to the sections of said split ring by said connecting means and being interwoven to form an open mesh structure adapted to be positioned in surrounding gripping relation over said other separate member.

3,291,508
FLEXIBLE FLUID JOINT
C. Paul Kolthoff, Jr., Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,820
6 Claims. (Cl. 285—132)

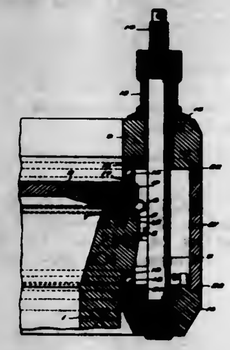


1. A flexible joint for conducting fluid under pressure comprising a tubular shaped rigid casing having at least one transverse aperture, a transverse conduit rigidly connected to said casing in communication with said aperture, a longitudinal conduit extending into said casing in endwise relation, at least one transverse opening disposed in said longitudinal conduit in registry with said transverse aperture, and resilient bushing means positioned between said longitudinal conduit and said casing, said resilient bushing means being secured sealingly to said casing and longitudinal conduit in bonded relation whereby said conduits are in fluid communication and said longitudinal conduit is resiliently movable with respect to said transverse conduit to a magnitude limited by said resilient bushing means.

3,291,509
FLANGED JOINT
Finn Börsum, Degerfors, Tage V. Jansson, Bromma, and Carl Ake Moberg, Trollbacken, Sweden, assignors to Aktiebolaget Atomenergi, Stockholm, Sweden, a company of Sweden
Filed Mar. 30, 1964, Ser. No. 357,012
1 Claim. (Cl. 285—187)

A flanged joint comprising two opposed annular flanges, an annular recess in the inner face of one of said flanges, an annular sealing ring seated in said annular recess, an annular protruding portion of less radial width than the width of said recess extending from the inner face of the other of said flanges into said annular recess and engaging said annular sealing ring, an annular slit tube having its one edge secured to the edge of one of said flanges and its other edge secured to the edge of the other of said flanges externally of said annular recess and said annular protruding portion, whereby said opposed flanges may move relatively in a radial direction while maintaining fluid tight relationship, and clamping means comprising

two ring-shaped members positioned on the opposite sides of the edge portions of said two flanges, rollers positioned between each of said annular ring-shaped members and the adjacent flange, a plurality of bolts extending through said ring-shaped members for drawing said ring-shaped



members toward each other and into contact with said rollers and a collar shaped support member extending between said ring-shaped members externally of said bolts, said clamping means imposing an axial clamping force on said flanges while permitting relative radial movement thereof.

3,291,510
TUBE FITTING
Joseph D. Kody, Arlington Heights, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Continuation of application Ser. No. 151,689, Nov. 13, 1961. This application July 6, 1965, Ser. No. 472,397
4 Claims. (Cl. 285—340)



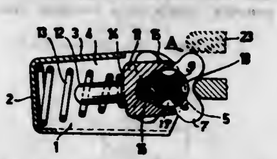
1. A tube fitting comprising: a body having a bore opening outwardly through one portion thereof; a nut having a bore therethrough and an inturned, substantially rigid flange at an outer end of the nut, said flange defining a longitudinally inner annular surface having a radial, annular radially outer portion and a longitudinally inwardly narrowing, frusto-conical, annular radially inner portion accurately coaxial of said nut bore; means for connecting the nut to the body with the bore of the nut coaxially aligned with the bore of the body at said portion; an annular springy retainer coaxially between said body portion and said flange and having a radial, annular radially outer portion and a longitudinally inwardly narrowing, frusto-conical, annular radially inner portion complementary to and circumferentially continuously facially engaging said outer and inner portions respectively of said flange surface to be positively rigidly supported thereby at all times in accurate centered relationship to said nut bore, the inner diameter of said inner portion of the nut flange being slightly larger than the inner diameter of said inner portion of the retainer whereby the radially inner edge of the inner portion of the retainer is limitedly deflectable for biting into a tube extending coaxially through said nut bore and thereby preventing axially outward movement of the tube; and annular means for sealing the tube to said body and urging said retainer against each of said portions of said flange surface and said inner portion of the retainer against said tube.

3,291,511
BALL AND SOCKET JOINTS
Viktor Langen, Moererbusch, near Duesseldorf, Germany, assignor to A. Ehrenreich & Cie, Duesseldorf-Oberkassel, Germany
Continuation of application Ser. No. 710,719, Jan. 23, 1958. This application Mar. 25, 1963, Ser. No. 269,835
1 Claim. (Cl. 287—87)



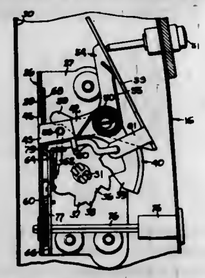
An unassembled ball and socket unit containing a lubricant prior to assembly in machinery and adapted for assembly in machinery comprising a ball headed stud having a stud portion presenting a ball head in a socket casing, a resilient sealing boot disposed between said socket casing and said stud and extending in intimate sealing engagement around said casing and said stud so as to retain said lubricant within said casing, and a retaining ring disposed endwise of said sealing cap in intimate contact with the proximate outer surfaces of said cap and said stud, said ring being of resilient material and having an unstressed inner diameter sufficiently less than the diameter of said stud to tightly engage the outer surface of said stud and resist movement of said ring along said stud and hold said boot against said casing with the absence of an adjacent linkage member on the stud and thereby retain the boot in lubricant sealing contact with the casing, said retaining ring also being provided with a lip formed around the outer peripheral portion thereof and extending over a peripheral portion of said cap in the direction of said housing to reinforce the contact between said sealing boot and said casing.

3,291,512
LOCK DEVICE FOR DOORS, SHUTTERS OR THE LIKE
Gunnar Erik Werner Lewin, Hantaregvagen 12, Vigelyholm, Sweden
Filed Mar. 4, 1964, Ser. No. 349,410
5 Claims. (Cl. 292—70)



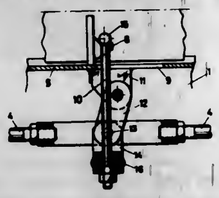
1. A lock device for a door, shutter, or the like comprising a casing having two opposed slots therein, a shaft slidably mounted in said slots, spaced cog wheels mounted on said shaft, said shaft and cog wheels forming a locking bar, a locking plate cooperating with said cog wheels, an intermediate member located in said casing, a compression spring in said casing cooperating with said intermediate member urging it towards said locking plate, blocking means upon said locking bar, said intermediate member having one end formed as a guide for said spring and the other end cooperating with said blocking means to guide said intermediate member relative to said locking bar and to fix said locking bar in various positions, said blocking means comprising a ratchet wheel on said shaft between said cog wheels having a lower cog height with respect to said cog wheels and a roller cooperating with said intermediate member and the cogs on said ratchet wheel.

3,291,513
DOOR LATCH FOR AUTOMOTIVE VEHICLE
Harry J. Shay, Rockford, Ill., assignor to L. W. Mezzinner, trustee, Rockford, Ill.
Filed Mar. 23, 1964, Ser. No. 353,799
3 Claims. (Cl. 292—216)



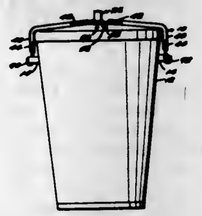
3. In a latch, the combination of, a base, a latching element mounted on said base to turn to latched and unlatched positions, an operating member mounted on said base to move between first and second positions, mechanism selectively operable to hold said latching element in said latched position and to release the element for turning to said unlatched position, locking means including a locking member mounted on said base for movement between locked and unlocked positions and operable respectively in said positions to uncouple and couple said operating member and said mechanism, said locking member having a cam surface disposed in a predetermined plane, a part connected to said operating member to be projected into and out of said plane as the operating member is moved to said first and second positions respectively, and a connection between said part and said mechanism and operable when the part is projected into said plane to move the part against said surface and cam said locking member to said unlocked position as the latching element is turned to said latched position.

3,291,514
LATCHING MEANS FOR HATCH COVERS
Erik Holger Isaksson, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Nov. 16, 1964, Ser. No. 411,336
Claims priority, application Sweden, Dec. 3, 1963, 13,359/63
5 Claims. (Cl. 292—256.5)



1. In a latching device for a hatch cover comprising a coaming surrounding a hatch opening, a cover adapted to rest on said coaming when in closed position, an outwardly directed horizontal flange at at least two sides of the coaming and fittings mounted on the coaming adapted for cooperation with keeper means on the edges of the cover,
a manoeuvring rod running along the coaming below each flange and arranged to actuate several fittings simultaneously,
a number of oblong openings having their longitudinal extension parallel to said rod in each of said horizontal flanges,
a lever in each fitting extending through each of said oblong openings, said lever having an enlargement at its upper end for co-operation with the keeper means and being of sufficient length to reach below the manoeuvring rod when in acting position,
an extension means and a pivot articulatedly connecting said lever to said rod,
a bracket fixed to the flange above the rod,
and a link swingably connected to said bracket and to said rod in such a manner that a horizontal movement of the rod will bring about also a vertical displacement thereof.

3,291,515
CAN LID RETAINER
John D. Lierman, 9203 Woolworth St., Omaha, Nebr.
Filed Oct. 24, 1965, Ser. No. 504,652
3 Claims. (Cl. 292—288)



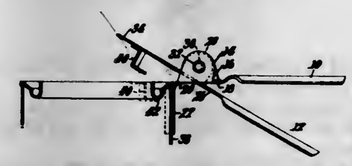
1. A cover holding means for a receptacle having a pair of side handles and a cover provided with a handle in the center of the top thereof, said cover holding means comprising a pair of springs, said springs being elongated and having upper ends and lower ends, securing means for said springs comprising a wire having a loop between its ends for extending around said handle by extending across an outer side of said handle and across an inner side of said handle, and means for attaching the outer ends of said wire to upper ends of said springs respectively, and first and second means attaching lower ends of said springs to said receptacle handles respectively, said loop having lapping portions disposed on a same side thereof and disposed one above another when the walls of the opening of said loop are held in vertical position, the said lapping portions being sufficiently free of any interconnection except by means of the remainder of said loop that the handle of said cover can pass between said lapping portions into said loop for facilitating attachment of said loop to said handle.

3,291,516
RESILIENT SHOCK ABSORBING BUMPER
Stephane Kavos, 28 Rue Nungesser et Coli, Paris, France
Filed Feb. 11, 1964, Ser. No. 344,094
Claims priority, application France, Feb. 13, 1963, 924,595; June 18, 1963, 938,425
1 Claim. (Cl. 293—67)



In combination with a bumper for attachement to a vehicle, a J-shaped vertical guard mounted on the bumper, an elastomeric element mounted on a face of the J-shaped vertical guard facing away from the bumper, positioned in the bight of the J-shaped vertical guard and extending transversely along the bumper a second elastomeric element, said second elastomeric element being provided with a longitudinal groove having a T-shaped cross-section the middle branch of which opens to a face of said second elastomeric element facing the bumper, at least one flat strengthening strip fitted within said groove and having essentially the same cross-section as the transverse branch of said T-shaped cross-section, and fastening means extending through said middle branch of said T-shaped cross-section and connecting said strip to said bumper.

3,291,517
PAINT CAN HOLDER AND BRUSH REST
John G. Stelpa, Sr., 264 Oak St., Shrewsbury, Mass.
Filed Feb. 10, 1965, Ser. No. 431,687
2 Claims. (Cl. 294—31)



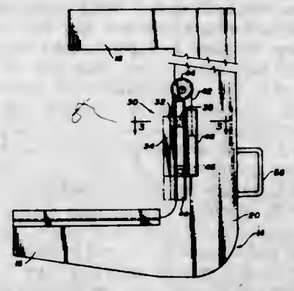
1. A holder for a paint can having an interior drip lip and comprising a pair of inter-pivoted scissor-like flat members, means for abutting the outside surface of the paint can on one member and hook means on the other member for insertion under the drip lip of the paint can at the interior thereof, a handle on each member, said handles when being pressed toward each other causing the abutting and hook means to approach and grip the can, said other member terminating in a flat plate extending in general across the top portion of the paint can and resting thereon when in position, said plate having a chordally arranged edge thereon upon which the paintbrush may be wiped.

3,291,518
VALVE
Harry F. Weinert, Portland, Oreg., assignor to Cascade Corporation, Portland, Oreg., a corporation of Oregon
Filed Sept. 14, 1964, Ser. No. 396,322
5 Claims. (Cl. 294—64)



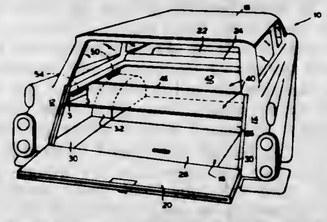
1. A bump valve for controlling the application of a vacuum comprising a generally spherical, hollow, resilient, elastomer body, having a supporting base portion with an opening therein for communication with a vacuum source, said body including multiple side wall portions spaced from each other extending around the body which are convexly curved on the outside of the body, a plurality of normally closed slits defined between said side wall portions of the body extending generally perpendicularly to said base portion adapted to be opened up when said body is deformed, and a compression spring in said body arranged to tension the body in the direction of said slits.

3,291,519
TRANSFER DEVICE WITH AN ARTICLE BUMPER
John J. Burke, Fontana, Calif., assignor to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Filed Oct. 5, 1964, Ser. No. 401,592
8 Claims. (Cl. 294—67)



1. A transfer device for use in the handling of a roll or coil of strip material having an eye at the center thereof, comprising, in combination, an arm constructed and arranged for penetrating the eye of the roll with limited freedom for lost motion, a rigid member fixedly united with the eye penetrating arm and extending away from the arm at one end thereof, a bumper carried by the rigid member and having a roll end engaging surface of substantial area disposed substantially at right angles to the arm for receiving and sustaining the end thrusts of a roll, means mounting the bumper on said rigid member with substantial freedom for movement relative to the arm in a plane located at a substantially right angle to the arm, but restraining the bumper against other movement relative to the arm, and means yieldingly urging the bumper to a predetermined normal position relative to the arm such that during engagement of the bumper with the roll end, the bumper will be free to maintain a fixed position relative to the roll end.

3,291,520
STATION WAGON UTILITY COMPARTMENT AND REMOVABLE COVER THEREFOR
Alva Merl Smith, 1758 Winnemac Ave., Chicago, Ill.
Filed June 10, 1964, Ser. No. 373,920
2 Claims. (Cl. 296—24)



1. In an automotive vehicle of the type having a body defining a passenger compartment within which there is disposed a forward and a rearward seat and back assembly respectively, and a tail gate for closing said compartment, said rearward assembly being collapsible and, when collapsed, establishing a storage deck from which there extend upwardly on opposite sides thereof a pair of side walls: the improvement therein which comprises opposed ledge-forming members fixedly secured to said side walls at a level spaced upwardly above said storage deck and effective throughout a major portion of the longitudinal extent of the passenger compartment above said storage deck, a two-part foldable compartment-forming panel assembly adapted to be removably sup-

ported upon said ledge forming members and defining with said deck, side walls and forward seat and back rest assembly, a concealed storage compartment, said two-part panel assembly including forward and rearward flat panel sections hingedly connected together along a pair of meeting edges and foldable upon each other in face-to-face relationship whereby said sections may assume coplanar positions with each section being supported directly upon said ledge-forming members and with the other section overlying the same in superimposed relationship, and latch means supported on the lower side of said flat panel sections when the said sections are in such coplanar relationship and adapted to be in releasable engagement with said ledge-forming members, each of said latch means being comprised of a lever arm pivotally mounted on its flat panel section and pivoted selectively to a locking position with said ledge forming member and to an unlocked position therewith whereby said latching means may be locked and concealed from view when said tail gate is in position closing said compartment, and whereby the rearward flat panel section may be unlocked from said ledge forming member and folded upon the forward flat panel section to reveal readily the contents stored on said storage deck.

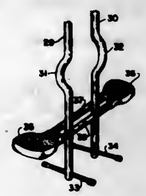
3,291,521
BOOK RACK ATTACHMENT FOR CHAIRS
Allison F. Krueger, 226 Miramar Drive, Green Bay, Wis.
Filed Aug. 25, 1965, Ser. No. 482,516
9 Claims. (Cl. 297—188)



1. A detachable book rack for a chair having rear legs and at least one connecting rung, said book rack comprising a trough opening upwardly and having spaced generally parallel front and rear walls and a connecting bight constituting a bottom at a level at which both ends of the trough are open, the walls and bottom being one continuous member and the front wall extending above said bottom to a height materially greater than that of the rear wall to guide into the trough the hand of a user behind the book rack, brace means connecting the front and rear walls at a level spaced substantially above the bight at the bottom of the trough and constituting sole means for keeping the upper portions of the front and rear walls rigidly spaced from each other, downwardly open brackets connected with a lower portion of the front wall of the trough and shaped to straddle the said rung of the chair for supporting the trough in pivotal relationship with the rung, and upper holding means releasably connecting an upper portion of the front wall of the trough with the chair for securing the trough detachably against pivotal movement about said rung.

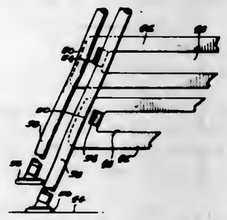
3,291,522
PLAY EQUIPMENT SEAT
Isadore Horowitz, Shreveport, and Emanuel S. Smyrnl, Bossier City, La., assignors to Gym-Dandy, Inc., Bossier City, La., a corporation of Louisiana
Filed Oct. 5, 1965, Ser. No. 493,025
4 Claims. (Cl. 297—195)

1. A molded plastic seat for play equipment and the like, comprising:
(a) a body having a substantially planar central top portion and a depending peripheral flange;
(b) said body and flange having a front portion and a rear portion, and the front portion of said flange being interrupted to form a passageway therethrough for a seat support;
(c) a series of stiffening webs integral with said body and extending substantially perpendicularly from said body within said peripheral flange;
(d) first means toward the rear portion of said body and on the same side of said central top portion as



said flange and webs for securing the rear portion of a seat support to said body;
(e) second means toward the front portion of said body for securing the front portion of a seat support to said body; and
(f) at least two of said stiffening webs on opposite sides of the center line of said body being provided with slots adjacent the underside of said substantially planar central top portion and substantially parallel to said planar central top portion for the reception of spaced end portions of a seat support to provide securing means for said spaced end portions.

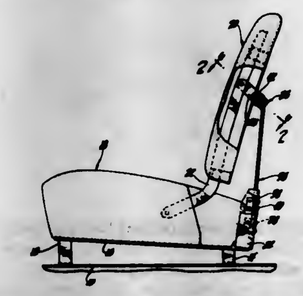
3,291,523
STACKABLE CHAIR
Allison F. Krueger, 226 Miramar Drive, Green Bay, Wis.
Continuation of application Ser. No. 853,412, Nov. 16, 1959. This application Sept. 16, 1965, Ser. No. 487,818
5 Claims. (Cl. 297—239)



1. A chair stackable with like chairs and comprising a seat, a supporting frame provided at each side of the chair in positions laterally offset from the seat with a pair of respectively forwardly and rearwardly inclined legs, a generally horizontal brace at each side of the chair directly attached to the legs, each brace having contact members positioned thereon in longitudinally spaced positions adjacent the legs and spaced from said legs to which the brace is attached, said members being connected solely with the brace, independently of either of said legs, and projecting from the brace in positions to engage the upper surfaces of the corresponding legs of a like chair on which the chair aforesaid is stacked.

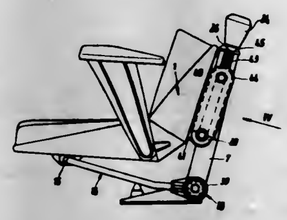
3,291,524
BACKREST SUPPORT MEANS
Hyland C. Flint, 3551 Walnut Lake Road, Rte. 2, Orchard Lake, Mich.
Filed July 6, 1965, Ser. No. 469,516
3 Claims. (Cl. 297—302)

1. Backrest support means for a unison action seat construction having a base and a seat movable relative to said base and a backrest having side frame members secured to and movable with said seat, said support means comprising:
a yoke member extending between said side frame members and having legs pivotally secured to said side frame members;



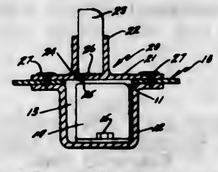
flexible support members secured to said base and extending upwardly therefrom;
and pivot means secured in the upward ends of said support members and secured in said yoke member rearwardly of said side frame members to permit pivotal movement of said yoke member relative to said support members for maintaining the angular relationship of said backrest relative to said base when said backrest moves with said seat member.

3,291,525
VEHICLE SEATS
Rupert Fritzmeier, Haus Nr. 14, Grosshelfendorf, near Munich, Germany
Filed Oct. 18, 1966, Ser. No. 497,874
Claims priority, application Germany, Nov. 26, 1963, F 41,371; Sept. 30, 1965, F 28,867
2 Claims. (Cl. 297—306)



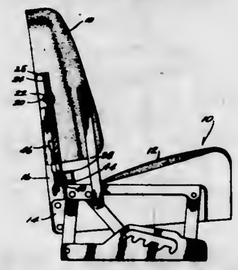
1. A vehicle seat in particular for use in mobile heavy duty vehicles such as tractors, said seat being guided for straight-line up and down movement at the backside by means of rollers disposed in a fixed rearwardly inclined guide column of C-shaped cross section opening towards the back rest portion of the seat and being pivoted at its bottom side, in front, to one of the ends of a swing lever, the other end thereof being in pivotal connection with the foot of the guide column, wherein tension springs are provided for resilient support of the seat, said springs being with one of their ends connected to the seat in the proximity of the junction of seating portion and back rest portion of the seat and transversely upwardly to a tensioning member being adjustable longitudinally to the guide column with the help of a lead screw mounted to the guide column and extending approximately parallel thereto, the arrangement being such that the tension springs assume a great degree of inclination under the condition of the seat being in its unloaded or unoccupied position.

3,291,526
GUARD FOR VEHICLE SAFETY BELTS
Arthur S. Nicholas, East Grand Rapids, Mich., assignor to Leon Chemical Industries, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 1, 1964, Ser. No. 400,647
1 Claim. (Cl. 297—388)



In combination with a vehicle having a structural body panel and a well in said panel, a vehicle safety belt having a web, a buckle and a retractor therefor, an opening in the upper surface of said panel; said retractor mounted in said well below said opening and aligned therewith; said web extending upwardly therefrom; a web guide mounted over said opening, said web guide having an upwardly extending tubular central portion defining a web channel; the walls of said web channel forming a constricted throat therein of a size suitable to slidably pass said web and position it in a predetermined path; the upper end of said central portion forming a stop surface, said web channel at said upper end being smaller than said buckle and said stop surface engaging said buckle to limit its downward travel under the bias of said retractor; the walls of said web channel flaring outwardly to form a buckle receiving pocket with said stop surface at the bottom thereof; the lower end of said web guide overlapping the edges of said opening for closing and concealing the same; said lower end also forming a seal with said edges; means for securing said web guide to said panel; said web guide being a single integral body of a material having sufficient rigidity to support the weight of the web and buckle together with the downward pull exerted by the retractor on the web.

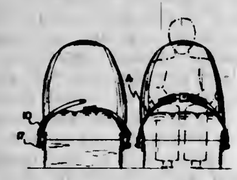
3,291,527
VERTICAL ADJUSTABLE BACK
Garth O. Hall, Brookfield, Harvey N. Tengler, New Berlin, and Arthur O. Radke, Shorewood, Wis., assignors to Bostrom Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 7, 1966, Ser. No. 532,139
4 Claims. (Cl. 297—353)



1. An adjustment mechanism for moving the back member between a number of preselected vertical positions in respect to the seat member, comprising:
guiding means fixed to the seat member and connected to said back member to permit vertical adjustment movement of said back member;
lever means fixed by first pivotal connecting means to the seat member and by second pivotal connecting means to said back member;
said lever means having a handle portion which is

adapted to be gripped and moved to pivot said lever in a vertical plane in respect to said seat member and thus correspondingly move said back member;
upwardly extending rack means fixed to said seat member and defining several vertical positions at which said lever may be selectively engaged with said rack; and
means for maintaining said lever means in engagement with said rack at any of the several vertical positions.

3,291,528
SEAT BELT STRAIGHTENER
Dwight M. Soncabough, 15319 Edgewater Drive, Lakewood, Ohio
Filed Oct. 19, 1965, Ser. No. 497,768
10 Claims. (Cl. 297—385)



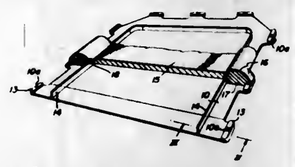
5. In a manually engageable seat belt straightener adapted to be slidably connected to a seat belt member, a body member having a passage therethrough and through which said belt member is adapted to extend, and means on said body member adjacent said passage for engaging and guiding said belt member as said belt member moves through said passage to straighten twists in said belt member as said body is moved on said belt member toward a free end thereof.

3,291,529
CHAIR CONSTRUCTION
Ernest J. Straitz, 712 S. 6th St., St. Charles, Ill.
Filed Nov. 4, 1965, Ser. No. 506,316
4 Claims. (Cl. 297—445)



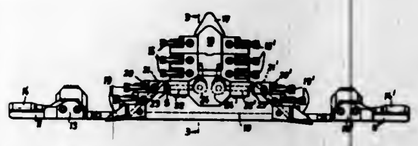
1. A chair of a type having a frame, a seat portion attached to the frame with leg portions depending downwardly therefrom, and a back portion secured to the frame extending upwardly from the level of the seat portion, said back portion comprising, two upwardly extending spaced apart side arms with a seat back positioned therebetween, the upper edge of the seat back being fully confined within an upper channel which is connected between upper regions of said side arms, the lower edge of the seat back being fully confined within a lower channel connected between lower regions of the side arms.

3,291,530
RESILIENT CUSHION AND SUPPORT THEREFOR
Alfred E. Harrison, Barton under Needwood, near Burton on Trent, England, assignor to Vitafoam Limited, a corporation of the United Kingdom
Filed Sept. 22, 1965, Ser. No. 489,358
7 Claims. (Cl. 297—452)



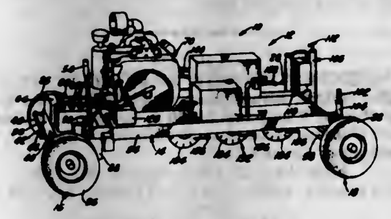
1. A cushion support moulded from a material which will flow when subjected to heat and pressure and will be resilient when cool, said support having an upper flat surface including a central area and surrounding edges, a rib formed integrally with said support and extending upwardly from said surface, said rib being located along at least one side of said central area of the support and spaced a distance from its adjacent edge, and rib extending upwardly a sufficient distance on one side to receive and retain a portion of an upholstery cover material and on the other side forms a location for a pad of upholstery material.

3,291,531
COAL PLANE WITH ADJUSTABLE FLOOR CUTTERS
Alois Hauschopp, Werne, Lippe, Germany, assignor to Gewerkschaft Eisenhütte Westphalia, Wertkamer, Lunen, Westphalia, Germany, a corporation of Germany
Filed Jan. 29, 1964, Ser. No. 341,042
Claims priority, application Germany, Feb. 2, 1963, G 36,971
10 Claims. (Cl. 299—34)



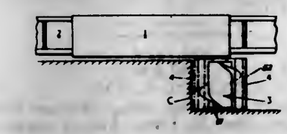
1. In a mining plane having a body portion and means for moving the body portion in a direction across the face of the deposit being worked adjacent the mine floor, a cutter holder mounted on said body portion for movement therewith, a cutter mounted on said cutter holder and disposed for cutting material from the deposit at about the level of the mine floor as the cutter holder is moved as aforesaid across the face of the deposit with said body portion, the improvement which comprises the cutter holder being shaped to provide a ramp surface for collection of material loosened from the deposit by the cutter and guiding it upwardly away from the mine floor, said ramp surface being inclined upwardly from adjacent the leading end of the cutter holder toward the trailing end thereof and being disposed between the cutter and said body portion, said cutter holder being hingedly mounted on said body portion, and the mining plane including means for selectively positioning the cutter holder with respect to the body portion utilizing said hinged connection thereof to the body portion, the pivot axis of said hinged connection being disposed substantially parallel to the face of the deposit and being inclined in the direction in which said ramp surface is inclined.

3,291,532
PAVEMENT SLOTTING APPARATUS
Cecil W. Hatcher, West Covina, Calif., assignor to Concut, Inc., El Monte, Calif., a corporation of California
Filed May 11, 1964, Ser. No. 366,499
15 Claims. (Cl. 299—39)



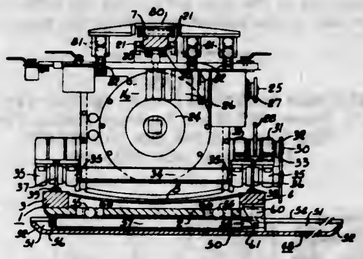
1. In a pavement slotting machine, the combination of:
(a) a wheeled vehicle including frame means supported by front and rear wheel means engageable with the pavement;
(b) said vehicle having a longitudinal centerline and each of said wheel means being laterally symmetrical with respect to said longitudinal centerline;
(c) said front wheel means being a driving wheel means for propelling said vehicle over the pavement with said rear wheel means trailing said front wheel means;
(d) tandem rotary slotting blades carried by said frame means for rotation about transverse horizontal axes and spaced apart along said longitudinal centerline of said vehicle;
(e) actuating means for moving said rotary slotting blades vertically into and out of slotting engagement with the pavement;
(f) a motor carried by said frame means; and
(g) means providing driving connections from said motor to said front wheel means, said rotary slotting blades and said actuating means.

3,291,533
LONGWALL MINING MACHINES
Thomas Gordon Rae, Ashby-de-la-Zouch, England, assignor to Coal Industry (Patents) Limited, London, England, a company of Great Britain
Filed July 17, 1963, Ser. No. 295,739
Claims priority, application Great Britain, July 20, 1962, 28,029; Oct. 23, 1962, 40,072
8 Claims. (Cl. 299—45)



5. A longwall mining machine comprising a rotary cutting head of the shearer drum type offset laterally from the mining machine body with respect to the direction of travel of the machine, said head being adapted to carry cutter picks and being bodily movable in a direction transverse to the axis of rotation of said head to effect cutting of a mineral face, said head being further adapted upon rotation to discharge cut mineral axially of the drum, said mining machine further comprising a cowl plate having a curved surface arranged closely adjacent and parallel to a portion of the circular path swept by the cutter picks, said cowl plate having an axial length in the direction of the axis of the head at least equal to the axial length of said head and a height in a direction perpendicular to said first direction approximately equal to the overall diameter of the head, and said cowl plate being secured to an inner cylindrical sleeve coaxial with the axis of curvature of said plate and pivotally mounted about the cutter head drive shaft to be selectively locatable on either side of the axis of rotation of the head.

3,291,534
SKIDS USED ON DEEP MINE AUGER MACHINES
George L. Adams, Canfield, Ohio, and Charles T. Gevin, Wauwatosa, Wis., assignors to The Salem Tool Company, Salem, Ohio, a corporation of Ohio
Original application Mar. 29, 1960, Ser. No. 18,356, now Patent No. 3,131,916, dated May 5, 1964. Divided and this application Dec. 27, 1963, Ser. No. 333,814
7 Claims. (Cl. 299—55)

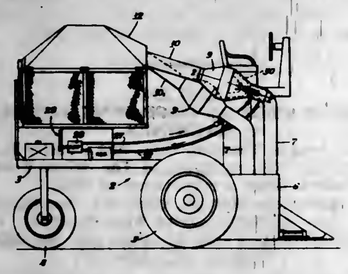


7. A coal mining machine comprising a frame having a mining mechanism with a head for mining, lifting jacks on said frame for raising the same from the mine floor and retractable above the bottom of the frame, two sets of spaced aligned pairs of brackets with inturned flanges on the under side of said frame adjacent the front and rear of the same, a skid for each set of spaced aligned pairs of brackets, each skid in the form of an upwardly open channel closed at its ends to form a skid channel and having spaced parallel flanges on each side to receive said bracket flanges therebetween, rollers on said frame to engage said parallel skid flanges to support said frame for movement on said skids, a cylinder disposed within each skid channel and below said spaced parallel skid flanges, pivot means connecting one end of each cylinder to said skid channel, bracket means depending from said frame into each skid channel beyond the other end of said cylinder, a piston operable in each cylinder and pivotally connected to its respective depending bracket, said cylinders being independently energized to move said skids back and forth independently to move and steer said frame.

3,291,535
COTTON PICKER AND FAN ASSEMBLY THEREFOR
Perry T. Isbell and William D. Lester, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,691
8 Claims. (Cl. 302—37)

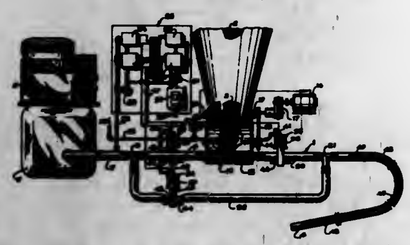
1. In a pneumatic conveying device for a cotton harvester of the type having a conveyor duct including delivery and discharge portions, a fan assembly connected therebetween comprising a housing including a pair of frusto-conical sections having base ends in adjacent relation and vertices connected to respective duct portions and an impeller means including fan blades mounted within one of said frusto-conical sections and rotatable to provide a vacuum in said delivery portion of the duct and said impeller means comprising a support within said one section, a conical core rotatably mounted within said one section and congruent therewith, and said blades mounted on said core between the same and said one

section, and said support comprising a hollow fluid-carrying member, a hydraulic motor mounted on said member



and connected to the core for driving the latter and fluid lines for said motor extending through the support.

3,291,536
POWDERED MATERIAL CONVEYOR SYSTEM
David K. Smoot, 105 Ward Parkway, Kansas City, Mo.
Filed Sept. 21, 1964, Ser. No. 397,699
11 Claims. (Cl. 302—49)

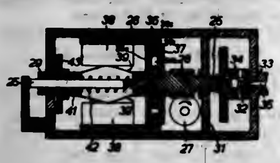


1. The method of conveying finely divided compactable material downstream within an elongated pipe comprising:

(a) introducing said material into said pipe at a point of introduction while injecting a fluid under pressure into said pipe upstream from said point of introduction, said material forming an elongated slug urged into downstream motion by said fluid, and

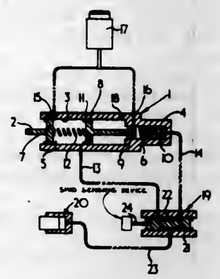
(b) periodically interrupting said material introduction while simultaneously initiating the injection of a fluid under pressure into said pipe downstream from said point of introduction and behind said slug to space said slug from succeeding slugs.

3,291,537
ANTI-SKID DEVICE FOR VEHICLES
Alexander John Wilson, Sutton Coldfield, England, assignor to Girling Limited, Tyseley, England, a British company
Filed Sept. 20, 1963, Ser. No. 310,213
10 Claims. (Cl. 303—21)



8. A device for preventing skidding of a vehicle incorporating means for applying a braken ot at least one wheel of the vehicle, comprising a spindle driven from the wheel of the vehicle, a flywheel, means mounting said flywheel on said spindle for free rotational and axial movement relative to said spindle, said mounting means being so constructed and arranged that the flywheel is sensitive both to the angular deceleration of the wheel and to the deceleration of the vehicle itself, and means for controlling the effort applied to said wheel by said brake applying means in accordance with the behaviour of said flywheel including clutch means arranged to limit the deceleration of said flywheel and loaded by inertia response of said flywheel only.

3,291,538
VEHICLE ANTI-SKID BRAKING SYSTEMS
Douglas Balgie, Birmingham, England, assignor to Dunlop Rubber Company Limited, London, England, and Fort Dunlop, Erdington, Birmingham, England, a corporation of Great Britain
Filed Aug. 27, 1965, Ser. No. 483,266
Claims priority, application Great Britain, Sept. 10, 1964, 37,015/64
6 Claims. (Cl. 303—21)

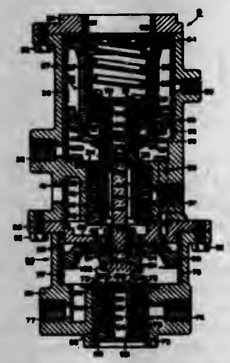


1. In combination with a brake associated with a rotatable vehicle wheel, an anti-skid braking system comprising a fluid pressure operating mechanism, a master cylinder assembly having a pair of fluid-pressurising chambers arranged to develop respectively a relatively high and a relatively low pressure on simultaneous operation thereof and provided with independent fluid connections to a control valve arranged selectively to connect either of the said chambers to the brake operating mechanism, the control valve being normally arranged to connect the high pressure chamber to the brake operating mechanism, and a skid-sensing device arranged to actuate the control valve to interrupt the supply of fluid to the brake operating mechanism from the high-pressure chamber during any period when the wheel is locked or when a skid is imminent and to connect the low-pressure chamber to the brake operating mechanism during the said period.

3,291,539
CONTROL VALVE
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Continuation of application Ser. No. 423,000, Jan. 4, 1965. This application Mar. 17, 1966, Ser. No. 535,253
18 Claims. (Cl. 303—52)

1. A control valve comprising a housing having a control port and a pair of sets of ports therein, each port set including inlet and outlet ports, a pair of valve means controlling pressure fluid communication between the ports of said ports sets, respectively, valve control means movable in said housing for operative engagement with one of said valve means including a pair of relatively movable members defining therebetween an expansible fluid pressure control chamber in pressure fluid communication with said control port, said valve control means being movable in response to an applied force to engage and move said one valve means to a position establishing pressure fluid communication between the ports of one of said

port sets, other valve control means movable in said housing for operative engagement with the other of said valve means and defining with said housing another expansible fluid pressure chamber in pressure fluid communication with the outlet port of said one port set, said other valve control means being movable in response to fluid pressure established at the outlet port of said one port set to engage and move said other valve means to a position establishing pressure fluid communication between the ports of the other of said port sets, resilient means urging one of said members independently of the other thereof when the fluid pressure at said control port is less than a predetermined valve to engage and automatically actuate said one valve means, said other valve control means also being responsive to fluid pressure automatically established at the out-



let port of said one port set to automatically actuate said other valve means, and said other valve control means including means movable in said housing and defining therewith said other chamber, other means extending through said last named means for concerted and relative movement therewith, and opposed portions on said other means for respective driven engagement with said one member and operative engagement with said other valve means, said other means being concertedly movable with said last named means in response to fluid pressure in said other chamber to engage one of said opposed portions with said other valve means to effect actuation thereof, and said other means also being movable relative to said last named means to actuate said other valve means in response to movement of said one member into driving engagement with the other of said opposed portions.

3,291,540
LATCH FOR FLOOR POLISHER HANDLE
Henry F. Doerman, North Olmsted, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 22, 1964, Ser. No. 376,891
2 Claims. (Cl. 306—13)



1. A latch mechanism for selectively securing a floor polisher handle from movement relative to a floor polisher comprising:

(a) an integrally formed bracket having a generally flat base portion, two opposed upwardly extending side wall portions arranged generally perpendicular to said base portion and an outwardly projecting extension integrally formed with one of said upwardly extending side wall portions, said extension being positioned above said base portion and arranged generally perpendicular to said one of said upwardly extending side wall portions, opposed apertures formed in each of said upwardly extending side wall portions, said apertures being located between said outwardly projecting extension and said flat base portion;

(b) a generally cylindrical floor polisher handle having aperture means formed in a lower portion thereof and a slot extending through a generally cylindrical wall thereof;

(c) a pivot pin extending through the aperture means in said handle into apertures in said upwardly extending side wall portions for rotatably securing said handle to said bracket;

(d) an integrally formed latch lever having a downwardly extending arm and an outwardly extending latch projection, said latch being pivoted to said bracket extension for rotation in a plane substantially perpendicular to the path of rotation of said handle;

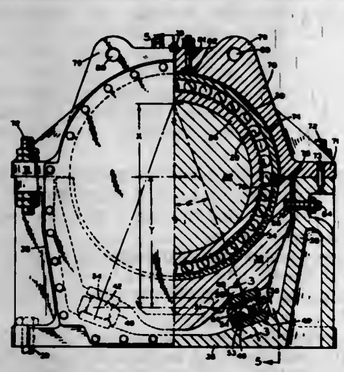
(e) a compression spring mounted between the downwardly extending arm of said latch and said one of said upwardly extending side wall portions of said bracket, said spring surrounding said pivot pin for securely holding said spring in position between said bracket and said latch, said spring constantly urging said outwardly projecting latch arm into the path of said generally cylindrical handle so that as said handle is moved to its upright position the end of said outwardly extending latch arm slides on said generally cylindrical surface until the end of the latch projection is in line with the slot formed in said handle and said compresion spring then forces said latch projection into said slot for securely holding said handle in an upright position; and

(f) an outwardly extending actuating arm on said latch lever so that downward movement of said actuating arm will move said latch lever against the compression of said spring to thereby remove said latch projection from said slot to permit movement of said handle to any one of a plurality of positions.

3,291,541
COMBINED PILLOW BLOCK AND BEARING ASSEMBLY
Carl L. Dellinger, Norwalk, Conn., assignor to Universal American Corporation, New York, N.Y.
Filed Dec. 27, 1963, Ser. No. 333,968
12 Claims. (Cl. 308—6)

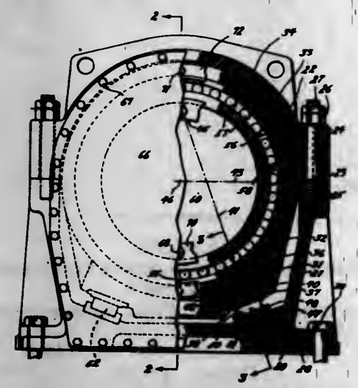
7. In a heated vessel supported by a pair of oppositely extending trunnions, an anti-friction bearing for the trunnion on a driving side, the combination of a combined pillow block and bearing assembly for the other trunnion on an expansion side to allow for turning of the vessel for pouring, and a floating bearing allowing for axial expansion, said assembly including a roller bearing with continuous inner and outer races carried on said latter trunnion, a saddle provided with an arcuate seat supporting the lower half of the outer race, a generally U-shaped base frame supporting the saddle, and a pair of linear motion bearings with rollers mounted in spaced relation between the lower side of the saddle and the upper central face of the base frame to allow for axial movement of the saddle and said trunnion, a cap rigidly mounted at the upper end of the saddle and having an arcuate face enclosing, but being spaced from, the upper half of said outer race, said cap being formed at its lower end with

inwardly extending faces normally spaced from the upper ends of the saddle but forming stops limiting rotation of the saddle in its linear bearing support which may be caused by lateral shock loads, a line normal to the axis



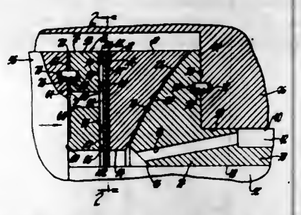
of the rollers in each linear motion bearing having an angular relation with a central vertical line passing through the trunnion axis of not less than 10° nor more than 45°

3,291,542
JOURNAL BEARING
Henry W. North, Reading, Pa., assignor to Birdsboro Corporation, Birdsboro, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1964, Ser. No. 349,860
5 Claims. (Cl. 308—6)



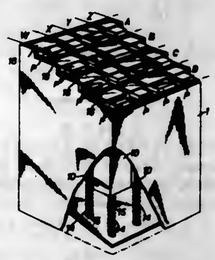
1. In a journal bearing for supporting a generally longitudinally extending journal, an outer housing extending longitudinally of the journal having a semi-cylindrical upper inner surface, first support surfaces on the outer housing lower inner surface for supporting ladder roller bearings, an inner housing extending within the outer housing having a semi-cylindrical upper outer surface slidably bearing against the upper inner surface of the outer housing and second support surfaces on the inner housing outer lower surface for supporting ladder bearings, a pair of ladder bearings between said first and second support surfaces, said first and second surfaces being inclined to the horizontal wherein each of said pair of ladder bearings extends longitudinally parallel to the journal and transversely inclined toward the other of said pair of ladder bearings and a line normal to each of said pair of ladder bearings and passing through their respective longitudinal axis intersect the vertical center line of the journal at a common point, and a radial bearing extending concentrically within and supported by the inner housing adapted to support an inner rotating means.

3,291,543
BEARING ASSEMBLY
Carl L. Nigh, Brownsburg, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,589
6 Claims. (Cl. 308—160)



1. A thrust bearing comprising a generally annular bearing member having a plurality of circumferential segmented sections therein arranged to form a bearing surface, a radial portion and the outer circumferential portion of each of said sections being rigidly supported to form a plurality of circumferentially separated, fixed bearing surfaces and another portion of each of said sections contiguous to each of said rigidly supported portions being capable of deflecting under load during bearing operation to provide a plurality of bearing surfaces which taper from said fixed surfaces, the degree of taper in said bearing surfaces being generally proportional to the amount of load applied thereto during bearing operation.

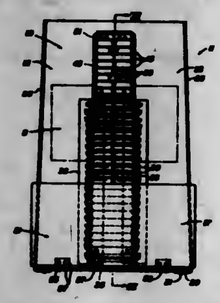
3,291,544
STORAGE AND ARTICLE DISPENSING MEANS
Walter Arthur Ord, "Woodhouse" Stratford St. Mary, New Colchester, Essex, England
Filed Jan. 11, 1965, Ser. No. 424,697
Claims priority, application Great Britain, Jan. 15, 1964, 1,773/64; June 24, 1964, 26,315/64
5 Claims. (Cl. 312—71)



1. A storage display and dispensing apparatus comprising a plurality of vertical magazines arranged in a series one behind another, each magazine having at its upper end a dispensing opening through which the uppermost article of a stack of articles in the magazine can be horizontally withdrawn, the magazines of said series being successively taller with their dispensing openings at vertically staggered levels to allow an article to be withdrawn forwardly from one magazine across the top of the adjacent magazine to the front, a frame for supporting said magazines, said frame comprising a plurality of transverse members extending transversely to the direction in which said articles are to be withdrawn and a plurality of side members extending transversely to said transverse

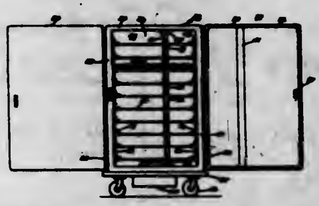
members, one side member being positioned on each of two opposite sides of each magazine, each side member being provided with a horizontal slot opening toward a magazine, said slots extending horizontally from a position at the top of one magazine along the sides of the taller adjacent magazine whenever a taller adjacent magazine exists, a vertical tube forming part of each magazine, said tube being open at its upper end to receive a stack of said articles and provided at said upper end with outwardly extending projections seated in the slots of the side members extending along the sides of that magazine, a translucent plate forming the top of each magazine seated in those slots of the side members which are positioned at the top of that magazine, and means for urging a stack of articles in each tube upwardly toward said translucent plate.

3,291,545
DEVICE FOR SORTING AND CHECKING FREIGHT BILLS
Clifton R. Bennett, 1051 Sondra St., Memphis, Tenn.
Filed Mar. 5, 1965, Ser. No. 437,393
6 Claims. (Cl. 312—183)



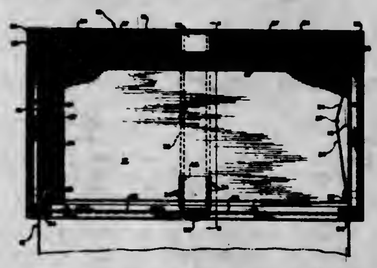
1. A portable device for use in sorting and checking freight bills of items received at a freight station comprising a base member having a forward end portion and a rearward end portion and including a horizontal quadrilateral bottom panel member, and two oppositely disposed and spaced side panel members secured to and upstanding from said bottom panel member, a plurality of juxtaposedly arranged leaf members with each leaf member having a proximal portion and a distal portion; pivot mounting means mounting each leaf member respectively at the proximal portion thereof from said bottom panel, each said leaf member being medianly arranged relative to the transverse dimension of said bottom panel member of said base member and pivotally movable fore and aft relative to said base member, said plurality of leaf members being arranged respectively extending horizontally obliquely and in overlying and stacked configuration, said plurality of leaf members being urged toward or held in an obliquely stacked configuration by gravity, adjacent two members of said plurality of leaf members being adapted to be pivotally separated to provide an area for receiving a freight bill, the distal portion of each leaf member having indicia affixed thereon for identifying a freight bill received in each said area between adjacent leaf members; a top panel member and means movably securing said top panel member to said base member; said top panel member being adapted to be moved from an open or closed disposition, when in said closed disposition said top panel member being disposed horizontally only over said rearward end portion of said base member and extending across said spaced side panel members in resting relationship thereon and defining a covered enclosure underneath said top panel member for receiving and holding freight bills, said top panel member being substantially shorter than said base member and exposing portions of said leaf members when in said closed disposition, also when in said closed disposition said top panel member being adapted to provide a flat surface for writing and for checking off items of the freight bills, said top panel member being adapted to be moved to an open disposition for depositing checked freight bills in said covered enclosure.

3,291,546
APPARATUS FOR STORING AND DELIVERING HOT AND COLD FOOD
Phillip S. Treycell, 231 E. Woodland Ave., Fort Wayne, Ind.
Filed Jan. 28, 1960, Ser. No. 5,272
14 Claims. (Cl. 312—214)



1. Apparatus for storing and delivering a compartmented tray of preportioned hot and cold food from its point of preparation directly to the consumer comprising: transportable chest means; partition means in said chest means vertically dividing the same into two sections, said partition means having at least two vertically spaced-apart sections defining a horizontally extending slot therebetween; at least one food tray having at least two longitudinally spaced-apart compartments formed therein for respectively receiving hot and cold food and defining therebetween a portion extending transversely across said tray and having top and bottom surfaces; and means for removably supporting said tray in said chest with said transverse portion thereof extending through said partition slot and with said two tray compartments respectively located in said two chest sections, said top and bottom surfaces of said tray portions sealingly engaging said partition means sections thereby mutually insulating said chest sections.

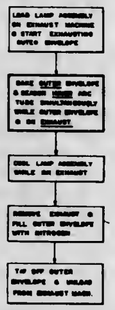
3,291,547
FILING CABINET WITH MOVABLE DRAWER
John E. Foster, Angola, N.Y., assignor to Art Metal Inc., Jamestown, N.Y.
Filed May 10, 1965, Ser. No. 454,987
3 Claims. (Cl. 312—331)



1. In a filing device comprising a cabinet housing a filing drawer adapted for bodily movement horizontally through an open front portion of said cabinet, a drawer suspension mechanism comprising in combination, a pair of hinge devices each comprising a pair of vertically ex-

tending hinge plates interconnected in articulated relation by means of a first pivot connection device having a vertically extended axis of pivoting, a second pivotal connection device mounting the free vertical end portion of one of said hinge plates to a rear portion of said drawer throughout a substantial vertical height thereof, a third pivotal connection device mounting the free vertical end portion of the other of said hinge plates to a rear wall portion of said cabinet throughout a substantial vertical height thereof, and guide means disposed at the front portion and centrally of said cabinet and supporting the underside of said drawer to guide and directionally stabilize the latter when moving in and out of said cabinet while suspended relative thereto by means of said hinge devices.

3,291,548
MERCURY VAPOR LAMP SEASONING AND SEALING METHOD
Hugh D. Fraser, West Caldwell, and Melvin C. Unglert, Wyckoff, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 9, 1964, Ser. No. 336,703
6 Claims. (Cl. 316—18)



1. The method of seasoning and sealing a partially fabricated vapor-discharge device comprising a sealed arc-containing envelope mounted within an outer envelope, with electrodes operatively positioned within said arc-containing envelope and connecting to lead-in conductors sealed through said outer envelope, which method comprises:

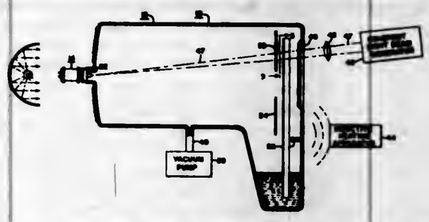
(a) initiating a discharge between the electrodes of the inner arc-containing envelope to drive off occluded gases,

(b) simultaneously exhausting the outer envelope of evolved gases including any diffused through the hot envelope of the inner arc-containing envelope,

(c) and thereafter sealing the outer enclosing envelope.

3,291,549
METHOD FOR FABRICATING AN ELECTRON DISCHARGE DEVICE
Von C. Campbell and Frank A. Romano, Syracuse, and Edmund F. Schilling, De Witt, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 3, 1963, Ser. No. 313,694
2 Claims. (Cl. 316—21)

1. A method of fabricating an electron discharge device for a light valve apparatus including a forming operation which is accomplished by the application of thermal energy to a body comprising: the steps of mounting and hermetically sealing an electron gun member having a processing end element to an envelope for the device, said envelope having a transparent segment; pumping said device to provide a difference in pressure between the interior and exterior of the envelope; and projecting a focused coherent light beam upon said end element for



a period of time for causing an aperture to be formed therein.

3,291,550
METALLIC GRID LIGHT-POLARIZING DEVICE
George R. Bird, Concord, and Maxfield Parrish, Jr., Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation of application Ser. No. 165,138, Jan. 9, 1962, which is a division of application Ser. No. 786,414, Jan. 12, 1959, now Patent No. 3,046,839, dated July 31, 1962. This application Apr. 16, 1965, Ser. No. 453,538
5 Claims. (Cl. 350—147)

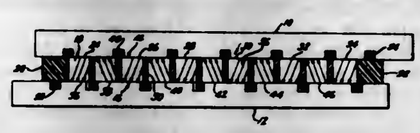


1. A metallic grid light-polarizing device adapted to polarize incident light in the visible and infrared regions of the spectrum and possessing marked stability and a high density ratio for light in said regions, comprising a generally planar light-transmitting carrier element having a configurated principal surface composed of a plurality of microscopic substantially equally spaced and parallel ridges extending thereacross, a flat nonconfigurated opposite surface, and, adjacent to the crests of the ridges, a plurality of substantially continuous, ribbon-like, metallic stripe composed of a vaporized metal deposited thereon of given highly absorptive and reflective properties extending along the entire length but only a portion of the width of a face of said ridges, said metallic strips thus being interspersed throughout their length with clear linear bands of substantially constant width composed of non-metal-bearing portions of the carrier element, the width of one metallic strip and an area intervening between the next metallic strip, as measured in a plane parallel with the plane of said carrier element, not exceeding one-half the wavelength of the light to be polarized and, when taken with the continuity and the opacity of said strips relative to said light, constituting a light polarizer of a transmission type adapted to provide linearly polarized light wherein the vibration direction is normal to the direction in which said strips and intervening bands are disposed.

3,291,551
LIGHT MODULATING APPARATUS AND METHOD
Solomon Zaromb, 56-03 Hilltop Ave., Baltimore, Md.
Filed Feb. 12, 1963, Ser. No. 257,988
16 Claims. (Cl. 350—160)

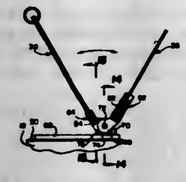
1. A light modulator comprising at least one cell including: spaced elements of transparent material or relatively low electrical conductivity having facing surfaces defining a space therebetween, means operatively associated with said elements to confine said space to form a chamber, electrical contacts extending into said chamber,

said contacts being separated by spaced strips of light-permeable electrically conductive material on each said surface, the strips on one surface being at least approximately parallel but staggered in an approximately overlapping relationship relative to the strips on the other surface, and an electrolyte in said chamber, said strips



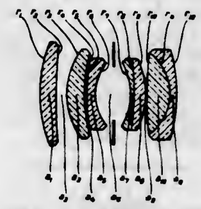
being so related in said chamber that current will flow through said electrolyte between said staggered strips along approximately zig-zag paths so as to form light-absorbing layers at the surfaces of said strips upon application of an electrical potential between said electrical contacts.

3,291,552
LETTERING GUIDE DEVICE
Daniel H. Heagan, 612 E. North Ave., Lompoc, Calif.
Filed Feb. 26, 1963, Ser. No. 260,606
1 Claim. (Cl. 350—174)



A lettering guide device adapted to be used in conjunction with a drafting machine having a chuck means, comprising a base member, a tinted window member and an image depicting surface, said image depicting surface including at least one surface having guide lines defined thereon, means for supporting said tinted window member in an upwardly extending direction at a selected first angle with respect to said base member, means for supporting said image depicting surface in an upwardly extending direction at a selected second angle with respect to said tinted window member, said first and second angles being substantially equal, said one surface of said image depicting surface being disposed in facing relationship to said tinted window member, said means for supporting said tinted window member and said means for supporting said image depicting surface being foldable with respect to each other and with respect to said base member between an assembled position wherein said tinted window member and said image depicting surface extend upwardly at said first and second selected angles, respectively, with respect to said base member and a collapsed position wherein said tinted window member and said image depicting surface extend in substantially parallel relationship with respect to said base member, said base member carrying a first part of vertically disposed laterally spaced apart, ear members, said means for supporting said tinted window member including a second pair of vertically disposed, laterally spaced apart, ear members having portions with laterally aligned slots defined therein, said tinted window member having a bottom portion slidingly receivable in said slots, said means for supporting said image depicting surface including a third pair of vertically disposed laterally spaced apart, ear members having portions with laterally aligned slots defined therein, said image depicting surface having a bottom portion slidingly receivable in said last mentioned slots, a pin passing through said first, second and third pairs of ear members and pivotally supporting said second and third pair of ear members with respect to said base member, said second pair of ear members having projecting stop means thereon, said third pair of ear members having a first flat surface engaged by said stop means to stop said tinted window member at its selected angular relationship with respect to said image depicting surface in the assembled position, and a second flat surface engaging said base member to stop said image depicting surface at its selected angular relationship with respect to said base member in the assembled position.

3,291,553
PHOTOGRAPHIC OBJECTIVE HAVING FOUR LENS MEMBERS
Walter Mandler, Midland, Ontario, Canada, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany, a corporation of Germany
Filed Nov. 1, 1962, Ser. No. 234,657
Claims priority, application Germany, Nov. 4, 1961, L 40,391
1 Claim. (Cl. 350—209)



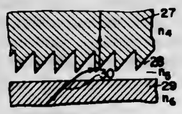
A photographic objective having a diaphragm and comprising four coaxial lens members spaced axially from one another and including a first lens member consisting of a convergent meniscus, a negative second lens member consisting of two air-spaced lenses, said first and second lens members being in front of the diaphragm, a third lens member consisting of a negative cemented meniscus and a positive cemented fourth lens member, said third and fourth lens members being behind the diaphragm, the reciprocal lens radii ρ and the axial thicknesses and spacings a being as given in the following table, by reference to the accompanying drawing, the refractive indices n_e and the Abbé numbers ν_e of the lenses also as given in the following table:

TABLE

[Focal length: 1.0 Relative aperture: 1:1.4]

ρ	a	n_e	ν_e
$\rho_1 = +1.2502$			
	$a_1 = 0.1022$	1.7919	47.2
$\rho_2 = +0.3569$			
	$a_2 = 0.0572$		
$\rho_3 = +2.3802$			
	$a_3 = 0.1124$	1.7919	47.2
$\rho_4 = +1.1574$			
	$a_4 = 0.0145$		
$\rho_5 = +0.8644$			
	$a_5 = 0.0469$	1.7085	26.8
$\rho_6 = +3.4981$			
	$a_6 = 0.2125$		
$\rho_7 = -2.7105$			
	$a_7 = 0.0232$	1.7231	29.3
$\rho_8 = -0.6471$			
	$a_8 = 0.0576$	1.7919	47.2
$\rho_9 = -2.0842$			
	$a_9 = 0.0019$		
$\rho_{10} = +0.5306$			
	$a_{10} = 0.1382$	1.7470	44.7
$\rho_{11} = -3.2400$			
	$a_{11} = 0.0482$	1.7205	48.0
$\rho_{12} = -1.0454$			

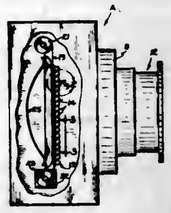
3,291,554
OPTICAL NEUTRAL CONTROLLABLE DENSITY FILTER
Edgar E. Price, 648 Applegrove Circle, Webster, N.Y. 14580
Filed Feb. 19, 1963, Ser. No. 259,545
3 Claims. (Cl. 350—285)



1. An optical system for controlling the fraction of incident light totally internally reflected from an optical surface forming an interface between two optically transparent media in response to an applied signal comprising; an optically transparent body, a plane surface on said body for receiving light rays from within said body incident upon said surface at an angle greater than the angle for total internal reflection, an optically transparent element including a plane grating having a series of successive ridges spaced from but adjacent to said plane surface, means for moving said element within at maximum 3 to 5 wavelengths from said plane surface in response to an applied signal, said ridges having faces oriented to intercept and absorb a portion of said light rays when said element is within 3 to 5 wavelengths from said plane surface whereby the fraction of light reflected from said plane surface is controlled.

3,291,555
PHOTOGRAPHIC REPRODUCTION APPARATUS
Iben Browning, Sunnyvale, Calif.
(745 Distel Drive, Los Altos, Calif.)
Original application Mar. 4, 1963, Ser. No. 262,562. Divided and this application Mar. 24, 1966, Ser. No. 537,094
9 Claims. (Cl. 352—244)

1. A photographic recording and reproducing apparatus including: a casing, a lens mosaic rigidly supported in said casing and comprising a multitude of lenses constructed and arranged in a stationary closely packed array, said mosaic having a front and back surface with said front surface substantially consumed by the front surfaces of said lenses for receiving light to be transmitted to said back surface, a film plate positioned within said casing adjacent the back surface of said mosaic, and means for moving said film plate past said mosaic in a direction that lies at an angle with respect to any row of said lenses, the front surface of each of said lenses receiving light on a distinct portion of said front surface of said mosaic in focusing a substantial portion of that light in a minute spot on said film plate whereby when said film plate moves past said mosaic the spot from



each of said lenses traces a streak on said film plate and the streaks from all of said lenses are parallel, means for applying substantially parallel light to the front surface of said lens mosaic and a screen positioned behind said film plate an effective optical distance substantially equal to the distance between said film plate and the front surface of said lens mosaic, the parallel light falling on each of said lenses being focused by said lenses through a spot along one of said streaks on said film plate to produce on said screen light over an area substantially the same as the lens mosaic front surface area and of an intensity in accordance with the intensity of the spot along said streak, the light of all of said lenses producing an image covering said screen in accordance with the intensities of the illuminated spots on said streaks on said film plate.

CHEMICAL

3,291,556
PROCESS FOR DYEING WOOL YARN AND PREPARATIONS FOR USE THEREIN
Alfred Berger, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland
No Drawing. Filed Nov. 18, 1963, Ser. No. 324,185
Claims priority, application Switzerland, Nov. 23, 1962, 13,774
6 Claims. (Cl. 8—54)

1. Process for dyeing wool yarn with wool dyestuffs in the presence of a levelling agent (A), which process comprises dyeing the wool yarn in an aqueous dyebath containing in addition to the wool dyestuff and levelling agent (A)

(I) paraffin oil in an amount of at least 100 percent by weight, referred to the weight of the levelling agent (A),

(II) an emulsifying agent for paraffin oil in an amount of at least 5 and at most 25 percent by weight, referred to the weight of the paraffin oil, and

(III) a defoamer of the silicone-type in an amount of at least 0.1 percent by weight, referred to the weight of the levelling agent (A),

the levelling agent (A) being a polyglycol ether derivative of an at most secondary higher fatty monoamine, said polyglycol ether derivative containing 25 to 40

$$—CH_2—CH_2—O—$$

(ethenoxy) groups, and the wool dyestuff being one which contains at least one acid group imparting solubility in water.

3,291,557
ALKYL DICARBOXYLIC ACID TREATMENT OF LEATHER
Maynard B. Neher and Nicholas D. Gallagher, Columbus, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
No Drawing. Filed Jan. 7, 1963, Ser. No. 249,607
16 Claims. (Cl. 8—94.22)

1. The process, to avoid spew formation in leather being made resistant to water penetration by alkylated dibasic acid agents, comprising:

(a) aging said agents to be introduced until substantially free from further appearance of undissolved solids therein;

(b) removing, from the aged agents, undissolved solids apparent therein after the aging to provide agents substantially free of undissolved solids; and

(c) then introducing the agents, substantially free of undissolved solids, into the leather.

3,291,558
TREATMENT OF LEATHER
Erich Bilder and Karl-Georg Kottenhahn, Hanau (Main), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Aug. 27, 1962, Ser. No. 219,763
Claims priority, application Germany, Aug. 29, 1961, D 36,916
7 Claims. (Cl. 8—94.21)

1. In a process for the incorporation of polymeric material in leather by working aqueous dispersions of polymerizable organic substances into the leather and polymerizing such polymerizable substances within the leather with the aid of a polymerization catalyst, the steps of working an aqueous dispersion containing at least one liquid polymerizable organic monomer containing a terminal $>C=CH_2$ group and at least one high molecular weight polymer of a monomer containing a terminal $>C=CH_2$ group, the monomer-polymer content of the aqueous dispersion being 5 to 60% by weight and the monomer content in the monomer-polymer mixture being 50–95% by weight and the polymer content thereof being 5–50% by weight, an emulsifier component and at least one polymerization promoter dissolved in the monomer into the leather and polymerizing the monomer in the thus treated leather.

3,291,559
PROCESS OF BLEACHING CELLULOSE WITH CHLORINE DIOXIDE WHEREIN CHLORINE DIOXIDE IS CONTINUOUSLY REPLENISHED
Homer L. Robson, New Haven, Conn., and John F. Synan, Baltimore, Md., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Oct. 13, 1961, Ser. No. 145,003
3 Claims. (Cl. 8—108)

1. Process of bleaching cellulosic textiles in a closed system comprising forcing a bleach liquor comprising an aqueous solution of chlorine dioxide to flow cyclically from a closed supply of the bleach liquor through a plurality of layers of the cellulosic textiles and back to the closed supply of the bleach liquor while proportionately introducing into the circulating bleach liquor a concentrated aqueous solution containing about 500 to 10,000 parts per million of chlorine dioxide to maintain from 10 to 200 parts per million of chlorine dioxide in the bleach liquor circulated to the textile.

3,291,560
METHOD OF FORMING POLYMERS ON FIBROUS SUBSTRATES THROUGH HIGH VELOCITY IMPINGEMENT WITH SOLUTIONS CONTAINING UNSATURATED MONOMERS AND CHEMICAL CATALYSTS
Greville Macbell and Manuel A. Thomas, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,671
6 Claims. (Cl. 8—116)

1. A process for modifying the characteristics of continuous lengths of loose, non-woven textile fibers which are confined in a given configuration throughout the modification comprising providing a solution of a compound containing the group

$$CH_2=C—$$
$$\quad\quad|$$

and a fibrous substrate; forcing said solution at a rate substantially greater than that possible as a result of merely refluxing said fibers in said solution through said fibrous substrate unidirectionally, intermittently back and forth throughout the process, said process being conducted in the presence of a chemical catalyst for the polymerization of said compound.

3,291,561
PROCESS OF SOLVENT BONDING POLYETHYLENE TEREPHTHALATE COPOLYESTER FABRICS WITH DIMETHYL SULFOXIDE
Steven Abrahlan, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 17, 1963, Ser. No. 273,543
4 Claims. (Cl. 8—130.1)

1. In a process for bonding fibers of fibrous textile material only at isolated points on contiguous fibers by

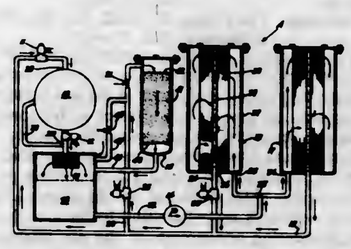
(A) applying to fibrous textile fabric, having at least a substantial proportion of synthetic linear condensation copolyester fibers, a single-phase solution of a liquid medium vehicle inert to the fibers, a latent solvent for the fibers and an inert insolubilizable extender which is a non-adhesive for the fibers;

(B) insolubilizing the inert extender to separate said solution into a plurality of phases, one of which phases contains the inert extender in contact with the textile fabric as a discontinuous coating; and

(C) rendering the latent solvent active to the extent that it softens the surface of the fibers of the textile fabric and renders them adhesive to each other at isolated points only, these points being ones at which fibers become contiguous; the surface of the fibers elsewhere having the inert extender therebetween rendering such surfaces non-adhesive to each other;

the improvement of applying to the copolyester fibers a single-phase treating solution essentially consisting of water, dimethyl sulfoxide and an inert insolubilizing extender which is a non-adhesive for the fibers of the fabric, insolubilizing the extender and activating the dimethyl sulfoxide by heating the fabric to a temperature of at least 160° C., and then removing the extender and the dimethyl sulfoxide from the fibers, said copolyester being composed of 90% to 98% ethylene terephthalate units and the remainder of the copolyester being ester units selected from the group consisting of ethylene isophthalate, ethylene 5-(sodium sulfo)isophthalate and ethylene hexahydroterephthalate.

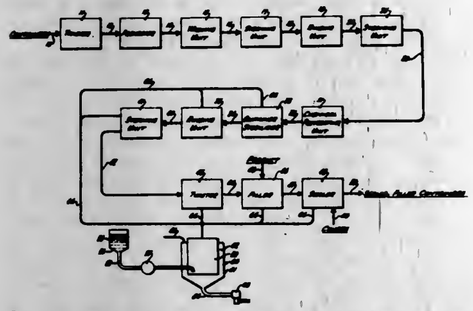
3,291,562
SELECTIVE TWIN FILTER MECHANISM AND METHOD FOR DRY CLEANING MECHANISM
Doyle L. Anderson, Cupertino, Calif., assignor to Self-Service Machines, Inc., Santa Clara, Calif., a corporation of California
Filed May 27, 1963, Ser. No. 283,335
8 Claims. (Cl. 8—142)



5. The method of prolonging filter life and insuring a full flow of solvent during the filling period of a dry cleaning mechanism having a plurality of filling cycles and an interim recirculating cycle between successive filling cycles, and having a cleaning chamber with a filling valve therefor, a storage reservoir, and a pump actuated, solvent circulating system operating during both the filling cycles and the recirculating cycles; which method comprises passing the circulating solvent under pressure to a pair of parallel filters in the solvent circulating system automatically, closing off the flow of solvent through

one of the filters during each recirculating cycle when the filling valve is closed, and automatically opening the flow of solvent through both filters during each filling cycle when the filling valve is open.

3,291,563
APPARATUS FOR STERILE PACKAGING
William McK. Martin, 457 Virginia Ave., San Mateo, Calif.
Original application Sept. 22, 1960, Ser. No. 59,143, now Patent No. 3,190,740, dated Apr. 27, 1965. Divided and this application Oct. 7, 1964, Ser. No. 409,042
3 Claims. (Cl. 21—94)



1. Canning apparatus comprising a preheater for preheating containers, means for washing and water-wetting the preheated containers, a container sterilizer unit employing dry heat as the sterilizing medium connected to said means for washing and water-wetting for treating the containers while they are still wet, means to move said containers sequentially through the preheater, the means for washing and water-wetting and through the said sterilizer unit, means for feeding the containers from the sterilizing unit sequentially to a filler unit and to a closing element, means for supplying sterilized covers to the closing element, and means for maintaining sterile conditions in the filler and closing element.

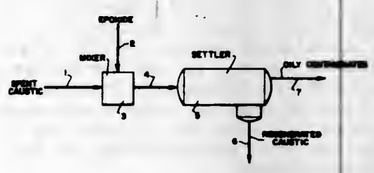
3,291,564
METHOD OF TREATING EXHAUST GASES OF INTERNAL COMBUSTION ENGINES UTILIZING A STABILIZED ALUMINA CATALYST SUPPORT
Kenneth K. Kearby, Watchung, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,882
3 Claims. (Cl. 23—2)

1. In a process of oxidizing carbon monoxide and hydrocarbons contained in internal combustion engine exhaust gases by passing said gases at elevated temperatures in the presence of oxygen into contact with a metal oxidation catalyst deposited on an activated alumina support, the improvement which comprises using as said support an alumina stabilized by about 2.5 to 5 mole percent of admixed barium chloride based on the alumina when the alumina is activated by calcination to the eta phase effective for preventing conversion of the eta phase alumina to theta phase alumina at elevated temperatures ranging up to 1600° F.

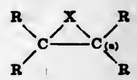
3,291,565
PREPARATION OF BERYLLIA WHISKERS
Wilbert A. Taebel, Towaco, and Gerard W. Hoekstra, Oakland, N.J., assignors to National Beryllia Corp., Haskell, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 28, 1965, Ser. No. 428,869
3 Claims. (Cl. 23—183)

1. Process of growing beryllia whiskers comprising heating beryllium metal above its melting point in the presence of an oxide of a metal which is reducible to a lower valence oxide and having a vapor pressure of less than about 1×10^{-3} mm. at 1200° C. and less than about 48 mm. at 1800° C. while in an atmosphere of substantially dry hydrogen, whereby beryllia whiskers grow in the vicinity of the molten beryllium.

3,291,566
SPENT CAUSTIC RECOVERY
William Judson Mattox, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,417
3 Claims. (Cl. 23—184)



1. A process for regenerating a spent caustic solution comprising alkaline metal mercaptides and alkali metal aromatic sulfur and oxygen-containing compound contaminents obtained from the treatment of a mineral oil which comprises contacting said spent caustic with a cyclic sulfide or imine compound of the following formula:



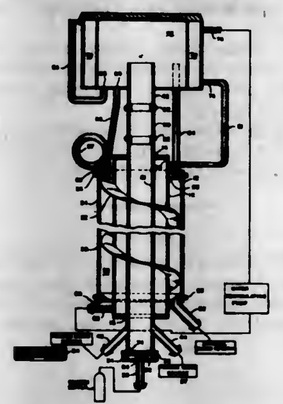
where R is selected from the group consisting of hydrogen and hydrocarbon radicals having 1 to 6 carbon atoms, from the group of alkyl, cyclo alkyl and aromatic, and X is selected from sulfur and nitrogen, and n may be 1 or 2, adding sufficient amounts of said cyclic compounds to react with the alkaline metal mercaptides and a substantial proportion of said alkaline metal aromatic sulfur and oxygen-containing compounds which reaction products form caustic-insoluble etherized conversion products which precipitate and form an oil phase and an aqueous phase, and separating said oil phase from said aqueous phase to recover a caustic phase substantially free of contaminants.

3,291,567
PROCESS FOR PREPARING SUPEROXIDES
Carey B. Jackson, Pompano Beach, Fla., assignor, by mesne assignments, to Scott Aviation Corporation, Lancaster, N.Y., a corporation of New York
No Drawing. Filed Aug. 26, 1964, Ser. No. 392,292
4 Claims. (Cl. 23—187)

1. The method of preparing an alkaline earth metal superoxide which comprises contacting a dry alkaline earth metal oxide at temperatures from ambient up to below about 100° C. with dry ozone and then thermally decomposing the resulting metal ozonide in dry oxygen to form the superoxide.

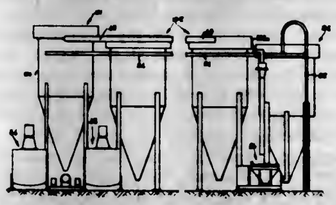
4. The improved method of preparing calcium superoxide which comprises thermally decomposing calcium nitrate in the presence of dry ozone and then thermally decomposing the resulting calcium ozonide to calcium superoxide in dry oxygen.

3,291,568
CARDIO-PULMONARY BY-PASS OXYGENATOR UNIT
Richard D. Sautter, 806 E. 17th St., Marshfield, Wis.
Filed Apr. 6, 1964, Ser. No. 357,484
7 Claims. (Cl. 23—258.5)



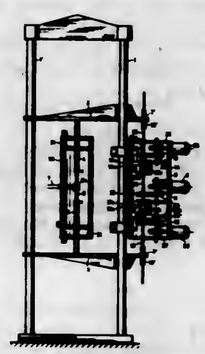
1. A blood oxygenating unit comprising a chamber having an inlet at the bottom and an outlet at the top,
a heat exchange jacket surrounding said chamber,
means for circulating a heat exchange medium through said jacket at a controlled temperature,
means for delivering venous blood to the inlet to said chamber,
means for admitting oxygen into said chamber to force the venous blood to rise in the chamber,
defoaming means connected to the outlet of said chamber to defoam the blood as it flows from the chamber,
a flat strip wound spirally around and secured to the outside of said heat exchanger a removable tubular plastic member mounted on the outer edge of the flat strip to form a reservoir around the outside of said jacket.
tube means for delivering defoamed blood from the defoaming means to the top of the spiral strip, and
tube means for removing blood from the bottom of said reservoir as needed.

3,291,569
APPARATUS FOR PURIFICATION AND RECLAMATION OF BRINE
Angelo Joseph Rossi, Port Elizabeth, Cape Province, Republic of South Africa (Via Bruno Buozzi 51, Rome, Italy)
Filed June 3, 1963, Ser. No. 293,550
Claims priority, application Republic of South Africa, June 4, 1962, 2,361/62
6 Claims. (Cl. 23—260)



1. Apparatus suitable for the chemical and physical treatment of salts and their solutions and which includes:
(a) a mixer vessel for mixing chemical additives with a solution of the salt to be treated to provide a mixture, and having
(i) a solution inlet for the solution to be treated,
(ii) a first additive inlet opening,
(iii) a mixture outlet duct, and
(iv) a second additive charging opening into the said outlet duct;
(b) a plurality of settling vessels each comprising:
(i) a central charging well within the vessel, the charging well having an upper tangential charging duct,
(ii) a downwardly converging lower wall defining a downwardly converging cavity,
(iii) a lower closable outlet connection leading out of the downwardly converging cavity, and
(iv) an overflow duct;
(c) inlet connections connecting the tangential charging ducts of the several settling vessels in parallel with each other, to the mixture outlet duct of the mixer vessel;
(d) a main outlet duct; and
(e) outlet connections connecting the overflow ducts, of the several settling vessels, in parallel with each other, to the main outlet duct.

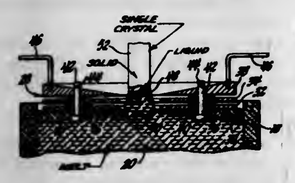
3,291,570
APPARATUS FOR CRUCIBLE-FREE ZONE MELTING OF CRYSTALLINE RODS, PARTICULARLY OF SEMICONDUCTOR RODS
Ludwig Michl, Miesbach, and Werner Spielmann, Dachtel, Kreis Calw, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Oct. 22, 1963, Ser. No. 318,011
6 Claims. (Cl. 23—273)



1. An apparatus for effecting crucible-free zone melting of a semiconductor rod, comprising guide means extending parallel to the axis of the rod; rod-holder means secured to opposite end portions of the rod and slidable along said guide means; heating means for melting a zone of the rod intermediate the end portions of the rod; and means for sliding said rod-holder means and consequently the rod end portions along said guide means, said sliding means comprising a pair of independently rotatable first and second shaft screw thread means for respectively displacing each of said rod-holder means and the respective rod end portion, a differential mechanism operatively connected to each of said first and second shaft screw thread means, rotary shaft means coaxial with said first and second shaft screw thread means serially coupling said differential mechanisms to each other, first and second motor means for independently rotating said first and second shaft screw thread means so as to selectively displace one of said rod-holder means and the respective rod end portion relative to the other, and third motor means for imparting rotation to said rotary shaft means and, through said differential mechanisms, to said first and second shaft screw thread means independently of said first

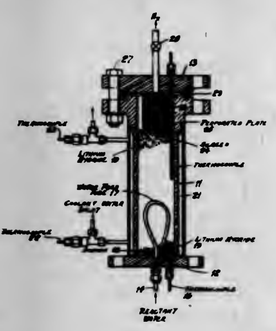
and second motor means so as to simultaneously displace both of said rod-holder means and respective rod end portions in the same direction and at the same rate of speed.

3,291,571
CRYSTAL GROWTH
Hubert G. Dohmen, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,706
5 Claims. (Cl. 23—273)



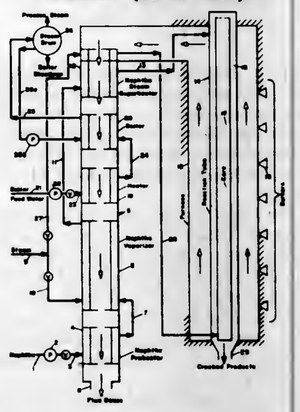
1. An apparatus for growing a monocrystalline body of controlled cross section, said apparatus comprising means for containing a crystal growing melt in a crystal growing environment, a melt cover member having an aperture therein for contacting the surface of said melt, said member being substantially inert to its environment, means for forcing a domical projection of said melt up through said aperture above the upper surface of said cover, means for pulling a single crystal from said melt domical projection by progressive unicrystalline solidification of said melt on a seed crystal above said cover member, and means on said cover for inhibiting radiation of heat from the outer surface of said cover member to the crystal growing environment above the domical projection.

3,291,572
HYDROGEN GENERATOR
Nicholas Fatica, Cleveland, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 22, 1964, Ser. No. 361,920
2 Claims. (Cl. 23—281)



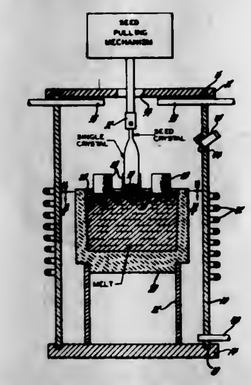
1. A hydrogen generator comprising
a hollow cylindrical housing having a body with an upper and lower open end, said body provided with an interior water jacket having inlet and exhaust fittings;
a lower end plate secured over said lower open end of said housing;
a water inlet fitting adapted on said lower end plate for admittance of water into said housing, said water inlet provided with a U-shaped tube within said housing;
a sodium bed resting on said lower end plate within said housing;
a lithium hydride bed resting on said sodium bed within said housing;
an upper plate secured over said upper open end of said housing;
a hydrogen exhaust fitting adapted on said upper plate for the exhaust of hydrogen from said housing;
a perforated plate resting in pressing engagement on said lithium hydride bed; and
a spring means dependent from said upper end plate within said housing, said spring means in pressing engagement with said perforated plate.

3,291,573
APPARATUS FOR CRACKING HYDROCARBONS
Leonard O. Frescoln, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 348,988
9 Claims. (Cl. 23—284)



1. In apparatus for the thermal cracking of normally liquid, as well as normally gaseous, hydrocarbons in the presence of steam, the improvement which comprises:
(a) a tubular cracking furnace having at least one vertical elongated cracking tube disposed therein substantially extending from the bottom to the top of said furnace;
(b) a core disposed within the cracking tube substantially coextensive therewith and forming a cracking annulus therebetween;
(c) a flue conduit in communication with the furnace having a plurality of communicating heat exchangers disposed therein adapted to be heated by the passage therethrough of flue gas from said furnace;
(d) means connected with the heat exchangers for passing hydrocarbon and steam therein and therethrough to effect a vaporized and superheated mixture comprising a first heat exchanger for preheating said hydrocarbon, means for passing said steam and preheated hydrocarbon into a second heat exchanger for vaporizing the said hydrocarbon in the presence of said steam, and means for passing the resulting vapor into a third heat exchanger for superheating the vaporized hydrocarbon-steam mixture; and
(e) means connected with the third heat exchanger for passing the superheated vaporized hydrocarbon-steam mixture therefrom and into the cracking annulus of the furnace.

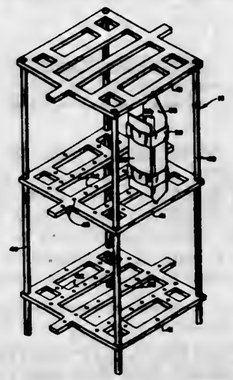
3,291,574
SEMICONDUCTOR CRYSTAL GROWTH FROM A DOMICAL PROJECTION
Russell M. Pierson, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,733
6 Claims. (Cl. 23—301)



1. The method of growing a monocrystalline body of controlled cross-sectional dimensions, said method comprising the steps of forming a melt in an environment for growing single crystals from the melt, placing said melt in contact with a member having an aperture, said member being substantially inert to its environment, forming a domical projection of said melt extending up from said aperture beyond the upper surface of said member, said domical projection filling the aperture and having a maximum cross-sectional linear dimension no greater than the aperture, contacting said domical projection with a seed crystal to establish a substantially frusto-conical melt zone upstanding above the surface of said apertured member with said melt zone having a solid-liquid interface, pulling a single crystal from said melt zone by progressive unicrystalline solidification of said melt on said seed crystal at said interface, maintaining said frusto-conical melt zone of predetermined size and shape during said crystal growth, maintaining said interface a predetermined height above the aperture during crystal growth, and maintaining the cross-sectional dimension of the frusto-conical zone no greater than the aperture and filling the aperture during said crystal growth by adjusting any one or more crystal growth conditions such as the rate of pull, inclination of pull axis, location of pull axis in said frusto-conical melt zone, location of said frusto-conical melt zone in the melt heat field, and melt temperature.

3,291,575
METHOD FOR GROWTH OF PEGMATITIC QUARTZ CRYSTALS IN A CONTROLLED AXIAL DIRECTION
Charles B. Sawyer, deceased, late of Cleveland Heights, Ohio, by The Cleveland Trust Company, executor, Cleveland, Ohio, assignor to Sawyer Research Products, Inc., Eastlake, Ohio, a corporation of Ohio
Filed Jan. 27, 1965, Ser. No. 429,951
9 Claims. (Cl. 23—301)

1. A method of uniformly growing a family of quartz crystals of increased usable bulk size and with a minimum of impurities in an autoclave having a seed-growing region, comprising the steps of positioning in such region at least two vertical rows of superimposed spaced-apart flat sheets of quartz seed crystals, each of said seed crystals having a major face intersecting the crystallographic Z axis at an angle of 90°±10° and being dimensioned in the direction of the X and Z axes to produce a ratio of the lengths of the X to Z axes of at least 5, each of said seed crystals further having its major face substantially parallel to the other seed crystals of both rows, exposing the seed crystals to a chemical and physical environment to cause crystal growth preferentially on such major faces,



directing gamma rays between said rows of crystals and thorugh said autoclave, taking a gammagraph shadow picture of the rays exiting from the autoclave to determine the distance between said vertical rows, and interrupting the exposure and resultant growth of the crystals when such distance reaches a predetermined minimum.

3,291,576
PRODUCTION OF HYDRATED SODIUM HYDROXIDE
Joseph V. Otrhalek, Dearborn, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,199
1 Claim. (Cl. 23—302)

In the transporting of solid sodium hydroxide monohydrate, the improvement which comprises transporting said sodium hydroxide monohydrate in a moisture-containing atmosphere maintained at a relative humidity of less than 15%.

3,291,577
OXIDATION RESISTANT MATERIAL
Gail F. Davies, Mentor Township, and Raymond H. Baskey, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
No Drawing. Filed Sept. 12, 1963, Ser. No. 308,354
9 Claims. (Cl. 29—182.2)

1. An oxidation resistant material having a high strength to weight ratio at elevated temperatures comprising: a powder metal matrix consisting essentially of nickel and chrome particles; and a plurality of fibers selected from a group of refractory metals consisting of tungsten, molybdenum, tantalum and niobium and alloys thereof dispersed substantially evenly throughout said matrix and bonded thereto without being mechanically interlocked relative to each other and having a diameter less than about 0.020 inch and a length of not substantially less than 0.0675 inch.

3,291,578
METALLIZED SEMICONDUCTOR SUPPORT AND MOUNTING STRUCTURE
John R. Fahey, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 4, 1963, Ser. No. 321,851
5 Claims. (Cl. 29—195)

2. A semiconductor device comprising a ceramic support, a metallizing coating on at least a portion of one

face of said ceramic support, said metallizing coating including a mixture of at least 55% by weight of at least one refractory metal ingredient, a silica ingredient, and an ingredient consisting of particulate material from the group consisting of silicon, germanium, and mixtures of silicon and germanium, said particulate material being



embedded in and outstanding from the surface of said metallizing coating in partial relief, a layer of a noble metal brazing material of gold, silver or alloys thereof covering said metallizing coating and intermetallically bonded to the outstanding portions of said particulate material, and a body of semiconductor material intermetallically bonded to said layer of brazing material.

3,291,579
PROCESS FOR GELLING ALCOHOLS
Bernard F. Mulaskey, Point Richmond, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed June 6, 1963, Ser. No. 285,894
5 Claims. (Cl. 44—7)

1. A process for producing an alcohol-containing alcogel which can be ignited in air under ambient conditions, which comprises:

(a) forming a solution comprising a metal halide, a lower alcohol and water; and

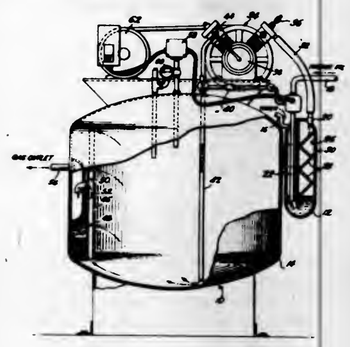
(b) adding to said solution an oxirane containing 2 or 3 carbon atoms per molecule, said oxirane being added in an amount of at least 0.5 mol per mol of said metal halide, said addition of said oxirane to said solution causing the entire resulting mixture to set up into the desired gel.

3,291,580
PREVENTION OF MICROBIAL GROWTH, CORROSION, AND THE LIKE
Emil A. Malick, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 3, 1963, Ser. No. 277,702
10 Claims. (Cl. 44—53)

1. A method for inhibiting microbial attack of liquid hydrocarbon fuels when said fuels contact a water phase, which method comprises: injecting directly into said water phase, from a source other than said fuel, a microbial growth inhibiting amount of at least one additive selected from the group consisting of (a) polyhydroxy alcohols containing from 2 to about 22 carbon atoms and from 2 to 5 OH groups per molecule wherein each OH is attached to a different carbon atom, and (b) glycol ethers having the formula $R(OCH_2CH_2)_xOH$ wherein R is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, phenyl and tolyl groups, when R is hydrogen, x is an integer of from 2 to 4, and when R is other than hydrogen, x is an integer of from 1 to 4; and contacting said fuel and the resulting water phase containing said additive.

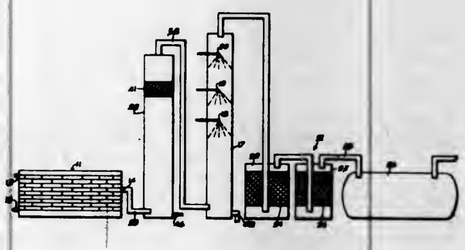
3,291,581
METAL TREATING GAS COMPOSITION AND APPARATUS FOR ITS PREPARATION
Frederick Meyer Frankhauser, Covina, Calif., assignor to Mite-Flo Inc., a corporation of California
Filed June 27, 1963, Ser. No. 291,163
10 Claims. (Cl. 48—197)

9. A gaseous mixture for heating a metal to its melting temperature comprising: a gas selected from the group consisting of butane, isobutane, propylene and propane in the amount of 25 to 70% by volume (S.C.); a gas selected from the group consisiting of nitrogen, carbon dioxide, neon, helium and argon in the amount of 24 to



59% by volume (S.C.); 6 to 16% oxygen by volume (S.C.) and 1 to 5 pounds water vapor per 10,000 ft.³ of gas mixture (S.C.) dry basis.

3,291,582
PROCESS FOR CONDITIONING GASES PRODUCED IN REFORMING LIQUID PETROLEUM
Harry D. Tyson, 191 NW. 98th St., Miami Shores, Fla.
Filed Dec. 26, 1963, Ser. No. 333,378
3 Claims. (Cl. 48—212)



1. A process for purifying petroleum gases for preventing the accumulation of a substantial portion of residual gums and tars in distribution lines of a distribution system comprising:

cracking liquid hydrocarbons at a temperature range from about 1250° F. to 1600° F.;

directing the reaction gases to the lower end of a substantially vertically disposed tower and cooling the gases thereat to a temperature from about 225° F. to 350° F.;

passing the gases through a moist, activated-charcoal filter in said tower and maintaining humidity conditions thereat so as to cause a condensate to form on the undersurface of said filter and so as to maintain the temperature of gases above said filter at a temperature above about 120° F., whereby objectionable polymeric materials are adsorbed by said filter while in a vapor state; and

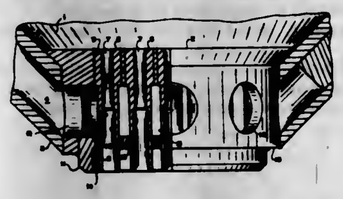
directing the gases from above said filter to a distributing system; whereby residual gums and tars are at a minimum when distributed.

3,291,583
METHOD OF MAKING A SAW
Frederick W. Lindblad, 835 Illinois Ave., Aurora, Ill.
Original application Feb. 19, 1963, Ser. No. 259,551, now Patent No. 3,221,728, dated Dec. 7, 1965. Divided and this application Sept. 2, 1965, Ser. No. 484,623
6 Claims. (Cl. 51—293)



1. A method of making a saw, which method comprises providing a circular disc, the peripheral portion of which is narrower than the radially inward adjacent part of the disc and which has recesses extending inwardly from said peripheral portion, providing a plurality of hardened arcuate cutting segments that include diamond abrasive particles embedded in a matrix and each having at least one radially inwardly opening groove that is a counterpart of peripheral surface means of the disc, securing to the arcuate segments retaining elements that project radially inwardly therefrom, placing the segments around the disc with the peripheral surface means of the disc entering the grooved portions of the segments and with the elements entering the recesses, causing said elements to deform beyond elastic limits in said recesses and cooperate with the recesses to secure the segments against peripheral and circumferential movement on the disc, and adhering the segments to the disc by an interposed bonding film.

3,291,584
FIBER GLASS ORIFICE
Gilbert J. Sheldon, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 289,338
6 Claims. (Cl. 65—11)



1. A glass fiber forming pot for simultaneously forming a plurality of coated glass fibers comprising, means defining a plurality of glass chambers, means controlling the temperature and viscosity in said glass chambers, means defining a plurality of central orifices communicating with the first of said glass chambers for forming a plurality of cores of glass fibers, means defining a plurality of radially spaced orifices each spaced from said central orifices forming a common core coating for each of said fibers, alignment means maintaining concentricity of the peripheral orifices with their mating central orifice to provide an even peripheral common coating on each of the cores of said fibers.

3,291,585
METHOD FOR THE TREATMENT OF RAW GLASS MATERIAL CONTAINING EASILY VOLATILIZABLE INGREDIENTS
Tsuneo Okamura, Yokohama, Japan, assignor to Asahi Glass Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Apr. 16, 1963, Ser. No. 273,521
4 Claims. (Cl. 65—18)

1. A method of reducing the losses of an easily volatilizable ingredient in the preparation of molten glass from a glass batch mixture of raw materials including an additive material containing at least one easily volatilizable ingredient which comprises mixing pulverized glass cullet with 0.05% to 30% by weight of said additive material, sintering the resulting mixture at a temperature between 500° C. and 1200° C., then charging the resulting sintered cullet material and the remaining additional batch ingredients of the glass batch mixture into a glass melting furnace and melting the glass batch mixture therein.

3,291,586
SOLDER GLASS COMPOSITIONS AND METHOD OF SEALING THEREWITH
George C. Chapman, Jr., and Kenneth M. Henry, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Apr. 16, 1963, Ser. No. 273,308
11 Claims. (Cl. 65—33)

1. A solder glass comprising a vitreous solder glass ranging from 25 to 75% by weight and a devitrifiable solder glass ranging from 75 to 25% by weight.

7. A method of forming a seal comprising applying a mixture of two finely divided sealing glasses to surfaces to be joined together, the sealing glasses being vitreous sealing glass and a devitrifiable sealing glass, heating said mixture to a temperature at which they flow and form a seal, and thereafter maintaining the mixture at an elevated temperature at which the devitrifiable glass devitrifies and the vitreous glass does not devitrify.

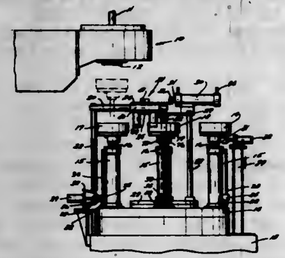
3,291,587
HERMETICALLY SEALING GLASS PARTS INCLUDING INTERVENING ELECTRICAL CONDUCTOR
Harry F. Loshirke, Toledo, and Arthur F. Van Zee, Elmore, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Continuation of application Ser. No. 302,753, July 5, 1963, which is a continuation of application Ser. No. 643,160, Feb. 28, 1957. This application Aug. 6, 1965, Ser. No. 477,818
3 Claims. (Cl. 65—43)



1. The method of producing an article consisting of glass parts sealed together, each of said parts having an inner surface, an outer surface and a marginal sealing surface extending from the inner to the outer surface, said article having an electrically conductive strip extending from the inner surface to the outer surface and across the marginal sealing surface of one of said parts which method consists of applying to one of said parts an adhering strip of electrically conducting material in the form of a paste or paint by painting the strip on said part in the form of a continuous strip extending along the inner surface of said part to the marginal surface, across the marginal sur-

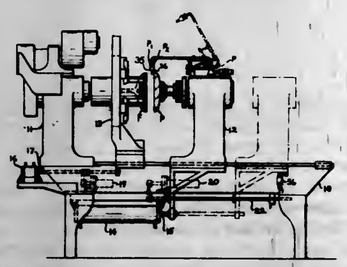
face to the outer surface and along said outer surface and firing to thereby adhere the strip to said part, thereafter applying to the said marginal sealing surfaces and said inner and outer surfaces of both of said parts and the portion of the said strip extending over said marginal surface of said one part, an electrically insulating solder consisting of glass in molten condition, and bringing said sealing surfaces into juxtaposition and thereby hermetically sealing them together with the solder extending across and between said marginal surfaces and along the inner and outer surfaces of both of said parts and over portions of said strip located on said inner and outer surfaces of said one part.

3,291,588
APPARATUS AND METHOD FOR PRESS MOLDING GLASS ARTICLES
Raymond J. Lippmann, Toledo, Ohio, and Eustace H. Mumford, Ottawa Lake, Mich., assignors to Owens-Illinois Inc., a corporation of Ohio
Filed Dec. 19, 1962, Ser. No. 245,785
10 Claims. (Cl. 65—75)



1. The method of press forming objects from molten glass having a relatively low viscosity, comprising the steps of moving a mold into close proximity to the discharge orifice of a container holding said molten glass, flowing a predetermined charge of said glass from said container into said mold, lowering said charged mold vertically downward, moving a plunger into vertical alignment above said mold, relatively moving said charged mold and plunger vertically into pressing relationship, cooling the charge while being pressed, lowering said mold away from said plunger and removing the pressed article from said mold.

3,291,589
APPARATUS FOR SEALING HOLLOW GLASS PARTS
George E. Born, Columbus, Helmut H. Gutheil, Toledo, and George Painter, Columbus, Ohio, assignors to Owens-Illinois Inc., a corporation of Ohio
Filed Jan. 9, 1963, Ser. No. 250,361
15 Claims. (Cl. 65—152)



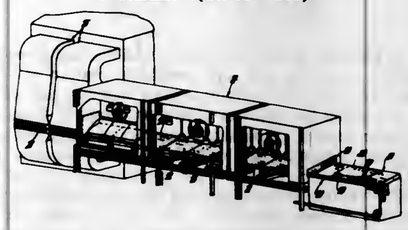
6. In an apparatus for sealing together the complementary sealing edges of two hollow complementary glass parts, the combination comprising:

means for supporting each said glass part for synchronous rotation and relative movement toward the other glass part,

a sensing unit for sensing the relative positions of the sealing edges of the two glass parts when they are moved toward one another,

and a control unit conditioned by actuation of said sensing unit for controlling the further movement of the parts toward one another in a predetermined cycle after the sensing unit has determined the relative positions of the sealing edges.

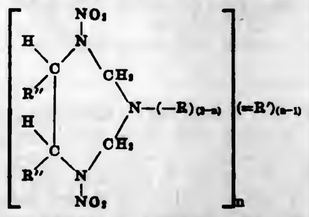
3,291,590
APPARATUS FOR BENDING GLASS SHEETS
Harold A. McMaster, Woodville, Ohio, assignor to Permaglass, Inc., Woodville, Ohio, a corporation of Ohio
Filed Sept. 11, 1964, Ser. No. 395,717
7 Claims. (Cl. 65—182)



1. In an apparatus for treating sheet material, an elongated bed having at least a portion curved transverse to the longitudinal axis thereof with a degree of transverse curvature which continuously increases therealong, said degree of transverse curvature changing at different rates of change at successive equally spaced points along the longitudinal axis of said portion of said bed, said rates at said equally spaced points when plotted against distance along the longitudinal axis of said portion being a portion of a sine curve, means supplying fluid over said portion of said bed for at least partially supporting a sheet thereover, and means for heating the sheet.

3,291,591
METHODS AND COMPOSITIONS FOR PLANT GROWTH ALTERATION
Stanley J. Strycker and Theodore W. Holmsen, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 10, 1963, Ser. No. 307,796
13 Claims. (Cl. 71—2.5)

1. Method of altering the growth of plants which comprises exposing a viable plant part to a growth altering amount of triazepine compound of the formula

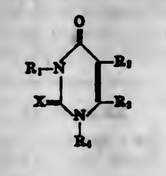


wherein R represents a monovalent radical selected from the group consisting of allyl, benzyl, cyclohexyl, nitro, and alkyl being of from 1 to 18, inclusive, carbon atoms; R' represents alkylene being of from 1 to 10, inclusive, carbon atoms; each R'' independently represents a member selected from the group consisting of hydrogen and methyl; and *n* represents an integer of from 1 to 2, inclusive.

3,291,592
METHOD FOR INCREASING SUGAR CANE YIELD
Arlyn W. Evans, Memphis, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 28, 1964, Ser. No. 361,206
8 Claims. (Cl. 71—2.5)

1. A method for modifying the growth of sugar cane and increasing its yield of sugar comprising applying to sugar cane plants from 5 to 35 days prior to harvest, an effective amount of at least one compound selected from the group consisting of

(a) compounds of the formula



wherein

R_1 is selected from the group consisting of alkyl of 1 through 10 carbon atoms; substituted alkyl of 1 through 8 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, hydroxy, alkoxy, alkoxycarbonyl and cyano; aryl of 5 through 10 carbon atoms; substituted phenyl wherein said substituent is selected from the group consisting of chlorine, bromine, fluorine, alkoxy, alkyl and nitro; aralkyl of 5 through 13 carbon atoms; substituted aralkyl of 5 through 13 carbon atoms wherein said substituent is selected from the group consisting of chlorine, nitro, alkyl and alkoxy; alkenyl of 3 through 8 carbon atoms; alkynyl of 3 through 8 carbon atoms; cycloalkyl of 3 through 12 carbon atoms; cycloalkenyl of 4 through 12 carbon atoms; cycloalkyl alkyl of 4 through 13 carbon atoms; cycloalkenyl alkyl of 5 through 13 carbon atoms; (substituted cycloalkyl)alkyl of 5 through 13 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl; and (substituted cycloalkenyl)alkyl of 5 through 13 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl;

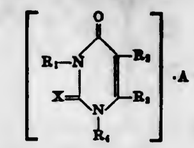
R_2 is selected from the group consisting of hydrogen, chlorine, fluorine, bromine, iodine, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, butoxy, nitro, alkoxymethyl of 2 through 6 carbon atoms, hydroxyalkyl of 1 through 6 carbon atoms, alkenyl of 3 through 6 carbon atoms, thiocyanato, cyano, thiolmethyl, methylthiomethyl, phenylthiomethyl, alkylthio of 1 through 4 carbon atoms, bromomethyl, fluoromethyl, chloromethyl, or carboxymethylthiomethyl;

R_3 is selected from the group consisting of hydrogen, chlorine, bromine, alkyl of 1 through 5 carbon atoms, chloroalkyl of 1 through 4 carbon atoms, bromoalkyl of 1 through 4 carbon atoms, or alkoxy of 1 through 5 carbon atoms;

R_4 is selected from the group consisting of hydrogen; alkyl of 1 through 5 carbon atoms; substituted alkyl of 1 through 5 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, hydroxy, alkoxy, cyano, carboxy and alkoxycarbonyl; alkenyl of 2 through 5 carbon atoms; alkynyl of 3 through 5 carbon atoms; acyl of 1 through 10 carbon atoms; substituted acyl of 1 through 10 carbon atoms wherein said substituent is selected from the group consisting of chlorine and alkoxy; carbamyl of 1 through 7 carbon atoms; substituted carbamyl of 1 through 7 carbon atoms wherein said substituent is chlorine; thiocarbamyl of 1 through 7 carbon atoms; substituted thiocarbamyl of 1 through 7 carbon atoms wherein said substituent is chlorine; alkylthio of 1 through 12 carbon atoms; substituted alkylthio of 1 through 12 carbon atoms wherein said substituent is selected from the group consisting of chlorine and bromine; phenylthio of 6 through 10 carbon atoms; substituted phenylthio of 6 through 10 carbon atoms wherein said substituent is selected from the group consisting of halogen, nitro, and alkyl; benzylthio of 7 through 12 carbon atoms; substituted benzylthio of 7 through 12 carbon atoms wherein said substituent is selected from the group consisting of halogen, nitro and alkyl; or glycosyl; and

X is selected from the group consisting of oxygen or sulfur; with the proviso that R_2 and R_3 can be taken together as $-(CH_2)_n-$ to form a ring wherein *n* is an integer of from 3 through 5, and with the further proviso that when R_3 is hydrogen, R_1 is selected from the group consisting of cycloalkyl of 3 through 12 carbon atoms, cycloalkenyl of 4 through 12 carbon atoms, and alkyl of 3 through 10 carbon atoms;

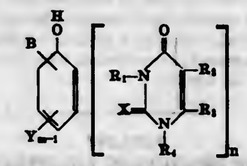
(b) compounds of the formula



where

R_1, R_2, R_3, R_4 and X are defined as above and A is an acid having an ionization constant greater than 2×10^{-6};

(c) compounds of the formula



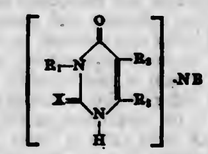
where

R_1, R_2, R_3, R_4 and X are defined as above and B is selected from the group consisting of hydrogen, bromine, chlorine, nitro, alkyl of 1 through 3 carbon atoms and $-OR_6$ radical where R_6 is alkyl of 1 through 3 carbon atoms,

Y is selected from the group consisting of chlorine and alkyl of 1 through 3 carbon atoms,

n is selected from the group consisting of 1 and 2;

(d) compounds of the formula

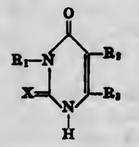


where

R_1, R_2 R_3 and X are defined as above, and

NB is a nitrogeneous base having an ionization constant K_b of greater than 10^{-9} in water, and

(e) salts of the compounds of the formula



where

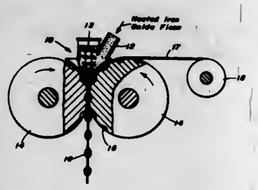
R_1, R_2, R_3 and X are defined as above, and the cation is selected from the group consisting of sodium, potassium, lithium, calcium, magnesium, barium, strontium, iron, manganese, and quaternary ammonium.

3,291,593

METHOD OF MAKING STRESSED BRIQUETTES

Ray L. Graham, Middlesex Township, Butler County, and Eugene A. Pelczarski, West Deer Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Oct. 1, 1964, Ser. No. 400,824
3 Claims. (Cl. 75—3)



1. A method of briquetting iron oxide fines comprising heating the fines to a temperature in the range of about 1000 to 2000 F., compacting the heated fines in a roll-type briquetting press under a load of about 20,000 to 100,000 pounds per inch of effective roll width to form briquettes, and embedding a length of heated wire in each briquette, said wire having a greater coefficient of thermal expansion than the iron oxide, whereby it prestresses each briquette on cooling.

3,291,594

METHOD OF PRODUCING PHOSPHATIC FERTILIZERS CONTAINING MAGNESIUM VALUES

John D. Nickerson, Lakeland, Fla., assignor to International Minerals & Chemical Corporation, a corporation of New York

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,870
5 Claims. (Cl. 71—41)

1. A method of making phosphoric fertilizer comprising preparing a finely comminuted starting material consisting essentially of materials of the group consisting of dolomite, admixtures of dolomite and phosphate rock, admixtures of magnesium chloride and phosphate rock, and admixtures of magnesium carbonate and phosphate rock, said starting material being characterized by magnesium content (calculated as magnesium oxide) of about 4.0 to about 20.0% by weight of said material, acidulating said starting material with phosphoric acid in an amount sufficient to provide in the acidulation product having a CaO plus MgO to P_2O_5 mole ratio of about 1, and calcining the acidulation product at a temperature in the range of 260 to 300° C. for a period of at least 20 minutes to recover a fertilizer containing P_2O_5 values in water-soluble form.

3,291,595

HIGH-NITROGEN PARTICULATE FERTILIZER COATED WITH NEUTRALIZED SUPERPHOSPHORIC ACID

Tommy C. Kearns, Park Forest, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,263
2 Claims. (Cl. 71—49)

1. A substantially dry granular high-nitrogen plant food composition comprising: a nitrogen source selected from the group consisting of urea and ammonium nitrate providing more than about 300 pounds of said urea or ammonium nitrate per ton of plant food coated with neutralized superphosphoric acid, said plant food being in granular form and containing less than about 1% water and being substantially soluble in water.

ERRATUM

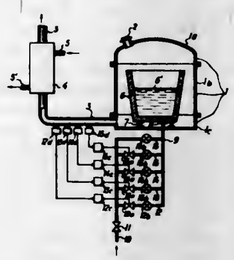
For Class 75—3 see:
Patent No. 3,291,593

3,291,596

METHOD AND APPARATUS FOR PURGING MOLTEN METAL OF GASEOUS IMPURITIES

Jacques Verge, Metz, France, and Etienne Saire, Westmount, Montreal, Canada, assignors to Institut de Recherches de la Sidérurgie Française, Saint-Germain-en-Laye, Seine-et-Oise, France, a professional institution, and l'Air Liquide, Société Anonyme pour l'Etude et l'Exploitation des Procédés Georges Claude, Paris, France, a French society

Filed Mar. 13, 1964, Ser. No. 351,707
Claims priority, application France, Mar. 14, 1963, 927,970, Patent 1,359,312
8 Claims. (Cl. 75—49)



1. A method of purging a body of molten metal of impurities which comprises:

(a) enclosing said body in a container in such a manner that said body has a free surface in the closed container;

(b) feeding a stream of a purging gas to a portion of said body downwardly spaced from said free surface while simultaneously withdrawing gas from a portion of said container above said surface;

(c) generating a signal representative of the gas pressure in said container portion; and

(d) controlling the flow rate of said stream in response to the signal generated and in direct relation to said gas pressure.

7. An apparatus for purging a body of molten metal of impurities comprising, in combination:

(a) a container enclosing the body of metal to be purged and a free surface of said metal body dividing a top portion of said container from a bottom portion;

(b) a conduit for feeding a stream of a purging gas to said bottom portion;

(c) suction means for withdrawing gas from said top portion;

(d) signal generating means for generating a signal representative of the gas pressure in said top portion; and

(e) flow control means in said conduit for controlling the flow rate of said stream in response to the signal generated.

3,291,597

PROCESS FOR RECOVERING METAL VALUES UTILIZING FUSED SALTS

Svante Mellgren, Metuchen, and Lamar D. Collin, Edison, N.J., assignors to American Metal Climax, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed July 6, 1964, Ser. No. 380,632
17 Claims. (Cl. 75—63)

1. The process for recovering at least one metal selected from the group consisting of silver, lead, cadmium and molybdenum, from a fused salt bath consisting essentially of at least one salt selected from the group consisting of alkali metal halides and alkaline earth metal halides, and containing at least one metal selected from the group consisting of silver, lead, cadmium, molybdenum, comprising adding to said bath an amount of aluminum in excess of that required to reduce said metal to the metallic state thereby forming a molten aluminum pool and thereafter recovering said metal from said bath.

3,291,598

RECOVERY OF COPPER AND ZINC VALUES USING LIQUID NITROGEN TETROXIDE

Carl K. Amano, Denver, and Clifford J. Lewis, Lakewood, Colo., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 9, 1964, Ser. No. 381,538
11 Claims. (Cl. 75—101)

1. A process for recovering at least one of copper and zinc values from an ore containing the same, said ore comprising a member selected from the group consisting of sulfide ores, oxide ores and mixtures thereof, which comprises contacting the ore with liquid nitrogen tetroxide and water, the water being present in at least about the theoretical amount up to about 100% in excess thereof to form the corresponding water-soluble nitrate and the nitrogen tetroxide being present in amount at least about 15 times the amount of water, removing the excess nitrogen tetroxide, and then leaching the water-soluble nitrate from the treated ore with water.

3,291,599

CHEMICAL PROCESS

James W. Reeves, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,581
13 Claims. (Cl. 75—103)

1. The process for removing iron from ferrotitaniferous ores to form a titanium dioxide concentrate in the leached ore which comprises reducing the iron contained in said ferrotitaniferous ores to the metallic state, oxidizing said iron in the presence of a leach liquor of an aqueous ammonia-ammonium carbonate solution to form a soluble ferrous complex, further oxidizing said ferrous complex to form hydrated ferric oxide as a distinct solid phase, separating said leached ore from said hydrated ferric oxide and said leach liquor and thereafter recovering said titanium dioxide concentrate.

3,291,600

ELECTROPHOTOGRAPHIC RECORDING ELEMENT AND METHOD OF MAKING

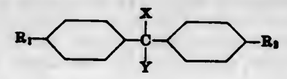
Frederick H. Nicoll, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 14, 1963, Ser. No. 251,062
10 Claims. (Cl. 96—1)

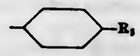


1. A method of producing a recording element comprising the steps of:

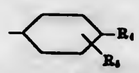
preparing a solution of an insulating, normally thermoplastic polymeric material capable of being rendered substantially non-thermoplastic by being subected to actinic radiation, and a dye-intermediate having the general formula:



wherein R_1 and R_2 are selected from the class consisting of monoalkylamino, di-alkylamino, monoarylamino and alkylarylamino, X is selected from the class consisting of H,



wherein R_3 is selected from the class consisting of H, OH, CH_3, OCH_3 and R_1 and



wherein R_4 and R_5 are selected from the class consisting of H, OH, CH_3, and OCH_3; and Y is H except when X+Y is double bonded oxygen;

forming a layer having a thickness of greater than about 11 microns from said polymeric material and said dye intermediate; and

controllable exposing one surface of said layer to said actinic radiation to produce an adherent film at said surface having a maximum thickness of about 500 angstrom units and substantially non-thermoplastic properties.

3,291,601

PROCESS OF INFORMATION STORAGE ON DEFORMABLE PHOTOCONDUCTIVE MEDIUM

Joseph Gaynor, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 29, 1960, Ser. No. 79,260
4 Claims. (Cl. 96—1.1)

1. The method for storing information on a deformable medium in an image pattern which comprises electrostatically charging a thermoplastically deformable photoconductive medium to establish a uniform charge pattern on its surface, selectively discharging portions of the uniform pattern by activating radiation to yield a latent electric charge image pattern, and heating the deformable medium to reduce the viscosity thereof and produce physical deformations corresponding to the latent electric charge image pattern by forces resulting from said latent electric charge image pattern.

3,291,602
MASKING PROCESS FOR THE PRODUCTION OF PHOTOGRAPHIC IMAGES

Eberhard Hellmig, Leverkusen, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 26, 1962, Ser. No. 212,738
Claims priority, application Germany, Aug. 9, 1961, A 38,898
2 Claims. (Cl. 96—5)

1. A process for producing color corrected color separation records of multicolor photographic images which consist of yellow, magenta and cyan partial images which comprises

(a) exposing to a multicolor photographic image illuminated with white light a light-sensitive photographic material comprising a light-sensitive silver halide emulsion layer that is sensitive to red, green and blue light and a filter layer having a density to blue light of about 2.0, to green light of about 1.0 and to red light of about 0.35 being capable of being decolorized in photographic processing baths upon a transparent support in such a manner that the filter layer faces the light source,

(b) developing, fixing and drying the exposed light-sensitive material to decolorize the filter layer and produce a silver masking image therein that is negative with respect to the multicolor photographic image,

(c) bringing the fixed and dried material which contains the silver masking image into register with the multicolor photographic image,

(d) producing color separation records by exposing other light-sensitive photographic materials to the silver masking image and the multicolor photographic image that are in register with each other, using for each color separation record an appropriate colored light, and,

(e) developing, fixing and drying the thus exposed photographic materials.

3,291,603
COLOR PROOFING CONSTRUCTIONS AND THEIR USE

Thomas Teplica Bryan, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation of application Ser. No. 216,552, Aug. 13, 1962. This application Nov. 29, 1963, Ser. No. 328,775
4 Claims. (Cl. 96—28)

1. A color proofing process which comprises:

(1) exposing through a red color separation positive a blue printer comprising a transparent support having a silver halide emulsion coating in which is uniformly dispersed a bleachable dyestuff system to provide a cyan color therein, said bleachable dyestuff system being capable of selective decolorization in the presence of reduced silver,

(2) developing said blue printer by dye-bleach technique to produce a positive image in said cyan color,

(3) exposing through a green color separation positive a red printer comprising a transparent support having a silver halide emulsion coating in which is uniformly dispersed a bleachable dyestuff system to provide a magenta color therein, said bleachable dyestuff system being capable of selective decolorization in the presence of reduced silver,

(4) developing said red printer by dye-bleach technique to produce a positive image in said magenta color,

(5) exposing through a blue color separation positive a yellow printer comprising a transparent support having a silver halide emulsion coating in which is uniformly dispersed a bleachable dyestuff system to provide a yellow color therein, said bleachable dyestuff system being capable of selective decolorization in the presence of reduced silver,

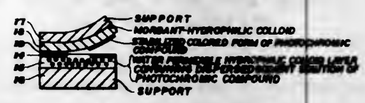
(6) developing said yellow printer by dye-bleach technique to produce a positive image in said yellow color, and

(7) superimposing all of said printers in register and viewing the resultant full color proof.

3,291,604
PROCESS FOR CREATING AND SUBSEQUENTLY TRANSFERRING AN IONIC PHOTOCHROMIC IMAGE

Stephen Michel and George M. Reitter, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 1, 1963, Ser. No. 255,602
11 Claims. (Cl. 96—29)



1. A process for producing and stabilizing a colored photochromic negative image reproduction of an original image comprising the steps:

(1) creating an ionic colored photochromic negative image on a reversible photochromic layer comprising a water-permeable hydrophilic colloid having dispersed therein a solution of a photochromic compound dissolved in a water-immiscible, high-boiling solvent by exposing said reversible photochromic layer while in the uncolored state to radiation having a wavelength shorter than 4000° A. through said original image;

(2) contacting in superposed relation in the presence of moisture, the surface of the photochromic layer bearing the colored photochromic negative image created in Step 1 with the surface of a receiving sheet comprising a water-permeable hydrophilic colloid-anionic mordant layer to transfer only the ionic colored photochromic image to the said surface of the receiving sheet; and

(3) separating the said receiving sheet from the said photochromic layer, leaving a stabilized colored photochromic negative image reproduction of said original on said receiving sheet, said stabilized image being non-reversible.

3,291,605
PHOTOGRAPHIC METHOD OF PLACING INDICIA ON A CYLINDRICAL TRANSPARENT SLEEVE

Edward C. Mathews, Yorktown Heights, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York

Filed Sept. 13, 1965, Ser. No. 491,488
1 Claim. (Cl. 96—38.3)



The method of applying indicia to the inner surface of a cylindrical transparent sleeve by means of a negative comprising the steps of:

(a) cleaning the sleeve with a mild solvent;

(b) coating the inner surface thereof with a dull white lacquer;

(c) drying the lacquer and then applying a light sensitive resist emulsion which is hardenable upon application of light thereto;

(d) positioning a photographic negative having indicia applied thereto over a transparent supporting jig means provided with a conical recess with the coated surface of said photographic negative being arranged within the sleeve and in contact with the emulsion;

(e) exposing the emulsion through the photographic negative by angular transmission of light rays from a light source projected through the conical recess in said jig means to harden the emulsion in the areas exposed to said light source;

(f) subjecting the cylindrical transparent sleeve to which the indicia from said negative has been transferred to a developer to remove the unexposed emulsion; and

(g) etching the lacquer to remove the lacquer not protected by the light hardened sensitive resist.

3,291,606
METHOD OF INHIBITING DISCOLORATION OF COLOR PHOTOGRAPHIC LAYERS CONTAINING DYE IMAGES AND RESULTING PHOTOGRAPHIC PRODUCTS

Roy Arthur Jeffreys, Harrow, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,952
10 Claims. (Cl. 96—55)

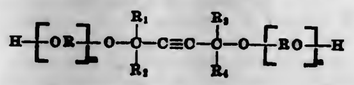
1. The method of inhibiting the discoloration of a water-permeable photographic layer containing a color image, said layer being substantially free of developed silver and residual silver halide, which comprises imbibing in said layer an aqueous solution of an amino acid selected from the class consisting of glycine, β-alanine, betaine, an alkylglycine in which the alkyl group has from 1 to 6 carbon atoms, and dipeptides of the said acids.

3,291,607
WATER-SOLUBLE POLYOXYALKYLENATED BUTYNE-2-DIOL-1,4 DEVELOPMENT ACCELERATORS

Fritz Dersch, Binghamton, Betty D. Fadden, Johnson City, and William L. Wike, Endicott, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

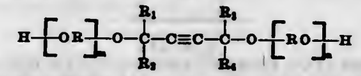
No Drawing. Filed May 28, 1965, Ser. No. 459,872
11 Claims. (Cl. 96—59)

1. An aqueous developer solution containing a silver halide photographic developing agent and a small amount of a development accelerator comprising a water-soluble polyoxyalkylenated butyne-2-diol-1,4 of the formula:



wherein R is selected from the group consisting of ethylene and propylene and R_1, R_2, R_3 and R_4 are independently selected from the group consisting of hydrogen and lower alkyl and wherein m and n represent positive integers the sum of which has a minimum average value of at least 7.

9. A reversal process of photography in which an exposed photographic element having at least one light-sensitive silver halide emulsion layer containing a non-diffusing color former is (a) given a first development in an aqueous alkaline developing solution containing a silver halide developing agent to form silver images only, (b) re-exposed to light, (c) given a second development in an aqueous developer solution containing a primary aromatic amino color developing agent to form both silver and dye images in the reverse areas of said emulsion layer; said process being characterized in that the first development is carried out in the presence of a development accelerator comprising water-soluble polyoxyalkylenated butyne-2-diol-1,4 of the formula:



wherein R is selected from the group consisting of ethylene and propylene and R_1, R_2, R_3 and R_4 are independently selected from the group consisting of hydrogen and lower alkyl and wherein m and n represent positive integers the sum of which has a minimum average of at least 7.

3,291,608
ENHANCED ACTIVITY OF NUCLEI FOR PHYSICAL DEVELOPMENT

Herbert S. Elias, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,267
11 Claims. (Cl. 96—66)

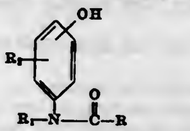
10. A photographic development process wherein a photographic material comprising a support having thereon a layer of a silver halide photographic emulsion and a layer containing metallic physical development nuclei formed in situ in chloranil-modified gelatin is exposed and developed by a physical photographic developer.

3,291,609
DEVELOPER INCORPORATED PHOTOGRAPHIC MATERIALS

Ralph Frederick Porter, Pittsford, and Thomas Edward Gompf, Penfield, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 5, 1964, Ser. No. 373,050
11 Claims. (Cl. 96—76)

1. A photographic element comprising a support and a photographic silver halide emulsion layer, and integral with said photographic element a water-permeable, hydrophilic colloid containing a silver halide development precursor represented by the following general formula:

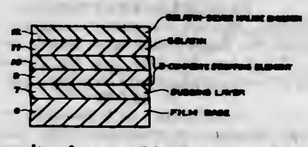


wherein R represents a member selected from the class consisting of an alkyl group and a halogenoalkyl group, R_1 represents a member selected from the class consisting of a hydrogen atom and an alkyl group, and R_2 represents a member selected from the class consisting of a hydrogen atom, an alkyl group, a halogen atom, an alkoxyl group, an acylamido group and an acyloxy group.

3,291,610
PHOTOGRAPHIC ELEMENT

Thomas I. Abbott and Hugo F. Hnedsepohl, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 31, 1963, Ser. No. 284,648
4 Claims. (Cl. 96—83)



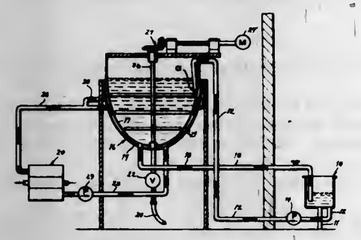
2. A composite photographic stripping element having a first layer comprising one part by weight ethyl cellulose and 0.25–0.50 part by weight gelatin, and a second

layer comprising one part by weight ethyl cellulose and 1.5 to 2.5 parts by weight gelatin.

3,291,611
MODIFYING ISOELECTRIC POINT OF GELATIN
John J. Krajewski, Wheeling, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Oct. 3, 1962, Ser. No. 227,988
9 Claims. (Cl. 96—114)

1. A photographic material comprising a support and a coating thereon of an emulsion of a silver halide and a modified gelatinaceous substance, said modified gelatinaceous substance comprising at least about 95% acid-cured gelatin and less than about 5% polymerized carboxylic vinyl acidic monomer.

3,291,612
METHOD FOR COLLECTING AND PRESERVING BLOOD
Harold F. Schneider and Norvel F. Gamel, St. Louis, Mo., assignors to Schneider Packing Company, St. Louis, Mo., a corporation of Missouri
Filed Dec. 2, 1963, Ser. No. 327,245
3 Claims. (Cl. 99—21)



1. The method of collecting and preserving the blood of slaughtered cattle pending shipment, comprising the steps of
collecting the fresh warm blood from newly slaughtered cattle,
while so collecting, retaining the collected blood above the coagulating temperature of substantially 80° F. and between such temperature and blood heat of such cattle,
then pouring said collected retained blood into a circulating refrigerated solution containing an anti-coagulant and held at a temperature below 42° F. and above freezing,
thereby quickly cooling the blood and avoiding foaming,
then continuously mixing and refrigerating the mixture to hold it within said temperature range, and
then transferring same to and filling a shipping receptacle,
whereby same is filled substantially without foam.

3,291,613
PROCESS FOR THE PRODUCTION OF ALCOHOL-REDUCED BEVERAGES
Karl J. Raible, Munich, Germany, assignor to Aktiengesellschaft fur Brauereiindustrie, Basel, Switzerland
Filed Apr. 22, 1963, Ser. No. 274,432
Claims priority, application Germany, Apr. 21, 1962, A 40,049
15 Claims. (Cl. 99—33)

1. In a process for manufacturing alcohol-reduced beverages, the steps of heating a charge of an alcoholic beverage for a short time under increased pressure, spraying said pressure-heated beverage into a vacuum, collecting the droplets resulting from said spraying to form a liquid while maintaining said vacuum, heating said collected liquid, and evaporating said heated liquid by applying a vacuum to it, said steps of heating said liquid followed by said vacuum-evaporating being repeated in a discrete and successive manner to reduce the volume and at least partially evaporate the alcoholic content of said beverage.

3,291,614
SOLUBLE DRY MILK PRODUCT AND A METHOD OF PRODUCING THE SAME
Leon Tumerman, Bay Shore, and Warren Y. Maddock, Westbury, N.Y., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 3, 1958, Ser. No. 718,454
31 Claims. (Cl. 99—56)

1. A powder comprising water-soluble milk components, a fat, and a surface active agent, the particle size of the powder being at least 100 microns diameter, the amount of surface active agent being at least 0.2% based on the weight of the powder, said amount being distributed over the surface of the particles, the fat adjacent the particle surfaces being covered with said agent, said agent having an intermediate hydrophile-lypophile balance with in the range of greater than 2.1 to less than 16.7, such that the powder disperses rapidly in water at a temperature below the melting point of the fat.

19. A method of preparing a powder of water-soluble milk components and a fat, at least a portion of said fat being adjacent the particle surfaces, that is rapidly dispersible in water at a temperature below the melting point of the fat, which comprises covering the surface of the particles with a surface active agent having an intermediate hydrophile-lypophile balance within the range of greater than 2.1 to less than 16.7, in an amount of at least 0.2% based on the weight of the powder, said minimum amount being distributed over the surface of the powder particles so that substantially all of the fat adjacent the particle surfaces is covered with said agent, the particle size of the product being at least 100 microns diameter.

3,291,615
METHOD FOR PREPARING QUICK-COOKING, STORAGE STABLE LEGUMES
Joseph J. Thompson and Winston F. Allen, Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
No Drawing. Filed Mar. 12, 1963, Ser. No. 264,697
3 Claims. (Cl. 99—98)

1. The method of preparing a body of quick cooking, edible, hard, dry, whole, storage-stable, discrete legumes which comprises subjecting a body of whole, dried, washed legumes having a moisture content of from about 8% to about 12% by weight in said dried condition to steaming for several minutes at a temperature of about 212° F., soaking the resulting pre-steamed legumes in hot water for several hours to a moisture content of from about 52% to about 60% by weight, draining said water therefrom and heating the legumes in an enclosed zone for several hours with steam at a temperature of from about 220° F., to about 250° F., disposing the cooked material in a drying chamber for several hours, first at a temperature of from about 100° to about 180° F., and at a relative humidity of from about 55% to about 70% and then at a temperature of from about 130° to about 200 F., in a slightly lower relative humidity until the legumes have a moisture content of from about 17% to about 21%, then finally drying the legumes with agitation at temperatures increasing from about 130° to 220° F., for a period of time sufficient to dry the legumes to a moisture content substantially that of the starting material.

3,291,616
DEFATTING MEAT PRODUCTS
George E. Briney, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Jan. 31, 1964, Ser. No. 341,765
3 Claims. (Cl. 99—107)

1. An improved method for producing an uncooked flavor-stabilized cured meat containing no added sodium chloride and having a major protein portion comprising: contacting uncooked animal tissue having a substantial fat portion with a heme-conditioning agent free of sodium chloride; thereafter comminuting the tissue to produce a semi-solid emulsion; heating the emulsion from about 80° F. to about 120° F. for a time sufficient to liquefy at least a portion of the fat and insufficient to denature the meat proteins of the solid residue; and separating the molten fat from the residue, said residue having a fat content to about 30%.

3,291,617
FROZEN FOOD INDICATORS
Robert A. Barker, Hamilton, and Howard F. Pratt, Ipswich, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Mar. 12, 1963, Ser. No. 264,636
5 Claims. (Cl. 99—192)



1. An indicator for frozen food packages comprising, in combination, a support, an arm pivoted on said support for swinging of an end portion of said arm about a fixed axis, said arm embodying means responsive to temperature for moving said end portion in the direction of said axis to position said end portion variably in accordance with temperature, means yieldably urging said arm to rotate on said axis, first stop means carried by said support and providing a surface adapted to be engaged by said end portion only at temperatures greater than a first predetermined value whereby axial movement of said portion during cooling releases it from said first stop means at said predetermined value for rotation of said arm by said urging means, second stop means carried by said support and providing a surface adapted to be engaged by said end portion, after release thereof from said first stop means, only at temperatures below a second predetermined value higher than said first predetermined value whereby a rise in temperature above said second predetermined value releases said arm from said second stop means for rotation to a warning disposition.

3,291,618
DENTAL IMPRESSION MATERIALS
Jacque C. Merrell, 8 Oxford St., Chevy Chase, Md.
No Drawing. Filed Sept. 23, 1965, Ser. No. 489,759
12 Claims. (Cl. 106—38.35)

1. A dental impression composition consisting essentially of a mixture of an alkali metal alginate, calcium sulphate, a metal fluoride, a basic neutralizing substance of low water solubility in an amount of about 1% to about 10% of the said composition and selected from the group consisting of the oxides and hydrated oxides of magnesium, calcium, and barium, an inert filler and a retarder, the said fluoride consisting essentially of zinc fluoride as the sole added fluoride in said composition necessary to obtain the desired results and being present in an amount of from about 1% to about 10%, said composition being adapted to eliminate fixing while maintaining controlled setting time and minimizing deterioration with age and environmental exposure, and to provide smooth and accurate impression and casts.

3,291,619
CERAMIC PRODUCTS AND PROCESS OF MAKING SAME
Daniel W. Lulu, Frenchtown, N.J., assignor to Frenchtown Porcelain Company, Trenton, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 6, 1963, Ser. No. 300,186
2 Claims. (Cl. 106—46)

1. A fired ceramic body consisting essentially of, by weight:

	Percent
Al_2O_3	68.5 to 98.5
SiO_2	0.5 to 30.0
MnO	0.5 to 30.5
TiO_2	0.5 to 8.0

having a surface resisivity of between about 3.46×10^{10} and about 2.7×10^{13} ohms and a loss factor at 1 megacycle of between about 0.096 and about 0.007.

3,291,620
OPTICAL GLASS
Konstantin Sergeevich Evstropiev, Krovsky Ave. 25, Apt. 53, and Adolf Kapitonovich Yakhkind, Novoizmailovsky Ave. 32, Korp. 2, Apt. 37, both of Leningrad, U.S.S.R.
No Drawing. Filed Apr. 23, 1963, Ser. No. 276,125
1 Claim. (Cl. 106—47)

Optical glasses, transparent in the visible and near infrared regions, possessing refractive indices from 2.15 to 2.18, dispersion coefficients 16.5–17.5, and containing in their composition in weight percentage: tellurium dioxide, 55–65; tungsten oxide, 15–17; tantalum oxide, up to 8; bismuth oxide, 0–5; thallium monoxide, 2–5; lanthanum oxide, up to 5; lead and titanium oxides, in total of not over 5%.

3,291,621
ULTRAVIOLET LIGHT-ABSORBING GLASS
Erwin C. Hagedorn, Oregon, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio
No Drawing. Filed May 31, 1963, Ser. No. 284,314
8 Claims. (Cl. 106—52)

1. An ultraviolet radiation-absorbing glass composition comprising a glass containing from .02 to .06% total chromium oxides expressed as Cr_2O_3 and present as both trivalent chromium oxide (Cr_2O_3) and hexavalent chromium oxide (CrO_3), the hexavalent chromium oxide being present in an amount of from .0005 to .017%, and from .005 to .06% cobalt oxide, said percentages being by weight of said glass composition, and said composition having C.I.E. colorimetric values for 10 mm. thickness of from about 1–45% brightness, from about 5–95% purity, and from 465 to 500 millimicrons dominant wavelength.

3,291,622
REFRACTORY ARTICLES
Victor Mandorf, Jr., Fostoria, Ohio, and Ronald W. Reidl, Pittsburgh, Pa., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 2, 1965, Ser. No. 460,868
4 Claims. (Cl. 106—55)

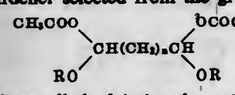
1. A hot pressed article formed from a mixture consisting essentially of boron nitride, calcium fluoride in an amount between 2 and 10 percent by weight of the boron nitride, and up to 80 percent by weight titanium boride.

3,291,623
REFRACTORY BODY AND METHOD OF MAKING SAME
Alfred C. Saunders, Hamburg, and John F. Grant, Orchard Park, N.Y., assignors to Electro Refractories & Abrasives Corporation, Buffalo, N.Y.
Filed Apr. 29, 1965, Ser. No. 451,936
5 Claims. (Cl. 106—56)

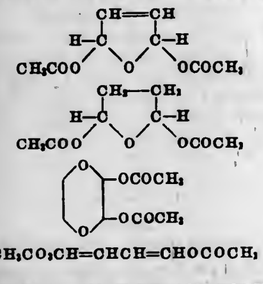
1. A refractory body composed of granules of at least one refractory material selected from the group consisting of silicon carbide, mullite, aluminum oxide, zircon, and periclase bonded with a mixture of 2 to 5% porous carbon and 3 to 20% finely divided silicon nitride dispersed through said carbon.

3,291,624
ACETYLATED DERIVATIVES OF DIALDEHYDES AND OF THEIR HEMIACETALS AS GELATIN HARDENERS
Roy Arthur Jeffreys, Harrow, and Donald M. Burness, Wealdstone, Middlesex, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 21, 1963, Ser. No. 303,664
5 Claims. (Cl. 106—125)

1. A composition of matter composed of gelatin containing a hardener selected from the group consisting of



in which R is an alkyl of 1–4 carbon atoms and n=0–5;



$CH_3CO_2CH{=}CHCH{=}CHOCOCH_3$

and

$CH_3CO_2CH{=}CHCH_2CH{=}CHOCOCH_3$

3,291,625
CELLULOSE ACETATE SOLUTIONS AND THE MANUFACTURE OF SELF-SUSTAINING FILMS THEREFROM
Giovanni Faraone and Alessandro Giorgetti, Cairo Montenotte, Italy, assignors to S.p.A. Ferrania
No Drawing. Filed June 7, 1962, Ser. No. 200,647
4 Claims. (Cl. 106—177)

3. A methylene chloride solution of cellulose acetate having an acetyl content of about 42.5 to 44%, capable of being rapidly formed into a film of low flammability, and containing 5 to 25% by weight of sucrose octadiphenyl phosphate, based on the weight of the cellulose acetate.

3,291,626
STABILIZED PIGMENT SLURRIES
Billy E. Sharling and Nathan Milliman, Macon, Ga., assignors to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,334
7 Claims. (Cl. 106—193)

1. The process of preventing the settling and stratification upon ageing of a finely divided particulate inorganic pigment of submicron particle size, in aqueous slurry, said pigment selected from the group consisting of sodium aluminosilicate, hydrated silica, and alumina hydrate, which comprises treating the pigment slurry with sufficient acidic material to produce a pH of from about 5.8 to about 8.1 and a fresh viscosity of from about 20 to about 2000 centipoises and a viscosity after one week of from about 10 to about 330 centipoises.

2. The process of claim 1 in which the acidic substance is selected from the group consisting of aluminum sulfate, sulfuric acid, aluminum sulfate together with tetra sodium pyrophosphate, and sulfuric acid together with carboxymethyl cellulose.

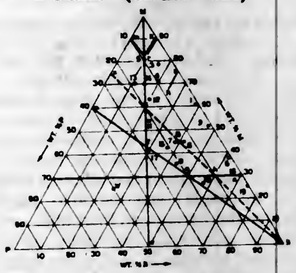
3,291,627
NITROCELLULOSE DISPERSIONS
Eugene C. Hamilton, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Dec. 13, 1962, Ser. No. 244,262
4 Claims. (Cl. 106—195)

2. A wood filler composition comprising a paste-like dispersion of nitrocellulose particles having an average particle size of about 3 to 5 microns in a non-polar volatile organic liquid, a nitrocellulose plasticizer, and pigment, the said nitrocellulose and nitrocellulose plasticizer, each comprising at least about 10% by weight of the total solids content of the composition, the pigment comprising at least about 50% by weight of the said total solids content, the non-polar volatile organic liquid being present in sufficient quantity to maintain the desired paste-like consistency.

3,291,628
BITUMINOUS SLURRY SEAL
Rudolf A. Jimenez and Bob M. Galloway, College Station, Tex., assignors to Texas A & M Research Foundation, College Station, Tex., a corporation of Texas
No Drawing. Filed May 14, 1964, Ser. No. 367,542
6 Claims. (Cl. 106—283)

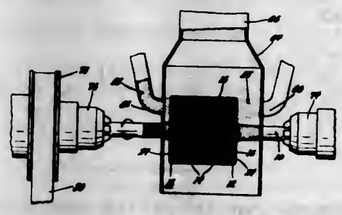
1. A slurry seal mixture consisting essentially of a bituminous emulsion thoroughly incorporated with a mixture of from about 60% to about 80% by weight of wet-bottom boiler slag in which 100% is capable of passing through a ⅜ inch sieve and not more than about 2% is capable of passing through a No. 200 sieve and from about 20% to about 40% by weight of filler of which 95% to 100% is capable of passing through a No. 30 sieve, the emulsion comprising from about 9% to about 16% by weight of the total slurry seal mixture.

3,291,629
MORPHOLIDES OF A MIXTURE OF EPOXIDIZED, SATURATED, AND MONOUNSATURATED FATTY ACIDS
Frank C. Magne, Evald L. Skau, and Robert R. Mod, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
Original application Jan. 15, 1962, Ser. No. 166,742, now Patent No. 3,219,664, dated Nov. 23, 1965. Divided and this application Apr. 2, 1965, Ser. No. 445,283
1 Claim. (Cl. 106—316)



The morpholides of a mixture of epoxidized fatty acids, saturated fatty acids, and monounsaturated fatty acids in which mixture of acids the weight proportions of saturated acids (S), epoxidized acids (E), and monounsaturated acids (M) are such that all of the following conditions are satisfied: (1) S/S+M+E is between 50/100 and 70/100; (2) M/S+M+E is greater than 5/100; (3) the saturated acids present in the said mixture of acids are saturated acids containing from 12 to 18 carbon atoms; and (4) the percentage of saturated acids containing at least 18 carbon atoms in said mixture of fatty acids is less than about 17% of all the acids in the mixture.

3,291,630
METHOD OF COATING CYLINDRICAL ARTICLES WITH THERMOPLASTIC MATERIAL
Olin H. Doyle and Donald Patterson, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 21, 1961, Ser. No. 125,844
2 Claims. (Cl. 117—18)



1. The method of coating the end surfaces of a cylindrical article with a coating of thermoplastic material wherein the article is heated to a temperature above the melting point of the plastic coating material comprising the steps of, forming a suspension of particles of the thermoplastic coating material in a gaseous stream, dividing said stream into at least two portions, directing the streams in opposite directions axially against opposed end surfaces of said cylindrical article with the article disposed within a chamber, effecting relative rotation between said oppositely directed streams and said article to coat the end surfaces thereof, and removing the excess coating particles surrounding the article within the chamber by exhausting the air therefrom so as to prevent coating the outer periphery of said cylindrical article.

3,291,631
TECHNIQUE FOR COATING ARTICLES USING STREAMS OF PARTICLES IN LAMINAR FLOW
Millard F. Smith, Westport, Conn. (% Nebrad Industries, Inc., P.O. Box 295, Saugatuck, Conn.)
Filed Feb. 1, 1963, Ser. No. 255,601
6 Claims. (Cl. 117—19)



1. The method of coating specific surface areas of an object with solid powder particles of coating material capable of being fused upon a hot surface upon contact comprising, in combination, the steps of:

(A) suspending the solid particles in an advancing stream of gas,

(B) directing the advancing stream with the particles entrained therein through a plurality of longitudinally spaced apart transverse screen means, and producing in the gas stream substantially laminar flow characteristics, including substantially smooth, parallel, uninflected streamlines passing through and issuing from the screen means,

with substantially equal pressures and particle velocities at laterally contiguous points of adjacent streamlines between the spaced apart screen means,

(C) directing the issuing gas-powder stream to impinge upon a heated object positioned in the path of at least some of the uninflected streamlines issuing from the screen means, and

(D) positioning a vacuum exhaust vent in the path of the gas-powder stream beyond the object to collect and recirculate unused powder coating material for re-use.

3,291,632
METHOD OF PREPARING A MEMBRANE OF DIVINYL BENZENE, STYRENE AND MALEIC ANHYDRIDE
Donald R. Nielsen, Corpus Christi, Tex., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,308
3 Claims. (Cl. 117—54)

3. A method of preparing a diaphragm for use in an electrolytic chlorine cell comprising, dissolving maleic anhydride in an organic solvent, contacting an asbestos sheet with said solvent containing maleic anhydride to thereby impregnate the asbestos with the solvent containing maleic anhydride, removing the asbestos sheet from contact with said solution and evaporating the solvent therefrom, contacting the substantially solvent free asbestos sheet with a mixture consisting essentially of divinyl benzene and styrene, polymerizing the divinyl benzene, styrene and maleic anhydride in the substantial absence of the solvent, said maleic anhydride being employed in quantities of between 0.5 to 3 moles of maleic anhydride for each mole of vinyl unsaturation present in the divinyl benzene-styrene mixture to thereby provide a diaphragm capable of producing an alkali metal hydroxide containing less than 0.1 percent alkali metal chloride when used in the electrolytic production of chlorine and alkali metal hydroxide by the electrolysis of alkali metal chloride solution.

3,291,633
REFLECTORIZING GLASS SPHERES AND METHOD OF MAKING THEM
Samuel E. Winkler, Jr., Huntingdon, Pa., assignor to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania
No Drawing. Filed May 16, 1963, Ser. No. 281,028
12 Claims. (Cl. 117—100)

1. A method of manufacturing internally reflecting glass spheres for use in reflectorized markers comprising heating small glass spheres of a size normally used for reflectorizing purposes to a temperature slightly below the melting point of the spheres, pouring the hot spheres into a cold bonding liquid, said liquid having a temperature below room temperature, said liquid comprising a dilute mixture of a transparent bonding agent with water, said bonding agent being a coupling agent for glass and synthetic plastic materials, whereby said hot spheres upon being immersed in said cold bonding liquid simultaneously become fractured internally and coated externally by said transparent bonding agent.

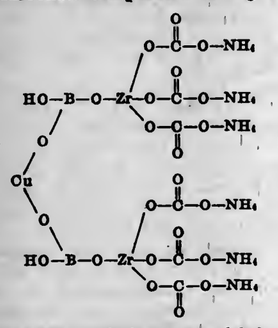
6. An internally reflecting glass sphere suitable for use in reflectorized markers comprising a small glass sphere having a diameter in the range of 3–100 mils, said sphere having a plurality of internal fractures and an outer transparent coating on said sphere of a bonding agent which prevents it from fracturing into small pieces, said bonding agent bonding with the glass sphere and being a coupling agent for glass and synthetic plastic materials.

3,291,634
METHOD OF RENDERING ARTICLES WATER REPELLENT
Nobuaki Wada, Ibaraki-shi, Kazumune Nakao, Higashisumiyoshi-ku, Osaka-shi, Toshiya Tsuji, Yao-shi, Osaka-fu, and Mitsugi Shibata, Fushimi-ku, Kyoto-shi, Japan, assignors to The Governor of Osaka-fu, Japan; Higashi-ku, Osaka-shi, Japan, and a foundation under the law of Japan, Nihon Mengyo Gijutsu Kenkyusho, Mengyo Kaikan, Bangaimachi, Higashi-ku, Osaka-shi, Japan
No Drawing. Filed Sept. 13, 1963, Ser. No. 308,647
4 Claims. (Cl. 117—135.5)

1. A method of rendering an article water repellent comprising wetting the article to be treated with an aqueous emulsion consisting of from 1 to 10 weight percent of a polysiloxane having a methylhydrogensiloxane unit in the order of at least 50 weight percent, and of a metallic salt of an aliphatic acid selected from the group consisting of sodium acetate, potassium acetate, magnesium acetate, calcium acetate, strontium acetate, barium acetate, cadmium acetate, cerium acetate, tin acetate, lead acetate, manganese acetate, iron acetate, nickel acetate, zinc acetate, sodium formate, zinc formate and lithium oxalate, said metallic salt being dissolved there-in in an amount at least cquivalent by metallic weight to the methylhydrogensiloxane unit contained in said polysiloxane, and drying the wetted article at room temperature to provide said article with a water repellency resistant to washing.

3,291,635
REACTION PRODUCTS OF COPPER AND MERCURY SALTS AND PROCESS FOR RENDERING COTTON FABRIC ROT RESISTANT THEREWITH
Charles J. Conner, New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Apr. 2, 1964, Ser. No. 356,991
16 Claims. (Cl. 117—138.5)

2. A process for preparing a water soluble copper borate-zirconyl ammonium carbonate composition comprising mixing 2 to 4 parts by weight of copper borate with about 100 parts by weight of a solution of zirconyl ammonium carbonate containing about 10% by weight of ZrO_2 and about 90% by weight of water, ammonia and carbon dioxide, and heating the resulting mixture at a temperature below 50° C. to dissolve the copper borate and produce the water soluble copper borate-zirconyl ammonium carbonate composition having the formula:

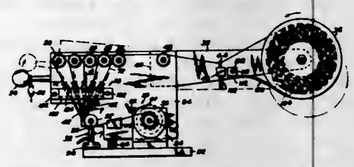


13. A process for rendering cotton fabric rot resistant comprising padding the cotton fabric to a wet pickup of about 50% with an aqueous solution containing the water soluble copper borate-zirconyl ammonium carbonate produced by the process of claim 2 dissolved therein in an amount corresponding to about 5% zirconium and about 0.85% copper to achieve an add-on of at least 2.5% zirconium by weight and at least 0.42% by weight of copper, and curing the padded fabric at a temperature of about 145° C. for a period of about 5 minutes, the shorter time intervals being employed with the higher temperatures.

3,291,636
METHOD FOR INSULATING ELECTRICAL ELEMENTS WITH POLYESTER PLASTISOLS AND SUCH ELEMENTS
David H. Reighter, Roslyn, and Robert L. Stratton, Folcroft, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 23, 1962, Ser. No. 239,813
8 Claims. (Cl. 117—212)

1. A method of insulating an electrical element comprising heating the element, dipping the same in a liquid insulating composition comprising:
(a) a polyester resin system comprising a mixture of from 50 to 75 parts by weight of a rigid polyester resin having, when cured, an elastic modulus of at least 4.0×10^5 p.s.i. and from 50 to 25 parts by weight of a flexible polyester resin having, when cured, an elastic modulus of no more than 1.0×10^5 p.s.i. and, per 100 parts by weight of the ployester resin mixture,
(b) from 15 to 40 parts by weight of antimony trioxide,
(c) from 25 to 60 parts by weight of a polyvinyl halide plastisol and,
(d) up to 300 parts by weight of a filler,
removing the coated element from the liquid dip and curing the coating formed thereon to form a flame retardant insulating layer on a portion of the electrical element.

3,291,637
METHOD AND APPARATUS FOR APPLYING COLOR CODED STRIPING TO MINIATURE COMPONENTS
Antonio Ramos, Cumberland, R.I., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed June 1, 1964, Ser. No. 371,635
20 Claims. (Cl. 117—212)



1. The method of applying color coded stripes to miniature components which includes first coating a plurality of thin filaments with appropriate color, there being one filament for each stripe of the color code, guiding the coated filaments very close to one another in collateral relation, and simultaneously moving all of the coated filaments laterally into contact with and then away from a component which is to be color coded.

3. Apparatus for applying color coded stripes to miniature components, said apparatus comprising means to coat a plurality of thin filaments with appropriate color, there being one filament for each stripe of the color code, means to guide the coated filaments very close to one another in collateral relation, and means to simultaneously move all of the coated filaments laterally into contact with and then away from a component which is to be color coded.

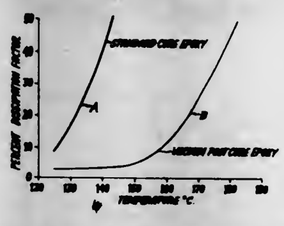
3,291,638
HEAT RESISTANT COATING COMPOSITIONS AND METHOD
Stanley A. Stadlen, North Woodmere, N.Y., and Ottavio Rapposelli, Jersey City, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Oct. 24, 1962, Ser. No. 233,502
8 Claims. (Cl. 117—231)

1. An electrically insulating wire coating composition which, after curing, is resistant to high temperatures comprising from eight to twelve parts of a film forming methyl phenyl silicone resin to one part of a cross linking methyl phenyl silicone resin, and an inorganic frit, the ratio of resin solids to inorganic frit being in the range 2/1 to 1/2, said film-forming resin having a specific gravity at 25 C. of approximately 1.06, a viscosity at 25 C. and 60% solids of approximately 20 to 40 centipoises, and containing approximately 15% to 25% phenyl groups with a similar concentration of methyl groups and practically no hydroxyl groups, and said cross-linking resin having a specific gravity at 25 C. of approximately 1.06, a viscosity at 25 C. and 60% solids of approximately 80 to 125 centipoises, and containing approximately 15% to 25% phenyl groups and 10% of hydroxyl groups.



5. The method of preparing coated wire which comprises the steps of repeatedly coating the wire with the composition of claim 1, heating the wire after each coating is applied to render the coating non-adherent without flashing the solvent, cooling the heated wire before the next coating is applied, and then in a series of successive heating and cooling steps gradually evaporating the residual solvent and then subjecting the coated wire to a final firing step to remove the more volatile decomposition products of the resins.

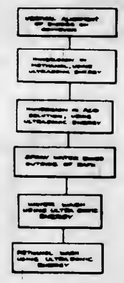
3,291,639
METHOD OF INSULATING ELECTRICAL CONDUCTORS
Ralph G. Flowers, Pittsfield, and Thomas L. Sharer, Richmond, Mass., assignors to General Electric Company, a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,641
4 Claims. (Cl. 117—232)



1. A method of curing a film insulation selected from the group consisting of epoxies, polyesters, acrylics, polyvinyl formals and urea-formaldehydes, in which the film is coated on a conductor and the conductor is heated in a nonoxidizing atmosphere at a temperature below the decomposing temperature of said film insulation said temperature being at least 250° C. for approximately 10 minutes.

3,291,640
ULTRASONIC CLEANING PROCESS
Howard Livingston, College Point, N.Y., assignor to Chemclean Corporation, College Point, N.Y.
Filed May 27, 1963, Ser. No. 283,510
6 Claims. (Cl. 134—1)

1. The process of cleaning flux oxide coated metallic elements fused to open end capillary tubes comprising depositing said tubes vertically with their open end uppermost, upon a conveyor; immersing said tubes while on said conveyor in a bath containing a suitably fluid liquid; energizing the liquid by means of ultrasonic energy thereby replacing the air of said tubes with said liquid; conveying said liquid filled tubes into an acid bath adapted



to react with said flux oxide coating and energizing with ultrasonic energy said acid bath until said flux is completely dissolved.

3,291,641
METHOD OF MAKING DRY-CHARGED LEAD-ACID BATTERY ELEMENTS BY TREATING THE ASSEMBLED BATTERY
Ahmad Sana, Circle Pines, Minn., assignor to Gould-National Batteries, Inc., a corporation of Delaware
No Drawing. Filed Aug. 8, 1963, Ser. No. 300,931
8 Claims. (Cl. 136—37)

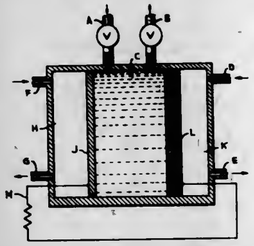
1. In the process of preparing dry-charged electrodes for lead-acid storage batteries:
(a) first, forming the active materials on the negative and positive plates while assembled together with separators as a unit assembly;
(b) second, immersing the unit assembly in a treating solution of about 1% to 10% of an acid selected from the group consisting of maleic acid, itaconic acid and acetylene dicarboxylic in water;
(c) and then drying the unit assembly in gas at a temperature of about 280° F. to 290° F. to bring the temperature of the assembly to about 240° to 250° F.

3,291,642
CATALYTIC ELECTRODE BODY AND METHOD OF MANUFACTURE
Margarete Jung, Nieder-Eschbach, Taunus, and Hanns H. Kroeger, Hanau-am-Gross Fleithbeck, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Jan. 9, 1962, Ser. No. 165,210
Claims priority, application Germany, Jan. 27, 1961, A 36,991
15 Claims. (Cl. 136—86)

2. A catalytically activable electrode body comprising a supporting matrix of the intermetallic nickel aluminum compound of the composition NiAl and the Raney nickel aluminum alloy of the composition $NiAl_3$ distributed throughout and carried in said matrix.

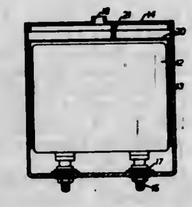
13. A method of manufacturing a sintered catalytic electrode body, comprising the steps of intimately mixing an intermetallic nickel aluminum compound powder of the composition NiAl with a Raney nickel aluminum alloy powder of the composition $NiAl_3$ in a weight ratio of $NiAl:NiAl_3=1.5:1.0$ to $4.0:1.0$, compressing the intimately mixed powders into the shape of the electrode body under a pressure of between 2 tons and 8 tons/sq. cm., sintering the compressed powder body at a temperature between about 700° C. and 1100° C. for about two to ten minutes, and activating the sintered body to convert it into a Raney metal catalyst.

3,291,643
FUEL CELL ELECTRODES
Harry G. Oswin, Ardsley, N.Y., Stewart M. Chodosh, River Edge, N.J., and Nigel I. Palmer, New York, N.Y., assignors to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
Filed Apr. 27, 1962, Ser. No. 190,695
10 Claims. (Cl. 136—86)



1. A fuel cell for the generation of electrical current directly from a fuel and oxidant comprising a housing, a fuel electrode, an oxidant electrode, means for feeding fuel and oxidant to the respective electrodes, an electrolyte compartment defined between said electrodes containing an electrolyte, said fuel electrode being a hydrogen diffusion, non-porous palladium silver alloy membrane coated on at least the surface fronting the fuel gas with a thin film of metal black, said metal black being a Group VIII metal black according to the Mendeleyeev's Periodic Table and said palladium-silver alloy containing from about 5 to 45 percent by weight silver.

3,291,644
DEFERRED ACTION TYPE ELECTRIC BATTERY HAVING ELECTROLYTE GUIDING MEANS
Robin Gray and Harold C. Jones, Swinton, near Manchester, England, assignors to Chloride Batteries Limited, Manchester, England, a company of Great Britain
Filed June 14, 1963, Ser. No. 287,942
Claims priority, application Great Britain, June 15, 1962, 23,062/62
6 Claims. (Cl. 136—90)



1. An electric cell of the type that is activated by introduction of liquid shortly before use comprising a casing, an element consisting of electrodes and separators positioned within said casing, said element being open at the bottom, a filling opening formed in the top of said casing through which said liquid is introduced to the element to activate the cell shortly before use, and guiding means for directing said liquid substantially as a sheet outwardly and downwardly substantially along the top and sides of said casing, respectively, said guiding means being an inverted container wholly within said casing and substantially enclosing the element along the top and sides but open at the bottom, a vent formed at the top of said container remote from said filling opening for the escape of air, whereby said liquid when introduced through said filling opening flows clear of said element to the region of the bottom of said casing and thence upward through the element to prevent formation of air bubbles and to allow air in said element to escape through said vent.

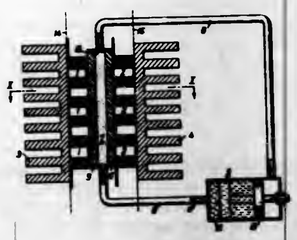
3,291,645
CORROSION INHIBITOR IN DRY CELL BATTERY
Lawrence P. Gould, Syracuse, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 10, 1964, Ser. No. 395,551
5 Claims. (Cl. 136—107)

1. A method of reducing corrosion of zinc in an ammonium chloride dry cell battery electrolyte which comprises incorporating in said electrolyte an additive having the formula RSO_3NHCH_2COOM wherein R is an aliphatic hydrocarbon radical containing 8–20 carbon atoms inclusive and M is an alkali metal.

3,291,646
CORROSION INHIBITOR IN DRY CELL BATTERY
Lawrence P. Gould, Syracuse, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 10, 1964, Ser. No. 395,581
6 Claims. (Cl. 136—107)

1. A method of reducing corrosion of zinc in an ammonium chloride dry cell battery electrolyte which comprises incorporating in said electrolyte an additive having the formula RNH_2 wherein R is an aliphatic hydrocarbon radical containing 16–18 carbon atoms inclusive.

3,291,647
THERMOELECTRIC DEVICE
Wilhelm Schneider, Langenhagen Hannover, and Otto Böttger, Frankfurt am Main, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Sept. 25, 1962, Ser. No. 226,124
Claims priority, application Germany, Sept. 27, 1961, L 40,118
7 Claims. (Cl. 136—204)



1. In a thermoelectric device, the combination comprising: a first and a second thermocouple each having a hot junction and a cold junction; a first heat conductive element connected in a heat conductive manner to the hot junction of said first couple; a second heat conductive element connected in a heat conductive manner to the cold junction of said second couple, said first and second elements defining a cavity disposed between, and thermally communicating, through said elements, with, said thermocouples, said cavity having an inlet; conduit means communicating with said cavity via said inlet; a heat conductive liquid in said conduit; and control means connected to said conduit means for selectively charging said cavity with said liquid and discharging it therefrom.

3,291,648
MULTISTAGE THERMOELECTRIC DEVICE
Anthony Robert Sheard and Adam Golebiowski, Langley, England, assignors to Frigistor Laboratories Limited, Langley, England
Filed May 9, 1963, Ser. No. 279,102
Claims priority, application Great Britain, May 9, 1962, 17,917/62; June 27, 1962, 24,716/62
14 Claims. (Cl. 136—212)



1. A thermoelectric device comprising a plurality of thermoelectric cooling elements arranged in first and second linking chains and first and second terminal chains, each said chain comprising thermoelements of one conductivity type; thermoelements of the opposite conductivity type alternating with the said thermoelement of said one type; thermally and electrically conducting bridges connecting adjacent thermoelements such that said bridges are on alternate sides of said chain whereby to provide a plurality of hot junctions on one side of each said chain and a plurality of cold junctions on the other side of each said chain, one cold junction bridge connected to a thermoelement of one conductivity type of said first linking chain and a thermoelement of the opposite conductivity type in said second linking chain and a thermoelement of the one conductivity type of said first terminal chain, a second cold junction bridge connected to a thermoelement of said opposite conductivity type in said first linking chain and a thermoelement of said one conductivity type in said second linking chain and a thermoelement of said opposite conductivity type in said second terminal chain.

3,291,649
THERMOELECTRIC CONTROL DEVICE
Lambert F. Craemer and Douglas R. Scott, both of Santa Ana, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 186,843
15 Claims. (Cl. 136—217)



1. A thermocouple comprising,
a pair of thin, substantially flat, complementary sheet members of conductive material joined together at their peripheries,
an element of conductive material dissimilar to the material of said members disposed between the members,
one end of said element being joined to the members to form a thermoelectric junction,
and means insulating the members from said element at the unconnected portions thereof,
said members being sufficiently thin and of a sufficient overall extent such that on heating the members will flex laterally outwardly with greater volumetric expansion than said element to compensate for the different expansion coefficients of said dissimilar materials and thereby reduce mechanical stresses between said members and said element.

9. A thermoelectric control device comprising,
a casing of conductive material having a pair of opposed substantially flat and parallel walls joined together along their peripheral edges,
an element of conductive material dissimilar to the material of the casing positioned in the casing and joined to said parallel walls to form a thermoelectric junction with the casing,
a pilot burner formed integral in the casing adjacent the thermoelectric junction in flame impinging relation therewith,
and means for connecting the pilot burner to a source of fluid fuel.

3,291,650
CONTROL OF CRYSTAL SIZE
Hubert G. Dohman, Kokomo, and Herbert A. Sims, Frankfort, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,708
4 Claims. (Cl. 148—1.6)

1. The method of growing a monocrystalline body of accurately controlled cross section which comprises the steps of forming a melt for growing monocrystals, forcing a domical projection of the melt through an aperture in a member contacting a surface of the melt, contacting said domical projection with a seed crystal to establish a melt zone having a surface extending between the seed crystal and the upper surface of said apertured member, directing a light beam onto the surface of said melt zone to produce a reflected beam of light having an angle of reflection therebetween, pulling a single crystal from said melt by progressive unicrystalline solidification from said melt onto said seed crystal at its contact area with said melt zone and, after initial crystal growth, maintaining said angle of reflection at a predetermined value during crystal growth by adjusting any one or more crystal growth conditions such as melt temperature, rate of pull, inclination of pull axis, location of pull axis in said melt zone, location of the melt zone in the melt heat field, and melt temperature.

3,291,651
DYEING ANODIZED ALUMINUM WITH COBALTIFEROUS AZO-DYESTUFFS
Jakob Brassel, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,270
Claims priority, application Switzerland, June 21, 1957, 47,519/57
22 Claims. (Cl. 148—6.1)

1. A method of dyeing anodically oxidized aluminum in fast shades which comprises immersing the anodically oxidized aluminum in an aqueous solution of complex cobalt compound sulfonated monoazo-dyestuff of the formula



in which R represents a hydroxybenzene radical bound to the azo linkage in vicinal position relatively to the hydroxyl group, and A represents a naphthalene radical, bound to the azo linkage in vicinal position to the NH_2— group at a pH of about 5 to about 7 until absorption of the dyestuff onto the oxidized aluminum is achieved.

3,291,652
METHOD OF BONDING CELLULOSE ACETATE TO METAL
Frederick A. H. Rice, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Original application Apr. 27, 1960, Ser. No. 25,177, now Patent No. 3,230,212, dated Jan. 18, 1966. Divided and this application Apr. 22, 1965, Ser. No. 462,199
2 Claims. (Cl. 148—6.24)

1. A method of bonding cellulose acetate containing

carboxylic groups to a metal substrate which comprises, dissolving said cellulose acetate in a volatile solvent, adding thionyl chloride to said solvent solution and directly pouring the resulting solution onto the metal substrate to form a film thereon, and heating said film on the metal substrate for a time sufficient to evaporate the volatile solvent and firmly bond the cellulose acetate to the metal substrate.



3,291,653

HARD FACING TREATMENT OF STEEL BODIES

Howard F. Ellert, St. Paul, Minn., assignor to Paper Calmenson & Co., a corporation of Minnesota

No Drawing. Filed Jan. 30, 1964, Ser. No. 341,432
3 Claims. (Cl. 148—12.1)

1. A method of forming hard facing material on a selected surface of a steel body which comprises:

(*a*) heating said surface to the critical temperature at which said surface becomes molten of the steel body;

(*b*) applying to said heated surface particles of a hard metal carbide in a matrix comprising a low carbon steel alloy of nickel, chromium and molybdenum in a molten state;

(*c*) causing said molten facing material to solidify;

(*d*) carburizing the solidified hard facing material and metal body supporting the same to a substantial depth, and

(*e*) reheating, quenching and drawing the carburized body to provide an abrasive hard facing thereon characterized by high resistance to spalling and high elastic limit.

3,291,654

PROCESS FOR PREPARING HIGH STRENGTH FABRICATED ARTICLES FROM ALUMINUM-BASE ALLOYS CONTAINING MAGNESIUM AND COPPER

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,655
12 Claims. (Cl. 148—12.7)

12. A method of preparing a high strength aluminum-base alloy extruded article consisting by weight essentially of an amount of magnesium within the range of from about 1.0 to about 2.0 percent and an amount of copper within the range of from about 7.5 to about 12, the balance being aluminum, which comprises the steps of atomizing the alloy into pellets from the molten state, extruding the pelleted alloy at a temperature within the range of from about 750 to about 850° F., solution heat treating the alloy at a temperature within the range of from about 915 to about 930° F. for a period of time within the range of from about 1 minute to about 2 hours, and aging the so-treated alloy at a temperature within the range of from about 320 to about 340° F. for a period within the range of from about 10 to about 20 hours.

3,291,655

ALLOYS

Robert F. Gill, Schenectady, Louis D. Tutt, Ballston Lake, and Jack Kevesian, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed June 17, 1964, Ser. No. 375,921
10 Claims. (Cl. 148—36)

1. A high temperature alloy characterized by high rupture ductility and high creep-rupture strength and having a bainitic structure with finely dispersed precipitated vanadium carbide, said alloy consisting essentially of by weight about .05 to .6% carbon, .5 to 3.0% chromium, 0.3 to 1.75% molybdenum, 0.15 to 1.0% vanadium, 0.2 to 1.5% manganese, from about .02 up to about 0.2% aluminum and from about 0.04 up to about 0.2% of titanium, with the remainder essentially iron.

3,291,656

CASTINGS OF MAGNESIUM-ALUMINUM-ZINC ALLOYS

Karl Ernst Mann, Meinerzhagen, Westphalia, Germany, assignor to Otto Fuchs, Meinerzhagen, Westphalia, Germany, a corporation of Germany

Filed Nov. 7, 1963, Ser. No. 322,586
Claims priority, application Germany, Nov. 27, 1962, F 38,400; July 16, 1963, F 40,238; Aug. 9, 1963, F 40,455
13 Claims. (Cl. 148—161)



3. In the method of preparing heat treated castings of a magnesium alloy of the type MgAlZn which method includes a solution heat treatment about from 380° C. to below 415° C., quenching, and artificially aging, the improvement which comprises selecting an alloy substantially consisting by weight of 8.3 to 8.7% aluminum, 1.4 to 1.6% zinc, 0 to 0.3% manganese, 0 to 0.7% copper and the balance magnesium and subjecting the same after said solution heat treatment below 415° C. and prior to quenching to a further solution heat treatment at a temperature of the order of about 415° C. to 425° C. for a time sufficient to obtain for the finished casting substantially the following order of magnitude minimum strength values:

Tensile strength	kp./mm.²	30
Yield strength	kp./mm.²	19
Elongation	percent	3

3,291,657

EPITAXIAL METHOD OF PRODUCING SEMICONDUCTOR MEMBERS USING A SUPPORT HAVING VARYINGLY DOPED SURFACE AREAS

Erhard Sirtl, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Aug. 9, 1963, Ser. No. 301,835
Claims priority, application Germany, Aug. 23, 1962, S 81,957
1 Claim. (Cl. 148—175)

The method of producing a semiconductor member by precipitating a semiconductor layer from a gaseous compound of semiconductor substance onto a substrate body, which comprises pressing crystal powders containing a semiconductor substance to be precipitated and including respectively varying doping substances into the shape of a tablet to produce surface areas of respectively varying

doping on its top side to provide a transfer body, placing the substrate body on the top side of the pulverulent transfer body, heating the substrate body from the transfer body to a temperature at which a transport reaction occurs and simultaneously subjecting the top side of the transfer body to a gas atmosphere capable of forming a gaseous compound with said semiconductor substance, whereby the pattern of said varyingly doped surface areas is epitaxially transported onto the side of the semiconductor body facing said transfer body.

3,291,658

PROCESS OF MAKING TUNNEL DIODES THAT RESULTS IN A PEAK CURRENT THAT IS MAINTAINED OVER A LONG PERIOD OF TIME

James H. Butler and David De Witt, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1963, Ser. No. 291,430
9 Claims. (Cl. 148—179)





1. The process of increasing the peak current at a given operating temperature for a tunnel diode, comprising the steps of:

(a) forming a junction defined by two regions, the first region having a doping concentration substantially above the level of degeneracy and the other region having a doping concentration no greater than that at the level of degeneracy;

(b) passing a current, substantially in excess of the peak current, in the forward direction through the diode at said given operating temperature;

(c) measuring the current-voltage characteristic of the diode; and

(d) increasing the forward current until there is an increase in the peak current in said characteristic at said given operating temperature.

3,291,659

AMMONIUM NITRATE DISKS

Joseph J. Yancik, Florissant, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Apr. 10, 1964, Ser. No. 358,862
11 Claims. (Cl. 149—2)





1. A method of preparing ammonium nitrate particles which comprises pressing in one plane prills of ammonium nitrate so as to reduce the dimensions of said prills in that plane while increasing the dimensions of a prill in a plane perpendicular, said prills having a particle density of at least about 1.5.

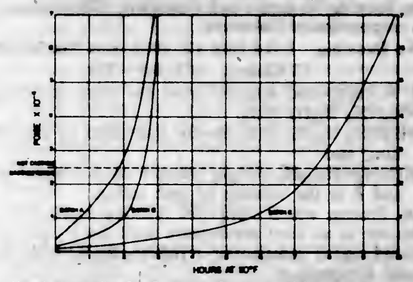
7. Granular ammonium nitrate in the form of disks comprising a central portion with a particle density of at least about 1.6 and a peripheral portion with a particle density less than about 1.6, said ammonium nitrate having a bulk density less than about 55 pounds per cubic foot.

3,291,660

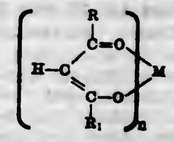
POLYURETHANE PROPELLANT FORMULATIONS AND PROCESS

Adolph E. Oberth, Fairoaks, David G. Smith, Rancho Cordova, and Rolf S. Bruenner, Orangevale, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

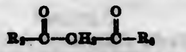
Filed Jan. 24, 1963, Ser. No. 254,856
21 Claims. (Cl. 149—19)



1. In the method of preparing a solid propellant composition which comprises intimately dispersing a solid inorganic oxidizing salt in a binder mixture consisting essentially of a compound having as its sole reacting groups not less than two active hydrogen groups capable of polymerizing with an isocyanate and a compound having as its sole reacting groups not less than two groups capable of undergoing a urethane-type reaction with hydroxy groups, and wherein the urethane catalyst comprises a catalytic amount of a chelate having the general formula:



wherein R and R_1 are non-reactive monovalent organic radicals, M is a metal radical having a coordination number equal to twice its electro valence and *n* is an integer which corresponds to the electro valence of M; the improvement which comprises employing an effective amount of an alpha, gamma diketone having the formula:



wherein R_2 and R_3 are non-reactive monovalent organic radicals selected from the group consisting of alkyl, aryl, haloalkyl and haloaryl, to increase the pot life of said polyurethane composition.

3,291,661

REACTION PRODUCTS OF NITRILE DECABORANES WITH OLEFINS

George J. Donovan and Murray S. Cohen, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 21, 1960, Ser. No. 64,218
7 Claims. (Cl. 149—22)

1. A method for the production of an organoboron compound useful as a fuel which comprises reacting a borane selected from the group consisting of bis(nitrile) decaboranes and bis(nitrile)alkyldecaboranes with an aliphatic monoolefin hydrocarbon containing from two to twelve carbon atoms while the reactants are in admixture with an inert organic solvent, the bis(nitrile)

decaboranes being the reaction products of decaborane with a nitrile of an unsubstituted aliphatic carboxylic acid having from 1 to 6 carbon atoms, and the bis(nitrile) alkyldecaboranes being the reaction products of a lower alkyl decaborane with an alkyl cyanide containing from 1 to 4 carbon atoms in the alkyl group.

6. Products produced by the method of claim 1.

3,291,662

COMPOUND AND COMPOSITION CONTAINING AMMONIA, HYDRAZINE, AND DECABORANE(8)

Walter H. Knoth, Jr., Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 17, 1962, Ser. No. 210,881
12 Claims. (Cl. 149—22)

1. A compound selected from the class consisting of $NH_2NH_2 \cdot B_{10}H_9 \cdot NH_3$,
$NH_2NH_2 \cdot B_{10}H_9 \cdot NH_3$ having hydrazine of crystallization, and
$M(NH_2NHB_{10}H_9 \cdot NH_3)_b$ wherein M is a metal cation and b is the valence of said cation.

10. Process which comprises reacting $B_{10}H_9 \cdot 2N_2$ with hydrazine in an inert atmosphere until the N_2 groups are replaced and a solution of $NH_2NH_2 \cdot B_{10}H_9 \cdot NH_3$ in hydrazine is obtained.

3,291,663

LEAD STYPHNATE CONTAINING METHYL CELLULOSE

George William Charles Taylor, Waltham Abbey, Essex, and Stanley Edward Napier, Tilehurst, Reading, England, assignors to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,607
11 Claims. (Cl. 149—24)

1. A process for the manufacture of lead styphnate which comprises precipitating the lead styphnate from an aqueous solution containing methyl cellulose, separating the precipitated lead styphnate from the said solution and drying the precipitate, whereby lead styphnate is produced in a granular, free-flowing form which incorporates methyl cellulose.

9. A granular lead styphnate having a small proportion of methyl cellulose incorporated therewith.

3,291,664

PREPARATION OF EXPLOSIVE SUBSTANCES CONTAINING CARBOXYMETHYL CELLULOSE

George William Charles Taylor, Waltham Abbey, and Stanley Edward Napier, Tilehurst, Reading, England, assignors to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,641
22 Claims. (Cl. 149—24)

1. A process for the manufacture of an essentially water-insoluble primary explosive which comprises precipitating the primary explosive from an aqueous solution containing carboxymethyl cellulose, separating the primary explosive from the said solution and drying the primary explosive, whereby the primary explosive is produced in a granular, free-flowing form which incorporates carboxymethyl cellulose from the said aqueous solution.

14. An explosive composition which comprises a water-insoluble primary explosive containing from about 0.01 to 3 percent of carboxymethyl cellulose incorporated therewith.

3,291,665

ZIRCONIUM COMPOSITION WITH POTASSIUM PERCHLORATE AND GRAPHITE

Charles H. Jackson, Redondo Beach, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California

No Drawing. Original application Jan. 24, 1962, Ser. No. 168,555, now Patent No. 3,283,843, dated Aug. 31, 1965. Divided and this application Aug. 2, 1965, Ser. No. 493,289
1 Claim. (Cl. 149—42)

An initiation material consisting essentially of an intimate mixture of (a) zirconium 46.0% plus or minus 0.2% by weight, (b) potassium perchlorate 48.0% plus or minus 0.2% by weight, (c) graphite 1.0% plus or minus 0.1% by weight, and, (d) a fluoroelastomer 5.0% plus or minus 0.1% by weight.

3,291,666

FREE FLOWING CRYSTALLINE ORGANIC DETONATING COMPOUND WITH ORGANIC FLUORINE POLYMERS

Donald Nixon Thatcher, Sewell, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 26, 1958, Ser. No. 776,418
4 Claims. (Cl. 149—92)

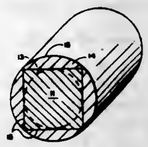
1. A free-flowing, readily pressed explosive composition of high thermal stability which consists essentially of a crystalline organic detonating compound having a melting point of at least 325° F. selected from the group consisting of picryl sulfone, cyclotrimethylenetrinitramine and cyclotetramethylenetetranitramine admixed with a copolymer of vinylidene fluoride and hexafluoropropylene in an amount between 1 and 5% by weight of the composition.

3,291,667

ETCHING PROCESS FOR SELECTIVELY FORMING WORKPIECE SURFACES

Samuel Young, Jr., La Mirada, and Dominic C. Mitchell, Jr., Arcadia, Calif., assignors to North American Aviation, Inc.

Filed Apr. 10, 1961, Ser. No. 101,838
3 Claims. (Cl. 156—18)



1. A process for selectively forming a surface of a workpiece of a material difficult to machine comprising the steps of selectively distributing an easily machinable coating material having an etch rate in an etchant comparable to the etch rate of said workpiece in said etchant onto the surface of said workpiece, machining a top surface of said coating material into a desired configuration and etching away all of said coating material and a portion of said workpiece until said workpiece comprises a surface conforming to the formed top surface of said coating material.

3,291,668

PHOSPHORESCENT COATED TEXTILE

Joseph Goldstein, Brookline, Mass., assignor, by mesne assignments, to Julius Goldstein & Sons Co., Boston, Mass., a corporation of Massachusetts

Filed Sept. 19, 1962, Ser. No. 224,789
5 Claims. (Cl. 156—67)

1. A method of preparing a phosphorescent laminate having good afterglow properties and high resistance to bending stress for use as a visible night marker in foot-

wear and having a thermoplastic overlayer with a thickness in the range of 0.02 to 0.0002 inch and wherein said laminate has an overall thickness of less than about 0.04 inch, said method compriaing,

applying a coating of phosphorescent crystals in a transparent thermoplastic resin carrier over a textile base,



applying a thin, clear, transparent thermoplastic sheet over said coating of phosphorescent crystals,

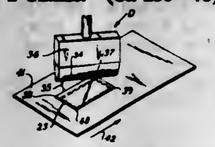
laminating said sheet to said coating and base by heating to a temperature in the range of 250 to 400° F. and applying a pressure between 300–500 p.s.i. for a period of at least 8 minutes to align said crystals so as to obtain increased afterglow effects.

3,291,669

METHOD OF FORMING AN INFORMATION RETRIEVAL APERTURE CARD

Benjamin B. Osher, Lawrence, N.Y., assignor to Kleer-Vu Industries, Inc., New York, N.Y.

Filed Dec. 10, 1963, Ser. No. 329,449
2 Claims. (Cl. 156—73)



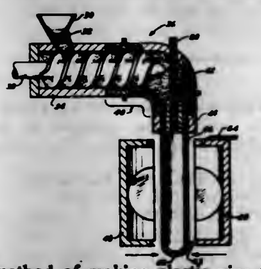
1. A method of sealing a transparent film to a window opening in an information retrieval card which comprises placing the card upward and the film underneath with an overlap of about .030" around the periphery thereof, placing the overlapped assembly against an anvil and applying a vibratory ultrasonic tool to the overlap and then applying a pressure of about 2,000 to 20,000 pounds per square inch at a cyclic rate of about 18,000 to 25,000 cycles for a period of about 1½ to 2 seconds to cause a mechanical bond and an integration of the overlapping edges of the card and the film and whereby the card and film will be coplanar, the tool consisting of an elongated member obliquely extending across the window opening.

3,291,670

METHOD OF MAKING PLASTIC PIPE FITTINGS

Martin A. Umb, Costa Mesa, Calif., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Filed Dec. 2, 1965, Ser. No. 511,176
3 Claims. (Cl. 156—245)



1. A method of making plastic pipe fittings for piping systems requiring fluid-tight joints comprising the steps of

a. providing a female mold having a cavity with the shape of the fitting desired, said cavity having a machined finish,

b. molding within said mold a hollow plastic body having at least one branch, forming said body with an external surface adjacent the end of said branch with a finish sufficiently smooth to permit fluid-tight sealing engagement therewith and having precise, accurately controlled dimensions,

c. forming a plastic end connector with a first portion having an internal surface complementary in size, shape and finish to the external surface of the end of said branch and with a second portion providing a pipe-receiving socket having an internal surface with a finish sufficiently smooth to permit fluid-tight sealing engagement therewith and having precise accurately controlled dimensions,

d. placing said first portion of said end connector over the end of said branch such that the internal surface of said first portion mates with the external surface of said branch and said second portion of said end connector extends beyond said branch, and

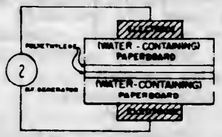
e. fluid-tight sealingly joining said first portion to said branch.

3,291,671

DIELECTRIC FUSING OF PLASTIC FILMS

Myer H. Hecht, 1429 Central Ave., Deerfield, Ill.

Filed Sept. 4, 1962, Ser. No. 221,670
15 Claims. (Cl. 156—273)



1. In a method of uniting opposed confronting surfaces of layers of paperboard containing by weight approximately 5–8% water distributed throughout the mass of said paperboard, the steps of:

interposing between and in direct face-to-face contact with the opposed confronting surfaces of sad water-containing paperboard layers at least one electrically non-polar, low dielectric loss factor thermoplastic film not inherently capable of being fused by a direct radio frequency field impressed across it,

positioning said paperboard layers with said low dielectric loss factor thermoplastic film in intimate contact therebetween under pressure between electrodes in a direct radio frequency field in the megacycle range, and

maintaining said field until said plastic film is tackified and fused to the opposed surfaces of said paperboard layers.

3,291,672

METHOD OF FORMING A SYNTHETIC RESIN PANEL

Ralph H. Sonneborn, Fernando Alvarez de Toledo, and Ronald Z. Bell, Huntingdon, Pa., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

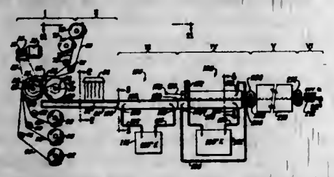
Filed Apr. 4, 1963, Ser. No. 270,727
7 Claims. (Cl. 156—289)

1. In a method of forming a synthetic resin panel from a polymerizable, liquid, thermosetting resin and a fibrous reinforcement mat sandwiched between pliable cover films,

the steps of

forming a generally V-shaped pool of liquid resin between opposed, converging supports forming sides of the pool,

moving a carrier film supported fibrous mat linearly in against one side of said pool to saturate the mat with the resin and wet out the fibers and degas the mat,
moving a second carrier film linearly into said pool along a line spaced from the mat entrance,



contactingly engaging said second carrier film and said mat within a narrower portion of said pool,
moving the films and mat out through the narrowest part of the pool as a lay-up, and
heating the lay-up for a sufficient period to polymerize the resin.

3,291,673

PROCESS OF BONDING ARTICLES WITH ALKYLENE DICYANAMIDE AT TEMPERATURES BELOW 100° C.

Kiichiro Sugino, Shinjuku-ku, Tokyo, Kozo Shiraï, Shinagawa-ku, Tokyo, and Rokuro Kitawaki, Mitaka-shi, Tokyo, Japan, assignors to Nippon Carbide Industries Co., Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Filed May 14, 1962, Ser. No. 201,228
8 Claims. (Cl. 156—331)

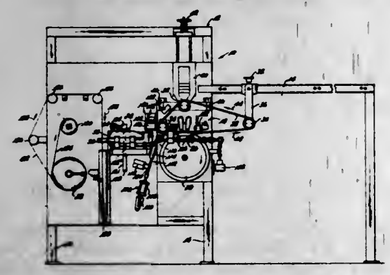
1. A process for bonding solid materials comprising coating at least one surface of one of the materials with a substance consisting essentially of at least one alkylenedicyanamide which is represented by the formula $NC.HN(CH_2)_nNH.CN$, wherein n is an integer from 4 to 20, to form a film on said one surface, placing said one surface against the surface of another material and polymerizing said film by heating the same at a temperature beween 10 and 100° C. for a period of 10 to 60 minutes.

3,291,674

V-BELT FABRIC WRAPPING MACHINE

Ashton L. Worrall, Jr., and David C. Wright, Cuyahoga Falls, Ohio, assignors to The Falls Engineering and Machine Co., Cuyahoga Falls, Ohio, a corporation of Ohio

Filed Sept. 30, 1963, Ser. No. 312,743
11 Claims. (Cl. 156—353)



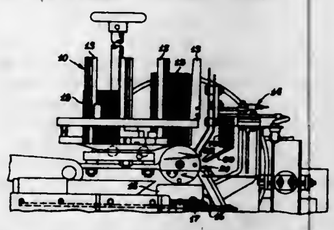
8. In an apparatus for automatically covering an endless core with a rubberized fabric, the combination of
a frame,
rotatable means operatively attached to said frame and supporting said core at peripheral spaced points,
means to place a reverse curvature along at least a portion of said core when positioned on said supporting means,
means to drive said core about said supporting means and through said reversed curvature,
feed means adapted to carry said fabric and place it against said core,
cutting means to cut said fabric on said feed means,
marker means associated with said feed means adapted to mark said fabric strip at a point to indicate a specific distance from the end thereof,
guide means to automatically fold said fabric strip about the sides of said core as said core is advanced,
serrated disc means operatively mounted in relation to said reverse curved portion of said core to provide surfaces to engage and wrap said fabric strip laterally around and over the top of said core by moving tensional forces applied to the edges of said fabric strip as said core is moved about said supporting means by said driving means, and
photo electric eye means adapted to view said mark as said fabric strip is wrapped on said core, said photo electric eye means being located at a distance from said initial application point of said fabric to said core which is equal to the distance from said mark on said fabric to the cut end thereof, said photo electric eye means operating to actuate said cutting means to cut said fabric strip in predetermined time relation to the detection of said mark by said photo electric eye means.

3,291,675

LABEL AND INDICIA APPLYING DRUM

Daniel L. Orloff and Kenneth D. Poley, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed June 24, 1963, Ser. No. 290,119
18 Claims. (Cl. 156—385)



3. Means for applying labels and indicia to a package made of plastic material wherein the labels include adhesive which is activated by the application of heat, said means comprising, a drum mounted for rotation about its longitudinal central axis, said drum being provided with means to hold a label on the cylindrical surface thereof for subsequent transfer to a package, said drum having at least one indicia bearing element carried thereby with the face of the element projecting slightly beyond the cylindrical surface of the drum, and heating means mounted proximate to said drum for activating the adhesive on a label held by the drum before the former is transferred to a package and for heating said element to form an indicia impression on the package.

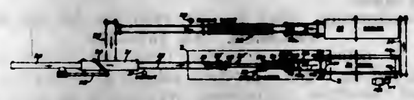
3,291,676

TILE SHEET-BACKING APPARATUS

Wayne C. Watson, Ambler, Pa., assignor to American Olean Tile Company, Inc., Lansdale, Pa., a corporation of New York

Filed Dec. 20, 1962, Ser. No. 246,124
13 Claims. (Cl. 156—561)

1. Tile sheet backing apparatus, comprising in combination, a board forwarding first conveyor which moves rectangular tile boards, having tile-holding pockets thereon, endwise and spaced apart along a horizontal path at a continuous uniform speed,
a double-tilt second conveyor having board supports which hold a board with one corner lowermost for taking tile boards from said first conveyor and moving them along continuously,
means alongside said second conveyor for agitating the boards to cause tiles to shift in their pockets to limiting positions toward the lowermost corner of said board where they are retained by gravity for the application of an adhesive backing sheet to the tiles on a board,
said agitating means including a member timed to move forward for a distance with an advancing board as it agitates the board,
a side-tilt third conveyor which takes boards endwise



with one side lowermost and moves them continuously from said second conveyor,
a high-level wide-gage fourth conveyor overlapping said third conveyor arranged to hold boards sidewise and move them along continuously,
a board turning device arranged in the overlap of said third and fourth conveyors which is constructed and arranged to lift boards from said third conveyor to a level above said fourth conveyor, turn them ninety degrees, and lower them sidewise-forward on said fourth conveyor,
a drying oven to receive boards travelling sidewise,
and a separately driven more slowly moving fifth conveyor travelling with boards arranged sidewise for taking boards from said fourth conveyor and moving them with closer spacing through said oven.

3,291,677

NON-WOVEN FABRICS AND A PROCESS FOR TREATING THE SAME

Herbert W. Coates, Joseph F. Bolgan, Jr., Milton J. Hamilton, and John T. Haynes, Jr., Charlotte, N.C., assignors to Kem-Wove Industries, Inc., a corporation of North Carolina

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,339
6 Claims. (Cl. 161—170)

6. A non-woven fabric comprising a plurality of thermoplastic fibers disposed in an intermingled, three-dimensional arrangement throughout the length, width and depth of said fabric, said fibers being bonded together at spaced points by a resinous bonding material to fixedly join said fibers together to form an integral non-woven structure, said non-woven fabric having a network of intercommunicating voids between said fibers throughout said fabric, said non-woven fabric having been compacted without the addition of any bonding material to a less open, higher density, compacted state from the state in which said fabric was originally made, and said non-woven fabric being responsive to the application of heat thereto of a temperature below the plastic flow temperature of both said thermoplastic fibers and said resinous bonding material for expansion to generally the original more open, low density state thereof.

3,291,678

METHOD OF COMPRESSING CREPED PAPER TISSUE STACKS AT SPECIFIC MOISTURE CONTENT

Kenneth M. Enloe and Le Roy L. Peterson, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Original application May 9, 1961, Ser. No. 111,417, now Patent No. 3,172,564, dated Mar. 9, 1965. Divided and this application May 15, 1964, Ser. No. 367,810
4 Claims. (Cl. 162—113)

1. In a method of making paper tissue, the steps which comprise, creping paper tissue from the drier drum of a papermaking machine with the paper tissue having a moisture content of less than 5 percent, calendering and stretching the creped tissue so as to remove some of the creping, adding moisture to the tissue subsequent to said stretching and creping to increase the moisture content to 5½ percent ±1 percent, and subsequently winding the tissue into a roll.

3. The method of making stacks of creped tissue paper of basis weight (uncreped) of about 7.6 pounds per 2,880 square feet and having a crepe ratio of about 20 percent, the paper being made of bleached furnish to which no sizing is added and which is dry creped and calendered, comprising the steps of folding sheets of the creped tissue paper having a moisture content of about 5½ percent into stacks, compressing such stacks in the direction perpendicular to the paper under a pressure between 15 and 890 pounds per square inch, and thereafter releasing the stacks from such compression to thereby form stacks which are substantially less in height than the original height of the stacks before compression and in which the sheets are soft and smooth and limp.

3,291,679

REACTION PRODUCT OF A POLYMERIC ALPHA-OLEFIN-MALEIC IMIDE-AMINE AND AN EPIHALOHYDRIN AND SIZING PAPER THEREWITH

Joseph P. O'Brien, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 29, 1965, Ser. No. 468,163
17 Claims. (Cl. 162—164)

6. A composition comprising the reaction product of an epihalohydrin with an alpha-olefin/imide-amine polymer formed by the reaction of an alpha-olefin/alpha, beta olefinically unsaturated polycarboxylic acid anhydride copolymer with a diamine containing at least one primary amino group, the alpha-olefin containing an average of from 2 to 40 carbon atoms, the ratio of said anhydride to the alpha-olefin in said copolymer being from about 0.9:1 to about 1.8:1, and the ratio of epoxide to cyclic imide groups in said epihalohydrinated reaction product being between about 0.1:1 and 1:1.

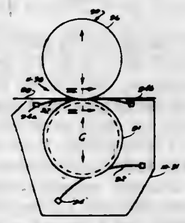
12. A method of improving the properties of a water-laid cellulosic web which comprises (a) adding to an aqueous slurry of papermaking cellulosic fibers a polymeric composition described in claim 6, (b) adsorbing the polymeric composition on the fibers, and (c) forming the treated fibers thus obtained into a web.

3,291,680

CYLINDER MACHINE PRESS ASSEMBLY

Edgar J. Justus and Dennis C. Cronin, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Oct. 17, 1963, Ser. No. 317,022
4 Claims. (Cl. 162—272)



1. A pair of rolls defining a nip receiving a moist porous felt material for dewatering the same, at least one of said rolls being a grooved roll formed of an imperforate press roll shell presenting to the felt touching the same a peripheral surface portion having a plurality of

alternating generally circumferentially aligned grooves and ridges, said ridges presenting to such felt smooth generally cylindrical closely axially spaced land areas for supporting the felt and permitting the felt to bridge the grooves and thereby protect against substantial marking in the case of any web carried on the felt into the nip defined by such grooved roll, said grooves being vented to ambient atmosphere at the oncoming and off-running sides of the nip defined by such grooved roll to facilitate reception of water from the felt at the nip, and means maintaining a wire in each of the grooves of such grooved roll at the nip to limit penetration of felt portions into such grooves at the nip.

3,291,681
KNOCK OFF SHOWER FOR PAPERMAKING MACHINES

Donal J. Wolf, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Dec. 26, 1963, Ser. No. 333,287
7 Claims. (Cl. 162—275)



3. A shower mechanism for a paper machine comprising,

an elongate rigid hollow shower tube having a plurality of discharge shower openings along the length,

an inlet passage in said tube,

means rotatably supporting the tube,

means for rotating the tube from a rest position wherein the shower openings face upwardly with respect to a spray position and the tube remains full of water to the spray position with said openings facing a shower zone in said spray position,

valve means supplying water under pressure to said inlet passage only in said spray position.

3,291,682
SUCTION CYLINDER MOLD FOR MAKING PAPER

Klas Hellstrom, Mount Royal, Quebec, Canada, assignor to Canada Iron Foundries, Limited, Quebec, Canada

Filed Sept. 16, 1963, Ser. No. 309,229
4 Claims. (Cl. 162—357)



1. A suction mould for drying pulp in which a cylinder is rotatably mounted in a pulp vat between stationary bearings, and a stationary suction box is mounted in sealing contact with the discharge end of the said cylinder, the said cylinder having an outer perforated peripheral surface and a series of longitudinal water drainage channels located immediately under the perforated surface of said channel, the said drainage channels communicating with the atmosphere and with said suction box, a first air extraction compartment and a second water drainage compartment in said suction box, the said air extraction compartment being located adjacent the lower end of the vertical centreline of the cylinder, vacuum means in said suction box located adjacent the upper end of the said centreline of the cylinder and an internal passage in the suction box connecting the said air extraction compartment with said vacuum means, the said vacuum means in operation, separately extracting air and water from said drainage channels through said first air extraction compartment and said second water drainage compartment.

3,291,683
CONTROLLING FUNGI AND BACTERIA WITH ALKOXY OR ALKYLTHIO ALKYLAMINE ETHERS

Glentworth Lamb, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 24, 1965, Ser. No. 458,366
10 Claims. (Cl. 167—22)

1. A method for controlling fungi and bacteria in an area and on organic products subject to infestation and attack therefrom, comprising: applying to the area to be protected from fungal and bacterial attack, a fungicidal-bactericidal effective amount of a compound selected from the group consisting of an amine having the formula:

$$R—X—R_1—NH_2$$

and the acid addition salt thereof, wherein R is an aliphatic hydrocarbon of from 6 to 18 carbon atoms, X is selected from the group consisting of sulfur and oxygen, and R_1 is a lower alkyl radical of from 2 to 4 carbon atoms.

3,291,684
CONTROL OF BACTERIA AND FUNGI WITH AMINE CYANOFERRATES

Glentworth Lamb, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,700
10 Claims. (Cl. 167—22)

1. A method for protecting organic materials and agricultural crops susceptible to attack by bacteria and fungi which comprises: applying to said materials and crops to be protected an effective amount of a compound of the formula:

$$(R—NH_2)_m \cdot H_mFe(CN)_6$$

or

$$(R'—X—R''—NH_2)_m \cdot H_mFe(CN)_6$$

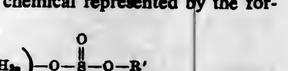
wherein R is an alkyl substituent containing from 6 to 18 carbon atoms; R′ represents an alkyl substituent containing from 4 to 14 carbon atoms, an alkoxyalkyl or alkoxy-alkoxyalkyl substituent containing from 6 to 16 carbon atoms; X is either oxygen or sulfur; R″ is an alkylene bridge containing from 2 to 4 carbon atoms; and *m* represents the integer 3 or 4.

3,291,685
METHOD OF PROTECTING PLANTS AGAINST INSECTS WITH MIXED ESTERS

Winchester L. Hubbard, Woodbridge, Allen E. Smith, Oxford, and Rupert A. Covey, Wolcott, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Original application Aug. 20, 1962, Ser. No. 218,093, now Patent No. 3,179,683, dated Apr. 20, 1965. Divided and this application Aug. 7, 1964, Ser. No. 388,321
18 Claims. (Cl. 167—30)

1. The method of protecting plants which comprises applying to the plants a chemical represented by the formula



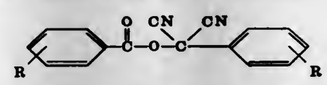
in which R and R′ are selected from the group consisting of aryl, alkaryl, cycloalkylaryl, haloalkylaryl, alkoxyaryl, and haloaryl radicals, *n* is 2 to 10, and *m* is 1 to 10, said aryl and substituted aryl groups being phenyl or naphthyl.

3,291,686
METHODS FOR CONTROLLING MICRO-ORGANISMS

Glentworth Lamb, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,781
8 Claims. (Cl. 167—30)

1. A method of controlling micro-organisms comprising the step of applying to an area to be protected from said micro-organism an effective amount of a dicyanobenzylbenzoate having the structure:



where R is a susbstituent selected from the group consisting of (lower)alkyl, halo and hydrogen.

3,291,687
CATTLE DIPS

George Wilson Cranch, Nottingham, England, assignor to Boots Pure Drug Company Limited, Nottingham, England, a British company

No Drawing. Filed Aug. 12, 1964, Ser. No. 389,217
8 Claims. (Cl. 167—36)

1. A composition adapted for producing a stable emulsion on dilution with water comprising (*a*) at least 20% w./v. based on the total volume of the composition of a carbamate selected from the group consisting of 2-cyclohexylphenyl N-methylcarbamate and 2-cyclopentylphenyl N-methylcarbamate, (*b*) a solvent system comprising 20–100% v./v. of high boiling coal tar acids which are the mixtures of high boiling phenols obtained from the carbolic oil fractions of coal tar distillation after prior removal of phenol, cresols and xylenols, said high boiling coal tar acids being further characterized by having a boiling range of about 200–300° C., and 80–0% v./v. of at least one water-immiscible organic liquid diluent having a boiling point above 200° C. and a specific gravity near to 1.0, and (*c*) at least one emulsifying agent in an amount sufficient to produce a stable aqueous emulsion when said composition is diluted with water to obtain a final concentration of 0.01–0.5% w./v. of carbamate.

3,291,688
ANTHELMINTIC TETRAHYDROPYRIMIDINES

Lloyd H. Conover, Quaker Hill, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 22, 1964, Ser. No. 398,427
12 Claims. (Cl. 167—53)

1. A method for the veterinary control of helminthiasis which comprises the administration to an animal of an effective dose of a water-insoluble salt of a compound selected from the group consisting of 2-(2-thenylmercapto)-Δ^2-tetrahydropyrimidine and 1-methyl-2-(2-thenylmercapto)-Δ^2-tetrahydropyrimidine; said water-insoluble salt being selected from the group consisting of the pamoates, amsonate, 2-hydroxy-3-naphthoate, and resin adsorbate of a porous sulfonic acid cation exchange resin.

3,291,689
MALIC ACID AND ARGININE COMPOSITION FOR TREATING HEPATIC DYSFUNCTION

Roger Nordmann, Paris, France, assignor to Laboratoires Roques, Paris, France, a corporation of France

No Drawing. Filed June 16, 1965, Ser. No. 464,542
10 Claims. (Cl. 167—55)

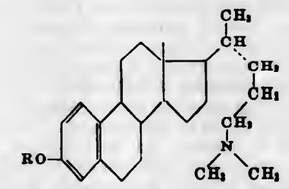
1. A method for treatment of hepatic ammonia intoxication in warm blooded animals comprising the administration internally in said animals of an effective amount of a mixture of L-arginine and malic acid, the amount of malic acid by weight being at least about one-third of the amount of arginine.

3,291,690
25-AZA-CHOLESTATRIENES, PROCESS FOR PRODUCTION AND METHOD OF TREATMENT

Daniel Bertin, Montrouge, and Jacques Perronnet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Mar. 18, 1965, Ser. No. 440,945
Claims priority, application France, Mar. 27, 1964, 968,943; June 17, 1964, 978,629, Patent 3,851 M
23 Claims. (Cl. 167—65)

20. A method of reducing cholesterol in warm-blooded animals which comprises administering to the animals an effective amount of a steroid compound selected from the group consisting of 25-aza-cholestatrienes of the formula



wherein R is selected from the group consisting of hydrogen, lower alkyl of 1 to 7 carbon atoms and an acyl radical of an organic carboxylic acid having 1 to 18 carbon atoms and their non-toxic, pharmacologically acceptable acid addition salts.

3,291,691
COMPOSITION AND METHOD FOR THE TREATMENT OF CYANIDE POISONING

Michel Marie Rolland, 6 Rue Benouville, Paris, France

No Drawing. Filed May 25, 1965, Ser. No. 458,754
Claims priority, application France, Mar. 24, 1961, 856,847, Patent 1,377
6 Claims. (Cl. 167—65)

1. A composition for the treatment of cyanide poisoning, consisting essentially of 100 parts by weight of hydroxocobalamin and about 35 to 800 parts by weight of sodium thiosulphate.

3,291,692
GERMICIDAL COMPOSITIONS CONTAINING COMPLEXES OF IODINE

John C. Hagerty, Webster Groves, Mo., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 26, 1965, Ser. No. 459,111
13 Claims. (Cl. 167—70)

1. A germicidal complex of iodine with an anionic surface active agent of the formula:

$$RCH_2O(CH_2CH_2O)_nSO_3X$$

wherein:

R is hydrocarbon alkyl containing from about 7 to about 19 carbon atoms;

n is a positive number of from about 2 to about 30; and

X is a cation selected from the group consisting of alkali metal ion, ammonium ion, triethanolamine ion and mixtures thereof; said complex containing from about 0.1 to about 30 percent by weight of iodine based on the weight of said surface active agent.

3,291,693

METHOD FOR DETERMINING VALUES OF COMPONENTS OF WHOLE BLOOD

Merlen G. Brown, Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed July 14, 1959, Ser. No. 826,941
3 Claims. (Cl. 167—84.5)

1. The method for use in accurately determining the relative volumes of leukocytes and platelets, respectively, contained in a sample of whole blood, said method comprising mixing with said sample of whole blood a small predetermined fractional amount of an anticoagulant, centrifuging a portion of said sample of whole blood and anticoagulant in suitable centrifuge means at a relatively slow speed of between 800 and 1800 r.p.m. for a period of time within a range of from 3 to 10 minutes so as to cause substantially all of the erythrocytes and leukocytes of said portion to settle to the lower part of said centrifuge means and to displace plasma and anticoagulant in said lower part, but without causing any material change in the relative distribution of platelets with respect to the plasma thereof, separating a quantity of plasma and anticoagulant containing substantially only platelets from said slow centrifuged portion, centrifuging in separate similar thin elongated straight-sided centrifuge means, at a relatively high speed, in the neighborhood of 12,000 r.p.m. and for a period of time between 4 and 5 minutes, said quantity of plasma and anticoagulant containing platelets and a portion of said sample containing erythrocytes, leukocytes, platelets and plasma, so as to cause substantially all of the platelets in one of said straight-sided centrifuge means to separate from the column of plasma and anticoagulant therein and form a platelet layer below said column, and to cause substantially all of the erythrocytes in the other of said straight-sided centrifuge means to collect as a column in the lower part thereof, to cause the platelets and leukocytes thereof to collect as a buffy layer above the erythrocyte column and to cause a column of substantially platelet-free plasma and anticoagulant to collect above the buffy layer, accurately measuring the longitudinal dimensions of the the layer of platelets and of the column of platelet-free plasma and anticoagulant in the first-mentioned straight-sided centrifuge means, and accurately measuring the longitudinal dimensions of the erythrocyte column, of the buffy layer and of the column of platelet-free plasma and anticoagulant in the second-mentioned straight-sided centrifuge means, whereby the dimensional values so obtained for the platelet layer and for the platelet-free plasma and anticoagulant column of said first-mentioned straight-sided centrifuge means may be taken as the ratio of the relative platelet volume in the buffy layer with respect to the plasma and anticoagulant volume of the second-mentioned straight-sided centrifuge means, and used in determining the relative platelet volume and the relative leukocyte volume of said buffy layer, and from which values for the volumes of all of the components of said blood sample may be calculated.

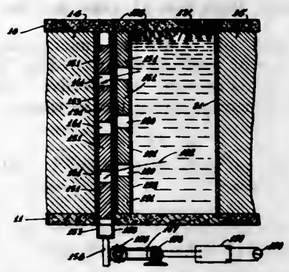
3,291,694

NEUTRON AMPLIFIER

Lyle B. Borst, Castalia, N.Y., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 24, 1957, Ser. No. 654,837
7 Claims. (Cl. 176—11)

1. A regenerative subcritical neutron amplifier comprising a plurality of directionally polarized convergent neutron generator stages in cascade, each stage comprising a region of neutron moderator material, a region of thermal neutron fissionable isotope material having the characteristic of emitting a small percentage of delayed neutrons, and a region of thermal neutron barrier material, the neutron moderator region being the input of each stage, and the thermal barrier region being the output of each stage, an extinguishable epithermal neutron source, means for projecting neutrons from the source into the input region of the first stage, means for projecting neutrons of each output region into the input region of each succeeding stage, means for transferring a portion of the fissionable isotope material from a stage to a selected preceding stage, and means for extinguishing the neutron source when the amplifier has reached a predetermined steady-state production of neutrons.

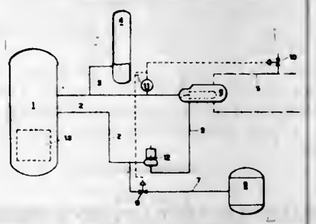


3,291,695

DEVICE FOR REDUCING THE OVERPRESSURES CAUSED BY FAILURES OF THE HEAT EXCHANGER IN TWO LOOPS PRESSURIZED ORGANIC COOLED NUCLEAR REACTOR PLANT

Elio Meril, Rome, Italy, assignor to Comitato Nazionale per l'Energia Nucleare, Rome, Italy

Filed Dec. 16, 1963, Ser. No. 330,766
Claims priority, application Italy, Feb. 6, 1963, 664,390
2 Claims. (Cl. 176—20)



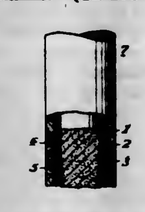
1. In a nuclear reactor plant having a primary loop and a secondary loop; a heat exchanger included in both loops, said primary loop further comprising a pressure vessel connected with said heat exchanger, fuel elements in said pressure vessel, a circulating pump connected with said pressure vessel and said heat exchanger, an expansion vessel and a drain tank, an organic fluid being circulated through said primary loop at a high temperature and relatively low pressure and water being circulated through said secondary loop at a lower temperature and a higher pressure than that of said organic fluid; an apparatus for reducing excessive pressure produced in said primary loop by failure in said heat exchanger, said apparatus comprising a pressure sensing device, means connecting said pressure sensing device with said primary loop and comprising a remotely controlled valve connected to said drain tank, and means connecting said pressure sensing device with said secondary loop and comprising a remotely controlled valve communicating with the atmosphere, the location of said pressure sensing device in the primary loop enabling it to detect said excessive pressure and to control said valves accordingly, thereby maintaining pressure in the primary loop at a value which is lower than the maximum pressure for which the primary loop was designed.

3,291,696

FUEL ELEMENT FOR HIGH TEMPERATURE AND HIGH POWER DENSITY NUCLEAR REACTOR

Eizo Sugimoto, Atsuyoshi Moriishima, Akira Tachibana, and Shgeru Yamakawa, Tokai-mura, Naka-gun, Japan, assignors to Nihon Genshiryoku Kenkyujo, Tokyo, Japan, a specific juridical corporation of Japan

Filed June 21, 1963, Ser. No. 289,530
Claims priority, application Japan, Sept. 21, 1962, 37/40,796
5 Claims. (Cl. 176—68)



1. A fuel element for use in a nuclear reactor of the gas-cooled type, said fuel element comprising: an elongated hollow cylindrical core member formed of gas-impermeable material selected from the group consisting of graphite and beryllium oxide; a fuel layer consisting essentially of fissionable material extending over the internal surface of said core member, said core member being free from said fissionable material; and a gaseous coolant in contact with the external surface of said core member; a gas-permeable covering layer extending over said fuel layer in contact therewith, said fuel layer being sandwiched between said core member and said covering layer; and a cylindrical filler member coaxial with said core member and spaced from said covering layer to define a gap therebetween for the circulation of a purge gas to remove gaseous fission products from said fuel element.

3,291,697

FUEL ELEMENT FOR NUCLEAR REACTOR

Warren P. Chernock, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,536
4 Claims. (Cl. 176—69)

1. A fuel element for nuclear reactors comprising a densified particulate mass contained in a housing, said mass having particles containing different materials at least some of which contain fissionable material, the size range of the particles containing different materials being different, said particles being of a material such that the different materials may be separated by simple screen processes after irradiation of the fuel element and the material thereof in a nuclear reactor.

3,291,698

FUEL ELEMENT

Peter Fortescue, Rancho Santa Fe, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 19, 1965, Ser. No. 449,032
14 Claims. (Cl. 176—68)

1. A nuclear reactor fuel element which comprises fissionable nuclear fuel, an outer sealed can surrounding said fissionable nuclear fuel, and a material which is fluid at the operating temperature of the fuel element substantially filling said can, said surrounding sealed can including expansion means for equalizing the pressure internally and externally of the fuel element by expansion or contraction thereof in response to the difference in pressure exterior and interior of said sealed can.

11. A fuel element designed for vertical disposition in a nuclear reactor, which fuel element comprises a plurality of right circular cylindrical fissionable nuclear fuel compacts each of which having an axially extending hole formed therethrough, said compacts being disposed one vertically above another with said holes in axial alignment, a right circular cylindrical neutron reflector pellet having an axially extending hole formed therethrough disposed above said fuel compacts with said pellet hole in axial alignment with said fuel compact holes, an elongated outer sealed right circular tubular can surrounding said fuel compacts and said pellets, the internal diameter of said tubular can being larger than the diameters of said fuel compacts and of said pellets to provide a peripheral gap therebetween, said fuel compact axial hole being in fluid communication with said peripheral gap at a location below the lowermost fuel compact, sodium substantially filling said can including said axially extending holes and said peripheral gap, means in said can preventing said reflector pellet and said fuel compacts from moving significantly upward therein, a porous filter element located in said tubular can vertically above said fuel compact, and conduit means extending from said axial hole in said neutron reflector through said filter to a point thereabove, said surrounding sealed can including a hollow right circular cylindrical section of internal diameter D made of a ductile material which section is deformed into an internal dumbbell cross sectional shape having a major dimension of about 1.20 D, a minor dimension of about 0.20 D and a radius of curvature of about 0.20 D for each of the rounded ends of the dumbbell, whereby said deformed section flexes in response to the difference in pressure exterior and interior of said sealed can to change the total volume thereof, and whereby in operation of the fuel element a convection flow of liquid sodium is established upward in said axial holes to a location above said filter and downward through said filter into said peripheral gap.



3,291,699

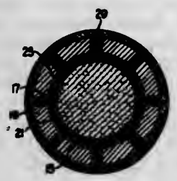
FUEL ELEMENT

Kenneth A. Trickett and Massoud T. Simnad, San Diego and George J. Malek, Poway, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 23, 1965, Ser. No. 516,157
14 Claims. (Cl. 176—68)

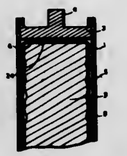
1. A fuel element for a nuclear reactor, which fuel element comprises an elongated, tubular body section formed of refractory material, a generally cylindrical support member disposed longitudinally within said tubular body section, said support member forming therein a plurality of recesses, nuclear fuel compacts disposed in said recesses,

and means for accommodating thermal expansion and irradiation growth including a layer of material disposed be-



tween said nuclear fuel compacts and said support member.

3,291,700
NUCLEAR REACTOR FUEL ELEMENT HAVING A DIFFUSION BARRIER
Francesco Brossa, Poirino, Turin, and Roger Theisen, Ispra, Varese, Italy, and Lucien Alilié, Brussels, Belgium, assignors to European Atomic Energy Community—EURATOM, Brussels, Belgium
Filed Nov. 6, 1963, Ser. No. 321,826
Claims priority, application Belgium, Nov. 16, 1962, 499,649
26 Claims. (Cl. 176—82)



1. Fuel element for nuclear reactors, more particularly for power reactors cooled by pressurized fluid heat vehicle comprising a fuel member consisting of fissile fuel, a protective canning surrounding the fuel member, the said canning being made of a material which diffuses with the fuel member, a diffusion barrier between the fuel member and the protective canning, the said barrier consisting of a diffusion-inhibiting lining formed by a strip wound around the fuel member to prevent the diffusion of the fuel through the protective canning.

3,291,701
BETA-CAROTENE PRODUCTION AND COMPOSITION THEREFOR
Roland C. Fuhs, Downers Grove, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed July 6, 1962, Ser. No. 208,111
17 Claims. (Cl. 195—28)

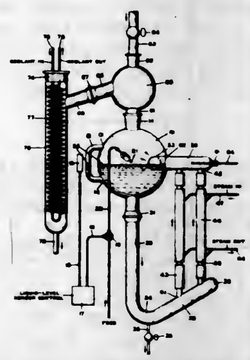
1. A process for producing beta-carotene which comprises cultivating beta-carotene producing microorganisms of the family Choanephoraceae in the presence of a nutrient medium assimilable by said microorganisms, said nutrient medium containing citrus peel materials, and incubating the microorganisms under aerobic conditions conducive to active growth.

10. A composition for the production of beta-carotene comprising: beta-carotene producing microorganisms of the family Choanephoraceae; carbohydrates; proteins; fatty materials; citrus peel material; and the pH of the composition being within the range of 5 to 7.

3,291,702
ENZYMATIC CONVERSION OF STARCH CONTAINING PROTEINACEOUS SUBSTANCES TO DEXTROSE
Guido M. Miescher, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Filed Apr. 13, 1964, Ser. No. 359,452
5 Claims. (Cl. 195—31)

1. In the enzymatic conversion of starch containing proteinaceous substances to glucose wherein an aqueous slurry of the starch is heated with an enzyme having alpha-amylase activity to thin the starch, the resulting mixture heated with an enzyme having amyloglucosidase activity to convert and saccharify the thinned slurry to produce an enzymolysate of glucose and the enzymolysate filtered and wherein the proteinaceous substances in the starch are present as contaminants in concentrations which make filtering of the enzymolysate difficult, the improvement which comprises heating said starch before formation of said aqueous slurry and prior to both enzymatic conversions at a temperature of about 110° to 130° C. for at least about 0.5 hour to facilitate said filtering.

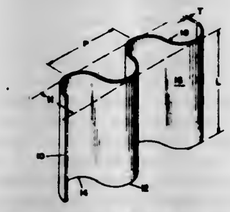
3,291,703
AUTOMATIC CYCLIC VACUUM STILL
William Dvonch, Radnor, and Harvey E. Albura, West Chester, Pa., assignors to American Home Products, New York, N.Y., a corporation of Delaware
Filed July 31, 1963, Ser. No. 296,934
1 Claim. (Cl. 202—181)



An automatic vacuum still comprising a reservoir vessel, a fluid inlet line connected to said vessel at a point above the normal level of liquid maintained in said vessel, a downwardly extending liquid draw off line connected to the bottom of said vessel, said draw off line terminating in an upwardly inclined portion which is closed at the outer end thereof, a product draw off line in the liquid draw off line positioned at the low point at which the draw off line begins its upward incline, at least one liquid circulation induction line, vertically positioned outside the vessel, connected at its lower end to the upward inclined portion of the liquid draw off line and at its upper end to a fluid return line, a heating jacket surrounding said induction line, means to introduce and withdraw heating fluid from said jacket, said fluid return line being generally perpendicular to said circulation line, closed at its outer end and communicating with the interior of the vessel at its inner end, said return line being positioned generally to straddle the point at which a liquid level is maintained in the vessel, a vapor condenser connected to and in communication with the upper end of said vessel, a vertical, U-shaped, transparent, liquid level side tube having its ends in fluid communication with said vessel, positioned to show liquid level in said vessel, a liquid level

sensing element external of said U-tube positioned to sense liquid level in said U-tube, control means connected to said sensing element and responsive thereto, said control means being connected to a valve responsive to the control means to regulate fluid flow in the fluid inlet line, a vapor collecting chamber overlying the reservoir vessel and directing vapors from said vessel to the condenser, and including an antifoam chamber connected through a valve cotrolled conduit with said vapor collecting chamber for introducing antifoam material thereto.

3,291,704
DISTILLATION APPARATUS HAVING CORRUGATED HEAT TRANSFER SURFACES
Gunther Ernst Diedrich, Burlington, and Charles W. Lotz, South Burlington, Vt., assignors to General Electric Company, a corporation of New York
Filed June 28, 1963, Ser. No. 291,569
7 Claims. (Cl. 202—236)



1. In a heat transfer wall for water distillation apparatus having on one side an evaporating surface and on the other side a condensing surface,
the improvement comprising:
a plurality of elongated protuberances separated by depressions on said evaporating surface,
said protuberances being substantially parallel and having
(1) a pitch P of from 0.050 inch to 0.500 inch,
(2) a height H of from 0.025 inch to 0.250 inch, and
(3) wherein the ratio P/H is approximately 2:1 throughout the range of dimensions of said pitch and height
said wall having a length L which compares to height (H) in a ratio of from 50:1 to 5000:1.

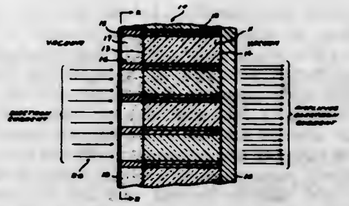
3,291,705
METHOD AND APPARATUS FOR ANALYZING GAS
Paul A. Hersch, Fullerton, Calif.
(1640 Arundel St., St. Paul, Minn.)
Original application May 5, 1961, Ser. No. 108,198. Divided and this application Feb. 3, 1965, Ser. No. 430,028
19 Claims. (Cl. 204—1)

6. The method of measuring small amounts of oxygen in a gas which comprises exposing said gas to a porous cathode selected from the group consisting of carbon, copper, gold, silver, mercury and elements of Group VIII of the Periodic Table having an atomic number of at least 44, one side of said cathode being in intimate contact with a non-conductive porous diaphragm and the opposite side of said diaphragm being in intimate contact with an anode selected from the group consisting of carbon, gold, silver, stainless steel, tantalum, mercury and elements of Group VIII of the Periodic Table having an atomic number of at least 44, said diaphragm containing a quiescent aqueous electrolyte and the total quantity of electrolyte being less than the total pore volume of said cathode and diaphragm; applying across said cathode and anode an electromotive force of from about 0.5 to about 2 volts thereby quantitatively reducing said oxygen,



and measuring the current across said anode and cathode to determine the amount of oxygen in said gas.

3,291,706
METHOD OF MAKING AN OPTICAL FIBER PHOSPHOR SCREEN
Rademes K. H. Gobel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 8, 1963, Ser. No. 314,820
2 Claims. (Cl. 204—15)



1. The method of making an optical fiber phosphor screen comprising the steps of: applying to one side of an optical fiber plate in which the fibers have opaque coatings, a coating of a photosensitive resist material of thickness equal to the desired phosphor depth; exposing said photosensitive resist material to light passed through the optical fibers from the other side of said plate; developing the resist image by removing the unexposed resist material; vacuum depositing from the vapor state a layer of metal over the area containing the resist image to a depth equal to the thickness of the resist material; removing the resist material and metal deposited thereon; and filling the voids left by the removed resist material with a phosphorescent material.

3,291,707
BRIGHT ZINC ELECTROPLATING TECHNIQUE
Harold G. Abbey, Jamaica, and George B. Schore, Great Neck, N.Y., assignors to Abbey Automation Systems, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 19, 1963, Ser. No. 259,730
2 Claims. (Cl. 204—55)

1. The process of barrel plating zinc on a base, comprising the steps of
(a) immersing a zinc anode and said base in an aqueous zinc fluoborate electroyte consisting essentially of 20 to 50 ounces of zinc fluoborate per gallon of water, the ratio of zinc to fluoboric acid being such as to afford a pH of 3.0 to 4.0, the electrolyte containing 0.1 to 0.4 ounce of brightening agent per

gallon of water, said agent having been introduced in said electrolyte as a concentrated solution of licorice dissolved in a small quantity of alcohol,

(b) applying a voltage between said base and said anode having a value in the range of 20 to 50 volts to produce an operating current density in the range of 100 to 800 amperes per square foot to deposit pure zinc on said base, and

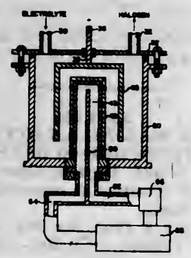
(c) cooling said electrolyte in the course of zinc electroplating to maintain a temperature range of 60° F. to 80° F.

3,291,708

ELECTROLYTIC PROCESS FOR PRODUCING A HALOGEN FROM ITS RESPECTIVE ACID AND THE APPARATUS THEREFOR

Walter Juda, Lexington, Mass., assignor to Ionics, Incorporated, Cambridge, Mass.

Filed Dec. 31, 1964, Ser. No. 425,107
3 Claims. (Cl. 204—128)



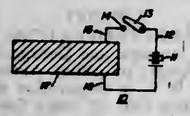
1. A process for producing a halogen gas from an acid selected from the group consisting of aqueous HCl and anhydrous HF in an electrolytic cell having spaced cathode and anode means separated by a membrane forming cathode and anode chambers, respectively, the steps comprising: introducing said acid into the anode chamber, passing an aqueous solution of an oxidant couple into the cathode chamber and retaining an effluent therefrom, simultaneously passing a direct electric current from said anode to said cathode through said cell to cause an ionic chemical reduction of said oxidant couple in said cathode chamber, supplying an oxidizing gas to the effluent of said cathode chamber to oxidize the reduced ions of said oxidant couple, recycling the regenerated oxidized couple to the cathode chamber, and removing the halogen gas from said anode chamber.

3,291,709

DRY METHOD OF FORMING A SILVER CHLORIDE ELECTRODE HAVING SILVER FILAMENTS FROM SURFACE TO SURFACE

Joseph L. Weininger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 13, 1963, Ser. No. 323,496
4 Claims. (Cl. 204—130)



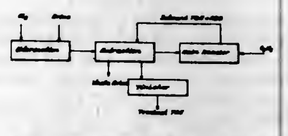
1. A method of forming an electrode which comprises providing a silver chloride body, and electronically conducting to and from said body a D.C. electric current said current being electronically applied to said body while said body is maintained in a dry state thereby forming a plurality of conductive filamentary bridges of metallic silver extending from one surface of said body to the other surface of said body.

3,291,710

PROCESS FOR THE MANUFACTURE OF TETRABROMOETHANE

Avraham Baniel and Avraham Beer, Haifa, Leonard Marshall Shorr, Beersheba, and Endre Varabanyi, Haifa, Israel, assignors, by mesne assignments, to Israel Mining Industries-Institute for Research and Development, Haifa, Haifa Bay, near Ir. Ganim, a company of Israel

Filed July 22, 1963, Ser. No. 296,677
Claims priority, application Israel, Sept. 12, 1962, 17,924
4 Claims. (Cl. 204—163)



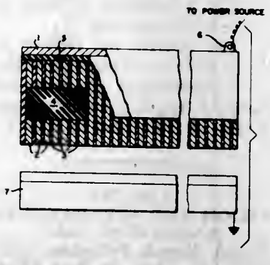
1. A process for the manufacture of tetrabromoethane, wherein bromine is extracted from a chlorinated aqueous bromide brine with tetrabromoethane containing so much acetylene dibromide that the bromine content of the extract is substantially equivalent stoichiometrically to the acetylene dibromide content of the extract; the extract is separated from the brine, a minor proportion thereof is withdrawn from circulation and subjected to a finishing treatment by intensive illumination for the conversion of essentially all the acetylene dibromide to tetrabromoethane by reaction with the bromine contained in the extract, and the major proportion of the extract is regenerated by the addition of more acetylene and recycled to the brine.

3,291,711

TREATING ELECTRODE AND PROCESS

Richard Nelson Meyer, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 12, 1963, Ser. No. 265,314
2 Claims. (Cl. 204—165)



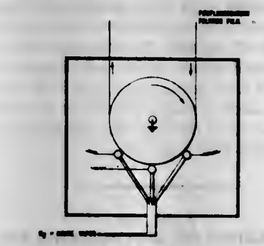
1. An elongated electrode for use in subjecting a moving polymeric shaped structure to the action of an electrical discharge, said electrical discharge established and maintained by application of a difference in electrical potential of alternating polarity between said elongated electrode and a second electrode displaced uniformly therefrom, both said electrodes extending transversely of the direction of travel of said moving polymeric shaped structure, said elongated electrode comprising a first elongated electrically conductive portion extending the entire length of said electrode, a second lamellate portion of substantially the same length as said first portion and separated therefrom by a third elongated dielectric portion contiguous to both said first and second portions over their coextensive lengths, said lamellate portion comprising a plurality of lamellate, serially contiguous over substantially their entire planar surfaces and alternately of electrically conductive and dielectric material, the plane of each said lamella being substantially parallel to the direction of travel of said polymeric shaped structure and extending transversely of the longitudinal dimension of said elongated electrode, said first elongated electrically conductive portion being adapted for electrical connection to permit the application of a difference in electrical potential of alternating polarity between said elongated electrode and said second electrode whereby to establish and maintain an electrical discharge in the gap between said second electrode and the lamellate portion of said elongated electrode.

3,291,712

SURFACE TREATMENT OF SHAPED ORGANIC POLYMERIC STRUCTURES

Richard T. McBride, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 1, 1963, Ser. No. 313,881
8 Claims. (Cl. 204—165)



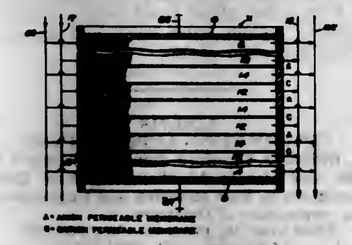
1. A process for rendering surfaces of shaped structures of organic polymeric materials strongly adherent to other materials which comprises subjecting the surface of an organic polymeric shaped structure to the action of an electrical discharge at substantially atmospheric pressure between spaced positive and negative electrodes maintained at a voltage differential in excess of about 1000 volts, said electrical discharge having an energy level below 15 electron volts, in a substantially oxygen gas-free atmosphere containing less than about 5% by volume of the vapor of an amine in an inert gaseous carrier, whereby to render said surface strongly adherable to other materials.

3,291,713

REMOVAL OF WEAKLY BASIC SUBSTANCES FROM SOLUTION BY ELECTRODEIONIZATION

Edgardo J. Parsi, Cambridge, Mass., assignor to Ionics, Incorporated, Cambridge, Mass.

Filed May 27, 1964, Ser. No. 370,631
15 Claims. (Cl. 204—180)



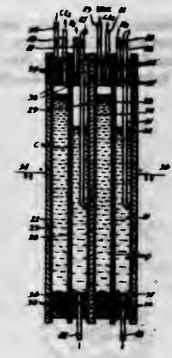
1. A process for the removal of strongly ionized electrolytes and weakly ionized bases from aqueous solutions containing a mixture of the same, the process comprising subjecting the solutions to electrodeionization in a series of at least two separate electrodeionization units, each unit of the series comprised of a cathode chamber at one terminal end, an anode chamber at the opposite terminal end, said chambers containing a cathode and an anode respectively, the body of each unit as defined by the terminating electrodes comprising a plurality of alternating diluting and concentrating chambers defined by alternating cation and anion ion-exchange permeable membranes, at least the diluting chambers of the last electrodeionization unit of the series containing a fluid permeable filler of ion-exchange material, said material of said diluting chambers comprising a strong acid cation exchanger, at least the diluting chambers of the other electrodeionization units of the series containing a fluid-permeable filler of ion-exchange material, said material of said diluting chambers comprising a mixture of strong base anion exchanger and strong acid cation exchanger, introducing liquids to be treated into the diluting compartments of the unit first in series and withdrawal of said liquid therefrom, further passing said liquid successively into and out of the diluting compartments of each remaining unit, introducing a liquid into the concentrating and electrode chambers of said unit first in series and withdrawal of said liquid therefrom, passing said liquid successively into and out of said chambers of each remaining unit, passing a direct current potential transversely across the body of each of said units of the series, said current being sufficient to dissociate water into hydrogen and hydroxyl ions within the diluting chambers, and withdrawing separate streams of deionized liquid and ion-enriched liquid from said last unit of the series.

3,291,714

ELECTRODES

John Robert Hall, Blackburn, Victoria, and Johannes Theodorus Van Gemert, Lalor, Victoria, Australia, assignors to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Australia, a corporation of Australia

Filed Jan. 8, 1962, Ser. No. 164,854
Claims priority, application Australia, Jan. 13, 1961, 363/61
25 Claims. (Cl. 204—256)

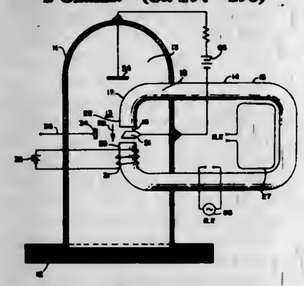


6. An electrode comprising a support formed from a metal selected from the group consisting of mild steel, titanium and a titanium base alloy, at least a portion of the surface of which is conductively covered by a coating of a ternary alloy consisting of from 5 to 60% of a primary metal selected from the group consisting of molybdenum and tungsten, said primary metal being alloyed with two metals selected from the group consisting of cobalt, nickel and iron.

3,291,715
APPARATUS FOR CATHODE SPUTTERING INCLUDING A PLASMACONFINING CHAMBER

Gerald S. Anderson, St. Paul, Minn., assignor, by mesne assignments, to Litton Systems Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Aug. 19, 1963, Ser. No. 302,783
2 Claims. (Cl. 204—298)



1. A device for sputtering material from a target electrode to coat a substrate, which comprises:

a first chamber for enclosing a first zone containing an ionizable gas and said substrate;

a tubular plasma chamber fabricated in the form of a closed loop for enclosing a second zone, said loop passing through the wall of said first chamber and having at least one portion extending within said first chamber, said portion of said loop within said first chamber being provided with at least one opening, said loop receiving said gas through said opening;

means for ionizing said gas within said plasma chamber to produce a plasma therein;

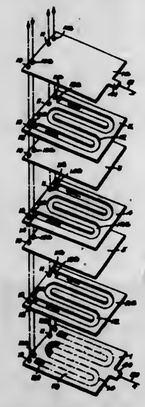
holder means for mounting said target within said plasma chamber adjacent to said opening; and

means for applying an electric potential to said target to bombard said target with ions from said plasma and sputter said material through said opening onto said substrate.

3,291,716
NOBLE METAL COATED VALVE METAL ELECTRODES USEFUL IN ELECTRODIALYSIS SYSTEMS

Vincent Cioffi, Somerville, Mass., assignor to Ionics, Incorporated, Cambridge, Mass.

Filed June 24, 1963, Ser. No. 289,815
4 Claims. (Cl. 204—301)



1. In an electrodialysis apparatus of the character described comprising a plurality of membranes selected from the group consisting of anion-exchange membranes, cation-exchange membranes, and non-permselective membranes, confined between a pair of electrodes consisting of a cathode and a noble metal-coated electrolytic-valve metals anode, said membranes being separated from one another by spacer members, each of said membranes and said spacer members containing manifold inlet means for receiving and electrolyte influent and manifold outlet means for discharging an effluent, said membranes and said spacer members being so constructed and arranged that said inlet means and said outlet means are aligned respectively with one another, said spacer members further containing means for defining a liquid flow path from the inlet means of said member to the outlet means thereof whereby electrolyte influent is caused to flow along and in contact with a membrane or an electrode adjacent thereto; the improvement which comprises said valve metal anode characterized in that the surface area of said anode adjacent to and corresponding to said spacer's flow path opposite from and in general contiguous to said inlet and outlet manifold means is free from noble metal coating and accordingly intrinsically electrolytically non-conductive sufficient to substantially prevent lateral flow of current therethrough, the remaining surface area of said anode within said spacer's flow path area being coated with noble metal and thus electrolytically conductive to allow passage of current in a substantially perpendicular direction through the remaining major portion of said spacer's flow path area.

3,291,717
HYDROGENATION OF BITUMINOUS EMULSION OBTAINED FROM TAR SAND

Edmund W. White, Edmonton, Alberta, Canada, assignor, by direct and mesne assignments, of thirty percent to Cities Service Athabasca, Inc., Edmonton, Alberta, Canada, a corporation of Delaware, thirty percent to Imperial Oil Limited, thirty percent to Atlantic Richfield Company, and ten percent to Royalite Oil Company Limited

Filed Dec. 9, 1963, Ser. No. 328,811
8 Claims. (Cl. 208—11)

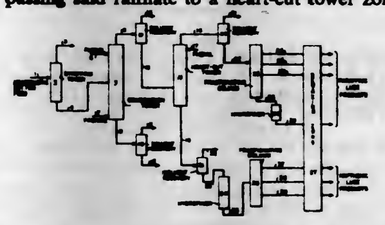
5. A process for separating hydrocarbons from bituminous sand which comprises mixing bituminous sand with water at a temperature above 125° F. to form a slurry, treating said slurry to separate sand and a bituminous emulsion, said emulsion containing by weight from about 26% to about 45% water, about 3% to about 15% fines and from about 40% to 70% of bitumen, said bitumen having a specific gravity of from about 1.0 to 1.05, heating said emulsion to a temperature of 775° F. to 880° F. and hydrogenating the heated bitumen containing liquid at about 800 p.s.i.g. to 1,000 p.s.i.g. and reacting from 800 s.c.f. to 1,000 s.c.f. of hydrogen per barrel of bitumen in the feed, removing hydrogenated effluent containing hydrocarbon oils, water and fines from the reactor, cooling and reducing the pressure on the effluent to form a two phase liquid having a hydrocarbon phase above a bottom water layer, and separating the hydrocarbon and water phases.

3,291,718
COMBINATION LUBE PROCESS

Frank A. Biribauer, Cranford, James D. Bucknell, Berkley Heights, and Harold N. Weinberg, East Brunswick, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 16, 1965, Ser. No. 440,155
17 Claims. (Cl. 208—36)

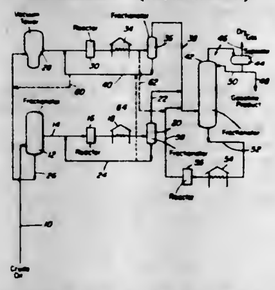
1. In a process for the production of naphthenic and paraffinic lubricating oils from a paraffinic atmospheric residuum which comprises introducing the said atmospheric residuum into a combination treating zone, introducing a solvent having a preferential selectivity for aromatic-type constituents as compared to paraffinic-type constituents into the upper area of said combination zone, introducing a deasphalting solvent into the lower area of said combination zone, removing a deasphalted raffinate phase from the top region of the said combination zone, passing said raffinate to a heart-cut tower zone, introducing a solvent having a preferential selectivity for aromatic-type constituents as compared to paraffinic-type constituents into the said heart-cut tower zone, withdrawing a raffinate phase comprising paraffinic-type constituents from the top of said heart-cut tower, withdrawing an extract phase comprising naphthenic-type constituents from the bottom region of said tower zone.



3,291,719
LIMITED CONVERSION OF HYDROCARBON OVER HIGHLY ACTIVE CATALYST

Thomas Dill, deceased, late of Westport, Conn., by Kathleen E. Dill, administratrix, Westport, Conn., assignor to Mobil Oil Corporation, a corporation of New York

Filed Mar. 22, 1966, Ser. No. 536,953
11 Claims. (Cl. 208—72)



11. A hydrocarbon conversion process which comprises contacting a relatively high boiling hydrocarbon in a liquid phase condition in the presence of a hydrogen donor material with a high activity aluminosilicate cracking catalyst under conditions to maintain conversion of the hydrocarbon feed to gasoline boiling products below about 30%, recovering gasoline boiling hydrocarbons from unconverted hydrocarbons, reheating unconverted hydrocarbons to an elevated temperature and contacting with a separate mass of high activity catalyst under conditions to obtain limited conversion to gasoline boiling hydrocarbons.

3,291,720
PROCESS FOR HYDROREFINING AND HYDROCRACKING OF HYDROCARBONS WITH A RHODIUM SULFIDE SUPPORTED CATALYST

Robert M. Dobres, Silver Spring, Md., and William A. Stover, Pitman, N.J., assignors to W. R. Grace & Co., a corporation of Connecticut

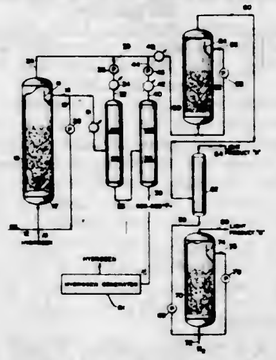
Filed Jan. 14, 1964, Ser. No. 337,568
6 Claims. (Cl. 208—89)

1. A process for conversion of hydrocarbons which comprises the steps of hydrocracking a hydrocarbon feed having a boiling range of about 400° F. to 1000° F. in the presence of a hydrocracking catalyst containing about 0.5 to 5 percent rhodium sulfide wherein the rhodium to sulfide atomic ratio is maintained at 0.5 to 0.9, employing temperatures of from 500 to 900° F., a pressure of 800 to 2000 p.s.i.g., a liquid hourly space velocity of total hydrocarbon feed from 0.5 to 5 and a ratio of hydrogen to hydrocarbon of 20 to 60, separating a heavy fraction from the effluent and recycling the same as a part of said total feed to the first mentioned hydrocracking step.

3,291,721
COMBINED HYDROCRACKING AND HYDROFINING PROCESS

Seymour C. Schuman, Princeton, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed June 13, 1963, Ser. No. 287,604
8 Claims. (Cl. 208—97)



1. In a process for refining and substantially converting a heavy oil having at least 10% by volume of hydrocarbons boiling above 900–1100° F., in which said oil while substantially in the liquid state and in the presence of hydrogen at a pressure of at least 800 p.s.i.g. is cracked in a primary reaction zone in contact with a particulate solid expanded at least 10% over its settled volume by the action of the fluid passing upwardly through it to place the solid in motion in the liquid and wherein substantially all residual hydrocarbons boiling above about 900 to 1100° F. are separated and removed from the thus cracked oil, and wherein the remainder of said cracked oil substantially free of hydrocarbons boiling above about 900–1100° F. are reacted in a second reaction zone with hydrogen at a pressure of at least 800 p.s.i.g. in the presence of a sulf-active hydrogenation catalyst, the improvement which comprises separating the effluent of the second reaction zone into a low boiling fraction and a higher boiling fraction, and reacting in a third reaction zone, said higher boiling fraction in the presence of hydrogen at a pressure of at least 800 p.s.i.g. in contact with a dual function hydrogenation and cracking catalyst at a temperature in the range of 650°–825° F. to substantially provide no more than 20 volume percent of material boiling above 750° F. in the total non-residual product obtained from the process.

3,291,722
HYDROCARBON CONVERSION PROCESS STARTUP PROCEDURE

John H. Tayler, Warton, near Preston, England, and Harold F. Mason, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,839
1 Claim. (Cl. 208—110)

In the starting up of a process comprising hydrogen treatment of a liquid hydrocarbon at a temperature between about 450° and 900° F., a pressure between about

250 and 10,000 p.s.i. and a liquid hourly space velocity of from 0.1 to 4.0 in a reactor containing a bed of hydrogenation catalyst comprising a compound of nickel and a compound of tungsten, the improvement which comprises passing hydrogen through said catalyst bed at a temperature below 300° F. and a pressure below 250 p.s.i.g. with said catalyst in the oxide form, raising said pressure to above 800 p.s.i.g., contacting said catalyst bed with a sulfur-containing hydrocarbon feed and hydrogen at a temperature below 300° F., increasing the temperature to reaction temperature while continuing the flow of said feed and said hydrogen, and during said latter step holding the temperature essentially constant at a value below about 650° F. for a period of time from 2 to 48 hours.

3,291,723

NAPHTHA HYDROFINING TO REMOVE NITROGEN

Emanuel Morse Blue, Piedmont, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed June 25, 1964, Ser. No. 378,029
6 Claims. (Cl. 208—254)

1. A hydrofining process for preparing catalytic reformer feed containing less than 1 p.p.m. nitrogen from olefinic naphtha containing nitrogen compounds in concentration deleterious to platinum reforming catalysts, said naphtha containing at least 20% by volume olefins such that exothermic reactions including hydrogenation of olefins will cause a temperature rise greater than 75° F. when said naphtha and hydrogen are passed into contact with a hydrofining catalyst at reaction conditions including a temperature initially above 550° F. and a pressure between 300 and 1000 p.s.i.g., which process comprises the steps:

(1) passing a preheated mixture of said olefinic naphtha and at least sufficient excess hydrogen to maintain said naphtha totally vaporized at said reaction conditions into contact with a hydrofining catalyst at an inlet temperature sufficiently above 550° F. such that the temperature increases to above 700° F. during said contacting;

(2) cooling the mixture of hydrogen and partially hydrofined naphtha effluent of said contacting by at least 50° F. to a temperature between 575° F. and 700° F., said naphtha remaining totally vaporized;

(3) passing the cooled mixture of hydrogen and partially hydrofined naphtha into contact with a hydrofining catalyst of several-fold higher activity for denitrification than cobalt-molybdenum hydrofining catalyst, using as a standard the cobalt-molybdenum catalyst described in Example 1 of the foregoing specification, to convert deleterious nitrogen compounds remaining in said partially hydrofined naphtha substantially completely to ammonia, the cooling in step (2) above being to a temperature sufficiently below 700° F. such that the maximum temperature does not exceed 700° F. during contacting with the higher activity catalyst; and

(4) removing the ammonia resulting from the contacting of the above steps (1) and (3) from the effluent of the second-mentioned contacting.

3,291,724

PROCESS FOR TREATING PETROLEUM CRUDE OIL

William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,640
5 Claims. (Cl. 208—309)

1. A method for removing asphaltenic material from a crude oil which comprises treating said crude oil at a temperature of from about 100° C. to about 450° C., and under a pressure of hydrogen within the range of from about 100 to about 300 atmospheres, with sulfur monochloride in an amount of from 0.1% to about 25.0% by weight, separating the resulting coke and recovering said crude oil reduced in asphaltenic concentration.

3,291,725

METHOD OF SEPARATING NORMAL ALKANES

John J. Brodbeck, Albany, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,669
9 Claims. (Cl. 208—310)

1. A process for the isolation of high purity normal alkane of from C_{10}–C_{16} (high alkane) performed at vapor phase conditions under relatively isothermal conditions in the range of 500 to 660° F. and relatively isobaric conditions in the range of 0 to 100 p.s.i.g.;

which comprises:

contacting in a separation zone a petroleum hydrocarbon feed boiling in the range of about 380 to 565° F. with molecular sieves having about a 5 A. pore size, said petroleum hydrocarbon being in an amount sufficient to fill the sieves from 70 to 90% of capacity, to obtain a raffinate relatively free of normal alkanes,

purging cocurrently with a normal alkane (low alkane) of from 5 to 9 carbons having at least 2 fewer carbons than the lowest desired "high alkane" for a time sufficient to remove any non-adsorbed materials from the separation zone,

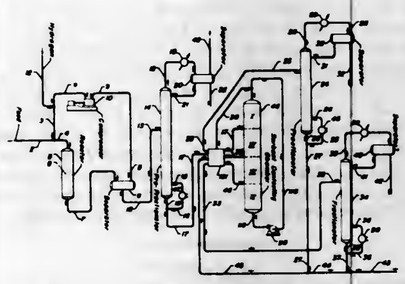
purging countercurrently to the feed with "low alkane" for a time sufficient to remove from 10 to 75% of the adsorbed "high alkane" from the molecular sieves, and then isolating the "high alkane."

3,291,726

CONTINUOUS SIMULATED COUNTERCURRENT SORPTION PROCESS EMPLOYING DESORBENT MADE IN SAID PROCESS

Donald B. Broughton, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 4, 1964, Ser. No. 364,477
20 Claims. (Cl. 208—310)



1. A process for the separation of components of a fluid mixture, at least one of which is selectively sorbed by contact with a solid sorbent, said mixture including a fraction suitable for use as a desorbent which process comprises:

introducing said fluid mixture into contact with a bed of solid sorbent,

withdrawing from said bed relatively less sorbed raffinate,

separating said raffinate into a higher boiling fraction and a lower boiling fraction in a separator,

returning one of said raffinate fractions as a desorbent to said bed thereby desorbing the previously sorbed component,

withdrawing from said bed resulting sorbate comprising selectively sorbed component and desorbent,

separating said sorbate into a higher boiling fraction and a lower boiling fraction in a second separator,

returning a portion of one of said sorbate fractions as additional desorbent to said bed,

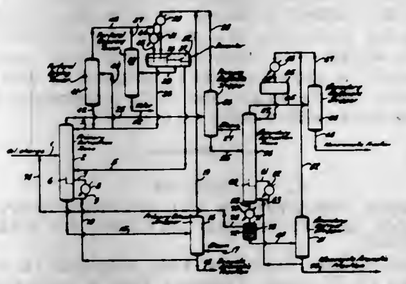
and withdrawing the remaining portion of said sorbate fraction from said second separator.

3,291,727

SOLVENT SEPARATION OF MONOCYCLIC AROMATIC, DICYCLIC AROMATIC AND NON-AROMATIC HYDROCARBONS

Robert A. Woodle, Nederland, Tex., and Howard H. Gross, Pleasantville, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,513
12 Claims. (Cl. 208—316)



1. A method of treating a hydrocarbon oil boiling within the range of about 400 to 600° F. and comprising dicyclic aromatic hydrocarbons, monocyclic aromatic hydrocarbons, and nonaromatic hydrocarbons effecting separation of a first product fraction rich in said dicyclic aromatic hydrocarbons, a second product fraction rich in said monocyclic hydrocarbons and a third product fraction rich in said nonaromatic hydrocarbons which comprises:

contacting said hydrocarbon oil, a solvent comprising furfural and a backwash comprising nonaromatic hydrocarbons boiling below 400° F. in a first zone effecting separation of a first extract-mix comprising said first product fraction, furfural and a minor amount of said nonaromatic hydrocarbons boiling below 400° F. and a first raffinate comprising monocyclic aromatic hydrocarbons, nonaromatic hydrocarbons boiling within the range of about 400 to 600° F., and nonaromatic hydrocarbons boiling below 400° F.,

separating said first product fraction from said first extract-mix,

separating said first raffinate into a raffinate fraction boiling below 400° F. and a raffinate fraction boiling above 400° F.,

contacting at least a part of said raffinate fraction boiling above 400° F. with a solvent comprising furfural at conditions effecting extraction of aromatic hydrocarbons to the substantial exclusion of nonaromatic hydrocarbons in a second contacting zone effecting separation of a second extract-mix comprising said second product fraction and a second raffinate comprising said third product fraction,

separating said second product fraction from said second extract-mix, and

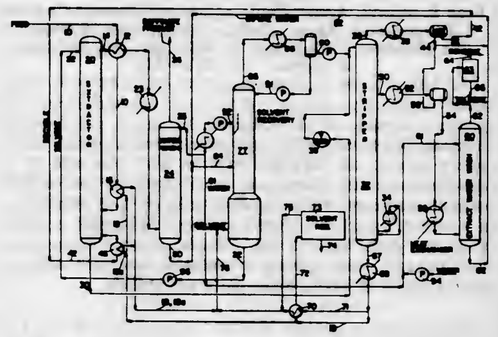
separating said third product fraction from said second raffinate.

3,291,728

SOLVENT EXTRACTION

Asmund A. Boyum and Leon M. Lehman, Brooklyn, N.Y., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed Dec. 27, 1963, Ser. No. 333,898
7 Claims. (Cl. 208—321)



1. A solvent extraction process for the separation of aromatic hydrocarbons from a mixture thereof with nonaromatic hydrocarbons wherein said mixture is contacted with a selective solvent in an extraction zone to form a raffinate and a rich solvent stream, said solvent containing a primary solvent less volatile than said aromatic hydrocarbons, and a water content of from 4 to 20 weight percent, vaporizing from the rich solvent stream dissolved hydrocarbons, part of the water and some primary solvent in a reboiled solvent stripping zone thereby forming a lean solvent separately cooling overhead and sidestream effluent from the stripping zone, recovering solvent-containing water streams from the resulting stripper vapors to produce an overhead recycle fraction rich in non-aromatic and a substantially pure aromatic product as a sidestream, said aromatic product stream and said raffinate stream from the extractor being water washed to recover traces of primary solvent and to produce effluents of solvent-containing water streams, the improvement in said process which comprises maintaining the stripping zone at superatmospheric pressure to obtain a lean solvent of substantially higher temperature than the temperature in the extraction zone, passing all said solvent-containing water streams to a fractionating zone, reboiling said fractionating zone by introducing a substantial part of said lean solvent from the stripping zone in flashing relation to the bottom of said fractionating zone, thereby obtaining substantially pure water overhead, and a lean solvent bottoms of lower heat content and desired content of water for reuse in the extraction section.

3,291,729

METHOD OF TREATING SEWAGE

Richard P. Martin, 1428 N. Broad St., Philadelphia, Pa. 19121

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,881
1 Claim. (Cl. 210—13)

A method of treating sewage containing unfavorable concentrations of fats, greases, and foam-producing de-

tergents that consists in admixing approximately 3.0% water with approximately 7.7% oleic acid, approximately 2.3% diethanolamine, approximately 3.4% butyl alcohol, approximately 19.5% diethylene-glycol monobutyl ether, approximately 52.1% kerosene, and approximately 12.0% tributyl phosphate and pouring said admixture in the relation of 1 part into 1,000,000 parts of influent sewage, thereby causing a reduced foam level, a de-aeration and a dissemination of surface fats and greases, an elimination of foul odors, and a compaction of a useful sediment.

3,291,730

MEMBRANES FOR CONCENTRATION OF SOLUTIONS

Fred E. Martin, Azusa, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,336
2 Claims. (Cl. 210—22)

1. The process of removing water from aqueous solutions containing synthetic detergents selected from the group consisting of alkylbenzene sulfonates, alkylphenol nonionics, alkanol amines and alkanol amides which comprises passing the aqueous solution over one side of a cellulose acetate membrane at a pressure above the osmotic pressure of the aqueous solution and recovering a product water of reduced synthetic detergent content from the other side of the cellulose acetate membrane, said product water having a synthetic detergent content not in excess of about three parts per million.

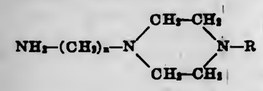
3,291,731

INCORPORATING SODIUM NITRITE INTO LUBRICANT COMPOSITIONS

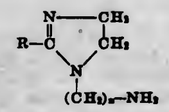
Richard P. Crowley, Milton, Mass., and Arnold J. Morway, Clark, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 28, 1965, Ser. No. 475,591
8 Claims. (Cl. 252—25)

1. A lubricant composition comprising a major proportion of a lubricating oil, a thickening amount of a grease thickener, and from 0.1 to 10 wt. percent of a dispersion of sodium nitrite in an imide formed by reaction of a copolymer of styrene and maleic anhydride of from 400 to 3000 molecular weight with an amino compound having from 2 to about 35 carbon atoms and from 2 to 5 nitrogen atoms, at least one of which is in a primary amino group, there being from about 0.5 to 5 parts by weight of the imide per part of sodium nitrite, said amino compound being selected from the group consisting of alkylene polyamines, N-aminoalkyl piperazines of the formula:



wherein n is a number 1 to 3, and R is hydrogen of an aminoalkyl radical containing 1 to 3 carbon atoms, polyalkoxydiamines prepared by the reaction of aliphatic amines with alkylene oxides of from 2 to 8 carbon atoms, and amino imidazolines having the formula:



wherein n is about 2 to 6, and R is a C_8 to C_{22} hydrocarbon group.

3,291,732

SYNTHETIC LUBRICATING OIL THICKENED TO A GREASE CONSISTENCY WITH p-POLYPHENYL

Ilgvars J. Spilners, Monroeville, and Chester S. Tempelski, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,259
4 Claims. (Cl. 252—28)

1. A lubricating composition comprising a dispersion in a major amount of synthetic lubricating oil selected from the group consisting of liquid polyorgano siloxanes having diphenylmethylsilyl end groups and polyaryl ethers of a sufficient amount to thicken the lubricating oil to a grease consistency of p-polyphenyl.

3,291,733

GREASE COMPOSITION

Paul R. McCarthy, Allison Park, and Chester S. Tempelski, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,017
4 Claims. (Cl. 252—28)

1. A lubricating composition comprising a dispersion in a major amount of a liquid polyorgano siloxane of a small amount, sufficient to thicken the polyorgano siloxane to a grease consistency, of a mixture of p-polyphenyl and finely-divided silica wherein the p-polyphenyl comprises about 0.5 to about 2 percent by weight of the total composition and the weight ratio of the p-polyphenyl to the finely-divided silica is about 1:2 to about 1:8.

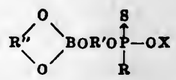
3,291,734

BORON, PHOSPHORUS AND SULPHUR CONTAINING ADDITIVES AND METHODS OF MAKING SAME

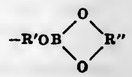
Chien-wei Liao, Beachwood, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,969
16 Claims. (Cl. 252—46.7)

13. As a composition of matter, a petroleum stock containing from 0.005 to 5 weight percent of a compound having the formula:



where:
R is an alkenyl radical having from 8 to 30 carbon atoms;
R' is selected from the group consisting of alpha and beta alkylene radicals having from 2 to 10 carbon atoms;
R'' is selected from the group consisting of alpha and beta alkylene radicals having from 4 to 10 carbon atoms; and
X is selected from the group consisting of alkyl radicals having from 2 to 18 carbon atoms and



where R' and R'' are defined the same as above.

16. The composition of claim 13 wherein the petroleum stock is a lubricating oil and said compound is present in an amount within the range of 0.1 to 5 weight percent.

3,291,735

ORGANOPOLYSILOXANE LUBRICANTS

Edgar D. Brown, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed June 1, 1964, Ser. No. 371,780
5 Claims. (Cl. 252—49.6)

1. A lubricant composition comprising by weight a uniform blend of (1) 100 parts of a chlorinated phenylpolysiloxane fluid containing from 3 to 20 mole percent of tetrachlorophenylsiloxy units chemically combined with from 97 to 80 mole percent of dimethylsiloxy units, based on the total moles of said chemically combined units, and (2) 35 to 65 parts of a methylphenylpolysiloxane fluid containing from 5 to 20 mole percent of methylphenylsiloxy units chemically combined with 95 to 80 mole percent of dimethylsiloxy units based on the total moles of said chemically combined units.

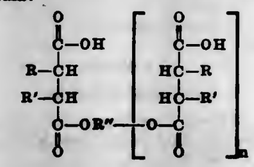
3,291,736

GREASE COMPOSITIONS CONTAINING ALKYL SUCCINIC PARTIAL ESTERS

Fritz A. Buehler, Cherry Hill, and John J. Giammaria, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,856
9 Claims. (Cl. 252—49.6)

1. A grease composition containing a silicone as a lubricating vehicle; a thickening agent; and as a corrosion inhibitor, a small amount of a partial ester having the general formula:



wherein of R and R' one is hydrogen, and the other is selected from the group consisting of alkyl and alkenyl radicals containing from 8 to 18 carbon atoms, R'' is a residue of a polyhydric alcohol, and n is an integer from 1 to 4.

3,291,737

LUBRICATING OIL COMPOSITIONS CONTAINING POLYMERS OF LOWER ALKYL METHACRYLATES AND METHOD OF PREPARING THEM

George S. Salmon, Richhill, and Abraham Mordechowitz, Spring Valley, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,130
4 Claims. (Cl. 252—56)

1. A method of solubilizing a C_1–C_3 methacrylate polymer in a mineral oil which comprises:

admixing a graft copolymer of methacrylates containing a polar portion and a non-polar portion with a major amount of a mineral oil and a minor amount of a C_1–C_3 alkyl methacrylate polymer, sufficient to improve the viscosity index of said oil, the weight ratio of said copolymer to said polymer being between 2:1 and 8:1, the combined weight percent of said copolymer and said polymer being between 0.25 and 2.5 percent of the mixture,

said polar portion comprising a member selected from the group consisting of a C_2–C_8 alkyl methacrylate, a C_5–C_6 cycloalkyl methacrylate and a C_2–C_8 epoxyalkyl methacrylate and said non-polar portion comprising a C_{10}–C_{18} alkyl methacrylate.

2. A method according to claim 1 wherein said polar portion is cyclohexyl methacrylate, said non-polar portion is octadecyl methacrylate, said polymer is poly(butyl methacrylate) and said mineral oil is a petroleum lubricating oil.

3,291,738

MATERIALS FOR PREPARING ETCH RESISTS

Louis J. Sciambi, Woodbury, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Original application Sept. 2, 1960, Ser. No. 53,706, now Patent No. 3,231,374, dated Jan. 25, 1966. Divided and this application Dec. 13, 1961, Ser. No. 159,177
10 Claims. (Cl. 252—62.1)

1. A developer composition for electrostatic deposition consisting essentially of a powdered resin-curing catalyst dispersed in an insulating carrier liquid selected from the class consisting of a mixture of trichlorotrifluoroethane and dimethyl polysiloxane and a mixture of low-viscosity mineral oil and a straight chain hydrocarbon having 5 to 8 carbon atoms, and wherein said powdered catalyst is selected from the class consisting of linoleates, naphthenates, octoates, resinates, stearates, and tallates of aluminum, cadmium, cobalt, copper, iron, lead, magnesium, manganese and zinc.

3,291,739

FERROMAGNETIC MATERIALS AND METHODS OF FABRICATION

André Deschamps, Paris, France, assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Feb. 20, 1963, Ser. No. 259,864
Claims priority, application France, Feb. 27, 1962, 889,363; Jan. 23, 1963, 922,335
2 Claims. (Cl. 252—62.5)

1. In the method for making ferromagnetic materials of the ferrite type for use at hyper-frequencies and having a molecular composition, after annealing, of:

$$xLOyR_2O_3$$
$$z(TO_2QO)$$

with

$$48 \leqslant x \leqslant 52$$
$$y+z=100-x$$

and

$$0.5 \leqslant z \leqslant 45.0$$

where L and Q each represent a bivalent metal from the group consisting of:

Fe^{++}, Mn^{++}, Co^{++}, Ni^{++}, Mg^{++}, Zn^{++}

R represents at least one trivalent metal from the group consisting of:

Fe^{+++}, Cr^{+++}, Al^{+++}, Ga^{+++}, Mn^{+++}

T represents at least one quadrivalent metal from the group consisting of:

Ti^{++++}, Ti^{++++} containing up to 30% Sn^{++++}

and where Fe^{+++} is always present as iron oxide Fe_2O_3, and consistutes at least three quarters of yR_2O_3, the steps which comprise:

(a) preparing a first compound (TO_2QO);
(b) forming a titanate having a corundum structure by sintering said first compound in air at about 1000° C. for about one hour;
(c) mixing a mixture of oxides corresponding to the compound (LOR_2O_3) with said sintered titanate the R_2O_3 portion of said second compound having the same crystalline structure as said titanate;
(d) grinding the combined mixture;
(e) forming the thus ground mixture into cores of desired shapes;
(f) slowly heating said cores in an oxygen atmosphere for several hours at a temperature of about 1200° C; and
(g) slowly cooling said cores for about 20 hours.

3,291,740

FERRIMAGNETIC GARNET COMPOSITIONS

Gerald P. Espinosa, Summit, and Seymour Geller, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,675
7 Claims. (Cl. 252—62.5)

1. A synthetic garnet composition having the formula:

$$\{Me_{2-A}Ca_A\}[Fe_{2-B}Sb_B](Fe_{3-C}V_C)O_{12}$$

where Me is selected from the group consisting of yttrium and bismuth, and A, B and C are related and limited according to:

$$B+C=\tfrac{1}{2}A$$
$$A=0.1 \text{ to } 3$$
$$B=0.05 \text{ to } 1.5 \text{ and}$$
$$C=\text{zero to } 1.5$$

3,291,741

ANTIFREEZE COMPOSITION

Roger F. Monroe, Midland, and Anthony J. Maciejewski, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,740
8 Claims. (Cl. 252—76)

1. An anticorrosive composition comprising:

Component:	Percent by weight
(a) Alkali metal borate	20–50
(b) Alkali metal phosphate	25–55
(c) Benzotriazole	3–15
(d) Piperazine	3–15
(e) Propynyloxynitrobenzene	1.5–8
(f) 4,4-bis-(3-nitro-4-hydroxyphenyl)-pentanoic acid	3–15

all percentages being based on the total weight of the named components.

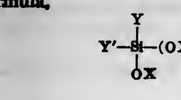
3,291,742

USE OF SILANES AS HEAT TRANSFER MEDIA AND HYDRAULIC FLUIDS

Brian Beard Millward, Wrexham, Wales, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,504
Claims priority, application Great Britain, Dec. 29, 1961, 46,626/61
9 Claims. (Cl. 252—78)

1. In a process for transmitting heat to materials in indirect contact with a source of heat through a heat transfer medium, the step of employing as the heat transfer medium a compound of the formula,



wherein Y, Y' and Y'' are each selected from the group consisting of phenyl, lower alkylphenyl and naphthyl, X is selected from the group consisting of alkyl of 6 to 18 carbon atoms, cyclohexyl, lower alkylcyclohexyl and phenylalkyl of 7 to 12 carbon atoms, X' is selected from the group consisting of alkyl of 2 to 5 carbon atoms and the radicals represented by X, a and b are unlike integers selected from 0 and 1, and when a is 1, the sum of the carbon atoms in X and X' is at least 12.

5. In hydraulic equipment, the combination comprising an actuating element and an actuable element, conduit means connecting said actuating element and said actuable element, and a liquid filling in said elements and said conduit means, said liquid filling comprising a compound of the formula,

wherein Y, Y' and Y'' are each selected from the group consisting of phenyl, lower alkylphenyl and naphthyl, X is selected from the group consisting of alkyl of 6 to 18 carbon atoms, cyclohexyl, lower alkylcyclohexyl and phenylalkyl of 7 to 12 carbon atoms, X' is selected from the group consisting of alkyl of 2 to 5 carbon atoms and the radicals represented by X, a and b are unlike integers selected from 0 and 1, and when a is 1, the sum of the carbon atoms in X and X' is at least 12.

3,291,743

NEUTRALIZER COMPOSITION

John J. Bost, Sacramento, Ralph E. Bernard, Carmichael, and George R. Joiner, Rancho Cordova, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,351
7 Claims. (Cl. 252—149)

1. A concentrated neutralizer composition consisting essentially of from 60 to about 70% by weight of hydroxy acetic acid, about 20 to 35% by weight water, and about 2 to 10% by weight of a member selected from the group consisting of lower alkylene glycols, lower monoalkyl ethers of lower alkylene glycols, lower monoalkyl ethers of lower alkylene ether glycols, and mixtures thereof wherein the lower alkyl groups and the lower alkylene groups contain from 1 to about 5 carbon atoms.

3,291,744

DETERGENT BAR

James Calvin Bohrer, East Brunswick, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 12, 1965, Ser. No. 471,425
9 Claims. (Cl. 252—161)

1. A milled and plodded synthetic detergent bar consisting essentially of water soluble synthetic anionic organic non-soap detergent, of which a major proportion of the anionic organic non-soap detergent, up to 90 percent by weight, is a water soluble normal higher alkyl sulfonate in which the normal alkyl group is of 15 to 20 carbon atoms, having an average chain length of 17 to 18 carbon atoms, and a minor proportion, 5–30 percent by weight of the anionic organic non-soap detergent, is a water soluble higher straight chain alkyl aryl sulfonate in which the straight chain alkyl group is of 8 to 20 carbon atoms, having an average chain length of 12 to 16 carbon atoms and about 5 to 15 percent by weight of water, said combination of detergents forming a cohesive milled and plodded toilet bar having soap-like physical characteristics in the absence of the plasticizer.

3,291,745

STABILIZATION OF TRICHLORETHYLENE

Theodore F. Martens, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,176
6 Claims. (Cl. 252—171)

1. A stabilized composition comprising trichlorethylene as the predominant ingredient and containing a stabilizing amount of at least one member from the group consisting of a mixture of 1,3-cyclopentadiene with its dimer, a mixture of 5-methyl-1,3-cyclopentadiene with its dimer, and a mixture of 1-methoxy-1,3-butadiene with its dimer.

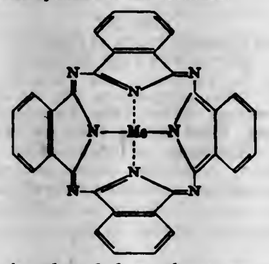
3,291,746

METAL PHTHALOCYANINES AS INFRARED ABSORBERS

Haig Cadmus Demeian, South Lowell, Mass., and John Mark Dowd, Jr., Hillsboro Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,626
2 Claims. (Cl. 252—300)

1. A composition of matter consisting essentially of poly(methylmethacrylate), which per se is substantially transparent in the visible spectrum, having incorporated therein from 0.01 gram to about 0.184 gram per square foot of a phthalocyanine of the formula:



wherein Me is selected from the group consisting of $Ge(OH)_2$ and VO; and where Me is $Ge(OH)_2$ the percent transmittance at a wavelength of about 0.484μ is at least 25 above the percent transmittance at about 0.900μ; and where Me is VO, the percent transmittance at a wavelength of about 0.523μ is at least 25 above the percent transmittance at 0.840μ.

3,291,747

METHOD FOR MAKING DOPED YTTRIUM OXIDE PHOSPHORS

Robert A. Lefever, Albuquerque, N. Mex., and Kenneth A. Wickersheim, Menlo Park, Calif., assignors to General Telephone and Electronic Laboratories, Inc., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 213,896, Aug. 1, 1962. This application Mar. 31, 1965, Ser. No. 444,460
4 Claims. (Cl. 252—301.1)

1. A process for producing a cathodoluminescent phosphor which comprises the steps of

(a) preparing a first hot acidic solution containing approximately 99 mole percent yttrium oxide and approximately 1 mole percent of a dopant selected from the group consisting of magnesium, cadmium, copper and thorium,

(b) reacting said first solution with a second hot solution of oxalic acid,

(c) allowing the reactants to cool to produce an oxalate precipitate of yttrium and a dopant selected from said group, and

(d) heating said oxalate precipitate to convert the oxalate to an oxide of yttrium incorporating an element from said group, the resultant phosphor exhibiting a blue-white cathodoluminescence.

3,291,748

THORIUM SILICATE HYDROSOLS

Frederick T. Fitch and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Original application May 12, 1960, Ser. No. 28,511, now Patent No. 3,199,583, dated Dec. 1, 1964. Divided and this application Feb. 4, 1964, Ser. No. 359,005
6 Claims. (Cl. 252—301.1)

1. An aqueous thorium silicate sol stable at temperatures up to at least 150° C. comprising a homogeneous dispersion in water of generally spheroidal, densified particles of thorium silicate having a particle size in the range of 200 to 3000 Angstrom units.

3,291,749

PHOTO-LUMINESCENT COMPOSITION CONSISTING ESSENTIALLY OF BORIC ACID AND FLUORESCEIN

James Stoerup, Park Ridge, Ill., assignor to Trinxon, Inc., Glenview, Ill., a corporation of Illinois

Filed Aug. 14, 1963, Ser. No. 302,204
7 Claims. (Cl. 252—301.3)



2. A photo-luminescent composition consisting essentially of a host compound fused with an activator, said host compound being boric acid crystals and said activator being fluorescein, the amount of activator ranging from 0.02% to 0.1% by weight of the host compound.

3,291,750

EMULSION CONTAINING LONG CHAIN ALKYLSULFURIC ACIDS

Elmer W. Maurer and Alexander J. Stirton, Philadelphia, and James K. Weil, North Wales, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Application Oct. 2, 1963, Ser. No. 313,400, which is a division of application Ser. No. 21,066, Apr. 8, 1960, now Patent No. 3,133,946, dated May 19, 1964. Divided and this application Feb. 12, 1965, Ser. No. 438,161
3 Claims. (Cl. 252—312)

1. An emulsion consisting essentially of a liquid halogenated hydrocarbon, water, and about from 0.05% to 0.1% of the DL-leucine salt of octadecylsulfuric acid as the emulsifying agent therefor.

3,291,751

PREPARATION OF A CATALYST CONTAINING A MOLYBDENUM COMPOUND DISPERSED WITHIN ALUMINA

Waldeen C. Buss, Pinole, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Jan. 30, 1964, Ser. No. 341,438
6 Claims. (Cl. 252—439)

1. The method for producing a gel comprising molybdenum oxide microscopically dispersed within alumina which comprises the steps: (a) forming a mixture comprising aluminum chloride and a solution of at least one compound selected from the group consisting of solutions of ammonium molybdate and molybdenum oxychloride, (b) adding to said mixture from about 1.0 to 3.0 mols of at least one oxirane containing from 2 to 3 carbon atoms per molecule per mol of chloride ions in said mixture, thereby forming a hydrogel, and (c) dehydrating said hydrogel by the steps comprising heating said hydrogel with an oxygen-containing gas containing less than about 5 volume percent oxygen to a temperature in the range of from about 900° to 950° F. and thereafter calcining the resulting molybdenum oxide and alumina-containing gel in air at a temperature of from about 900° to 1000° F.

3,291,752
PROCESS FOR PREPARING A SODIUM-POTASSIUM CARBONATE POLYMERIZATION CATALYST
James Keith Hambling and John Grebbell, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation
No Drawing. Filed May 6, 1963, Ser. No. 278,411
Claims priority, application Great Britain, May 7, 1962, 17,432/62
3 Claims. (Cl. 252—443)

1. A process for the production of a catalyst suitable for polymerizing olefinic hydrocarbons selected from the group consisting of an olefinic hydrocarbon having at least three carbon atoms per molecule and mixtures of said olefinic hydrocarbon with at least one other hydrocarbon copolymerizable therewith, comprising: dispersing elemental sodium on anhydrous potassium carbonate at a temperature below about 250° C.

3,291,753
CATALYST PREPARATION
Charles E. Thompson, Fanwood, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Sept. 19, 1963, Ser. No. 310,147
9 Claims. (Cl. 252—447)

1. A method of making catalyzed carbon which comprises the steps of (*a*) absorbing from 1 to 3 noble metal compounds onto carbon, (*b*) contacting said absorbed carbon with a trisubstituted silane selected from the group consisting of trialkyl silane and triaryl silane, (*c*) heating the product of step (*b*) in a carbon monoxide atmosphere at about 750° to 850° F., and (*d*) heating the product of step (*c*) in a hydrogen atmosphere at about 1500° to 1700° F.

3,291,754
MOLECULAR SIEVE FORMED BODIES HARDENED WITH A BINDING AGENT
Helmut Hausech and Wolfgang Biedermann, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Jan. 10, 1963, Ser. No. 250,483
Claims priority, application Germany, Feb. 19, 1962, F 36,069
5 Claims. (Cl. 252—455)

1. Molecular sieve formed bodies hardened with from 5 to 40% by weight of a binding agent selected from the group consisting of an oxide, hydroxide and basic salt of an alkaline earth metal.

3,291,755
CATALYTIC DEHYDROGENATION CATALYST FOR PARAFFINIC HYDROCARBONS
Vladimir Haensel, Hinsdale, and James Hoekstra, Evergreen Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,051
4 Claims. (Cl. 252—464)

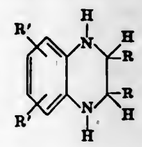
1. A catalytic composite which comprises alumina, from about 0.01% to about 1.5% by weight of lithium, from about 0.05% to about 5.0% by weight of a Group VIII metallic component and a metallic component selected from the group consisting of arsenic, antimony, bismuth and compounds thereof in an atomic ratio to the Group VIII metallic component of from about 0.20 to about 0.45.

3,291,756
CATALYTIC DEHYDROGENATION
Robert S. Bowman, Pittsburgh, Pa., assignor to The Baugh Chemical Company, Baltimore, Md., a corporation of Maryland
No Drawing. Filed Jan. 9, 1964, Ser. No. 336,649
5 Claims. (Cl. 252—474)

1. A dehydrogenation catalyst consisting essentially of, by weight, about 2 to 90 percent of cobaltous ferrite, from about 5 to 20 percent of potassium calculated as K_2O, from 0 to 85 percent of free ferric oxide, and from 0 to 5 percent of chromic oxide.

3,291,757
TETRAHYDROQUINOXALINES AS ANTI-OZONANTS FOR RUBBER
Buddy Sturm, Jr., Talmadge, and Farris H. Wilson, Jr., Silver Lake, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,708
12 Claims. (Cl. 260—45.8)

1. A rubbery, conjugated diene polymer normally susceptible to oxygen and ozone degradation and containing, in an amount sufficient to inhibit such degradation, a tetrahydroquinoxaline having the structure:



wherein R is a radical selected from hydrogen, alkyl, cycloalkyl, aralkyl, alkenyl, and aryl and wherein R′ is a radical selected from hydrogen, alkyl, cycloalkyl, aralkyl, alkenyl, aryl, alkoxy and aryloxy.

3,291,758
SUPERCONDUCTIVE MATERIALS
Harry N. Treaftis, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed May 31, 1963, Ser. No. 284,333
4 Claims. (Cl. 252—512)

1. A superconductive connecting material for superconductive elements, said material consisting essentially of, by weight, 10.0 parts of a liquid complex epoxy resin containing more than one 1,2 epoxide groups per molecule, from about 1.0 to 1.5 parts of a liquid room temperature amino curing agent for said epoxy resin and from about 88 to 90 parts of finely divided nonoxidized superconductive metal.

3,291,759
NON-LINEAR RESISTANCE MATERIAL
John J. Pitha, Lenox, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 13, 1963, Ser. No. 330,387
6 Claims. (Cl. 252—516)

3. The method of making non-linear resistance material for use in overvoltage protective devices comprising providing a mixture of silicon carbide particles and a cordierite-forming binder material therefore, said mixture consisting essentially of approximately 65 parts by weight of silicon carbide, 14–21 parts by weight of talc, 21–14 parts by weight of a porcelain mixture, compacting said mixture, and firing said mixture at a temperature of about 1240° C. to about 1260° C. in a hydrogen atmosphere.

3,291,760
PREPARATION OF CONDENSATION PRODUCTS CONTAINING SILICON-NITROGEN LINKAGES
John W. Bayer, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed July 1, 1965, Ser. No. 468,982
6 Claims. (Cl. 260—2)

1. The method of preparing a condensation product which comprises heating a mixture of the following reactants in the stated proportions at a reaction temperature within the range of from 100° C. to 400° C. in the presence of a catalytic amount of a strongly basic catalyst at least until the evolution of hydrogen has substantially completely subsided:

(1) at least one di-(organo)silane represented by the general formula



where R and R′ each represents a monovalent hydrocarbon radical, and

(2) at least one cyclosilazane represented by the general formula



where R″ and R‴ have the same meanings as R and R′, and *n* represents an integer from 3 to 5, inclusive, the reactants of (1) and (2) being employed in a ratio of from 0.2 to 1.5 mole equivalents of the di(organo) silane of (1) for each =NH grouping in the cyclosilazane of (2), said strongly basic catalyst being a member of the group consisting of (a) salts, with an alkali-forming metal, of an acid having a pK_a of from 15 to 75, (b) tetramethyl ammonium hydroxide, (c) tetraethanol ammonium hydroxide, (d) benzyl trimethyl ammonium hydroxide and (e) benzyl triethyl ammonium hydroxide.

3,291,761
RECLAIMING PROCESS FOR FLUOROCARBON ELASTOMERS CROSS-LINKED THROUGH AN AMINE BRIDGE
Warren R. Griffin, 2517 Olson Drive, Dayton, Ohio
No Drawing. Filed Oct. 1, 1963, Ser. No. 313,130
4 Claims. (Cl. 260—2.3)

1. A process for reclaiming amine-vulcanized fluorocarbon elastomeric scrap material cross-linked through an amine bridge, said process consisting essentially of the steps of adding a permanganate to a mixture consisting essentially of a solvent, an acid and said scrap material, said mixture having a resultant pH value less than 7; and stirring said mixture for approximately four hours to effectuate oxidative cleavage of said amine bridge thereby returning said vulcanized scrap material to its pre-vulcanized state.

3,291,762
METHOD OF PREPARING A PLASTERING MATERIAL FROM FLAKES OF A FOAMED THERMOPLASTIC POLYMER
Russell J. Raymond, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 3, 1963, Ser. No. 249,137
5 Claims. (Cl. 260—2.5)

1. A method of preparing a plastering material comprising:

blending together flakes of a foamed thermoplastic polymer with up to 97 percent by weight of a dry filler,

dissolving minor proportion of a drying oil in a major proportion of a solvent for said polymer, then stirring into said blend of thermoplastic polymer and filler a quantity of said solution of drying oil which wets said blend without forming a separate phase.

3,291,763
PREPARATION OF POLYMERIC COMPOUNDS FROM CARBAMIC ESTERS
Alan James Becallick, Poynton, and Geoffrey Arthur Haggis, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,910
Claims priority, application Great Britain, Nov. 28, 1961, 42,554/61
6 Claims. (Cl. 260—13)

1. A process for preparing polymeric materials which comprises heating together at a temperature of from 50 to 250° C., (a) at least one member selected from the group consisting of nonpolymeric polyalcohols, low molecular weight mono-amino alcohols, polyamines, hydroxyl-ended polyesters, hydroxyl-ended polyethers, polyvinyl alcohol, cellulose and cellulose esters and (b) up to a substantially equivalent amount of at least one carbamic ester of the formula $X(NH{\cdot}CO_2R)_n$ where *n* is a number selected from 2 and 3, R is selected from the group consisting of alkyl, aryl, aralkyl and cycloakyl groups, and X is selected from the group consisting of CO, SO_2 and 1,3,5-triazinyl.

3,291,764
PREPOLYMERS FROM A POLYAMINO COMPOUND AND AN EPOXIDIZED FATTY ACID ESTER
Thomas W. Findley, La Grange, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Continuation of application Ser. No. 19,147, Apr. 1, 1960. This application July 30, 1965, Ser. No. 476,167
9 Claims. (Cl. 260—18)

9. A method for producing a prepolymer from a polyamino compound having at least two nontertiary amino groups and an epoxidized fatty acid ester of a lower alcohol which comprises: heating a mixture of 20–50 parts by weight of said polyamino compound and 100 parts by weight of an epoxidized fatty acid ester of a lower alcohol, said ester having an oxirane oxygen content above about 6% and having nonterminal epoxy groups, to a temperature of about 60–90° C., continuing said heating until the reaction mixture becomes soluble in a 1% equous solution of acid, cooling said reaction mixture to retard further polymerization of the components, and subsequently dissolving said reaction mixture in an aqueous acetic acid solution.

3,291,765
PROCESS FOR PRODUCING OIL-MODIFIED ALKYD RESINS AND SUCH RESINS
Philip J. Campagna, Somerville, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 19, 1962, Ser. No. 180,872
7 Claims. (Cl. 260—22)

1. The process of producing an oil-modified alkyd resin which consists essentially of mixing an ester of an olefinic higher aliphatic acid with phthalic anhydride and hydrogen peroxide in the proportions of from 1.5 to 2 mols of phthalic anhydride and 1.25 to 1.75 mols of hydrogen peroxide per mol of ester, maintaining the reaction mixture at a temperature to effect epoxidation of the ester, adding a polyhydric alcohol to the reaction mixture in amount to produce a reaction mixture containing from

about 3.5 to 4.5 mols of reaction mixture per mol of polyhydric alcohol, and heating the resultant reaction mixture to produce an oil-modified alkyd resin having an acid number less than 10.

3,291,766

CO-POLYMERS COMPRISING SHELLAC AND PROCESS FOR PRODUCING SAME

Floyd L. Edris, Pottstown, Pa., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,086
25 Claims. (Cl. 260—27)

1. A polymer consisting essentially of

(a) from about 2 to 30% by weight of solubilized shellac,

(b) up to about 75% by weight of monovinyl aromatic monomer,

(c) up to 25% of a member selected from the group consisting of aliphatic monovinyl monomers, aliphatic monovinylidene monomers, and divinyl benzene, and

(d) the balance comprising conjugated diolefin monomer,

the aggregate amount of (c) comprising less than about twice the diolefin monomer content of said polymer, the aggregate of (c) and (d) in said polymer comprising at least 18% by weight of said polymer.

3,291,767

ASPHALTIC FILAMENT COMPRISING ASPHALT, ETHYLENE-VINYL ACETATE COPOLYMER AND PARAFFIN WAX

Ralph Zanyenga, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 16, 1963, Ser. No. 295,499
2 Claims. (Cl. 260—28.5)

2. A substantially continuous flexible, non-tacky filament having a diameter of .001 to .02 inch comprising from 50 to 75 wt. percent asphalt having a softening point of 200–300° F., from 10–20 wt. percent paraffin wax having a melt point of 125–160° F. and from 10–20 wt. percent of an ethylene-vinyl acetate copolymer resin having a softening point of 200–300° F. and containing 5 to 15 moles of ethylene per mole of vinyl acetate said filament being characterized by the ability to be wound on a one inch diameter spool and unwound therefrom without breaking or sticking at a temperature of 100–150° F.

3,291,768

MULTILAYERED COATING COMPOSITION COMPRISING VINYLIDENE CHLORIDE

Helmuth L. Pfleger, Huntingdon Valley, and Charles G. Gebelein, Philadelphia, Pa., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,532
12 Claims. (Cl. 260—29.6)

1. A latex comprising resinous and multilayered particles for preparation of coatings and film resistant to passage therethrough of moisture and grease, and retentive of such resistance after creasing, said particles comprising an inner layer of a resin selected from the group consisting of:

(1) polyvinylidene chloride;

(2) interpolymers of vinylidene chloride and ester of C_3–C_8 alpha-unsaturated aliphatic acid; and

(3) interpolymers of an acid selected from the group consisting of acrylic, methacrylic, itaconic, maleic, fumaric, crotonic, and citraconic acid with materials selected from the group consisting of

(a) vinylidene chloride;

(b) ester of C_3–C_8 alpha-unsaturated aliphatic acid; and

(c) mixtures of (a) and (b);

and an outer layer of a resin selected from the group consisting of:

(1) interpolymers of vinylidene chloride and ester of C_3–C_8 alpha-unsaturated aliphatic acid; and

(2) interpolymers of an acid selected from the group consisting of acrylic, methacrylic, itaconic, maleic, fumaric, crotonic, and citraconic acid with materials selected from the group consisting of

(a) vinylidene chloride;

(b) ester of C_3–C_8 alpha-unsaturated aliphatic acid; and

(c) mixtures of (a) and (b);

the proportion of said vinylidene chloride being higher in an inner layer of said particles than in an outer layer thereof.

3,291,769

MANUFACTURE OF POLYVINYLIDENE CHLORIDE COPOLYMER EMULSIONS

David Malcolm Woodford, Bozeat, and Graham Brown, Wellingborough, England, assignors to Scott Bader & Co. Ltd., Wollaston, Wellingborough, Northamptonshire, England, a company of Great Britain and Northern Ireland

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,523
Claims priority, application Great Britain, Oct. 30, 1962, 40,997/62
8 Claims. (Cl. 260—29.6)

1. A method for the production of an aqueous stable amorphous polyvinylidene emulsion which comprises feeding separate flows of a vinylidene chloride monomer component and a comonomer component into a reaction chamber containing water, there being present during the copolymerisation reaction at least a polymerisation catalyst and a surfactant, wherein the quantity of the vinylidene chloride monomer component required for the copolymerisation reaction is introduced into the reaction chamber at such a rate that the addition of the total vinylidene chloride monomer component required is completed before completion of the addition of the total comonomer component required for the copolymerisation whereby between about one twentieth and about one third by weight of the total comonomer component required is added to the reaction chamber after the addition of the total vinylidene chloride monomer component required has been completed, the comonomer component being added continuously during the copolymerisation reaction.

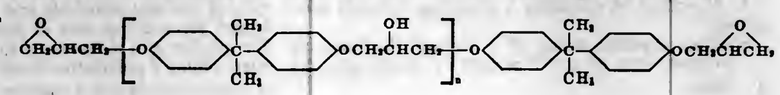
3,291,770

COATINGS FROM PARTIAL CONDENSATION OF ALLYLATED PHENOLIC RESIN WITH EPOXY RESIN

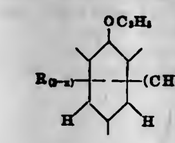
Norman G. Gaylord, New Providence, and Alfred M. Tringali, Middlesex, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Mar. 7, 1962, Ser. No. 177,960
4 Claims. (Cl. 260—33.4)

1. A method of preparing organic solvent soluble thermosetting resins which comprises condensing at a temperature below 135° C. an ethoxyline resin having an average molecular weight of 1300 to 4000, an epoxide equivalent of 870–4000 and the general formula



where n is a number from 3 to 14 inclusive with an allylated polymethylol phenol selected from the group consisting of compounds having the general formula



where R is a member of the group consisting of alkyl and hydrogen and x is a number from 2 to 3 inclusive and tetramethyloldiallyloxydiphenyl dialkyl methane by heating said reactants in the presence of an acid catalyst and an alkanol.

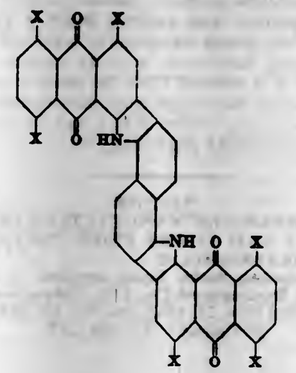
3,291,771

MELT SPINNABLE POLYAMIDE DYED WITH STABLE ANTHRAQUINONES

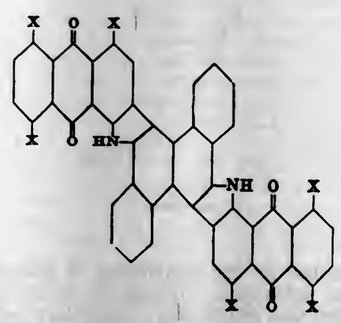
Hans Altermatt, Reinach, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Feb. 21, 1962, Ser. No. 174,724
Claims priority, application Switzerland, Feb. 23, 1961, 2,184/61
2 Claims. (Cl. 260—37)

1. A spinnable polyamide of hexamethylene diamine and adipic acid having incorporated in finely divided form a dyestuff selected from the group consisting of the formulae



and



in which one X in each anthraquinone radical represents acylamino and the other X's represent hydrogen atoms.

3,291,772

SILYLAMINESILOXANES AND POLYFUNCTIONAL ACIDS FOR ENCAPSULATING COMPOSITIONS

Reginald J. Best, Schenectady, and George P. De Zuba, Waterford, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,592
10 Claims. (Cl. 260—37)

1. A fluid composition comprising (A) 100 parts of a silicon-nitrogen polymer having a viscosity of from 10^2 to 10^9 centipoises at 25° C., and from 0.001 to 2 moles of a unit selected from the class consisting of $(R'_2N)R_2SiO_{0.5}$, $(R'_2N)R_2Si(NR')_{0.5}$ and R_2SiNR' chemically combined with from 98 to 99.999 moles of units selected from the class consisting of R_2SiO, $RSiO_{1.5}$, SiO_2, and mixtures thereof to provide for a ratio of from 1.5 to 2.04 of the sum of the R and R'_2N radicals per silicon atom of said silicon-nitrogen polymer, and (B) from 0.5 to 10 parts of a polyfunctional compound selected from the class consisting of boron-oxide, a boron-oxygen acid, an ester of a boron-oxygen acid, a phosphorous-containing acid, sulfuric acid and ferric chloride, where the free valence of the silicon atoms of said silicon-polymer, other than those connected to oxygen to form siloxane linkages and nitrogen to form terminal units selected from the class consisting of silazy, silylaminesiloxy, and silylaminesilazy, are joined to R radicals, and where the free valences of the nitrogen atoms of said silicon-nitrogen polymer, other than those connected to silicon atoms, are joined to R' radicals, where R is a member selected from the class consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, and R' is a member selected from the class consisting of hydrogen and monovalent hydrocarbon radicals.

3,291,773

REFRACTORY MATERIAL AND METHOD FOR MAKING THE SAME

Robert Rodriguez, Anaheim, Calif., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,418
2 Claims. (Cl. 260—38)

1. The method of making a refractory article which comprises impregnating a woven SiO_2 cloth with an A-stage phenolic molding resin containing finely divided perlite, converting the resinous coating on the cloth to its B-stage by heating, subdividing the resultant resin-coated cloth into a plurality of particles of a size convenient for molding, and then laminating said particles one to another to form a coherent whole by heating the particles in a mold under temperature and pressure, whereby the resin is converted to its C-stage and a refractory laminate is produced.

2. A refractory article comprising a coherent laminate of a plurality of particles of a sub-divided woven SiO_2 cloth and finely divided perlite in a C-staged phenolic molding resin.

ERRATUM

For Class 260—45.8 see:
Patent No. 3,291,757

3,291,774

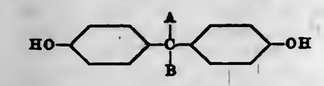
POLYCARBONATES FROM DIPHENOLIC ACIDS

Nicholas C. Bolgiano, Manor Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 7, 1960, Ser. No. 61,662
4 Claims. (Cl. 260—47)

1. An alkali soluble polycarbonate prepared by the reaction of, in an aqueous medium at a pH of from about 10–11,

(a) a member the sole reactive groups of which are, under the conditions of the condensation reaction, the phenyl hydroxy groups, said member being selected from the class consisting of a diphenolic acid and a mixture of bisphenols of which at least 5 mol percent is a diphenolic acid, said diphenolic acid being of the formula



wherein A is a member selected from the class consisting of —H and an alkyl radical, and B is a member selected from the class consisting of —COOH and —RCOOH where R is an alkylene radical with

(b) a member selected from the class consisting of phosgene and a bischloroformate having the two chloroformate groups as the sole reactive groups capable of reacting with (a) under the conditions of the reaction.

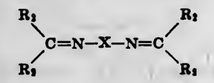
3,291,775

PROCESS FOR CURING POLYEPOXIDES WITH A POLYIMINE

Roy T. Holm, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,032
14 Claims. (Cl. 260—47)

1. A process for curing polyepoxides having a plurality of vic-epoxy groups which comprises mixing the polyepoxide with a polyimine of the formula



wherein R_2 is a member of the group consisting of hydrogen, open-chain hydrocarbon radicals and six-membered cyclic hydrocarbon radicals including those cyclic radicals formed by joining together two of the R_2 radicals which are attached to the same carbon atom, carboxy-substituted hydrocarbon radicals, carbalkoxy-substituted hydrocarbon radicals, hydroxy-substituted hydrocarbon radicals, alkoxy-substituted hydrocarbon radicals and halogen-substituted hydrocarbon radicals and X contains less than 14 carbon atoms and is a member of the group consisting of hydrocarbon radicals, oxygen-containing hydrocarbon radicals, sulfur-containing hydrocarbon radicals, nitrogen-containing hydrocarbon radicals, phosphorous-containing hydrocarbon radicals and halogen-containing hydrocarbon radicals, and exposing the resulting mixture to an atmosphere having at least 20% relative humidity.

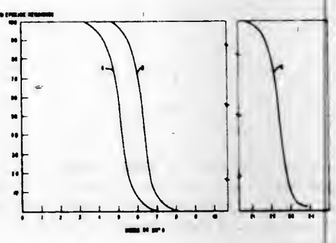
3,291,776

PROCESS FOR CURING POLYEPOXIDES WITH POLYMERCAPTANS

Herbert A. Newey, Lafayette, and Paul A. Devlin, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 26, 1962, Ser. No. 233,244
16 Claims. (Cl. 260—47)

1. A process for curing a polyepoxide having more than one vic-epoxy group and selected from the group consisting of glycidyl polyethers, polyhydric phenols and glycidyl polyethers of polyhydric alcohols with at least .8 equivalents of a liquid aliphatic or six-membered cycloaliphatic polymercaptan having a molecular weight less than about 3,000 in contact with from .05% to 5% by weight of an organic sulfide of the formula R—S—R wherein R is a member of the group consisting of aliphatic hydrocarbon radicals, six-membered cycloaliphatic hydrocarbon radicals, aromatic hydrocarbon radicals and derivatives of the foregoing wherein at least one of the



hydrogen has been replaced by an OH radical, said organic sulfide having no more than 25 carbon atoms.

3,291,777

POLYMERS FROM POLYFLUOROKETONES

Gelu Stoeff Stamatoff, Newark, and Joseph William Wittmann, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 27, 1963, Ser. No. 261,469
16 Claims. (Cl. 260—47)

1. A polymer having units of the structure

$$\{Ar—C(CX_3)_2\}_n$$

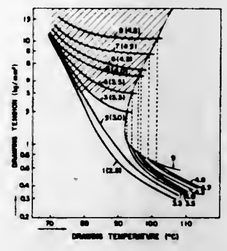
wherein Ar is selected from the group consisting of divalent unsubstituted aromatic radicals; divalent aromatic radicals substituted with electron donating groups, selected from the groups consisting of alkyl and oxyalkyl groups; divalent heterocyclic aromatic radicals; and ferrocene; and X is selected from the group consisting of chlorine, fluorine and straight chain perhaloalkyls of from 1 to 3 carbon atoms, wherein at least 4 of the X's are fluorine and n is an integer greater than 10.

3,291,778

METHOD FOR THE MANUFACTURE OF FILAMENTS AND FIBERS FROM POLYETHYLENE OXYBENZOATE

Mikio Korematsu, Saeki, Japan, assignor to Polyesterether Development Co., Ltd., Tokyo, Japan

Filed Nov. 21, 1963, Ser. No. 325,329
22 Claims. (Cl. 260—47)



1. A method for the manufacture of filaments and fibers from polyethylene oxybenzoate, characterized by drawing melt-spun polyethylene oxybenzoate fibers, which are composed of molecules not substantially oriented and crystallized, to a draw ratio of above 2.5 at a temperature of 70° C. to 120° C. under a tension of above 3 kg./mm.².

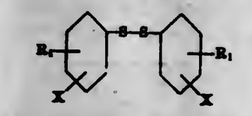
3,291,779

CUPROUS p-HALOTHIOPHENOXIDE

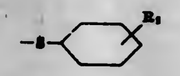
Carl E. Handlovits, Midland, and James B. Leach, Coleman, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,470
12 Claims. (Cl. 260—79)

1. A method which comprises reacting a mole of bis (haloaryl) disulfide having the generic formula



wherein R_1 represents a member selected from the group consisting of hydrogen, a lower aliphatic radical having from 1 to 4 carbon atoms and



wherein R_2 is a member selected from the group consisting of hydrogen and lower aliphatic radicals, and X represents a halogen having an atomic number from 17 to 35, with up to 1.0 mole of copper at from about 80° to about 180° C. for from about 4 hours to about 9 days under an atmosphere inert under the reaction conditions, to prepare the corresponding cuprous p-halothiophenoxide.

12. A fiber comprising a filament drawn from a fused composition consisting of a linear polyphenylene sulfide having a molecular weight above about 2000, prepared by homopolymerizing cuprous p-bromothiophenoxide prepared in accordance with the procedure of claim 1.

3,291,780

SLURRY PROCESS FOR THE PREPARATION OF HYDROCARBON INTERPOLYMERS

Edward K. Gladding, New Castle, and Rolland Shih-yuan Ro, Brandywine Hundred, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 16, 1961, Ser. No. 117,904
9 Claims. (Cl. 260—80.5)

1. In the process of preparing an elastomeric copolymer having about 20 to 75 percent by weight of ethylene units by copolymerizing ethylene with a member selected from the group consisting of (a) at least one alpha monoolefin having the structure R—CH=CH$_2$, wherein R is an alkyl radical of not more than 8 carbon atoms and (b) at least one of said alpha monoolefins and at least one non-conjugated hydrocarbon diene, said process being carried out in the presence of a coordination catalyst system comprising a vanadium compound with an organoaluminum compound; the improvement consisting essentially of preparing said copolymer in the form of a slurry by carrying out the copolymerization at a temperature between about —30 and 50° C. in a halogenated liquid hydrocarbon selected from the group consisting of methylene chloride, ethyl chloride and 1,2-dichloroethane; with the provisos that the total concentration of copolymerizable monomers shall not exceed 2 molar when said liquid hydrocarbon is methylene chloride, shall not exceed 2 molar when said liquid hydrocarbon is 1,2-dichloroethane and shall not exceed 5 molar when said liquid hydrocarbon is ethyl chloride; and the copolymerization temperature shall not exceed the boiling point at atmospheric pressure of the particular liquid halogenated hydrocarbon which is being used.

3,291,781

REACTION PRODUCT OF A VINYLIDENE CHLORIDE/VINYL CHLORIDE/ALLYL GLYCIDYL ETHER TERPOLYMER AND ORTHOPHOSPHORIC ACID AND COMPOSITIONS CONTAINING SAME

James A. Robertson, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 27, 1963, Ser. No. 290,909
6 Claims. (Cl. 260—80.5)

1. A phosphated polyepoxide consisting essentially of a terpolymer of 60 to 80 weight percent vinylidene chloride, 12 to 37 weight percent vinyl chloride and 3 to 8 weight percent allyl glycidyl ether, reacted with at least 0.5 and less than 1.0 mole of orthophosphoric acid per mole of said ether.

3,291,782

OIL-SOLUBLE COPOLYMERS OF DIALLYL AND ALPHA-OLEFINS

William S. Anderson, Oakland, and John Boor, Jr., El Cerrito, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 10, 1965, Ser. No. 454,690
4 Claims. (Cl. 260—80.5)

1. An oil-soluble non-crystalline cyclohydrocarbon copolymer having a molecular weight of from 500,000 to 1,000,000 obtained by reacting a mixture of diallyl and an alpha-monoolefin of from 2 to 18 carbon atoms in a liquid hydrocarbon medium at a temperature below 100° C. in the presence of a catalyst obtained by reacting hydrocarbon solutions of aluminum triethyl and titanium tetrachloride in a mole ratio ranging from about 0.1:1 to less than 0.4:1 at elevated temperatures for a time sufficient to completely oxidize the aluminum triethyl and thereafter reacting the resulting mixture with a hydrocarbon solution of aluminum diethyl chloride in an amount to give a catalyst-containing mixture having a total aluminum-to-titanium mole ratio of at least 1:1.

2. An oil-soluble non-crystalline cyclohydrocarbon copolymer having a molecular weight of from 500,000 to 1,000,000 obtained by reacting a mixture of diallyl, 1-hexene and ethylene in a liquid hydrocarbon medium at a temperature below 100° C. in the presence of a catalyst obtained by reacting hydrocarbon solutions of aluminum triethyl and titanium tetrachloride in a mole ratio ranging from about 0.1:1 to less than 0.4:1 at elevated temperatures for a time sufficient to completely oxidize the aluminum triethyl and thereafter reacting the resulting mixture with a hydrocarbon solution of aluminum diethyl chloride in an amount to give a catalyst-containing mixture having a total aluminum-to-titanium mole ratio of at least 1:1.

3,291,783

METHOD OF SYNTHESIZING POLYMERS, AND ORGANOMETALLIC POLYMERS

Eugene G. Rochow, Winchester, and Robert L. Stern, Lexington, Mass., assignors to Protetech Incorporated, Cambridge, Mass., a corporation of Massachusetts

Filed July 31, 1962, Ser. No. 213,730
1 Claim. (Cl. 260—92.1)

A new high polymer stable and solid at 200° C., insoluble in hydrocarbon solvents, and having substantially the following repeating unit

$$—R_p—M(R_a)_x—R_p—M(R_a)_x—$$

where R_p is a perfluorocarbon, where M is a transition metal selected from the group consisting of scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, yttrium, zirconium, columbium, molybdenum, technetium, ruthenium, rhodium, palladium, silver, cadmium, lanthanum, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, mercury, and actinium, plus the rare earth and uranium or actinide metals, where R_a is a carbonyl, and x is an integer equal to or greater than one.

3,291,784

POLYMERISATION OF ETHYLENE IN THE PRESENCE OF ALUMINUM TRIMETHYL AND TITANIUM-TRICHLORIDE WHICH HAS BEEN MIXED ONE MINUTE PRIOR TO INJECTION INTO THE REACTOR

Frank Baddington and John Brewster Rose, St. Albans, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 26, 1963, Ser. No. 276,078
Claims priority, application Great Britain, May 2, 1962, 16,855/62
5 Claims. (Cl. 260—94.9)

1. Process for the homopolymerization of ethylene which comprises contacting ethylene with a polymerization catalyst in a polymerization reactor at a pressure above 450 atmospheres and a temperature not exceeding 100° C., and recovering solid polyethylene, said polymerization catalyst having been prepared by mixing titanium tetrachloride with aluminum trimethyl within one minute prior to introduction into said polymerization reactor.

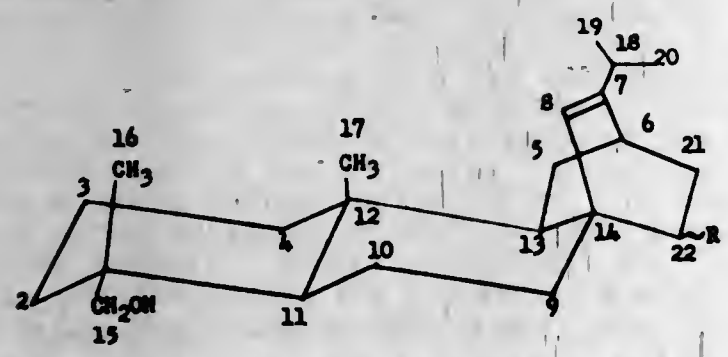
3,291,785

DIOLS OF THE REACTION PRODUCT OF ROSIN AND BETA-PROPIOLACTONE

Noah J. Halbrook and Ray V. Lawrence, Lake City, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,328
2 Claims. (Cl. 260—97)

1. The isomeric diol compounds represented by the formula



wherein R is a —CH_2OH group spatially located endo or exo.

2. A process for preparing a composition of matter comprising a mixture of the isomeric diols of claim 1, which process comprises reducing, under an inert gas with lithium aluminum hydride at a temperature of about from 0° to 50° C., the product obtained by the reaction of rosin and β-propiolactone at 225° C., the lithium aluminum hydride and the reaction product of rosin and β-propiolactone being employed in a ratio of about one to five moles of the hydride per mole of the reaction product.

3,291,786

CARBAZOLEDISULFONIC ACID 1,6-TETRAZONIUM DICHLORIDE

Henry M. Grotta, Delaware, Ohio, and Myron N. Lugasch, deceased, late of Columbus, Ohio, by Phyllis T. Lugasch, heir, Scranton, Pa., assignors, by mesne assignments, to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,308
1 Claim. (Cl. 260—141)

Carbazoledisulfonic acid 3,6-tetrazonium dichloride.

3,291,787

CARBAZOLEDISULFONIC ACID 3,6-TETRAZONIUM DICHLORIDE

Henry M. Grotta, Delaware, Ohio, and Myron N. Lugasch, deceased, late of Columbus, Ohio, by Phyllis T. Lugasch, heir, Scranton, Pa., assignors, by mesne assignments, to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,309
1 Claim. (Cl. 260—141)

Carbazoledisulfonic acid 1,6-tetrazonium dichloride.

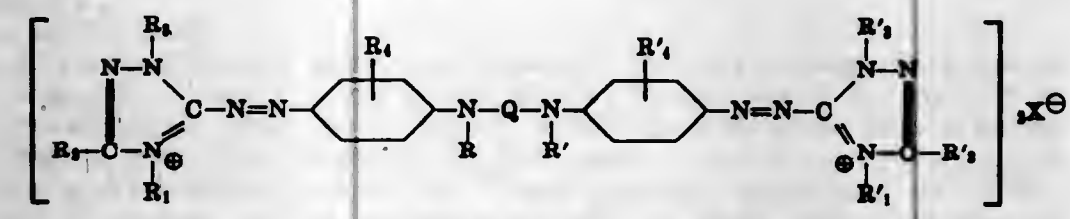
3,291,788

CATIONIC TRIAZOLE DISAZO DYESTUFFS

Wataru Yamaya, Kitakyushu-shi, and Koji Matsui, Kiryu-shi, Japan, assignors to Mitsubishi Chemical Industries Limited, Tokyo, Japan, a corporation

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,659
7 Claims. (Cl. 260—157)

1. Cationic dyestuffs as indicated by the following formula:



wherein $X^{\ominus}$ is an anion of a quaternizing agent, which does not confer insolubility to the dye molecule, R and R' each is a radical taken from the class consisting of methyl, ethyl, β-hydroxyethyl, β-cyanoethyl, γ-hydroxypropyl, γ-methoxy-β-hydroxy-propyl, benzyl and hydrogen atom; R_1 and R'_1 each is a radical taken from the class consisting of methyl, ethyl and benzyl; R_2 and R'_2 each is a radical taken from the class consisting of hydrogen atom, methyl, ethyl, phenyl and benzyl; R_3 and R'_3 each is a radical taken from the class consisting of hydrogen atom, methyl, ethyl and benzyl; R_4 and R'_4 each is a radical taken from the class consisting of hydrogen, methyl, methoxy and chlorine atom; Q is a divalent radical taken from the class consisting of ethylene, oxydiethylene, dioxytriethylene, p-toluidino-N·N-diethylene, p-xylylene, 2-methyl-p-xylylene, 2-methoxy-p-xylylene, 2-chloro-p-xylylene and 2,5-dimethyl-p-xylylene.

3,291,789

DECAUSTICIZATION OF POLYSACCHARIDE XANTHATES

Douglas J. Bridgeford, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 7, 1962, Ser. No. 200,621
16 Claims. (Cl. 260—217)

1. A method of preparing a decausticized solution of a film-forming material which comprises contacting a caustic aqueous solution of an alkali xanthate of a film-forming polysaccharide with an insoluble material selected from the group consisting of cation exchange materials in the hydrogen ion form, anion exchange materials in the salt form, and ion retardation materials in a sufficient amount and for a sufficient time to reduce the pH of the solution to less than about 13.

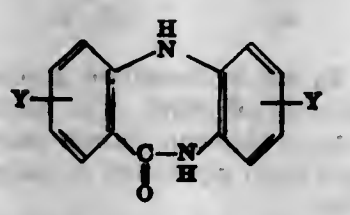
3,291,790

PROCESS FOR PREPARING DIBENZO-DIAZEPINONE COMPOUNDS

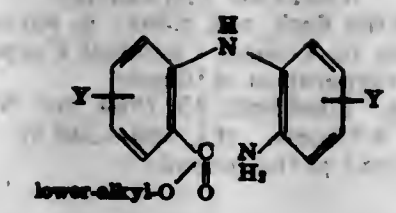
Richard E. Strube, Kingsport, Tenn., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 28, 1963, Ser. No. 220,052
5 Claims. (Cl. 260—239.3)

1. The process for preparing [5H]-dibenzo-[b,e][1,4]-diazepin-11(10H)-ones having the formula

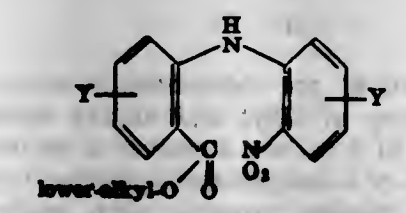


wherein Y is selected from the group consisting of hydrogen and a non-interfering substituent which comprises thermally cyclizing lower-alkyl N-(2-aminophenyl)anthranilates having the formula

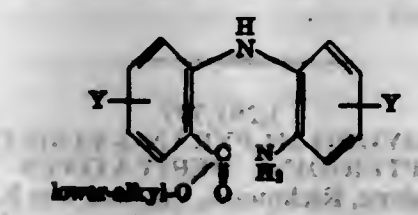


wherein Y is as indicated above and lower-alkyl is of from 1 to 4 carbon atoms, inclusive.

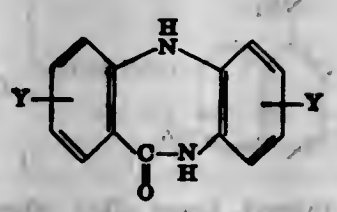
4. The process which comprises reducing lower-alkyl N-(2-nitrophenyl)anthranilates having the formula



wherein Y is selected from the group consisting of hydrogen and a non-interfering substituent to produce lower-alkyl N-(2-aminophenyl)anthranilates having the formula



wherein Y is as indicated above, and thermally cyclizing the thus-prepared lower-alkyl N-(2-aminophenyl)anthranilates to produce [5H]-dibenzo-[b,e][1,4]-diazepin-11(10H)-ones having the formula



wherein Y is as indicated above.

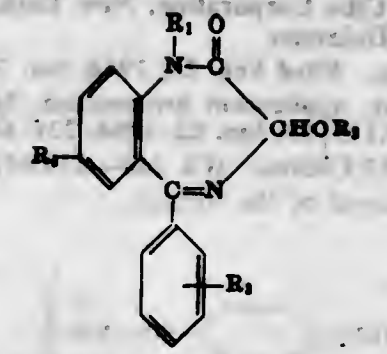
3,291,791

PROCESS FOR PREPARING 3-LOWER ALKANOYL-OXY AND 3-BENZOYL-OXY 5-PHENYL-1,3-DIHYDRO-2H-1,4-BENZO-DIAZEPIN-2-ONES

Earl Reeder, Nutley, and Lee Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche, Inc., Nutley, N.J., a corporation of New Jersey

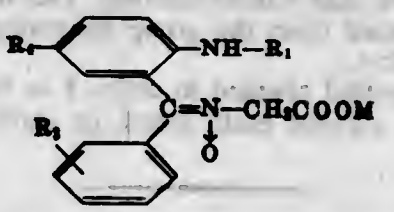
No Drawing. Filed June 23, 1964, Ser. No. 377,405
4 Claims. (Cl. 260—239.3)

1. A process for the preparation of a compound of the formula



wherein R_1 is selected from the group consisting of hydrogen and lower alkyl; R_2 is selected from the group consisting of lower alkanoyl and benzoyl; R_3 is selected from the group consisting of hydrogen, halogen and trifluoromethyl; and R_4 is selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, lower alkylthio and lower alkyl;

which comprises treating a compound of the formula



wherein R_1, R_3 and R_4 have the same meaning as above; and M is selected from the group consisting of hydrogen, alkali metals and earth alkali metals;

with an acylating agent selected from the group consisting of lower alkanoyl anhydride, benzoyl anhydride, lower alkanoyl halide, benzoyl halide, di-lower alkanoyl sulfide and di-benzoyl sulfide.

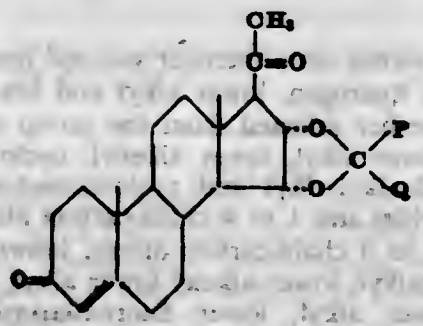
3,291,792

ACETALS AND KETALS OF 15α,16α-DIHYDROXYPROGESTERONE

Samuel C. Pan, Metuchen, and Pacifico A. Principe, South River, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,344
5 Claims. (Cl. 260—239.55)

1. A steroid of the formula



wherein P is selected from the group consisting of hydrogen, lower alkyl, halo, lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic heterocyclic and monocyclic heterocyclic lower alkyl; Q is selected from the group consisting of lower alkyl, halo lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic

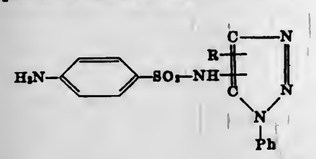
heterocyclic and monocyclic heterocylic lower alkyl; and together with the carbon to which they are joined P and Q is selected from the group consisting of monocyclic cycloalkyl and monocyclic heterocyclic.

3,291,793
SULFONAMIDES

Hans Ulrich Daeniker, Reinach, Basel-Land, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,390
Claims priority, application Switzerland, Mar. 14, 1963, 3,126/63; Jan. 22, 1964, 731/64
12 Claims. (Cl. 260—239.65)

1. A compound of the formula



in which Ph stands for a member selected from the group consisting of phenyl and phenyl substituted by at least one member selected from the group consisting of lower alkyl, halogen and trifluoromethyl, and R stands for a member selected from the group consisting of hydrogen and lower alkyl.

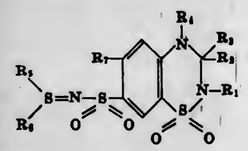
2. A compound claimed in claim 1 in the form of an alkali metal, alkaline earth metal, or earth metal salt.

3,291,794
N-(1,2,4-BENZOTHIADIAZINE-7-SULFONYL)-SULFILIMINES

Charles Ferdinand Huebner, Chatham, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,550
6 Claims. (Cl. 260—243)

1. A member selected from the group consisting of a compound having the formula



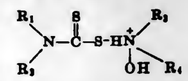
in which R_1 stands for a member selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl, R_2 for a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, cycloalkyl, cycloalkenyl, cycloalkyl-alkyl and cycloalkenyl-alkyl with 5 to 7 ring-carbon and 1 to 4 chain-carbon atoms, phenylalkyl with 1 to 4 chain-carbon atoms, lower fluoroalkyl, lower chloroalkyl, lower alkoxy-lower alkyl, lower alkylmercapto-lower alkyl, lower fluoroalkoxy-lower alkyl, lower chloroalkoxy-lower alkyl, lower fluoroalkylmercapto-lower alkyl, lower chloroalkylmercapto-lower alkyl, dilower alkylamino-lower alkyl and lower alkeneimino-lower alkyl, R_3 and R_4 for a member selected from the group consisting of hydrogen and a direct bond, R_5 and R_6 for lower alkyl and R_7 for a member selected from the group consisting of chloro and trifluoromethyl, an alkali metal salt and an acid addition salt thereof.

3,291,795
HYDROXYLAMINE SALTS OF DITHIOCARBAMIC ACIDS

Alfred C. Whiton, Norristown, and Thomas E. Degar, Ambler, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,209
9 Claims. (Cl. 260—247.1)

1. A compound of the structure



where R_1 and R_2 are hydrocarbon groups selected from the group consisting of alkyl, aryl, alkaryl and aralkyl having from one to eighteen carbon atoms and together with the nitrogen form piperidino or morpholino; R_3 and R_4 are lower alkyl.

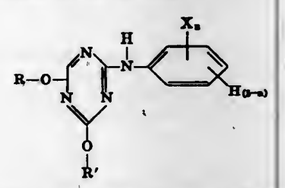
7. The acid addition salt of diethylhydroxylamine and morpholine dithiocarbamate.

3,291,796
PESTICIDAL POLY-SUBSTITUTED DIALKOXY ANILINO TRIAZINES

Frank Ross, Villa Park, and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 15, 1964, Ser. No. 396,720
9 Claims. (Cl. 260—249.5)

1. A compound of the formula



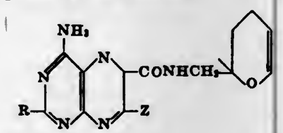
wherein R and R′ are independently selected from the group consisting of alkyl and alkoxy substituted alkyl radicals of 1 to 4 carbon atoms; *n* is an integer from 2 to 5; and each X is independently selected from the group consisting of chlorine, bromine, nitro, amino, and alkyl, alkoxy, acyl and alkylamido radicals of 1 to 4 carbon atoms, provided a maximum of two X's are nitro radicals, and provided that a minimum of one X is selected from the group consisting of chlorine, bromine, nitro, amino, and alkoxy, acyl and alkylamido radicals of 1 to 4 carbon atoms.

3,291,797
3,4-DIHYDRO-2H-PYRAN-2-YLMETHYL PTERIDINE DERIVATIVES

Thomas S. Osdene, Richmond, Va., and Leo E. McCardle, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,238
12 Claims. (Cl. 260—251.5)

1. A compound of the formula:



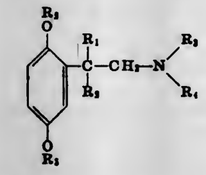
wherein R is 2-thienyl, lower alkyl, phenyl, halophenyl, trifluoromethyl, phenyl, or (lower)alkylphenyl; Z is hydroxy, amino or 3,4-dihydro-2H-pyran-2-ylmethylamino.

3,291,798
(2-TERTIARY AMINO ETHYL)-HYDROQUINONES, LOWER ALKANOYL DERIVATIVES THEREOF AND PROCESSES FOR THEIR PRODUCTION

Louis L. Skaletzky, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 25, 1964, Ser. No. 347,116
6 Claims. (Cl. 260—268)

4. A compound selected from the group consisting of (1) (2-aminoethyl)hydroquinone of the formula



wherein R_3 is selected from the group consisting of hydrogen and lower-alkanoyl; R_1 is selected from the group consisting of hydrogen, lower-alkyl, and phenyl; R_2 is selected from the group consisting of lower-alkyl and phenyl; R_3 and R_4 taken separately are selected from the group consisting of lower-alkyl, phenyl, and substituted phenyl selected from the group consisting of lower-alkylphenyl, lower-alkoxyphenyl, and halophenyl, provided that R_3 and R_4 are not simultaneously selected from phenyl and substituted phenyl; and R_3 and R_4 taken together with —N< constitute a saturated heterocyclic amino radical selected from the group consisting of pyrrolidino, 2-methylpyrrolidino, 2-ethylpyrrolidino, 2,2-dimethylpyrrolidino, 3,4 - dimethylpyrrolidino, 2 - isopropylpyrrolidino, 2 - sec - butylpyrrolidino, morpholino, 2 - ethylmorpholino, 2 - ethyl - 5 - methylmorpholino, 3,3 - dimethylmorpholino, thiamorpholino, 3-methylmorpholino, 2,3,6-trimethylmorpholino, 4 - methylpiperazino, 4 - butylpiperazino, piperidino, 2 - methylpiperidino, 3 - methylpiperidino, 4 - methylpiperidino, 4-propylpiperidino, 2 - propylpiperidino, 4 - isopropylpiperidino, hexamethyleneimino, 2 - methylhexamethyleneimino, 3,6-dimethylhexamethyleneimino, and homomorpholino and (2) acid addition salts thereof.

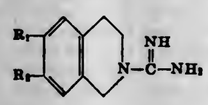
6. [1,1 - dimethyl-2-(4-methyl-1-piperazino)ethyl]hydroquinone.

3,291,799
ISOQUINOLINE CARBOXAMIDINE

Wilhelm Wenner, Upper Montclair, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,040
9 Claims. (Cl. 260—286)

4. A compound selected from the group consisting of compounds of the formula



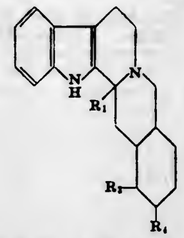
wherein R_1 and R_2 are selected from the group consisting of hydroxy and lower alkoxy, one of R_1 and R_2 being hydroxy and the other of R_1 and R_2 being lower alkoxy
and acid-addition salts thereof with pharmaceutically acceptable acids.

3,291,800
3-SUBSTITUTED DERIVATIVES OF YOHIMBANE ALKALOIDS AND PROCESS FOR THEIR PRODUCTION

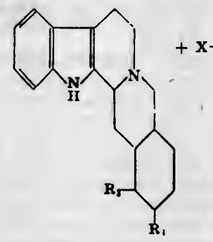
John Shavel, Jr., Mendham, and Harold Zlanes, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed July 23, 1963, Ser. No. 296,938
4 Claims. (Cl. 260—288)

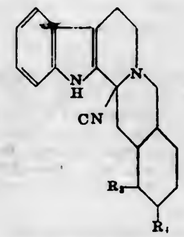
2. Process for the production of a compound of the formula:



wherein R_1 is a member selected from the group consisting of lower alkyl, phenyl and benzyl and R_3 is a member selected from the group consisting of hydrogen and lower alkyl and R_4 is a member selected from the group consisting of hydrogen and hydroxy which comprises refluxing a member selected from the group consisting of those having the formula:



and



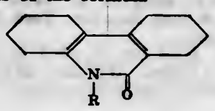
in which X is an anion selected from the group consisting of acetate, chloride, sulfate, phosphate and perchlorate and R_3 and R_4 have the same meaning as defined with a compound of the formula R_1Li.

3,291,801
NOVEL OCTAHYDRO-6(5)-PHENANTHRIDINONES AND PREPARATION THEREOF

Stewart R. Montgomery, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 23, 1963, Ser. No. 282,552
6 Claims. (Cl. 260—289)

1. Compounds of the formula



wherein R is selected from the group consisting of hydrogen, lower alkyl and benzyl groups.

4. The compound 5-methyl-1,2,3,4,7,8,9,10-octahydro-6(5)-phenanthridinone.

3,291,802

2,3- AND 2,6-DICHLOROPYRAZINE BY CHLORINATION

Kenneth Henry Collins, North Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,872
13 Claims. (Cl. 260—250)

1. A process for the preparation of a dichloropyrazine which comprises reacting chlorine with 2-chloropyrazine in a polar organic solvent which is water soluble, in the ratio of at least 0.3 mole of said solvent per mole of 2-chloropyrazine, at a temperature of about 40° to 120° C., and having over about 0.02 mole percent, based on 2-chloropyrazine, of water present for orientation of the product towards the 2,6-dichloropyrazine isomer, and less than said 0.02 percent water for orientation of the product towards the 2,3-dichloropyrazine isomer.

3,291,803

MAGNESIUM SALTS OF PYRIDINE CARBOXYLIC ACIDS

Bernard F. Duessel, Yonkers, N.Y., assignor to Nepera Chemical Co., Inc.

No Drawing. Continuation of application Ser. No. 281,036, May 16, 1963. This application Jan. 15, 1965, Ser. No. 425,965
5 Claims. (Cl. 260—295.5)

1. A method of preparing a magnesium salt of nicotinic acid which comprises reacting magnesium oxide with nicotinic acid in an aqueous reaction medium, adjusting the pH to greater than 7 and less than 10, diluting the reaction medium by the addition of a lower aliphatic alcohol, filtering contaminating iron compounds from the diluted reaction solution, separating the magnesium salt of nicotinic acid from the reaction medium and drying the separated magnesium salt of nicotinic acid to nearly constant weight.

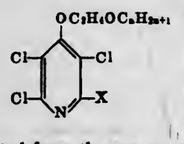
3,291,804

ALKOXYETHOXYPOLYCHLOROPYRIDINES

Howard Johnston, Walnut Creek, and Mary S. Tomita, Glendale, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,277
5 Claims. (Cl. 260—297)

1. A 4-(2-alkoxyethoxy)polychloropyridine having the formula



wherein X is selected from the group consisting of chloro and hydrogen and *n* is an integer of from 1 to 4, inclusive.

3,291,805

METHOD FOR THE PRODUCTION OF HYDROXY-PICOLINIC ACID

Miguel A. Ondetti, Highland Park, and John T. Sheehan, Middlesex, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 28, 1965, Ser. No. 428,873
1 Claim. (Cl. 260—297)

2-hydroxymethyl-3-benzyloxypyridine.

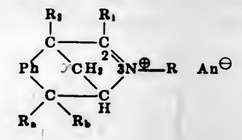
3,291,806

METHANO-BENZAZEPINIUM COMPOUNDS

Gordon Northrop Walker, Morristown, N.J., and Karl Schenker, Binningen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1966, Ser. No. 525,870
16 Claims. (Cl. 260—313.1)

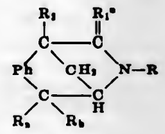
1. A member selected from the group consisting of a compound having the formula



in which Ph stands for a member selected from the group consisting of 1,2-phenylene, (lower alkyl)-1,2-phenylene, lower alkoxy)-1,2-phenylene, (halogeno)-1,2-phenylene, (N,N-di-lower alkylamino)-1,2-phenylene and (trifluoromethyl)-1,2-phenylene, each of R and R_1 for a member selected from the group consisting of lower alkyl, lower alkenyl, cycloalkyl, cycloalkenyl, cycloalkyl-lower alkyl and cycloalkenyl-lower alkyl in which each cycloalkyl contains 3 to 8 and each cycloalkenyl 5 to 8 ring-carbon atoms, phenyl-lower alkyl, naphthyl-lower alkyl and pyridyl-lower alkyl, each of R_2 and R_a for a member selected from the group consisting of hydrogen, lower alkyl, phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, (N,N-di-lower alkylamino)-phenyl and (trifluoromethyl)-phenyl, R_b for a member selected from the group consisting of hydrogen, hydroxyl, lower alkoxy, phenyl-lower alkoxy and lower alkanoyloxy, and $An^{\ominus}$ is the anion of an acid, its 2,3-dihydro-derivative and the free base thereof.

4. A compound as claimed in claim 1 and being the 2,3-dimethyl - 1 - phenyl - 1,4 - dihydro - 5H - 1,4-methano-3-benzazepinium chloride.

8. A compound of the formula



in which Ph stands for a member selected from the group consisting of 1,2-phenylene, (lower alkyl)-1,2-phenylene, (lower alkoxy)-1,2-phenylene, (halogeno)-1,2-phenylene, (N,N-di-lower alkylamino)-1,2-phenylene and (trifluoromethyl)-1,2-phenylene, R for a member selected from the group consisting of lower alkyl, lower alkenyl, cycloalkyl, cycloalkenyl, cycloalkyl-lower alkyl and cycloalkenyl-lower alkyl in which each cycloalkyl contains 3 to 8 and each cycloalkenyl 5 to 8 ring-carbon atoms, phenyl-lower alkyl, naphthyl-lower alkyl and pyridyl-lower alkyl, R_1', for a member selected from the group consisting of lower alkylidene, lower alkenylidene, cycloalkylidene, cycloalkenylidene, cycloalkyl-lower alkylidene and cycloalkenyl-lower alkylidene in which each cycloalkylidene and cycloalkyl contains 3 to 8 and each cycloalkenylidene and cycloalkenyl 5 to 8 ring-carbon atoms, phenyl-lower alkylidene, naphthyl-lower alkylidene and pyridyl-lower alkylidene, each of R_2 and R_a for a member selected from the group consisting of hydrogen, lower alkyl, phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, (N,N-di-lower alkylamino)-phenyl and (trifluoromethyl)-phenyl, R_b for a member selected from the group consisting of hydrogen, hydroxyl, lower alkoxy, phenyl-lower alkoxy and lower alkanoyloxy.

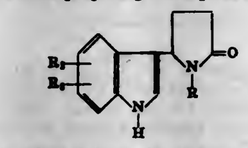
3,291,807

PROCESS FOR PRODUCTION OF 5-(INDOL-3-YL)-2-PYRROLIDINONES

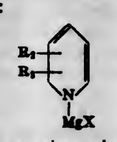
Jackson B. Hester, Jr., Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 11, 1964, Ser. No. 366,647
3 Claims. (Cl. 260—326.13)

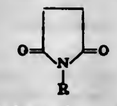
1. A process for preparing a compound of the formula:



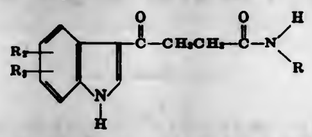
wherein R is selected from the group consisting of alkyl and benzyl, and R_2 and R_3 are selected from the group consisting of hydrogen, alkyl, alkoxy, and halogen, which comprises the steps: (1) reacting an indolyl Grignard reagent of the formula:



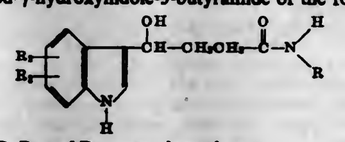
wherein R_2 and R_3 are as given above and X is halogen having an atomic number from 17 to 53, inclusive, with an N-substituted succinimide of the formula:



wherein R is selected from the group consisting of alkyl and benzyl; (2) reducing by catalytic hydrogenation or with an alkali-metal hydride the resulting N-substituted-γ-oxoindole-3-butyramide of the formula:



wherein R, R_2 and R_3 are as given above; and (3) concomitantly dehydrating and cyclizing the resulting N-substituted-γ-hydroxyindole-3-butyramide of the formula:



wherein R, R_2 and R_3 are as given above.

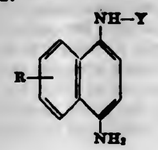
3,291,808

NAPHTHALENE DIAMINE COMPOUNDS AND METHODS FOR THEIR PRODUCTION

Edward F. Ehlinger and Donald F. Worth, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

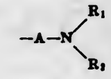
No Drawing. Filed Dec. 22, 1964, Ser. No. 420,450
6 Claims. (Cl. 260—326.85)

1. A member selected from the class consisting of free bases of the formula:

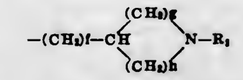


and pharmaceutically acceptable acid addition salts thereof;

wherein Y represents a member of the group consisting of:



and



A represents a member selected from the group consisting of alkylene of 2 to 8 carbon atoms inclusive and alkylene of 3 to 6 carbon atoms inclusive in which one of the non-terminal methylene groups is replaced by a member selected from the class consisting of —O—, —S—, =CHOH, =COH(lower alkyl), =N(lower alkyl), and =CH(diloweralkylaminoalkyl);

R represents a member selected from the group consisting of hydrogen, methyl, chloro and bromo;

R_1 and R_2 each represent a member selected from the group consisting of

(1) alkyl, alkoxyalkyl, hydroxyalkyl, and cycloalkyl, said members having fewer than 7 carbon atoms,

(2) as further members the allyl radical, the methallyl radical, and lower dialkylaminoalkyl of 3 to 7 alkyl carbon atoms inclusive,

(3) and still further members wherein R_1 and R_2 in combination with the nitrogen atom to which they are attached represent a member selected from the class consisting of: pyrrolidino, piperidino, hexamethyleneimino, morpholino, piperazino, homopiperazino, decahydroquinolinyl, decahydroisoquinolinyl, azabicyclooctyl, azabicyclononyl, azabicyclodecyl, hexahydroindolinyl, octahydroquinazolinyl, azaspiranonyl, azaspiradecyl, azaspiraundecyl and octahydrocyclopentapyrrolyl, and lower alkyl, lower hydroxyalkyl, lower alkoxyalkyl, hydroxy, lower alkoxy, amino, and lower dialkylaminoalkyl substituted derivatives thereof;

f represents an integer from 0 to 3 inclusive;

g and *h* represent integers such that the sum of *g* and *h* is an integer from 3 to 4;

and R_3 represents a member selected from the group consisting of lower alkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower dialkylaminoalkyl.

3. 1 - [2 - (4 - amino - 1 naphthylamino) - ethyl]-pyrrolidine, dihydrochloride.

3,291,809

PHOSPHATYLTHIOEPOXIDE

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,641
10 Claims. (Cl. 260—327)

1. A compound selected from the group consisting of bis-(dithiophosphatyl) thioepoxyalkane having from 4 to 14 carbon atoms in the thioepoxy moiety and bis-(dithiophosphatyl) thioepoxycycloalkane having from 6 to 14 carbon atoms in the thioepoxy moiety.

3,291,810
PROCESS FOR THE PREPARATION OF β-LACTONES

Carl Edward Lorenz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 9, 1964, Ser. No. 417,011
16 Claims. (Cl. 260—343.9)

1. A process for the preparation of pivalolactone which comprises neutralizing, at a temperature in the range of 0°–65° C., α,α-dimethyl-β-chloropropionic acid with a dilute aqueous solution of a base to provide the anion of said α,α-dimethyl-β-chloropropionic acid as an aqueous solution of the salt of the α,α-dimethyl-β-chloropropionic acid having a pH in the range of 5.0 to 11.4, and forming pivalolactone and extracting it from the aqueous phase as rapidly as formed in yields of at least 65%, based on said α,α-dimethyl-β-chloropropionic acid, by immediately intimately admixing and dispersing by vigorous agitation said aqueous solution with a water-immiscible organic solvent for the pivalolactone at a temperature in the range of 60°–120° C. for from 1 to 30 minutes, under a pressure sufficient to maintain the water and the organic solvent in the liquid phase, while vigorously agitating the mixture, and separating the resulting solution of said pivalolactone in the water-immiscible solvent from the aqueous phase.

3,291,811
CYCLOHEXANO[g]CHROMONES SUBSTITUTED IN 2-POSITION BY CARBOXYL OR CARBOXYMETHYL-AMINOCARBONYL

Arthur Hedley Wragg, Cranage, Middlewich, England, assignor to Beecham Laboratories Limited, Cheshire, England

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,036
Claims priority, application Great Britain, Mar. 30, 1962, 12,222/62
5 Claims. (Cl. 260—345.2)

1. Cyclohexano[g]chromone-2-carboxylic acid.

2. 2 - carboxymethylaminocarbonylcyclohexano [g]-chromone.

3,291,812
NOVEL 3-KETO-4-FLUORO-Δ⁴-STEROIDS AND PREPARATION THEREOF

Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, Armand Guillemette, Noisy-le-Sec, and Bernard Goffinet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,729
Claims priority, application France, Mar. 21, 1960, 822,001
22 Claims. (Cl. 260—397.3)

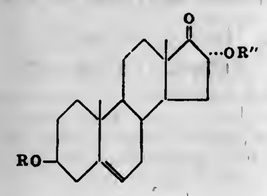
11. 4-fluoro-16α-methyl-Δ⁴-pregnene-3,11,20-trione.

3,291,813
3 MONO AND 3,16-DIESTERS OF Δ⁵-ANDROSTENE-3β,16α-DIOL-17 ONE AND PROCESS FOR THE PRODUCTION THEREOF

Allan Eugene Hydorn, Milltown, and James Riva Moetz, New Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,723
8 Claims. (Cl. 260—397.4)

1. A steroid of the formula



wherein R is selected from the group consisting of the acyl radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms, a hydrocarbon dicarboxylic acid of less than twelve carbon atoms, and alkali metal, alkaline earth metal or amine salts of the latter; and R'' is selected from the group consisting of hydrogen, the acyl radical of a hydrocarbon dicarboxylic acid of less than twelve carbon atoms and salts thereof.

3,291,814
NOVEL SYNTHESIS OF 19-NORSTEROIDS AND NOVEL 19-NORSTEROID INTERMEDIATES

Philip Guy Marshall, Cheadle Hulme, England, assignor to Aspro-Nicholas Limited, London, England, a British company

No Drawing. Filed Aug. 28, 1964, Ser. No. 392,906
10 Claims. (Cl. 260—397.4)

1. A method of making 17α-vinyloestr-5(10)-en-17β-ol-3-one comprising acting upon a solution of a Δ⁸-dehydrooestrone 3-enol ether with acetylene in the presence of an ethinylation catalyst to form a Δ⁸-dehydro-17α-ethinyloestradiol 3-enol ether, acting upon said Δ⁸-dehydro-17α-ethinyloestradiol 3-enol ether with an alkali metal and ammonia to simultaneously reduce the 17α-ethinyl group to a 17α-vinyl group, reduce the 8–9 double bond and reduce the aromatic A ring to a diene ring, and acting upon a solution of the resulting 17α-vinyloestra-2,5(10)-dien-3, 17β-diol 3-enol ether with an organic acid to form 17α-vinyloestr-5(10)-en-17β-ol-3-one.

3,291,815
6-FLUORO-16α-METHYL CORTICOSTEROIDS

Ellis Rex Pinson, Jr., Jackson Heights, N.Y., assignor to Chas. Pfizer & Co., Inc., Brooklyn, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 26, 1959, Ser. No. 836,076
1 Claim. (Cl. 260—397.45)

A compound selected from the group consisting of 6β-fluoro - 16α - methyl-Δ⁹⁽¹¹⁾-pregnene-5α,17α,21-triol-3,20-dione and its 21-acetate.

3,291,816
DEHYDRATION OF LESQUEROLATES

Leo A. Goldblatt, New Orleans, La., and Richard E. Knowles, Pleasant Hill, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 2, 1963, Ser. No. 313,401
6 Claims. (Cl. 260—410.7)

1. A composition comprising a mixture of esters of 11,13-eicosadienoic acid and 11,14-eicosadienoic acid with a hydroxy compound of the group consisting of alkanols, ethylene glycol, glycerine, pentaerythritol, and dipentaerythritol.

3,291,817
POLYMER COORDINATED METAL COMPOUNDS

Jack Rockett, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 20, 1963, Ser. No. 289,441
8 Claims. (Cl. 260—429.9)

1. A stable mineral-oil-soluble coordination compound of an oil-insoluble metal salt of a diorgano dithiophosphoric acid and an oil-soluble, linear, non-solid addition polymer having a molecular weight in the range of from 10,000 to 500,000 and containing at least one free amino group, wherein the total of the carbon atoms in the organo groups is in the range of from 2 to 40, the ratio of metal atoms to amino nitrogen atoms in said coordination compound being in the range of from 1:1 to 0.1:1, said metal being selected from the group consisting of zinc, chromium, nickel, copper, cobalt and cadmium.

3,291,818
PROCESS FOR THE MANUFACTURE OF MONOMERIC, ANHYDROUS LEAD SALTS OF ACRYLIC OR METHACRYLIC ACID

Heinz Ratz, Troisdorf, and Paul Spielau, Spich, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,964
Claims priority, application Germany, Jan. 5, 1963, D 40,632
6 Claims. (Cl. 260—435)

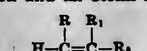
1. Process for the manufacture of monomeric anhydrous lead salts of acrylic and methacrylic acid, which comprises reacting the corresponding free acid with a member selected from the group consisting of lead oxide, lead carbonate, and mixtures thereof, in a solvent mixture composed of about 95–80% by volume of a water-insoluble component consisting essentially of at least one of low boiling aromatic and cyclo-aliphatic hydrocarbons and about 5–20% by volume of a water-soluble, water-binding component consisting essentially of at least one of low boiling aliphatic cyclic ethers and aliphatic ketones, whereby the content of unreacted free acid present remains dissolved in said solvent mixture while the corresponding lead salts formed in the reaction remain undissolved.

3,291,819
PRODUCTION OF ORGANO-ALUMINUM COMPOUNDS

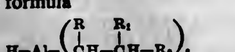
Günther Brune, Philadelphia, Pa., and Hubert Schirp, Duesseldorf, Germany, assignors to Henkel & Cie, G.m.b.H., Duesseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Apr. 20, 1961, Ser. No. 104,241
Claims priority, application Germany, Apr. 23, 1960, H 39,254; May 17, 1960, H 39,451
7 Claims. (Cl. 260—448)

1. A process for the preparation of aluminum primary alkyl compounds wherein the primary alkyl radicals contain 5 to 30 carbon atoms which comprises reacting at a temperature between about 90° and 150° C. and a hydrogen pressure of about 100 to 300 atmospheres metallic aluminum, hydrogen and an olefin having the formula



wherein R and R_1 are alkyl radicals and R_2 is a member selected from the group consisting of hydrogen and alkyl radicals, and the sum of thte carbon atoms in R, R_1 and R_2 is 3 to 28, to form an aluminum secondary alkyl compound having the formula



wherein R, R_1 and R_2 have the above definition, removing the hydrogen, isomerizing said aluminum secondary alkyl compound by heating at temperatures above 150° C. in the presence of more than one mol of an olefin having 2 to 30 carbon atoms per mol of said aluminum secondary alkyl compound to form said aluminum primary alkyl compounds, and recovering said compound.

3,291,820
ORGANOBORON ISOCYANATES AND PROCESS FOR THE PREPARATION THEREOF

Theodore L. Heying, North Haven, Conn., Joyce Ann Reid, Highland Park, N.J., and Samuel I. Trotz, Orange, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,862
7 Claims. (Cl. 260—453)

1. An isocyanate compound of the formula:

$$B_{10}H_{10}(CR^dCR^e)$$

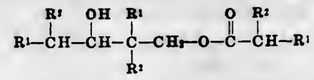
wherein R^d and R^e are each selected from the group consisting of hydrogen and —NCO and wherein at least one of R^d and R^e is —NCO.

3,291,821
PREPARATION OF GLYCOL MONOESTERS BY CONDENSATION OF ALDEHYDES IN THE PRESENCE OF AN AQUEOUS SOLUTION OF A STRONG INORGANIC BASE

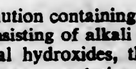
Milton A. Perry and Hugh J. Hagemeyer, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 4, 1963, Ser. No. 321,135
9 Claims. (Cl. 260—494)

1. The process of continnously preparing a glycol monoester of the formula:



which comprises continuously and intimately contacting an aldehyde of 4 to 10 carbon atoms having the formula:



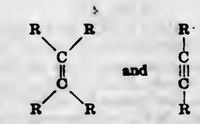
with an aqueous solution containing a strong base selected from the group consisting of alkali metal hydroxides and alkaline earth metal hydroxides, the hydroxyl ion concentration of said aqueous solution, calculated as sodium hydroxide, being about 5 to about 20 weight percent, the volumetric ratio of said aldehyde to said aqueous solution being from about 90:10 to about 50:50, for about 15 minutes to about 2 hours at a temperature of about 50° C. to about 125° C. wherein each of R^1 and R^2 is a hydrocarbyl radical of 1 to 7 carbon atoms.

3,291,822
SALTS OF SULFOSULFINIC ACIDS AND A PROCESS FOR THEIR PREPARATION

Horst Baumann, Duesseldorf, Germany, and Johann Heinrich Helberger, deceased, late of Munich-Thalkirchen, Germany, by Henning Von Dobeneck, executor, Munich, Germany, assignors to Bohme Fettchemie, G.m.b.H., Duesseldorf, Germany, a corporation of Germany

No Drawing. Filed Dec. 23, 1964, Ser. No. 421,155
Claims priority, application Germany, Feb. 26, 1959, H 35,742
13 Claims. (Cl. 260—513)

1. A process for the production of salts of organic sulfo-sulfinic acids which comprises the steps of reacting from about two to three mols of a water-soluble acid sulfite compound, selected from the group consisting of alkali metal acid sulfites, ammonium acid sulfites and acid sulfites of organic bases, while maintaining the reaction at a pH from about 4 to less than 5 with about one mol of an unsaturated aliphatic compound having a structural formula selected from the group consisting of



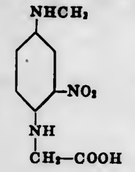
wherein R is a member selected from the group consisting of hydrogen, lower alkyl, lower alkanol and lower glycol ether radicals in the presence of an oxidizing agent selected from the group consisting of oxygen and atmospheric air, under atmospheric pressure, at a temperature of from about —10 to 100° C.

3,291,823
4-CARBOXYMETHYLAMINO-3-NITRO-1-METHYLAMINOBENZENE AS A DYEING AGENT

Gregoire Kalopissis, Paris, and Raymond Bugnat, Boulogne-sur-Seine, France, assignors to L'Oreal, a corporation of France

No Drawing. Application Oct. 18, 1961, Ser. No. 146,006, now Patent No. 3,188,346, dated June 8, 1965, which is a division of application Ser. No. 826,454, July 13, 1959, now Patent No. 3,117,911. Divided and this application Oct. 23, 1964, Ser. No. 412,275
Claims priority, application France, Apr. 23, 1959, 792,972, Patent 1,253,228
1 Claim. (Cl. 260—518)

A dyestuff suitable for use in dyeing of hair or other keratinous fibres, having the formula:



3,291,824
N-(2-HALO-LOWER ALKANOYL)ANTHRANILIC ACID DERIVATIVES

Milan Radoje Uskokovic, Passaic, and Wilhelm Wenner, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,788
2 Claims. (Cl. 260—518)

1. N - phenyl-N-(2-halo-lower alkanoyl)-5-halo-anthranilic acid.

3,291,825
METHOD OF MAKING DIPHENIC ACID

Nicholas P. Greco, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,468
9 Claims. (Cl. 260—523)

1. A method of making diphenic acid from the ozonation product of phenanthrene obtained by reacting phenanthrene with ozone in a mixture consisting essentially of 5–80% by weight water and 20–95% by weight of a saturated aliphatic alcohol having from two to eight carbon atoms comprising reacting at a temperature up to the reflux temperature of the reaction mixture in an aqueous solution having a pH of at least 13 said ozonation product with an oxidizing agent of the formula

MOX

wherein M is an alkali metal and X is a member selected from the group consisting of chlorine and bromine, by adding said ozonation product to an aqueous solution of said oxidizing agent and allowing the mixture to react to form the alkali metal diphenate, hydrolyzing said alkali metal diphenate in the presence of a strong mineral acid, and recovering diphenic acid.

3,291,826
TETRAKIS-(1,1-DIHYDROPERFLUORO-OCTYL) UREA, INTERMEDIATE AND PROCESS

Theodore Mill, Palo Alto, and John O. Rodin and Robert M. Silverstein, Menlo Park, Calif., and Cyril Woolf, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,449
8 Claims. (Cl. 260—544)

1. Tetrakis-(1,1-dihydroperfluoro-octyl) urea.

5. Bis-(1,1-dihydroperfluoro-octyl) carbamyl chloride.

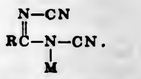
8. The process for the preparation of tetrakis-(1,1-dihydroperfluoro-octyl) urea which comprises (1) reacting in admixture perfluorooctanoic acid and benzotrichloride to convert said perfluorooctanoic acid to perfluorooctanoyl chloride, (2) reacting said perfluorooctanoyl chloride with ammonia to form perfluorooctanamide, (3) treating said perfluorooctanoylamide with a reducing agent to convert said perfluorooctanoylamide to 1,1-dihydroperfluorooctylamine, (4) reacting in admixture said 1,1-dihydroperfluorooctylamine with perfluorooctanoyl chloride to form N-1,1-dihydrofluorooctyl perfluorooctanamide, (5) treating said N - 1,1 - dihydroperfluorooctyl perfluorooctanamide with a reducing agent to convert said N-1,1,-dihydroperfluorooctyl perfluorooctanamide to bis-1,1-dihydroperfluoroocotyl amine, (6) reacting said bis-1,1-dihydroperfluoro-octyl amine with phosgene at a temperature in the range of 75 to 250° C. to produce bis-(1,1-dihydroperfluoro-octyl) carbamyl chloride, and (7) heating said bis-(1,1-dihydroperfluoro-octyl) carbamyl chloride in the presence of dimethyl formamide to produce tetrakis-(1,1)-dihydroperfluoro-octyl) urea.

3,291,827
PROCESS FOR PREPARING N,N'-DICYANOAMIDINE SALTS

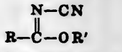
Kenneth Robert Huffman, Stamford, Conn., and Frederic Charles Schaefer, Munich-Solln, Germany, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,850
4 Claims. (Cl. 260—551)

1. A process for preparing an N,N'-dicyanoamidine salt of the formula:



in which R is selected from the group consisting of phenyl and halo-, nitro- and alkyl-substituted phenyl and M is an alkali metal which comprises bringing into reactive contact at a temperature of from about 0° C. to about 50° C. an N-cyanoimidate of the formula:



in which R is as defined hereinabove and R' is lower alkyl with an alkali metal cyanamide of the formula:

MHNCN

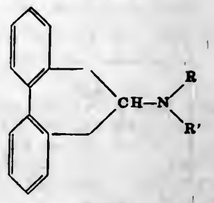
in which M is as defined hereinabove.

3,291,828
6-AMINO-6,7-DIHYDRO-5H-DIBENZO[a,c] CYCLOHEPTENES

Katsumi Kotera, Mishima-gun, and Ryonosuke Kido, Toyonaka-shi, Osaka, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed July 2, 1964, Ser. No. 380,081
7 Claims. (Cl. 260—562)

1. A compound of the formula:



wherein R is a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and di(lower) alkylamino(lower)alkyl and R' is a member selected from the group consisting of lower alkyl, lower alkenyl and di(lower)alkylamino(lower)alkyl.

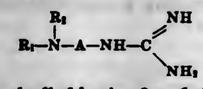
7. 6 - formylamino-6,7-dihydro-5H-dibenzo[a,c]cycloheptene.

3,291,829
(N-CYCLOALKYLAMINE)ALKYL GUANIDINES

Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Mar. 2, 1961, Ser. No. 92,755
8 Claims. (Cl. 260—564)

1. A member selected from the group consisting of a compound of the formula:



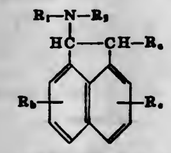
in which R_1 is cycloalkyl having 3 to 6 ring carbon atoms, R_2 stands for a member selected from the group consisting of hydrogen and lower alkyl, and A is lower alkylene having from two to three carbon atoms and separating the guanidino from the amino group by from two to three carbon atoms, and an addition salt thereof with a therapeutically acceptable acid.

3,291,830
1-N-ALKYNYL-AMINO-ACENAPHTHENES AND SALTS THEREOF

Charles Ferdinand Huebner, Chatham, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,163
4 Claims. (Cl. 260—576)

1. A member selected from the group consisting of compound of the formula



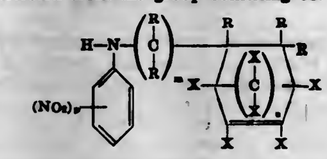
in which R_1' is a lower 2-alkynyl radical having preferably from three to five carbon atoms, R_2' is lower alkyl, the group R_a is a member selected from the group consisting of hydrogen and lower alkyl, and each of the groups R_b and R_c is a member selected from the group consisting of hydrogen, lower alkyl, or halogeno and an acid addition salt thereof.

3,291,831
N-CYCLOALKENIC DERIVATIVES OF NITROANILINES AND A METHOD FOR THE PREPARATION THEREOF

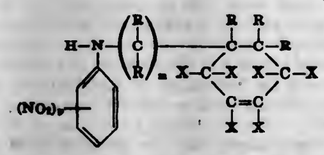
John P. Lavid, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,735
20 Claims. (Cl. 260—576)

1. An N-cycloalkenic derivative of a nitro substituted aniline selected from the group consisting of:



and



in which the R substituents are selected from the group consisting of hydrogen and lower alkyl radicals, the X substituents are selected from the group consisting of hydrogen, chloro, bromo, iodo, mono- and di-, chloro-, bromo- and -iodo-methyl and lower alkyl radicals, *m* ranges from 0 to about 6, *n* is an integer of from 1 to 2 and *p* is an integer from 1 to 3.

3,291,832
PROCESS FOR PREPARING 3,4 DICHLOROANILINE

John Richard Kosak, Wilmington, and William Ervin Meece, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,645
2 Claims. (Cl. 260—580)

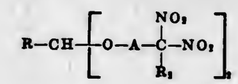
1. In the process for producing 3,4-dichloroaniline by the hydrogenation of 3,4-dichloro-1-nitrobenzene at temperatures of from 30° C. to 150° C. and hydrogen gas pressures of at least 100 p.s.i.g. in the presence of platinum as a catalyst and morpholine as a dechlorination inhibitor, the improvement consisting of completing the reduction, after essentially all of the 3,4-dichloro-1-nitrobenzene has been hydrogenated, at a temperature in the range of from about 170° C. to about 180° C. to reduce the 3,3',4,4'-tetrachlorohydrazobenzene impurity in the 3,4-dichloroaniline product.

3,291,833
NITROACETALS

Marvin H. Gold, Sacramento, and Henry J. Marcus, West Covina, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,877
1 Claim. (Cl. 260—584)

As compositions of matter, the nitroacetals having the formula



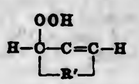
wherein R is an alkyl radical, R_2 is a nitrazaalkyl radical, and A is an alkylene radical.

3,291,834
DEHYDRATION OF HYDROPEROXIDES TO KETONES

William J. Farrissey, Jr., Northford, Conn., assignor, by mesne assignments, to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,599
10 Claims. (Cl. 260—586)

1. A method for converting an unsaturated hydroperoxide of the general formulae:

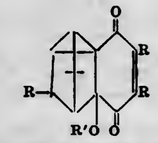


where R' is selected from the group consisting of a C_2 to C_9 alkylene and a C_2 to C_9 olefin

to the corresponding unsaturated ketone which comprises treating said hydroperoxide with a mixture of an acid chloride selected from the group consisting of acetyl chloride, propionyl chloride, and benzoyl chloride and a nitrogen base which will trap hydrogen chloride at a temperature less than 30° C., washing free said nitrogen base from the reaction product with hydrochloric acid, and recovering said corresponding unsaturated ketone.

3,291,835
1,3-METHANO-H-CYCLOPROPA(cd) NAPHTHALENE-4,7-DIONES
Hsing Yun Fan, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 17, 1964, Ser. No. 338,304
9 Claims. (Cl. 260—586)

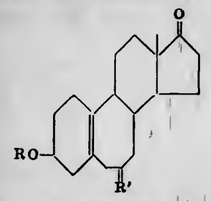
1. 3a - substituted - 1a,2,3,3a - tetrahydro-1,3-methano-1H-cyclopropa(cd)naphthalene - 4,7 - diones of the formula:



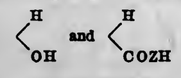
wherein each R, independently, is a member of the group consisting of hydrogen, middle halogen, unsubstituted alkyl of from one to ten carbon atoms, alkoxy of from one to ten carbon atoms, the alkyl moiety thereof being unsubstituted; R' is a member of the group consisting of unsubstituted, mono-, and poly-(middle halogen)- substituted alkyl of from one to ten carbon atoms, allyl, benzyl, methoxyethyl, hydroxyethyl, dihydroxypropyl, tetrahydrofurfuryl, tetrahydropyranyl and 2,2-dimethyl-1,3-dioxolan-4-ylmethyl.

3,291,836
HOMOESTRENES
John S. Tadanier, Chicago, and John Wayne Cole, Deerfield, Ill., assignors to Abbott Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,842
3 Claims. (Cl. 260—586)

1. A compound of the formula



wherein R is selected from the group consisting of hydrogen, HZ, C_6H_5Z and HZCO, with Z representing a saturated alkylene radical of 1–7 C atoms, and wherein R' is selected from the group consisting of oxygen,

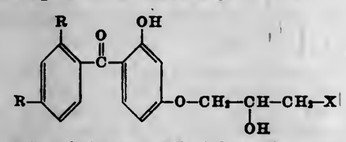


and



3,291,837
NOVEL BENZOPHENONE ETHERS
Albert I. Goldberg, Berkeley Heights, N.J., and Joseph Fertig, New York, N.Y., assignors to National Starch and Chemical Company, New York, N.Y.
No Drawing. Filed Jan. 4, 1963, Ser. No. 252,659
10 Claims. (Cl. 260—591)

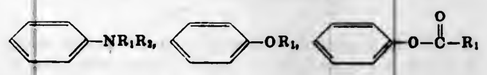
1. The 2-hydroxy - 3 - halopropyl benzophenone ethers which correspond to the following:



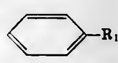
wherein X is a halogeno radical from the group consisting of the chloro, iodo and bromo radicals and R is a radical independently selected from the class consisting of hydrogen and hydroxy radicals.

3,291,838
PREPARATION OF KETONES
Raymond E. Magnan, Columbus, Ohio, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed May 8, 1963, Ser. No. 278,987
7 Claims. (Cl. 260—591)

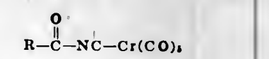
1. Process for the preparation of a ketone, said process comprising reacting a compound selected from the class consisting of



and

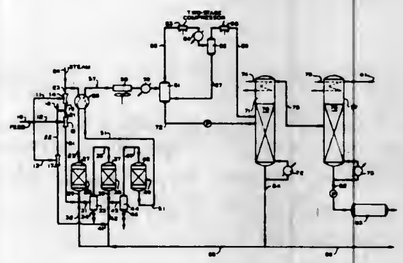


wherein R_1 and R_2 are hydrocarbon radicals having from 1 to about 8 carbon atoms, said radicals being selected from the class consisting of alkyl, aryl, cycloalkyl, alkaryl, and alkenyl radicals; with an acyl isonitrile chromium pentacarbonyl having the formula



wherein R is a hydrocarbon radical having from 1 to about 16 carbon atoms, said radical selected from the class consisting of alkyl, cycloalkyl, aralkyl, aryl, alkaryl, alkenyl and cycloalkenyl radicals.

3,291,839
PRODUCTION OF ACETALDEHYDE
Richard W. Carney and Graham A. Renberg, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 26, 1962, Ser. No. 247,028
7 Claims. (Cl. 260—605)



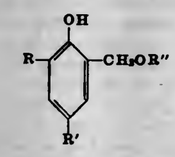
5. A process for the production of acetaldehyde from acetylene, which process comprises: dividing an original feed stream comprising acetylene into approximately equal first, second, and third portions; mixing said first portion of feed stream with an excess of process steam and passing the resulting mixture into a first reaction zone at a predetermined initial reaction temperature within the range of from about 500 to about 650° F.; in said first reaction zone forming acetaldehyde by reacting acetylene and steam under acetaldehyde forming conditions of temperature and pressure in the presence of a catalyst capable of catalyzing the formation of acetaldehyde; withdrawing a first reaction mixture effluent comprising unreacted excess steam and acetaldehyde product at an elevated final reaction temperature within the range of from about 750 to about 850° F. from said first reaction zone, the difference between said initial temperature and said final temperature being not greater than about 300° F.; cooling said first reaction mixture effluent from said final temperature to said initial temperature; passing said cooled first reaction mixture effluent without separation of unreacted excess steam and acetaldehyde product therefrom, together with said second portion of feed stream, into a second reaction zone at a predetermined initial reaction temperature within the range of from about 500 to about 650° F.; in said second reaction zone, forming additional acetaldehyde by reacting acetylene and steam under acetaldehyde forming conditions of temperature and pressure in the presence of another portion of said catalyst; withdrawing a second reaction mixture effluent comprising unreacted excess steam and acetaldehyde product at an elevated final reaction temperature within the range of from about 750 to about 850° F. from said second reaction zone, the difference between said initial temperature and said final temperature being not greater than about 300° F.; cooling said second reaction mixture effluent from said final temperature to said initial temperature; passing said cooled second reaction mixture effluent without separation of unreacted excess steam and acetaldehyde product therefrom, together with said third portion of feed stream, into a third reaction zone at a predetermined initial reaction temperature within the range of from about 500 to about 650° F.; in said third reaction zone, forming additional acetaldehyde by reacting acetylene and steam under acetaldehyde forming conditions of temperature and pressure in the presence of another portion of said catalyst; withdrawing a third reaction mixture effluent comprising steam and acetaldehyde product at an elevated final reaction temperature within the range of from about 750 to about 850° F. from said third reaction zone, the difference between said initial temperature and said final temperature being not greater than about 300° F.; the mol ratio of steam to acetylene in each of said first, second, and third reaction zones being within the range of from 25 to 60, and the overall mol ratio of said process steam to the total acetylene in said original undivided feed steam being within the range of from 6 to 16; and recovering acetaldehyde product from said third reaction mixture effluent.

3,291,840
TERTIARY PHOSPHINE OXIDES
Sheldon A. Buckler and Martin Epstein, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Mar. 1, 1962, Ser. No. 176,775
7 Claims. (Cl. 260—606.5)

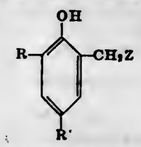
1. (1 - hydroxycyclohexyl)cyclohexylphenylphosphine oxide.

3,291,841
PROCESS FOR THE PREPARATION OF BENZYL ETHERS
Francis X. O'Shea, Wolcott, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,188
3 Claims. (Cl. 260—611)

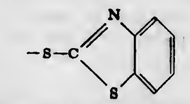
1. A method of preparing a compound of the formula:



in which R, R' and R'' are selected from the group consisting of alkyl, cycloalkyl and aralkyl groups of up to 12 carbon atoms each, comprising heating one molar equivalent of a compound of the formula:



wherein R and R' are as previously defined and Z is mercaptobenzothiazolyl radical:



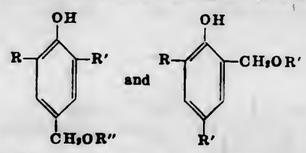
with one molar equivalent of an alkali metal hydroxide and at least one molecular equivalent of an alcohol of the formula

R''OH

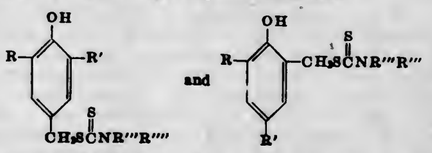
in which R'' is as previously defined, at a temperature of from room temperature to 100° C.

3,291,842
METHOD OF PREPARING BENZYL ETHERS
Francis X. O'Shea, Wolcott, and Frank B. Root, Waterbury, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,189
5 Claims. (Cl. 260—611)

1. A method of preparing a compound selected from the group consisting of those having the general formulae



wherein R, R' and R'' are selected from the group consisting of alkyl, cycloalkyl and aralkyl groups of up to 12 carbon atoms each, comprising treating one molar equivalent of a compound selected from the group consisting of those having the general formulae



wherein R''' and R'''' are alkyl groups having 1 to 5 carbon atoms each and R and R' are as previously defined, with one molar equivalent of an alkali metal hydroxide and at least one molar equivalent of an alcohol having the formula R''OH in which R'' is as previously defined, at a temperature from about 0° C. to about 100° C.

3,291,843
FLUORINATED VINYL ETHERS AND THEIR PREPARATION
Charles Gerhard Fritz and Stanley Selman, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 8, 1963, Ser. No. 314,651
14 Claims. (Cl. 260—614)

1. A process for the preparation of fluorinated vinyl ethers from fluorinated 2-alkoxypropionyl fluorides which comprises the steps of contacting a fluorinated 2-alkoxy-

propionyl fluoride and a carbonate of a metal selected from Group I–A of the Periodic Chart of the Elements, under anhydrous conditions for about 0.01 to 10 minutes at a temperature of from 75° C. to 300° C., and recovering said fluorinated vinyl ether.

3,291,844

CATALYTIC PREPARATION OF FLUOROETHERS

John D. Watson, Sr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,401
4 Claims. (Cl. 260—614)

1. A process for preparing fluoroethers which comprises;

(a) placing a mixture of a saturated monohydroxy unsubstituted aliphatic alcohol and an alkali metal fluoride in a reaction vessel, said alcohol having from 1 to about 4 carbon atoms and the weight ratio of said alcohol to said alkali metal fluoride ranging from about 120 to about 3,

(b) removing substantially all of the air from said reactor,

(c) introducing over a period of time at about room temperature and subatmospheric pressure a member selected from the group consisting of olefinic and acetylenic perfluorocarbons into said reaction vessel, said perfluorocarbon containing from 2 to about 6 carbon atoms, the amount of said perfluorocarbon at a maximum being about equal to that required for stoichiometric balance for production of the corresponding alkyl fluoroalkyl ether, or alkyl fluoroalkene ether and recovering the corresponding alkyl fluoroalkyl ether or alkyl fluoroalkene ether therefrom.

3,291,845

LIQUID OXYALKYLATION PRODUCTS OF HIGH-MELTING POLYOLS AND COMPOSITIONS UTILIZING SAME

Kermit Donald Longley, Park Forest, and Carl Bernstein, Deerfield, Ill., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,798
11 Claims. (Cl. 260—615)

1. In a method of obtaining a normally liquid oxyalkylation product of a high-melting polyol, said high-melting polyol having a melting point of at least 200° C. and selected from the group consisting of mannitol, erythritol, pentaerythritol, dipentaerythritol, tripentaerythritol and higher pentaerythritols, trimethylolethane, and 1,3-propane-diol-2-hydroxy-methyl-2-methyl, said oxyalkylation product containing from 10 to 22 milli-equivalents, per gram, of hydroxyl groups, the steps which comprise admixing said high-melting polyol with a lower melting polyol, said latter polyol being selected from the group consisting of glycerol, sorbitol, diglycerol and higher polyglycerols, ethylene glycol, diethylene glycol, propylene glycol, 1,3-butylene glycol, 1,5-pentanediol, and trimethylolpropane, the high-melting point polyol being soluble in said lower melting point polyol to produce a mixture of polyols which contains at least 20% by weight of said high-melting polyol and which mixture is an essentially clear liquid at a temperature not exceeding 170° C., and oxyalkylating said mixture in a liquid state by admixing the same, under a pressure in excess of atmospheric pressure and at a temperature not exceeding 170° C., with an oxyalkylating agent in an amount to produce a final normally liquid oxyalkylation product of said mixture of polyols containing from 10 to 22 milli-equivalents, per gram, of hydroxyl groups.

3,291,846

PROCESS FOR PRODUCING VINYL CHLORIDE

Eiji Otsuka and Toru Takahashi, Kugenuma Fujisawa, and Takeshi Abe, Zushi, Japan, assignors to Toyo Koatsu Industries, Incorporated, Chuo-ku, Tokyo, Japan, a corporation of Japan

Filed Sept. 4, 1963, Ser. No. 306,419
Claims priority, application Japan, Sept. 22, 1962, 37/40,925
7 Claims. (Cl. 260—656)

1. The process for producing vinyl chloride by the simultaneous chlorine substitution of ethylene and thermodecomposition of ethylene dichloride comprising the steps (1) introducing a gaseous mixture containing ethylene, chlorine and ethylene dichloride to a first reaction zone at a mol ratio of ethylene to chlorine to ethylene dichloride of 3–5:1:0.2–2.0, (2) subjecting said gaseous mixture to simultaneous chlorine substitution of ethylene and thermodecomposition of said ethylene dichloride at a reaction temperature of 450° C. to 550° C. and a contact time of 0.05 to 0.5 second in a fluidized bed in the first reaction zone thereby forming a product containing vinyl chloride, hydrogen chloride and unreacted ethylene, said fluidized bed comprising a heat carrier selected from the group consisting of sand, silicon carbide, glass powder, pumice stone, fire brick, active carbon, silica gel and alumina fluidized by said gaseous mixture, (3) absorbing vinyl chloride from said product with a solvent solution in an absorbing zone, (4) mixing oxygen and ethylene with the outlet gas of the absorbing zone containing hydrogen chloride and unreacted ethylene, (5) subjecting a gaseous mixture from the Step 4 to a catalytic oxychlorination in a second reaction zone to form a product containing ethylene dichloride, vinyl chloride, chlorinated by-product, unreacted hydrogen chloride, water and unreacted ethylene and (6) circulating said product to the first reaction zone whereby ethylene dichloride is decomposed into vinyl chloride simultaneously with a production of vinyl chloride from ethylene and chlorine.

3,291,847

CATALYTIC ALKYLATION OF ALKYL-SUBSTITUTED AROMATICS WITH MONOOLEFINS

Paul F. Warner, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,354
6 Claims. (Cl. 260—668)

1. A process which comprises contacting an alkyl-substituted aromatic with a monoolefin and with a catalyst supported on soda ash, said catalyst comprising (1) a major amount of an alkali metal selected from the group consisting of potassium, sodium and sodium-potassium alloy and (2) a minor amount of graphite, and recovering the resulting alkylated product.

3,291,848

ALKYLATION CATALYST AND PROCESS THEREFOR

William G. Nixon, Westchester, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,661
17 Claims. (Cl. 260—671)

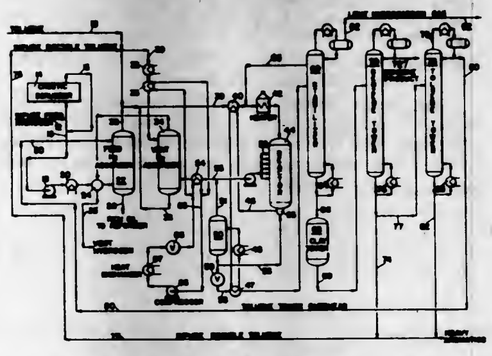
1. A process for the alkylation of an alkylatable aromatic hydrocarbon with an olefin-acting compound at alkylation conditions in the presence of a substantially anhydrous catalyst prepared by combining a phosphoric acid-containing composite with a halogen compound selected from the group consisting of hydrogen halides and ammonium halides to effect chemical combination of the phosphoric acid portion of said composite with the halogen of said compound.

3,291,849

HYDRODEALKYLATION

Charles C. King, Paris, France, Joseph F. Campagnolo, Oradell, N.J., and Leon M. Lehman, Brooklyn, N.Y., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed Nov. 16, 1964, Ser. No. 411,500
6 Claims. (Cl. 260—672)



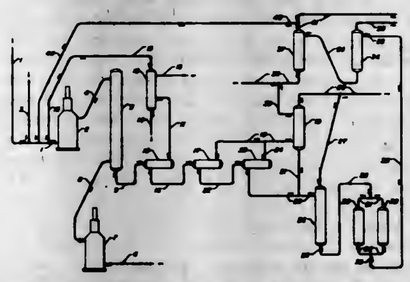
1. The process of dealkylating alkylated aromatic hydrocarbons at a conversion rate of at least 60% per pass to produce aromatic hydrocarbons of a lower molecular weight which comprises contacting the alkylated aromatic hydrocarbons in a reaction zone at a temperature between 1100° F. and 1500° F. and at a pressure between about 500 p.s.i.g. and 800 p.s.i.g. with a hydrogen rich gas, said contacting being carried out in the substantial absence of solids or surfaces which would tend to catalyze the reaction, quenching the reaction with hydrogen to maintain a temperature difference in the reaction zone between maximum and minimum reaction temperatures of not to exceed about 200° F., cooling the reaction effluent from the reaction zone to stop the reaction, separating unreacted alkylated aromatic hydrocarbons and impure hydrogen from the reaction effluent, returning the unreacted alkylated aromatic hydrocarbons back to the reaction zone to increase the ultimate yield of aromatic hydrocarbons, and passing impure feed hydrogen in countercurrent contact with alkylbenzene at temperatures below ambient thereby removing hydrocarbons and reducing hydrogen consumption in the reaction zone.

3,291,850

HYDRODEALKYLATION OF ALKYL AROMATIC HYDROCARBONS

Don B. Carson, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 20, 1965, Ser. No. 488,546
11 Claims. (Cl. 260—672)



1. A hydrodealkylation process which comprises reacting an alkyl aromatic hydrocarbon with hydrogen at hydrodealkylation conditions, thereby forming a reaction mixture containing dealkylated aromatic hydrocarbon, hydrogen and methane, commingling steam with said mixture and catalytically reacting the same with at least a portion of the methane content of the mixture to convert methane to hydrogen and carbon oxides, separating the resultant hydrogen-enriched reaction mixture into a gaseous phase and a liquid hydrocarbon phase, separating carbon oxides from said gaseous phase to increase the hydrogen concentration of the latter, thereafter supplying the gaseous phase to the aforesaid hydroalkylation step to furnish hydrogen therefor, and recovering the desired dealkylated aromatic hydrocarbon from said liquid phase.

3,291,851

METHOD OF SEPARATING AROMATIC HYDROCARBONS FROM PETROLEUM FRACTIONS

Ivor W. Mills, Glenolden, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Oct. 4, 1962, Ser. No. 228,249
12 Claims. (Cl. 260—674)

1. Method of separating naphthalenic compounds from a petroleum fraction boiling within the range of 375° to 600° F. and containing naphthalenic compounds which comprises the steps of:

(a) admixing said petroleum fraction with a finely dispersed alkali metal at a temperature below 0° centigrade,

(i) in the presence of a selected ether to form alkali metal naphthalene compounds,

(b) separating the said alkali metal naphthalene compounds from the residual petroleum fraction,

(c) decomposing said alkali metal naphthalene compounds by heating same to form naphthalene compounds, and,

(d)) recovering the naphthalenic compounds so formed.

3,291,852

ISOBUTANE PRODUCTION

Clark J. Egan, Piedmont, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Oct. 25, 1963, Ser. No. 318,803
8 Claims. (Cl. 260—676)

1. The process for producing selectively isobutane from light distillates in a continuous manner, which comprises passing hydrogen and a light distillate into contact with a reactant for polar impurities and then into contact with a halided alumina-supported noble metal catalyst containing from 2 to 7 weight percent halogen, at a temperature below 700° F. and a hydrogen partial pressure above 1000 p.s.i.a., and recovering an isobutane concentrate from the distillate which has been so passed.

3,291,853

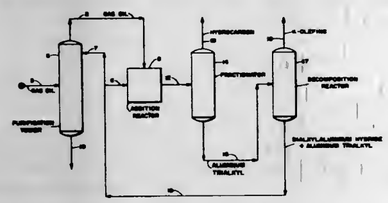
SEPARATION OF ALPHA-OLEFINS CONTAINING AT LEAST 5 CARBON ATOMS FROM MIXTURES CONTAINING THE SAME USING ALUMINUM DIALKYL HYDRIDE

George C. Feighner and Delmar D. Krehbiel, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed Aug. 13, 1963, Ser. No. 301,816
9 Claims. (Cl. 260—677)

1. A process which comprises passing a dialkylaluminum hydride to a reaction zone, passing a feed mixture containing an alpha-olefin containing at least 5 carbon atoms and at least one additional hydrocarbon to the reaction zone, whereby the alpha-olefin reacts with the hydride to produce a trialkylaluminum, separating the trialkylaluminum from the resultant reaction product, sub-

jecting the trialkylaluminum to heat whereby the same is decomposed to a hydride and alpha-olefin, separating



the alpha-olefin from the hydride, and recycling at least part of the hydride to the reaction zone.

3,291,854
DEHYDROGENATION OF HYDROCARBONS IN THE PRESENCE OF OXYGEN, CHLORINE AND A GROUP V-B CATALYST

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 11, 1965, Ser. No. 463,371
14 Claims. (Cl. 260—680)

1. The method for dehydrogenating aliphatic hydrocarbons of 4 to 6 carbon atoms which comprises heating in the vapor phase at a temperature of from about 450° C. to 850° C. an aliphatic hydrocarbon of 4 to 6 carbon atoms with oxygen in a molar ratio of at least one-fourth mol of oxygen per mol of said hydrocarbon and chlorine in a molar ratio of from at least .01 to less than 0.5 mol of chlorine per mol of said hydrocarbon, the partial pressure of said hydrocarbon being equivalent to less than about one-fifth atmosphere at a total pressure of one atmosphere, with a material selected from the group consisting of metals, salts, oxides and hydroxides of metal elements of Periodic Table Group V–B and mixtures thereof in a catalytic amount, the ratio of the gram mols of the said oxygen to the gram atoms of said chlorine being at least 1.50.

3,291,855
CATALYTIC DEHYDROGENATION OF PARAFFINIC HYDROCARBONS

Vladimir Haensel, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,796
9 Claims. (Cl. 260—683.3)

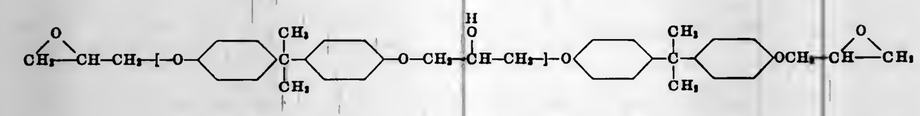
1. A process for dehydrogenating a paraffinic hydrocarbon which comprises contacting said paraffinic hydrocarbon with a catalytic composite of alumina and at least one metallic component selected from the metals of Groups VI and VIII of the Periodic Table, and compounds thereof, at dehydrogenating conditions including a temperature within the range of from about 400° C. to about 700° C., and in the presence of from 500 to 1500 p.p.m. of sulfur and from about 125 to about 375 p.p.m. of nitrogen.

3,291,856
RESINOUS CONDENSATION PRODUCT OF AN ETHOXYLINE RESIN AND A POLYALKYLOL PHENOL

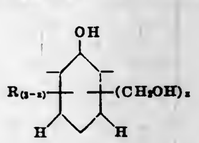
Alfred M. Tringali, Middlesex, and Norman G. Gaylord, New Providence, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Mar. 7, 1962, Ser. No. 177,959
4 Claims. (Cl. 260—831)

1. An organic solvent soluble thermosetting resin consisting of the acid catalyzed condensation products of an ethoxyline resin having an average molecular weight of 1300 to 4000 and an epoxide equivalent of 870 to 4000 and the general formula



where *n* is a number from 3 to 14 inclusive and a polyalkylol phenol having the general formula



where R is a member of the group consisting of alkyl and hydrogen and *x* is a number from 2 to 3 inclusive in the presence of butanol.

3,291,857
CURABLE POLYMERS

William W. Howerton, Harvard, Mass. (338 Callender Lane, Wallingford, Pa.)

No Drawing. Filed Feb. 17, 1960, Ser. No. 9,183
6 Claims. (Cl. 260—836)

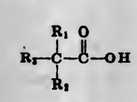
1. An extrusion and molding composition which has good shelf-life in a single container and which when fused and mixed becomes reactive to produce a cross-linked polymer, said composition comprising an intimate mixture of at least first and second solid, discrete particles of a thermoplastic polymer, said thermoplastic polymer being selected from the group consisting of polyvinyl chloride and thermoplastic heteropolymers of vinyl chloride with monofunctional vinyl monomers, said first particles having fused therein a first member of a reactable combination and said second particles having fused therein a second member of said reactable combination, said reactable combination being selected from the group consisting of combination (A) and combination (B), said combination (A) having as its first member a vinyl monomer, which is polyfunctional in polymerizable vinyl groups and which is polymerizable to a cross-linked polymer and as its second member a polymerization catalyst for said vinyl monomer, and said combination (B) having as its first member a compound having reactable epoxy groups therein which is curable to a cross-linked polymer and as its second member a curing agent for said compound having reactable epoxy groups therein.

3,291,858
THERMOSETTING RESIN BASED PAINTS CONTAINING A POLYESTER PREPARED BY REACTING PHTHALIC ANHYDRIDE, GLYCEROL, AND GLYCIDYL ESTERS OF ALPHA-BRANCHED SATURATED MONOCARBOXYLIC ACIDS WITH EITHER AN AMIDE-ALDEHYDE OR A PHENOL-ALDEHYDE RESIN

Hendricus A. Oosterhof and Klaas Ruyter, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 6, 1963, Ser. No. 307,029
Claims priority, application Netherlands, Oct. 3, 1962, 283,869
6 Claims. (Cl. 260—842)

1. A process for preparing coating compositions which comprises mixing and reacting at a temperature between 20 and 200° C. (1) a polyester resin prepared by reacting phthalic anhydride, glycerol and glycidyl esters of alpha-branched saturated monocarboxylic acids, said acids having the general formula



wherein R_1 and R_2 are alkyl radicals, R_3 is selected from the group consisting of hydrogen and alkyl radicals and R_1, R_2 and R_3 contain a total of from 2 to 18 carbon atoms, and (2) an aldehyde resin selected from the group consisting of amino-aldehyde and phenol-aldehyde resins in the presence of (3) halides, said halides being selected from the group consisting of Lewis acids, complexes thereof and salts of these complexes and being employed in amounts of from 0.01% to 5% by weight based on the total weight of the resins, the weight ratio of components (1):(2) being between about 10:90 and 90:10.

3,291,859
BLOCK COPOLYMERS FORMED BY THE REACTION OF AN ISOCYANATE-TERMINATED POLYMER WITH A DUAL FUNCTIONAL FREE RADICAL INITIATOR AND AN ETHYLENICALLY UNSATURATED MONOMER

Arthur V. Tobolsky, 191 Snowden Lane, Princeton, N.J.

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,607
23 Claims. (Cl. 260—859)

1. The process for preparing block polymers comprising reacting

(1) a polymeric moiety, said moiety having only saturated carbon-to-carbon bonds in its structure and containing at least one isocyanate group in a position suitable for reaction;

(2) at least one ethylenically unsaturated monomer; and

(3) a dual functional free-radical initiator, said initiator containing

(i) at least one group functioning as a free-radical initiator, and

(ii) at least one other group containing an active hydrogen atom and capable of reacting with an isocyanate group by displacement of said active hydrogen atom, said initiator being selected from the group consisting of peroxide, azo, and polysulfide free-radical initiators containing at least one substituent selected from the group consisting of —OH, —COOH, —SH, —NH_2 and —NHR,

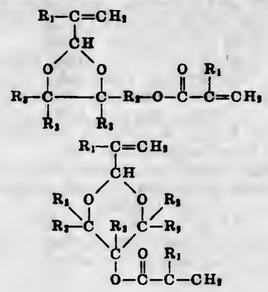
thereby to form a block polymer containing said polymeric moiety linked to polymer formed from said monomer through said isocyanate group.

3,291,860
UNSATURATED ESTERS OF 1,3-CYCLIC ACETALS AS MONOMERS FOR UNSATURATED POLYESTER RESINS

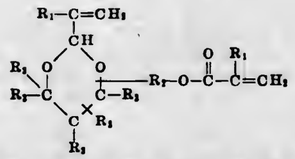
John David Nordstrom, Minneapolis, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,121
16 Claims. (Cl. 260—866)

1. A coating composition comprising an unsaturated polyester obtained by the condensation of diol with dicarboxylic acid and as a curing agent for said polyester a mixture of a vinyl monomer and a cyclic acetal having a formula selected from the class consisting of:



and



wherein R_1 is a radical selected from the class consisting of hydrogen and the methyl group, R_2 is an alkylene radical of 1 to 18 carbon atoms, and R_3 is a radical selected from the class consisting of hydrogen and alkyl radicals having from 1 to 8 carbon atoms.

3,291,861
ADHESIONABLE POLYOLEFIN BLENDS

Armand Francis Lewis, Fairfield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 1, 1963, Ser. No. 299,147
8 Claims. (Cl. 260—876)

1. A novel controlled adhesive polymeric, blended composition in particulate form comprising (a) one part of adhesionable, irradiated, vinyl-modified polyolefin, said polyolefin being selected from the group consisting of polyethylene and polypropylene, and said vinyl group being grafted thereon and selected from the group consisting of bis-(2-chloroethyl) vinyl phosphonate, vinyl phosphonic acid, p-vinylphenyl boronic acid, p-vinyl benzyl sulfonic acid and the alkali metal salts thereof, said vinyl-modified polymer being increased in weight of from about 0.1 percent to about 20 percent, and (b) from about 0.25 part to about 4 parts untreated polyolefin.

3,291,862
CHLORINATED POLYOLEFIN POLYMER MIXTURES

Walter B. Armour, Plainfield, N.J., and Michael P. Diamantopoulos, Winchendon, Mass., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,519
10 Claims. (Cl. 260—897)

1. A method for the preparation of chlorinated polyolefin polymer mixtures comprising chlorinating an organic

solvent solution of a mixture of atactic polypropylene and an ethylene:propylene copolymer, said chlorination being conducted in the presence of a free radical catalyst; wherein the ratio of atactic polypropylene to ethylene:propylene copolymer ranges from 30:70 to 70:30; wherein said ethylene:propylene copolymer has a ratio of ethylene:propylene ranging from 60:40 to 70:30; and wherein the amount of chlorine in the resulting chlorinated polymer mixture ranges from 10 to 60%, by weight, of said polymer mixture.

3,291,863

THERMOPLASTIC MIXTURES OF VINYL CHLORIDE POLYMERS WITH CHLORINATED POLYOLEFINS OF HIGH MOLECULAR WEIGHT AND PROCESS FOR PREPARING SAME

Hans-Helmut Frey, Frankfurt am Main, Helmut Klug and Karl-Heinz Mittelberger, Gersthofen near Augsburg, and Friedrich Nolte, Muhlheim (Ruhr), Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,825
Claims priority, application Germany, Apr. 18, 1959, F 28,249
15 Claims. (Cl. 260—897)

1. A process for imparting elasticity to polymers of vinyl chloride which comprises adding to 90–50% by weight of said polymer of vinyl chloride 10–50% by weight of a chlorinated polymer of monoolefins selected from the group consisting of ethylene, propylene, and mixtures thereof, containing 20–50% by weight of chlorine, obtained by chlorinating the polymer in the presence of water at a temperature at first within the range of 60° C. and 90° C. and then at a temperature above 110° C. as the lower limit and up to 150° C. as the upper limit, whereby in the final phase of the chlorination at least 5% by weight of chlorine is introduced into the chlorination product.

3,291,864

POLYTETRAFLUOROETHYLENE COMPOSITION CONTAINING VINYLIDENE FLUORIDE-PERFLUOROPROPYLENE COPOLYMER

Judson B. Eldridge, 300–A Fowler, and Elmo C. Julian, 513–A Saratoga, both of China Lake, Calif.

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,078
3 Claims. (Cl. 260—900)

1. A composition of matter comprising 12 to 35% by weight of a copolymer of vinylidene fluoride and perfluoropropylene in intimate admixture with 65 to 88% by weight of polytetrafluoroethylene, said copolymer consisting essentially of 32.1% by weight carbon, 1.8% by weight hydrogen and 66.1% by weight fluorine.

3,291,865

CYCLIC POLYMERIC PHOSPHONITRILATE COMPOSITIONS

Ehrenfried H. Kober, Hamden, Henry F. Lederle, North Haven, and Gerhard F. Ottmann, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,938
25 Claims. (Cl. 260—927)

1. A cyclic polymeric phosphonitrilate composition of the formula:

$$N_nP_nR'_aR''_b$$

where n is a whole number selected from the group consisting of 3 and 4, where $a+b=2n$, where a has a value between 1 and $(2n-1)$, where b has a value between 1 and $(2n-1)$, where R' is a polyfluoroalkoxy of the formula:

$$Z(CF_2)_yCH_2O—$$

where y is a whole number between 1 and 20, where Z is selected from the group consisting of hydrogen and fluorine, and where R'' is a phenoxy selected from the group consisting of phenoxy, naphthoxy, phenoxyphenoxy, lower alkoxy-substituted phenoxy, lower alkyl-substituted phenoxy, phenol-substituted phenoxy, halogen-substituted phenoxy, halogenated lower alkyl-substituted phenoxy, halogenated lower alkoxy-substituted phenoxy and mixtures thereof, wherein the halogen substituents are selected from the group consisting of chlorine, fluorine, and bromine.

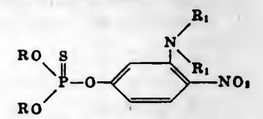
3,291,866

(PARA NITRO-3 TERTIARYAMINO-PHENYL) THIOPHOSPHORIC ACID ESTERS

Karl Maasen and Rudolf Heins, Cologne-Stammheim, Heinrich Pelster, Leverkusen, and Gunter Untersteinhofer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,564
Claims priority, application Germany, Jan. 22, 1963, F 38,633
3 Claims. (Cl. 260—945)

3. A compound of the formula



wherein R and R_1 stand for lower alkyl having up to 4 carbon atoms.

3,291,867

PHOSPHORUS PENTOXIDE-POLYOL FUSION REACTION PRODUCTS

Daniel Shew, Metuchen, N.J., and Bernard W. Greenwald, Bronx, N.Y., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,775
16 Claims. (Cl. 260—953)

1. A composition of matter prepared by the fusion reaction of a polyol having from 3 to 7 carbon atoms and from 3 to 7 hydroxyl groups with phosphorus pentoxide in a phosphorus to polyol mole ratio of about 0.25 to from about 1 to about 2 to 1 and at a temperature of from about 80° C. to about 200° C., said composition of matter having a phosphate content of from 33–80 mole percent of which 55–98 percent is present as the dibasic phosphate and from 2–45 percent is present as the monobasic phosphate as determined by potentiometric titration; an acid number of from 200–800; and a hydroxyl number of from 200–1200; said polyol residue being derived from a polyol having from three to seven carbon atoms and from three to seven hydroxyl groups.

3,291,868

PRODUCTION OF POLARIZING ELEMENTS

Alfred Winsor Brown, Woonsocket, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Continuation of application Ser. No. 751,933, July 30, 1958. This application July 20, 1964, Ser. No. 383,893
5 Claims. (Cl. 264—2)



1. A method for producing a polarizing element comprising a binder composition and a plurality of glass flakelets dispersed therein, the polarizing element having randomly disposed interfacial disturbance regions uniformly distributed throughout the element in which the binder composition is separated from the surfaces of the flakelets, the interfacial disturbance regions defining pockets having a first major surface bounded by at least one flakelet and a second opposed major surface bounded by the binder composition, said method consisting essentially of the steps of mixing glass flakelets with a dispersion of a resinous material hardenable at elevated temperatures to a transparent mass and an excess of a volatile substance to produce a mixture which consists essentially of the glass flakelets, the resinous material and the volatile substance, three dimensionally confining the mixture under a pressure sufficient to prevent excessive volatilization and to prevent the formation of massive gas bubbles, and heating the mixture while under the confining pressure to harden the resinous material and to vaporize the volatile substance to a degree necessary to cause the interfacial disturbance regions between glass flakelets and the resinous material and to render the mixture polarizing.

3,291,869

NUCLEAR FUEL

Philippe D. S. St. Pierre, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Original application Oct. 28, 1960, Ser. No. 65,611, now Patent No. 3,168,479, dated Feb. 2, 1965. Divided and this application June 1, 1964, Ser. No. 371,746
6 Claims. (Cl. 264—.5)

1. A process for the production of an oxide nuclear fuel compact composed of a metal oxide selected from the group consisting of thorium oxide and thorium oxide-uranium oxide mixtures having at least 95 percent density which comprises, compacting a thermally decomposable compound of the metal to be used in the oxide fuel element under a pressure sufficient to form a green compact, heating the compact in a reducing atmosphere to the decomposition temperature of the metal compound, and continuing the heating to a sintering temperature and allowing the compact to cool.

3,291,870

METHOD OF FABRICATING A MULTICHANNEL NUCLEAR FUEL ELEMENT

George S. Allison, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed June 12, 1964, Ser. No. 374,855
4 Claims. (Cl. 264—.5)



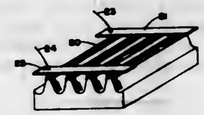
1. A method of making a multichannel fuel element, comprising closely surrounding a plurality of right circular cylindrical first tubes of gas-tight, corrosion-resistant metal with coaxial tubes of fissionable material, solidly filling the interior of the first tubes with sacrificial metal to form a plurality of components, sealing each of the said components in a tight-fitting copper container, heating the sealed container to extrusion temperature, converting each of the components to a hexagonal shape of smaller diameter than that of the copper container, removing the copper container, arranging the plurality of components thus reduced in diameter into a close-packed honeycomb configuration of hexagonal shape, surrounding the configuration with a close-fitting sleeve of fluid-tight, corrosion-resistant metal, filling the vacant volumes between the sleeve and the configuration with transition shapes, sealing the sleeve and its contents in a second copper container, heating the assembly thus formed within the said second container to extrusion temperature, extruding the said assembly through a round die of smaller diameter than that of the assembly, removing the copper container, covering the exposed ends of the nuclear material with chemically inert material and removing the sacrificial material by chemical means.

3,291,871

METHOD OF FORMING FINE WIRE GRIDS

Henry A. Francis, Cambridge, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 13, 1962, Ser. No. 237,153
1 Claim. (Cl. 264—1)



Method of forming fine wire grid, comprising the steps of

(a) shadowing the tops of the peaks of a corrugated substrate, at least the surface of which is electrically non-conducting, to form along said tops fine wires of an electrically conducting material;
(b) electroplating a metal on said fine wires thereby to increase their height without appreciably increasing their width and to form a master substrate;
(c) forming a replica of said master substrate; and
(d) shadowing the peaks of said replica.

3,291,872

METHOD FOR COLD MOLDING PITCH BONDED SHAPED CARBON BODIES

Lloyd H. Brown, Crystal Lake, and Joseph B. Dede, Jr., McHenry, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed July 20, 1964, Ser. No. 383,968
5 Claims. (Cl. 264—29)

1. A method for cold molding pitch bonded shaped carbon articles comprising admixing at substantially ambient room temperature particulate carbon, binder, and a phosphoric acid catalyst, said binder being in an amount between about 20% and about 40% by weight based on the weight of the carbon, said binder comprising a major portion of pitch having a melting point above about 120° F., said binder containing a member selected from the group consisting of furfuryl alcohol and furfural in an amount between about 10% and about 40% by weight based on the weight of the binder, said catalyst being present in an amount greater than about 6% by weight expressed as orthophosphoric acid based on total weight of said carbon and said binder, said admixing resulting in a semi-fluid mixture; molding said semi-fluid mixture at ambient room temperature under pressure, and hardening the resulting shape by curing at substantially room temperature.

3,291,873
MOLDING CELLULAR POLYURETHANE PLASTICS

James L. Eakin, Aliquippa, Pa., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

Filed Oct. 21, 1963, Ser. No. 317,451
3 Claims. (Cl. 264—54)

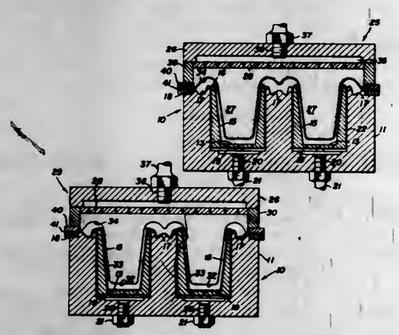


1. In a process for the preparation of a molded cellular polyurethane plastic by a process which comprises introducing into the cavity of a mold a flexible polyurethane composition, covering the mold with a cover plate, allowing said foamable polyurethane composition to expand inside the covered mold whereby said cover plate rises in a vertical direction when contacted by said expanding foamable composition and said cover plate exerts a compressive pressure on said foamable composition while said foamable composition is still plastic to make the resulting compressed foam conform to the dimensions defined by the cavity of the mold and the underside of said cover plate, allowing said compressed foam to become nonplastic, removing said cover plate and stripping the molded foam from the mold, the improvement which comprises providing for substantially constant release of pressure at the junction of the cover plate and the mold cavity from the time that the foamable composition reaches the underside of the cover plate until completion of the rise.

3,291,874
METHOD AND APPARATUS FOR FORMING ARTICLES FROM PLASTIC SHEET MATERIAL

Kaiji Negoro, Clarendon Hills, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 22, 1963, Ser. No. 267,682
2 Claims. (Cl. 264—89)

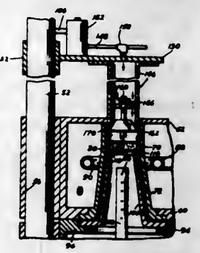


1. A method of fabricating deep drawn hollow articles from thermoplastic resin sheets which comprises clamping a thermoplastic sheet in a frame, softening the sheet by heating, preliminarily shaping one or more articles by drawing the softened sheet through application of differential pressure onto a male die having a shape approximating the desired final shape of the article and having external dimensions somewhat smaller than the internal dimensions of a co-operating female die, the dies being initially positioned adjacent opposite sides of the sheet and the male die having a recess in the area which is in oppositely disposed spaced relation relative to the rim of the co-operating female die when the male die is fully inserted in the female die and into which recess a portion of the softened sheet is drawn, moving the male and female dies relative to each other to position the portion of the sheet for forming the article in the cavity in the female die while it is supported on the male die, with the preliminarily formed sheet including the portion thereof which has been drawn into the recess in the male die being held out of contact with the rim of the female die so as to avoid premature chilling which would result in non-uniform stretching of the article forming portion of the sheet, forcing the still soft sheet into contact with the interior wall defining the cavity in the female die by differential pressure so as to effect substantially instantaneous transfer of all parts of the preliminarily drawn sheet, and cooling the sheet to set the resin with the article forming portion of the sheet having the final shape of the cavity in the female die.

3,291,875
METHOD FOR FORMING PLASTIC ITEMS

Ely Freedman and Maurice J. Bernard, Atlanta, Ga., Gerson Meyer, Baltimore, Md., and Robert Mayer, Scarsdale, N.Y., assignors to Temp-Tainer Corporation, a corporation of Georgia

Continuation of application Ser. No. 787,945, Jan. 20, 1959, now Patent No. 3,118,176, dated Jan. 21, 1964. This application Jan. 20, 1964, Ser. No. 338,671
6 Claims. (Cl. 264—93)

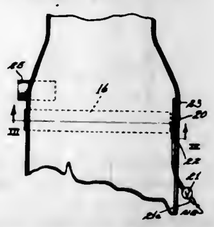


1. A method for making an article from mold material and comprising the steps of placing a predetermined quantity of mold material in an open end of a mold cavity interconnected with a mold chamber, moving a plunger into said end of said cavity to first close said cavity and continuing to move to another position to form part of said mold chamber, and directing fluid pressure through said plunger into said cavity to force said mold material into said chamber after movement of said plunger closes said cavity and prior to forming part of said mold chamber.

3,291,876
METHOD AND MECHANISM FOR BIAXIALLY ORIENTING EXTRUDED TUBULAR FILM

Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed May 5, 1964, Ser. No. 365,023
7 Claims. (Cl. 264—95)

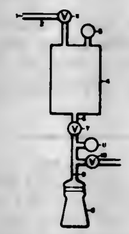


1. The method of making thin sheet film which comprises extruding plastic material continuously from an extruding head forming a tube, flattening the tube across the width thereof at a flattening location spaced from the extruding head and leaving an edge portion unflattened, inflating the tube with an inflating member through said edge portion for forming a bubble between the inflating head and flattening location, and slitting the edge of the tube at said edge portion and separating the flattened tube to accommodate insertion of the inflating member.

3,291,877
STRENGTHENING POLYETHYLENE BOTTLES

Finn Clement, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 11, 1963, Ser. No. 329,811
7 Claims. (Cl. 264—100)

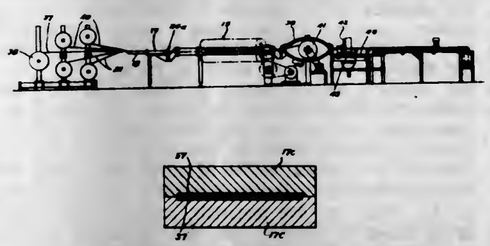


1. A process for increasing resistance to deformation of bottles made from polyethylene of density from about .940 to about .950 and having wall thicknesses ranging from about 0.01 inch to about 0.06 inch comprising the steps of (1) expanding the volume of said bottles by application of internal pressure on the bottles in the range of about 10 p.s.i.g. to about 50 p.s.i.g., (2) sustaining internal pressure for a period of time no greater than about 5 minutes; the internal pressure and time being sufficient to orient and reorient crystallites and molecules of the wall of said bottles in the direction of least strength but insufficient to permanently increase the volume of said bottle more than about 3.5%, (3) effecting recovery of said bottle to substantially its original configuration, the temperature of said orientation and reorientation being within the range of about 60° to about 100° F.

3,291,878
PRODUCTION OF FIBER REINFORCED RESIN ARTICLES

Le Roy R. Beggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware

Filed Dec. 11, 1962, Ser. No. 243,862
8 Claims. (Cl. 264—137)

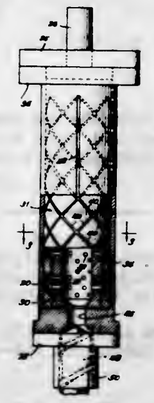


1. A method for making articles of fiber reinforced resin material, comprising impregnating a fiber reinforcement with heat settable liquid resin material, feeding the impregnated fiber reinforcement through a forming passage of small thickness compared to its width, feeding a travelling core strip through said forming passage along with the impregnated fiber reinforcement in position to span the width of the forming passage and form a channel conforming in cross section with that of an article to be formed, heating the resin material in the forming passage sufficiently to solidify it, gripping the solidified article together with the core strip beyond the discharge end of the forming passage and pulling on the article and strip to advance the materials through the system, and separating the formed article from the core strip after delivery thereof from the gripping and pulling mechanism.

3,291,879
METHOD AND APPARATUS FOR FABRICATING PLASTIC WEB

Allan D. Martin, Sanford, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 435,396
16 Claims. (Cl. 264—167)



1. A method for fabricating a flat plastic web pattern of abstract shape comprising the steps of forming said web pattern of abstract shape on the peripheral surface of a cylindrical member, confining said cylindrical member within an outer cylindrical member having a slot formed therein, extruding extrudable plastic material into said pattern, and rotating one of said cylindrical members to extrude said formed abstract shaped web pattern out through said slot.

4. Apparatus for fabricating flat plastic web patterns of abstract shape comprising an outer cylindrical casing, a cylinder assembly rotatably mounted in said casing, and means to rotate said cylinder assembly, said cylinder assembly being formed with a plurality of grooves of abstract shape on its peripheral surface and having means therein for conduction of plastic material to said grooves, said casing being formed to provide a slot coextensive with the longitudinal bounds of said grooves whereby plastic material can be extruded and will flow out at every point of intersection of the grooves and the slot.

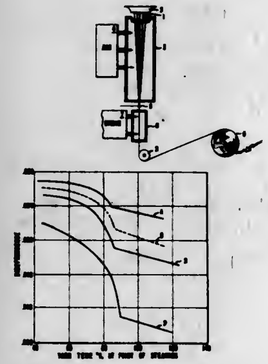
3,291,880
PROCESS FOR PREPARING AN UNDRAWN, LOW BIREFRINGENCE POLYAMIDE YARN

Gilbert Pital, Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 23, 1964, Ser. No. 428,654
6 Claims. (Cl. 264—176)

1. A process for preparing an undrawn, low birefringence polyamide yarn which comprises (1) extruding a molten, synthetic fiber-forming polyamide in the form

of filaments, (2) cooling the said filaments to a temperature at least about 15° C. above the force-to-draw transition temperature of the said filaments and low enough to



at least partially solidify the said filaments, (3) contacting the said filaments with steam for a period no longer than about 0.02 second and (4) forwarding the said filaments from the said contact with steam.

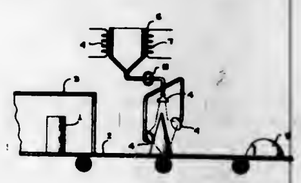
3,291,881
THREADED PIPE CONSTRUCTION METHOD
Vesta F. Michael, Wichita, Kans., assignor to Rock Island Oil & Refining Co., Inc., Wichita, Kans., a corporation of Kansas
Filed Oct. 12, 1962, Ser. No. 230,093
7 Claims. (Cl. 264—266)



1. A method for forming male threads on the pin end of an elongate pipe member having an uncured outermost resin surface, comprising the steps of longitudinally moving a centrally apertured threaded mold having internal thread-forming portions filled with a hardenable thread-forming substance inwardly over the end portion of the elongate pipe member about which male threads are to be formed, forcing uncured resin of the pipe surface into the interval between the mold and the pipe at the end of the mold disposed toward the adjacent pipe distal end limit so as to provide fluid pressure to the hardenable thread-forming substance filling the mold thread-forming portions whereby air entrapment between said mold and pipe pin end is avoided, and removing said mold from said elongate pipe member.

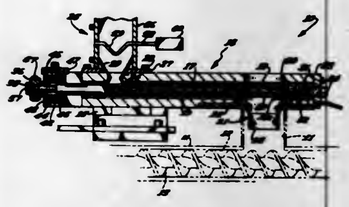
3,291,882
METHOD FOR PRODUCING THIN-WALLED HOLLOW POLYLACTAM ARTICLES
Robert E. Warner, Sinking Spring, Pa., assignor, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania
Filed Nov. 21, 1963, Ser. No. 325,232
1 Claim. (Cl. 264—300)

A method for producing shaped, thin-walled, hollow polylactam articles includes the steps of: applying to a form a molten coating of reactive polymerizable mixture comprised of a higher lactam monomer, a catalyst and a promoter for the polymerization of said monomer, and, as an internal mold release agent, a ketone of a higher chained fatty acid selected from the group consisting of



18-pentatriacontanone and 12-tricosanone; polymerizing said mixture while exposed on said form at temperatures below the melting point of the polylactam; and stripping the resulting polymerized article from the surface of said form.

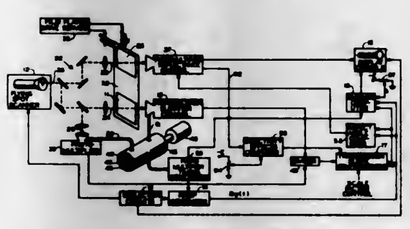
3,291,883
DYE METERING METHOD FOR INJECTION MOLDING OPERATIONS
David L. Cornelius, Coon Rapids, and Allan C. Dahlquist, Minneapolis, Minn., assignors, by mesne assignments, to West Bend Thermo-Serv, Inc., Anoka, Minn., a corporation of Minnesota
Filed Oct. 30, 1963, Ser. No. 320,866
4 Claims. (Cl. 264—329)



1. A continuous method of metering and mixing dry powdered dye material and plastic material during an injection molding operation, said method comprising the steps of continuously moving a stream of dry plastic material by action of gravity through a vertical course of travel, continuously introducing dry powdered dye material by action of gravity into a substantially closed horizontal metering chamber and continuously moving said dry powder in a horizontal stream through the metering chamber by a revolvable variable speed metering medium, continuously discharging a stream of powdered dye material having a predetermined volume flow from the medium chamber by action of gravity directly into the vertically moving stream of plastic material, controlling the volume flow of the stream of powdered dye material by the rotational speed of the metering medium, continuing movement of the stream of plastic and dye materials in a vertical course of travel and passing said materials through a restricted zone to cause admixing of the plastic and dye materials, continuing movement of the stream of mixed material and introducing the mixture only into a horizontally disposed heating and mixing chamber, and further mixing said mixed materials and simultaneously heating the same to a fluid condition by a revolvable heating and mixing medium while moving the stream of mixed materials through a horizontal course of travel.

ELECTRICAL

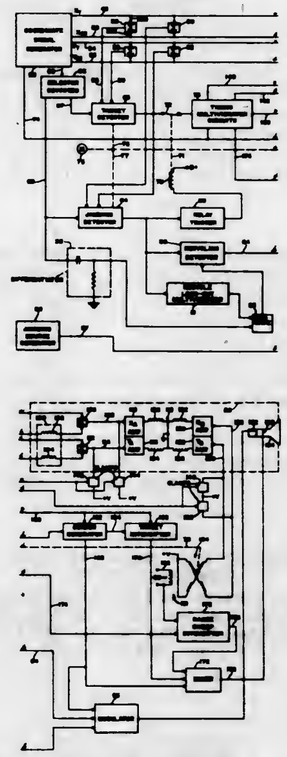
3,291,884
RADAR SIMULATOR
Edward E. Gray, Palo Alto, Calif., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,746
5 Claims. (Cl. 35—10.4)



1. A radar simulator comprising,
a representation of radar terrain reflectance data;
a representation of radar terrain elevational data;
each of said representations being encoded as discrete gray scale variations upon a photographic transparency;
means for simultaneously scanning corresponding regions of each of said representations to derive first and second electrical signals therefrom indicative of the terrain reflectance and terrain elevation, respectively;
first circuit means responsive to said first electrical signal operable to generate a third electrical signal representative of building heights when said first electrical signal exceeds a predetermined threshold;
summing means combining said second and third electrical signals to provide a fourth electrical signal representative of the terrain elevation combined with the building heights; and
second circuit means responsive to said fourth electrical signal operable to break up said first electrical signal to simulate leading edges and shadows of buildings.

3,291,885
RADAR JAMMING SIMULATOR
William A. Eisele, Pleasantville, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 18, 1965, Ser. No. 440,962
4 Claims. (Cl. 35—10.4)

1. In a radar display simulator, the combination comprising:
coordinate signal generator means for generating coordinate signals representative of target positions and own ship position;
a first cathode ray tube having beam deflection means and operatively connected to said coordinate signal generator means to provide deflection of the beam of said first cathode ray tube to positions on the face thereof corresponding to simulated non-jammer targets;
a second cathode ray tube having beam deflection means and operatively connected to said coordinate signal generator means to provide deflection and intensification of the beam of the second cathode ray tube so that said non-jammer targets are indicated as luminous spots on the face of said second cathode ray tube;
light responsive means disposed to receive light emitted from said luminous spots on said second cathode ray tube and operatively connected to said first cathode ray tube so as to increase the intensity of the beam thereof in response to increases in light received by said light responsive means;
rotatable mask means disposed between the face of said second cathode ray tube and said light responsive means, said mask means comprising an aperture;



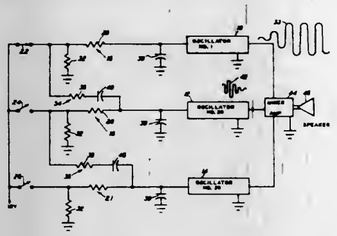
drive means connected to said mask means for effecting rotation thereof so that said aperture sweeps the face of said second cathode ray tube at a rate corresponding to simulated rotation of an antenna, whereby optical coincidences of the beam of said second cathode ray tube and said aperture are detected by said light responsive means and intensity of said beam of said first cathode ray tube is varied to produce non-jammer target indicating luminous spots on the face thereof in a polar sequence corresponding to the sweep of said aperture.

3,291,886
TRANSIENT TONE SIGNAL CIRCUITS
Frederick B. Thaker, Beaverton, Oreg., assignor to Rodgers Organ Company, Hillsboro, Oreg., a corporation of Oregon
Filed Oct. 21, 1963, Ser. No. 317,495
7 Claims. (Cl. 84—1.01)

1. In an electric musical instrument having a plurality of tone generators each generating a tone signal of a dif-

ferent frequency and also having a source of keying electrical energy for the generators and an output circuit, the improvement comprising:

a keying circuit means associated with each generator, including a keying switch means and voltage dropping means comprising a resistor capable of bilateral current conduction connected between the switch means and the associated generator for supplying keying energy from the source to said associated generator to cause a tone signal of a first frequency to be delivered from said associated generator to the output circuit when the switch means is actuated,



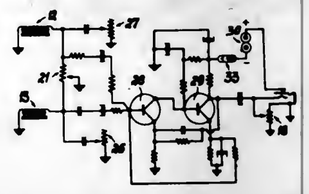
and a plurality of transient circuit means each capable of bilateral A.C. current conduction and connected to and extending from a point between the switch means and one side of the voltage dropping means in one of the keying circuit means to a point between the other side of the voltage dropping means and the generator in another keying circuit means for also supplying a transient of keying energy to the generator associated with the other keying circuit means to cause a transient tone signal of a second frequency to be delivered to the output circuit when the switch means in the one keying circuit means is actuated.

3,291,887
PIEZOELECTRIC MUSICAL PICKUP ARRANGEMENT
Frank C. Carman and Lynn Johnson, both of 165 Social Hall Ave., Salt Lake City, Utah
Filed Jan. 30, 1964, Ser. No. 341,243
9 Claims. (Cl. 84—1.16)



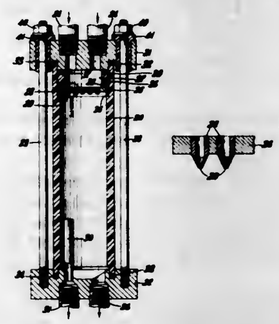
1. A musical instrument of the type having vibratable strings comprising a bridge member of nonmetallic material, said bridge member having an upper string-contacting portion and having an elongated opening therein at a location below and spaced from said upper string-contacting portion, said opening having spaced apart side walls concave for at least part of their extent to form an enlarged central portion of said opening, an elongated piezoelectric transducer mounted in said opening with its opposite ends in contact with the concave portions of said side walls, and signal-carrying conductors attached to said transducer.

3,291,888
ELECTRIC GUITAR
Remo Meazzi, 6 Via Piatti, Franco Caldironi, 24 Via Bolzano, and Attilio Olivieri, 32 Via Trebbia, all of Milan, Italy
Filed May 5, 1964, Ser. No. 365,007
Claims priority, application Italy, May 7, 1963, 9,580/63
7 Claims. (Cl. 84—1.16)



1. In an electric guitar, in combination, a guitar housing having an opening; a plurality of guitar strings mounted on said guitar housing extending above said opening; at least two microphones mounted on said guitar housing and located in the region of and spaced from each other in direction of said guitar strings so as to receive tones of different types; operable electrical mixing means arranged within said guitar housing and connected to said microphones for mixing the tone signals transmitted by the same and adjusting the amplitudes of said tone signals relative to each other in such a manner that upon operation of said electrical mixing means the amplitude of the tone signals of one microphone is increased while the amplitude of the tone signals of the other microphone is decreased, and vice-versa; a plurality of adjusting means each associated with one of said microphones for individually adjusting the tone signals transmitted by the respective microphone; and pre-amplifier means arranged also in said guitar housing and connected to said electrical mixing means for amplifying the mixed electrical signals derived therefrom; and connector means on said housing connected to said pre-amplifier means and adapted to be connected to a conductor for transmitting the pre-amplified mixed tone signals.

3,291,889
DIELECTRIC INTERRUPTER
Lawrence J. Uline, Lakewood, Ohio, and Hello A. Trull, St. Petersburg, Fla., assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 18, 1966, Ser. No. 538,516
4 Claims. (Cl. 174—8)



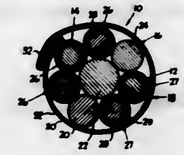
1. A compact dielectric interrupter for electrically interrupting the continuity of a flowing liquid amalgam stream comprising, in combination, a vertically disposed hollow body composed of a dielectric material, an inlet header at the top and an outlet header at the bottom of said body, each of which beader is composed of metal, metallic tie-rods means holding said headers in place with said hollow body therebetween, insulating means electrically insulating said tie-rod means from at least one of said headers, a perforated distributor plate mounted within the top of said body and spaced from said inlet header so as to define a chamber thereabove, tubular venting and overflow means mounted in said outlet header within the bottom of said hollow body, and means for dividing and breaking said liquid amalgam stream almost immediately as it passes through said perforated distributor plate of said hollow body into a plurality of streams of discrete droplets, said means comprising a plurality of nozzles supported within the perforations of said distributor plate, each of said nozzles having a straight tubular section within the wall portion of said distributor plate and an extending tip portion jutting below said distributor plate characterized by a pronounced taper and conical-like configuration which taper together with the orfice in each of said nozzles greatly facilitates dividing and breaking said liquid amalgam stream into discrete droplets almost immediately below the tips of said nozzles as said stream passes through said orifices.

3,291,890
STRAIN INSULATOR
James O. Sweeny, Pittsfield, Mass., and Norman F. Walters, Baltimore, Md., assignors to General Electric Company, a corporation of New York
Filed July 30, 1965, Ser. No. 475,917
5 Claims. (Cl. 174—30)



5. A strain insulator comprising, in combination, similar halves each having: a hollow metal frame with a coupling end and an inwardly extending shoulder at the other end, an eyebolt extending into said frame through its shoulder end and having an enlarged end in said frame and an eye end outside said frame, insulating members surrounding said eyebolt and seated respectively on the inner and outer surfaces of said shoulder, said enlarged end of said eyebolt serving to convert a tension force on said eyebolt to a compressive force in the insulating member which is seated on the inner surface of said shoulder, spring means independent of said eyebolt pressing said insulating members against said surfaces; means sealingly fastening said coupling ends together in face to face relation, and an insulating fluid having a higher dielectric strength than air filling the remaining spaces in said insulator and being in contact with both sides of the insulating members which are seated on the inner surface of said shoulders.

3,291,891
SHIELDED ELECTRIC CABLES
Robert E. Sharp, Richmond, Ind., assignor to Belden Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 23, 1964, Ser. No. 354,080
7 Claims. (Cl. 174—36)



1. An electrical cable comprising at least two insulated conductors, a plurality of contacting uninsulated conductors disposed between said insulated conductors so as to provide a barrier therebetween, and a metallic conductive shield disposed over said conductors in electrical contact with at least one of said uninsulated conductors.

3,291,892
APPARATUS FOR SPACING CONDUCTORS
Malcolm Bethea, Jr., P.O. Box 1407, Birmingham, Ala.
Filed Dec. 27, 1965, Ser. No. 516,591
4 Claims. (Cl. 174—42)



1. A spacer for use in an overhead electrical transmission system having parallel suspended conductors,

(a) a spacer bar disposed to extend diagonally between the parallel conductors and comprising a pair of elongated members facing each other,

(b) an inwardly facing clamping element adjacent each end of each elongated member disposed to cooperate with an adjacent inwardly facing clamping element of the elongated member adjacent thereto,

(c) each clamping element having a longitudinally extending conductor receiving recess therein and being mounted adjacent each end of said spacer bar with said spacer bar extending at an oblique angle relative to said conductor receiving recess and conductors clamped therebetween, and

(d) securing means drawing said elongated members and the clamping elements carried thereby toward other to clamp the conductors in place.

3,291,893
HERMETICALLY SEALED CASING AND LEAD-IN CONDUCTOR
Leonard E. Aske, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 6, 1961, Ser. No. 157,445
5 Claims. (Cl. 174—50.55)

1. An electric wire hermetically sealed along its longitudinal axis, said wire comprising:

a conductive core;

a concentrically arranged insulative web having a strong wicking characteristic;

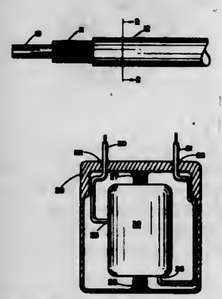
a metallic protective sheath concentrically surrounding said insulative web; and

insulative sealing material impregnating said web and providing a hermetic seal between said conductive core and said protective sheath, along the longitudinal axis of said wire.

3. In an electric instrument having a hermetically sealed casing, apparatus for providing electrical connections from the interior to the exterior of the casing, through an aperture of the casing, said apparatus comprising, in combination:

a longitudinally hermetically sealed electrical conductor extending through said aperture;

said conductor having a central conductive core for making the desired electrical connection to the instrument;



a porous insulative web concentrically arranged about said central core and extending along said core through said aperture in the casing;

a protective sheath of material which is bondable to the casing surrounding said web and extending along said web through said aperture in the casing;

insulative sealing material impregnating said web and providing a hermetic seal along the longitudinal axis of said electrical conductor between said central core and said protective sheath; and

means bonding said sheath to the casing to provide a hermetically sealed instrument.

3,291,894
ELECTRICAL COMPONENT WITH TERMINAL LUGS
James H. Sampson, Fort Lauderdale, Fla., assignor to Hollingsworth Solderless Terminal Co., Phoenixville, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1966, Ser. No. 543,678
16 Claims. (Cl. 174—52)



1. In an electrical connector, an electrical component having wire terminals at its opposite ends, a pair of tubular crimpable electrical conductors in line with and one at each end of the electrical component, each tubular conductor surrounding a wire terminal of the electrical component and in crimped engagement therewith, and extending endwise beyond the wire terminals in a direction remote from the electrical component adapted to receive electrical connection thereto and a tubular insulating body surrounding the electrical component and surrounding at least a portion of each tubular conductor.

3,291,895
COAXIAL CABLE CONNECTORS
Peter F. Van Dyke, Palos Park, Ill., assignor to Andrew Corporation, Orland Park, Ill., a corporation of Illinois
Filed May 5, 1964, Ser. No. 364,940
13 Claims. (Cl. 174—88)

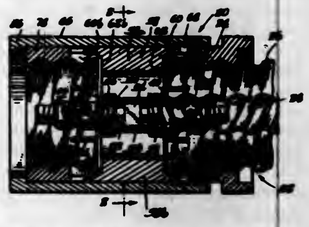
1. A coaxial cable and connector assembly comprising:

(a) a coaxial cable having a helically corrugated outer conductor,

(b) an outer conductor connector comprising a member having an inwardly bevelled camming surface,

(c) a conducting clamping member on the end of the cable having internal helical threads engaging the corrugation of the outer conductor,

(d) the clamping member being longitudinally slitted about the entire circumference of its end and having a recess at one circumferential portion thereof, and the outer conductor being radially outwardly deformed at said circumferential portion of its end and engaging the recess for rotational interlocking,



(e) and a threaded tightening means acting upon the connector and the clamping member and tightened to join the clamping member against the camming surface and thus bending the end of the clamping member inwardly to clamp the outer conductor securely,

(f) the bevelled camming surface having a transverse annular surface immediately inward thereof, the end of the outer conductor being jammed against this transverse surface.

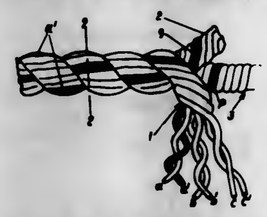
3,291,896
ELECTRICAL CABLE
Clifford B. Vincent, Glen Ellen, Calif., assignor to Vincent & Vincent, Inc., Windsor, Calif., a corporation of California
Original application Apr. 11, 1962, Ser. No. 186,712, now Patent No. 3,252,834, dated May 24, 1966. Divided and this application Sept. 10, 1965, Ser. No. 486,460
5 Claims. (Cl. 174—120)



1. An electrical cable characterized by enhanced resistance to moisture penetration, oxidation, weathering, temperature change, and electrical interference, said cable consisting of conductors surrounded by insulating medium and a protective sheath, said insulating medium and the inner surface of said protective sheath being coated and impregnated with an electrical treating composition comprising from 5 to 10% of a varnish, 10 to 20% of a silicone resin, and 65 to 85% of a solvent.

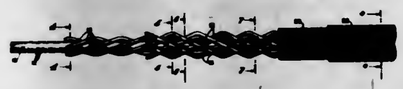
3,291,897
ELECTRICALLY CONDUCTING ROPE
Anthony Bramley, Gosford House, Gosford, Kidlington, Oxford, England
Filed Jan. 10, 1964, Ser. No. 337,016
Claims priority, application Great Britain, Jan. 12, 1963, 1,493/63
5 Claims. (Cl. 174—126)

1. An electrical current conductor comprising several plies twisted together, each ply consisting of a number of filaments, at least one of the filaments of at least one ply being a metallic conductor and at least one being non-metallic, the filaments of each ply which comprises a metallic conductor being so twisted together that the metallic conductor lies exposed on the surface of the ply at intervals determined by the amount of twist imparted to the ply, wherein the ratio of the twist used in joining the plies to the ply twist is equal to the ratio of the



radius of the ply to the sum of the radius of the ply and the radius of the helix formed by the plurality of plies, and the direction of twist used in joining the plies is opposite to the direction of the twist of each ply.

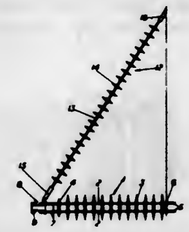
3,291,898
HIGH VOLTAGE EXPANDED ELECTRICAL CONDUCTORS
Donald H. Sandell, Reno, N.Y., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 21, 1964, Ser. No. 339,146
6 Claims. (Cl. 174—131)



1. An expanded high voltage conductor comprising a central cylindrical elongate core of reinforcing material, at least one layer of circumferentially equispaced electrically conductive skeletal strands helically laid and supported on the exterior surface of the said central core, at least one additional layer of oppositely generally helically laid electrically conductive strands supported on outer surfaces of the equispaced electrically conductive skeletal strands, each of said strands in the additional layer thereof being permanently deformed and angularly kinked to provide substantially straight chords bridging the spaces between the adjacent underlying equispaced skeletal strands, the kinks in each strand of the additional layer thereof defining the corners of a polygonal trace in one complete generally helical lay of each said strand, at least one layer of circumferentially contacting helically laid electrically conductive strands supported on the additional layer of kinked strands underlying the same in opposite lay thereto, said last mentioned strands being disposed in circular transverse trace having an inner circumference circumscribing the corners of the polygonal transverse traces formed by the additional layer of kinked strands, and said layer of circumferentially equispaced skeletal strands forming lateral walls of axially extending passages radially outwardly disposed from the center of the conductor.

3,291,899
ELECTRIC INSULATORS IN THE FORM OF FRAMED STRUCTURES INCORPORATING RODS OF RESIN BONDED FIBRE
Percy James Alfred Ward, London, and Kenneth Albert Austin, Bexleyheath, Kent, England, assignors to British Insulated Callender's Cables Limited, London, England, a British company
Filed Apr. 16, 1965, Ser. No. 448,717
Claims priority, application Great Britain, Apr. 21, 1964, 16,492/64
15 Claims. (Cl. 174—148)

1. An insulator for supporting an electric conductor comprising a rigid structure having as principal structural elements at least three rods of resin bonded fibre of high tensile strength arranged symmetrically around the longitudinal axis of the structure, a plurality of mutually spaced insulating cross-members spacing said rods apart along their length, rigidly jointed to the rods at intervals, and



shaped to increase the surface leakage path along the insulator, means for supporting an electric conductor attached to the rods at at least one end of the insulator and means attached to the rods at the other end of the insulator for securing the insulator to a support.

3,291,900
STRAIN INSULATOR FOR DEAD ENDING
James O. Sweeny, Pittsfield, Mass., and William D. Becker, Baltimore, Md., assignors to General Electric Company, a corporation of New York
Filed Aug. 9, 1965, Ser. No. 478,164
8 Claims. (Cl. 174—169)



1. A unitary molded strain insulator for dead ending comprising, in combination, an elongated core of stranded inorganic fiber, a bail linked with one end of said core, a cable clamp having a socket receiving the other end of said core, and a molded plastic sheath covering said core, extending into said socket and enclosing the portion of said bail linked with said core.

3,291,901
COLOR TELEVISION SIGNAL GENERATING SYSTEM AND IMAGE PICKUP TUBE THEREFOR
Toshihiko Takagi and Shosaku Nagahara, Kawasaki, Japan, assignors to Nippon Columbia Kabushikikaisha (Nippon) Columbia Co., Ltd., Kawasaki, Japan, a corporation of Japan
Filed July 16, 1963, Ser. No. 295,412
Claims priority, application Japan, July 26, 1962, 37/31,707
8 Claims. (Cl. 178—5.4)

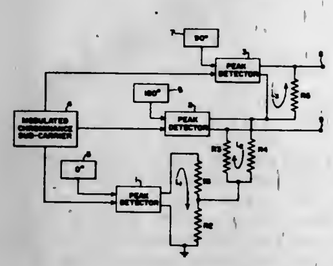
1. A color television signal generating system comprising an image pick up tube provided with an optical filter placed in front thereof and a single video output terminal, a low-pass filter, a plurality of band-pass filters, said low-pass filter and band-pass filters being supplied with video signals from said single video output terminal, and a plurality of detectors for detecting output signals from said band-pass filters, said optical filter being composed of a plurality of filter components, each being arranged with any two of three kinds of strip filter elements, a first one of said strip filter elements being ca-

pable of essentially transmitting all colored lights from an object to be transmitted, a second one being capable of intercepting substantially one colored light of said all colored lights and a third one being capable of intercepting substantially another colored light different from that intercepted by said second one, said optical filter being positioned at a place where a real image is essentially formed between said object and the photo-electric con-



version layer of said image pickup tube in a manner so that the longitudinal direction of said strip filter elements is different from the scanning direction of the electron beams and said filter components having different pitches from one another to generate different carrier frequencies corresponding to said pitches due to scanning, thereby obtaining color signals from said detectors and low-pass filter.

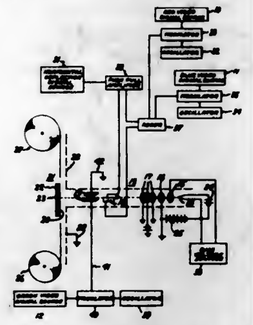
3,291,902
SYNCHRONOUS DETECTOR
Robert B. Dome, Geddes Township, Onondaga County, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 17, 1963, Ser. No. 316,899
4 Claims. (Cl. 178—5.4)



1. In a color television receiver, a synchronous detector for recovering first and second color difference signals from a modulated chrominance sub-carrier, said detector comprising:

a. first, second, and third peak detectors,
b. means for applying the modulated chrominance subcarrier to each of said peak detectors,
c. means for applying signals having the frequency of the chrominance sub-carrier and at 0°, 180°, and 90° phase angles thereto, to said first, second, and third peak detectors, respectively,
d. means for developing the sum of one-half of the low frequency output of said first peak detector and one-half of the low frequency output of said second peak detector, and
e. means for substracting the low frequency output of said third peak detector from said sum to recover the first color difference signal,
f. means for subtracting one-half of the low frequency output of said first peak detector from one-half of the low frequency output of said second peak detector to recover the second color difference signal.

3,291,903
COLORED LIGHT PROJECTION SYSTEM
William E. Glenn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,912
8 Claims. (Cl. 178—5.4)



1. An information writing and diffraction type light projection system comprising a deformable light modulating medium, means producing two superimposed diffraction gratings of different spacings for diffracting light in the same direction and corresponding respectively to two different color components with the grating of greater grating spacing corresponding to a color component of shorter wavelength and with the ratio of the grating spacings representing the two color components being equal to the inverse ratio of the desired center wavelength of said two color components.

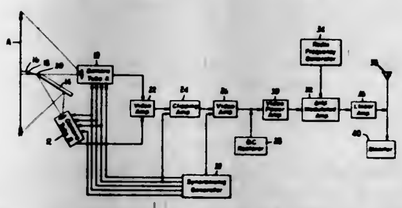
3,291,904
STEREOSCOPIC TELEVISION SYSTEM WITH SPECIAL EFFECTS
Harvey L. Ratliff, Jr., Amarillo, Tex., assignor of one hundred percent to Jetru Inc., Amarillo, Tex.
Filed July 17, 1963, Ser. No. 295,792
12 Claims. (Cl. 178—6.5)



1. A process for a portrayal of drama, action, scenes, events, and the like comprising the steps of: first recording wide-angle stereoscopic motion pictures of said portrayal upon a media, second recording substantially every directional component of sound of said portrayal upon said media, third recording the temperature conditions of said portrayal upon said media, fourth recording the odor conditions of said portrayal upon said media, fifth recording the wind speed and directional conditions of said portrayal upon said media, sixth recording the heat radiation conditions of said portrayal upon said media,

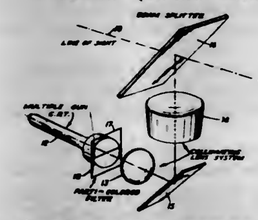
seventh reproducing said wide-angle stereoscopic motion picture, said substantially every directional component of sound, said temperature condition, said odor conditions, said wind speed and directional conditions, and said heat radiation conditions of said portrayal from said media simultaneously before different viewing observers.

3,291,905
MULTIPANEL TELEVISION SYSTEM
Philip Stanley Smith, 1005 Rydal Road, Cherry Hill, N.J.
Filed Jan. 13, 1964, Ser. No. 337,375
3 Claims. (Cl. 178—6.8)



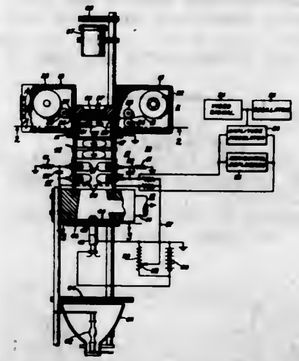
1. A system for projecting a televised scene in sections on a screen comprising means for providing successive groups of electric video signals of the complete scene, means for dividing each said group into successive subgroups of electric video signals each of which sub-groups corresponds to a separate section of the entire scene, said dividing means including a mirror with a bevelled edge, a first camera tube which is positioned to televise one section of the scene directly past said bevelled edge and a second camera tube positioned to televise another section of the scene from its reflection in the mirror, said second camera tube being positioned so that the mirror image point of the entrance pupil of its lens is located substantially at the entrance pupil for the lens of the first camera tube, and projection means for separately projecting each section of the scene from said subgroups of electric video signals and assembling the scene sections into the entire scene.

3,291,906
AIRCRAFT VISUAL INDICATING OR DISPLAY SYSTEMS UTILIZING A CATHODE RAY TUBE
John Joseph Ward, Maidenhead, and Brian Dennis McCarthy, Catford, London, England, assignors to Specto Limited
Filed May 1, 1963, Ser. No. 277,394
2 Claims. (Cl. 178—7.85)



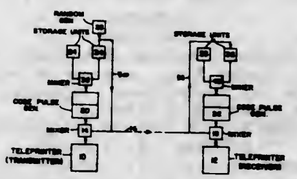
1. In an aircraft, a display apparatus for presenting to a pilot a display of flight instrument information superimposed on his line of sight forward of the aircraft, said apparatus comprising a screen, a partly reflecting mirror disposed in said line of sight to direct light from said screen into said line of sight, collimating means interposed between said screen and said mirror, a plurality of writing means for tracing respective component images of the display on different regions of said screen, and means for rendering visible and distinguishing the images from different regions.

3,291,907
LIGHT VALVE PROJECTOR WITH LIGHT MODULATING MEDIUM HEATING MEANS
William E. Glenn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 18, 1963, Ser. No. 317,269
5 Claims. (Cl. 178—7.87)



1. A light valve projector comprising an evacuable envelope having a transparent wall portion, means within said envelope providing a light modulating medium extending across a projection light path including said transparent wall portion, said means including a tape having a thermoplastic surface, means for heating said thermoplastic surface over an area in the light path through said transparent wall portion to a temperature which renders it a viscous liquid which is readily deformed by the forces of an electric charge, means providing an electron beam within said envelope and impinging it on said medium, means for deflecting and intelligence modulating said beam to establish an electric charge pattern over said area corresponding to intelligence to be projected to correspondingly deform said medium and means for moving said tape transversely with respect to said projection light path at a rate which is slow compared to the rate at which the beam is deflected over said area and which removes said thermoplastic from said area as it becomes damaged by the impingement thereon of said electron beam, said light path including a light source and Schlieren optics cooperating with the deformations of said medium to project light corresponding to the intelligence impressed on said medium by said modulated beam.

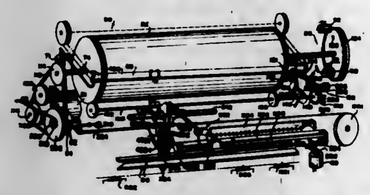
3,291,908
PROCESS FOR THE CODING OF MESSAGES
Kurt Elrat, Zurich, Switzerland, assignor to Gretag Aktiengesellschaft, Zurich, Switzerland
Filed Aug. 8, 1962, Ser. No. 215,674
Claims priority, application Switzerland, Aug. 18, 1961, 9,647
14 Claims. (Cl. 178—22)



1. In a method of coding messages comprising generating at a transmitting station clear message pulses and code pulses, mixing said pulses to form a coded message, transmitting said message to a receiving station, and passing said message and identical code pulses to a mixer at the receiving station to separate said clear message

pulses, the steps of generating at said transmitting station by means of a code generator a code pulse sequence determined by the initial state of the code generator the number of possible initial states of which is large in comparison with 10^{10}, determining said initial state from a first state information present in stored form at the transmitting and receiving stations and from a second state information, determining said second state information at random at one of said stations, and transmitting said second state information to the other of said stations.

3,291,909
DRUM PRINTER
Clayton H. Clark, Mundelein, and Donald J. Stefanik, Berwyn, Ill., assignors to SCM Corporation, a corporation of New York
Filed Oct. 25, 1962, Ser. No. 233,109
39 Claims. (Cl. 178—25)



1. A page printer, having code signal receiving and printer control and operating means and wherein printing means include a print hammer carriage means which moves in spacing steps and return movement across a page, comprising:

(a) means including a power storage spring means for step spacing said carriage means from a start-of-line position to an end-of-line position, said spring means supplying the force for carriage stepping movement;

(b) a positive drive carriage return mechanism including:

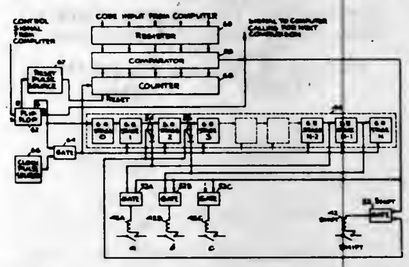
(1) an electro-magnetic clutch means, energizable for accomplishing positive drive actuation;

(2) carriage return control means operable in response to a carriage return signal to automatically energize said magnetic clutch and to concurrently shift and maintain the means for step spacing said carriage means in an inactive position during return movement of said carriage means to a start-of-line position, said return operation storing power in said spring means for subsequent step spacing actions; and

(3) additional control means to automatically deenergize said carriage return clutch electro-magnet and to permit activation of said means for step spacing said carriage means when said carriage means reaches its start-of-line position.

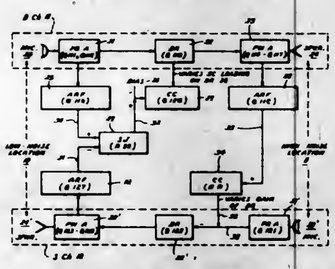
3,291,910
ENCODER
James P. Nicklas, Woodland Hills, Calif., and Robert H. Stotz, Boston, Mass., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,842
3 Claims. (Cl. 178—26)

2. Apparatus for actuating a typewriter key responsive to a code representative of the character printed by actuation of said key comprising a shift register having a plurality of stages, each stage being associated with a different one of said typewriter keys, register means into which said code is entered, counter means, comparator means for comparing the count of said counter means and the contents of said register means and providing an output signal when they are identical, a clock pulse source, means responsive to the entry of a code character into said register means for applying a binary signal to the first stage of said shift register and for applying clock pulses to said counter to be counted and to said shift register to cause it to shift, a plurality of gates, means connecting the output of each one of said shift register stages to the input of a different one of said gates, means responsive to an output from said



comparator means indicative of an identity between the contents of said register means and the count of said counter means for terminating the further application of pulses from said source to said counter and to said shift register and for opening said plurality of gates, and means responsive to the transmission through one of said gates of said binary signal for operating the typewriter key associated with the shift register stage containing said binary signal at the time of said comparator output signal.

3,291,911
TWO-WAY INTERCOMMUNICATION SYSTEM
Charles E. McCullough, Austin, Tex., assignor to Kaman Aircraft Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Apr. 1, 1963, Ser. No. 269,408
9 Claims. (Cl. 179—1)



1. In an intercommunication system capable of two-way voice communication without regenerative feedback, the combination comprising:

a dominating channel having a first microphone located at a first location, a first speaker located at a second location, and audio amplifier means connected therebetween,

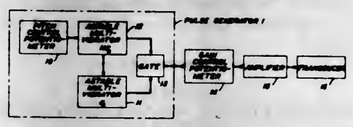
a second channel normally operating at full gain and having a first microphone located at said second location, a second speaker located at said first location, and audio amplifier means connected therebetween,

a first electrical circuit means automatically, partially muting said dominating channel when there is no communication originating at said first microphone,

a second electrical circuit means automatically deactivating said first means during the time when communication is originating at said first microphone, and

a third electrical circuit means automatically, partially muting said second channel when said dominating channel is operating at increased sensitivity, muting of said second channel being responsive only to communication originating at said first microphone.

3,291,912
ARTIFICIAL LARYNX
James L. Flanagan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 18, 1963, Ser. No. 273,962
7 Claims. (Cl. 179—1)

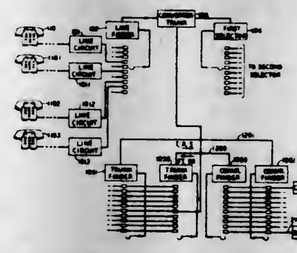


1. An artificial larynx for introducing into a user's vocal tract artificial sound from which speech may be produced by said user which comprises

means for generating a periodic train of pulses in which each period contains a predetermined plurality of n pulses, $n=2, 3, \ldots$, and each period is substantially equal in duration to the average fundamental pitch period of the human voice, and

transducer means responsive to said train of pulses for externally vibrating a portion of said user's throat wall in order to introduce artificial sound into said user's vocal tract.

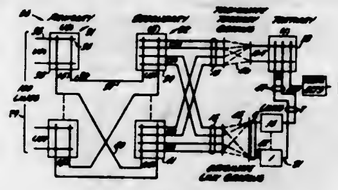
3,291,913
TELEPHONE SYSTEM SIGNAL CONVERTER
Edward E. Hanna, Brooklyn, N.Y., Arthur W. Kettley, Middletown, N.J., and Terrell N. Lowry, New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 17, 1963, Ser. No. 281,137
17 Claims. (Cl. 179—16)



1. In a telephone switching system in combination, a plurality of signal converters for converting multifrequency calling signals to serial groups of pulses, an electronic control apparatus common to all of said converters including means for storing a plurality of different programs of orders for controlling the operation of said electronic equipment, means for controlling the storing of multifrequency signals received by each of said converters by one of said programs, and means for controlling the transmission of converted signals by each of said converters by another one of said programs.

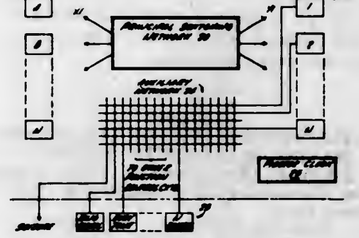
3,291,914
EXPANDABLE PRINTED CIRCUIT CROSSPOINT SWITCHING NETWORK
Theron L. Bowers, Western Springs, Ill., assignor to International Telephone and Telegraph Corporation, a corporation of Maryland
Filed Mar. 25, 1963, Ser. No. 267,616
16 Claims. (Cl. 179—18)

1. An electronic switching network for selectively extending paths from a plurality of network inlets to a plurality of network outlets, said network comprising a plurality of self-selecting crosspoints electrically assembled into cascaded matrices, said cascaded matrices extending between the inlets and outlets of said network, means comprising a plurality of printed circuit cards for physically assembling said crosspoints into a compact group of components, each of said cards which carries a network inlet connection also carrying the added crosspoints necessary to give said inlet connection access to said network with no loss in the grade of service given



by said network, whereby the addition of a card bearing an inlet to the switching network assembly automatically adds all crosspoints required to give network switching capacity to serve said inlet, and intercard cabling means for electrically joining the crosspoints physically mounted on said additional card into said electrical assembly.

3,291,915
ELECTRONIC SWITCHING CONTROL CIRCUIT FOR TELECOMMUNICATION SYSTEM
Eric Gordon Platt, Worth, and John J. Dupuis, Chicago, Ill., assignors to International Telephone and Telegraph Corporation, a corporation of Maryland
Filed Apr. 25, 1963, Ser. No. 275,693
17 Claims. (Cl. 179—18)

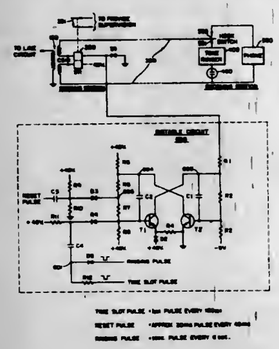


1. A switching network comprising a plurality of network access points and a plurality of crosspoints, first circuits each of which is connected via a plurality of said access points to one side of said network, second circuits each of which is connected via a plurality of said access points to the other side of said network, means in each circuit connected to said one side of said network for normally applying a first marking to one of the plurality of points of access that is associated with the circuit applying the first marking, means in the second circuits for individually applying a second marking to one of the points of access associated with a second circuit requesting service, the sum of said first and second markings being equal to a potential required to close a crosspoint, whereby at least one crosspoint responds to said markings to interconnect an idle one of said first circuits and said requesting circuit, and means responsive to said crosspoint closure for causing the interconnected circuits to mark the remaining ones of the access points associated with each interconnected circuit for selectively extending additional paths between said interconnected circuits.

3,291,916
SIGNALING SYSTEM

Adam A. Jorgensen, Charlottesville, Va., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed Aug. 23, 1963, Ser. No. 304,140
12 Claims. (Cl. 179—86)

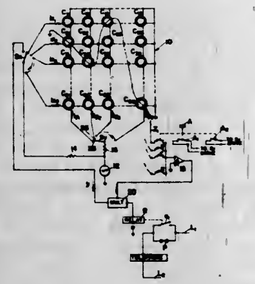


1. In a signaling system, a signal sending station, a signal receiving station, a two-conductor line for coupling said sending and receiving stations, a signaling device coupled to said line at the receiving end thereof responsive only to applied potential above a predetermined potential, a source of potential having a full value above said predetermined potential at said sending station, a first source of pulses at said sending station, means normally connecting said source of potential to one conductor of said line so as to apply less than said predetermined value of potential thereto, and bistable coupling means coupled to said first pulse source, said potential source, and said line at said sending station end, said coupling means being actuated in response to pulses from said first source for applying the full potential of said potential source to said line to actuate said signalling device.

3,291,917
AUTOMATIC DIALER FOR TELEPHONES HAVING A MAGNETIC MEMORY

Tetsuji Takahashi, Kanagawa-ken, Japan, assignor to Nippon Communication Industrial Co., Ltd., Kanagawa-ken, Japan

Filed July 9, 1963, Ser. No. 293,794
5 Claims. (Cl. 179—90)

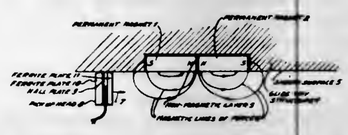


1. Automatic telephone dialing apparatus comprising:
(a) a magnetic core matrix memory having *x*-axis and *y*-axis sets of exciting windings on the cores thereof,
(b) first means for cyclically impressing current pulses on one set of windings sequentially at a rate corresponding to the desired rate of dialing pulses,
(c) second means for impressing current on each winding, in turn, of the other set for an interval at least equal to the length of a complete cycle of the first means, and
(d) a read-out wire threaded through selected cores for reading out pulses corresponding in time of occurrence to a desired telephone number, each selected core being in a different column of the matrix memory.

3,291,918
MAGNETO-ELECTRIC SIGNAL TRANSMISSION SYSTEM

Friedrich Kuhrt, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Original application May 13, 1959, Ser. No. 812,915, now Patent No. 3,041,416, dated June 26, 1962. Divided and this application Jan. 29, 1962, Ser. No. 169,546
Claims priority, application Germany, May 22, 1958, S 58,317; May 24, 1958, S 58,365; Feb. 3, 1959, S 61,595
8 Claims. (Cl. 179—100.2)



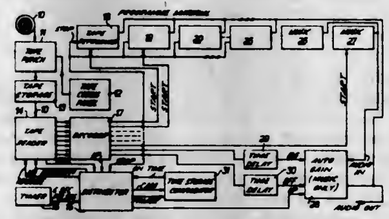
1. A magneto-electric signal transmission apparatus, comprising a magnetic signal transmitter and a pickup device for response to magnetic signals issuing from said signal transmitter along a given path of relative motion, the pickup device comprising a Hall plate of semiconductor material disposed transversely to said path of relative motion, said Hall plate having current supply terminals defining a current axis which is transverse to the direction of said relative motion and which is longitudinal to the surface of the signal transmitter, the Hall plate having Hall voltage electrode means for producing a Hall voltage in response to the magnetic signals, said signal transmitter comprising two permanent magnets mounted with their magnetic axes transverse to said path of relative motion and with mutually opposed polarities beside each other and forming a narrow field gap between respective adjacent poles of opposite polarities, said field gap facing said path of relative motion and said permanent magnets providing a magnetic field having flux lines which cut said Hall plate substantially perpendicularly thereto whereby the Hall voltage of said Hall plate passes through a maximal magnitude when said pickup device and said field gap pass by each other.

3,291,919
UNATTENDED RADIO STATION

Glen A. Robitaille, P.O. Box 488, London, Ontario, Canada

Filed Jan. 31, 1963, Ser. No. 255,264
9 Claims. (Cl. 179—100.2)

1. Apparatus for automatically controlling the programme of a radio station comprising a record containing a sequence of coded instructions and adapted to be advanced and read by a reader operated either in synchronism with a timer, or by signals from sources of programme material, means for decoding said coded elements to control the operation of a plurality of sources of programme material, at least one of said sources of programme material containing programme elements of indeterminate length, said decoded instructions being adapted to control the operation of said sources of programme material, each of said sources being adapted to generate a stop signal on reaching the end of a programme element, a time storage comparator adapted to accept input pulses from said timer and from said reader and to store the number of pulses by which the scanning of said record deviates from synchronism with said timer,

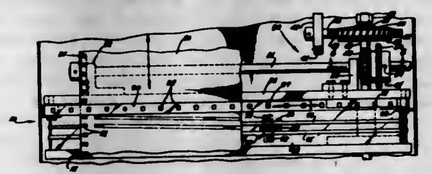


and means for advancing said reader at a high rate without decoding said coded elements to return said record to synchronism with said timing device.

3,291,920
RECORDING AND REPRODUCING MACHINE

Fred Hauser, 1544 Midvale Ave., Los Angeles, Calif.

Filed Jan. 12, 1965, Ser. No. 425,034
14 Claims. (Cl. 179—100.2)



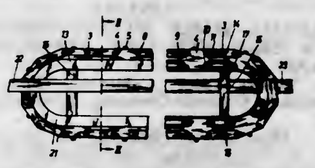
1. In a recording and reproducing machine including a housing, a plurality of magnetic sound recording and reproducing heads, motor means and means for receiving and advancing recording sheet material through the housing, said sheet material having a paramagnetic recording material on an underside thereof and an upper surface adapted to receive written intelligence thereon, the provision of:
continuous band means including a pair of axially spaced band drums for mounting and moving said recording and reproducing heads into and out of recording and reproducing relationship with the under surface of said sheet material;
electrical connecting means for interconnecting said heads with a loud speaker system;
indicator means for indicating above the upper surface of said sheet material the relative movement of a head along the sheet material undersurface; and
transmission means for drivingly connecting said continuous band means, sheet material advancing means and indicator means with said motor means for uniform relative movement between said heads, indicator means and sheet material.

3,291,921
DEVICE FOR SUPPORTING AND FEEDING CABLES

Matthias Gilbert Wanlinger, deceased, late of Ettlingen, Baden, Germany, by Ursula Wanlinger, nee Jungbluth, executrix, Ettlingen, Baden, Germany, assignor to Kabelschlepp G.m.b.H., Siegen, Westphalia, Germany

Filed Sept. 3, 1963, Ser. No. 306,369
Claims priority, application Germany, Sept. 4, 1962, K 47,666
10 Claims. (Cl. 191—12)

1. An arrangement for guiding and supporting flexible energy conveying conductors, especially cables and hoses, which includes: chain means having an upper chain section and a lower chain section and at least one arcuate chain section leading from said upper section to said lower section, said chain means comprising interlinked chain elements and supporting members carried by said chain elements for receiving and supporting energy conductors, stationary means connected to one of said upper and lower chain sections for guiding portions of energy conductors onto and guiding other portions of energy conductors from said chain means, movable means connected to the other of said upper and lower chain section for connecting energy conductors on said chain means with a movable consumer, supporting roller means supported by said chain means and distributed therealong,

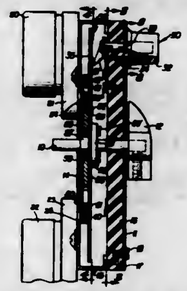


and guiding rail means movable relative to said stationary means for guiding said supporting by engaging said roller means and thereby guiding said chain means along a substantially oval path, said rail means comprising an upper portion which the upper chain section engages and a lower portion which the lower chain section engages and at least one arcuate portion leading from said upper portion to said lower portion and engaged by said arcuate chain section, each chain section being supported by its pertaining portion of said rail means.

3,291,922
SEQUENTIAL TIMING DEVICE WITH TIMING MOVEMENT INDEPENDENT FROM POWER SHAFT

Fred Hauser, 1544 Midvale Ave., Los Angeles, Calif.

Filed Aug. 6, 1963, Ser. No. 300,371
15 Claims. (Cl. 200—37)



1. In a timing device for use with a multiple station control device such as an electrical distributor, water pilot valve, or the like, wherein the timing device includes a power transmission means to be interconnected with and operate the control device; a plurality of stationary timing units for controlling timing periods for the various stations of the control device; engagement means for engaging portions of said timing units; and electrical circuit means for selectively connecting motor means with a source of electrical potential in response to engagement of said engagement means with said timing units, the provision of:
mounting means for rotatively mounting said engagement means independently of said power transmission means and in spaced opposed relation to said timing units;
indexing drive means for driving said power transmission means;
timing drive means for driving said engagement means; and

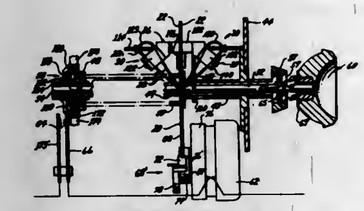
connecting means between said indexing drive means and said engagement means including means for driving said engagement means with said mounting means and power transmission means by said indexing drive means during an indexing period and for allowing limited movement of said engagement means independently of said indexing means and said transmission means to be driven by said timing drive means on said mounting means during a timing period.

3,291,923

SEQUENTIAL TIMER HAVING PROGRAM DISC WITH HIGH AND LOW POWER SWITCHING MEANS

Werner Robert Bauer, Columbus, Ohio, assignor to Robertshaw Controls Company, a corporation of Delaware

Filed May 1, 1962, Ser. No. 191,509
12 Claims. (Cl. 200—38)



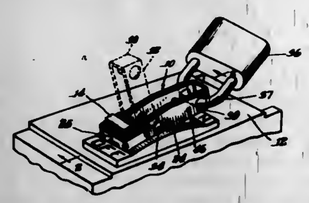
1. In combination: a disc having non-conductive disc sides with program electrical conductors on said disc sides; and a U-shaped reader member with metallic legs straddling said disc; non-conductive bars held by said metallic legs; and flexible electrical conductors passing between said legs and through and supported by said non-conductive bars and being slantingly directed toward and biased into contact with said disc sides by said non-conductive bars.

3,291,924

HANDLE LOCKING ATTACHMENT FOR ELECTRICAL CONTROL DEVICES

James A. Tharp, Cedar Rapids, Iowa, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Feb. 25, 1965, Ser. No. 435,242
4 Claims. (Cl. 200—42)



1. A handle locking attachment securable to a pivotable operating handle extending outwardly of a casing of an electrical control device to lock the handle in one of two operative positions thereof, said attachment comprising a generally U-shaped housing member formed from flat sheet stock and including a bight portion and a pair of spaced, flatwise generally parallel leg portions, a generally U-shaped clamping member formed from flat sheet stock and including a bight portion and a pair of spaced, flatwise generally parallel leg portions, the leg portions of said clamping member being disposed between the leg portions of said housing member, and means connecting said clamping and housing members for pivotal movement relative to each other about a fixed axis extending generally perpendicularly to the leg portions of said clamping and housing members and disposed adjacent the free ends of the leg portions of said clamping member in spaced relationship to the bight portion of said housing member, said free ends of the leg portions of said clamping member being defined respectively by curved edge surfaces of varying radius measured from said fixed axis of pivotal movement between said clamping and housing members, the distance between said bight portion of said housing member and said free ends of the leg portions of said clamping member decreasing due to the varying radius of said curved edge surfaces as said clamping member is pivoted relatively to said housing member from a position in which the leg portions of said clamping member extend generally perpendicularly to the leg portions of said housing member to a position in which the leg portions of said clamping member are substantially aligned with the leg portions of said housing member, whereby a pivotable operating handle extending outwardly of a casing of an electrical control device may be clamped between said bight portion of said housing member and said free ends of said leg portions of said clamping member, the free end portions of the leg portions of said housing member and the bight end portions of the leg portions of said clamping member having apertures extending respectively therethrough which are aligned when said clamping member is in clamping position relatively to said housing member for receiving a shackle of a padlock to lock said clamping member in said clamping position, and the leg portions of said housing member being formed to bear against the casing of an electrical control device when said handle locking attachment is secured on a pivotable operating handle thereof and said handle is in one of two operative positions and an attempt is made to pivot said handle to the other operative position thereof.

3,291,925

MULTIPLE CIRCUIT SELECTOR SWITCH

Robert E. Hartsock, La Habra, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed May 27, 1965, Ser. No. 459,370
5 Claims. (Cl. 200—46)



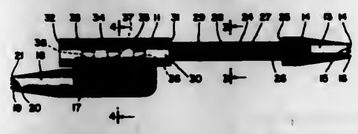
2. A multiple circuit selector switch actuating mechanism comprising a first guide panel, having a series of apertures formed therethrough, a second guide panel, having a series of apertures formed therethrough, an actuator panel, having a series of contact apertures formed therethrough, and a series of contacts, each of said contacts having first and second terminal ends and having a portion between said terminal ends lying within the area defined by its respective contact aperture and each of said first terminal ends lying within the area defined by its respective aperture formed in said first guide panel and each of said second terminal ends lying within the area defined by its respective aperture formed in said second guide panel and said first and second guide panels in spaced, stacked relationship with said actuator panel lying between said first and second guide panels and said actuator panel having a drive means associated therewith adapted to move said actuator panel transversely of said first and second guide panels thereby bending said contacts formed a relaxed to a tensioned position.

3,291,926

FLUID PROOF SWITCH

Arthur L. Nelson, San Diego, Calif., assignor to Wisco Instruments & Controls Company, Inc., a California corporation

Original application Mar. 18, 1963, Ser. No. 265,881. Divided and this application Sept. 27, 1965, Ser. No. 490,251
7 Claims. (Cl. 200—51)



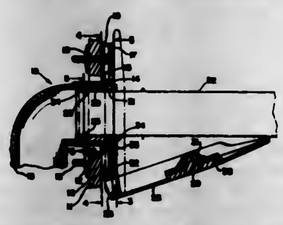
1. A fluid proof switch comprising, in combination: an elongated plug of circular cross-section throughout substantially its length; at least one plug contact embedded in said plug and having an exposed surface substantially flush with a surface portion of said plug at an area intermediate the ends of said plug, said exposed surface extending circumferentially around said plug for a first given distance; a socket body including an elongated socket of circular cross-section throughout substantially its length corresponding to said circular cross-section of said plug so that said plug is receivable in snug relationship in said socket; and at least one socket contact embedded in the internal wall of said socket and having an exposed surface extending circumferentially about said wall for a second given distance, the sum of said first and second given distances being less than 360° whereby said plug may be rotated in said socket from a first position in which the exposed portion of said plug contact is circumferentially spaced from the exposed portion of said socket contact to a second position in which the exposed portion of said plug contact engages the exposed portion of said socket contact to thereby effect an electrical connection of said plug contact to said socket contact.

3,291,927

INLET VALVE ASSEMBLY FOR CENTRAL CLEANING SYSTEM

Robert H. Riley, Jr., Towson, and Francis J. Rosenthal, Jr., Fork, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Oct. 21, 1965, Ser. No. 499,480
6 Claims. (Cl. 200—61.6)



1. An inlet valve assembly for a central cleaning system, the inlet valve assembly being mounted on a wall or other element of a building structure and comprising:

(a) a hollow coupling member received within an opening formed in the wall and adapted for connection with a source of suction internally of the wall;

(b) a retaining member removably seated on said coupling member and engaging between a portion of the coupling member and the exposed face of the wall for preventing said coupling member from being withdrawn internally into the wall;

(c) a supporting member secured to the face of the wall, substantially enclosing the retaining member, and preventing dislodgment of the retaining member from the coupling member;

(d) said supporting member having an opening therein communicating with the coupling member, thereby to facilitate the insertion of a wand or hose into the inlet valve assembly; and

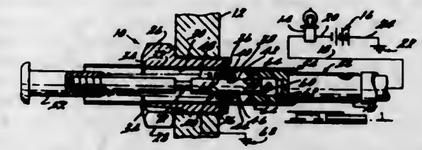
(e) a movable cover member connected to said supporting member for normally closing the opening therein.

3,291,928

CLOSURE ACTUATED ELECTRIC SWITCH WITH MANUALLY OPERATED HOLDING MEANS

Evan L. Jones, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

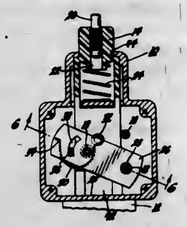
Filed Aug. 27, 1965, Ser. No. 483,101
1 Claim. (Cl. 200—61.79)



An electric switch adapted to be opened and closed by a hinge member comprising a tubular body portion adapted for support in a relatively stationary support member, a relatively movable tubular contact member having one end for engagement with one end of said body portion and another end for engagement with a suitable conductor of an associated electrical circuit, said body portion one end having a radially inwardly directed flange portion formed thereon defining a centrally disposed aperture, an elongated actuating rod extending through said aperture and having one end thereof operatively connected to said tubular contact and another end projecting beyond an opposite end of said body portion, said actuating rod being of a cross-sectional area normally permitting of relatively slight transverse movement of said rod relative to said aperture but normally permitting of relatively large transverse movement of said rod relative to said opposite end of said body portion, a coiled compression spring situated about said rod and having one end abuttingly engaging said flange portion and another end abuttingly engaging said rod near said other end of said rod, said spring being effective to resiliently urge said rod in one direction in order to cause said contact member to engage said body portion and thereby complete said associated electrical circuit whenever said hinged member is moved away from said rod, said coiled spring also being effective to tend to maintain said rod in axial alignment with said body portion, said rod being effective whenever moved by said hinged member in a direction opposite to said one direction to move said contact out of engagement with said body portion thereby opening said circuit, and an annular recess formed in said rod intermediate the ends thereof adapted to engage said flange portion whenever said rod is moved a sufficient distance in excess of the distance normally moved by said hinged member in said opposite direction in order to prevent said spring from urging said contact member into engagement with said body portion, said annular recess permitting said rod to be moved through a relatively large transverse movement with respect to said aperture in order to place said rod in a generally

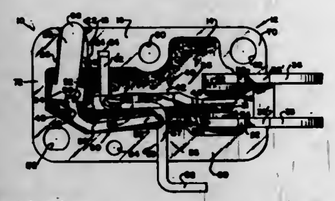
skewed position with respect to the axis of said tubular body portion.

3,291,929
LIMIT SWITCH
Bert R. Wanlass, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 15, 1964, Ser. No. 374,911
2 Claims. (Cl. 200—67)



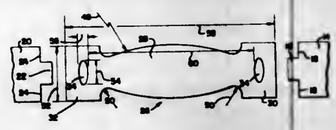
1. An electric switch comprising: a switch body; actuator means slidably disposed for translational movement in said switch body; fixed contacts spaced apart and carried by the switch body, said fixed contacts being adapted to be connected respectively to an electrical load, conductive means pivotally mounted on a portion of the switch body at a point equidistant from said fixed contacts, said conductive means carrying a contact movable in an arcuate path between the fixed contacts; locating means including a slot formed in said conductive means for positioning said conductive means positively with respect to any one of the fixed contacts; and resilient means including means comprising a substantially U-shaped portion having one end pivotally engaging said actuator means and having another end pivotally engaging said conductive means, said resilient means being responsive to sliding movement of the actuator means near either extreme of translational movement to rapidly drive the movable contact into sliding engagement with any of the spaced fixed contacts.

3,291,930
SWITCH WITH PIVOTED PUSH BUTTON AND COUNTERSUNK SWITCH LEVER
George M. Hipple, Columbus, Ohio, assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,159
13 Claims. (Cl. 200—67)



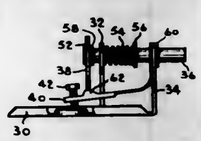
1. In combination:
a switch casing having a switch cavity and a plunger receiving wall adjacent said cavity, said wall having a plunger bearing slot;
a switch construction in said cavity;
a switch actuating lever having a pivot lever end pivoted on a pivot in said cavity, said lever having a main lever body extending transversely to the longitudinal axis of said plunger bearing slot and having a free lever end bent and directed toward said plunger bearing slot and movable in an arc toward and away from said plunger bearing slot; and a plunger longitudinally and swingingly movable in a plunger pivoting bearing in said slot, said plunger having an opening at its inner and swinging end receiving said free lever end.

3,291,931
OBLONG END OPENING SWITCH CONSTRUCTION
Gilbert Rogers, 2067 White Road, Grove City, Ohio
Filed July 12, 1965, Ser. No. 471,510
10 Claims. (Cl. 200—67)



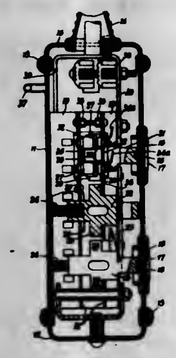
1. In combination:
an actuating and first fulcrum member having a first protruding tongue and a respective leaf spring engaging edge shoulder on each side of said tongue;
a second fulcrum member having a second protruding tongue aligned with said first tongue and having a respective leaf spring engaging shoulder on each side of said second tongue;
a flexible, thin, hard metal, elongated leaf spring which is free of local stress producing sharp bends, notches and internal corners and having an arcuate main body with rocking end portions free of line fold deformation engaging respective ones of said edge shoulders with substantially straight surfaces which are extensions of said arcuate main body, said end portions each having a respective tongue receiving oblong opening having arc shaped end portions, which opening is free of local stress producing sharp bends, notches and internal corners, said opening loosely limiting the turning movement of a respective tongue in said opening and confining the sidewise and endwise movement of said leaf spring to maintain said leaf spring substantially aligned between said fulcrum members.

3,291,932
PRESSURE RESPONSIVE CONTROL RESET STRUCTURE
Robert T. Main, Arlington Heights, Ill., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,237
8 Claims. (Cl. 200—83)



1. The combination with a control device of the type having a control mechanism movable from one controlling condition to another controlling condition in response to movement of a diaphragm under influence of pressure acting on one side of the diaphragm in opposition to a preselected opposing biasing force, of means for preselecting the biasing force including, cam means rotatable about an axis continuously adjusting the biasing force when rotated, means mounting the cam for rotary and axial movement, and means responsive to axial movement of the cam means to actuate the control mechanism to said one condition.

3,291,933
ELECTRICAL SWITCH UNIT WITH THIN STRIP MOUNT AND SEQUENTIALLY OPERATED SNAP SWITCHES
Arthur Thomas Charles Burrows, Stevenage, England, assignor to Geo. W. King Limited, Stevenage, Hertfordshire, England, a British company
Filed Oct. 15, 1965, Ser. No. 496,581
Claims priority, application Great Britain, Nov. 13, 1964, 46,423/64
14 Claims. (Cl. 200—76)



1. A switch unit comprising:
two elongated, relatively thin, strip-like elements, the two elements being parallel with their longitudinal faces being spacedly and oppositely disposed from each other;
at least two pairs of fixed electrical contacts mounted on the face of at least one support element at longitudinally spaced positions thereon, each pair of fixed electrical contacts being operatively associated with a pair of contact carriers mounted on a plunger;
means mounted on strip-like elements for supporting at least two plunger members for sliding movement transversely with respect to the faces of the supporting elements;
at least two plunger members supported by the plunger support means; and
a pair of contact carriers, having contacts carried thereby, pivotally mounted on each plunger member in such manner so as to be disposed in the space between the support elements, the contact carriers being spring loaded and so arranged on their respective plunger members that upon appropriate depression of either plunger member the contact carriers associated therewith will be moved angularly past a dead center position whereafter the spring will be effective to cause them to snap into a position wherein the contacts carried thereby will bridge the appropriate pair of fixed contacts carried by the support element.

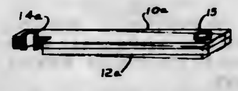
3,291,934
LEVEL INDICATING SWITCH
Hugh H. Mealy, 427 28th Ave., Longview, Wash.
Filed Nov. 2, 1964, Ser. No. 408,132
4 Claims. (Cl. 200—84)

1. A fluid level detecting device, comprising:
a hollow housing adapted to move with said fluid level;
flexible support means attached to said housing and normally hanging vertically for supporting said housing in a normally vertical position with its axis vertical when said fluid is below a predetermined level and for supporting said housing in an inclined position with its axis inclined to the vertical when said fluid exceeds said predetermined level and moves said housing;
two pairs of mercury switches comprising elongated tubes;
means in said housing for supporting said switches with the longitudinal axis of each switch inclined with respect to the housing axis by substantially the same acute angle, and with the lower ends of the switches circumferentially spaced substantially uniformly about the housing axis;
said switches each containing a pair of switch contacts at the lower end thereof and a pool of mercury such that all of said pairs of contacts are closed by the



mercury in the switches in said vertical position of said housing and at least one of said pairs of contacts is opened in any inclined position of said housing greater than a predetermined minimum angle; and
means for connecting said two pairs of switch contacts in a series circuit so that when the fluid level rises and moves said housing from said vertical position to said inclined position said series circuit is opened, and when the fluid level falls and moves from said inclined position to said vertical position such series circuit is closed, to produce electrical signals indicating the level of the fluid.

3,291,935
THERMOSTAT ACTUATORS OF RESINOUS MATERIAL
Cornelius B. Murphy, 51 Cedar Lane, Scotia, N.Y., and Reginald J. Boot, 1356 Clifton Park Road, Niskayuna, N.Y.
Filed Sept. 25, 1963, Ser. No. 311,504
7 Claims. (Cl. 200—113)



1. A thermostat actuator comprising two resinous components joined at spaced points adjacent the longitudinal ends thereof, one of said components comprising an essentially pure, unfilled, polymer resinous material, and the other component having a low linear coefficient of thermal expansion relative to said one component and formed of a resinous material filled with material having a relatively low linear coefficient of thermal expansion.

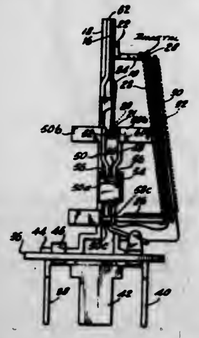
3,291,936
TIME DELAY SNAP SWITCH WITH BIMETALLIC PULL RIBBON
George G. Merkl, New Milford, N.J., assignor, by mesne assignments, to Tung-Sol Industries, Inc., Newark, N.J., a corporation of Delaware
Original application Sept. 24, 1963, Ser. No. 311,133. Divided and this application Dec. 1, 1965, Ser. No. 525,279
4 Claims. (Cl. 200—113)

2. In a snap switch, the combination comprising:
(a) a frame;
(b) two spaced apart stops attached to said frame;
(c) a resilient metallic plate having one end fixedly secured to the frame and the other end freely movable between the spaced apart stops, said plate having two

substantially longitudinal slots which define a bowed centrally located vane;

(d) anchor means on said metallic plate, said anchor means having an arm upstanding from the plane of the metallic plate that can be pivoted back and forth on said metallic plate to cause the bowed centrally located vane to curve snapping the free end of the plate back and forth between the two spaced apart stops;

(e) an expansible pull ribbon having on one side thereof a first metal with a small coefficient of expansion at lower temperatures and with a higher coefficient of



expansion at higher temperatures and having on the other side thereof a second metal with a coefficient of expansion at lower temperatures which is greater than the coefficient of expansion of the first metal at lower temperatures, said pull ribbon being attached at one end to the frame and at the other end to the arm upstanding from the plane of the plate to position the arm so that it holds the free end of the plate adjacent one of the spaced apart stops at lower temperatures and against the other of the spaced apart stops when some higher temperature is exceeded; and

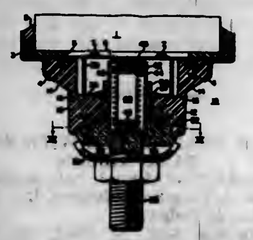
(f) an insulated electrical heating wire positioned adjacent the pull ribbon.

3,291,937

EXPLOSIVE DISCONNECT HAVING THE EXPLOSIVE MEANS THERMALLY AND ELECTRICALLY ISOLATED FROM RESISTANCE IGNITION MEANS

Charles H. Carothers and Philip W. Bogner, Bloomington, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 11, 1965, Ser. No. 494,340
9 Claims. (Cl. 200—115)



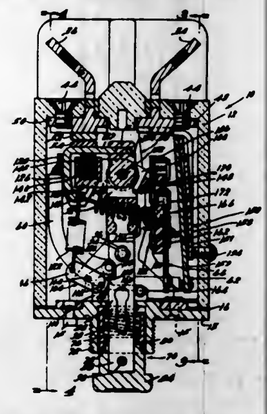
9. A circuit interrupter comprising an insulating housing containing a spark gap, an electrical resistance heating means connected in electrical parallel across the gap, an explosive means for disconnecting the circuit disposed in close proximity to the resistance means, the resistance means adapted to ignite the explosive means upon being heated by a continuous flow of current, the explosive means being adapted to rupture the housing and to remove an electrode forming the gap from the housing, the explosive means being further effective to disconnect the resistance means connected across the gap, the explosive means being thermally and electrically isolated from the gap and resistance means under normal operating conditions and current flow.

3,291,938

CIRCUIT BREAKER

Martin V. Zabaty, Jackson, Mich., assignor to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Filed Feb. 16, 1965, Ser. No. 433,091
8 Claims. (Cl. 200—116)



1. An electric circuit breaker comprising a housing, a stationary contact within said housing, a movable contact engageable with said stationary contact, a releasable plunger assembly for effecting movement of the movable contact into engagement with said stationary contact, a trip device having a set condition for maintaining said contacts in engagement and a tripped condition for releasing the engagement between the stationary and movable contacts in said tripped condition in response to a preselected condition in said breaker, and means operably connected to said plunger assembly for relating the motion of said assembly mechanism to said movable contact and engageable with said trip device for urging the engagement of said movable and stationary contacts during at least a portion of said motion and relieving said movable contact from said engagement when said preselected conditions are sensed including support means supporting said movable contact in pivotal relation to said plunger assembly and biasing means including resilient means resiliently engageable with said support means for urging said movable contact into engagement with said stationary contact, said biasing means including pivot arm means pivotally connected to said operating mechanism and having one end releasably in engagement with said trip device and a portion of the other end thereof including means for fixedly supporting said resilient means on said pivot arm means.

3,291,939

FUSE STRUCTURE HAVING ARC-QUENCHING SLEEVE

Paul C. Hitchcock, Plum Island, Mass., assignor to The Chase-Shawmut Company, Newburyport, Mass., a corporation of Massachusetts

Filed Mar. 4, 1964, Ser. No. 349,453
7 Claims. (Cl. 200—120)

1. An electric fuse comprising in combination:

(a) a support of organic insulating material defining a transverse passage;

(b) metallic means cladding opposite sides of said support;

(c) a fusible element threaded through said passage having ends situated outside said passage and conductively connected to said metallic means; and

(d) gas-evolving means responsive to fusion of said fusible element and kindling of an arc for establishing a gas-blast moving the terminals of said arc beyond the break formed upon fusion of said fusible



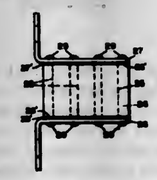
element between said metallic cladding means along said metallic cladding means in substantially opposite directions, said gas-evolving means including a sleeve of a heat-shrinkable organic insulating material shrunk under stress around said support and around said metallic means, said sleeve being tightly clamped against both ends of said passage and being tightly clamped against the portions of said metallic means adjacent said passage.

3,291,940

HIGH INTERRUPTING CAPACITY FUSES HAVING CASINGS OF INORGANIC MATERIAL

Frederick J. Kozacka, South Hampton, N.H., and Erwin Salzer, Walton, Mass., assignors to The Chase-Shawmut Company, Newburyport, Mass.

Filed June 15, 1964, Ser. No. 376,417
3 Claims. (Cl. 200—120)



1. An electric fuse comprising in combination:

(a) a plurality of fusible elements of a high current-limiting action metal;

(b) a plurality of separate bodies of quartz sand each embedding one of said plurality of fusible elements;

(c) a pair of spaced terminal plates conductively connected by said plurality of fusible elements; and

(d) a prismatic block of precompressed asbestos cement having a pair of end surfaces and defining a plurality of bores extending at right angles to said pair of end surfaces, the axes of said plurality of bores being situated in a common plane parallel to a pair of outer surfaces of said block, each of said plurality of fusible elements and each of said plurality of bodies of quartz sand being housed in one of said plurality of bores, said pair of terminal plates covering said pair of end surfaces of said block; and

(e) self-tapping drive pins projecting through said pair of terminal plates into said pair of end surfaces of said block for securing said pair of terminal plates to said block.

3,291,941

CURRENT-LIMITING FUSE PRECLUDING OVERSHOOT OF THE LET-THROUGH CURRENT PEAK OVER THE FUSING CURRENT PEAK

Erwin Salzer, Walton, Mass., assignor to The Chase-Shawmut Company, Newburyport, Mass.

Filed July 26, 1965, Ser. No. 474,748
4 Claims. (Cl. 200—120)



1. A current-limiting fuse precluding overshoot of the let-through current peak over the fusing current peak comprising in combination:

(a) a tubular casing of insulating material;

(b) a pair of terminal elements closing the ends of said casing;

(c) a pulverulent arc-quenching filler inside said casing;

(d) a fusible element in ribbon-form inside said casing, submersed in said filler and conductively interconnecting said pair of terminal elements, said fusible element defining a plurality of serially related points of reduced cross-sectional area; and

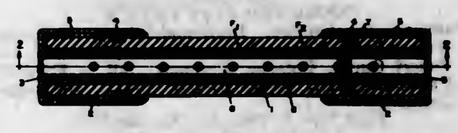
(e) sandwich plate means of a gas-evolving insulating material for said fusible element arranged to sandwich only portions of said fusible element situated between said plurality of points of reduced cross-sectional area and to expose all of said plurality of points of reduced cross-sectional area to the immediate action of said arc-quenching filler.

3,291,942

ELECTRIC FUSE WITH SEPARATE QUARTZ FILLERS HAVING DIFFERENT GRAIN SIZES

Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.

Filed July 26, 1965, Ser. No. 474,778
3 Claims. (Cl. 200—120)



1. An electric time-lag fuse comprising in combination:

(a) a tubular casing of insulating material;

(b) a pair of terminal elements closing the ends of said casing;

(c) a ribbon fuse link of a metal having a relatively high fusing point and having a plurality of serially related points of reduced cross-sectional area conductively interconnecting said pair of terminal elements;

(d) a link-severing relatively low fusing point metal arranged on said fuse link off the center thereof;

(e) a transverse partition subdividing said casing into a relatively long compartment and a relatively short compartment, said relatively short compartment housing said link-severing metal;

(f) a relatively fine quartz sand filler finer than U.S. Standard Sieve Number 40 in said relatively long compartment; and

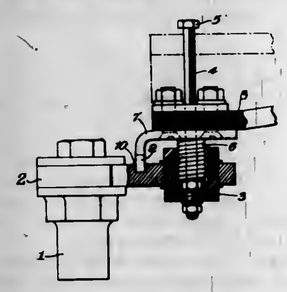
(g) a relatively coarse quartz sand filler coarser than U.S. Standard Sieve Number 20 in said relatively short compartment.

3,291,943
TIME-LAG FUSE WITH RIBBON FUSE LINK FOLDED IN LONGITUDINAL AND IN TRANSVERSE DIRECTION
Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Jan. 7, 1966, Ser. No. 519,276
6 Claims. (Cl. 200—120)



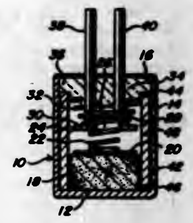
1. A time-lag fuse comprising:
(a) a casing of insulating material;
(b) a pulverulent arc-quenching filler inside said casing;
(c) a pair of terminal elements closing the ends of said casing; and
(d) a ribbon fuse link of a high fusing point metal inside said casing surrounded by said arc-quenching filler and conductively interconnecting said pair of terminal elements, said fuse link including an axially inner wedge-shaped portion formed only by a pair of flanges enclosing an acute angle, said pair of flanges defining serially related points of reduced cross-sectional area and said pair of flanges supporting an overlay of a link-severing low-fusing point metal, said fuse link further including a pair of axially outer internal connector tabs each formed by an extension of one of said pair of flanges and each having a larger cross-sectional area than any of said points of reduced cross-sectional area of said pair of flanges and each of said pair of connector tabs being bent in a direction longitudinally of said fuse link at a first point to form a first loop toward the center of said pair of flanges and each of said pair of connector tabs being bent in a direction longitudinally of said fuse link at a second point spaced from said first point to form a second loop away from the center of said pair of flanges and toward one of said pair of terminal elements.

3,291,944
TENSIONED FUSE DEVICE
Wolfgang Breckmäller, Dortmund-Syburg, Germany, Werner Busch, Knapsack, near Cologne, Germany, and Robert Quack, Cologne, Germany (all % Friedrich Uhde G.m.b.H., Degginstrasse 10–12, Dortmund, Germany)
Filed Nov. 9, 1964, Ser. No. 409,777
7 Claims. (Cl. 200—121)



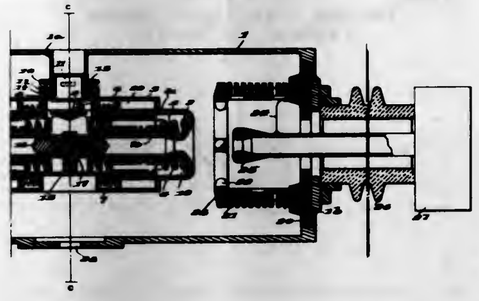
1. In a tensioned fuse device for the anodes of electrolytic cells comprising an electrically conductive contact plate, means for attaching said contact plate to a current supply source, an electrically conductive current transmitting member, a soldered connection securing said contact plate to said transmitting member, said contact plate and said transmitting member being current carrying elements, resilient means reacting between said current carrying elements for moving out of contact with each other when said soldered connection melts to interrupt the current between them, one of said elements being movable in a predetermined path away from the other of said elements when said connection melts, the improvement which consists in, an insulated pin being between said current carrying elements, said pin having a contact projection normally spaced from said one element and in said path of motion whereby said one element strikes said projection to indicate the current interruption when said elements are spread apart by said resilient means, said resilient means being a coil spring coaxially mounted about said insulated pin, an insulated body being swivelly mounted on one of said current carrying elements, and said pin and coil spring being secured within said body.

3,291,945
THERMAL SWITCH HAVING TEMPERATURE SENSITIVE PELLET AND MOVABLE CONTACT
Phillip Edward Merrill, Don C. Barnett, and Emil Robert Plasko, all of Kettering, Ohio, assignors to Micro Devices Corp., Dayton, Ohio, a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 437,219
2 Claims. (Cl. 200—142)



1. In combination, in a miniature fuse: a metallic cup-shaped casing having a horizontal bottom, a cylindraceous side wall, an upper inward flange and a transverse shoulder adjacent said inward flange; a thermally collapsible pellet adjacent said bottom; a relatively strong vertical compression coil spring with its lower end exerting a downward pressure on said pellet; a hat-shaped member having a crown, a vertical cylindraceous wall, and a rim, with said crown on and receiving the upper end of said strong spring within said crown; a relatively weak vertical compression coil spring with its lower end on said rim of said hat-shaped member; a relatively rigid insulator cover member in said casing with the top of its edge engaging the under side of said inward flange, and with its under side engaging said transverse shoulder and the upper end of said relatively weak spring; two vertical line conductors passing through said insulator cover member and having lower ends engaging said crown when said pellet is not collapsed, said relatively weak spring moving said crown away from said ends of said line conductors when said pellet is thermally collapsed, the top of said crown being flat and receiving the upper end of said strong spring, the lower ends of said conductors being flat, said weak spring being relatively wider at its upper end and relatively narrower at its lower end, said weak spring being held spaced from said conductors by said wider upper end against said insulator cover member and by said narrower lower end against said rim.

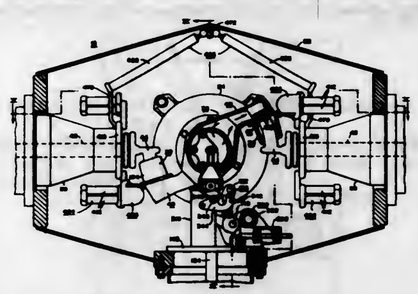
3,291,946
GAS-BLAST CIRCUIT BREAKER WITH MEANS FOR THROTTLING GAS FLOW DURING A SWITCHING-OUT OPERATION
Helmuth Schubert, Wettingen, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed May 27, 1964, Ser. No. 370,533
Claims priority, application Switzerland, June 28, 1963, 8,057/63
7 Claims. (Cl. 200—148)



1. In a circuit breaker of the gas-blast type the combination comprising a housing defining therein at least one load breaking chamber constantly under gas pressure and containing a pair of hollow main contact members and a stationary auxiliary contact member, one of said main contact members being movable and the other being stationary, an exhaust valve for each of said hollow main contact members controlling flow of pressurized gas through the same during a switching-out operation, a resistance element within said chamber and through which said auxiliary contact member is connected to said stationary main contact member, said resistance element surrounding said stationary main contact concentrically and serving also as a carrier for said auxiliary contact member which is located intermediate said movable and stationary main contact members when in their switched-out position, said movable main contact member being engageable with said auxiliary contact member prior to effecting engagement with said stationary main contact member, said exhaust valve cooperable with said stationary main contact member being closed to cut off flow of pressurized gas therethrough substantially simultaneously with disengagement as between said movable main contact member and said auxiliary contact member during a switching-out operation, and means effecting a throttling of the flow of pressurized gas through said hollow movable contact member during the latter part of a switching-out stroke thereof subsequent to disengagement as between said hollow movable contact member and said stationary auxiliary contact member.

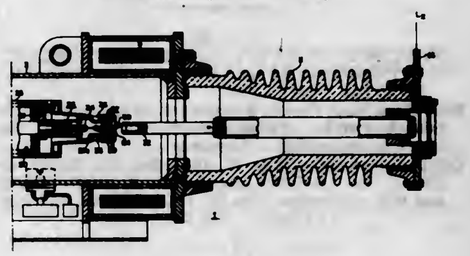
3,291,947
INTERRUPTING STRUCTURES FOR COMPRESSED-GAS CIRCUIT INTERRUPTERS HAVING DOUBLE-BREAK HOLLOW ROTATIVE MOVING CONTACT-ARM ASSEMBLY
Roswell C. Van Sickle, Wilkinsburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 12, 1964, Ser. No. 374,708
16 Claims. (Cl. 200—148)

1. A high-voltage compressed-gas circuit interrupter including an upstanding insulating column structure, an insulating operating rod extending upwardly interiorly of said column structure, an interrupting head surmounted upon said column structure and having a pair of terminal bushings extending therewithin, a pair of spaced stationary contacts secured to the interior ends of the terminal bushings, a rotative hollow cross-arm bridging contact assembly adaptable for rotation in a single direction about an axis, said rotative bridging contact assembly making separable engagement with the pair of spaced stationary



contacts, operating crank means interconnecting the upper end of said insulating operating rod with said rotative bridging cross-arm assembly, and a blast valve disposed adjacent the hub portion of the rotative bridging contact assembly for controlling an outward flow of high-pressure gas through the opposed hollow arms of said assembly.

3,291,948
ORIFICE STRUCTURE FOR COMPRESSED GAS-CIRCUIT INTERRUPTER
James M. Telford, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 6, 1964, Ser. No. 387,823
6 Claims. (Cl. 200—148)

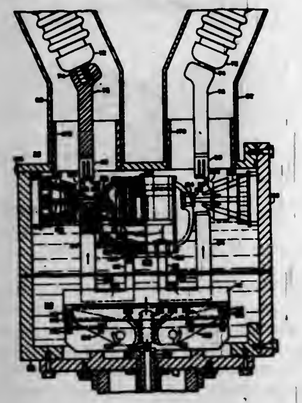


1. A single orifice structure for a gas-blast circuit interrupter including a generally cylindrically-shaped insulating member having a restricted orifice opening intermediate the ends thereof, lateral open venting means in the side wall of the orifice structure on the downstream side of the restricted orifice opening comprising at least four uniformly-spaced lateral vents, said venting means being disposed in immediate proximity to the restricted orifice opening, and the lateral open venting area being substantially one-half that of the restricted orifice opening.

3,291,949
FLUID-BLAST CIRCUIT INTERRUPTERS HAVING IMPROVED ARC SPLITTER STRUCTURE
Charles F. Cromer, Trafford, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1964, Ser. No. 397,512
14 Claims. (Cl. 200—148)

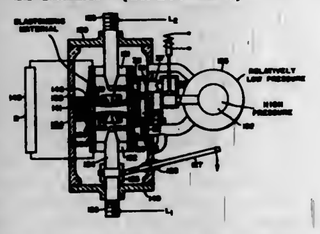
1. A circuit interrupter comprising a plurality of interrupting and pressure-generating contacts connected in series circuit relation which open and close at substantially the same time to break and complete an electrical

circuit, a pressure chamber, said pressure-generating contacts being disposed to break and complete the electrical circuit within said pressure chamber and to generate a pressure therein, said interrupting contacts being disposed to break and complete the electrical circuit externally of said pressure chamber, said pressure chamber having opposed side orifice openings with one orifice open-



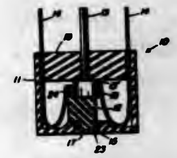
ing disposed adjacent each of said interrupting contacts, arc-interrupting means including an arc splitter structure disposed adjacent said interrupting contacts diametrically opposite the opposed side orifice openings in said pressure chamber, said arc-interrupting means being arranged by remote mounting to allow isolation gaps to be produced between said interrupting contacts when they are in their open position.

3,291,950
SYNCHRONOUS-TYPE FLUID-BLAST CIRCUIT INTERRUPTERS HAVING SPACED NOZZLE-SHAPED CONTACTS
Fritz Kesselring, Zurich, Switzerland, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Original application Mar. 27, 1961, Ser. No. 98,522, now Patent No. 3,215,804, dated Nov. 2, 1965. Divided and this application June 10, 1965, Ser. No. 462,936
11 Claims. (Cl. 200—148)



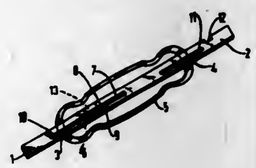
1. The combination in a fluid blast circuit interrupter of a pair of spaced relatively fixed nozzle-shaped contacts, a plurality of movable bridging segmental contacts for bridging said pair of spaced relatively fixed nozzle-shaped contacts in the closed circuit position of the interrupter, each of said segmental bridging contacts having a piston member secured thereto, blast valve means including a synchronous operator for releasing a blast of compressed fluid into the circuit interrupter for acting upon the several piston members for effecting arc establishment, means for directing the fluid blast radially inwardly toward the nozzle openings of said pair of relatively fixed nozzle-shaped contacts, said synchronous operator being effective to cause blast valve opening only near a current zero on the descending part of the current wave, and a pair of spaced relatively fixed arcing electrodes disposed along the axis of the nozzle-shaped contacts for positioning the arc axially along the nozzle-shaped openings of the contacts.

3,291,951
MINIATURE SINGLE-POLE DOUBLE-THROW SWITCH
Leo R. Kalous, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Sept. 29, 1964, Ser. No. 400,148
6 Claims. (Cl. 200—155)



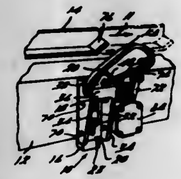
1. A miniature switch comprising: a dielectric case, a dielectric rotor having a cam surface mounted for rotation within said case, a first contact resting upon said rotor, a second and a third contact mounted in said case so that rotation of said rotor in one direction will cause electrical contact between said first contact and said second contact and prevent contact between said first contact and said third contact, and rotation in the opposite direction will cause electrical contact between said first contact and said third contact and prevent electrical contact between said first and second contacts.

3,291,952
SEALED CONTACT SET
Heinz Meier and Hugo Angermeier, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Munich, Germany
Filed July 23, 1965, Ser. No. 474,326
Claims priority, application Germany, Aug. 11, 1964, S 92,579
9 Claims. (Cl. 200—166)



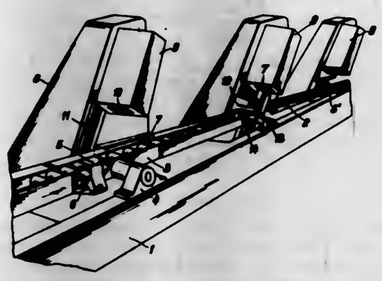
1. In a sealed electrical contact set having a pair of flat contact members each with a substantial portion of its length extending within a protective enclosure, the other portions of the contact members extending outwardly of the enclosure, with a junction between each contact member and the enclosure and with the contact members having opposed contacting portions in the enclosure, the improvement comprising:
a stiffening rib on each contact member extending through its junction into the enclosure, each said rib being operative to prevent substantial flexure of the portion of its contact member in which it extends, so that the flexure characteristics of the contact members are determined by the distance between the ribs and the ends of the members, rather than by the characteristics of said junctions.

3,291,953
SWITCH MOUNT AND PROTECTOR
Frank D. Lalk, Clawson, Mich., assignor to Arico Inc., Fraser, Mich., a corporation of Michigan
Filed May 21, 1964, Ser. No. 369,270
8 Claims. (Cl. 200—172)



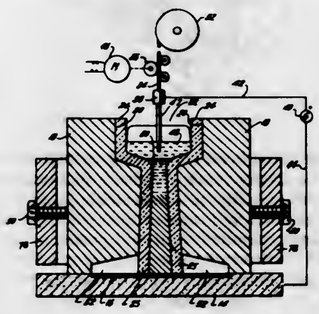
1. An actuating and protecting device for protecting and actuating a limit switch having a switch arm movable for actuating and deactuating the limit switch, said device comprising: a heavy sectioned body member, means on said body member for supporting a limit switch to said body member, a heavy sectioned lever member adapted to be engageable with the switch arm and pivotally secured to said body member for pivotal movement about a selected axis towards and away from the limit switch, first stop means comprising a pair of engageable surfaces on said lever member and said body member for limiting the movement of said lever member in a direction away from the limit switch, and second stop means on said lever member and said body member for limiting the movement of said lever member in a direction towards the limit switch whereby damage to the limit switch is prevented from overtravel of said lever member said first and second stop means substantially symmetrically located on opposite sides of said axis whereby said lever member can be utilized to actuate a limit switch located on either side of said selected axis.

3,291,954
METHOD OF AND APPARATUS FOR ELECTRO-INDUCTIVELY HEATING METAL BILLETS
Friedrich Schaffler, Remscheid, Germany, assignor to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany
Filed Mar. 20, 1964, Ser. No. 353,452
Claims priority, application Germany, Sept. 28, 1963, D 42,902
11 Claims. (Cl. 219—10.69)



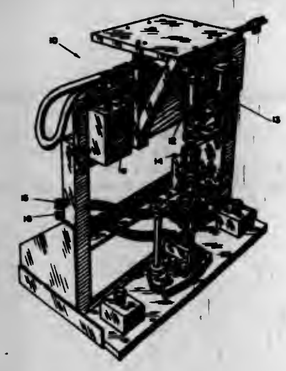
1. Apparatus for electro-inductively heating metal billets which are required to be delivered to hot-working apparatus or the like in synchronism with a predetermined working cycle, comprising a billet-transporting roller bed; said bed comprising a plurality of sections each tiltable into an inclined position; an inductor located above each tiltable section outside the path of travel of the billets on the bed; and means for conveying a billet on a tilted section along said section and into co-operation with the inductor associated therewith and for maintaining the said co-operation while the said tilted section is returned into alignment with the bed to allow another billet to be transported past the said inductor.

3,291,955
SUBMERGED MELT WELDING PROCESS AND APPARATUS
Harry I. Shrubsall, Scotch Plains, and Hiram B. Gilson, Chatham, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,781
11 Claims. (Cl. 219—73)



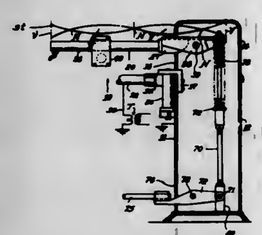
1. Method of welding a butt-joint between spaced opposing rail-end shaped faces of elongated steel members to be welded, which rail-end shaped faces have opposing surface areas corresponding to the ball, web and flanges of railroad rails, which comprises:
closing the space between such faces at the bottom of such space with electrically conductive material;
positioning a consumable metal electrode substantially vertically in such space with the lower end thereof in contact with such material;
adding granular submerged-melt welding composition in an amount sufficient to cover the starting area in the bottom of such space;
locating wall molds on opposite sides of said members adjacent such space, having inner surface portions composed of electrically non-conductive material that is substantially higher in melting temperature than that of the submerged-melt welding composition;
supplying electric welding current to such electrode and electrically conductive material at the bottom of such space to melt such granular composition and adjacent metal of such faces; and
continuously feeding such electrode downwardly toward the resulting melt until such space is filled with meld metal under a blanket of molten submerged-melt welding composition, thereby fusion welding such parts together;
said electrically non-conductive inner surface portions of the side wall molds acting to laterally confine the heat of the molten composition and weld metal as the operation progresses, thereby substantially increasing the temperature of the molten welding composition and, in turn, the electrical conductivity thereof, causing the end of the electrode to be progressively melted in the molten submerged-melt welding composition before it reaches the molten weld metal.

3,291,956
ELECTRIC WELDING HEAD
Herman Ulanet, Maplewood, N.J. (% George Ulanet Company, 413 Market St., Newark, N.J.)
Filed Mar. 8, 1965, Ser. No. 438,127
4 Claims. (Cl. 219—86)



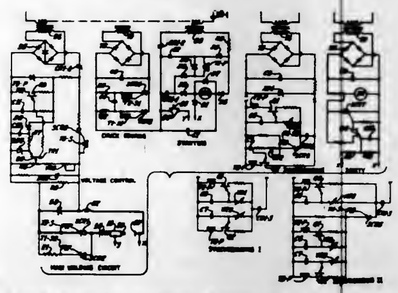
1. In a welding head comprising coaxial and opposing co-acting electrodes, each electrode mounted at a right angle to substantially non-deflectable supporting metal plates and electrically insulated therefrom, guiding means for maintaining parallelism of said plates, means for connecting said electrodes in a welding circuit and means for engaging and disengaging said electrodes with components that are to be joined by welding and means for applying pressure on rigorously coaxial electrodes without disturbing their coaxiality by a measurable amount.

3,291,957
METHOD AND APPARATUS FOR REMOVAL OF INSULATION COATING OF PARTS IN SPOT WELDING
Albert G. Bodine, Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed Oct. 12, 1965, Ser. No. 495,157
7 Claims. (Cl. 219—86)



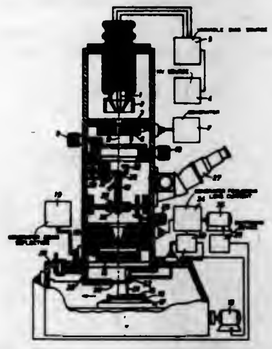
2. In a spot welding machine, the combination of:
a welding electrode adapted to contact a coated part to be spot welded;
means for effecting relative sonic vibration between said electrode and said part to remove said coating, embodying an elongated elastically vibratory bar adapted to have transverse resonant standing wave vibration set up therein, characterized by nodes and antinodes;
said electrode being mounted on said bar at a vibratory portion thereof; and
a mechanical oscillator coupled to said bar in the region of an antinode of said standing wave.

3,291,958
STUD WELDING
Paul A. Glorioso, Amherst, Ohio, assignor to Gregory Industries, Inc., Lorain, Ohio, a corporation of Michigan
Filed June 5, 1964, Ser. No. 372,764
18 Claims. (Cl. 219—98)



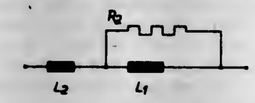
1. Apparatus for welding a stud to a workpiece comprising means for retracting a stud, means for establishing a welding arc between the stud and the workpiece, and means for plunging the stud toward the workpiece, means for initiating the plunge stroke of the stud at a predetermined time in the weld cycle, controllable means for varying the time at which the stud is plunged toward the workpiece, means for initiating the arc at a predetermined time in the weld cycle, and controllable means for varying the time at which the arc is initiated.

3,291,959
PROCEDURE AND EQUIPMENT FOR THE AUTOMATIC FOCUSSING OF THE CHARGE CARRIER BEAM IN DEVICES FOR THE WORKING OF MATERIALS BY MEANS OF A CHARGE CARRIER BEAM
Fritz Schleich, Unterkochen, Wurttemberg, and Justus Sienknecht, Frankfurt am Main, Germany, assignor, by mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 239,864
Claims priority, application Germany, Nov. 18, 1961, Z 9,079
19 Claims. (Cl. 219—121)



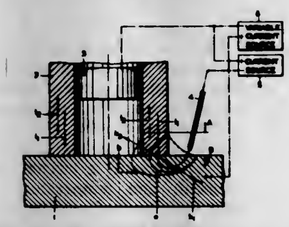
1. The method of focussing a charge carrier beam in equipment which generates a charge carrier beam for working material and which includes a current actuated focussing lens which consists of the steps of periodically varying the current flowing through the focussing lens, measuring the amplitude of the charge carrier emission from the material being worked, and setting the current flowing through the focussing lens at that value corresponding to measurement of an extreme value in the charge carrier emission amplitude.

3,291,960
CONTROL APPLIANCE FOR SOURCES OF WELDING CURRENT
E Folkhard, Bad Soden, Taunus, and Horst Keller, Frankfurt am Main-Griesheim, Germany, assignors to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 16, 1964, Ser. No. 418,654
Claims priority, application Germany, Dec. 21, 1963, K 51,696
2 Claims. (Cl. 219—131)



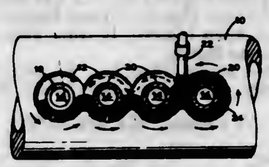
1. An arrangement for influencing the short-circuit time slope of a welding procedure comprising direct current welding means having a flat characteristic including circuit means for making a short-circuit electric arc for a meltable electrode, said circuit including a main inductor, a secondary inductor connected in series to said main inductor, an ohmic resistance in a side branch connected in parallel to said main inductor, the inductance of said main inductor being greater than that of the secondary inductor, and the resistance value of the parallel ohmic resistance being greater than the resistance of the main inductor and the secondary inductor.

3,291,961
MEANS AND METHODS FOR ARC WELDING WITH A NON-CONSUMABLE ROD ELECTRODE
Jacobus Petrus Benschop and Johannes Jacobus Broodman, both of Zoeland, Netherlands, assignors to Apparaten-en Ketelfabriek Den Haag N.V., a corporation of the Netherlands
Filed Nov. 30, 1964, Ser. No. 414,539
Claims priority, application Netherlands, Dec. 13, 1963, 301,808
5 Claims. (Cl. 219—137)



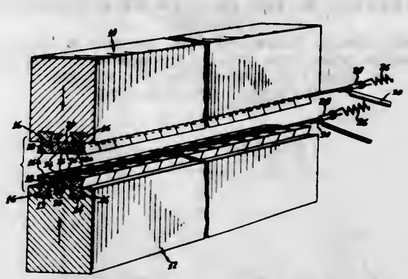
1. The method of electric arc welding from a two pole electric current source for joining two workpieces by use of a non consumable rod electrode, comprising the steps of connecting one pole of the electric current source to a first of the workpieces, contacting the two workpieces in a common surface contact zone forming a joinder edge between the workpieces, connecting the non consumable rod electrode to the other pole of the electric current source, striking an arc between the rod electrode and the second of the workpieces at a fixed distance near enough to the zone of contact to cause the material in both workpieces at the zone of contact to melt, moving the electrode adjacent the contacting surfaces at said fixed distance from the contact surface joint to produce the arc in a path on the surface of the second workpiece which path remains at a constant distance from the joint, and choosing the welding current magnitude with the position of the poles at the two workpieces so that the welding current through the melt assumes a marked preferential direction from the second to the first workpiece in a plane through the non consumable electrode and the nearest point of connection with the pole connected to the first workpiece whereby a force is exerted upon the melt in a desired direction by current flow between the pieces.

3,291,962
WELDMENT AND METHOD OF MAKING SAME
Robert Walker, Wadsworth, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 31, 1966, Ser. No. 539,105
8 Claims. (Cl. 219—137)



4. The method of weld uniting a plurality of tubes of circular cross section to an elongated header comprising the steps of:
(a) providing said header with a plurality of counterbores along a line which extends longitudinally of said header,
(b) arranging the tubes in a row with an end of each of them received in a counterbore,
(c) joining said tubes to said header at the junctures formed by the header and the tubes by applying localized welding heat continuously and sinuously first along one side of the tube row, around the last tube in said row, and then back along the other side of the tube row to the point of beginning while simultaneously depositing weld metal on said header between said tubes and at said junctures with semicircular deposits of weld metal on opposite sides of the line extending longitudinally of said header so that the ends of the semi-circular deposits overlap at each juncture along said longitudinal line.

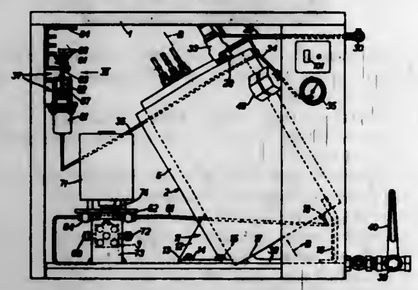
3,291,963
RADIANT HEAT SEALING MEANS
Edward W. Wetzel, Hillside, N.J., assignor to Waldetron Corporation, Newark, N.J., a corporation of New Jersey
Filed Apr. 10, 1964, Ser. No. 358,695
11 Claims. (Cl. 219—243)



1. Heat sealing means comprising a pair of support members having confronting surfaces and disposed in confronting relation for movement toward and away from each other in said relation each of said support members having laterally spaced holding means on said surface thereof, a series of ceramic members secured to each of said members by said holding means and collectively provided with a longitudinal groove and outer clamping surfaces at opposite sides of said groove extending longitudinally thereof, said groove and said clamping surfaces of one of said series of ceramic members confronting the groove and the clamping surfaces

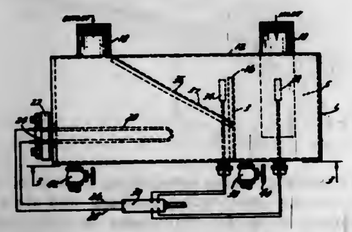
of the other series of ceramic members, and an electrically heated sealing member disposed within one of said grooves, each of said support members having a pair of laterally spaced longitudinally extending dove-tail grooves in said surface thereof, said holding means being secured in said grooves and having outwardly projecting portions engaging said ceramic members for securing them to said support.

3,291,964
IMMERSION HEATER STEAM BOILERS
Gerald A. Williams, Cranley Green, England, assignor to Bastian and Allen Limited, Harrow, England, a corporation of Great Britain
Filed May 4, 1964, Ser. No. 364,684
Claims priority, application Great Britain, May 7, 1963, 18,666/63
2 Claims. (Cl. 219—271)



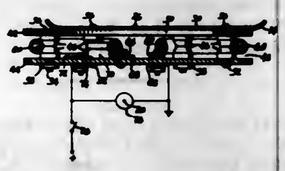
1. A steam generation plant comprising support means, a boiler shell including a cylindrical side wall, a flat upper disc and a flat lower disc closing the ends of the cylindrical side wall and electrical heater elements supported from said shell inside said shell, said boiler shell being mounted on said support means with the longitudinal axis of said cylindrical side wall inclined to the vertical by an angle of between 20° and 60°, a live steam delivery passage opening into the boiler shell through said upper disc adjacent the upper edge of said upper disc, and a blow-down delivery passage opening into the boiler shell through said lower disc adjacent the lower edge of said lower disc.

3,291,965
ELECTRIC WATER HEATER WITH SEDIMENT CHAMBER
Gordon Hatch, Milwaukee, Wis., assignor to Hatco Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 9, 1963, Ser. No. 315,025
8 Claims. (Cl. 219—314)



1. In a heater, the combination with a main tank having a heating element in a lower portion thereof, baffle means of less height than the main tank but extending to a level above the heating element for partially segregating a sediment chamber from the main tank portion in which the heating element is disposed, the baffle means partitioning the sediment chamber against direct communication with said lower portion of the main tank and providing an opening affording communication substantially directly between the top of the sediment chamber and an upper portion of the main tank, a supply pipe opening into the sediment chamber, a drain pipe opening from the sediment chamber, a liquid-delivery pipe opening from the said main tank portion outside of the sediment chamber, a thermostat operatively connected to control said heating element and having an energizing bulb disposed within the sediment chamber in the path of liquid delivered thereto through said pipe, and an overtemperature thermostat operatively connected to control said heating element and having a bulb located in the main tank externally of said chamber at a level higher than that of the heating element and lower than the level of communication between the sediment chamber and the main tank.

3,291,966
HEATING ELEMENT
Albert L. Bunting, Dearborn, Mich., assignor to The Interstate Sanitation Company, Detroit, Mich., a corporation of Ohio
Filed Apr. 27, 1964, Ser. No. 362,687
4 Claims. (Cl. 219—371)

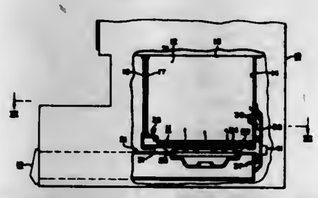


1. In combination with a blower having a casing, and means defining a blower inlet opening in said casing; a heating assembly comprising a circular plate having an area greater than the area of said inlet opening, a plurality of insulating posts supported upon said casing around the periphery of said inlet opening and fixedly secured to said plate to support said plate in spaced relationship from said casing to define an annular inlet passage between said plate and said casing coaxial with said inlet opening, an electrical heating element supported upon said posts within said inlet passage extending substantially entirely around the periphery of said inlet opening with opposite ends of said heating elements circumferentially spaced from each other to form a circumferential gap in said heating element, and temperature responsive means for controlling operation of said heating element connected to one of said opposite ends of said heating element and located within said inlet passage adjacent said gap.

3,291,967
DOMESTIC RANGE
Carl W. Tiss, Washington Township, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 27, 1964, Ser. No. 340,210
2 Claims. (Cl. 219—392)

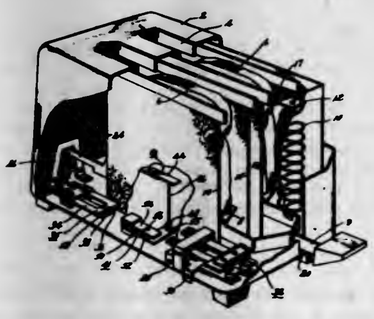
1. A domestic range comprising;
wall structure including a horizontal shelf member,
a pair of side walls, a top wall and rear wall defining an oven enclosure,
a slidable member having a horizontal top surface disposable below said shelf member,
a plurality of heating units provided on said surface,
said slidable member being movable from a first position wherein one of said surface units is disposed beneath said oven enclosure to a second position wherein said unit is exposed for surface heating utensils, and

means for transfer of heat energy from said one heating unit to said oven enclosure,
whereby said heating unit is a source of heat energy for said oven enclosure when in said first position and a source of heat energy for heating of utensils when in said second position, said heat transfer means comprising the combination of



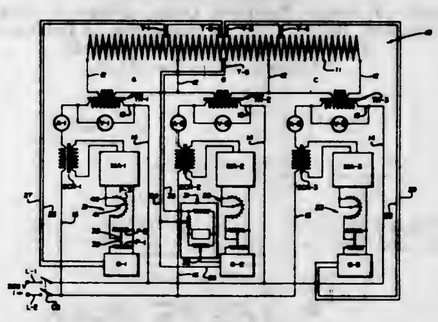
said slidable member having an opening located below said top surface and near said one heating unit,
said wall structure defining a duct communicating with said oven enclosure and said opening, to thereby transfer heat energy to said oven enclosure by convection.

3,291,968
CONTROL MECHANISM FOR AN ELECTRIC COOKING APPLIANCE
Paul V. Snyder, Fullerton, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 11, 1963, Ser. No. 329,622
11 Claims. (Cl. 219—489)



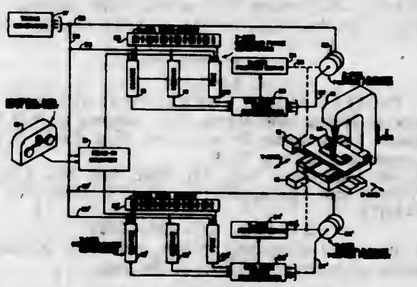
1. In an electrically operated cooking appliance including a main heater and a line switch for controlling the main heater, manually operated means to close said line switch to initiate a cooking cycle; latch means to maintain said line switch closed; electrically operated release means for said latch means to terminate the cooking cycle; a detector switch in electrical series with the line switch to energize the main heater when closed; means responsive to the temperature of the food being cooked for opening said detector switch when the cooking operation is complete; an electrically operated control switch which when closed, forms a series electrical control circuit with said release means while said series control circuit is in electrical parallel with said detector switch; and means for operating said control switch to its closed position in the series circuit with said detector switch and line switch and further connected in series with said release means, and said release means is operated when said line and control switches are closed and said detector switch is open.

3,291,969
TEMPERATURE CONTROL SYSTEM FOR A DIFFUSION FURNACE
Boris J. Speransky, Menlo Park, and Cecil A. Lasch, Jr., Redwood City, Calif., assignors to Electroglas, Incorporated, Redwood City, Calif., a corporation of California
Filed Oct. 18, 1963, Ser. No. 317,268
12 Claims. (Cl. 219—503)



1. In a diffusion furnace, means forming at least one zone, heating means disposed in the zone, a source of power, a transformer connected to the heating means, a saturable core reactor connected to the source of power and to the transformer for controlling the power supplied to the transformer, temperature sensing means disposed in said zone, means providing a predetermined set point temperature connected to said temperature sensing means for providing a signal proportional to the difference between the measured temperature and the set point temperature, a galvanometer connected to said temperature sensing means and said means providing a set point temperature, a resistive network and means including a magnetic amplifier connecting said resistive network to said saturable core reactor, said resistive network providing a constant output impedance for said galvanometer and in addition providing means for regulating the signal from said galvanometer from zero through 100 percent.

3,291,970
AUTOMATIC CONTROL APPARATUS
John T. Evans and Leroy U. C. Kelling, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Filed Nov. 21, 1962, Ser. No. 239,285
7 Claims. (Cl. 235—151.11)



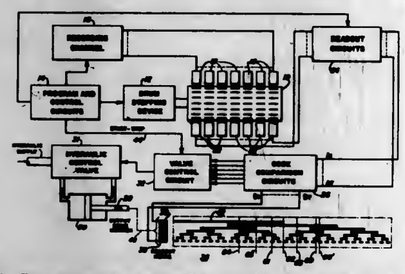
1. In an object positioning system wherein a commanded position of said object is represented by a phase-coded command signal and the actual position of said object is represented by a phase-coded position signal, means for ascertaining the presence of said object within a preselected distance from said commanded position comprising, a first bistable element normally residing in a first state and operative to assume a second state within a preselected time interval before and after occurrence of

said command signal, and a second bistable element controlled by said first bistable element and responsive to said position signal to assume a first or second state in accordance with the condition of said first bistable element.

3,291,971
CONTROL SYSTEM

Maurice J. Dunne, Newtown, Conn., assignor to Unimation, Inc., Bethel, Conn., a corporation of Delaware

Filed Feb. 25, 1963, Ser. No. 260,422
7 Claims. (Cl. 235—151.1)



1. In a control system for moving a member in accordance with numerical input data, means at each desired position of said member for producing a unique pattern representing a plural digit position number, each of said plural digit position numbers differing from the number at the adjacent position by only one digit, means responsive to numerical input data for producing a plurality of electrical signals corresponding to the respective digits of a plural digit command number representing the position to which said member is to be moved, a plurality of sensing devices one for each digit of said plural digit position number and movable as a unit in relation to said pattern in accordance with movement of said member, gate circuit means for individually comparing the output of said sensing devices with different ones of said electrical signals corresponding to different digits of said common number and developing signals representing anticoincidence of each digit of said command number with the corresponding digit of said position number, means for developing a direction signal in response to said gate circuit means associated with the highest order difference in said command and position numbers, means for modifying the sign of said direction signal in accordance with the number of coincidence signals simultaneously produced in digits of higher order than said highest order difference, and means for moving said member in a direction corresponding to said modified direction signal.

3,291,972
DIGITAL ERROR CORRECTING SYSTEMS

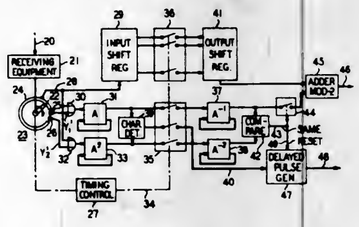
Harry A. Helm, Morristown, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York

Original application Aug. 21, 1961, Ser. No. 132,925. Divided and this application Nov. 1, 1965, Ser. No. 521,471
3 Claims. (Cl. 235—152)

1. In a data processing system, means for performing iterative arithmetic operations of the form

$$Y(n+1)=X(n+1)+AY(n)$$

where X represents successive multidigit input characters, Y represents successive multidigit output characters, A is an arithmetic operator expressible as a matrix having arithmetic significance with respect to said characters, and n is the number of the input characters, a plurality of storage means equal in number to said number of digits, adding means equal in number to the number of said digits, means connecting the outputs of said adding means to corresponding inputs of said storage means, means for applying the digits of said X characters to corresponding ones of said adding means, means for deriving the digits of said Y characters from the outputs of said storage means,

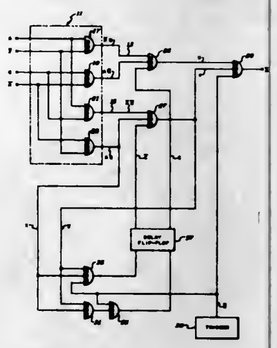


and means for implementing said matrix operation comprising feedback means for selectively feeding said outputs of said storage elements to said adding means in accordance with the entries in said matrix.

3,291,973
BINARY SERIAL ADDERS UTILIZING NOR GATES

Robert E. Rasche, Plainview, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Sept. 22, 1964, Ser. No. 398,375
10 Claims. (Cl. 235—176)

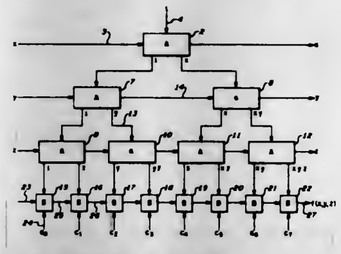


1. A serial full adder for adding a first variable composed of A and $\overline{A}$ digits to a second variable composed of B and $\overline{B}$ digits comprising means to sort each pair of incoming digits according to the binary value of the constituent digits in the pair; means to store carry and inverse carry signals for use in a succeeding digital addition; means to produce a first intermediate signal when a like combination signal is produced by the sorting means and an inverse carry signal is being stored in said storage means; means to produce a second intermediate signal when an unlike combination signal is produced by the sorting means and a carry signal is being stored in said storage means; an output NOR gate connected to receive said first and second intermediate signals; means to initiate storage of a carry signal in response to an AB signal from said sorting means; means to initiate storage of a carry signal in response to a second intermediate signal; an inverse carry NOR gate connected to receive AB signals from said sorting means and second intermediate signals; means to initiate storage of an inverse carry signal in response to an output from said inverse carry NOR gate; and an output terminal on said output NOR gate for connecting the adder to an external load.

3,291,974
PLANAR FUNCTION GENERATOR USING MODULO 2 UNPRIMED CANONICAL FORM LOGIC

Shimon Even, Haifa, Israel, assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Dec. 14, 1964, Ser. No. 418,100
6 Claims. (Cl. 235—176)



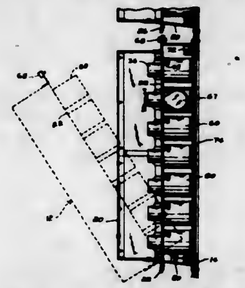
1. A logical network comprising
n rows of first logic modules and one row of second logic modules connected in tree configuration,
each said first module receiving first and second input signals at first and second input terminals and providing first and second output signals identical thereto and a third output signal which is the conjunction of said first and second input signals,
each said second module receiving third, fourth and fifth input signals at third, fourth and fifth input terminals and providing one output signal which is the modulo 2 sum of said third input signal and the conjunction of said fourth and fifth input signals,
the first output signal from each first module of a preceding row being applied to the second input terminal of a respective first module of a succeeding row,
the third output signal from said first module of a preceding row being applied to the second input terminal of a different respective first module of said succeeding row,
the first output signal from each first module of the last row of first modules being applied to the fourth input terminal of a respective second module,
the third output signal from each said first module of said last row of first modules being applied to the fourth input terminal of a different respective second module,
the output signal from a preceding second module being applied to the third input terminal of a succeeding second module.

3,291,975
SCORE BOARD SIGN STRUCTURE

Theron E. McCullough and Chad C. Beltz, Des Moines, Iowa, assignors to Fair-Play Manufacturing Co., Des Moines, Iowa, a corporation of Iowa

Filed Jan. 30, 1964, Ser. No. 341,242
8 Claims. (Cl. 240—11.2)

1. In a sign structure, comprising,
a vertical support frame having a plurality of openings at its forward side,
a horizontal row of light units comprised of a plurality of separate light panel units each including a housing enclosure, said light panel units being disposed along only the rearward side of said vertical frame and being independently pivotally secured to said supporting frame,
screen means on the forward side of said frame opposite to said panel units and covering said openings therein,
a plurality of light sockets in each of said housing enclosures,
said housing enclosures being pivotally secured to the rearward side of said frame to permit said housing enclosures to be selectively pivoted rearwardly with

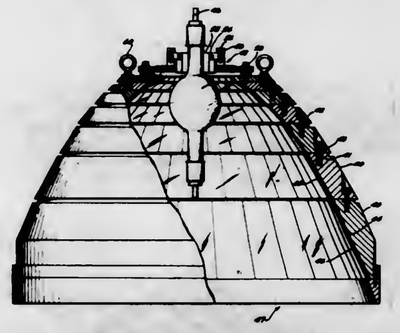


respect to said frame to permit access thereto without the removal of said screen means from said frame.

3,291,976
ILLUMINATION SYSTEM

Jerome J. Rosenblatt, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 19, 1964, Ser. No. 368,637
4 Claims. (Cl. 240—41.35)



1. An illumination system comprising:
a mirror support assembly including a plurality of juxtaposed concentric rings each having an inside diameter different than that of the other rings and a flat inner surface inclined at a predetermined angle relative to said light source, said assembly having one end smaller than the other;
a light source mounting bracket attached to said smaller end;
a plurality of flat mirrors attached to the inner surface of said rings; and
a light source attached to said mounting bracket and extending into the assembly sufficiently to enable each mirror to reflect an equal solid angle of the light energy from said source.

3,291,977
EXTENSIBLE LAMP

James E. Nafe, 1815 Miami St., South Bend, Ind.

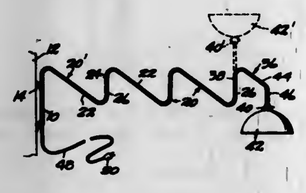
Filed Aug. 10, 1964, Ser. No. 388,625
7 Claims. (Cl. 240—73)

1. An extensible lamp comprising
a support including a substantially vertical tubular bracket,
a plurality of rigid tubular intermediate sections,
a tubular rigid end section,

said tubular bracket, tubular intermediate sections and tubular end section being rotatably connected end to end,

said rotatable connections constituting telescopic interfitting substantially vertical relatively rotatable parts having communicating bores and a circumferential shoulder on one part engaging the end of the other part,

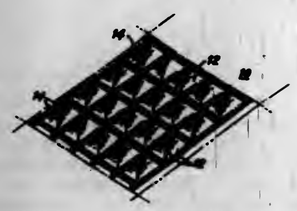
said intermediate sections having substantially parallel end and vertical portions and a central inclined portion extending from the top of one end portion to the bottom of other end portion,



an electric socket carried by the free end of said end section, and

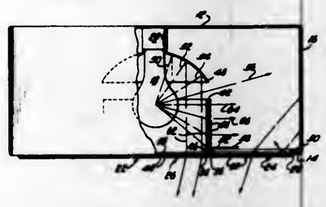
an elongated insulated electrical conductor connected to said socket and extending continuously through and concealed by said tubular end and intermediate sections and said bracket and having clearance within said communicating bores of said connection parts.

3,291,978
MODULAR LOUVER STRUCTURE
Irving Greenberg, Flushing, and Frank J. Marchhart, New Hyde Park, N.Y., assignors to Aluminum Louvre Corporation, New York, N.Y., a corporation of New York
Filed Sept. 14, 1964, Ser. No. 396,298
5 Claims. (Cl. 240—78)



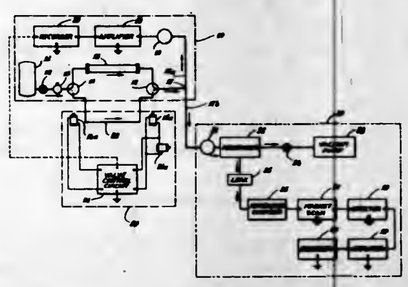
1. A louver structure comprising a plurality of transversely-spaced, longitudinally-extending horizontal first bars of substantially V-shaped transverse cross-section and including upwardly diverging first arms having transversely-aligned vertical slots formed in the upper sections thereof and extending to points above the lower edges thereof, a plurality of longitudinally-spaced, transversely-extending horizontal second bars of substantially V-shaped transverse cross-section registering with corresponding of said first slots and including upwardly diverging resilient second arms and having transversely-spaced, vertical slots formed in their lower borders embracing the lower borders of said first bars below the apices of said first slots and protuberances formed in said first arms adjacent the apices of said first slots under the pressure of the assembly of said first and second bars as they are pressed into mating registry, said protuberances projecting outwardly from the outer faces of said first arms into firm engagement with the edges of said second slots.

3,291,979
LUMINAIRE
Henry Leon Logan, Bronxville, N.Y., assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 5, 1966, Ser. No. 545,196
3 Claims. (Cl. 240—78)



3. In combination in a luminaire, including a housing, a light source positioned within said housing and means for transmitting light positioned below said light source, said means for transmitting light comprising a central portion including means for receiving light incident thereon and for concentrating the same into a comparatively narrow beam, said means for transmitting light further comprising an outer portion, a vertical portion intermediate said central and outer portion and including means for vertically redirecting incident light from said source to above said outer portion to the walls of said housing, and means formed on said outer portion for downwardly redirecting diffused light from said housing walls.

3,291,980
COMBINED CHROMATOGRAPH AND MASS SPECTROMETER ANALYZING APPARATUS
Vincent J. Coates, Westport, and Edward B. Delaney, Ridgefield, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,973
5 Claims. (Cl. 250—41.9)



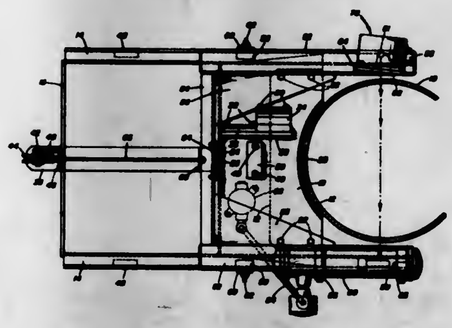
1. Apparatus for analyzing a mixture comprising:

a gas chromatographic system wherein a carrier gas transports said mixture through a chromatographic column for separating the components of said mixture and for determining the quantity of each component;

a mass spectrometer responsive to said components for identifying said components;

and carrier gas by-pass means coupled across said column for reducing the flow of said carrier gas in said column to isolate said chromatographic column after a component is detected by said gas chromatographic system for a period of time sufficient to permit said mass spectrometer to scan said component and identify said component.

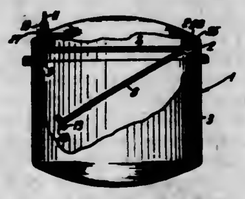
3,291,981
CALIBRATING MEANS FOR RADIOACTIVE TEST APPARATUS WHICH TESTS FLUENT MATERIAL MOVING THROUGH A CONDUIT
Arthur J. Stock, Lakewood, Ohio
(11800 Edgewater Drive, Cleveland, Ohio)
Filed June 26, 1963, Ser. No. 290,732
7 Claims. (Cl. 250—43.5)



1. An apparatus for measuring the amount of material in a conduit comprising carriage means, a source of radiant energy and detector means mounted on said carriage means, track means, support means for supporting said track means in proximity to the conduit, first and second calibrating means mounted near said track means, said carriage means being movably mounted on said track means, said carriage means being biased toward a forward position in which the conduit is positioned between said source and detector means, retracting means connected to said carriage means for moving said carriage means rearwardly against the forward bias, indexing means mounted on said track means for contacting said carriage means when said carriage means is moving rearwardly and for imparting impedance to said rearward movement of said carriage means at a predetermined first calibrating position, and for contacting said carriage means and imparting impedance to the forward bias of said carriage means at a predetermined second calibrating position, whereby said first calibrating means is positioned between said source of radiant energy and said detector means when said carriage means is in said first calibrating position and said second calibrating means is positioned between said source of radiant energy and said detector means when said carriage means is in said second calibrating position, and indicating means connected to said detector means, for indicating the relative value of radiant energy detected by said detector means.

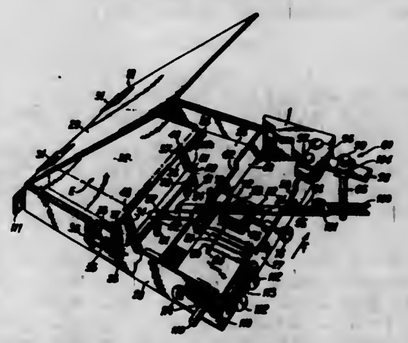
3,291,982
GRAZING INCIDENCE VACUUM SPECTROMETER HOUSING STRUCTURE
Ernst Alexander and Benjamin S. Fraenkel, Jerusalem, Israel, assignors to Yissum Research Development Company, Jerusalem, Israel
Filed Mar. 31, 1965, Ser. No. 539,213
Claims priority, application Israel, Apr. 15, 1962, 17,133
7 Claims. (Cl. 250—51.5)

1. A grazing incidence vacuum spectrometer comprising, in combination, a vacuum-tight housing adapted to withstand a high internal vacuum; a sleeve extending in vacuum-tight relation through an opening in said housing; a pair of axles extending rotatably through said sleeve in vacuum-tight relation therein, said axles being concentric with said sleeve and one of said axles being a tubular axle and the other axle extending through said tubular axle in telescoped relation therewith; a pair of arms within said housing, each secured to the inner end of a respective one of said axles and extending radially from the associated axle, said arms being positioned closely adjacent each other axially of said axles; said axles providing for independent angular adjustment of said two arms about the common axis of said axles; a diffraction grating, having a preselected radius of curvature, and a slit system supported at the free end of one of said arm; a photographic plate holder supported on the free end of the other arm, a photographic plate thereon being positioned on the Rowland circle having half the radius of curvature of the diffraction grating; said diffraction grating and said plate holder being disposed at substantially the same radius from the common axis of said axles whereby a photographic plate on said plate holder may be brought into substantial coincidence with



said diffraction grating; a source of radiation under a relatively high vacuum in operative connection with the external end of said slit system for directing radiation through said slit system to impinge on said grating; said slit system extending through another opening in said casing; a bellows in vacuum-tight connection to said casing and to said slit system and subjected on its interior to the vacuum in said housing and on its exterior to the vacuum of said source of radiation; and means for establishing and maintaining a substantial vacuum in said housing; whereby, the optical system of said spectrometer is supported from a single point which is said sleeve and said two axles, so that the interrelation of the optical parts is not effected by changes in dimension of the housing.

3,291,983
CASSETTE CASE FOR SIMULTANEOUS TOMOGRAPHY CONTAINING A STACK OF FILM ASSEMBLIES
Pierre Lemaire, 62 bis Rue de la Tour, Paris, France
Filed Apr. 29, 1963, Ser. No. 276,331
Claims priority, application France, May 8, 1962, 896,899
7 Claims. (Cl. 250—61.5)



1. Device for the simultaneous tomography of a body supported on a table of a radiographic unit, the device being adapted to be supported by a case which is movable longitudinally of the table on the side of the table opposed to said body by an X-ray source movable longitudinally of the table so that the case moves in unison with but

in the opposite direction to the X-ray source, the device having a longitudinal axis adapted to extend longitudinally of the table and containing in combination: a support, a stack of adjoining relatively movable thin assemblies, each assembly comprising a radiation-sensitive film and two intensifying screens, one of said intensifying screens disposed on each side of the film, guide means associated with the assemblies for guiding the assemblies so that they are movable relative to each other in a plurality of parallel planes in a direction parallel with said longitudinal axis, and an actuating mechanism comprising an arm mounted to pivot relative to the support about an axis substantially perpendicular to said planes from one side to the other of a first plane perpendicular to said longitudinal axis and engaging portions of the assemblies at points on the arm which are at respectively increasing distances from the pivotal mounting of the arm from one assembly to the next adjacent assembly, whereby pivotal movement of the arms from one side of the other of said first plane shifts the assemblies in said planes and in said direction to different extents, the actuating mechanism further comprising a first member which co-operates with said arm, is movable relative to the device from one side to the other of a second plane perpendicular to said longitudinal axis and adapted to co-operate with and be movable by a second member rigid with the table when the case and the device supported thereby move longitudinally of the table and means interconnecting the arm and the first member so that movement of the first member from one side to the other of said second plane causes movement of the arm from one side to the other of said first plane, whereby the films of the assemblies have formed thereon in operation of the radiographic unit images of different planes of said body, which planes depend on said distances.

3,291,984
FLEXIBLE HERMETICALLY SEALED X-RAY FILM PACK WITH ELASTIC MATERIAL IN COMPRESSION THEREIN
Eric Sigvard Wasser, Kungsholmsstrand 185, Stockholm, Sweden
No Drawing. Filed May 27, 1964, Ser. No. 370,700
Claims priority, application Sweden, May 27, 1963, 5,819/63
1 Claim. (Cl. 250—68)

An X-ray film pack comprising a hermetically sealed envelope of soft and flexible material of the class consisting of rubber and plastic, and within the envelope an X-ray film, intensifier foils on either side of the X-ray film, and an elastically compressible solid material in compression between the envelope and a said foil.

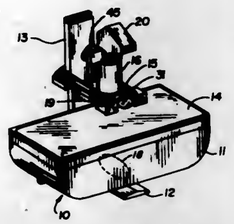
3,291,985
VIEWING APPARATUS FOR INTENSIFIED X-RAY IMAGES HAVING AN IMPROVED OPTICAL SYSTEM
Edward B. Graves, South Euclid, and Edgar J. Bastin, Chesterland, Ohio, assignors to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 5, 1964, Ser. No. 387,720
2 Claims. (Cl. 250—77)

1. In an X-ray table including a body tiltable from horizontal to vertical and return, a patient supporting top on the body, and a tower movable relative to the body along paths paralleling the table top, an image tube support structure reciprocally mounted on the tower for movement toward and away from the top, an image intensification tube and housing mounted on the support structure, the tube having input and output ends, and an optic system mounted on the tube housing near the output end to receive an ouput image, the improvement comprising:

(a) a viewing mirror mounted on said structure substantially in the plane of the input end of the image tube;

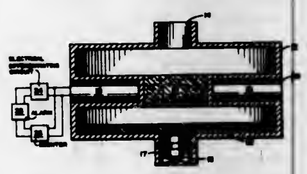
(b) said optic system being fixedly connected to the image tube housing;

(c) said optic system including means to receive an image from the output of said image tube and directed downwardly against said viewing mirror; and



(d) said optic means being constructed such that said image directed against said viewing mirror is angled outwardly with respect to the axis of the image tube as it is directed downwardly onto the viewing mirror.

3,291,986
MONITOR FOR AIR-BORNE BERYLLIUM
Irvin E. Lamb, Berkeley, Calif., assignor, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Aug. 13, 1962, Ser. No. 216,390
11 Claims. (Cl. 250—83.3)

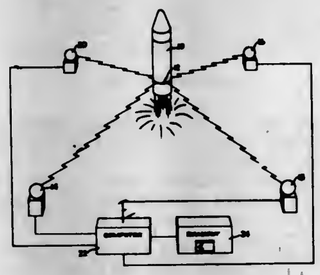


1. A monitor for air-borne beryllium or the like comprising: means for filtering particles from the air having an air permeable filter element disposed therein, and a source of radioactive particles integrally dispersed within said air permeable filter element whereby the radioactive particles from said source react with the beryllium collected upon and within said filter element producing secondary radiation proportional to the beryllium collected.

3,291,987
ALL-WEATHER THREE-DIMENSIONAL POSITION INDICATING SYSTEM
Henry R. Chope, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 8, 1963, Ser. No. 271,153
10 Claims. (Cl. 250—83.3)

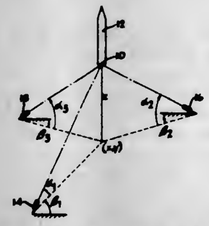
1. A position indicating system for indicating the instantaneous position of a body moving in space comprising radioactive material affixed to said body for effectively producing a single source of penetrative radiation, means independent of said body and responsive to said single source of penetrative radiation for making three independent and different measurements of said source of penetrative radiation at a plurality of widely separated points by deriving therefrom a total of at least

three independent signals, and computer means responsive to said independent signals for indicating in three



coordinates the instantaneous position of said moving body in space relative to a reference datum.

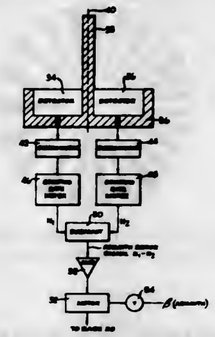
3,291,988
ALL-WEATHER THREE-COORDINATE POSITION INDICATING SYSTEM
Henry R. Chope, William R. Clore, and Leonard C. Brown, assignors to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 8, 1963, Ser. No. 271,154
13 Claims. (Cl. 250—83.3)



1. A position indicating system for tracking a body moving in spaced comprising radioactive material affixed to said body effectively producing a single source of penetrating radiation, means independent of said body and responsive to said single source of penetrating radiation for making substantially simultaneous measurements of at least three separate planes in each of which said body lies by deriving respective independent signals each systematically related to a respective one of said planes in which lies said source, and computer means for combining said independent signals to derive separate indications of three coordinates identifying the instantaneous position of said moving body in space relative to a reference datum.

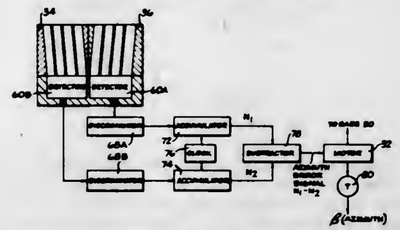
3,291,989
ALL-WEATHER ANGULAR TRACKING SYSTEM
Angelo J. Campanella, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 8, 1963, Ser. No. 271,342
9 Claims. (Cl. 250—83.3)

1. Apparatus for tracking a body moving in space and carrying radioactive material that effectively produces a single source of penetrating radiation, said apparatus comprising a radiation shield effective to stop a substantial portion of said penetrating radiation striking it, a pair of detection means each responsive to said single source of penetrating radiation by producing detection signals systematically related to the radiation detected, said detection means being disposed on respective opposite sides of said radiation shield, comparison means for comparing detection signals from the respective detection means, means responsive to said comparison means for positioning said radiation shield to make the compared signals more nearly equal, and means responsive to the position



of said radiation shield for deriving a signal indicative of the direction of said radioactive material relative to said radiation shield.

3,291,990
ALL-WEATHER ANGULAR TRACKING SYSTEM
John J. Lentz, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 8, 1963, Ser. No. 272,182
23 Claims. (Cl. 250—83.3)

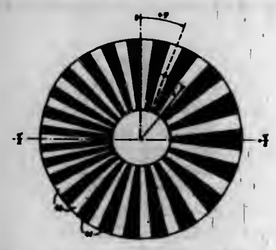


1. Apparatus for tracking a body moving in space and carrying a source such as radioactive material that produces penetrating radiation, said apparatus comprising detection means responsive to said penetrating radiation by producing detection signals systematically related to the radiation detected, a pair of director means disposed before said detection means each restricting the direction whence said penetrative radiation reaches said detection means to a respective preferred direction, comparison means for comparing detection signals related to radiation reaching said detection means from each of said preferred directions defined by said director means, motor means responsive to said comparison means for moving both said director means as a unit to make the compared signals more nearly equal, and means responsive to the position of said director means for deriving a signal indicative of the direction of said source relative to an arbitrarily chosen axis.

3,291,991
PHOTORESPONSIVE INFRARED TARGET SCANNING APPARATUS
Arno Welti, Zurich, Switzerland, assignor to Albiswerk Zurich A.G., Zurich, Switzerland, a Swiss corporation
Filed Nov. 8, 1963, Ser. No. 322,439
Claims priority, application Switzerland, Nov. 19, 1962, 13,554/62
12 Claims. (Cl. 250—83.3)

8. In infrared tracking apparatus, a rotatable scanner disc having a center and a polar gap pattern having a

gap width which varies sinusoidally in the peripheral direction, said gap width having throughout said polar pat-



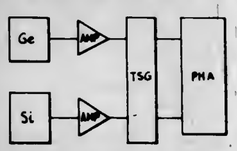
tern a circular measure in radians which is inversely proportional to the radial distance from the center of the disc.

3,291,992

PAIR OF SEMICONDUCTOR RADIATION DETECTORS HAVING DIFFERENT ATOMIC NUMBERS AND SENSITIVE REGIONS OF DIFFERENT THICKNESS

James Wakefield, Woolhampton, Derek George Waters, Reading, and Rex Anthony Pope, Tilehurst, Reading, England, assignors to Associated Electrical Industries Limited, London, England, a British company

Filed Apr. 24, 1964, Ser. No. 362,391
Claims priority, application Great Britain, May 2, 1963, 17,386/63
4 Claims. (Cl. 250—83.3)



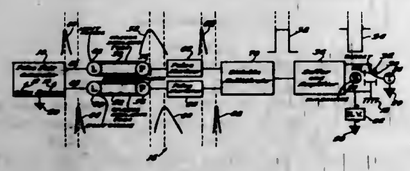
1. Radiation detection apparatus comprising a pair of solid state radiation detectors of semi-conductors having different atomic numbers and with sensitive regions of different thicknesses such that substantially equal Compton effects are produced in the electrical outputs of said detectors, each detector output feeding a separate channel, each channel including a separate amplifier, at least one of the amplifiers having means for adjusting the gain thereof, means for subtracting the electrical outputs of said detectors to eliminate Compton effects and indicating means responsive to the resultant difference between said outputs.

3,291,993

METHOD AND APPARATUS FOR PULSE PRODUCTION IN PARTICLE ACCELERATORS

Ira L. Morgan and John R. Porter, Austin, Tex., assignors to Texas Nuclear Corporation, Austin, Tex., a corporation of Texas

Filed Apr. 2, 1962, Ser. No. 184,174
16 Claims. (Cl. 250—214)



16. Apparatus for charged-particle acceleration and analogous purposes comprising a high-voltage terminal system insulated from its surroundings, pulse-generating means insulatedly spaced from the terminal system for producing periodic pulse pairs of manually variable time delay, detecting means in the terminal system, and a switch in the terminal system, operable in response to successive pulses so detected to alternate an electrical parameter in the terminal between two conditions.

3,291,994

SPROCKET SIGNAL GENERATOR WITH NOVEL APERTURE ARRANGEMENT FOR PRECISE TIMING OF SIGNALS

Albert J. Romeo, Springfield, and Torkjell Sekse and Ernesto G. Sevilla, Norristown, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 16, 1964, Ser. No. 411,497
5 Claims. (Cl. 250—219)



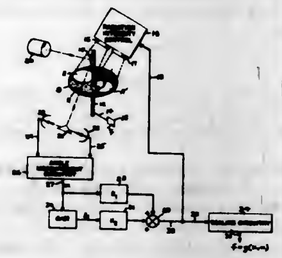
1. A sprocket signal generator to be used with a record medium having sprocket holes therein comprising: a reading station; first means in said reading station for generating a first sprocket signal in response to a first sprocket hole in a record medium passing through said reading station; second means in said reading station for generating a second sprocket signal in response to a second and sequentially positioned sprocket hole in said record medium; said first and second signals having partially coincident portions; and means responsive only to said coincident portions of said first and second signals for producing a single sprocket pulse.

3,291,995

PHOTOELECTRICALLY CONTROLLED RADIATION PRESSURE TORQUE BALANCE

Samuel Schalkowsky, Radnor, Pa.
(4003 Woodlawn Road, Chevy Chase, Md. 20015)

Filed Feb. 17, 1964, Ser. No. 345,465
18 Claims. (Cl. 250—231)



1. Apparatus for measuring very small forces, comprising in combination,

(1) a senor device rotatable about a fixed position axis of rotation and including,

(a) a sensor support element through which passes the rotational axis of said sensor,

(b) a target element fixedly secured to said sensor support element and upon which the force to be measured may be directed, said target element extending laterally of said axis of rotation so that a force exerted thereon produces a torque tending to rotate said sensor in a first sense about said axis of rotation, and

(c) a radiation receiving surface carried by said sensor support element, disposed laterally of said axis of rotation and upon which surface radiation is selectively directable to produce a torque tending to rotate said sensor about said axis of rotation in a second sense opposite to said first sense,

(2) means for freely suspending said sensor by its support element for rotation about said fixed position axis,

(3) control signal generating monitor means effective to detect angular deviations of said sensor from a predetermined reference position and generate control signals uniquely corresponding to said angular deviation and to the rate of change thereof,

(4) radiation projecting means disposed for projecting radiation onto the said radiation receiving surface of said sensor, and

(5) control means coupled to said monitor means and to said radiation projecting means automatically effective responsive to the control signals generated by said monitor means to control the quanta of radiation projected onto said sensor to thereby produce a torque on said sensor equal and opposite to that produced by the force being measured,

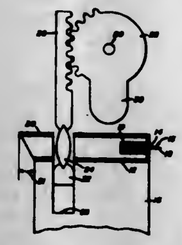
whereby, the rotation of said sensor is stopped at an angular deviation from its aforesaid predetermined reference position which uniquely corresponds to the magnitude of the force being measured.

3,291,996

CAMERA PHOTOCELL WITH MOVABLE LENS FOR MAINTAINING A RELATIVELY CONSTANT VERTICAL FIELD ANGLE AS THE CAMERA IS ROTATED

Allen G. Stimson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 29, 1963, Ser. No. 305,427
7 Claims. (Cl. 250—234)



1. An optical system for regulating the elevation of the vertical field angle from which a photoelectric cell is illuminated, comprising: a tiltable frame supporting said cell; a light deflector for directing light onto said cell; and pendular means supporting said deflector for moving at least a part of said deflector relative to said cell when said frame and cell are tilted up or down, the direction of relative movement of said deflector part being such that the angular movement of the vertical limits of the field of illumination of said cell is less than the angle through which said cell is tilted.

3,291,997

METHOD AND APPARATUS FOR TRACING FLUID FLOW THROUGH POROUS MEDIA

Edward L. Albenesius, Aiken, Clyde C. Haskell, North Augusta, and Richard H. Hawkins, Aiken, S.C., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 13, 1963, Ser. No. 323,517
5 Claims. (Cl. 250—83.1)



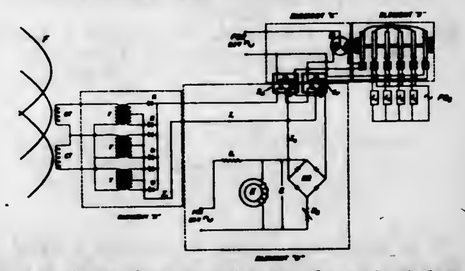
1. A method of tracing fluid flow in soil comprising drilling a plurality of substantially equally spaced holes in a circular array to a predetermined depth above the water table in the soil, drilling an access hole in the approximate center of said plurality of holes and to a greater depth, depositing in each of said plurality of holes a quantity of D_2O, placing a probe comprising an integral gamma radiation sources and neutron detector in said access hole, said gamma radiation having an energy greater than the threshold value for the (γ,n) reaction with deuterium, moving the probe in the vicinity of and relative to the depth of said plurality of holes, and measuring the neutrons produced by the (γ,n) reaction with said detector at various positions of said probe over a period of time.

3,291,998

PEAK LOAD STABILIZERS

Theodore Wildi, 1365 de Longueuil, Quebec, Quebec, Canada

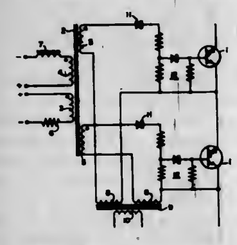
Filed Mar. 13, 1964, Ser. No. 351,726
6 Claims. (Cl. 307—35)



1. An off-peak load control system for a circuit having a feeder line, a base load with a predetermined maximum demand and a plurality of off-peak loads; said system comprising a transformer and rectifier system to convert the alternating currents supplied by the feeder lines into direct current, a pair of saturable-reactors each having control windings to carry said direct current, two tap-switches connected to reference windings of said saturable-reactors at points corresponding respectively to said maximum demand and to a differential minimum defined by said maximum demand less the largest of said off-peak loads, the saturable-reactor connected to said

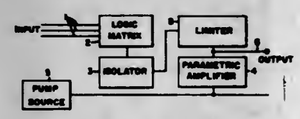
"maximum" tap-switch having a normally unsaturated power-winding, and the saturable-reactor connected to said differential "minimum" tap-switch having a normally saturated power-winding, a switch between said feeder line and each of said off-peak loads, a reversible motor associated with said switches to operate said switches in a given sequence, said motor being connected through said power-windings of said saturable-reactors to operate in a given sense so as to close said switches in said given sequence only when said control direct current is below said minimum and said "minimum" reactor's power-winding is saturated, and to start again in reverse so as to open said switches in inverse sequence only when said control current exceeds said maximum and said "maximum" reactor's power-winding saturates, and to stop whenever said control direct current has a value intermediate said maximum and said minimum.

3,291,999
ISOLATED MULTIPLE OUTPUT CIRCUIT
Kenneth Lipman, Tonawanda, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 15, 1961, Ser. No. 110,091
20 Claims. (Cl. 307—88)



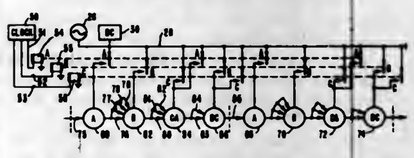
4. A magnetic amplifier comprising a saturable core, and a plurality of separate load circuits for supplying a corresponding number of loads, each load circuit comprising a load winding inductively disposed on said core and individual supply means connected to the load winding for energizing the load winding to provide an output in its load circuit in response to saturation of the core.

3,292,000
ULTRA HIGH SPEED PARAMETRIC DIGITAL CIRCUITS
Woo F. Chow, Philadelphia, Pa., assignor to General Electric Company, a corporation of New York
Filed June 19, 1961, Ser. No. 118,003
10 Claims. (Cl. 307—88)



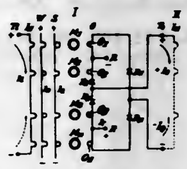
3. In combination: means for supplying a digital input signal of a predetermined frequency coded in phase; logic means responsive thereto and adapted to perform a logic operation thereon producing a logic signal in phase coding, a degenerate case parametric amplifying means adapted to receive said logic signal as an input at a common terminal and produce at said common terminal a synchronized output signal at the same frequency as said logic signal; a transistor connected between said logic means and said common terminal to provide only forward signal propagation from said logic means to said common terminal; and a limiter connected to said common terminal to limit said logic signal input and thereby provide constant amplitude output signals.

3,292,001
PARAMETRIC OSCILLATOR DATA SHIFTING APPARATUS
Gregory Constantine, Jr., Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 27, 1963, Ser. No. 291,197
5 Claims. (Cl. 307—88)



1. In a device of the character described, the combination comprising:
a pump signal generator for producing pump signals;
a phase locked oscillator, said oscillator being adapted, when excited by a pump signal, to assume either a 1 or 0 phase oscillation mode;
first and second impedance means connected respectively to the input and output of said phase locked oscillator, said second impedance means having a greater impedance than said first impedance means;
means for simultaneously applying phase signals to said first and second impedance means; and
switch means for permissively coupling said pump signal generator to said phase locked oscillator for causing said oscillator to begin oscillating, said oscillator invariably assuming the phase of said phase signal applied to the first impedance.

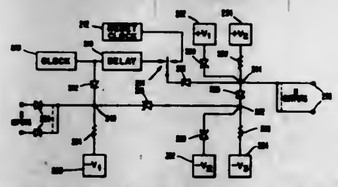
3,292,002
LOGICAL CIRCUITS
Hajime Enomoto, Ichikawa-shi, and Saburo Shiraï, Nerima-ku, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed July 13, 1965, Ser. No. 475,308
Claims priority, application Japan, Dec. 30, 1958, 33/38,355; Feb. 28, 1959, 34/5,995
15 Claims. (Cl. 307—88)



1. A logic circuit comprising a plurality of logic units each unit comprising four magnetic elements each having substantially rectangular hysteresis characteristics, each of the elements having three kinds of couplings namely, an equal odd number of input couplings, a write-in coupling, and an output coupling; the write-in and output couplings being connected in series respectively to form write-in and output ports, means connecting one input coupling from each element in series with one another to form a plurality of respective input ports the same in number as there are input couplings on an element; all the couplings of one element being coupled to magnetize in the same direction, one of the three kinds of couplings on each of the remaining elements being reversely coupled with respect to the other two kinds of couplings on the same element and each of the three kinds of ports including one of said reversely coupled couplings, means for applying a resetting pulse current having amplitude sufficient to saturate the elements to a reset port to set the unit to initial states of magnetization, the reset port comprising four couplings coupled

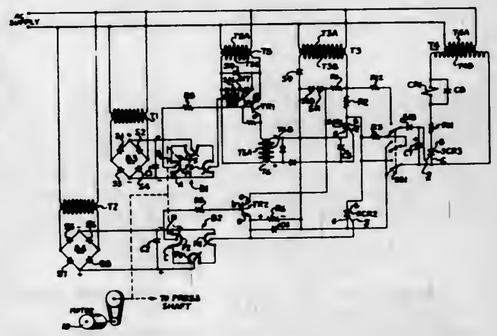
respectively to the four elements and connected in series, means for thereafter applying a write-in pulse current to the write-in port having amplitude equal to the coercive force of the elements, the write-in coupling and the reset coupling on each of the elements magnetizing each element in opposite polarities, means for applying input pulse currents to at least one of the input ports simultaneously with the application of the write-in pulse; the output port connected in a closed loop to form a bridge each output coupling being an arm of the bridge, with junctions between the arms, two opposed junctions of the bridge being plus and minus output terminals respectively, the remaining two junctions being plus and minus readout terminals respectively; four rectifying elements connected in series with the output couplings respectively the forward direction of the rectifying elements being from plus to minus of the readout terminals; means for applying a readout pulse current to the readout terminals causing an output signal to exist at the output terminals and thus retrieving the information stored into the unit by the input current; means connecting the output port of all but one unit to the input port of another unit in cascade fashion whereby a shift register is formed.

3,292,003
TUNNEL DIODE NOR LOGIC CIRCUIT
Brian Elliott Senr, Oreland, and Jack Saul Cubert, Willow Grove, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 13, 1962, Ser. No. 172,937
2 Claims. (Cl. 307—88.5)



1. In combination, a tunnel diode having two stable operating states, said tunnel diode exhibiting different potential drops thereacross in each of said stable states, said tunnel diode having an anode and a cathode, input means comprising a plurality of diodes connected together to form a logic network for providing input signals having different levels, a first backward diode connected between said input means and the cathode of said tunnel diode, a current sink connected to said input means and said first backward diode, said first backward diode so poled that conventional current may flow therethrough from said tunnel diode to said current sink, a source of periodic pulses connected to said input means, said current sink and said first backward diode, said source providing current to said current sink to reverse bias said first backward diode except during the application of said periodic pulses, said input means providing current to said current sink to reverse bias said first backward diode when one input signal level is applied, bias means connected to said tunnel diode for biasing said tunnel diode to one of said stable states, a current source, a second backward diode connected between said current source and said anode of said tunnel diode, said current source providing current flow through said tunnel diode to said current sink only when said first backward diode is forward biased such that said tunnel diode switches from said one stable state to the other stable state, a potential source, a third backward diode connected between said potential source and said cathode of said tunnel diode, output means connected to said anode of said tunnel diode for providing different output signals in accordance with different stable states of said tunnel diode, said potential source and said third backward diode providing a clamping network such that said output means provides accurate output signals, and reset means connected to said tunnel diode for switching said tunnel diode from said other stable state to said one stable state.

3,292,004
SYSTEM FOR CONTROLLING THE OPERATING PERIOD OF A RESPONSIVE DEVICE DURING EACH CYCLE OF A PRESS OR THE LIKE
Francis E. Heilberger, Elmhurst, Ill., assignor to Danly Machine Specialties, Inc., Chicago, Ill., a corporation of Illinois
Filed May 31, 1963, Ser. No. 284,715
17 Claims. (Cl. 307—88.5)



2. In a system for controlling the period of operation of a responsive device during each cycle of operation of a press or the like, the combination which comprises, means responsive to the operation of the press or the like for providing a pair of cyclically recurring output voltage signals having prescribed polarities and amplitudes at preset times, each swept through a range of values at preset times during each cycle of operation of the press or the like, control means for rendering the responsive device operative when operatively associated therewith, a first switch device connected to receive one of said signals for operatively associating the control means with the responsive device in response to said one signal passing a predetermined value within its range of values, and a second switch device connected to receive the other of said signals for operatively disassociating the control means from the responsive device in response to said other signal passing a predetermined value within its range of values and independently of the concurrent value of said one signal.

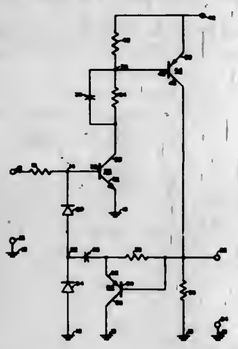
3,292,005
HIGH-RESOLUTION SWITCHING CIRCUIT
Robert E. Lee, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,653
5 Claims. (Cl. 307—88.5)

4. Time delay switching circuitry for use where high resolution is desirable comprising, in combination:
first current responsive means including first, second and third means;
power supply means connected to said second means of said first current responsive means;
input means connected to said first means of said first current responsive means for supplying an input signal thereto;
resistive means connected between said power supply means and said third means of said first current responsive means;
second current responsive means including first, second and third means, said second means being connected to said power supply means;

means connecting said first means of said second current responsive means to said third means of said first current responsive means for receiving signals therefrom;

output means connected to said third means of said second current responsive means for providing an output signal;

third current responsive means including first, second and third means, said first means and said third means of said third current responsive means being



connected to said output means and said power supply means respectively;

resistive means connected between said second means and said first means of said third current responsive means; and

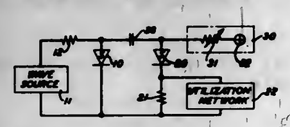
impedance means connected between said second means of said third current responsive means and said first means of said first current responsive means, any energy in said impedance means discharging through said third current responsive means.

3,292,006

STORAGE DIODE PULSE SIGNAL GENERATOR

Charles J. N. Candy, Convent Station, and Donald E. Rowlinson, Bridgewater Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 27, 1963, Ser. No. 312,225
5 Claims. (Cl. 307—88.5)



1. Apparatus for generating high-speed pulse signals which comprises

a first storage diode,

means for energizing said first diode,

a second storage diode connected in shunt with the first and commonly poled with respect thereto,

means for pre-biasing said second diode,

and means for capacitively isolating the pre-biasing means from said first diode.

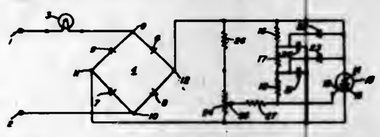
3,292,007

FULL-WAVE DIMMER CIRCUIT USING ONE CONTROLLED RECTIFIER

Jerome J. Tiemann, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 17, 1963, Ser. No. 316,948
3 Claims. (Cl. 307—88.5)

1. A control circuit for selectively varying the conduction angle of a controlled rectifier having an anode, a cathode and a gating electrode, said anode and cathode being adapted to be connected to a source of pulsating unidirectional voltage; said control circuit comprising: an integration network including at least three resistors connected in series circuit relationship from said anode to said gating electrode and capacitors connected from the junctions of said resistors to said cathode; asymmetrically conducting devices connected from the junctions of said



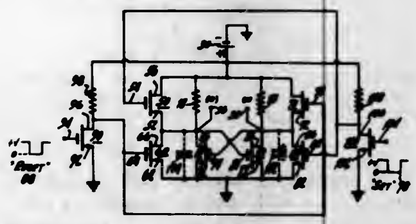
resistors to said anode, said devices being connected to provide low impedance discharge paths for said capacitors through said rectifier when conduction of said rectifier is initiated; and, means connected to said anode and said gating electrode for mixing a variable portion of the voltage supplied to said anode with the voltage from said integrating network to provide a corresponding variation in the conduction angle of said rectifier.

3,292,008

SWITCHING CIRCUIT HAVING LOW STANDBY POWER DISSIPATION

Adolph K. Rapp, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 3, 1963, Ser. No. 327,653
6 Claims. (Cl. 307—88.5)



1. The combination comprising:

first and second amplifying devices each having input and output electrodes defining a current carrying path, and having also a control electrode;

a direct current connection between the output electrode of each device and the control electrode of the other device;

a first impedance element having one terminal connected to the output electrode of the first amplifying device;

a second impedance element having one terminal connected to the output electrode of the second amplifying device;

means for applying operating potential, respectively, between the second terminal of each said impedance element and the input electrode of the associated amplifying device;

third and fourth amplifying devices having their current carrying paths connected, respectively, in circuit across the current carrying paths of the first and second amplifying devices;

fifth and sixth amplifying devices having their current carrying paths connected, respectively, across the first and second impedance elements;

a first signal receiving input terminal common to the control electrodes of the third and sixth amplifying devices; and

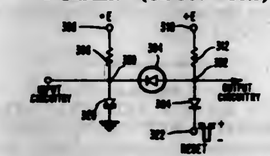
a second signal receiving input terminal common to the control electrodes of the fourth and fifth amplifying devices.

3,292,009

STORED CHARGE RESET FOR LOGIC CIRCUITS

Brian E. Sear, Baltimore, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 20, 1963, Ser. No. 332,184
6 Claims. (Cl. 307—88.5)



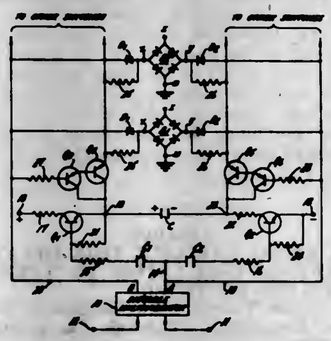
1. A circuit comprising, input circuit means, a circuit element exhibiting two stable operating conditions, said circuit element connected to said input circuit means, a charge storage device selectively exhibiting bilateral conduction wherein one type of conduction is a direct function of the other type of conduction, a current source, said charge storage device being connected between said current source and said circuit element such that said other type of conduction normally exists from said current source to said circuit element via said charge storage device, a pulse supplying source connected to said charge storage device such that in response to the application of a pulse by said pulse source said one type of conduction exists from said circuit element to said pulse source via said charge storage device until the charge stored in said charge storage device has been dissipated whereupon said charge storage device becomes a substantially open circuit and said circuit element is isolated from said pulse source.

3,292,010

CAPACITOR DRIVEN SWITCH

James H. Brown, Severna Park, and William J. Wester, Glen Burnie, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 10, 1964, Ser. No. 350,926
10 Claims. (Cl. 307—88.5)



1. A capacitor driven switch comprising:

a voltage controlled switch means having a control circuit and a switch circuit;

a storage capacitor coupled in parallel to said control circuit of said switch means;

a first electron emission means in said parallel coupling and having a control electrode;

a voltage source coupled to charge said storage capacitor;

a second electron emission means in the coupling of said voltage source and said capacitor, said second electron emission means having a control electrode to control the connection of said voltage source to said capacitor;

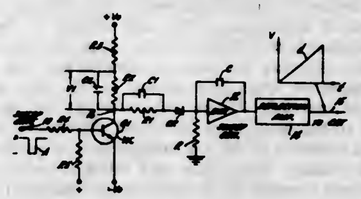
a polarity reversing means coupled to the control electrodes of said first and second electron emission means and through unidirectional means to the control circuit of said switch means to apply voltage of a polarity alternately to said first and second electron means and said switch means whereby under one polarity output of said polarity reversing means the switch circuit of said switch means is open, said first electron emission means is nonconductive, and said second electron emission means is conductive to charge said storage capacitor, and under the other polarity condition said second electron emission means is nonconductive and said first electron emission means is conductive to apply stored voltage on said storage capacitor to said control circuit of said switch means to close said switch circuit.

3,292,011

BANDWIDTH COMPENSATION FOR HIGH SPEED RAMP VOLTAGE GENERATOR EMPLOYING TWO SERIES CONNECTED PARALLEL RC NETWORKS

Richard H. Casey, Laurel, and Alfred E. Popodi, Glen Burnie, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 16, 1964, Ser. No. 360,468
5 Claims. (Cl. 307—88.5)



1. Bandwidth compensation for high speed ramp voltage generation comprising:

a sweep voltage generator having an input and an output;

a unidirectional means in said input oriented with the low impedance direction toward said sweep voltage generator;

a direct current voltage source;

a first resistor-capacitor parallel network and an electron emission device with conduction electrodes coupled in series with said network across said voltage source, said electron emission device having a control electrode;

a second resistor-capacitor parallel network coupling the juncture of said first resistor-capacitor network and said electron emission device with said unidirectional means; and

a gating signal input coupled to said control electrode whereby sweep voltages generated by said sweep voltage generator and current delays are compensated by compensating the gating signals in said networks and electron emission means to minimize the nonlinearity of said generated sweep voltages and current delays on the output of said sweep voltage generator.

3,292,012

LOW OFFSET VOLTAGE LOGIC GATE

Charles R. Cook, Jr., Lake Park, Fla., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,431
4 Claims. (Cl. 307—88.5)

1. A logic gate circuit, comprising:

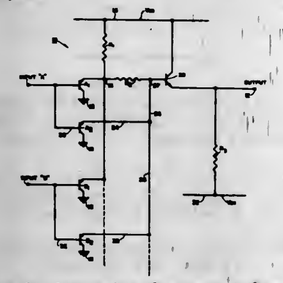
(a) an input transistor of one type, the emitter of which is connected through a first impedance to a

voltage supply, the collector of which is connected to ground, and the base of which is connected to an input terminal,

(b) an output transistor of the complementary type, the collector of which is connected to said voltage supply, the base of which is connected to the emitter of the said input transistor, and the emitter of which is connected to an output terminal,

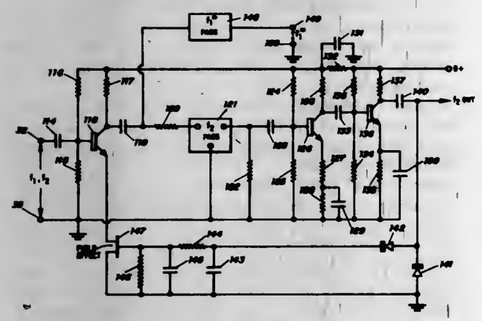
(c) means for applying a voltage at the said input terminal,

(d) a second impedance disposed between the emitter of the said input transistor and the base of the said output transistor for producing an IR drop therebetween, and



(e) means for increasing the current through the said second impedance when said voltage at the input terminal is at the low voltage stage, and not appreciably affecting the current through the said second impedance when said voltage at the input terminal is at the high voltage state, whereby the likelihood of voltage gain from said input terminal to said output terminal at the low voltage state is lessened, and the voltage drop from said input terminal to said output terminal is not appreciably changed.

3,292,013
DIVIDER CIRCUIT PROVIDING QUOTIENT OF AMPLITUDES OF PAIR OF INPUT SIGNALS
Yehuda Goldzny, Newton, Mass., assignor to Mithras, Inc., Cambridge, Mass., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,897
6 Claims. (Cl. 307—88.5)



1. Divider circuit means for dividing the amplitudes of a pair of input signals to produce an output signal representative of the resultant quotient, comprising:

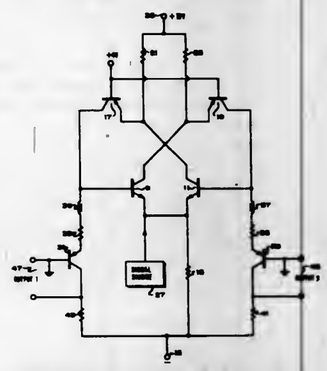
variable gain amplifier means adapted to receive said pair of signals which are distinguishable with respect to a selected characteristic, said amplifier means having a bipolar transistor;

gain control means including a field effect transistor, directly coupled to said amplifier means for controlling the gain of said amplifier means, said amplifier means being coupled to said field effect transistor;

gain control bias filter means coupled to said amplifier means and said control means for biasing said gain control means only in accordance with the amplitude of a selected one of said signals; and

output filter means coupled to said amplifier means for producing an output signal representative of said quotient between the amplitudes of the other said signal and said selected signal.

3,292,014
LOGIC CIRCUIT HAVING INDUCTIVE ELEMENTS TO IMPROVE SWITCHING SPEED
Merrill W. Brooksby, Cupertino, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 11, 1965, Ser. No. 424,796
6 Claims. (Cl. 307—88.5)



1. A logic circuit comprising:

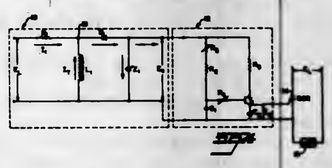
a pair of gain elements, each including first and second electrodes forming an output circuit and including second and third electrodes forming an input circuit;

an input terminal connected to the input circuits of said gain elements for receiving a source of signal; and for each of said gain elements;

a low input impedance amplifier connected to apply the signal at the output circuit of a gain element to the input circuit of the other gain element; and

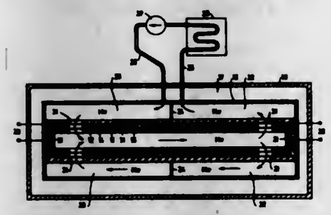
inductive means connected to receive the signal applied to the input circuit of a gain element, said inductive means constituting the only energy storage means for storing energy at a level indicative of the most recent logic state.

3,292,015
CIRCUIT USING VARIABLE TIME DELAY AND RELAXATION OSCILLATOR TO TRIGGER A CONTROLLED RECTIFIER
James C. Neisch, Warren, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,432
8 Claims. (Cl. 307—88.5)



1. In combination, a diode rectifier; impulse responsive means for controlling, within a predetermined half-cycle of an applied A.C. input voltage, the phase angle at which said diode rectifier will initiate conduction; and means selectively operative to produce and apply to said impulse responsive means an impulse synchronized with said applied input voltage at any selected phase angle within the entire duration of said predetermined half-cycle.

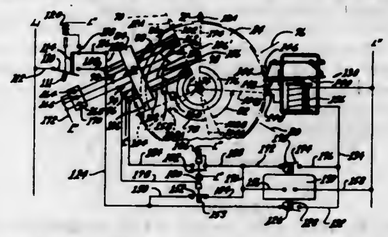
3,292,016
SUPERCONDUCTING THREE-PHASE CURRENT CABLE
Wilhelm Kafka, Tennenlohe 164, near Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Sept. 23, 1963, Ser. No. 310,942
Claims priority, application Germany, Sept. 22, 1962, S 81,606
10 Claims. (Cl. 307—90)



10. A multi-phase cable arrangement for use between a source and a load, comprising lead means for each phase, each of said lead means having spaced opposite ends and including two concentrically-arranged mutually-insulated superconducting tubes positioned as inner and outer conductors, load circuit means for connecting each load phase between the inner and outer ones of the conductors of the corresponding lead means, source circuit means for connecting each phase of the source across the tubes of said respective lead means, network means for interconnecting said lead means in multi-phase arrangement at only one end of said lead means, each of said inner tubes having an interior metallic layer and an outer layer of superconducting material, liquid helium filling said inner tube, each of said outer tubes having a superconducting layer and two insulating layers jacketing said superconducting layer on each side, heat-insulating means embracing a number of said lead means collectively and forming a cooling space between said heat-insulating means and said lead means, said cooling space being filled with liquid helium, port means in said lead means for connecting the interior of the inner tube with the cooling space, and pump means connected to said cooling spaced for circulating the liquid helium through the cooling space and the interior of the inner tube.

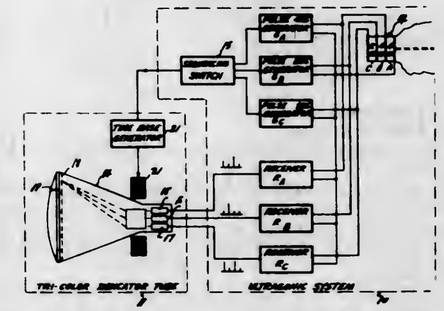
3,292,017
MANUAL CONTROLLER FOR A TIMER
Werner Robert Bauer, Columbus, Ohio, assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Nov. 30, 1962, Ser. No. 241,249
14 Claims. (Cl. 307—141.4)

7. In combination: a manipulator movable by an operator from a manipulator zero position to a program starting position; a program impulse controller having program initiating means to cause a program performance by a mechanism to be controlled, said impulse controller having a controller zero position, a program start position and a program termination position; drive means for said controller to cause said controller to actuate a program at program speed from a program start position to a program termination position and to cause said controller to move at return speed from said termination position to said controller start position; and locking and unlocking means between said manipulator and said controller to lock together said manipulator and controller when they are simultaneously at their respective zero positions and



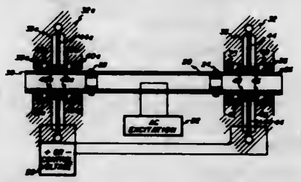
to unlock them when they are moved by said operator to their respective program start positions and when said actuator is started to actuate said program.

3,292,018
TRANSDUCERS
Manfred E. Clynes, Palisades, N.N.Y., assignor to Air-Shields, Inc., Hatboro, Pa., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,847
5 Claims. (Cl. 310—8.1)



1. In an ultrasonic system, a transducer constituted by three resonant transducer blanks each of a half-wave thickness, each being conductively plated on both faces, the three blanks being interfacially bonded to form a composite structure, terminals connected to the end faces of said composite structure and the bonded faces thereof, and means connected to said terminals selectively to excite said blanks to generate three different ultrasonic frequencies in sequence.

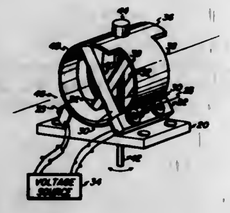
3,292,019
TRANSDUCER
Stephen K. Hsu, Ann Arbor, and Albert Blatter, Clawson, Mich., assignors to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,668
10 Claims. (Cl. 310—8.5)



1. A transducer for changing an electrical signal into minute corresponding movements of an output member comprising,

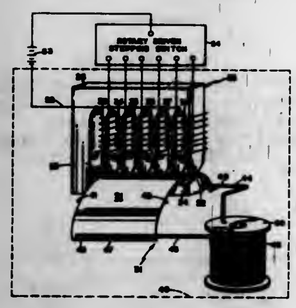
electrical strain producing means,
said electrical strain producing means experiencing and contraction which is proportional to the magnitude of input signals being applied thereto,
directional clamp means in clampable relation to said strain producing means to provide freedom of movement of said electrical strain producing means in one direction during said expansion and contraction and restrict movement in another direction during said expansion and contraction.

3,292,020
TRANSDUCER
Stephen K. Hsu, Ann Arbor, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,669
3 Claims. (Cl. 310—8.6)



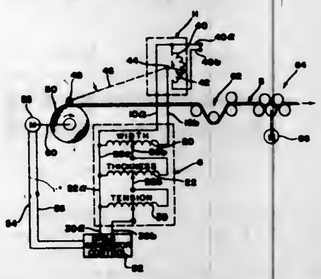
1. Apparatus comprising
a cylindrical housing,
a base being located exteriorly of said cylindrical housing
a plurality of piezoelectric members each having one of their ends fixed to said base and the other of their ends extending through said cylindrical housing and fixed to the inner circumference of said cylindrical housing,
said plurality of piezoelectric members being deflectable by an electrical signal to rotatively move said housing relative said base.

3,292,021
SUPERCONDUCTIVE DEVICE
Ethan D. Hoag, Watertown, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,726
13 Claims. (Cl. 310—40)



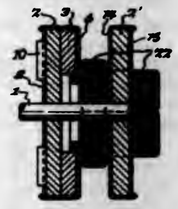
1. In combination:
(a) a superconductive member having dimensions whereby a normal region may be provided through said member without substantially affecting dominant current flow in said member when superconductive;
(b) means for providing a stable normal region through said member in a direction substantially normal to the direction of current flow in said member when said member is superconductive; and
(c) means for causing said normal region to move from the periphery of said member in a direction in said member substantially normal to both the axial direction of said normal region and the direction of said dominant current flow.

3,292,022
ELECTRICAL TENSION CONTROL DEVICE FOR STRIP PROCESSING LINE
Archie R. Foreman, Mentor, Ohio, assignor to Production Machinery Corporation, Mentor, Ohio, a corporation of Ohio
Filed Feb. 1, 1963, Ser. No. 255,588
5 Claims. (Cl. 310—93)



1. In a device for controlling the tension on a strip passing through a processing line comprising a tension mechanism for applying an axial force onto said strip and a control means for controlling said mechanism in accordance with the width and thickness measurements of said strip, the improvement comprising: said control means including an A.C. power supply, a first autotransformer having an input connected to said power supply, an output and a first means for adjusting the voltage ratio of said first autotransformer in accordance with one of said measurements, a second autotransformer having an input connected to the output of said first autotransformer, an output, and second means for adjusting the voltage ratio of said second autotransformer in accordance with the other of said measurements, and means for controlling the force exerted by said tension mechanism in accordance with the output of said second autotransformer.

3,292,023
DYNAMOELECTRIC MACHINE
William Kober, Fairport, N.Y., assignor, by mesne assignments, to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 3, 1964, Ser. No. 394,242
16 Claims. (Cl. 310—156)



1. A dynamoelectric machine comprising opposed field structures mounted for rotation about an axis, said field structures being spaced apart in the direction of said axis to provide an axial air gap therebetween, one of said field structures including flux producing means permanently magnetized in the direction of said axis, the other of said field structures being magnetically passive and comprising a magnetic member providing substantially only a flux return circuit, a casing of highly electrically conductive nonmagnetic material having an outer side wall encircling the outer peripheral side of said magnetic member and an end wall extending inwardly along the air gap end face of said magnetic member, and an armature winding having a portion disposed in said air gap.
3. A dynamoelectric machine as set forth in claim 1, wherein said casing includes an opposite end wall of highly electrically conductive material extending inwardly along the opposite face of said magnetic member.

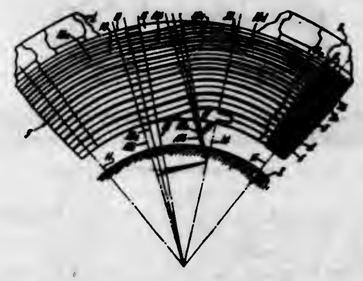
3,292,024
DYNAMOELECTRIC MACHINE
William Kober, Fairport, N.Y., assignor, by mesne assignments, to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed May 16, 1963, Ser. No. 280,973
6 Claims. (Cl. 310—201)



1. In a dynamoelectric machine having field structures spaced apart along the axis of the machine and producing flux across an annular axial air gap and having an armature structure supported within said air gap and centered about said axis, and said field and armature structures being rotatable relative to each other about the axis; the armature structure comprising:
(a) a disc of winding-supporting material centered about said axis and normal thereto in a plane occupying said air gap, the diameter of the disc being great as compared with its thickness; and
(b) armature windings supported on the disc and comprising conductive substantially-rigid sheet-material strips including pairs of main conducting members having portions disposed generally radially of the axis and these portions having larger-area faces standing substantially normal to the surface of the supporting disc, and the main conducting portions being joined together at their first ends by integral connecting members disposed generally axially of the machine, the paired main conducting members straddling the disc and being joined at their second ends to the main conducting members of other paired members.

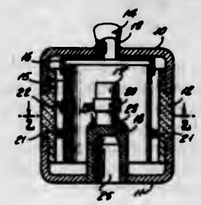
3,292,025
DYNAMOELECTRIC MACHINE ROTOR END WINDING
Joseph A. Victor, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 15, 1964, Ser. No. 367,825
5 Claims. (Cl. 310—208)

1. A dynamoelectric machine rotor winding comprising a plurality of coils having radially stacked turns including circumferentially extending end turn conductors, said conductors on one end of the rotor including a transition section for each coil wherein the conductors change radial distance from the rotor axis from one turn to the next the conductors in said transition section each comprising a substantially straight portion and an adjacent short radius of curvature portion connecting a



circumferentially extending conductor of one turn to a conductor of the next radially outer turn, and connector means extending between the transition sections and connecting said coils in electrical series.

3,292,026
VOLTAGE REGULATOR DISCHARGE DEVICE
Max Yarmovsky, Livingston, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 243,123
4 Claims. (Cl. 313—1)

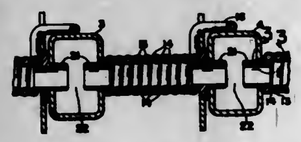


1. A voltage regulator discharge device comprising: a sealed envelope enclosing a gas at reduced pressure, an anode, and a cathode; said envelope formed with a first terminal disc having a turned-over flange, a second terminal disc having a turned-over flange, and a hollow cylindrical insulator sealed between said flanges; a hollow cylindrical cathode connected to said first terminal and mounted adjacent to the inside surface of the insulator for shielding the insulator from sputtering due to electrical discharges; an exhaust tubulation connected to the center of said first terminal disc for exhausting and filling the envelope; a re-entrant conductive stem connected to the center of the second terminal disc; a barrier ring positioned between the outside surface of the cathode cylinder and the inside surface of the insulator for blocking the flow of ionized particles; and an anode mounted inside the cathode cylinder in axial alignment therewith and connected to the second terminal disc.

3,292,027
ELECTRON TUBE ENVELOPE WALLS OF COOLING COILS WELDED TOGETHER
Stanley E. Allen, Jr., Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 28, 1964, Ser. No. 348,234
4 Claims. (Cl. 313—24)

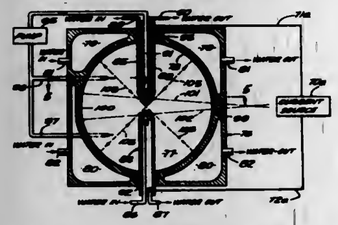
1. In an electron tube apparatus including an envelope, an envelope portion comprising a plurality of convolutions of conduit sealed to one another to form a vacuum-

tight envelope portion and sealed to the adjacent envelope to define therewith the tube envelope, said con-



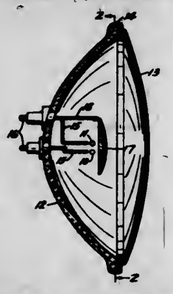
volutions of conduit providing means for circulating a coolant therethrough to cool said portion of the envelope.

3,292,028
GAS VORTEX-STABILIZED LIGHT SOURCE
Delbert G. Van Ornum, Newport Beach, Calif., assignor, by mesne assignments, to Giannini Scientific Corporation, Long Island, N.Y., a corporation of Delaware
Original application June 20, 1962, Ser. No. 203,760. Divided and this application July 1, 1963, Ser. No. 291,698
4 Claims. (Cl. 313—30)



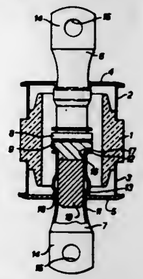
1. Apparatus for generating and stabilizing an electric arc, comprising means to define an arc chamber, means to form in said chamber a concave highly-reflective surface which is at least a major portion of a sphere, means to generate at the center of said reflective surface an electric arc adapted to radiate substantial quantities of radiant energy to said surface for reflection back to said arc, said arc being stabilized due to the elevation of temperature at said center caused by said reflected radiant energy, and means to effect flow of gas in said chamber vortically about said arc to aid in stabilizing said arc and to cool and clean said reflective surface.

3,292,029
SEALED BEAM HEADLIGHT WITH GLASS-BEADED LIGHT REFLECTING SHIELD
Philip V. Palmquist, Maplewood, and Chi Fang Tung, Lincoln Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,475
5 Claims. (Cl. 313—113)



1. In a sealed-beam light fixture of the type having a substantially parabolic concave specular-reflecting housing, a transparent lens plate over the visually-exposed face of the housing and hermetically sealed to the housing about the perimeter thereof, and at least one resistance lighting element within the housing and surrounded by an essentially-inert atmosphere confined within the envelope defined by the housing and lens plate, the improvement comprising a reflex-reflecting all-inorganic shield located within the envelope defined by the housing and lens plate between the resistance lighting element of said fixture and said lens plate, said shield being surrounded by said inert atmospbere and consisting essentially of glass beads of refractive index between 1.8 and 2.0 firmly bonded in partially embedded condition in an inorganic material with hemispherical specular reflecting means about the underlying bonded hemispherical portions of said beads, said shield being essentially free of ingredients volatilizable therefrom at temperatures up to 1000° F. at 700 mm. of Hg and being positioned with its surface of partially embedded glass beads facing toward said resistance lighting element.

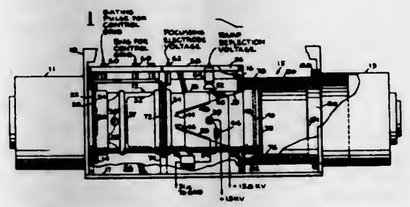
3,292,030
ELECTRODE ASSEMBLIES FOR SURGE DIVERTERS
Cyril Gray, New Barnet, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed June 11, 1964, Ser. No. 374,442
Claims priority, application Great Britain, June 26, 1963, 25,449/63
5 Claims. (Cl. 313—244)



1. An electrical surge diverter for an electrical circuit comprising an envelope enclosing an evactuated space and a pair of substantially axially aligned electrode assemblies extending into said space and being so spaced apart at their adjacent ends within said space as to provide a high voltage gap therebetween, each of said assemblies comprising a tube extending through said envelope, means providing a fluid tight seal between said tube and said envelope, a radially outwardly extending flange formed integral with said tube at the inner end thereof within said envelope, a cylindrical electrode having one end coaxially and interfittingly received in the inner end of said tube and being formed with an annular land that is seated against said flange, said electrode having an end section disposed beyond the inner end of said tube, with the end face of said end section delimiting said gap, an annular positioning shoulder formed integral with said tube in predetermined, axially spaced relation from said flange, said positioning shoulder being disposed within said envelope and facing towards the outer end of said tube, an annular portion formed on said envelope within said space in interfitting circumferentially surrounding relation to said tube in the region where it passes through said envelope, said annular shoulder being axially seated against said annular portion to positively locate said end face within said space, and an electrical terminal formed integral with the outer end of said tube protruding beyond said envelope, the terminals for both of said assemblies being adapted for connection in said circuit to provide

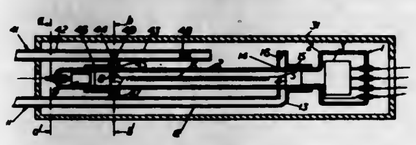
an electrical current conducting path between said assemblies and passing serially through the tube and electrode of each assembly.

3,292,031
ANODE CAPACITOR AND SUPPORT FOR IMAGE CONVERTER CAMERA TUBE
John J. Hickey, Hawthorne, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed May 27, 1963, Ser. No. 283,423
5 Claims. (Cl. 315—3)



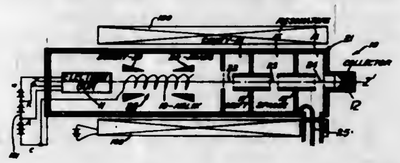
1. In combination:
an image converter camera tube provided with a photocathode, a control grid and an annular anode spaced in that order along an axis;
a cylindrical capacitor assembly mounted concentrically about said annular anode and including two dielectrically spaced concentric metal cylinders, with the inner cylinder in peripheral contact with said anode;
and means forming a low inductance connection between the outer metal cylinder and said photocathode, said means including a metal enclosure surrounding said tube and extending along the axial length separating said outer metal cylinder and said photocathode.

3,292,032
TRAVELLING-WAVE TUBE HAVING INTEGRATED TUNING PLUNGER TO IMPEDANCE MATCH TOO-SHORT INTERNAL COUPLING TO EXTERNAL CIRCUITRY
Ryuzo Orui, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Mar. 26, 1963, Ser. No. 268,058
Claims priority, application Japan, Sept. 18, 1962, 37/40,474
3 Claims. (Cl. 315—3.5)



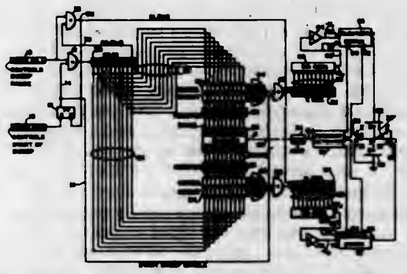
1. In a travelling wave tube assembly having a slow-wave structure extending linearly between input and output coupling devices within an evelope, an input waveguide and an output waveguide positioned diametrically with respect to said envelope and extending substantially parallel to said slow-wave structure from the output end thereof;
each waveguide having a connected waveguide portion aligned transverse to said slow-wave structure and embracing and extending beyond their respective input and output coupling devices;
the input transverse waveguide portion extending beyond its associated coupling device;
said output transverse section extending beyond its associated coupling device;
a further waveguide portion connected to said output waveguide and extending linearly beyond the junction of said output waveguide and its associated transverse waveguide portion;
said further waveguide portion having an impedance to compensate for the shorter length of the extended transverse waveguide portion.

3,292,033
ULTRA-HIGH-FREQUENCY BACKWARD WAVE OSCILLATOR-KLYSTRON TYPE AMPLIFIER TUBE
Masamichi Kenmoku, Minato-ku, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 16, 1962, Ser. No. 187,658
Claims priority, application Japan, Apr. 22, 1961, 36/14,472
6 Claims. (Cl. 315—3.6)



1. An ultra high frequency oscillator tube in which a focussed beam of electrons from an electron gun is emitted substantially coaxial with the tube axis, the combination which comprises a slow backward wave oscillator portion coupled to said beam of electrons for producing a high frequency velocity modulated backward wave oscillation; and a klystron type amplifier portion connected in tandem with said oscillator portion, said amplifier portion including a plurality of cavity resonators serially disposed about said velocity modulated beam for amplifying a high frequency oscillation component of said beam, means for collecting said beam, and means coupled to the last resonator cavity for extracting the amplified high frequency oscillation component.

3,292,034
APPARATUS FOR SYNCHRONIZING CATHODE RAY DEFLECTION TO A ROTATING ANTENNA USING DIGITAL TECHNIQUES
Norman J. Braaten, Rosemount, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,121
2 Claims. (Cl. 315—24)



2. A system for deflecting an electron beam in a cathode ray tube, having beam deflection plates, in angular synchronism with an antenna rotating about a fixed axis, comprising:
a combination pulse counter-register comprised of a predetermined number of cascaded binary scalers;

means operating in conjunction with the pulse counter-register to produce a pulse train having a total length in time substantially equal to a predetermined electron beam sweep time;

a first coincidence circuit and first register, the first coincidence circuit and first register together with the pulse counter-register interconnected to operate as a first binary rate multiplier;

a second coincidence circuit and a second register, said second coincidence circuit and said second register interconnected with said pulse counter-register to operate as a second binary rate multiplier;

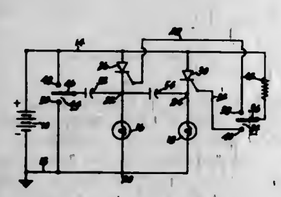
means for producing a digital signal representing the magnitude of the sine of the angular displacement of the antenna and a digital signal representing the magnitude of the cosine of the angular displacement of the antenna, the sine signal forming the multiplier for the first binary rate multiplier and the cosine signal forming the multiplier for the second binary rate multiplier, the pulse train forming the multiplicand in both said first and second multipliers;

means for converting the output digital signals of the first and second binary rate multipliers respectively to analog voltages representing vertical deflection and horizontal deflection respectively;

means separately inverting the analog voltages; and,

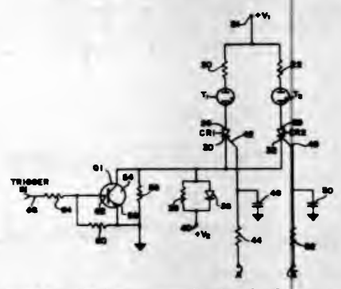
an electronic switch including an antenna quadrant detector for switching analog voltages of the proper polarity to the horizontal and vertical deflection plates of the cathode ray tube respectively.

3,292,035
SEMICONDUCTOR HEADLIGHT CONTROL SYSTEM
Robert E. Lee, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,295
3 Claims. (Cl. 315—83)



1. A headlamp control system comprising, a low beam filament, a high beam filament, a source of direct current, a first controlled rectifier having anode, cathode, and gate electrodes, a second controlled rectifier having anode, cathode and gate electrodes, means connecting the anode and cathode electrodes of said first controlled rectifier and said high beam filament across said source of direct current, means connecting the anode and cathode electrodes of said second controlled rectifier and said low beam filament across said source of direct current, a first switch having a movable contact and a pair of fixed contacts, means connecting said fixed contacts of said first switch with the gate electrodes of said controlled rectifiers, a second switch having a movable contact and a pair of fixed contacts, means connecting the fixed contacts of said second switch respectively with opposite sides of said source of direct current, a first capacitor connecting the movable contact of said second switch with one of the cathodes of one of said controlled rectifiers and a second capacitor connecting the cathodes of said first and second controlled rectifiers.

3,292,036
CONTROLLABLE DIGITAL STORAGE DISPLAY CIRCUITRY
Evan T. Colton, Lynnfield, Zaki Abdou-Nabl, Framingham, and Bernard M. Gordon, Magnolia, Mass., assignors, by mesne assignments, to Transitron Electronic Corporation, a corporation of Delaware
Filed Aug. 6, 1964, Ser. No. 387,963
12 Claims. (Cl. 315—84.6)



1. A storage display control circuit for converting a digital code and for activating a display of said converted code on command, said circuit comprising:

a source of command pulses,

a source of a digital code signal subject to change independently of the occurrence of said command pulses,

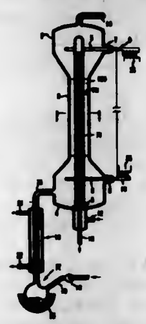
means responsive to the leading edge of each command pulse for erasing any previously stored code indication from a device providing said display;

means responsive to said digital code signal for providing a decoded signal representative of the value of said digital code signal;

means responsive to the trailing edge of said command pulse for providing said decoded signal to said device to display a representation of the value at that time of said digital code signal,

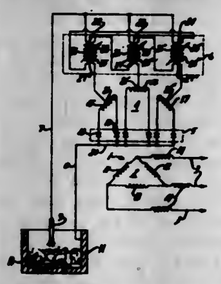
and means associated with said device for storing the latter value until the occurrence of the next command pulse.

3,292,037
ARC DISCHARGE LAMP FILLED WITH ELECTRON-IMPACT EXCITABLE MATERIAL CARRIED IN AN INERT GAS
Heribert Karl Josef Herpletz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,133
8 Claims. (Cl. 315—106)



1. An improved high efficiency electrical arc discharge lamp unit for generating light, said unit comprising in combination; a gas-tight housing means constructed and arranged for cooperation and operative association with a photochemical reaction vessel, said housing means comprising a first elongated tubular envelope member formed of a material pervious to light generated by said unit, said housing means further comprising a first end closure member cooperating with one end of said tubular envelope member and a second end closure member cooperating with said other end of said tubular envelope member, said unit further comprising a second inner elongated tubular member cooperating with said first tubular member to define an elongated tubular zone, said unit further comprising support means in said housing means cooperating with said second tubular member to support said second tubular member inside said first tubular member and maintain said tubular zone in a configuration having a substantially uniform predetermined thickness, said unit further comprising a first electrode assembly mounted on one of said end closure members and positioned in said housing means at one end of said zone and a second electrode assembly mounted on the other of said end closure members and positioned in said housing means at the other end of said zone, said electrode assemblies adapted to be operatively connected to an electrical power supply circuit of predetermined characteristics, said unit further comprising a third means cooperating with one of said closure members for maintaining a predetermined low absolute pressure in said zone in said housing means, said unit further comprising a fourth means cooperating with one of said closure members for supplying during operation a predetermined amount of an electron-impact excitable medium carried in an inert gas to said zone in said housing means, and a fifth means cooperating with said inner tubular member to maintain a predetermined temperature in said inner tubular member and said zone, said predetermined characteristics of said power supply circuit, said predetermined thickness of said tubular zone, said predetermined pressure, said predetermined temperature, and said predetermined amount of said medium being such that upon energization of said electrode assemblies by such power supply circuit, a high intensity light-radiating arc discharge is created and maintained in said zone between said electrode assemblies to produce sufficient light of a predetermined wave length range and intensity in said zone for transmission through said first tubular envelope member to space surrounding said unit such that significant photochemical effects can be effectively produced in the surrounding space.

3,292,038
D.C. POWER SUPPLY
Robert L. Stuefen, Fontana, Wis., assignor, by mesne assignments, to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 3, 1964, Ser. No. 372,190
12 Claims. (Cl. 315—142)

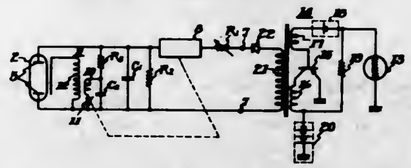


1. In a polyphase power supply for supplying a load,

a polyphase transformer,

rectifying means interconnected with the polyphase transformer to produce a direct current output, and control means connected with the transformer and the rectifying means and controlling the operational mode of the supply to produce a polyphase half wave rectified output following a load line having a high open circuit voltage which decreases rapidly with the load current and a multiple phase, half wave rectified output following a second load line characterized by having a substantially smaller open circuit voltage and a substantially constant voltage within the rated load.

3,292,039
LIGHT-INHIBITING MARINE FLASHER
Masao Horino, 81 Nakano-cho, Meguro-ku, Tokyo, Japan
Filed Dec. 11, 1963, Ser. No. 329,715
1 Claim. (Cl. 315—159)

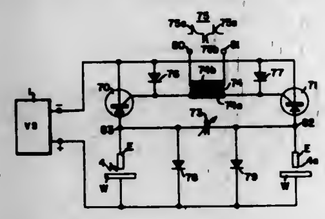


An electro-flash pilot lamp comprising a tubular sealed container having two transparent windows at one end thereof, an electro-flash lamp having main electrodes and a trigger electrode visible through one of said transparent windows, a photoelectric element visible through the other of said transparent windows, a battery at the other end of said tubular sealed container having one terminal connected to a first transformer winding and the collector-emitter path of a transistor through its other terminal, means comprising the series connection of the base of the transistor, a second winding of said transformer, a bias source normally preventing conduction of said transistor and said photo-electric element for generating oscillating energy in the absence of light, means comprising a third winding of said transformer furnishing rectified high potential, and an automatic blinking control device for controlling the blinking of said electro-flash lamp in the middle part of said tubular sealed container, said device having a capacitor connected to the main electrodes of said electro-flash lamp, a bias resistor connected in parallel to said capacitor, a relay inserted between one of the terminals of said capacitor and said rectifying means, a variable resistor connected in series to said relay and a trigger transformer having a primary winding and a secondary winding, said relay having a normally open relay contact connected to said primary winding, said secondary winding being connected to the trigger electrode of said electro-flash lamp, the buoyancy of said tubular sealed container being balanced to its whole weight in such a manner that said transparent windows of said tubular sealed container comes up to the water surface when said tubular sealed container is thrown into the water.

3,292,040
MULTIVIBRATOR PULSE GENERATOR FOR ELECTRO EROSION APPARATUS
Werner Ullmann and Fritz Grauer, Locarno, Switzerland, assignors to Agie A.G. fur Industrielle Elektronik Locarno, Switzerland, a corporation of Switzerland
Filed Dec. 5, 1960, Ser. No. 73,894
Claims priority, application Switzerland, Dec. 8, 1959, 81,593
3 Claims. (Cl. 315—165)

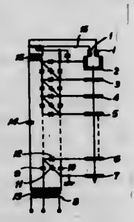
3. An electric pulse generator comprising voltage supply means adapted to apply pulse discharges across two separate gaps, electronic switch means in circuit with said

voltage supply means, timer means for controlling said electronic switch means, said electronic switch means and said voltage supply means including means for producing pulse discharge the maximum value of which is not a function of time, a separate controlled rectifier connected to said voltage supply means each adapted to be connected in circuit with a separate gap, said controlled



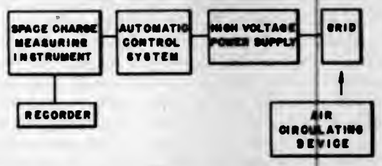
rectifiers being interconnected by a condenser with the respective control electrodes of said separate controlled rectifiers in circuit with said timer means, whereby ignition of one of said controlled rectifiers interrupts current flow through the other of said controlled rectifiers such that the two gaps are alternately supplied with pulse discharges.

3,292,041
MULTISTAGE TYPE HIGH VOLTAGE ELECTRON GUN WITH CONTROLLABLE ELECTRODE SPACING
Shinjiro Katagiri, Kodaira-shi, Tokyo, and Hirokazu Kimura, Kogane-shi, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed June 26, 1963, Ser. No. 290,851
Claims priority, application Japan, July 2, 1962, 37/27,188
1 Claim. (Cl. 315—357)



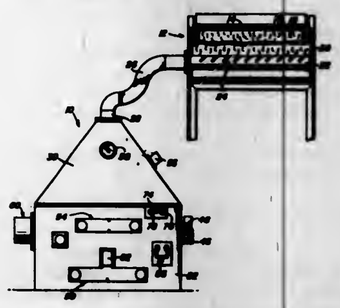
A multistage electron gun comprising electron emission means, a first anode, a plurality of further anodes aligned with each other and with said first anode, support means holding said further anodes in fixed relationship with each other, means for applying successively larger voltages respectively to said first and further anodes whereby the anodes provide acceleration stages for electrons from said emission means, means to vary said voltage and thereby said acceleration, and control means to vary the relative spacing between the electron emission means and said first anode to compensate for variations in said voltage, said emission means being fixed relative to said further anodes, said control means being adapted to move said first anode, said support means being a vacuum-tight envelope, said control means including a gear means extending through said envelope and engaging said first anode, and an insulating rod extending along said further anodes outside of said envelope and engaging and operating said gear means, said rod including conductive elements electrically connected to said further anodes.

3,292,042
PROCESS AND APPARATUS FOR PRODUCING A SUBSTANTIALLY NEUTRAL ELECTRIC ATMOSPHERE
John W. Michener and Jimmy L. Quinn, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,533
12 Claims. (Cl. 317—2)



1. The method of improving the processing of low mass articles which are subject to attraction and displacement by electrically charged bodies comprising circulating ion containing atmosphere in the vicinity of said low mass articles in a manner so as to contact an oppositely charged member which carries a charge sufficient to annihilate atmospheric ions but insufficient to generate ions thereby annihilating those ions which were previously contained within said atmosphere whereby bodies will not acquire an electrical charge such as to subject low mass articles to attraction and displacement by said electrically charged bodies.

3,292,043
HEATING AND HUMIDIFYING STATIC ELIMINATING APPARATUS
Everett S. Brown, Sr., 1620 Westminster Place, Mexico, Mo.
Filed Mar. 24, 1964, Ser. No. 354,256
1 Claim. (Cl. 317—2)



Apparatus for supplying a static eliminating atmosphere to a treating zone through which paper stock is being fed comprising, a liquid containing tank, heating means for elevating the temperature of the liquid in the tank to accelerate evaporation thereof, forced airflow means for producing a continuous flow of air over the surface of the evaporating liquid, air heater means disposed in the path of said flow of air when laden with moisture from the evaporating liquid surface for elevating the temperature thereof, flow conducting means for directing said flow of air laden with moisture onto the paper stock within said treating zone and means for regulating the temperature of the moisture laden air and the quantity of moisture carried therewith for respectively removing static charges from the paper stock and preventing subsequent accumulation of static charges after leaving the treating zone, said forced airflow means comprising a blower rotatable about an axis disposed in close parallel spaced relation to said surface of the liquid, deflector means fixedly mounted above the blower and extending downwardly therefrom in the direction of airflow toward the surface of the liquid, and means for maintaining said surface of the liquid at a substantially constant level within the tank, said air heater means being mounted in parallel spaced relation to the surface of the liquid within the tank adjacent to a lower end of the deflector means, said flow conducting means comprising an upwardly converging hood mounted on the tank having an outlet through which the moisture laden flow of heated air passes, an elongated tube mounted in parallel spaced relation to the paper stock within said treating zone having a plurality of spaced discharge slots from which said flow of air emerges, and flexible conduit means connecting said outlet of the hood to the elongated tube for supply of the moisture laden, heated air thereto.

3,292,044
DUSTWALL SHIELDING
Carl N. Klahr, Brooklyn, N.Y.
(678 Cedar Lawn Ave., Lawrence, N.Y. 11559)
Filed Mar. 15, 1963, Ser. No. 265,431
8 Claims. (Cl. 317—3)



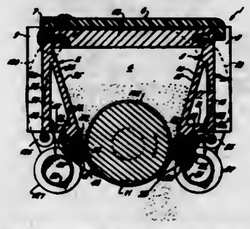
1. A method of shielding the surface of an object against collision with hypervelocity pellets comprised of containing a wall of discrete and disassociated dust particles adjacent the surface of the object, said dust particles being each sufficiently small, relative to the size of a hypervelocity pellet to make the impact between a particle and said pellet a thick target collision, and wherein the total number of dust particles per unit area of protected surface is sufficient to disintegrate the pellet by the total of the individual hypervelocity interaction effects of the dust particle collisions against the pellet.

3,292,045
ELECTROSTATIC POWDER SPRAYER
Warren G. Bubler, Westfield, N.J., assignor to OXY-Dry Sprayer Corporation, New York, N.Y., a body corporate of New York
Filed Apr. 23, 1964, Ser. No. 362,106
3 Claims. (Cl. 317—3)



1. In an electrostatic powder sprayer, the combination of
a pair of spaced apart end members;
means between said end members defining a receptacle for powder material to be dispensed;
a cylindrical roller journaled between said end members within an opening below said receptacle;
wiping blade means secured to said receptacle and positioned to engage said roller for forming a dispensing mechanism for metering out powder material from said receptacle at a substantially uniform rate;
means providing a like arcuate surface on each of said end members, said arcuate surfaces being eccentric with respect to the cylindrical surface of said roller;
an elongated electrode means capable of providing an electrostatic field;
a pair of spaced-apart socket members adapted to secure the ends of said elongated electrode;
a pair of socket support members each adapted to slidably engage a different one of said arcuate surfaces, each of said socket members being secured to a different one of said support members so that said tubular means is adjustable to various positions generally parallel to the axis of said dispensing roller and in the vicinity of said wiping blades; and
means for energizing said tubular means to create an electrostatic field to free powder material from said roller and to disperse the same so that said powder can fall evenly to the surface below.

3,292,046
POWDER SPRAYER WITH FLEXIBLE BLADES
Warren G. Bubler, Westfield, N.J., assignor to Oxy-Dry Sprayer Corporation, New York, N.Y., a body corporate of New York
Filed Apr. 23, 1964, Ser. No. 362,128
6 Claims. (Cl. 317—3)

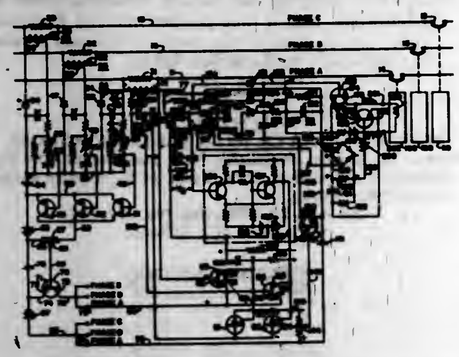


1. In an electrostatic powder sprayer, the combination of
a pair of spaced apart end members;
a cylindrical dispensing roller journaled between said end members;
receptacle means located between said end members and above said roller providing a receptacle for powder materials to be dispensed;
means attached to said receptacle means for providing a retaining surface near said roller and parallel to the axis thereof;
at least one wiping blade disposed to engage said retaining surface and to tangentially engage said dispensing roller, the combination of said dispensing roller and said blade providing a metering mechanism for dispensing powder material from said receptacle;
first blade deforming means contacting that portion of said blade between said retaining surface and said dispensing roller and urging said blade toward said roller to provide a first curvature of said blade extending uniformly over the length of said blade;
second blade deforming means contacting that portion of said blade extending beyond said retaining surface prior to deformation and urging said portion of the blade toward said roller to provide a second curvature extending uniformly over the length of said blade;
said first and second curvatures creating a transverse S-shaped bend extending over the length of said blade to provide rigidity of the blade and resilient engagement with said roller.

3,292,047
CIRCUIT BREAKER CONTROL CIRCUIT
Chin Hsun Lee, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 12, 1963, Ser. No. 294,713
12 Claims. (Cl. 317—11)

1. In circuit breaker apparatus for use in an alternating current line having a direct current component therein, in combination, a circuit breaker having contacts in the line,

the circuit breaker having an inherent invariable time delay between the application of a predetermined tripping potential thereto and the opening of the contacts, means including phase shift means, square wave generator means, differentiator means, and transistor switching means connected to the line for ascertaining the instant when the alternation corresponding in polarity of the polarity of the



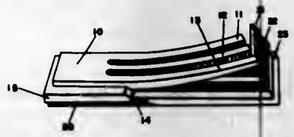
direct current component attains its crest amplitude and for producing a signal at said instant, means connected to the line initiated by said signal for measuring the ratio of the amplitudes of the direct current component of the alternating current component, and circuit means including energizing means connecting the ratio measuring means to the circuit breaker.

3,292,048
PROTECTED ELECTRICAL TRANSFORMER
William R. Swaish, Pittsburgh, and John R. Smith, McMurray, Pa., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,058
12 Claims. (Cl. 317—15)



1. A protected electrical distribution transformer comprising, in combination, a hollow casing having a hand hole therein permitting access to the interior of said casing, means including a detachable cover for sealing said hand hole, insulating dielectric fluid within said casing, a core and coil assembly including a magnetic core linked by transformer primary and secondary windings immersed in said fluid within said casing, an insulating bushing on said casing having a central conductor and an axial bore opening into the interior of said casing, a primary current limiting fuse within said bore electrically connected at one end to said central conductor, a primary overload fuse immersed in said fluid within said casing, means within said casing accessible through said hand hole for releasably mounting said primary overload fuse immersed in said fluid and including a pair of spaced apart terminals adapted to be electrically connected by said overload fuse, one of said terminals being connected to the other end of said current limiting fuse and the second of said terminals being electrically connected to one end of said primary winding, said current limiting fuse being adapted to interrupt short circuit current of the circuit including said primary winding and to limit the current to a magnitude smaller than the available short circuit current of said circuit and being adapted to rupture within less than five seconds on high amperage, short circuit currents greater than approximately 30 times 100 percent load current on said primary winding, said overload fuse having a low melting temperature element fusible in a time interval greater than five seconds in response to I^2R heating caused by overload currents of a magnitude between approximately 3 and 30 times said 100 percent load current and also being fusible in response to I^2R heating and overheating of said insulating fluid caused by incipient fault current of greater than ten minutes duration and less than approximately 3 times said 100 percent load current.

3,292,049
SPARK GAP
Louis Lucas, Jr., Boston, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed July 5, 1963, Ser. No. 292,847
6 Claims. (Cl. 317—61)



1. A spark gap comprising:
a solid dielectric having a substantially planar surface;
a gaseous dielectric disposed adjacent said surface;
a pair of spaced electrodes bonded to said solid dielectric and so disposed that a portion of said planar surface lies between said electrodes; and
a very thin coating of a material selected from the group consisting of graphite and metal coated on said portion of said planar surface.

3,292,050
MOUNTING OF SOLID STATE ELECTRONIC COMPONENTS
Floyd Groeneboom, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Aug. 19, 1965, Ser. No. 480,992
3 Claims. (Cl. 317—100)



3. In an electronic circuit comprising a dual solid state component assembly including
a pair of matched solid state electronic components,
a substrate on which the components are mounted,
leads extending through said substrate and respectively connected to the active portions of said components,
an inverted can telescoped over the substrate and bonded thereto with its walls spaced from said components,
said can having an outwardly projecting flange,
a thermal protective unit for said assembly including, in combination,
a cap telescoped over said can,
a nut threaded onto the lower end of said cap,

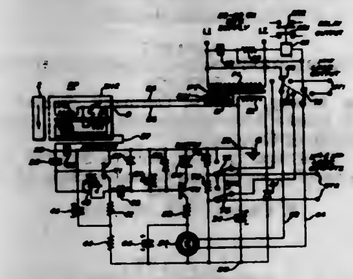
said cap and nut being formed of a material having a high thermal conductivity,
said cap and said nut having opposed inwardly projecting lips between which the flange of the can is clamped to secure the can in fixed relation to said cap with the walls of the cap in spaced relation from the can,
the height of the cap lip being approximately no higher than the height of the substrate, and
a printed circuit board to which the transistor leads are connected.

3,292,051
ASSEMBLY INCLUDING CIRCUIT ELEMENTS WELDED TO A COMMON CONDUCTOR
Fred D. Olney, Jr., and Donald R. Price, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Dec. 27, 1963, Ser. No. 333,825
9 Claims. (Cl. 317—101)



1. An electrical wiring board assembly comprising a board of insulating material, a conductor spaced from and juxtapositioned to said board, a plurality of electrical circuit elements each having a pair of lead wires, a pair of metallic sleeves one arranged on an end of each of said lead wires, weld means for conductively connecting each of said sleeves to said conductor and the end of each of said lead wires, and means for connecting the other end of each of said lead wires to said board.

3,292,052
PROXIMITY SWITCHING SYSTEM
Walther Richter, River Hills, and Irving A. Gardner, Greendale, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 19, 1963, Ser. No. 310,094
12 Claims. (Cl. 317—148.5)



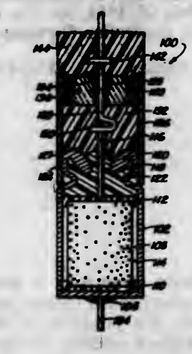
1. A proximity switching system for detecting the presence of metallic material comprising:
a proximity detector comprising an exciting coil and two pickup coils in inductive relation to said exciting coil, said pickup coils being series connected and wound in phase opposition;
means applying a commercial power, low frequency alternating current to said exciting coil to produce an electromagnetic field adjacent the detector;
an amplifier for receiving an alternating voltage signal from said pickup coils when said electromagnetic field is disturbed by a metallic element thereby to provide a control signal;
a static switching device;
means providing supply voltage to said amplifier and to said static switching device from said alternating current applying means;
means responsive to the magnitude of said control signal from said amplifier for operating said static switching device;
an an electroresponsive reed relay responsive to operation of said static switching device for performing an output control function.

3,292,053
ANODIZED-FILM DIELECTRIC CAPACITOR HAVING COLLOIDAL GRAPHITE COATING ON THE FILM
Aniello DiGiacomo, Orange, N.J., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed June 21, 1963, Ser. No. 289,582
10 Claims. (Cl. 317—230)



1. A small discrete capacitor comprising a metal core made of tantalum, the surface of said core being very smoothly polished and anodized to provide a tantalum pentoxide dielectric, a coating of colloidal graphite applied directly on the oxide, one or more layers of silver on the colloidal graphite, a metal can receiving the aforesaid coated core with solder therebetween, a solderable lead welded to the core, and a solderable lead welded to the can.

3,292,054
CAPACITOR SEAL
John Burnham and Robert I. Hutton, now by change of name, Robert I. Burnham, both of Los Angeles, Calif.; said Robert I. Burnham, assignor to Ti-Tal Incorporated, Santa Monica, Calif.
Filed Aug. 22, 1963, Ser. No. 303,967
2 Claims. (Cl. 317—230)



1. An electrolytic capacitor having a seal, said electrolytic capacitor comprising:
a case having a closed bottom and walls extending to an open top, said walls having an interior and an

exterior, said case being metallic and forming the cathode of said capacitor, an anode within said case, spacing means between said anode and said case so that said anode is spaced from said case, an electrolyte within said case between said anode and said walls of said case, an anode lead electrically connected to said anode and extending out of said open end of said case;

a resilient seal member in engagement with said anode lead and said case adjacent the open end of said case, said case having an inwardly directed flange at its open end, said inwardly directed flange being positioned in said resilient seal material so as to cause and maintain distortion and compression of said resilient seal material to maintain said resilient seal material in contact with said anode lead and with said walls of said case;

a metallic sleeve engaging at least a portion of said exterior of said walls of said case, metal sealingly engaged with said sleeve and with said walls of said case to seal said sleeve with respect to said case, said sleeve extending beyond the open end of said case;

an anode lead extension secured to said anode lead so as to define a joint therebetween, said joint being positioned within said sleeve and providing electrical continuity between said anode lead and said anode lead extension, said joint being of larger dimension than said anode lead extension;

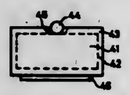
a relatively rigid seal material within said sleeve, said relatively rigid seal material being in sealing engagement with said sleeve, said case, said resilient seal material, said anode lead, said joint and said anode lead extension so as to accomplish sealing and anchoring of said joint;

a glass seal positioned around said anode lead extension, metal sealed to said glass seal and to said sleeve, and metal sealed to said anode lead extension and said glass seal whereby sealing of the open end of said case is accomplished; and

an anchor formed on said anode lead extension adjacent said glass seal on the side of said glass seal away from said anode; and

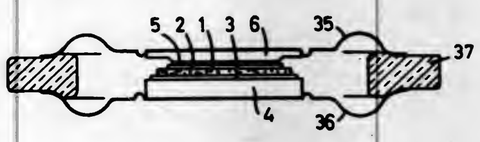
a relatively rigid seal material positioned on said anode lead extension so as to engage said anode lead extension, said anchor and said glass seal.

3,292,055
TUNNEL DIODE WITH PARALLEL CAPACITANCE
Hans-Joachim Henkel, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed July 20, 1961, Ser. No. 125,548
Claims priority, application Germany, July 30, 1960, S 69,707
3 Claims. (Cl. 317—234)



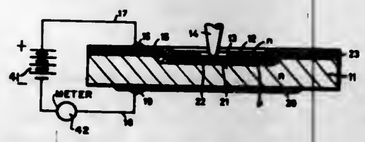
1. A tunnel diode comprising a semiconductor body having two electrodes bonded thereto and having between said electrodes two p-n junctions of which only one is an alloyed tunnel-effect junction of considerably smaller area than the other so that it is of low capacitance relative to said other and the other is a diffused junction of considerably larger area than the one so that it is of high capacitance relative to said one, said diffused junction being electrically in parallel to said tunnel-effect junction.

3,292,056
THERMALLY STABLE SEMICONDUCTOR DEVICE WITH AN INTERMEDIATE PLATE FOR PREVENTING FLASHOVER
Reimer Emeis, Ebermannstadt, and Horst Schreiner, Nuremberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 13, 1964, Ser. No. 351,694
Claims priority, application Germany, Mar. 16, 1963, S 84,285
9 Claims. (Cl. 317—234)



1. A semiconductor element comprising a carrier plate, a flat semiconductor body having electrodes on opposite sides thereof and being located on top of said carrier plate, the opposite sides of said semiconductor body having determined transverse surface areas, a contact member above said semiconductor body, a porous intermediate plate of sintered conductive material conductively attached between said contact member and said semiconductor body and having an integral projection facing said semiconductor body, said projection having a smaller transverse surface area than said semiconductor body, said intermediate plate having upwardly adjacent to said projection a laterally protruding portion of larger transverse area than said projection, and a nickel coating on the transverse surface of said intermediate plate adjacent said semiconductor body.

3,292,057
PRESSURE-RESPONSIVE SEMICONDUCTOR DEVICE
Wolfgang Touchy, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Sept. 11, 1964, Ser. No. 395,792
Claims priority, application Germany, Sept. 13, 1963, S 87,344
20 Claims. (Cl. 317—234)



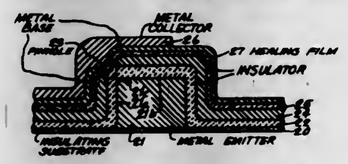
1. A pressure sensitive semiconductor device, comprising

a planar transistor of inverse zone sequence having a semiconductor body of determined conductivity type and functioning as an emitter, a base region of opposite conductivity type in said semiconductor body and functioning as a base and a collector region of opposite conductivity type from said base region in said base region, said collector region having a thickness which is small relative to that of said emitter and providing a collector current in operation, the emitter and base regions forming an emitter-base p-n junction between them and the collector and base regions forming a collector-base p-n junction between them;

current supply means attached only to the emitter and collector regions of said semiconductor body; and

pressure means in contact with the semiconductor body in the collector region thereof for applying pressure to said semiconductor body in said collector region thereof to vary current flow through said semiconductor body, in accordance with said pressure.

3,292,058
THIN FILM CONTROLLED EMISSION AMPLIFIER
Charles W. Haas, Mount Penn, Solomon R. Pollack, Philadelphia, and Herbert B. Callen, Bala Cynwyd, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,266
7 Claims. (Cl. 317—235)



1. A thin film structure comprising an electrically conductive metal emitter deposited upon an insulating substrate, said metal emitter being deposited on said insulating substrate in a conformation such that said metal emitter presents an edge formed by the junction of two surfaces of said metal emitter, a first insulator film deposited on said metal emitter, a film of an electrically conductive metal base deposited on said first film of insulator, said film of metal base having a pinhole opening therethrough located at that portion thereof on said first insulator film lying along the edge of said metal emitter, a second insulator film covering said metal base but not filling said pinhole in said metal base and an electrically conductive metal collector film deposited on said second insulator film extending through said pinhole to contact said first insulator film.

3,292,059
FORCE TRANSDUCER
Weightstill W. Woods, Redmond, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed July 9, 1964, Ser. No. 381,351
7 Claims. (Cl. 317—246)

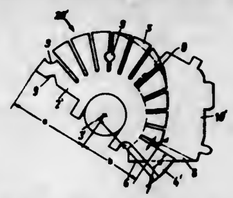


1. A capacitance transducer comprising:

(a) a non-metallic means defining a chamber and having oppositely disposed capacitor electrodes, said capacitor electrodes having surfaces coated with charged particle emission means; and

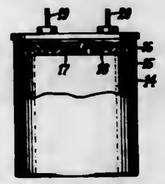
(b) a flexible electrode mounted between said capacitor electrodes, said flexible electrode providing charged particle collecting means and said flexible elctrode being disposed within an inert gas medium.

3,292,060
VARIABLE CAPACITOR
Eckart Schatter, Ingolstadt, and Karl Schwarz, Ettenheim, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed July 7, 1965, Ser. No. 470,177
Claims priority, application Germany, July 7, 1964, T 26,524; Jan. 14, 1965, T 27,009
14 Claims. (Cl. 317—253)

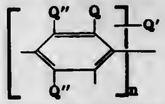


1. A variable capacitor comprising two cooperating capacitor plates mounted for movement with respect to each other between a first position wherein the capacitance of the capacitor is at a minimum and a second position wherein the capacitance of the capacitor is at a maximum, one of said capacitor plates having a main part and an auxiliary part, only said auxiliary part of said one capacitor plate being opposite the other of said capacitor plates when the capacitor is in said first position thereof, said auxiliary part of said one capacitor plate being adjustable toward and away from said other capacitor plate, thereby to allow the minimum capacitance of the capacitor to be adjusted, said auxiliary part of said one capacitor plate being not opposite said other capacitor plate when the capacitor is in its second position, said capacitor further comprising means for preventing an abrupt change in the capacitance characteristic of the capacitor at the point where said auxiliary part of said one capacitor plate ceases to be opposite said other capacitor plate.

3,292,061
ELECTRICAL CAPACITOR WITH A POLYPHENYLENE ETHER DIELECTRIC
John W. Eustance, Glens Falls, N.Y., assignor to General Electric Company, a New York corporation
Filed Aug. 13, 1963, Ser. No. 301,763
18 Claims. (Cl. 317—258)



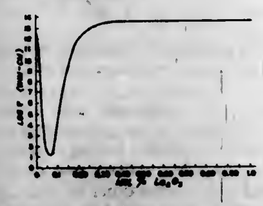
1. An electrical capacitor comprising a pair of electrodes separated by dielectric material, said dielectric material comprising a polyphenylene ether having a repeating structural unit of the formula



wherein the oxygen atom of one unit is connected to the benzene nucleus of the adjoining unit, n is a positive integer and is at least 100, Q is a monovalent substituent selected from the group consisting of hydrogen, hydrocarbon radicals free of a tertiary α-carbon atom, halohydrocarbon radicals having at last two carbon atoms between the halogen atom and phenol nucleus and being free of a tertiary α-carbon atom, hydrocarbonoxy radicals

being free of a tertiary α-carbon atom, and halohydrocarbonoxy radicals having at least two carbon atoms between the halogen atom and phenol nucleus and being free of a tertiary α-carbon atom, Q' and Q'' are both monovalent substituents which are the same as Q and in addition, halogen.

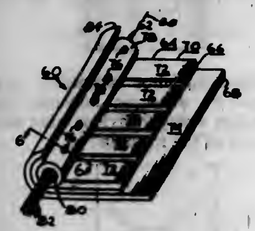
3,292,062
METHOD FOR PREPARING STABILIZED BARIUM TITANATE, AND CAPACITOR
Patrick K. Gallagher, Basking Ridge, and John B. MacChesney, Morris Plains, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,628
5 Claims. (Cl. 317—258)



1. A method for the preparation of a composition having the general formula $BaTiO_3 \cdot xLa_2O_3$ wherein x has a value within the range of 0.003 to 0.01 which comprises the steps of mixing barium titanate having a purity of at least 98.00 percent, exclusive of strontium, calcium, magnesium and lead ions, with a lanthanum compound in an amount sufficient to provide 0.3 to 1 mol percent La_2O_3 in the desired composition and firing the resultant mixture in air at a temperature within the range of 1400–1550° C. for a time period within the range of 0.25 to 4 hours, whereby there is produced an insulating composition evidencing a room temperature resistivity of at least 10^7 ohm-cm.

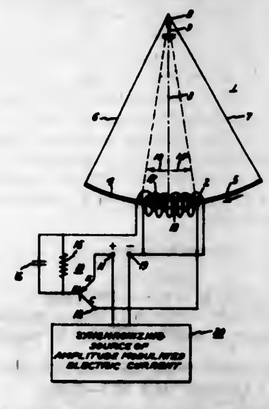
3. A capacitor comprising an element having the general formula $BaTiO_3 \cdot xLa_2O_3$ wherein x has a value within the range of 0.003 to 0.01, and at least two spaced electrodes contacting said element, said element having been prepared in accordance with the procedure of claim 1.

3,292,063
WOUND CAPACITORS
David Kellmann, 1465 S. Cloverdale, Los Angeles, Calif.
Filed Aug. 9, 1964, Ser. No. 387,105
16 Claims. (Cl. 317—260)



1. A capacitor comprising, in combination:
a tubular dielectric core member having peripheral walls defining a hollow core therethrough, and at least one aperture extending through said walls to provide communication between said hollow core and regions external said core member, and said at least one aperture spaced intermediate the ends of said dielectric core member;
a multi-layer film member comprising a first dielectric layer and a second dielectric layer spirally wound around said core member a preselected number of turns, and said first dielectric layer and said second dielectric layer substantially coextensive throughout the length of said core member, and each of said first and said second dielectric layers having an upper surface and a lower surface;
a plurality of spaced apart electrically conductive strips spirally wound around said dielectric core substantially parallel to each other and intermediate said upper surface of said first dielectric layer and said lower surface of said second dielectric layer;
at least one electrically conductive strip spirally wound around said dielectric core member intermediate said upper surface of said second dielectric layer and said lower surface of said first dielectric layer;
means for connecting a first capacitor lead to a first of said plurality electrically conductive strips; and
at least one electrically conductive contact means coupled to said tubular core member and having a first portion on the external surface of said tubular core member for selective contact to said at least one electrically conductive strip, and a second portion extending in said aperture through said wall of said tubular core member to said hollow core, and means for connecting a lead to said second portion of said electrically conductive contact in said hollow core of said tubular core member.

3,292,064
FREQUENCY REGULATED CHRONOMETER
Robert L. Waters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 16, 1964, Ser. No. 352,897
3 Claims. (Cl. 318—127)



1. A synchronized mechanical oscillator system comprising: a high Q mechanical resonant system including a magnetized element adapted to move about a neutral position with periodic motion of predetermined frequency in response to temporary displacement of said element from the neutral position; switching means coupled to said element and responsive to the movement thereof to provide an electrically conductive path between at least two terminals of said switching means only when said element moves in one predetermined direction through first and second portions of its path that are substantially equal in length and extend in opposite directions, respectively, from said neutral position; electromagnetic means located adjacent the path of said element and adapted to influence said predetermined frequency by accelerating said element during passage of said element through said first portion of the path and decelerating said element during passage of said element through said second portion of the path respectively in response to amplitude peaks of unidirectional electric current pulses having two maxima separated by a minimum; a source of amplitude modulated periodic electric current having a frequency that is substantially equal to a harmonic of said predetermined frequency; and means operatively connecting said two terminals of said switching means, said electromagnetic means and said source in series circuit relationship to apply said periodic current to said switching means so as to increase amplitude of one of said pulse maxima and decrease amplitude of the other of said pulse maxima in response to asynchronization of the movements of said element with the frequency of said source.

3,292,065
LINEAR ELECTRIC MOTOR AND CONTROL SYSTEM
Gustav O. Fredrickson, Granby, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Jan. 27, 1964, Ser. No. 340,232
9 Claims. (Cl. 318—135)



3. A linear electric motor and control circuit for producing an incremental linear movement comprising a frame, stator means mounted on said frame and formed to provide at least three pole pieces, winding means magnetically associated with the pole pieces, each of said pole pieces having an outer pole surface that is formed with equally spaced teeth, an elongate plunger having at least one longitudinal plunger surface formed to provide equally spaced plunger teeth extending transversely of said surface, means mounting the plunger for reciprocating movement with respect to the stator means to have the plunger surface travel along a linear path with the plunger teeth extending transversely of the path, the pole surfaces being aligned along said path with the teeth in the pole surfaces extending transversely of said path and said pole surfaces being equally spaced to have a tooth of one pole surface be oppositely aligned with a tooth of the plunger and with a similar tooth of the next pole surface being a fraction of the plunger tooth pitch misaligned from an oppositely disposed plunger tooth and with a similar tooth of the third pole surface being twice the fraction of the plunger tooth pitch misaligned from an oppositely disposed plunger tooth and a control circuit adapted to be connected to a source of electrical energy and the winding means to change the magnetic polarity of at least one of said pole pieces to effect a linear movement of the plunger that is the fraction of the tooth pitch of the plunger teeth.

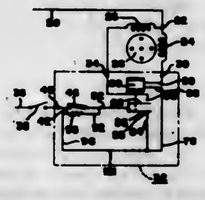
3,292,066
DYNAMIC BRAKING CIRCUIT FOR INDUCTION MOTORS
Charles K. Hooper, Linthicum Heights, and Bernard V. Gerber, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 30, 1964, Ser. No. 394,048
1 Claim. (Cl. 318—211)

In a single phase alternating current induction motor of a type identified by a field including a capacitor therein, a circuit for reversing and dynamic braking thereof, comprising: a pair of relay switches with interconnected central terminals, each having a separate current source terminal and a separate field terminal at an opposite side of said capacitor, said switches, one at said source terminal and other at said field terminal, alternatively, for



forward and reverse operation, respectively, of said motor; and a semiconductor rectifier connected between said central and source terminals and in series with said field with both said switches at said field terminals, said rectifier allowing a pulsating unidirectional current through said field to dynamically brake said motor.

3,292,067
ELECTRICAL APPARATUS
Harry F. Clark, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Oct. 30, 1962, Ser. No. 234,093. Divided and this application Jan. 15, 1965, Ser. No. 425,787
4 Claims. (Cl. 318—221)

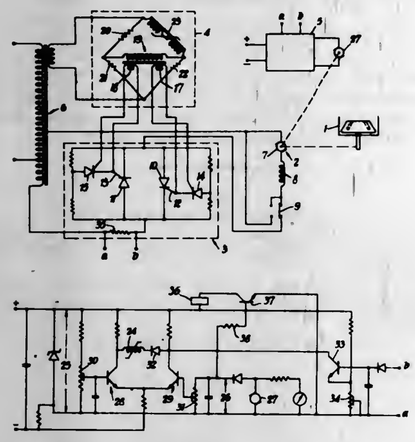


1. A control for an electric motor having main and phase windings, said control including a self-resetting thermal overload protector for deenergizing said motor upon an overload, an electric heater adapted to be connected in series with the main winding for accelerating the operation of said overload protector and for delaying the resetting thereof, a starting relay having normally open contacts adapted to be connected in series with said phase winding for energizing said phase winding, and means including normally closed contact means operated by said starting relay to open position during the energization of the phase winding for energizing said heater during the starting period and connected in shunt circuit with only said electric heater for shunting said electric heater to substantially deenergize said heater during the remainder of the running period of the motor.

3,292,068
SATURABLE REACTOR MOTOR SPEED CONTROL CIRCUIT
Edward John Holden, Crawley, Sussex, England, assignor to M.S.R. Holdings Limited, London, England, a British company
Filed Feb. 26, 1964, Ser. No. 347,476
Claims priority, application Great Britain, Mar. 1, 1963, 8,404/63
10 Claims. (Cl. 318—327)

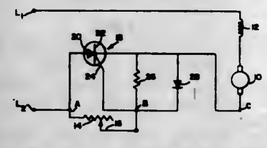
1. An electric motor in combination with a speed control circuit comprising: a current supply circuit connected to said electric motor for supplying current thereto; at least one controllable semi-conductor rectifier device in said current supply circuit; a bridge circuit; a saturable reactor comprising one arm of said bridge circuit; an output of said bridge circuit connected to said controllable

semi-conductor rectifier device for supplying control signals from said bridge circuit to said rectifier device; a control winding of said saturable reactor for adjusting the phase position of said control signals; whereby the speed of said electric motor may be controlled by said control winding for adjusting the phase position of said control signals; an error sensing circuit connected to said control winding for supplying thereto an electrical error signal which is a function of the difference between the required and the actual speed of said electric motor so as to cause the speed of said electrical motor to be controlled in a manner such as to reduce said electrical error signal,



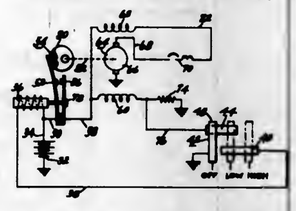
said error sensing circuit including a pair of transistors in a long-tailed pair configuration, said control winding connected between the collectors of said pair of transistors; motor current regulating means; a transistor in said motor current regulating means; means connected to supply a voltage which is a function of current in said electric motor to the base of said transistor for rendering said transistor conductive when a predetermined motor current is exceeded; and the collector-emitter path of said transistor connected to said control winding so as to cause, when said transistor is rendered conductive, the mean value of current in the said electric motor to be reduced.

3,292,069
TORQUE INCREASING DEVICE FOR A SERIES COMMUTATOR MOTOR
Wade V. Evans, Jr., Richmond, Va., assignor to Texaco Experiment Incorporated, Richmond, Va., a corporation of Virginia
Filed Oct. 11, 1963, Ser. No. 315,572
3 Claims. (Cl. 318—345)



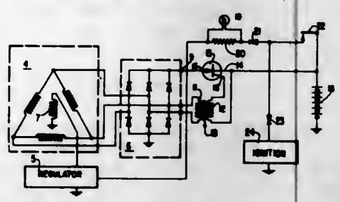
1. A device for increasing the available torque of a speed-controlled commutator motor having series-connected armature and field windings adapted to be fed from an A.C. supply voltage source through a speed controlling rheostat series-connected between said source and said motor, said rheostat having a first supply voltage terminal and a second terminal; comprising, in combination, a control resistor, said resistor being connected between and in series with said second rheostat terminal and said motor and defining a first current path; a solid state controlled rectifier having an anode, a cathode, and a gate; said rectifier being connected with its anode-cathode path in shunt from said first rheostat terminal to said motor; and a second current path, said second current path connecting said gate and said second rheostat terminal.

3,292,070
ELECTRIC MOTOR PROTECTOR CIRCUIT
Thomas M. Hlechak, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,250
1 Claim. (Cl. 318—472)



An energizing circuit for a direct current compound wound motor having an armature, series field winding and a shunt field winding, said energizing circuit comprising: an electric power source; a relay operated switch including a coil and a pair of contacts closed upon energization of said coil; a first circuit connecting said shunt field winding through said relay operated switch to said power source; a second circuit connecting said armature and series field winding through said relay operated switch to said power source; a thermal overload circuit breaker having a large spread between the low limit trip time and the high limit trip time connected in said second circuit; and a third circuit including manual switching means for energizing said relay coil from said power source whereby closure of said manual switching means energizes said motor such that the current flow through said relay coil and said shunt winding bypasses said overload circuit breaker and only current normally flowing through the armature and the series field winding flows through said overload circuit breaker, said thermal overload circuit breaker thereby carrying only the current normally passing through the armature and the series field winding while offering thermal overload protection for the entire motor.

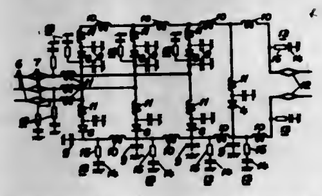
3,292,071
RECTIFIER PROTECTING CIRCUIT
Robert C. McLaughlin, Bloomingdale, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 19, 1963, Ser. No. 324,697
12 Claims. (Cl. 320—25)



1. In an electrical system for a motor vehicle and which includes a battery, alternating current generation means, a plurality of diodes connected to the alternating current generation means for providing a direct current potential to charge the battery, and an ignition system,

a diode protection circuit including in combination, semiconductor switch means coupled between the plurality of diodes and the battery, first circuit means coupling said semiconductor switch means to the generation means and responsive thereto to cause said switch means to connect the battery to the plurality of diodes when the generation means produces an output potential, and second circuit means coupling the battery to the ignition system, said second circuit means being responsive to the polarity of the battery and applying a potential from the battery to the ignition system when the polarity of the battery is correct, said second circuit means decoupling the battery from the ignition system when the polarity of the battery is not correct.

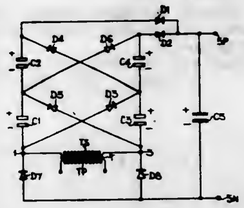
3,292,072
MEANS FOR DECREASING RADIO DISTURBANCES GENERATED IN A STATIC CONVERTER
Nils Hybin-Cavallius, Tre Krokars Gata 4A, Karl-Erik Olsson, Kopmangatan 3A, Lennart Fuxé, Grottvagen 57, and Sven Jacobsen, Grottvagen 56, all of Ludvika, Sweden
Filed Apr. 9, 1963, Ser. No. 271,657
Claims priority, application Sweden, Apr. 10, 1962, 3,944/62; Dec. 21, 1962, 13,837/62
4 Claims. (Cl. 321—9)



1. A static multi-phase converter for high voltage comprising rectifier means having a plurality of inlet terminals for connection to a multi-phase source and first and second output terminals, said rectifier means including a plurality of pairs of rectifiers having anodes and cathodes, first means connecting each of said inlet terminals to the anode of one rectifier of a pair and to the cathode of another rectifier of a pair, second means connecting the unconnected anodes of the rectifiers to said first outlet, third means connecting the unconnected cathodes of each pair to the second outlet, said third connecting means including elements connecting one unconnected cathode to another and connecting the cathodes to said second outlet, and a plurality of damping means each connected between a different one of said elements at a point adjacent one of the cathodes connected to said element and earth, each damping means comprising a resistive component and a capacitor connected in series.

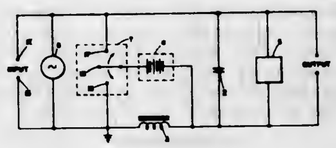
3,292,073
VOLTAGE-MULTIPLIER RECTIFIER CIRCUITS
Royston Everard Jones, Maplederham, and Ronald Thomas Waters, Earley, Reading, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 15, 1963, Ser. No. 302,328
Claims priority, application Great Britain, Aug. 31, 1962, 33,579/62
5 Claims. (Cl. 321—15)

1. A voltage multiplier rectifier circuit comprising:
(a) first and second input terminals between which an alternating supply can be applied;
(b) first and second direct current output terminals;
(c) a reservoir capacitor connected across the first and second output terminals;
(d) a first rectifier connected between the first input terminal and the first output terminal;
(e) a second rectifier connected between the second input terminal and the first output terminal in the same sense or direction as the first rectifier;
(f) a third rectifier connected by one pole to the second output terminal;
(g) a fourth rectifier connected by one pole to the second output terminal in the same sense or direction as the third rectifier;
(h) a first direct current charging path extending between the first and second output terminals through the first and third rectifiers and a series chain of "n" capacitors interposed between these two rectifiers;
(i) a second direct current charging path extending between the first and second output terminals, in the



same sense or direction as the first charging path, and extending through the second and fourth rectifiers and a series chain of "n" capacitors interposed between these two rectifiers;
(j) shunting rectifiers, $2n$ in number, series connected in pairs, and each pair connected so as to shunt one pair only of consecutive series connected capacitors in one of the D.C. paths; and
(k) a connection between the junction point of each pair of shunting rectifiers and the junction point of the pair of capacitors in the other D.C. path which correspond to the two capacitors which this pair of rectifiers is shunting, whereby the reservoir capacitor tends to charge to $(n+1)$ times the peak value of the voltage applied to the input terminals.

3,292,074
FREQUENCY DIVIDER UTILIZING A SATURABLE REACTOR AND A CAPACITOR
Harry T. Mortimer, Anaheim, Calif., assignor to North American Aviation, Inc.
Filed Apr. 3, 1963, Ser. No. 270,373
2 Claims. (Cl. 321—68)



2. In combination:
alternating voltage source means,
capacitor means in series with said source means,
saturable reactor means in series with said capacitor means and said alternating voltage source means,
impedance means in parallel with said capacitor means and in series with said alternating voltage source means and said saturable reactor means,
charging means,

means including a first switch means for momentarily connecting said charging means in parallel with said capacitor means for charging said capacitor means to a voltage, including means for disconnecting said charging means from said capacitor means after the capacitor is charged to said voltage, and wherein is further included a second switch means for discharging said capacitor means,

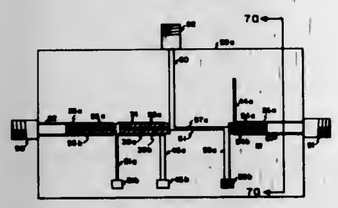
said first and second switch means comprise a single pole, double throw switch having a neutral, unconnected position.

3,292,075

STRIPLINE FILTER HAVING COINCIDING PASS BANDS AND STOP BANDS AND DEVICES UTILIZING THE SAME

Robert J. Wenzel, Oakland County, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed Apr. 30, 1964, Ser. No. 363,793
13 Claims. (Cl. 321—69)



1. Apparatus for filtering radiant energy comprising ground plane members,

first, second, and third ports being spaced apart,

said ports being located at spaced points on the periphery of said ground plane members,

at least one TEM mode propagation component for providing a distributed constant impedance to said radiant energy being between said first and second ports to comprise a first filter section,

at least one TEM mode propagation component for providing a distributed constant impedance to said radiant energy being between said second and third port to comprise a second filter section,

said components being insulated from said ground plane members for a predetermined distance along the length thereof,

each of said first and second filter sections having a plurality of pass bands and stop bands, with the pass bands of one of said sections coinciding with the stop bands of the other of said sections to form pass-stop bands,

the pass bands of one filter section crossing over the stop bands of the other filter section as approximately the half power point along said bands, the points of said crossings being located sufficiently near said half power point to provide an input VSWR of less than 2.0 for all frequencies to 20 gigacycles.

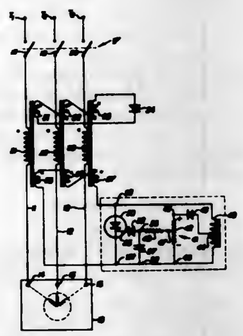
3,292,076

VARIABLE VOLTAGE CONTROL SYSTEM

Cornelis B. A. Wickenhagen, Torrance, Calif., assignor to Emerson Electric Co., a corporation of Missouri

Filed Jan. 14, 1963, Ser. No. 251,178
9 Claims. (Cl. 323—89)

4. In a control system for multiphase load having leads respectively for the phases and cooperable with a multiphase source: a primary winding serially connected in each lead; a core for each primary winding; a secondary coil on each core, constituting a control winding for determining the degree of saturation of the respective core; and a common control circuit for all of the secondary windings, including a controllable rectifier device in closed series circuit with said control windings, for permitting



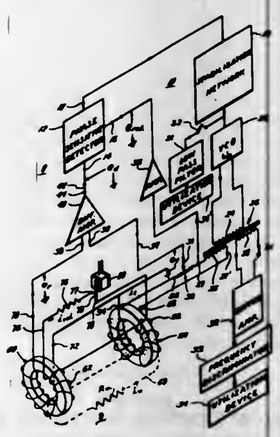
unidirectional current to flow in all the control windings, and means for adjusting the phase angle at which said rectifying device becomes active during a half cycle of said source.

3,292,077

CONDUCTIVITY MEASURING SYSTEM

William J. Slaughter, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Jan. 2, 1963, Ser. No. 249,088
9 Claims. (Cl. 324—30)



1. In a system for measuring the conductivity of a liquid,

a tunable oscillator for providing a carrier signal,

a receiver coil immersed in said liquid,

means utilizing said carrier signal to induce an alternating potential in said receiver coil,

means utilizing said alternating potential and at least a portion of said carrier signal to provide a control signal, and

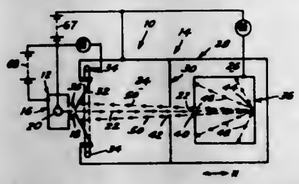
means operatively coupling said control signal to tune said oscillator by an amount and in a direction corresponding to the conductivity of said liquid.

3,292,078

VACUUM GAUGE HAVING AN X-RAY TRAP AND A SHIELD

Richard F. Herzog, Lexington, Mass., assignor to GCA Corporation, Bedford, Mass., a corporation of Delaware

Filed Dec. 8, 1961, Ser. No. 158,044
5 Claims. (Cl. 324—33)



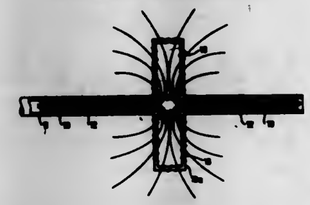
1. An ion gauge for measuring gas pressure of the order of 10^{-10} torr comprising, a source of electrons for producing ions, focus and control means substantially surrounding said source, anode means adapted to accelerate said electrons, trap means consisting of an enclosure having an opening therein through which said accelerated electrons are received, shielding means located between said anode and said trap, ion collector means located so as to be shielded by said trap and said shield from any X-ray produced by the electrons and means electrically connected to said collector means to measure the flow of ions thereto.

3,292,079

PROBE DEVICE FOR ELECTRIC PLASMA MEASUREMENTS

Heinrich Schindler, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Apr. 2, 1963, Ser. No. 269,960
Claims priority, application Germany, Apr. 4, 1962, S 78,883
5 Claims. (Cl. 324—40)



1. Probe for measuring the product of electric conductance times speed of a moving fluid electric medium, comprising an insulating tube, two opposingly poled magnetic field members having respective magnetic axes aligned in said tube and being axially spaced from each other to form an intermediate field gap, and two closed-loop probe coils mounted on said tube in the field range of said gap and having respective coil-surrounded probe areas extending on diametrically opposite sides of said tube in a common axial plane, said probe coils having output leads for providing measuring voltage when the probe is exposed to a flow of the medium.

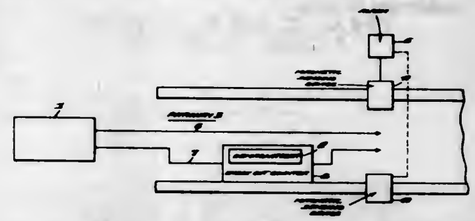
3,292,080

SYSTEM AND METHOD FOR PREVENTING PILFERAGE BY DETECTION OF MAGNETIC FIELDS

Emmanuel M. Trifilio, Lincoln LeVeque Tower, Columbus, Ohio

Filed Nov. 23, 1964, Ser. No. 412,893
16 Claims. (Cl. 324—41)

16. A method for preventing the pilferage of goods, comprising providing a security area in which goods are to remain, said security area having an entrance and exit pathway, actively supplying said goods located in the security area with a permanent magnetic field, position-



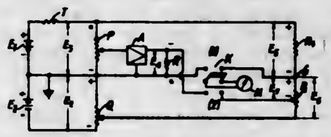
ing a magnetic sensing means at said exit pathway, sensing the magnetic field of said goods which pass into said exit pathway and preventing the removal of said goods from the security area.

3,292,081

APPARATUS FOR MEASURING THE NEGATIVE RATIO OF VOLTAGE

Yoshiharu Kondo and Shuji Nakazawa, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed May 17, 1963, Ser. No. 281,255
Claims priority, application Japan, June 4, 1962, 37/23,066
5 Claims. (Cl. 324—57)



1. Apparatus for measuring negative voltage dividing ratio and negative voltage increase ratio comprising

a bridge circuit having four arms, a pair of input terminals, and a pair of output terminals.

two sources of potential connected in series adding relationship across said input terminals,

means connecting the point of connection between said two potential sources to one of said output terminals,

said first arm including a circuit under test having an output terminal which produces a negative voltage dividing ratio or negative voltage increase ratio,

said second arm comprising a variable divider resistor and being connected in series with said first arm between said input terminals,

said third arm comprising a proportional arm resistor,

said fourth arm comprising a standard variable divider resistor and being connected in series with said third arm between one of said output terminals and the variable contact on said variable divider resistor,

a current indicating means,

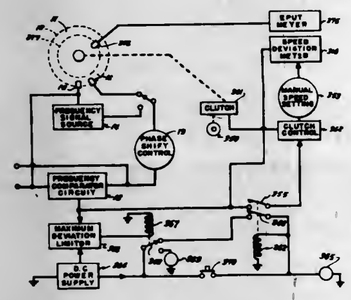
means for connecting said current indicating means between said output terminals whereby said bridge is balanced by first adjusting said variable divider resistor,

and means for then connecting said current indicating means between said output terminal of said circuit under test, and whereby the variable contact on said standard variable divider resistor, negative dividing ratio or negative increase ratio can be accurately determined from the setting of said standard variable divider resistor when said latter resistor is adjusted until said current indicating means indicates zero current.

3,292,082
SPEED MONITORING APPARATUS USING A SATURATED MAGNETIC RECORDING TRACK

Michael V. Braino, Malibu, and William J. Holt, Pacific Palisades, Calif.; said Holt assignor to Varo Inc. Electronics Division

Filed Apr. 27, 1962, Ser. No. 190,651
5 Claims. (Cl. 324—70)



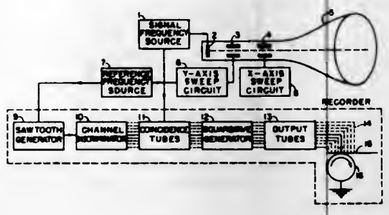
1. A monitoring apparatus for producing a signal which varies in accordance with the deviations and the speed of a movable member comprising: a control track movable with the movable member; a recording transducer disposed along said track; frequency standard means connected to said recording transducer for energizing the recording transducer with a signal having a constant frequency whereby said recording transducer continuously records a signal on said track while said movable member is moving; a reading transducer spaced from said recording transducer along the control track in the direction of movement of said control track for reading the recorded signal; frequency comparator means coupled to said frequency standard means and to said reading transducer for comparing the phase relationships of said constant frequency and the output of said reading transducer and producing a control signal which varies in accordance with the deviations in the speed of said movable member; and means operatively associated with said reading transducer for varying the phase relationship of the output of said reading transducer relative to said constant frequency before said output of said reading transducer is applied to said last mentioned means, said control track comprising a magnetic record means and said recording transducer magnetically saturating said magnetic recording means alternately in opposite magnetic polarities in accordance with said constant frequency whereby a new signal recorded on said magnetic record means erases the old record previously recorded by said recording transducer.

3,292,083
DEVICE FOR PROVIDING A PERMANENT DISPLAY OF THE PHASE OR FREQUENCY DIFFERENCE BETWEEN SIGNALS

Clifton H. Prosbrey, Jr., Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 5, 1955, Ser. No. 551,180
7 Claims. (Cl. 324—79)

1. In a frequency measuring system, a signal source providing a first series of pulses having a selected repetition frequency, signal generating means for providing a second series of pulses having a predetermined repetition frequency, a plurality of coincidence means, each adapted to provide an output signal upon the simultaneous application of at least two input signals, means connected between said signal source and said plurality of coincidence means for applying said first series of pulses in parallel to each of said plurality of coincidence means, means connected between said signal generating means and said plurality of coincidence means for applying each pulse of said second series of pulses to a respective one of said coincidence means so that each of the plurality of coincidence means provides said output signal when a pulse of said first series of pulses and a pulse of said

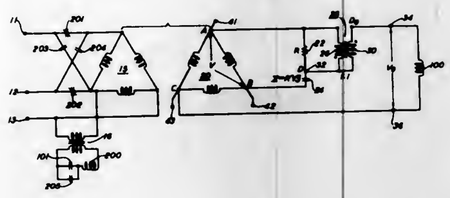


second series of pulses is applied during the same time interval, a plurality of recording devices, means for connecting each of said plurality of recording devices to the output of a respective one of said coincidence means, a recording medium, and means for positioning said recording medium so that the operation of each of said plurality of recording devices may be recorded on said recording medium.

3,292,084
PHASE ROTATION INDICATOR

Philip F. Beischer, Belleville, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 6, 1964, Ser. No. 343,036
1 Claim. (Cl. 324—86)



In a phase rotation direction sensor for a polyphase electrical system, in combination,

(a) a two element phase splitting network connected across a first phase of said polyphase system,

(b) said network splitting the phase voltage into components of determined phase relationship,

(c) voltage sensing and reversing means connected across one element of said network,

(d) said sensing and reversing means having a unity input to output voltage magnitude ratio,

(e) voltage summation means having input means with said input connected across the output of said sensing means and a phase voltage adjacent to said first phase,

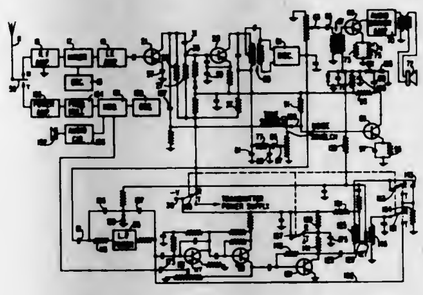
(f) said summation means responsive to the magnitude of voltages at its input,

(g) said determined phase relationship so selected that said input voltage to the comparison means will be substantially zero for one direction of phase rotation in said polyphase system and of a material non null value for the opposite direction of phase rotation.

3,292,085
COMBINED ENCODER-DECODER DEVICE PROVIDING RAPID BUILD UP OF OSCILLATIONS

Paul W. Black, Harvey, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Sept. 18, 1963, Ser. No. 309,768
7 Claims. (Cl. 325—18)

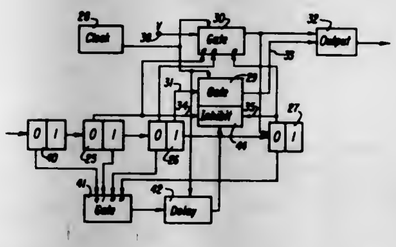


1. A combination encoder-decoder device for use in selective signaling two-way radio apparatus and operable in encoder mode to provide tone oscillations and in decoder mode to provide a control signal in response to a received tone, said device including in combination, an amplifier, a frequency responsive unit coupled to the output of said amplifier and providing a control signal for the receiver upon receipt of signals of a predetermined frequency from said amplifier, said amplifier having a bias circuit for controlling the gain thereof according to the magnitude of bias potential applied thereto, means for applying a predetermined bias potential to said bias circuit for decoder operation, and switch means selectively operable to feed back signals from said frequency responsive unit to the input of said amplifier for operation in encoder mode, said switch means having provision for changing the predetermined bias potential applied to said bias circuit when said device is operating in encoder mode, said bias circuit having storage means therein maintaining the predetermined bias potential of decoder mode operation for a period of time after said switch means is operated, to permit oscillations to build up to a desired amplitude.

3,292,086
SYSTEM FOR CONVERTING A TRAIN OF BINARY ZEROES TO A TRAIN OF ALTERNATING ONES AND ZEROES AND VICE VERSA

Henry Magnuski, Glenview, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed July 11, 1963, Ser. No. 294,301
12 Claims. (Cl. 325—38)

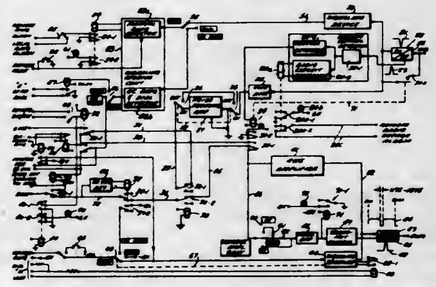


1. In a binary pulse system wherein information is represented by a first pulse train including a series made up to 1 and 0 binary pulses and wherein 1 and 0 pulses are provided in alternation in the absence of information, the method of deriving a second pulse train wherein no 1 pulses are present in the absence of information from the first pulse train including the steps of, sampling three adjacent pulse positions of the first pulse train to determine the presence of 1 and 0 pulses, converting a 010 pulse sequence in the first pulse train into a 000 pulse sequence in the second pulse train, and converting a 000 pulse sequence in the first pulse train into a 010 pulse sequence in the second pulse train.

3,292,087
SIGNAL MONITORING AND SWITCHING CIRCUITS FOR A TERMINAL FACILITY

Lawrence M. Carver, Stamford, Conn., assignor to Stelma Incorporated, Stamford, Conn., a corporation of Connecticut

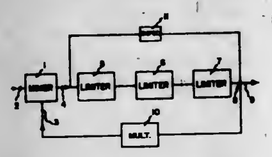
Filed Sept. 24, 1963, Ser. No. 311,086
10 Claims. (Cl. 325—64)



1. Terminal means for connecting a four-wire radio circuit receiving signals from a remote location comprising a first channel for receiving voice signals and standby and function signals from the radio circuit; said standby control signal being received when the remote location is in standby condition and said function control signal being received when the remote location is transmitting voice signals; a second channel for sending signals to control the radio circuit; a third channel for connecting said terminal means to a two-wire telephone line; normally disabled relay means including first contact means for connecting said third channel to said second channel; detector means connected to the input of the first channel energizable by the function control signal of a first frequency to energize said relay means; said relay means including second contact means; said relay means when energized, operating said first and second contact means for disconnecting said third channel from said second channel and connecting said third channel to said first channel; first filter means coupled between the radio circuit and the input of said detector means; said first channel including second filter means and amplifier means connected to the output of said second filter means; said second filter means passing signals in the voice band except for a narrow band of frequencies to said amplifier means; said function control signal of said first frequency and said standby control signal of a second frequency lying in said narrow band; said amplifier means including means for automatically adjusting the gain of the amplifier under control of changes in input signal level to provide output signals of suitable amplitude; said first filter means passing signals of frequencies lying only in said narrow band; second detector means connected to the output of said first filter means to receive said first and second control signal frequencies; said

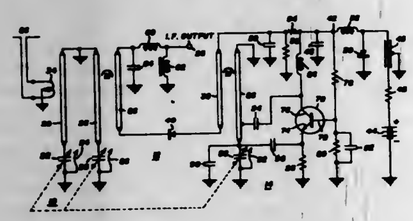
second detector means including means for providing a visible indication when the level of incoming signals are below a predetermined threshold.

3,292,088
FREQUENCY MODULATION COMPRESSION RECEIVER
Ronald H. Martin, Hamilton, Ontario, Canada, and Alan J. Buxton, Belmont, Calif., assignors to Canadian Westinghouse Company Limited, Hamilton, Ontario, Canada, a company of Canada
Filed Mar. 29, 1963, Ser. No. 269,006
5 Claims. (Cl. 325—346)



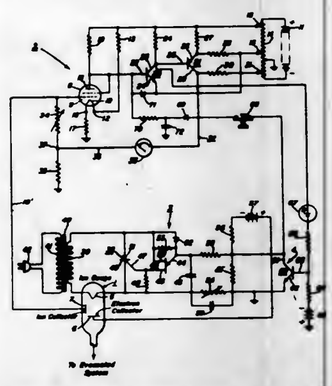
1. A frequency modulation compression receiver including a mixer, a source of incoming signal applied to said mixer, a source of local oscillations applied to said mixer, said source of local oscillations comprising a frequency multiplier, a limiting amplifier coupled to the output of said mixer, an impedance arranged to apply a further local oscillation to the output of said mixer and a coupling from the output of said amplifier to said impedance permitting the generation of said further local oscillation only when the output of said amplifier is below usable level, and means to apply the output of said limiting amplifier to said frequency multiplier.

3,292,089
UHF CONVERTER CIRCUIT ARRANGEMENT
Adolf Earnest Wolfram, Jamesville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,522
1 Claim. (Cl. 325—449)



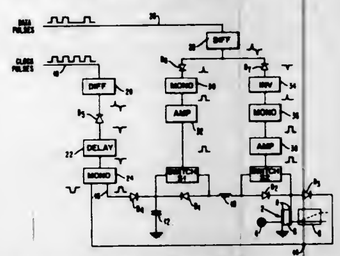
A converter circuit comprising: a frequency selective input network for tuning a radio frequency signal in a UHF frequency band; an oscillator network for generating a high frequency alternating signal; a mixer network for heterodyning two input signals to produce an output difference frequency signal, said mixer network including a diode mixing element, said diode having a diode current versus diode voltage curve including segments thereon of relatively higher and lower dynamic impedance; said input network, said oscillator network and said mixer network arranged for coupling a tuned radio frequency signal and oscillator alternating signal into the mixer network for producing a difference frequency signal thereof; and frequency responsive means for causing said diode to exhibit a relatively higher dynamic impedance when relatively higher UHF frequencies are tuned.

3,292,090
ION GAUGE SYSTEM HAVING OVERLOAD PROTECTION
Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 1, 1964, Ser. No. 379,633
6 Claims. (Cl. 328—8)



1. An electric signal sensing system comprising:
(a) a negative feedback direct current amplifier including a plurality of cascaded amplifying stages, a subsequent one of said stages being saturable at a predetermined value of amplifier input signal magnitude that is insufficient to saturate stages preceding said one stage;
(b) a source of signal to be sensed coupled to the input of said amplifier; and
(c) electronic protective means coupled to at least one of said preceding stages and responsive to a sudden change in output signal thereof produced when said subsequent stage saturates to de-energize at least a portion of said system.

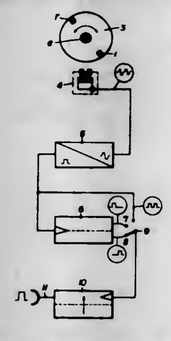
3,292,091
ENERGY CONSERVING CIRCUIT FOR CAPACITIVE LOAD
Kurt M. Kosanke, Wappingers Falls, Werner W. Kulcke, Poughkeepsie, and Erhard Max, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 24, 1965, Ser. No. 434,998
6 Claims. (Cl. 328—67)



1. A circuit for transferring energy to and from a capacitive load comprising, in combination,
a tank capacitor,
a series circuit including an inductance connected between said tank capacitor and said capacitive load,
a pair of diodes connected in said series circuit at opposite ends of said inductance, each operating to block the flow of current toward said inductance and permitting current flow in the opposite direction,

separate switch means for bypassing each of said diodes,
and means for operating said separate switch means successively.

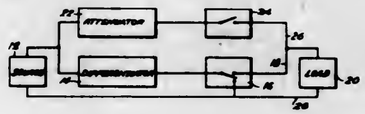
3,292,092
DEVICE FOR THE TRIGGERING OF CATHODE-RAY OSCILLOGRAPHS FOR INDEXING INTERNAL COMBUSTION ENGINES
Reimar Germann, Graz, Austria, assignor to Hans List, Graz, Austria
Filed July 21, 1964, Ser. No. 384,166
Claims priority, application Austria, July 22, 1963, A 5,868/63
4 Claims. (Cl. 328—179)



1. In an instrument for developing an index waveform to synchronize a cathode ray oscillograph by triggering a sweep brace therein, the oscillograph being adapted to view operational characteristics of internal combustion engines of both the two-stroke and four-stroke type having a rotary member coupled thereto and driven thereby, with an indicator element displaceably arranged for securing at a variable position on said rotary member of the engine to be indexed, a corresponding pickup device arranged adjacent the path of said indicator element to produce a pulse voltage therefrom as the rotary member rotates, the improved system for deriving an indexing waveform from said pulse voltage for synchronizing said oscillograph to view various operational modes in said engines, comprising a processing channel for converting the form of said pulse voltage into an index waveform by means of a pulse shaping circuit processing said pulse voltage to produce a pulse of standardized shape and amplitude, a bistable state circuit connected for operation from said pulse of standardized shape and amplitude to produce alternating output signals at both a direct and an inverted output terminal responsive to a change in state effected by said pulse of standardized shape, a monostable state device producing in response to an input trigger pulse a shaped output pulse of a duration suitable for a triggering pulse to index the sweep trace in said oscillograph which output pulse is independent in characteristics from the input trigger pulse, and a circuit connecting at least one of said alternating output signals to said monostable state circuit as said input trigger pulse.

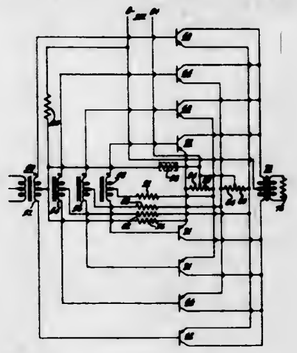
3,292,093
DEMODULATOR FOR FREQUENCY MODULATED SIGNAL
Kenneth K. Clarke, 300 Riverside Drive, New York, N.Y., and Donald T. Hess, 88-11 Union Turnpike, Glendale, N.Y.
Filed Oct. 12, 1965, Ser. No. 500,477
14 Claims. (Cl. 329—129)

1. Apparatus for demodulating a frequency modulated carrier, said apparatus comprising means to differentiate a portion of the input, means to feed the positive side of the derivative to the output, means to provide a bucking wave corresponding to another portion of the input, means to feed the negative side of the bucking wave to the output, the aforesaid means having components selected and adjusted for a ratio of the two opposite feeds such that at a desired center frequency the average output is zero, the means to feed the positive side of the derivative to the output being a first transistor with a bias source biasing it to a voltage higher than the load voltage, and the emitter



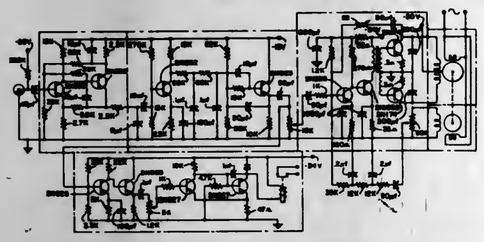
side of said first transistor being shunted by a first diode, the means to feed the negative side of the attenuated wave to the output being a second transistor with a bias source biasing it to a voltage higher than the load voltage, the emitter side of the second transistor being shunted by a second diode, one of said transistors being PNP and the other being NPN, and said diodes being polarized oppositely to one another and each oppositely to the emitter circuit that it shunts.

3,292,094
PARALLEL AMPLIFIER CIRCUIT HAVING LOAD EQUALIZATION MEANS
Billie J. Jones, Byesville, Ohio, assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 18, 1964, Ser. No. 345,737
6 Claims. (Cl. 330—15)



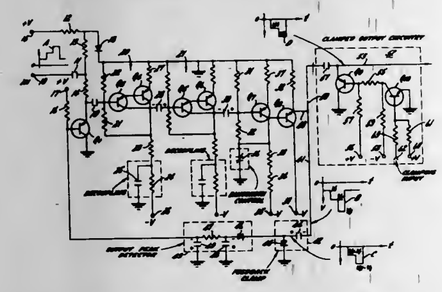
5. An amplifier system for supplying power to a load comprising:
a plurality of push-pull amplifier stages N_1, N_2 . . . N_n connected in parallel to supply said load in common,
a plurality of bias control means equal in number to said plurality of amplifier stages, one of which connects said N_1 amplifier stage to said N_2 amplifier stage and another of which connects said N_n amplifier stage to said N_1 amplifier stage,
each of said bias control means being responsive to changes in the power supplied to said load by one of the two amplifier stages with which it is associated to change in the same direction the power supplied to said load by the other of the two amplifier stages with which it is associated.

3,292,095
COMPLEMENTARY TRANSISTOR AMPLIFIER INCLUDING INPUT IMPEDANCE INCREASING FEEDBACK MEANS
David L. A. Duff, Burlington, Ontario, Canada, assignor to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada
Original application Oct. 10, 1961, Ser. No. 144,076, now Patent No. 3,214,661, dated Oct. 26, 1965. Divided and this application June 3, 1965, Ser. No. 461,052
5 Claims. (Cl. 330—17)



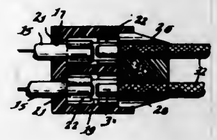
1. Light sensitive apparatus including a high-impedance photosensitive voltaic device, a PNP transistor, means connecting said PNP transistor in amplifying relationship with said device, said connecting means having high input impedance matching the impedance of said device, an NPN transistor, means connecting said NPN transistor in amplifying relationship with said PNP transistor, and negative feedback means connected between said NPN and said PNP transistors.

3,292,096
LINEAR, AUTOMATIC GAIN CONTROL AMPLIFIER
Raymond J. Deneen, Jr., Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 11, 1964, Ser. No. 366,670
6 Claims. (Cl. 330—29)



1. A linear automatic gain controlled amplifier comprising:
- a variable voltage divider circuit including a series of resistors and the emitter and collector electrodes of a transistor in series across a voltage, said transistor having a base electrode, and an input to said voltage divider being at the juncture of two of said series resistors to said emitter and with an output taken from said emitter;
- an inverting amplifier having an input coupled to the output of said voltage divider and an output to provide inverted amplified voltage signals therefrom;
- an output clamping circuit coupled to said amplifier output to provide the amplified voltage at a clamped reference voltage level adaptable for output circuitry; and
- a feedback circuit coupling the output of said amplifier with the base electrode of said transistor in said voltage divider, said feedback circuit including a feedback clamp and a peak detector in that order from said amplifier output to said base electrode whereby the feedback voltage controls the impedance of said transistor to control the gain to said amplifier inversely to amplification.

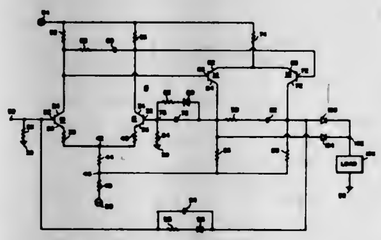
3,292,097
CIRCULAR FLUORESCENT LAMP CONNECTOR
Edwin G. Gaynor, Bridgeport, Conn., assignor to Edwin S. Gaynor, Southport, Conn.
Filed Dec. 16, 1963, Ser. No. 330,748
3 Claims. (Cl. 339—50)



1. A circuit connector for a circular fluorescent lamp including a socket joining the ends of a fluorescent tube, said socket having pairs of projecting prongs with each pair connected to the ends of a filament in the tube, comprising:
- (a) a body member having a recess at one end thereof and a plurality of openings in the opposite end adapted to receive the prongs of the socket,
- (b) a cap conformably recieved in said recess in the body member and secured thereto and having two pairs of longitudinally extending generally radially outwardly opening channels adapted to receive circuit leads for the fluorescent tube,
- (c) said body member having longitudinally extending enlarged passages therein between said recess and terminating at the openings in the opposite end of the body member,
- (d) and a conductive terminal positioned in each of said passages with each terminal including
- (e) an elongated longitudinally extending flat base having parallel longitudinal edges,
- (f) a pair of converging arms integral with and extending upward from the opposite longitudinal edges of the base adjacent one of the openings in the body member and adapted to receive and frictionally engage the end of a prong projecting from the socket and entering said one opening, and
- (g) a pair of diverging arms extending upward and outward from the longitudinal edges of the base at the opposite end thereof adjacent said recess,
- (h) each circuit lead being secured to the base of a terminal between the diverging arms.

3,292,098
AMPLIFIER CIRCUIT WITH UNIPOLAR OUTPUT INDEPENDENT OF INPUT POLARITY
Gerald K. Bensing, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,448
2 Claims. (Cl. 330—69)

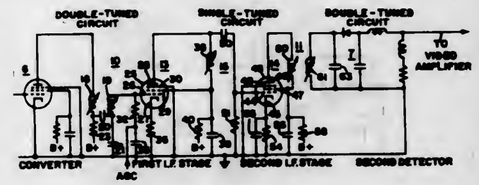
1. Absolute apparatus for converting a multi-polarity input signal of variable magnitude to a unipolarity output signal which has a magnitude that is a function of the input signal, the apparatus including input and output means and further comprising, in combination:
- first differential amplifier means including first and second input means and first and second output means;
- second differential amplifier means including first and second input means and first and second output means;
- means connecting the input means of the absolute apparatus to said first input means of said first differential amplifier means;
- reference potential means connected to said second input means of said first differential amplifier means;
- means connecting said first output means of said first differential amplifier means to said first input means of said second differential amplifier means;
- means connecting said second output means of said first differential amplifier means to said second input means of said second differential amplifier means;
- first rectifying means connecting said first output means of said second differential amplifier means to the output means of the absolute apparatus;
- second rectifying means connecting said second output means of said second differential amplifier means to the output means of the absolute apparatus;
- first feedback means connecting said first output means of said second differential amplifier means to said second input means of said first differential amplifier means, said first feedback means including a third



rectifying means such that feedback is obtained only when said first output means of said second differential amplifier means is of a predetermined polarity with respect to said second input means of said first differential amplifier means, the third rectifying means providing a voltage drop in the feedback signal substantially equal to that provided by said first rectifying means and thereby minimizing errors in the output signal; and
- second feedback means connecting said second output means of said second differential amplifier means to said first input means of said first differential amplifier means, said second feedback means including a fourth rectifying means such that feedback is obtained only when said second output means of said second differential amplifier means is of a predetermined polarity with respect to said first input means of said first differential amplifier means, the fourth rectifying means providing a voltage drop in the feedback signal substantially equal to that provided by said second rectifying means and thereby minimizing errors in the output signal.

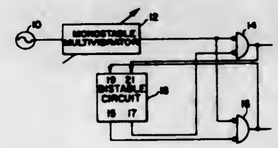
3,292,099
TWO-STAGE INTERMEDIATE FREQUENCY AMPLIFIER
Robert B. Dome, Geddes Township, Onondaga County, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 14, 1962, Ser. No. 223,699
6 Claims. (Cl. 330—154)

1. A two-stage intermediate frequency amplifier for providing high gain and an overall bandwidth satisfactory for passing the intermediate frequency signal and for providing maximum skirt attenuation comprising:
- (a) a first amplifier stage having an input and an output,
- (b) a second amplifier stage having an input and an output,
- (c) a first critically coupled double-tuned circuit connected to the input of said first amplifier stage,
- (d) a single-tuned circuit connected between the output of said first amplifier stage and the input of said second amplifier stage,



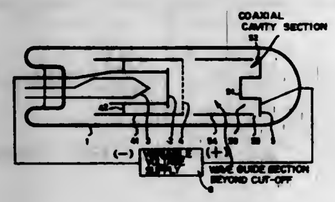
- (e) a second critically coupled double-tuned circuit connected to the output of said second amplifier stage,
- (f) said first and said second double-tuned circuits and said single-tuned circuit being tuned to the center frequency of the intermediate frequency signal and adjusted so that the frequency response of each exhibits only one frequency peak.

3,292,100
PULSE GENERATOR WITH MULTIPLE PHASE-DISPLACED OUTPUTS
Richard M. Berlind, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 257,917, Feb. 12, 1963. This application Jan. 4, 1966, Ser. No. 528,679
6 Claims. (Cl. 331—45)



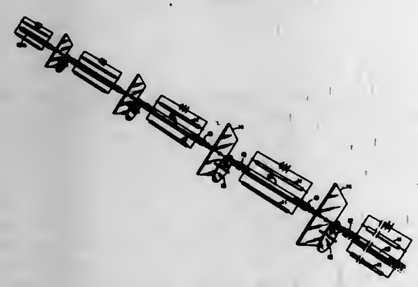
1. Pulse generating apparatus comprising: input means for providing sequential input pulses at a predetermined frequency, the input pulses have a selected width, bistable circuit means having input and output terminals and providing output signals at the output terminals to indicate the conductivity state of said bistable circuit means, first and second gating means, each of said gating means having input and output terminals, first connecting means for connecting said input means and the output terminals of said bistable circuit means to the input terminals of said first and second gating means, second connecting means for connecting the output terminals of said gating means to the input terminals of said bistable circuit means, means included in each of said first and second gating means responsive to the input pulses provided by said input means and to the output signals of said bistable circuit means for causing said first and second gating means to generate at their output terminals a pair of pulse trains which are 180° out of phase with each other, the frequency of each pulse train being half that of the input pulses and the width of the pulses of each pulse train being substantially the same as the width of the input pulses, and means included in said bistable circuit means responsive to the pulse trains generated by said first and second gating means for causing said bistable circuit means to change its conductivity state at the end of each input pulse provided by said input means.

3,292,101
PLASMA TUBE FOR MICROWAVE CIRCUITS
Jean L. Fevalier, Saint-Maur, France, assignor to Thomson-Varian, Paris, France, a company of France
Filed July 2, 1964, Ser. No. 379,969
Claims priority, application France, July 3, 1963, 940,252
5 Claims. (Cl. 331—83)



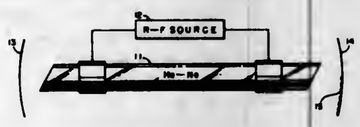
1. A variable reactance plasma tube adapted to oscillate in a given frequency range comprising a vacuum sealed envelope filled with a low pressure gas, a cathode assembly, a grid and an anode assembly, said anode assembly forming a metallic reentrant cavity resonator having a coaxial cavity portion and an adjacent cylindrical waveguide portion extending substantially up to to the grid, said cylindrical waveguide portion being beyond cut-off for all the frequencies comprised in said frequency range, means for coupling to said coaxial portion microwave energy having a frequency in said range, means for abstracting from said coaxial cavity portion microwave energy and means for applying a variable voltage between said cathode and anode assemblies.

3,292,102
PULSED OPTICAL BEAM GENERATOR
Francis T. Byrne, 123 Hamilton Ave., Silver Spring, Md.
Filed Dec. 14, 1962, Ser. No. 246,863
4 Claims. (Cl. 331—94.5)



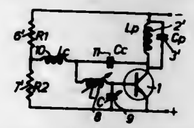
1. A system for producing a high energy pulsed beam of radiation which comprises:
a plurality of optically aligned laser sections positioned in end-to-end spaced relationship on an optical axis, each of said sections including a laser element, a light source for exciting each of said laser elements,
an end laser element of said plurality of laser sections including a laser element one-half the length of the remainder of said plurality of laser elements,
an optical switch,
and a mode selector positioned between opposing ends of each of said plurality of laser sections and wherein said laser element having one-half the length of the remainder of said laser elements comprises an inner end perpendicular to the axis through said laser element and an outer end with a retro-prism attached thereto to reflect incident light back through each of said laser sections along said optical axis.

3,292,103
LASER IMAGE AMPLIFYING SYSTEM
Jack A. Soules, 870 N. Arlington Mill Drive, Arlington, Va., and Francis T. Byrne, 123 Hamilton Ave., Silver Spring, Md.
Filed Mar. 15, 1963, Ser. No. 266,156
5 Claims. (Cl. 331—94.5)



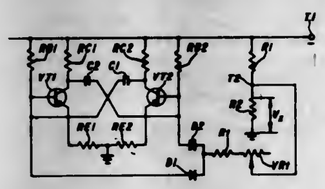
1. An optical image amplifier system which makes use of a LASER oscillator comprising:
(a) a LASER oscillator,
(b) said LASER oscillator comprising an element within which LASER action takes place, confocal spherical reflector surfaces positioned adjacent each end of said element, and means for optically pumping said oscillator,
(c) one of said reflector surfaces having a fully reflective surface,
(d) the other of said reflective surfaces having a partially reflective surface, and
(e) a semitransparent film containing an image thereon and inserted juxtaposed said partially reflective surface over one half the area of said partially reflective surface in which the area covered is entirely on one side of a line normal to the axis of said LASER between said one-half of the partially reflective surface and the end of said element in the path of light waves emerging from the end of said element toward said partially reflective surface to reduce the reflectivity of said partially reflective surface in the areas covered by said image and thereby cause some oscillations in said element to cease.

3,292,104
AMPLITUDE CONTROL CIRCUIT FOR TRANSISTOR OSCILLATORS
Harry Donald Kitchin, Colchester, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed June 11, 1964, Ser. No. 374,479
Claims priority, application Great Britain, June 24, 1963, 24,961/63
10 Claims. (Cl. 331—109)



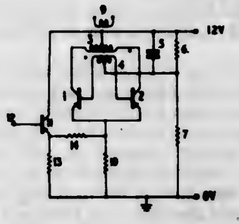
1. In a transistor oscillator including a transistor, a tuned circuit coupled to the collector of said transistor to produce output oscillations at a predetermined frequency, a D.C. bias voltage source coupled to the base of said transistor, and means for applying a feedback signal from the collector to the base of said transistor to sustain said oscillations, the improvement comprising an amplitude control circuit including an inductive circuit element coupled in series between the base of said transistor and said D.C. bias voltage source, a capacitive circuit element coupled between the base and the emitter of said transistor, means for applying said feedback signal from the collector circuit of said transistor to said inductive and capacitive circuit elements, said inductive and capacitive circuit elements being of such value as to produce a predetermined initial transfer characteristic between the input and output of said transistor, one of said circuit elements being variable in value, and means for varying the value of said variable circuit element to vary the amplitude of said output oscillations without significantly altering the frequency thereof by varying said transfer characteristic.

3,292,105
ASTABLE MULTIVIBRATOR CIRCUITS EMPLOYING AUXILIARY DISCHARGE PATHS FOR CROSS COUPLING CAPACITORS
Carl S. den Brinker, Brickhill, Bedford, England, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 17, 1963, Ser. No. 309,921
1 Claim. (Cl. 331—113)



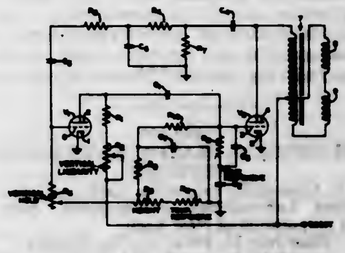
An astable multivibrator circuit comprising first and second transistors each having a collector, a base, and an emitter, the emitter of each transistor being connected to a reference potential by conductive means, the collector of each transistor being connected to a supply potential through one of a pair of separate load resistors, first and second base resistors, the first base resistor being connected between the base of the first transistor and the supply potential, the second base resistor being connected between the base of the second transistor and the supply potential, first and second coupling capacitors, the first coupling capacitor being connected between the base of the first transistor and the collector of the second transistor, the second coupling capacitor being connected between the base of the second transistor and the collector of the first transistor, the first and second base resistors providing a primary discharge path for the first and second coupling capacitors, respectively, first and second unidirectionally conductive devices, the first unidirectionally conductive device being connected between the base of the first transistor and a common point, the second unidirectionally conductive device being connected between the base of the second transistor and said common point, said common point being connected through variable resistive means to a constant voltage source having a magnitude between that of said reference potential and that of said supply potential, said magnitude being less than the sum of the forward voltage across the base-emitter path of either of the transistors plus the value of said supply potential multiplied by the ratio of any impedance in the path between the emitter of either of the transistors to the sum of the resistance in the emitter and collector path of either of the transistors, whereby in operation said unidirectional conductive devices are each alternatively forward and reverse biased to connect the first and second coupling capacitors one at a time through said resistive means to said voltage source to provide the coupling capacitor so connected a secondary discharge path in parallel with said primary discharge path, the secondary discharge path having a lower impedance than either of said primary discharge paths.

3,292,106
VARIABLE FREQUENCY OSCILLATOR UTILIZING CURRENT CONTROLS
John Lewis Edwin Baldwin, Croydon, England, assignor to Rank-Bush Murphy Limited, London, England, a British limited company
Filed Aug. 20, 1964, Ser. No. 392,674
Claims priority, application Great Britain, Aug. 23, 1963, 33,422/63
5 Claims. (Cl. 331—117)



1. A variable-frequency oscillator comprising, in combination: two like transistors each having a base electrode, an emitter electrode and a collector electrode; a direct connexion commoning said emitter electrodes; a source of direct current having first and second poles; a connexion including total emitter-current restricting means from said commoned emitter electrodes to said first terminal of said source; a transformer having primary and secondary windings; connexions in predetermined polarity between said collector electrodes and respective ends of said primary winding; a centre-tap on said primary winding; a connexion from said centre-tap to said second terminal of said source; connexions opposite in polarity to said predetermined polarity between said base electrodes and respective ends of said secondary winding; a centre-tap on said secondary winding; a direct-voltage source having terminals at different potentials; connexions from said terminals of said source to said centre-taps on said primary and secondary windings; and means operable to vary the relation between said total emitter current and said direct voltage and thereby to alter the operating frequency of said oscillator.

3,292,107
TEMPERATURE-COMPENSATED VERTICAL SWEEP CIRCUIT
Benjamin O. Powell, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,533
1 Claim. (Cl. 331—140)



A temperature-compensated multivibrator vertical sweep circuit for a television receiver comprising:
(a) first and second electron discharge devices, each discharge device having a control grid, cathode and plate,

(1) the plate of said first discharge device being coupled to the grid of said second discharge device,

(b) feedback means connected between the plate of said second discharge device and the grid of said first discharge device,

(c) pulse forming means connected between the anode of said first discharge device and a reference potential,

(1) said pulse forming means including capacitance means,

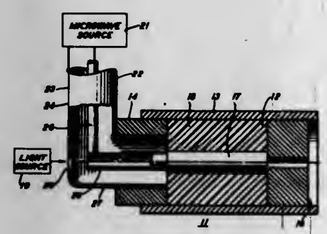
(d) said pulse-forming means being connected to the grid of said second discharge device to apply a signal thereto,

(e) biasing means connected between the grid of said second discharge device and said reference potential,

(1) said biasing means including resistance means,

(f) said capacitance means and said resistance means exhibiting negative temperature coefficients of capacitance and resistance respectively to respectively increase the amplitude of the signal applied to said grid of said second discharge tube from said pulse forming means increases as temperature increases and to decrease the bias on said grid of said second discharge device as temperature increases.

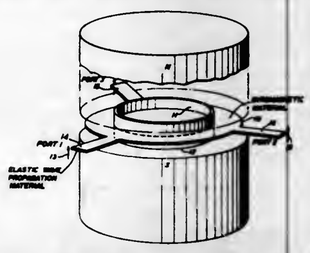
3,292,108
TRAVELING WAVE COAXIAL LIGHT MODULATOR
August M. Johnson, Middlesex, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 19, 1963, Ser. No. 274,171
3 Claims. (Cl. 332—7.1)



1. A light modulator comprising an elongated member of electro-optic material forming the center conductor of a coaxial cavity resonator, means for simultaneously applying light energy to said material for travel axially therealong and modulating energy to said resonator comprising a coaxial cable, said coaxial cable having a hollow center conductor through which said light energy is directed and which terminates adjacent one end of said material, said resonator having an exit aperture aligned with the axis of said hollow center conductor.

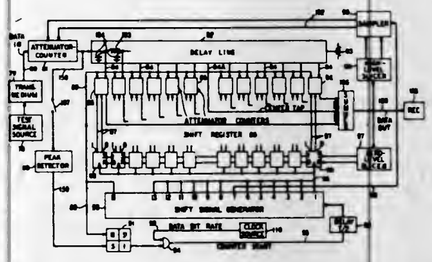
3,292,109
NONRECIPROCAL ELASTIC WAVE COUPLING NETWORK
Richard L. Comstock, Palo Alto, Calif., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 14, 1964, Ser. No. 382,615
8 Claims. (Cl. 333—1.1)

1. A nonreciprocal coupling circuit for elastic wave energy comprising a magnetized member of ferromagnetic material having gyromagnetic properties, means at one point on the periphery of said member for exciting elastic wave vibrations in said member in a standing wave having spaced nodal points of vibration around said periphery, and means for coupling to elastic wave vibrations



in said member at another point on said periphery that coincides with one of said nodal points.

3,292,110
TRANSVERSAL EQUALIZER FOR DIGITAL TRANSMISSION SYSTEMS WHEREIN POLARITY OF TIME-SPACED PORTIONS OF OUTPUT SIGNAL CONTROLS CORRESPONDING MULTIPLIER SETTING
Floyd K. Becker, Colts Neck, and Robert W. Lucky and Erich Port, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 16, 1964, Ser. No. 396,836
19 Claims. (Cl. 333—18)



1. Apparatus for establishing optimum settings for the multipliers in a transversal equalizer intended for correction of distortion imposed upon a communication signal of multiple frequency content in passage from a signal source to a receiver through a transmission medium having a dispersive effect upon the different frequency components of signals applied thereto comprising

means for transmitting a series of test impulses through said transmission medium,

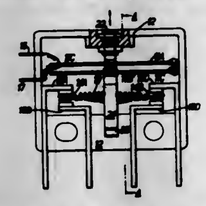
means for detecting the polarity of successive time-spaced samples of each test impulse traversing said transversal equalizer and its multipliers, and

means for incrementally adjusting the settings of said multipliers in inverse polarity relation to successive polarity indications from said detecting means after each test impulse has traversed said equalizer.

3,292,111
ELECTROSTRICTIVE RELAY
Michael B. Cotton, Emsworth, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Apr. 29, 1965, Ser. No. 451,749
Claims priority, application Great Britain, May 1, 1964, 18,159/64
4 Claims. (Cl. 335—3)

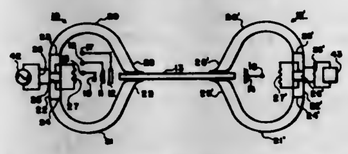
1. An electrostrictive relay including a plurality of elec trostrictive bending elements defining an elongate structure, means coupling the electrostrictive bending element

together, actuating means fixedly secured to one of said elements, contact means arranged to be operated in response to predetermined linear movement of said actuating means, means restraining another of said elements



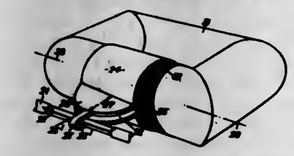
against displacement thereof as a whole so that bending of said another element in response to the energization thereof is imparted to said one element and is added to the movement thereof produced in response to its own energization.

3,292,112
TWO SIDED SLOW WAVE TRANSMISSION CIRCUIT HAVING A SELECTIVE MODE COUPLER
Charles E. Enderby, Palo Alto, and Richard M. White, Berkeley, Calif., assignors to General Electric Company, a corporation of New York
Filed Apr. 28, 1964, Ser. No. 363,201
4 Claims. (Cl. 333—6)



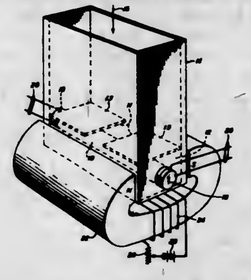
1. The combination of: a two-sided slow wave transmission circuit having a longitudinal plane of symmetry, thereby providing two modes of propagation of electromagnetic energy, a first mode characterized by being in phase with respect to the two transverse sides of the plane of symmetry of said circuit and a second mode characterized by being out-of-phase with respect to said two sides; a pair of coupling channels adapted to separately receive electromagnetic energy from respective sides of said circuit; and an electromagnetic wave network having four branches for receiving energy from said coupling channels at first and second branches and for directing energy in said first mode to a third one of said branches and for directing energy in said second mode to a fourth one of said branches.

3,292,113
ELECTROMAGNETIC TRANSDUCERS
Ronald Naylor, Cheadle Hulme, Cheadle, and Gordon G. Scarrott, Wokingham, England, assignors to Ferranti, Limited, Hollinwood, England, a company of Great Britain and Northern Ireland
Filed Apr. 5, 1963, Ser. No. 270,977
Claims priority, application Great Britain, Apr. 5, 1962, 13,082/62
6 Claims. (Cl. 333—30)



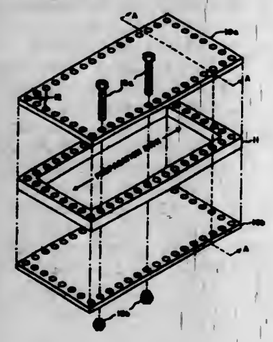
1. An electromagnetic transducer unit for a magnetostrictive delay-line to carry signals in the longitudinal mode, the line being of ribbon form in the vicinity of the unit, including two comparatively narrow flattened conductive transducer elements spaced apart to allow the ribbon of the delay-line to pass transversely between them with its broader surfaces closely parallel to the broader surfaces of those elements, two comparatively broad transformer secondary components each formed by a half-loop of conductive strip material disposed so that the two define together a cylinder the diameter of which is approximately equal to the breadth of each strip and the axis of which is parallel to the direction of the delay-line in the vicinity of the unit, a pair of closely-parallel planar connections joining the ends of the transducer elements on one side of the delay-line to ends adjacent to one another of the secondary components, each to each, over a transitional region of length approximately equal to half the breadth of said strip material, these connections being shaped at their edges for smoothly converging the sectional dimensions of said ends of the secondary components to the sectional dimensions of said ends of the transducer elements, a primary winding closely coupled inductively to the two secondary components, and secondary-circuit completion connections so applied to the other ends of the transducer elements and the other ends of the secondary components as to allow the primary winding to energise in respect of each transducer element a secondary circuit to cause that element to carry a current which at any given moment flows transversely to the delay-line in the opposite direction to the current carried by the other element at that moment, thereby providing the effect of an energised transducer loop.

3,292,114
ULTRASONIC DELAY LINE FOR MICROWAVE AND HIGHER FREQUENCIES
Warren P. Mason, West Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 16, 1963, Ser. No. 302,502
1 Claim. (Cl. 333—30)



A delay line for use with ultrasonic waves at a prescribed frequency in the megacycle and higher frequency ranges comprising in combination a fused silica delay line having therein as a substantially uniformly distributed impurity from 100 to 10,000 parts per million of a doubly ionized metal selected from the class consisting of manganese, iron, nickel and chromium, the delay line having a pair of smooth terminal surfaces accurately aligned to be perpendicular to the direction of propagation of ultrasonic waves through the adjacent portions of the line, means for impressing a unidirectional steady magnetizing field perpendicular to the direction of propagation of ultrasonic waves in the delay line, means for irradiating said delay line in the direction normal to both the direction of propagation of ultrasonic waves in the delay line and said unidirectional magnetizing field with electromagnetic waves of a frequency several times greater than the said prescribed frequency, means for injecting ultrasonic waves of said prescribed frequency into one terminal surface of said delay line and means at the other terminal surface of said delay line for converting ultrasonic wave energy to electrical wave energy.

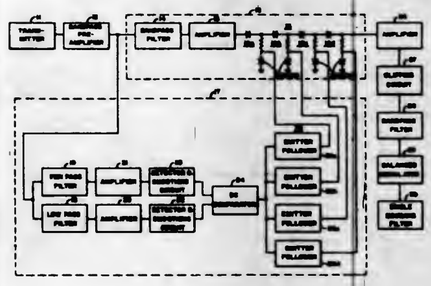
3,292,115
EASILY FABRICATED WAVEGUIDE STRUCTURES
Richard La Rose, South Hempstead, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois
Filed Sept. 11, 1964, Ser. No. 395,748
7 Claims. (Cl. 333—73)



1. An easily fabricated waveguide structure, comprising:
a first pair of electrically conductive members which constitute opposite walls of a waveguide structure, said first pair of members each having a plurality of holes adapted to receive fastening means set forth hereinafter, said holes being along at least one direction which is generally parallel to a given propagation path in said waveguide structure;
at least one additional electrically conductive member disposed between said first pair of members and constituting other opposite walls and ends of said waveguide structure for providing at least one given propagation path in said waveguide structure, said additional member having a plurality of holes adapted to receive fastening means set forth hereinafter, said holes being along at least one direction which is generally parallel to said given propagation path in said waveguide structure, and being in alignment with at least some of the holes in said first pair of members;
and a plurality of fastening means which, when said first pair of members and said additional member are assembled so that holes in said first pair of members align with holes in said additional member, are placed in each of said aligned holes for securing said first pair of members and said additional member together in said assembled relationship to form a waveguide structure, and for providing electrical continuity between said first pair of members and said additional member for radio-frequency currents.

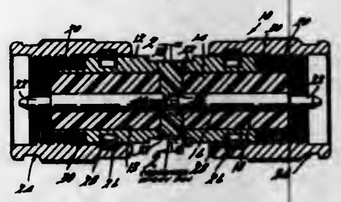
3,292,116
DYNAMIC SPEECH EQUALIZING SYSTEM HAVING A CONTROL CIRCUIT THAT SEPARATES AND COMPARES THE HIGH AND LOW FREQUENCY ENERGY
Charles E. Wallter, Norwell, and Joseph F. Govois, North Easton, Mass., assignors to Hazeltine Research, Inc., a corporation of Illinois
Filed Mar. 20, 1964, Ser. No. 353,406
4 Claims. (Cl. 333—18)

1. A dynamic speech equalizing system for improving the intelligibility of a transmitted vocal message comprising:
first equalization means comprising a plurality of selectively controlled pre-emphasis networks, each network having a positive rising frequency slope characteristic, for adjusting the relative energy content of the high-frequency portion of an input signal in the vocal frequency spectrum in incremental steps;
second means responsive to said input signal for separating the high-frequency energy content from the low-frequency content and averaging said separated high- and low-frequency contents for providing output signals, the amplitudes of which are representative of the relative energy contents of the high- and low-frequency portions of said input signal;



and third means responsive to said output signals for comparing their respective amplitudes and controlling the operation of said first equalization means so that the relative energy content of said high-frequency portion is increased in incremental steps in relation to the relative energy contents of said high- and low-frequency portions of said input signal.

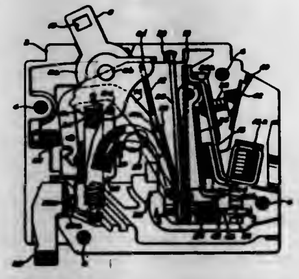
3,292,117
COAXIAL CONNECTOR WITH MEANS FOR PREVENTING AXIAL AND ROTATIONAL MOVEMENT BETWEEN CONNECTOR COMPONENTS
John H. Bryant, Birmingham, and William A. Johnston, Southfield, Mich., assignors to Omni Spectra, Incorporated, Southfield, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 507,433
19 Claims. (Cl. 333—97)



1. A coaxial connector for transmitting RF waves comprising: a tubular outer conductor, a dielectric core member located within said outer conductor and extending for a substantial portion of the length of said outer conductor and having an axially extending bore, a center conductor supported by said dielectric core member within said bore, and means including a member different from said center conductor, said outer conductor, and said core member and having a dielectric constant different than that of said core member and connected to and mechanically connecting together said center conductor, said outer conductor, and said core member for preventing relative axial movement therebetween in either axial direction and providing an electrical impedance to the RF wave substantially matching the electrical impedance of the electrical circuit of the coaxial connector immediately adjacent said means.

ERRATUM
For Class 335—3 see:
Patent No. 3,292,111

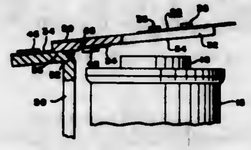
3,292,118
CIRCUIT BREAKERS WITH IMPROVED TRIP MECHANISMS
Alexander J. Pastore, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,874
20 Claims. (Cl. 335—37)



1. In a circuit breaker of the type having a spring biased mechanism for operating the breaker between circuit-closed and circuit-open conditions and an operating lever for actuating said operating mechanism, the combination comprising:
latch means acting on said operating mechanism to maintain the latter in its circuit-closed condition and being releasable in response to an abnormal electrical condition to trip said operating mechanism to its circuit-open condition;
a thermal responsive device having a portion which moves when heated under the influence of an excessive electro-thermal condition in the breaker;
and means coupling said movable portion to said latch means for effecting the release of the latter upon predetermined movement and being normally effective to apply a bias tending to separate said movable portion of said thermal responsive device from said latch means to prevent lost motion therebetween when said movable portion starts to move and comprising:
means in said coupling means responsive to movement of said movable portion for decreasing said bias thereby to reduce upon tripping the stress imposed on said thermal responsive device when it is hot.

3,292,119
ELECTROMAGNETIC RELAY HAVING AN ANTI-CHATTER FEATURE
Charles W. King, Anderson, Ind., and Stanley G. Kingma, Blacksburg, Va., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 7, 1965, Ser. No. 454,093
2 Claims. (Cl. 335—104)

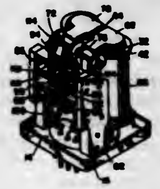
1. An electromagnetic relay comprising, a base, a spring hinge post extending upwardly from said base having a generally L-shaped end section, said L-shaped end section having a top wall, a relay actuating coil supported by said base, a contact post extending upwardly from said base, an armature, a flat spring hinge having a section connected to said top wall of said L-shaped section and having another section connected to said armature, said armature having a section contacting said top wall of said L-shaped section, and a spring metal contact support



connected to said armature, said contact support having a contact means which is engageable with the top end of said contact post when said relay coil is energized.

3,292,120
RELAY HAVING POLES OF INDEPENDENT SENSITIVITY
Floyd L. Malmberg, Wayne, N.J., assignor to American District Telegraph Company, Jersey City, N.J., a corporation of New Jersey
Filed Dec. 28, 1964, Ser. No. 421,324
7 Claims. (Cl. 335—119)





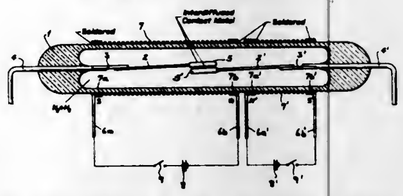
1. An electromagnetic relay, comprising:
(a) a plurality of parallel magnetic core members;
(b) an individual energizing coil disposed about each of said core members, said coil being responsive to an external source of signals;
(c) a non-retentive magnetic circuit element disposed between each pair of said core members;
(d) an individual armature element for each of said core members;
(e) means pivotally mounting said armature elements so that said armature elements each move to a position magnetically interconnecting the corresponding core and an adjacent magnetic circuit element in response to energizing current flow in the corresponding one of said coils;
(f) biasing means urging said armature out of said position thereof;
(g) magnetic circuit means intercoupling said respective cores and adjacent magnetic circuit elements to provide, with said respective armatures, an individual magnetic circuit for each of said cores; and
(h) electrical switching contacts operatively coupled to said armatures for operation by said armatures upon pivoting motion of the latter.

3,292,121
BISTABLE SWITCHING DEVICE
Georg Bergstrasser, Frankfurt am Main, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany
Filed Nov. 2, 1964, Ser. No. 408,174
Claims priority, application Germany, Nov. 22, 1963, T 25,168
2 Claims. (Cl. 335—153)



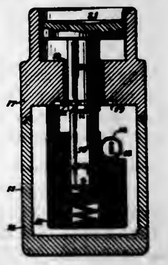
1. A bistable reed switch comprising in combination:
(a) an elongated housing having a housing wall of insulating material including end portions and lateral portions;
(b) a first reed defining a predetermined plane and projecting from the outside of said housing transversely across one of said end portions of said housing into the inside of said housing and having a first contact surface formed by an edge of said first reed adjacent the axially inner end thereof;
(c) a second reed of magnetizable material projecting at a predetermined point thereof from the outside of said housing transversely across the other of said end portions of said housing into the inside of said housing, said second reed being arranged in the plane defined by said first reed, said second reed having a second contact surface formed by an edge of said second reed adjacent the axially inner end thereof juxtaposed to said first contact surface of said first reed, said second reed further having a portion of reduced cross-sectional area situated inside said housing between said predetermined point thereof and said second contact surface, said portion of reduced cross-sectional area imparting to said second contact surface of said second reed a freedom of motion within said plane defined by said first reed relative to said predetermined point of said second reed and relative to said first contact surface of said first reed, said first contact surface of said first reed and said second contact surface of said second reed defining a gap of predetermined width in the absence of magnetic forces acting upon said second reed;
(d) a first permanent fixed bar magnet arranged adjacent said gap and adjacent the longitudinal edges of said first reed and of said second reed substantially parallel to said first reed and to said second reed and having a pair of end surfaces spaced substantially equidistantly from said first reed and from said second reed, said first bar magnet establishing a magnetic field tending to reduce said predetermined width of said gap between said first contact surface of said first reed and said second contact surface of said second reed and to maintain said first contact surface of said first reed and said second contact surface of said second reed in abutting engagement upon any abutting engagement thereof caused by electromagnetic action;
(e) electromagnetic winding means mounted upon said housing for establishing a magnetic field to cause abutting engagement of said first contact surface of said first reed by said second contact surface of said second reed; and
(f) a second permanent fixed bar magnet arranged adjacent said gap and adjacent the longitudinal edges of said first reed and of said second reed substantially parallel to said first reed and said second reed, said second magnet having a pair of end surfaces spaced substantially equidistantly from said first reed and from said second reed, said second bar magnet being arranged to establish a magnetic field tending to bias the axially inner end of said second reed away from the axially inner end of said first reed and to increase the width of said gap between said first contact surface of said first reed and said second contact surface of said second reed.

3,292,122
ELECTROMAGNETIC RELAY HAVING SEPARATE MAKE AND BREAK INDUCTANCE COILS
August Belič and Janez Erjen, Ljubljana, Yugoslavia, assignors to Institut za Elektronsko in Avtomatiko, Ljubljana, Yugoslavia, a corporation of Yugoslavia
Filed Oct. 22, 1965, Ser. No. 500,860
Claims priority, application Yugoslavia, Nov. 12, 1964, 13,255/64
8 Claims. (Cl. 335—154)



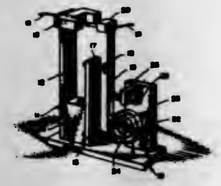
1. An electromagnetic relay comprising a sealed envelope of generally cylindrical shape; a first and a second reed of remanently magnetizable material extending substantially axially within said envelope from opposite ends thereof, said reeds having overlapping extremities within said envelope and being provided at their opposite extremities with terminals for connecting them in an external circuit, at least one of said reeds being resiliently biased for keeping said overlapping extremities separated in the absence of magnetic attraction; a first inductance winding coiled around at least part of the length of each of said reeds; and a second inductance winding coiled around a portion of only one of said reeds but terminating short of said overlapping extremities.

3,292,123
PERMANENT MAGNET OPERABLE REED SWITCH
Gregory Siklos, Bronx, N.Y., assignor to The Marbelite Company, Inc., Brooklyn, N.Y.
Filed May 13, 1965, Ser. No. 455,446
10 Claims. (Cl. 335—205)



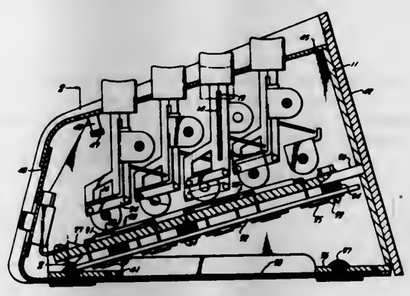
1. In a reed switch, a magnet and a pair of elongated reeds having overlapping ends, the magnet being positioned adjacent one of the reeds and removed from the other reed and being movable from a position of rest, which position is with its longitudinal axis normal to the longitudinal axis of the reeds, and its lateral axis coincident with the projection of the longitudinal axis of the adjacent reed and to a functioning position in which a pole of the magnet rests coincident with the projection of the longitudinal axis of the adjacent reed whereby the reeds become magnetized and their overlapping ends contact one another when the magnet is moved to a functioning position.

3,292,124
MAGNETICALLY SENSED TEMPERATURE CONTROL DEVICE
Sam Legvold, Ames, Iowa, assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa
Filed Sept. 24, 1964, Ser. No. 398,970
2 Claims. (Cl. 335—205)



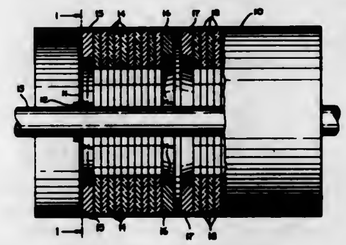
2. A thermostat, comprising a frame, a pair of contact arms on said frame, means coupled to said arms when the same are in contact for controlling the temperature of the space surrounding said arms, one of said arms being equipped with a ferromagnetic element and the other arm being equipped with a gadolinium-containing element aligned with the first-mentioned element for selective contact therewith, said gadolinium-containing elements also containing carbon whereby the Curie point of said gadolinium-containing element is elevated above 72° F.

3,292,125
MAGNETICALLY KEY OPERATED SWITCHING DEVICE
William A. Berry, Covina, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Oct. 15, 1965, Ser. No. 496,404
4 Claims. (Cl. 335—206)



1. A magnetically operable switching device comprising a frame,
an elongate guide member of magnetic material having a lower magnetic remanence carried by said frame,
said member having a plurality of aligned spaced flanges extending along the upper and lower edges thereof,
a depressible key member of non-magnetic material having an elongate vertical slit slideably embracing said member,
said slit being open at the upper end thereof,
a key top on said key member closing said upper end of said slit,
said key member being guided laterally by adjacent ones of said upper and lower flanges,
a permanent magnet carried by said key member,
said magnet engaging one of said lower flanges when said key member is undepressed whereby said flange substantially short-circuits the magnetic flux produced by said magnet and normally maintains said key member in undepressed position, and
a switch carried by said frame below said magnet,
said switch comprising a pair of magnetic reed elements,
at least one of said reed elements being operable by magnetic flux produced by said magnet upon depression of said key member.

3,292,126
PERMANENT MAGNET PULLEY
Bernhard A. Paim, Los Angeles, Calif., assignor to Buck Manufacturing Company, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,464
2 Claims. (Cl. 335—302)

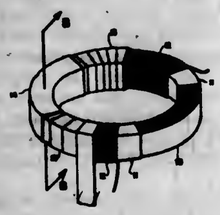


1. A permanent magnet pulley comprising a hollow shell of non-magnetic material, means for supporting said shell on a shaft, permanent magnet means positioned in said shell engaging the inner surface of said shell, said magnet means having a radial width extending inside of said shell a predetermined distance toward said shaft, magnetic pole rings fitted into said shell, said pole rings engaging only parts of the ends of said permanent magnet means adjacent to said shell and extending inward from the inner surface of said shell a distance substantially less than the radial width of said permanent magnet means so that substantial areas of the ends of said magnet means are exposed to the air, said magnetic pole rings having a cross-sectional area that is large enough to provide a low reluctance path for the magnetic flux from the ends of said permanent magnet means to guide the magnetic flux from the ends of said magnet means outward through said shell to the outside of the pulley where useful work is to be performed and magnetic flux tending to thread through the air gap inside of the pulley from said innermost areas of the ends of said magnet means is reduced.

3,292,127
CLOSED CIRCUIT RESISTIVE SHIELDING FOR MULTIWINDING TRANSFORMERS
Elmer A. Dormuler, Orange, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed July 1, 1963, Ser. No. 291,772
7 Claims. (Cl. 336—84)

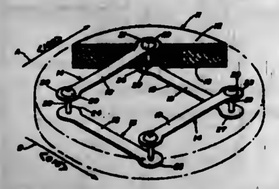
1. In a transformer having at least a primary winding and a secondary winding, and insulation on each of said windings, the improvement comprising

a shield between said windings and completely enveloping one of said windings, said shield being constructed of a closed circuit resistive coating, said



coating a having a sufficient resistive value to avoid the effects of a short-circuited turn overloading said transformer, and to avoid a resistance so high as to impair the shielding effect of said shield.

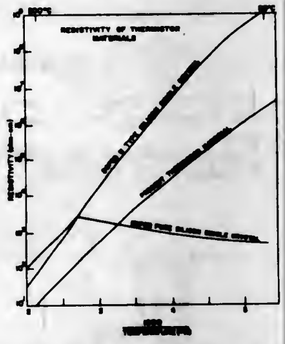
3,292,128
SEMICONDUCTOR STRAIN SENSITIVE DEVICES
Robert N. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1961, Ser. No. 161,964
9 Claims. (Cl. 338—2)



1. A semiconductor strain sensitive device comprising: a monocrystalline body of high resistivity semiconductive material having a first pair of low resistivity zones in the surface adjacent region of one face and a second pair of low resistivity zones in the surface adjacent region of the opposite face, said first pair of low resistivity zones on one face defining two opposite portions of a four portion closed figure and the second pair of low resistivity zones on the opposite face defining the other two opposite portions of said closed figure, the high resistance of said body providing electrical isolation of said zones in said body; means for making electrical connections to the respective end portions of the low resistivity zones on opposite faces of said body to form a complete unitary bridge circuit, the crystallographic orientation of the monocrystalline body and the impurity concentration and conductivity-type of the low resistivity zones established therein being selected to provide said first and second pairs of low resistivity zones with elastoresistance coefficients adapted to provide a maximum unbalance of said bridge circuit for a given applied force.

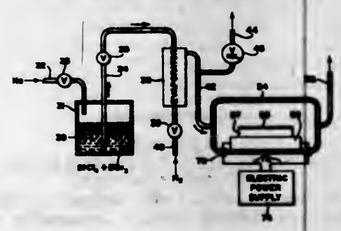
3,292,129
SILICON THERMISTORS
Moises G. Sanchez and Wayne T. Barrett, Severna Park, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Original application Oct. 7, 1963, Ser. No. 314,395. Divided and this application Sept. 24, 1965, Ser. No. 508,778
3 Claims. (Cl. 338—22)

2. A thermistor of silicon having N-type polarity comprising copper leads soldered to a single crystal of said N-type silicon nickel plated at the ends and containing less than 100 parts per billion of impurities doped with about 10 to 100 parts per billion of gold wherein the ex-



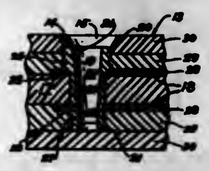
cess of gold over background impurities is between 1 and 100 parts per billion.

3,292,130
RESISTOR
Rodney A. Rogers, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 28, 1961, Ser. No. 127,491
5 Claims. (Cl. 338—308)



1. A resistance element comprising an electrical insulating member, a film of silicon deposited on said member, said silicon containing about 10^{18} to about 10^{20} conductivity determining impurity atoms per cubic centimeter, and spaced apart electrical connections to said film.

3,292,131
DEVICE FOR INTERCONNECTION OF ELECTRICAL APPARATUS
Douglas E. Porch, Hayward, Calif., assignor of ten percent to William J. Smith, Kentfield, Calif.
Filed Dec. 20, 1963, Ser. No. 332,659
11 Claims. (Cl. 339—14)



1. A terminal board for interconnecting a large plurality of electrical leads each having a tapered pin connector, said board comprising:
- a central base member of non-conductive material;
- a series of bars of conductive material forming predetermined conductive paths on said base member;
- a plurality of generally cylindrical terminal receptacles located at the ends of said bars and extending through

said base member, each said receptacle having a generally cylindrical shape with a tapered axial bore and end portions extending above and below said base member, each said end portion having a surface indentation;
- a layer of conductive material on said bars and around said receptacles filling said surface indentations and thereby securing said receptacles within the central base member;
- and a layer of non-conductive encapsulation compound covering the opposite sides of said central base member and extending outwardly beyond the layers of conductive material.

ERRATUM
For Class 339—50 see:
Patent No. 3,292,097

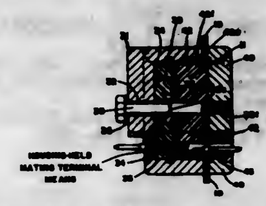
3,292,132
TEST JACK FOR PANEL MOUNTING
James V. Murphy, Warwick, R.I., assignor to Electronic Molding Corporation, Pawtucket, R.I., a corporation of Rhode Island
Filed Dec. 30, 1963, Ser. No. 334,603
5 Claims. (Cl. 339—126)



1. In a test jack for insertion into an opening formed in a panel, a contact member having a raised annular portion formed thereon intermediate the ends thereof and a turret joined to one end thereof, a contact sleeve located within said contact member and including an annular head member that is fixed to the end of the contact member that is opposite the turret, a body portion formed of an insulating material and enveloping a major portion of said contact member, the turret of said terminal being exposed for electrical interconnection to an externally located conductor, and a locking collar secured to said body portion, said locking collar including a flange and a plurality of grooves that define an interrupted surface, said interrupted surface being pressed into said opening, wherein portions of the panel surrounding said opening flow into the grooves defining the interrupted surface, said flange engaging the surface of said panel adjacent said opening and cooperating with said interrupted surface to positively lock said test jack in said panel opening.

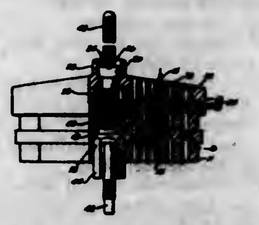
3,292,133
VEHICLE-PANEL CONNECTOR
Donald C. Bunch, Bloomfield, and Richard E. Trusten, Dearborn, Mich., Raymond Smith, Warren, and Robert C. Weaver, Oakland, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Sept. 12, 1960, Ser. No. 55,682, now Patent No. 3,168,608, dated Aug. 25, 1964. Divided and this application Mar. 5, 1965, Ser. No. 439,706
2 Claims. (Cl. 339—198)

1. A vehicle panel connector comprising, a pair of housing portions at least one of which projects through an aperture of a vehicle mounting panel such as a storage compartment wall, dashboard wall, floor board, firewall, and the like, a plurality of terminal means secured in each of said housing portions, all of said terminal means being identical to each other and including contact portions resiliently engaged in contiguous mating relation to each other, at least one of said housing portions including fastening means adapted to interlock said housing portion in place on one of opposite sides of the vehicle panel, each of said housing portions being retained by a frame means and a bolt means carried by said frame means to stay



therewith through holding together said frame means and housing portions on opposite sides of the panel, said frame means on one side of the panel having a rectilinear configuration for retention of one of said housing portions and a central laterally offset transverse U-shaped strap-like member through which said bolt means extends from a headed end thereof to a lateral shoulder integral therewith, and a substantially annular spring fastening device fitted onto said bolt means to engage said shoulder thereof for retaining assembled relation with both said housing portion and frame means.

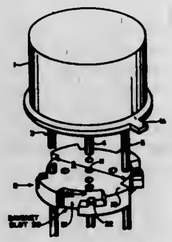
3,292,134
CONNECTOR BACK SEAL
Norbert L. Mouhs, Placentia, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 356,204
1 Claim. (Cl. 339—192)



In combination with an electrical connector block having a threaded portion and a plurality of bores each containing an electrical contact having an electrical conductor affixed thereto, a sealing device comprising:
- a flat flexible sealing member including a plurality of transverse environmental sealing bores each adapted to receive an electrical conductor and including an aperture having externally extending shoulders defining a reduced diameter portion for gripping said electrical conductor and a sealing portion; and
- a rigid retaining member engaging and supporting said flat flexible sealing member and including a cavity of substantially the same dimensions as the flexible sealing member for containing said sealing member, said cavity having a rigid continuous end surface containing a plurality of bores each of such size to contain one of said electrical conductors and of such frequency and position that when said sealing member is positioned in said cavity the bores of said sealing member, said retaining member and said electrical connector block are substantially coaxial, said retaining member also including a centrally located

threaded member mateable with the threaded portion of said electrical connector block for drawing said retaining member towards said electrical connector block to compress said sealing member between said electrical connector block and said end surface of said retaining member to uniformly deflect each of said sealing portions into uninterrupted sealing engagement with a different one of said electrical conductors.

3,292,135
BASE ASSEMBLY FOR TRANSISTORS AND THE LIKE
Samuel C. Robinson, New Albany, Ind., assignor to Robinson-Nugent, Inc., New Albany, Ind., a corporation of Indiana
Filed July 1, 1964, Ser. No. 379,524
7 Claims. (Cl. 339—196)



1. A terminal base assembly of the type mountable upon the base end of transistors and like devices which present a plurality of laterally-spaced lead-wires projecting axially from a base end-face in a predetermined distribution pattern, comprising:

A. a disc-like plug member,
  (1) said plug member having
    (a) base and outer ends,
    (b) central and marginal body portions between its end faces, and
    (c) a plurality of lead-wire-receiving open-ended bores extending axially through said central portion from one end face to the other in a desired distribution pattern,
  (2) said plug member being
    (a) positionable on said device with its base end face pressed against the base end face of the device and with each lead wire of the device passing axially through the corresponding one of its bores to project from its outer end face, and
    (b) securable to said device, when so positioned thereon, by bending the projecting end portion of each lead wire to extend transversely along the plug member's outer end face;

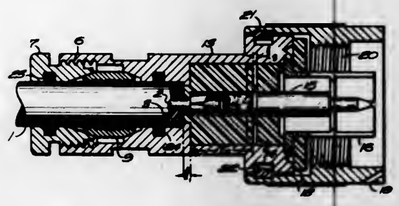
B. a cup-shaped socket member,
  (1) having a cylindrical bore wall, an open-mouth at its base end to receive said plug member and a bottom wall at its outer end, and
  (2) being movable over the periphery of the plug member
    (a) axially inward with its mouth end foremost to an inner position, wherein its cylindrical wall encircles, and the inner periphery thereof fits snugly over, the periphery of the plug member, and
    (b) from said inner position to an angularly offset position, this movement initially involving the twisting of said socket member rotationally out of its inner plug-member-encircling position;

C. bayonet locking means cooperatively provided, by the outer periphery of said plug member and the inner periphery of said cylindrical bore wall of said socket member, to constrain said movement of said socket member over said plug member to a predetermined path extending axially to said inner position and thence to said angularly offset operating position;

D. latching means, operative in said angularly-offset operating position, for releasably latching the socket member against rotation; and

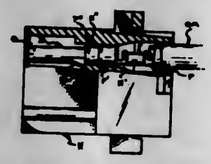
E. a plurality of electrical terminal members mounted on the socket member to present
  (1) a plurality of electrical terminal connections on its outer face and
  (2) a plurality of electrical contacts within the socket member, one contact for each lead wire,
    (a) each contact arranged adjacent to but spaced from the inner bottom face of said socket member in position to be in engagement with its lead wire when the socket member is in its angular offset operating position on the plug member.

3,292,136
COAXIAL CONNECTOR
Sherman J. Somerset, Melrose, Mass., assignor to Gremar Manufacturing Co., Inc., Wakefield, Mass., a corporation of Massachusetts
Filed Oct. 1, 1964, Ser. No. 400,807
2 Claims. (Cl. 339—177)



1. An electrical connector for attachement to a coaxial cable, the connector comprising:
(1) a cylindrical conductive shell having internal threads at one end, the shell having an internal flared opening intermediate its ends,
(2) an elongate contactor having resilient fingers at one end arranged to surmount and grasp the center conductor of the coaxial cable, the elongate contactor being within the shell and extending along the shell's longitudinal axis,
(3) dielectric means insulating the contactor from the shell and securing the contactor in its axial position within the shell,
(4) a nut having an externally threaded portion adapted to engage the internal threads of the shell, the nut having a central aperture for permitting the coaxial cable to extend therethrough into the interior of the shell, the central aperture of the nut terminating in a flared opening,
(5) a split ring adapted to surround a portion of the coaxial cable, the ring being split for its entire length along a spiral path, the split ring being disposable in the shell to extend between the nut and the shell's internal flared opening, and the split ring having tapering end portions that are urged against the flared openings in the shell and the nut when the nut is advanced into the shell whereby the entire split ring is compressed.

3,292,137
SPRING LATCH MEANS
Wilfred R. Scheller, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 319,020, Oct. 25, 1963. This application Apr. 21, 1966, Ser. No. 545,527
1 Claim. (Cl. 339—217)



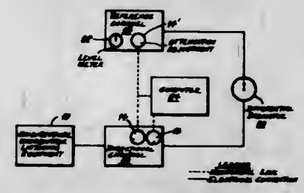
An electrical connector assembly comprising in combination an electrical terminal and a dielectric housing member; said electrical terminal having a stamped and formed body section and ferrule section, said body section defining a matable section matable with a complementary electrical terminal and including a lance member stamped out of said body section and extending outwardly therefrom in a direction away from a longitudinal axis of said terminal, said lance member having a first section and a second section, said first section having one end anchored to said body section and another end connected to one end of said second section to define a bend thereat, the other end of said second section being free, said first section extending substantially parallel to said longitudinal axis and said second section extending outwardly from said first section at an angle of between 10° and 20° with said bend being located about one-fourth the length of said latch member, said ferrule section having U-shaped lugs secured on a conductive core and insulation of an insulated conductor; said housing member having a passageway therein provided with an abutment and securing section; means on said terminal in engagement with said abutment to limit movement of said terminal in one direction; said free end of said lance member engaging said securing section to limit movement of said terminal in another direction, said lance member distributing bending stresses about said bend and said one end of said first section of said lance member, and said free end being beveled so as to effectively grip said securing section.

3,292,138
CIRCUIT CONNECTORS PROVIDING IMPROVED ELECTRICAL CONTACT AND MECHANICAL RETENTION
Robert W. Jones, Culver City, Calif. (15843 Kalisher St., Granada Hills, Calif.), Raymond J. Blanchette, 6858 Langdon Ave., Sherman Oaks, Calif., and Forrest D. Groves, 13921 Judd St., Pacoima, Calif.
Filed Oct. 29, 1963, Ser. No. 319,874
6 Claims. (Cl. 339—220)



1. An electrical connection socket terminal device for insertion into circuit boards comprising:
a generally cylindrical upper portion of predetermined diameter having a central receiving bore therein;
a lower socket portion in axial alignment with said generally cylindrical upper portion, said lower portion being smaller in diameter than said upper portion and having therein a bore of reduced diameter with respect to said central receiving bore, said bore of reduced diameter in said lower portion continuing from and being in communication with said central receiving bore, the outer diameter of said lower portion having a rolled-in groove therein near the lowermost end thereof;
a stopping flange extending from the lower end of said upper portion and the upper end of said lower portion about the outer diameter of said socket terminal device for limiting the depth to which said device may be inserted into circuit boards; and
said lowermost end being slotted axially through said rolled-in groove to form a bifurcated gripping tip in said lower socket portion with said rolled-in groove therearound forming a doughnut-shaped intrusion into said bore of reduced diameter, the discontinuities of said intrusion due to the bifurcation thereof forming gripping edges so that when said device is in a circuit and an electrical circuit connection pin or wire end is inserted through said receiving bore into said bore of reduced diameter, said intrusion discontinuities make a binding tight electrical contact with said pin or said wire end.

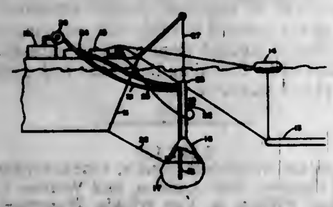
3,292,139
SONAR PERFORMANCE COMPUTER
Lloyd T. Einstein, New London, and Wallace C. Nordstrom and William A. Von Winkle, Waterford, Conn., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 12, 1964, Ser. No. 389,230
7 Claims. (Cl. 340—5)



1. Apparatus for use in making performance measurements on an underwater listening equipment having one directional axis and one narrow operating frequency band comprising
(a) an adjustable gain directional channel coupled to the output of the listening equipment,
(b) an adjustable gain reference channel including an omnidirectional hydrophone supported in the vicinity of the listening elements of the underwater listening equipment,
(c) a differential indicator device connected to the outputs of both channels for registering whether their outputs are equal,
(d) said reference channel including means for indicating whether the output of the reference channel is equal to, less than, or greater than a predetermined reference level, wherein for a particular combination of reference channel gain and input in said frequency band to the hydrophone, its indicating means registers the reference level,
(e) both channels including identical, ganged attenuator means for adjusting the gains of both channels equally,
(f) said directional channel including a second attenuator means independent of said ganged attenuator means and for one selected setting of the second attenuator means, both channels provide equal outputs for an input signal in said frequency band deriving from a source along the directional axis of the listening equipment sufficiently distant for the signal to arrive as planar waves and several times the intensity of sea noise in that frequency band incident to the hydrophone and the listening elements,
(g) and a computer device coupled to the ganged attenuator means and to the second attenuator means for measuring the difference of attenuation of the

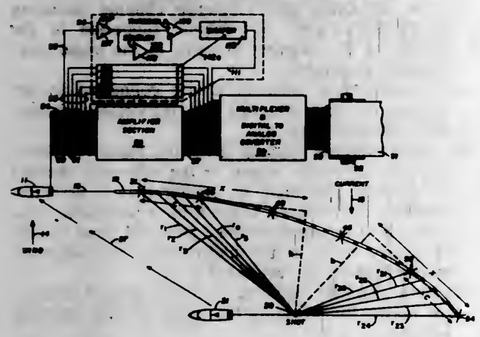
second attenuator means relative to its reference setting and the attenuation of the ganged attenuator means relative to its reference setting.

3,292,140
SYSTEM FOR GENERATING SEISMIC SIGNALS
Frank A. Aggson, Dallas, and Fretwell G. Crider, Arlington, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed June 21, 1963, Ser. No. 289,524
6 Claims. (Cl. 340—7)



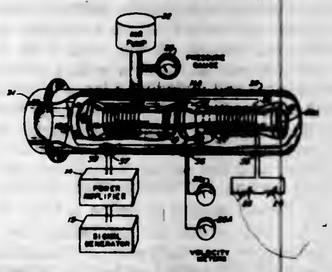
1. In a system for producing seismic signals useful in the investigation of underwater geologic formations, the combination which comprises first means for initiating the generation in water of a primary pressure pulse which results in the formation of an expanding gas bubble, and second means for directing gas into the bubble formed to reduce the contraction of said bubble, said second means including at least one conduit leading from a supply of gas and having an end thereof located at a position relatively close to said first means such that said end will break into said bubble as said bubble expands for the introduction of gas into said bubble.

3,292,141
MARINE NORMAL MOVEOUT DETERMINATION
Harley F. Hixon, Metairie, La., and Edward R. Prince, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 24, 1964, Ser. No. 420,942
8 Claims. (Cl. 340—7)



1. In marine seismic exploration, the method which comprises:
(a) producing a seismic disturbance at a marine shot location,
(b) receiving acoustic energy generated by said seismic disturbance at spaced points in the vicinity of said location disturbance to produce a series of electrical signals,
(c) sequentially sampling the amplitudes of said signals,
(d) converting the sampled electrical amplitudes into digital signals,
(e) magnetically recording said digital signals on a real time base referenced to the time of occurrence of said seismic disturbance,
(f) converting the first break energy in each of the signals of a sub set of said electrical signals into digital signals, and
(g) recording the latter digital signals on said time base.

3,292,142
HIGH PRESSURE TRANSDUCER CALIBRATION AND TEST EQUIPMENT
David L. Carson, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 11, 1965, Ser. No. 439,111
3 Claims. (Cl. 340—8)

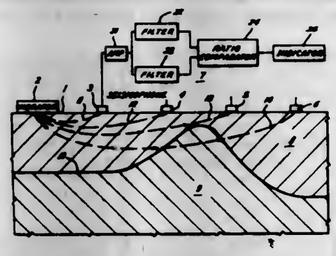


1. Apparatus for creating deep-submergence conditions for testing an operating transducer of the type having a head piece and a driving means for reciprocating the radiating face of said head piece and having a housing enclosing the parts of the transducer with only said radiating face exposed, the testing apparatus comprising:
a load transducer capable of generating an output signal which is a function of oscillatory mechanical power applied to the face of said load transducer, the face of said load transducer being adapted for stiff coupling to the face of said operating transducer,
a pressure container adapted to receive said load transducer attached face-to-face with said operating transducer,
an air pump connected to said container for elevating the air pressure in said container to statically load the face of said operating transducer, and
high pressure lead-in seals in the walls of said container for leads to the terminals, respectively, of the two mentioned transducers.

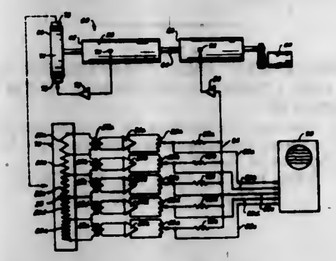
3,292,143
METHOD AND APPARATUS FOR GEOPHYSICAL EXPLORATION UTILIZING VARIATION IN AMPLITUDE ATTENUATION OF DIFFERENT FREQUENCIES
William L. Russell, 400 Brookside Drive, Bryan, Tex.
Filed Mar. 8, 1963, Ser. No. 263,991
6 Claims. (Cl. 340—15.5)

1. A method of exploration for data on the character of a geophysical formation adjacent the wall of a borehole, comprising the steps of
introducing acoustic energy at selected three or more different frequencies into the borehole wall at a first location,
said frequencies having a fixed amplitude relationship between them,
said acoustic energy passing through the formation and back to the borehole;
receiving the returning acoustic energy at a second location fixedly spaced along the borehole wall from said first location;
detecting the amplitude relationship of a first combination of said selected frequencies;

detecting the amplitude relationship of a second combination of said selected frequencies, the frequencies of said second combination having longer wavelengths than the frequencies in said first combination, the frequencies in said second combination being affected by a deeper lateral penetration of the formation than the frequencies in said first combination.



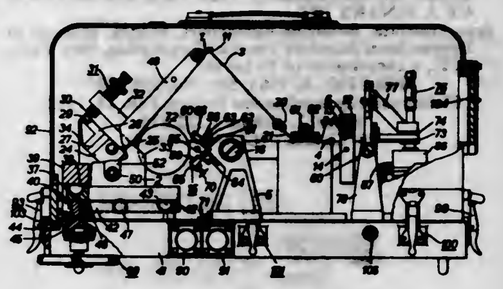
3,292,144
METHOD FOR SHAPING THE FREQUENCY SPECTRUM OF SEISMOGRAPHIC DATA
Milford R. Lee and Donald E. Dunster, both of Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed Nov. 20, 1963, Ser. No. 325,018
4 Claims. (Cl. 340—15.5)



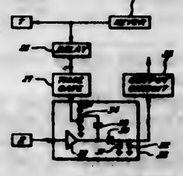
1. An improved method for normalizing seismic field data from a geological locality to compensate for amplitude attenuation caused by the earth comprising the steps of:
synthesizing a seismogram from a downhole velocity log made in the immediate geological locality where said seismic field data was acquired, and
adjusting the relative amplitudes of predetermined frequency band components of the seismic field data to correspond to the relative amplitudes of corresponding frequency band components of said synthesized seismogram produced from the geological locality.

3,292,145
LONG PERIOD VERTICAL SEISMOGRAPH
Patrick Lever Williams, Cullington, Edinburgh, Scotland, assignor to United Kingdom Atomic Energy Authority, London, England
Filed June 17, 1963, Ser. No. 288,320
Claims priority, application Great Britain, June 28, 1962, 24,878/62
4 Claims. (Cl. 340—17)

1. A vertical long-period seismograph comprising a rigid frame, a mass-carrying boom hinged to said frame to allow movement of the boom about a horizontal axis, a resilient suspension for suspending the boom from the frame, said suspension comprising a cantilever-mounted leaf spring connected in series with an inextensible tie, each end of said tie being secured by a flexural connection, said leaf spring being substantially straight and said tie extending substantially at right angles from the unmounted end of the spring when the boom is in its equilibrium position.

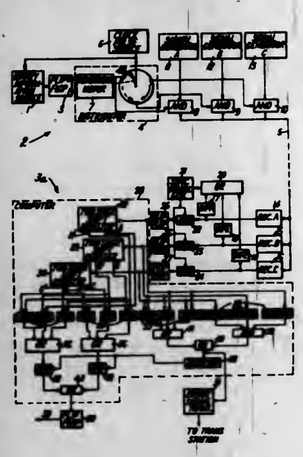


3,292,146
METHOD AND APPARATUS FOR ACOUSTIC LOGGING IN CASED WELL BORES
John T. Dewan, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 130,969, Aug. 8, 1961. This application May 26, 1964, Ser. No. 370,763
7 Claims. (Cl. 340—18)



1. Acoustic well logging apparatus for use in a cased well bore comprising: an elongated support member adapted to be spaced a given distance from the walls of a well bore, acoustic transmitter means and acoustic receiver means supported along the length of said support member in a fixed relationship relative to said support member, said transmitter being arranged to provide an acoustic impulse which is transmitted at least in part along the casing in said well bore, said receiver means being responsive to an acoustic impulse transmitted along said casing for developing a corresponding electrical signal characteristically consisting of a series of alternations, gated amplitude circuit means coupled to said receiver means for developing an output signal with a magnitude proportional to the amplitude of a half-cycle of an electrical signal from said receiver means, and time circuit means coupled to said amplitude circuit means and operative in response to and in predetermined time relationship to the pulsing of said transmitter means for gating said amplitude circuit means into operative conditions for a predetermined time interval substantially equal to a period of one-half cycle of the electrical signal from said receiver means, said time circuit means including means for delaying the beginning of said gating interval until a predetermined time after the emission of an acoustic pulse and during the development by said receiver of a corresponding electrical signal, said predetermined time being dependent upon the velocity of acoustic energy along said casing thereby limiting the output signal to that portion of an electrical signal which occurs at said predetermined time and during said predetermined time interval.

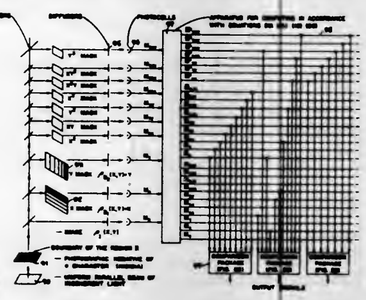
3,292,147
DATA TRANSMISSION SYSTEM EMPLOYING A DIFFERENT SEQUENCE OF DISTINCT CONDITIONS TO REPRESENT THE TWO CONDITIONS OF A BINARY BIT
Jean Ducrotte, Boulogne-Billancourt, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 6, 1963, Ser. No. 256,630
Claims priority, application France, Feb. 14, 1962, 888,622, Patent 1,322,270
20 Claims. (Cl. 340—146.1)



5. A data transmission system comprising:
a source of binary bits;
first means coupled to said source responsive to each of said bits to provide a given sequence of a plurality of distinct conditions for one condition of said bits and the opposite sequence of said distinct conditions for the other condition of said bits; and
second means coupled to said first means responsive to the sequence of distinct conditions to recover said bits;
said second means including means responsive to predetermined ones of said distinct conditions of one of said bits and predetermined ones of said distinct conditions of said bit preceding said one of said bits to detect the presence or absence of an error in said one of said bits to recover said one of said bits in the absence of an error and to block the recovery of said one of said bits in the presence of an error.

3,292,148
CHARACTER RECOGNITION APPARATUS USING TWO-DIMENSIONAL DENSITY FUNCTIONS
Vincent E. Giuliano, Concord, Paul E. Jones, Jr., Cambridge, George E. Kimball, Winchester, Richard F. Meyer, Sudbury, and Barry A. Stein, Brookline, Mass., assignors to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 8, 1961, Ser. No. 108,571
15 Claims. (Cl. 340—146.3)

1. An apparatus for identifying information-bearing indicia, the image of which can be represented as a two-dimensional density function $\rho_I(x,y)$, comprising in combination
(a) a set of selective energy attenuating systems which weight said image according to a set of two-dimensional, continuously varying discriminant density functions $\rho_{D_1}(x,y)$, independent of $\rho_I(x,y)$, at least one of which is nonconstant in at least one dimension;
(b) means for directing an energy manifestation image of said indica $\rho_I(x,y)$ through said selective energy attenuating systems so as to obtain a set of product images $\rho_I(x, y)\rho_{D_1}(x, y)$ of said density function;
(c) means for detecting a proportional fraction of the total energies transmitted through each of said sys-

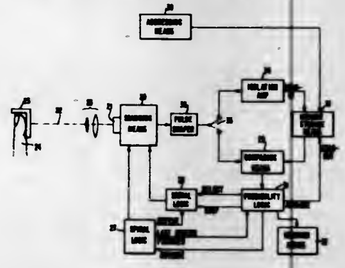


tems, each of said total energies being represented as a fraction of an area integral

$$\iint \rho_I(x, y)\rho_{D_1}(x, y)\,dx\,dy$$

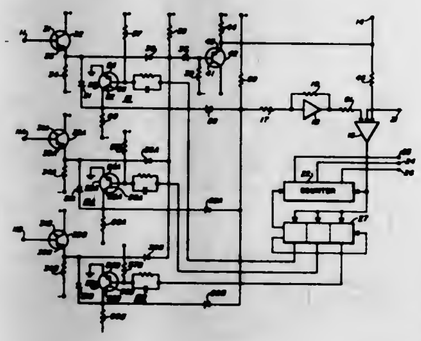
so as to obtain a set of measurable signals representative of said area integrals; and
(d) means for comparing said signals with a set of predetermined signals so as to identify said indicia with a known indicia.

3,292,149
IDENTIFICATION AND COMPARISON APPARATUS FOR CONTOUR PATTERNS SUCH AS FINGERPRINTS
David A. Bourne, Chappaqua, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 18, 1964, Ser. No. 376,125
24 Claims. (Cl. 340—146.3)



2. Contour pattern identification apparatus for determining whether a questioned pattern of contour lines submitted thereto is known comprising scanning means adapted to scan said questioned pattern of contour lines and produce a train of electrical pulses correlative to the scanning path; memory storage means providing stored indicia correlative to a known pattern of contour lines; reference coordinate determination means adapted to search the questioned pattern of contour lines for a known reference coordinate comprising means for controlling said scanning means so as to direct a predetermined sequence of scanning centers, and means for controlling said scanning means so as to direct a predetermined sequence of radial scans at each said scanning center; pattern identification means adapted to respond to location of a reference coordinate by said reference coordinate determination means by controlling said scanning means so as to make a series of scans having a known spatial relation to said reference coordinate; and comparator means adapted to compare any train of pulses produced by said scanning means with the indicia stored in said memory storage means for correspondence.

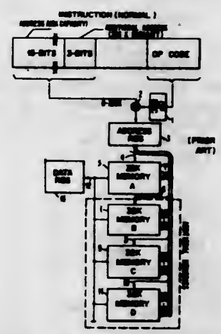
3,292,150
MAXIMUM VOLTAGE SELECTOR
Kenneth E. Wood, Severna Park, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 23, 1963, Ser. No. 275,175
10 Claims. (Cl. 340—149)



1. A peak analogue voltage selector comprising:
maximum voltage selecting means having an input adapted for connection to a plurality of analogue voltages of interest;
a plurality of electronic switching means each having an input adapted for connection to a different one of said plurality of analogue voltages;
voltage comparator means having one input connected to an output of said maximum voltage selecting means and having a second input connected to the outputs of said plurality of switching means;
readout means for periodically reading out any difference of voltage between said inputs of said comparator;
counting means operably connected to said comparator for counting any output pulses thereof; and
control means operably connected to said plurality of switching means for sequentially switching said plurality of switching means.

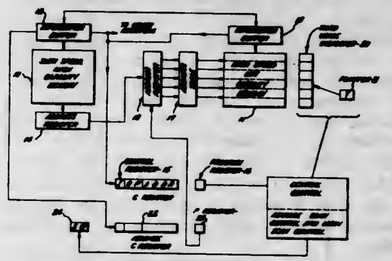
3,292,151
MEMORY EXPANSION
Gordon L. Barnes, Poughkeepsie, James R. Groves, Stanisburg, Jerry L. Teepler, Poughkeepsie, and Michael A. Maccatoll, Hyde Park, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 4, 1962, Ser. No. 199,695
16 Claims. (Cl. 340—172.5)

1. The combination comprising:
memories having addressable locations;
a source of instructions of two kinds respectively consisting of a first kind of instructions each containing an address portion for addressing the locations in at least one memory and also containing a tag portion for designating a selection among a specified plurality of memories, and a second kind of instructions each containing a memory group selection portion;
first control means, connected to said memories and to said source, having a group selection portion responsive to said memory group selection portion in each instruction of said second kind to specify a plurality of memories;
second control means, connected to said memories and to said source, having a memory selection portion responsive to said tag portion in each



instruction of said first kind to select at least one memory from said specified plurality of memories; and
third control means, connected to said memories and to said source, having an address selection portion responsive to said address portion in each instruction of said first kind to address locations in a memory selected by said second control means.

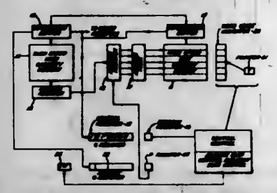
3,292,152
MEMORY
Robert S. Barton, Altadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 17, 1962, Ser. No. 223,919
3 Claims. (Cl. 340—172.5)



1. A memory comprising storage means having an information storage portion and an information identification storage portion wherein a piece of information and its identification portion are stored in correlated locations in their respective storage portions, said storage means having a plurality of storage locations, a plurality of usage indicators corresponding to the plurality of storage locations with each indicator assigned to an individual storage location and having a preselected state for indicating the availability of the storage location for writing in new information and another state for indicating the storage location is in use and controllable to automatically switch in state in accordance with the memory operations on the individual storage locations, a pointer having a plurality of stable states corresponding to the plurality of storage locations in said storage means cyclically operable to successively step from an initial stable state for identifying a storage location having its usage indicator in said preselected state to another stable state for identifying

the next successive storage location having its usage indicator in said preselected state and controlled to automatically point in accordance with the change in the state of a usage indicator, register means coupled to said information identification portion of said storage means for simultaneously comparing each of said identification portions for reading out the associated information or writing new information into said storage means at the storage location available therefor.

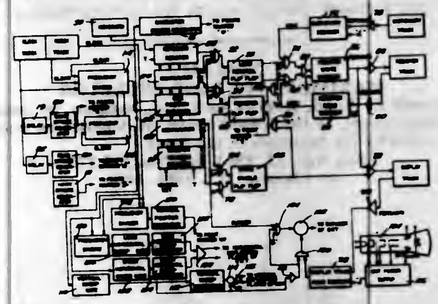
3,292,153
MEMORY SYSTEM
Robert S. Barton, Altadena, Calif., and William K. Orr, Wheaton, Ill., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 1, 1962, Ser. No. 227,451
7 Claims. (Cl. 340—172.5)



1. In a memory system having a high word capacity memory characterized by a high access time, a first information register coupled to said memory for receiving information read out of memory and to be written therein, means coupled to said memory for reading preselected information therefrom and transferring same to said first information register, a first control register for storing an instruction to be executed, a first control counter for indicating the address of the next instruction to be executed, a low word capacity associative memory characterized by a relatively low access time, an address register coupled to said associative memory for interrogating the memory, each associative memory position having a usage indicator for indicating the usage or non-usage of the information in an execution cycle and all arranged to normally indicate non-usage, sequential indicating means arranged with said usage indicators for indicating the last used information in the high speed memory during an execution cycle, a second control register for storing information last transferred to the associative memory, a second control counter for indicating the address of the next instruction to be transferred to the associative memory, and control means for controlling the transfer of information between said memories in a preselected sequence.

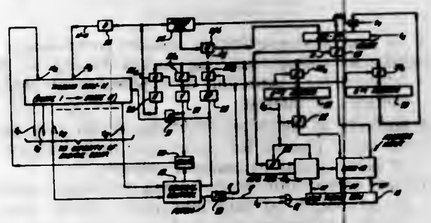
3,292,154
DISPLAY APPARATUS
Elmer C. Stevenson, Wellesley, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 241,867
9 Claims. (Cl. 340—172.5)

1. Display apparatus comprising:
(a) a recorder having a rotating recording medium with a plurality of closed tracks, at least one such track having a plurality of signal trains permanently recorded thereon, each one of said signal trains specifying character elements for forming a character;
(b) means for selecting individual ones of such plurality of signal trains and rerecording the so selected individual signal trains on a separate track of said recording medium thereby to establish a sequence of signals specifying a desired sequence of characters;
(c) an unshaped beam type cathode ray tube;
(d) means for reading back the rerecorded signals and converting them into recurrent signals for controlling the intensity of the beam of the said cathode ray tube; and,



(e) means for repetitively scanning the beam in synchronism with the rerecorded signals so as to repetitively produce groups of character elements representing the desired sequence of characters on the screen of the cathode ray tube.

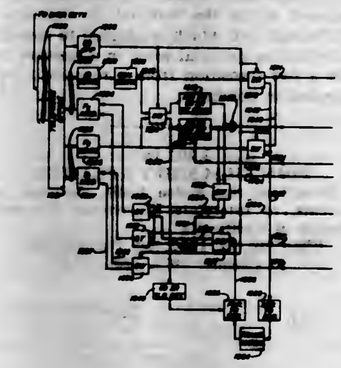
3,292,155
COMPUTER BRANCH COMMAND
Dan Neilson, Lake Park, Fla., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 15, 1963, Ser. No. 265,375
12 Claims. (Cl. 340—172.5)

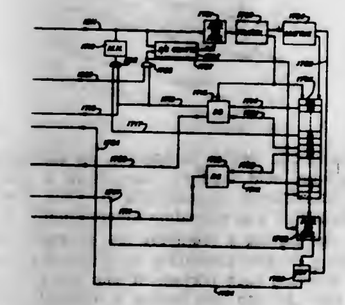


4. In a stored program digital computer, comprising:
(a) memory means for storing a computer program including a branch instruction having at least a modifier portion, and the addresses corresponding to a return from branch instruction;
(b) means for normally and sequentially forming addresses corresponding to instructions and for reading such instructions out of the memory means;
(c) means for selectively combining the modifier portion of a branch instruction read out of the memory means with an address formed by the address forming means for forming a return from branch address; and
(d) means for writing the return from branch address into the memory means location identified by the return from branch instruction address contained in the stored branch instruction for thereby forming an instruction for returning the computer to a predetermined instruction in the program after the branch.

3,292,156
DATA SIGNAL STORAGE CIRCUIT
Nathan H. Stochel, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 28, 1963, Ser. No. 283,055
11 Claims. (Cl. 340—172.5)

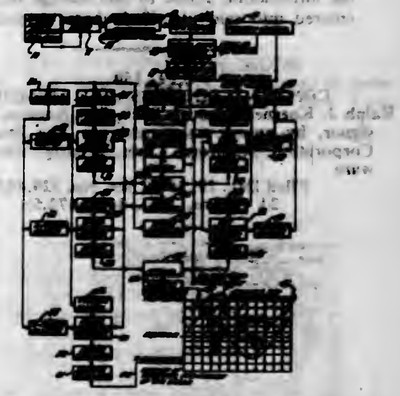
1. In a binary data signal communication system, a storage system for storing data signals received from a remote data set comprising, means for receiving said data signals from said data set, means for storing said data signals received by said receiving means, first signalling means for returning a warning signal to said remote data set, means responsive to the storage of a predetermined number of said data signals in said storing means for enabling said first signalling means, second signalling means for returning a different signal to said remote set to temporarily break transmission by said remote set, and further means responsive to the storage of an additional number of data signals in said storing means for enabling said second signalling means and disabling said first signaling means.





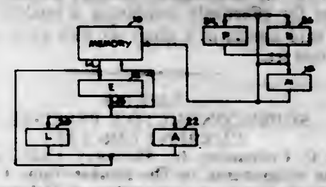
3,292,157
DIGITAL SATELLITE DISPLAY SYSTEM
Marthey F. Mallow, Waltham, Wash., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 25, 1963, Ser. No. 290,570
3 Claims. (Cl. 340—172.5)

1. A digital system for displaying an orbit of a satellite comprising:
(a) a storage unit;
(b) means for reading into and out of the storage unit the positions of the satellite in terms of longitude and time when vertically over and crossing the earth's equator traveling in a given direction;
(c) means for reading into and out of the storage unit the positions of a cycle of the orbit of the satellite in terms of longitude, latitude, and time;
(d) a counter for controlling the sequence of positional information read into and out of the storage unit;
(e) a cathode ray oscilloscope having an "X" deflection control, a "Y" deflection control, and an intensity spot control;
(f) means for activating the "X" deflection control from the sequential read-out of the cycle latitude storage;
(g) means for adding the longitude of the equatorial crossing and the cycle longitude;
(h) means for activating the "Y" deflection control of the cathode ray oscilloscope fed from the output of the adding means;



(i) means for adding the time for the equatorial crossing and the cycle time, forming a time sum;
(j) a real time clock;
(k) and means for comparing the time sum with the real time clock, causing an intensity spot on the cathode ray oscilloscope provided the time sum is greater than the time of the real time clock, and causing the counter to advance the read-out provided the time sum is less than the time of the real time clock.

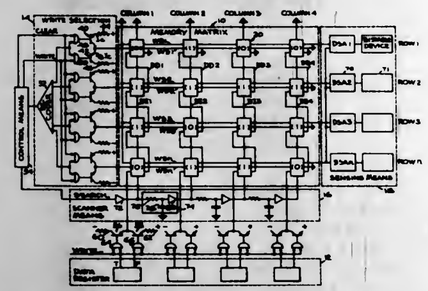
3,292,158
DATA PROCESSING APPARATUS INCLUDING MEANS FOR PROCESSING WORD AND CHARACTER FORMATTED DATA
Edward J. Selmeister, Los Angeles, Calif., assignor, by mesne assignments, to Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed July 29, 1963, Ser. No. 298,672
13 Claims. (Cl. 340—172.5)



1. A digital data processing apparatus including:
a memory comprised of a plurality of digital storage elements arranged to define a plurality of word locations, each word location including a plurality of character locations;
a source of timing pulses;
a memory address register including a word location address portion for storing information identifying one of said word locations and a character location address portion for storing information identifying a character location in said identified word location;
means for incrementing said information stored in said character location address portion in response to said timing pulses;
means for incrementing said information stored in said word location address portion in response to said information stored in said character location address portion;

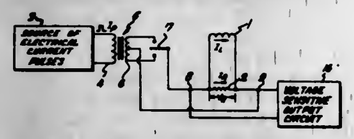
a storage register;
means for storing information in said storage register; and
means responsive to said information stored in said memory address register for selectively causing either the information stored in said identified character location to be entered into said storage register or the information stored in said storage register to be entered into said identified character location.

3,292,159
CONTENT ADDRESSABLE MEMORY
Ralph J. Koerner, Canoga Park, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 10, 1963, Ser. No. 329,405
21 Claims. (Cl. 340—172.5)



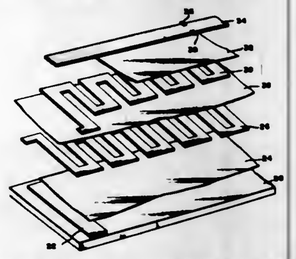
1. A content addressable memory comprising:
a matrix of identical memory elements respectively including N rows of elements, each row comprising a memory location capable of storing a word, and Q columns of elements, each column including a correspondingly positioned memory element from each location, each of said elements capable of assuming at least two different states;
means for sequentially interrogating on a column by column basis all of the elements in each column to develop successive sets of indicating signals, each signal of a given set indicating the state of a different one of the interrogated memory elements; and
means for effectively combining a predetermined one of said signals in a given set with each other signal in said set.

3,292,160
SUPERCONDUCTIVE PERSISTENT CURRENT CIRCUITS
Eugene C. Crittenden, Jr., Monterey, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed June 5, 1957, Ser. No. 663,668
11 Claims. (Cl. 340—173.1)



3. An electrical circuit including the combination of a first superconductive conductor, a second superconductive conductor connected in a circuit loop with the first conductor, means establishing a persistent circulating current around said circuit loop, said conductors being adapted to sustain said persistent circulating current around the circuit loop so long as both of the conductors are superconducting, and means coupled to said circuit loop for rendering one of said conductors electrically resistive only for a selected magnitude and direction of said established persistent circulating current while the other of said conductors remains in a superconductive condition, said conductor which is rendered electrically resistive comprising a piece of material having a cross-sectional configuration which concentrates the magnetic field generated within the material by electrical current flow therethrough and which is adapted to sustain islands of superconducting material when in a resistive condition to provide a fast transition from a resistive condition to a superconductive condition.

3,292,161
THIN FILM SHIFT REGISTER
Kent D. Broadbent, San Pedro, Calif., assignor, by mesne assignments, to Interstate Electronics Corporation, a corporation of California
Filed Jan. 19, 1962, Ser. No. 167,292
12 Claims. (Cl. 340—174)

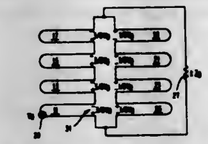


1. A magnetic device comprising an elongated magnetic medium, said medium comprising a plurality of portions alternatively magnetizable in either of two states of magnetization and extending longitudinally along said medium and having a relatively low magnetic hardness, a separating portion extending longitudinally along said medium between each portion of said plurality adjacent another such portion and having a relatively high magnetic hardness, said separating portion having a first state of magnetization; input means magnetically coupled to said magnetic medium at a first predetermined place thereof for establishing in said plurality of portions an area of a second state of magnetization; output means responsive to the state of magnetization of said magnetic medium at a second predetermined place thereof, spaced from said first predetermined place by a continuous portion of said magnetic medium; and means magnetically coupled to said magnetic medium along said continuous portion thereof for moving the area of said second state of magnetization from said first predetermined place to said second predetermined place on said magnetic medium within said continuous portion thereof.

3,292,162
DATA STORAGE READ OUT NETWORK
Carlos F. Chong, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y.
Filed Aug. 28, 1962, Ser. No. 220,005
5 Claims. (Cl. 340—174)

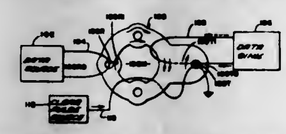
1. A signal sense line arrangement for a memory of magnetizable elements comprising:
(a) a plurality of transmission line stubs representing a sense line, each of said stubs having a substantially identical characteristic impedance;
(b) said transmission line stubs arranged in at least first and second groups;
(c) said transmission line stubs in said first group connected in series;
(d) a said transmission line stubs in said second group connected in series;

(e) said first and second groups connected in parallel with each other; and



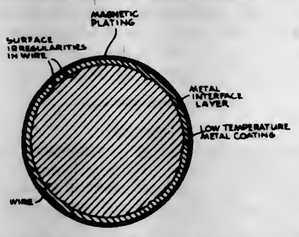
(f) load means having a value which has a predetermined relationship to the value of said characteristic impedance which is common for each stub, said load connected in parallel with said first and second groups.

3,292,163
MAGNETIC-CORE LOGIC CIRCUITS
Douglas C. Engelbert, Palo Alto, Calif., assignor to AMP Incorporated, Harrisburg, Pa., a corporation of New Jersey
Original application Jan. 19, 1960, Ser. No. 3,395, now Patent No. 3,140,402, dated July 7, 1964. Divided and this application Dec. 3, 1962, Ser. No. 241,956
4 Claims. (Cl. 340—174)



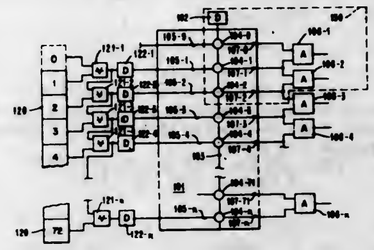
1. The improvement in toroidal cores of the type made of magnetic material having two states of magnetic remanence and having a main aperture and two terminal apertures in the magnetic material on either side of said main aperture, said improvement comprising having a core with the cross-sectional area of a leg of material on one side of a terminal aperture substantially equaling at least the cross-sectional area of the remaining leg of material adjacent said terminal aperture plus the sum of the cross-sectional areas of the legs of material on either side of the other terminal aperture.

3,292,164
COATING PRODUCT
Paul E. Wells, Los Angeles, John S. Davis, Glendale, Ronald E. Lee, Simi, and David R. Boles, Van Nuys, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,127
5 Claims. (Cl. 340—174)



3. An improved magnetic memory plane comprising:
a wire screen and a magnetic plating deposited thereon,
said magnetic plating including metal selected from the group consisting of iron, cobalt, nickel and mixtures thereof,
said magnetic plating having a thickness of between about 60 and 100 microinches, a substantially square bulk hysteresis loop and a coercivity of at least about 1.8 oersteds,
the wires of said wire screen having sufficiently small radii of curvature such that crystals of said magnetic plating are magnetically oriented thereby, and
said wires being woven in a configuration providing a plurality of closed loops to facilitate the magnetic orientation of the magnetic plating around the individual loops.

3,292,165
DATA TRANSMISSION MODE
Frederick L. Post, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,517
9 Claims. (Cl. 340—174)

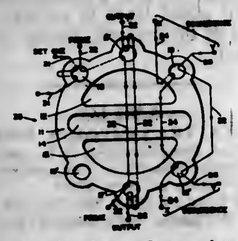


1. Data transmission mechanism comprising:
(a) data presentation means for presenting a first group pattern of bit signals;
(b) array means, interconnected with said data presentation means, for transmitting any given group pattern of bit signals directly on a bit by bit basis without change of signal, subject however to the existence of common mode noise, said array means including auxiliary means having significance as an auxiliary signal, to be used for noise cancellation;
(c) array output means connected to said array means having an inherent coding function when connected to said array to receive signals and provide sense outputs but provide cancellation of noise; and
(d) data coding means, interconnected with said data presentation means, arranged to code each pattern of bit signals during transmission complementary in effect to the coding function of said array output means;
(e) whereby each pattern of bit signals undergoes a change from the first group pattern to a coded second group pattern and back to said first group pattern during transmission.

3,292,166
MULTI-APERTURE CORE COINCIDENCE MEMORY
Bradford O. Van Ness, Phoenix, and William B. Buchrle, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed July 10, 1963, Ser. No. 294,004
9 Claims. (Cl. 340—174)

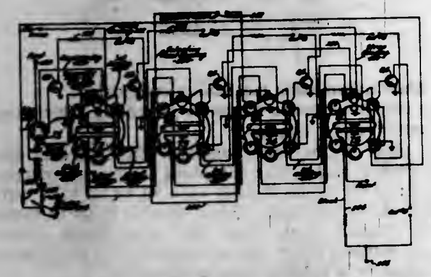
5. A magnetic memory device, comprising a magnetic core having relatively high flux retentivity, said core having first and second major apertures therein each defining a major flux path about the same, and said core further having first, second and third minor apertures in one of said flux paths and fourth and fifth minor apertures in the other of said flux paths, an input winding passing through said first minor aperture, an output winding passing in one direction through said second minor aperture and passing in the opposite direction through said fourth minor aperture, and two coincidence windings both passing through

said third minor aperture and said fifth minor aperture, said third and fifth minor apertures each having two flux legs on opposite sides thereof, with one coincidence wind-



ing linking one flux leg for each associated aperture and the other coincidence winding linking the other flux leg for each associated aperture.

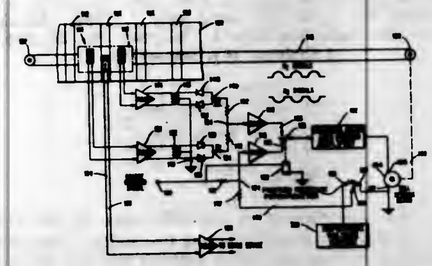
3,292,167
CORE-TRANSISTOR COUNTER
William B. Ruphrie, Scottsdale, and Lawrence R. Smith, Phoenix, Ariz., assignors to Motorola Inc., Chicago, Ill., a corporation of Illinois
Filed July 29, 1963, Ser. No. 298,264
15 Claims. (Cl. 340—174)



1. In a binary counter, the combination of: core means of magnetic material having relatively high flux retentivity properties, said core means having first and second major magnetic sections therein which are adapted to be magnetized independently of one another, said core means having a major aperture in each of said magnetic sections and having input and output minor apertures in each of said magnetic sections; a set winding mounted on said core means and extending through the input aperture of one of said magnetic sections; an output winding mounted on said core means and extending through the output apertures in each of said magnetic sections; a prime winding mounted on said core means and extending through said output apertures in each of said magnetic sections; first means for introducing a signal to said set winding to establish a predetermined set flux condition about the output aperture in said first magnetic section; and second means for introducing a signal to said prime winding to revert said predetermined set flux condition about the output aperture in said first magnetic section and thereby induce a signal in said output winding.

3,292,168
HIGH RESOLUTION, HEAD POSITIONER SYSTEM
James L. Gray, Maple Glen, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,690
2 Claims. (Cl. 340—174.1)

1. A device for properly aligning a sensing head with a magnetic recording track comprising:
(a) a first sensing head for reading signals recorded upon said magnetic recording track;
(b) a second sensing head for sensing the effect of signals recorded in said magnetic recording track adjacent one edge of said track;
(c) a third sensing head for sensing the effect of signals recorded in said magnetic recording track adjacent the other edge of said track;
(d) mounting means arranged to hold said first, second and third sensing means in desired positions relative to one another and adapted for movement relative to said magnetic recording track;
(e) first positioning means responsive to a first signal to move said mounting means to a position of approximate alignment with said magnetic recording track;
(f) said first positioning means including:
(1) an input terminal for receiving said first signal indicative of said approximate position;
(2) a demodulator and power amplifier means connected to said terminal and adapted to provide a signal of a correct polarity and amplitude;

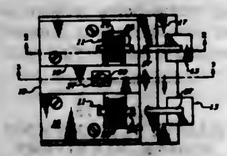


(3) a null seeking servo connected to said demodulator and power amplifier and arranged to take up a position in accordance with the signal supplied by said demodulator and power amplifier means;
(4) a feedback potentiometer means connected to a reference voltage source and adapted to provide a signal to said terminal indicative of any error in position between where the servo should be and where the servo actually is;
(5) means connected to said servo and arranged to be rotated as said servo turns to sweep said feedback potentiometer and further to move said mounting means;
(6) and means to disconnect said first positioning device when said first signal is reduced;
(g) and second positioning means responsive to said second and said third sensing heads to move said mounting means to a position of correct alignment with said magnetic recording track.

3,292,169
MAGNETIC HEAD SUSPENSIONS
Ignatius A. D'Alessandro, Bethpage, and Clarence A. Muller, Northport, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,142
9 Claims. (Cl. 340—174.1)

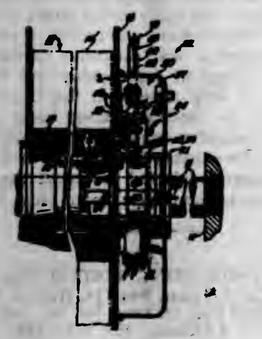
1. A single point suspension for a magnetic head assembly of the type adapted to float in an operative state on the film of air created by an associated rotating drum comprising a single pivot pin radially disposed with respect to said drum for pivotally positioning the magnetic head assembly during normal operation, a pivot point on the inner end of said pivot pin for contacting and pivotally positioning the magnetic head assembly, spring means to

exert an inward force through the pivot pin on the magnetic head assembly during normal operation, and stop means to prevent the spring means from exerting an in-



ward force on the magnetic head assembly when this assembly drops below the position it occupies in the operative state.

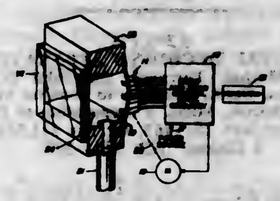
3,292,170
REEL MOUNTED PORTABLE SUPPLY WARNING APPARATUS HAVING ROTATION CONTROLLED FLASHING SIGNAL
Joseph D'Angelo, Wyckoff, N.J., assignor to Reto American Corporation, Paramus, N.J., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,120
4 Claims. (Cl. 340—259)



1. Supply roll run-out warning apparatus for indicating that a roll of material is nearly all payed out from a roll comprising support means locatable near one end face of the roll, said support means being revolvable with the rolls as the material pays out, sensing switch means mounted on said support means responsive to the pay out of material beyond a predetermined amount, a signal device, a source of electrical power, a warning circuit interconnecting said source of power, said signal device and said sensing switch means, and gravity-responsive switch means mounted on said support means and revolving therewith and being included in said warning circuit for interrupting said circuit once during each revolution of said roll.

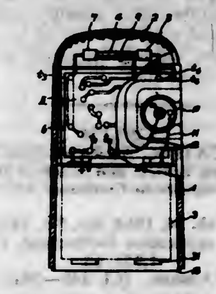
3,292,171
DISPLAY DEVICE DEPOSITING SUSPENDED PARTICLES BY SELECTIVE MAGNETIZATION OF A VIEWABLE SURFACE
Franklin L. Wilson, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 31, 1964, Ser. No. 393,138
6 Claims. (Cl. 340—324)

1. A magnetic display means comprising a fluid-tight chamber, a strip of magnetic steel tape forming at least a portion of one wall of said chamber, a clear transparent strip member forming at least a portion of an opposite wall of said chamber, said chamber carrying a fluid vehicle into which is suspended a quantity of ferrite particles, magnetic recording head means communicating with the outer surface of said magnetic tape, drive means for translating said recording head means along the length of said tape in a selective manner, current and drive control means including a current source connected to said recording head, and said drive and current control means including means for initially driving said recording head the length of said tape in a predetermined direction with current flow continuously effected in a reference direction



and subsequently driving said recording head to selected positions with said current flow being caused to be reversed for certain ones of said selected positions, each said selected position with reversal of current flow in said head effecting a deposit of said ferrite particles at that point on said tape juxtapositioned with said head, each said selected position without reversal of current flow freeing any previously deposited ferrite particles from the point on said tape juxtapositioned with said head.

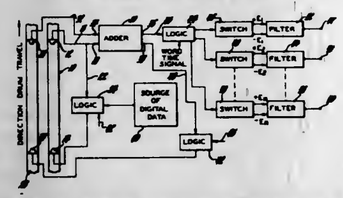
3,292,172
WATERTIGHT SIGNAL LAMP
Masao Horino, 51 Nakano-cho, Mogusa-ku, Tokyo, Japan
Filed Apr. 10, 1964, Ser. No. 358,898
Claims priority, application Japan, Apr. 13, 1963, 38/19,216
1 Claim. (Cl. 340—331)



A watertight signal lamp comprising a case enclosing a battery, a discharge lamp and a control circuit connected to the battery and blinking the discharge lamp at predetermined intervals, said case having an open end and associating grooves on the inner wall near a marginal edge at said open end, a lid attached to the marginal edge of said case to seal the case watertight, said lid having a concave portion formed on the outside thereof, a handle plate consisting of a half circular portion of larger diameter and a half circular portion of smaller diameter and having a rotary shaft at the center thereof, a cam plate forming screw portions engaging the associating grooves provided on said case on the inside of the lid and having at the center a shaft sleeve to be fitted with the rotary shaft of said handle plate, said shaft sleeve passing through an aperture of said lid and said handle plate and cam plate being coupled through the lid by driving a screw inserted from the center hole of the cam plate into a female screw of said rotary shaft, a half circular handle having rotatable shafts fitted into recesses provided across the diameter at the demarcation of said half circular portions of larger and smaller diameters

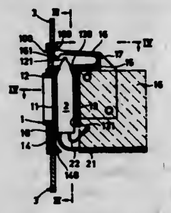
of said handle plate, said handle being of substantially the same diameter as the half circular portion of larger diameter, a rubber packing inserted into an annular groove of said lid proper to be attached to the marginal edge of the case, a rubber packing disposed around the shaft sleeve of said cam plate to form a watertight connection between the shaft sleeve and the aperture of the lid proper through which the shaft sleeve passes.

3,292,173
DIGITAL DECODING APPARATUS
Brunton S. Horton, Torrance, and John D. Michaels, Los Angeles, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 311,556
4 Claims. (Cl. 340—347)



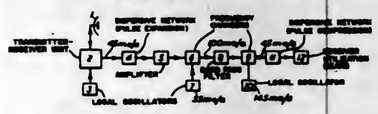
1. Digital to analog conversion apparatus comprising first register means for repeatedly making available for computation a digital representation of a quantity, second register means for providing a digital reference quantity, adder means connected to receive the digital representation and the reference quantity and to add the same, means to repeatedly recirculate the result of the addition to the second register means for consequent addition with the digital representation, means connected to receive the output of the adder means and to produce a positive signal quantity upon the occurrence of an overflow and to produce a negative signal quantity upon the absence of an overflow, and means connected to receive and to average the positive and negative signal quantities over a predetermined cycle length.

3,292,174
INDICATING ARRANGEMENT
Peter Tóth, Kloten, Zurich, and Manfred Dorizzi, Zurich, Switzerland, assignors to Contraves AG, Zurich, Switzerland
Filed Feb. 14, 1964, Ser. No. 344,887
Claims priority, application Switzerland, Feb. 15, 1963, 1,956/63
13 Claims. (Cl. 340—381)



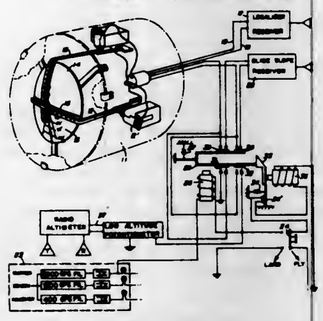
1. An indicating lamp holding module for removably mounting in an aperture in a supporting panel, said module comprising a plate-like carrier having a front face and a rear face and provided with a substantially rectangular observation window opening having opposite long side edges and opposite short side edges; lamp holding means on said plate-like carrier located in the region of said opposite long side edges of said observation window extending in a direction rearwardly from said rear face so as to provide a receptacle for a lamp in communication with and visible through said window opening; and two clamping means located also on said plate-like carrier in the region of said opposite short side edges, respectively, of said observation window opening and extending also rearwardly from said rear face, at least one of said clamping means being resilient so that said two clamping means are adapted to removably clamp said module in an aperture in a supporting panel.

3,292,175
PULSED RADAR SYSTEMS AND PULSED RADAR RECEIVERS
Percy Samuel Brandon, Great Baddow, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Sept. 16, 1963, Ser. No. 309,193
Claims priority, application Great Britain, Sept. 21, 1962, 35,948/62
4 Claims. (Cl. 343—17.2)



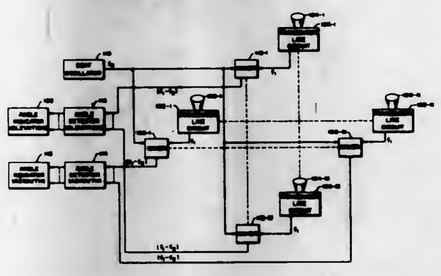
1. In a pulse radar system including radar transmitter means for generating radar output pulses of predetermined length, the improvement comprising a pulsed radar receiver containing a first dispersive network adapted to spread the energy of input pulses fed thereto over a time which is long relative to the length of an input pulse, means for feeding received radar pulses to said network, an amplifier connected to amplify pulses which have been pulse-expanded by said network and a second dispersive network adapted to restore the amplified expanded pulses to the original input pulse length.

3,292,176
HEIGHT INDICATING SYSTEM FOR AIRCRAFT
Carl J. Crane, Box 116, Helotes, Tex.
Filed Feb. 18, 1964, Ser. No. 345,807
4 Claims. (Cl. 343—108)



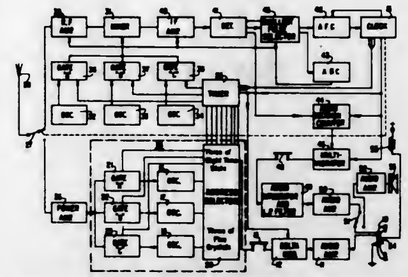
1. An aircraft height indicating system, comprising means for selectively displaying indication of aircraft proximity to an instrument landing glide slope path, as well as aircraft proximity to a landing runway, said means comprising a horizontal movable pointer, a dial swept by the said horizontal pointer, said dial portraying scale means common to glide slope measurement, said dial also portraying a horizontally delineated height reference scale, a horizontally displayed centrally positioned null line midway vertically of the said dial for establishing the zero height proximity of the landing runway to the aircraft, as well as for establishing the locus of the aircraft with respect to the said glide slope path, a galvanometer for driving the said pointer, the said galvanometer being connected by a switching means to either the output of a guide slope receive or to the output of a radio altimeter, a radio altimeter, a glide slope receiver, a marker beacon receiver, said marker beacon receiver output activating the said switching means to disconnect the said glide slope receiver from the said galvanometer when the aircraft traverses the energy pattern of a selected ground-based marker beacon transmitter and coupling a signal from said radio altimeter to said galvanometer representative of the height of the aircraft relative to the runway.

3,292,177
PHASE DETECTING SYSTEM FOR DETERMINING THE DIRECTION OF A BEAM IMPINGING UPON A FIXED RECEIVING ARRAY
Barrie Brightman and Uwe A. Pommerening, Webster, N.Y., assignors to Stromberg-Carlson, Rochester, N.Y., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,263
7 Claims. (Cl. 343—113)



1. In combination, a fixed linear array including a predetermined number of transducers for receiving a directional energy beam impinging thereon, whereby respective signals which are relatively phase-displaced in accordance with the direction of said beam will be induced in adjacent transducers of said array, phase-sensitive means including a plurality of individual sampling means coupled to said transducers each of which sampling means in effect sequentially samples the respective signals from adjacent transducers of said array at a different predetermined rate, an individual adder means coupled to each sampling means and responsive to the amplitude of each of the sequential samples produced by that sampling means to which it is coupled for producing an output signal therefrom having an amplitude proportional to the sum of the amplitudes of these sequential samples, and indicator means coupled to said adder means for indicating which individual adder means produces the output signal having the greatest amplitude.

3,292,178
COMMUNICATION SYSTEM
Henry Magnuski, Glenview, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 22, 1962, Ser. No. 181,554
20 Claims. (Cl. 343—203)



13. Transmitter apparatus including in combination, means for providing a train of pulses having a regular time relation with the presence and absence of such pulses constituting the information to be transmitted, a plurality of oscillators for producing waves of different frequencies, a plurality of gates individually coupled to said oscillators for controlling the transmission of said waves therefrom, selector means producing recurring pulse groups with each group corresponding to a pulse of said train and including a plurality of pulse components in predetermined time positions, and means for applying each of said pulse components to one of said gates to operate the same to transmit waves from the associated oscillator, whereby a train of coded pulse groups is transmitted, with each pulse group, including a plurality of pulse components of different frequencies in predetermined time positions to form an address, and said train of pulse groups providing the transmitted information.

DESIGNS

DECEMBER 13, 1966

206,424
SIGN
Robert C. Alexander and William B. Ecoff, Minnetonka, and Leslie C. Kouba, Minneapolis, Minn., assignors to Unipop Inc., Minnetonka, Minn., a corporation of Minnesota
Filed Dec. 6, 1965, Ser. No. 69
Term of patent 14 years
(Cl. D1—12)



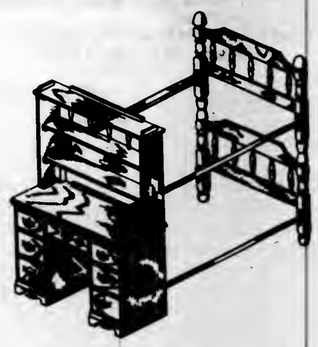
206,425
INFANT'S BIB
Ila E. Faughnder, 2836 Francis Ave., Los Angeles, Calif. 90005
Substituted for abandoned design application Ser. No. 89,570, June 10, 1964. This application Aug. 19, 1965, Ser. No. 86,640
Term of patent 14 years
(Cl. D3—26)



206,426
HOLDER FOR SHAVING GEAR OR THE LIKE
George Wise, 5606 Bartis Ave., Baltimore, Md. 21207
Filed Oct. 24, 1965, Ser. No. 87,933
Term of patent 14 years
(Cl. D4—3)



206,427
COMBINED BED AND BOOKCASE UNIT
Norman H. Fowler, Morristown, Tenn., assignor to Forest Products Corporation, Morristown, Tenn., a corporation of Tennessee
Continuation of design applications Ser. No. 86,248 and Ser. No. 86,249, July 22, 1965. This application June 20, 1966, Ser. No. 2,731
Term of patent 14 years
(Cl. D5—4)



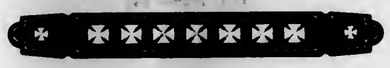
206,428
BINDER SPINE
Walter Feldmahr, Canton, N.Y., assignor to Gary Industries, Inc., a corporation of Nevada
Filed Feb. 10, 1965, Ser. No. 83,787
Term of patent 14 years
(Cl. D6—1)



206,429
CAKE OR THE LIKE
David B. Eckelman, Shawnee Mission, Kans., assignor to Interstate Bakeries Corporation, Kansas City, Mo., a corporation of Delaware
Filed Dec. 4, 1963, Ser. No. 77,659
Term of patent 14 years
(Cl. D8—1)



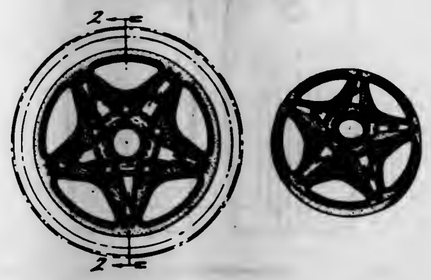
206,430
PULL FOR DOORS, DRAWERS AND THE LIKE
David F. James, Los Angeles, and James W. Maine, Fullerton, Calif., assignors to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed Mar. 2, 1966, Ser. No. 1,252
Term of patent 14 years
(Cl. D10—8)



206,431
TRIM MOLDING FOR ELECTRONIC EQUIPMENT CABINETS OR SIMILAR ARTICLES
Grant E. Allen, Jr., and Fred Bohm, Atlanta, Ga., assignors to Scientific-Atlanta, Inc., De Kalb County, Ga., a corporation of Georgia
Filed Oct. 23, 1965, Ser. No. 87,862
Term of patent 14 years
(Cl. D13—6)



206,432
WHEEL
Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Jan. 28, 1966, Ser. No. 814
Term of patent 14 years
(Cl. D14—30)



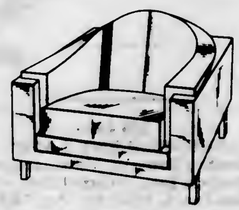
206,433
CHAIR
Leon S. Stinkis, 102 E. Rayen Ave., Youngstown, Ohio 44503
Filed Dec. 8, 1965, Ser. No. 121
Term of patent 14 years
(Cl. D15—1)



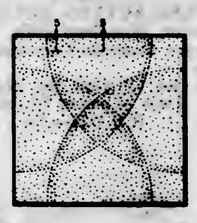
206,434
CHAIR FOR REVERSE SITTING
Nolen M. Doss, Sr., P.O. Box 14975, Phoenix, Ariz. 85031
Filed Oct. 1, 1965, Ser. No. 87,284
Term of patent 14 years
(Cl. D15—1)



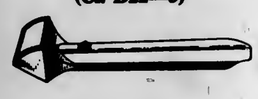
206,435
ARM CHAIR
Miguel Rodrigo, República de Chile Street 284, Lima, Peru
Filed Oct. 23, 1965, Ser. No. 87,884
Term of patent 14 years
(Cl. D15—1)



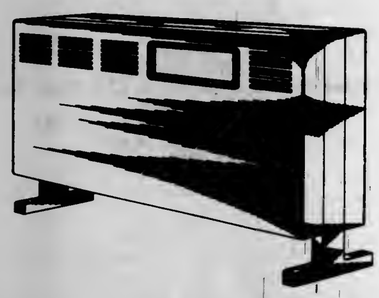
206,436
ACOUSTICAL CORRECTION TILE
Gary S. Hurlbut, Buffalo, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed June 3, 1965, Ser. No. 85,557
Term of patent 14 years
(Cl. D18—2)



206,437
CASING FOR AN ELECTRIC SHAVER
Michel Pechaud, La Chaux-de-Fonds, Switzerland, assignor to Etablissements Aesup, Vaduz, Liechtenstein, a firm of Liechtenstein
Filed Dec. 21, 1964, Ser. No. 83,131
Term of patent 14 years
Claims priority, application Switzerland, June 24, 1964, 35,263/64
(Cl. D22—3)



206,438
CONTROLLER CABINET FOR DATA PROCESSING SYSTEM OR SIMILAR ARTICLE
Pierre L. Crease, Kettering, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed July 8, 1965, Ser. No. 86,080
Term of patent 14 years
(Cl. D26—5)



206,439
FLUORESCENT LAMP
Richard A. Moselly, Danvers, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 6, 1964, Ser. No. 78,096
Term of patent 14 years
(Cl. D26—8)



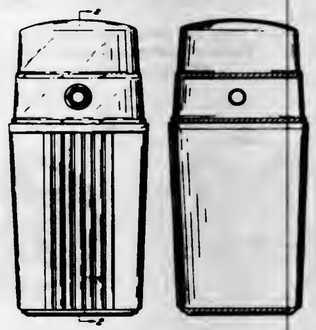
206,440
PUSH BUTTON HOUSING
George R. Lawlor, Woodland Hills, Calif., assignor to Carrier Current Controls Corporation, a corporation of California
Filed Oct. 13, 1965, Ser. No. 87,452
Term of patent 14 years
(Cl. D26—13)



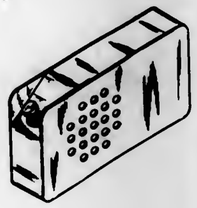
206,441
ANTENNA COIL
James Shirey, 5259 Redding Drive, Zachy Lake, Box 332, Brighton, Mich. 48116
Continuation of abandoned design application Ser. No. 73,649, Feb. 20, 1963. This application June 18, 1964, Ser. No. 80,543
Term of patent 14 years
(Cl. D26—14)



206,442
HOUSING FOR BATTERY OPERATED SOUND AMPLIFIER OR SIMILAR ELECTRICAL APPARATUS
Robert J. Mueller and Herbert L. Kornfeld, Los Angeles, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Apr. 30, 1965, Ser. No. 85,634
Term of patent 14 years
(Cl. D26—14)



206,443
HOUSING FOR A REMOTE CONTROL UNIT FOR A TELEPHONE ANSWERING APPARATUS OR THE LIKE
Edward M. Cappucci, Ardsley, and Arthur R. Marotta, Westbury, N.Y., assignors to Robosonics, Inc., a corporation of Delaware
Filed Nov. 17, 1965, Ser. No. 88,130
Term of patent 14 years
(Cl. D26—14)



206,444
CHRISTMAS TREE ORNAMENT
Dario Moreschenne, Via Arcetina 161, Firenze, Italy
Filed Oct. 24, 1965, Ser. No. 87,897
Term of patent 14 years
(Cl. D29—1)



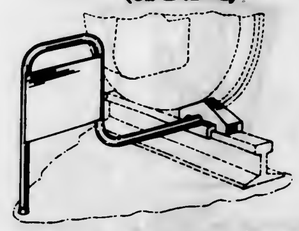
206,445
VASE
Orville C. Hansen, Cedars, Okla.
(P.O. Box 152, Fort Smith, Ark. 72901)
Filed Aug. 30, 1965, Ser. No. 86,757
Term of patent 14 years
(Cl. D29—28)



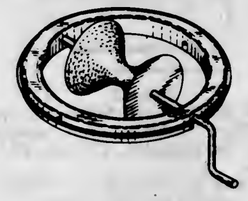
206,446
TROPHY OR THE LIKE
Jean Mayeur, Flushing, N.Y., assignor to Cartier, Inc., New York, N.Y., a corporation of New York
Filed Sept. 7, 1965, Ser. No. 86,884
Term of patent 14 years
(Cl. D29—28)



206,447
COMBINED WHEEL CHOCK AND FLAG
Ralph V. Switzer, Park Ridge, Ill., assignor to The Alden Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 7, 1966, Ser. No. 952
Term of patent 14 years
(Cl. D41—1)



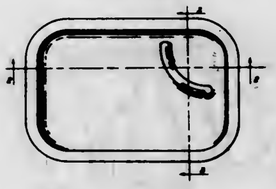
206,448
KITE STRING HOLDER
Thomas F. Niemann, Denver, and Michael J. Santoramo, Arvada, Colo., assignors to The Saturn Corporation, Denver, Colo., a corporation of Colorado
Filed Oct. 15, 1964, Ser. No. 82,189
Term of patent 14 years
(Cl. D41—1)



206,449
AUTOMOBILE TRAY
Henry M. Terry, 5517 W. Jackson St., Pensacola, Fla. 32506
Filed Sept. 13, 1965, Ser. No. 86,981
Term of patent 14 years
(Cl. D44—10)



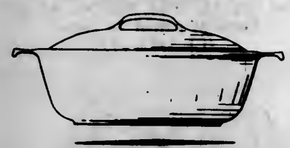
206,450
TRAY
Clifford T. Lloyd, 605 Elkhart St., Arapahoe, Colo. 80802
Filed Oct. 5, 1965, Ser. No. 87,332
Term of patent 14 years
(Cl. D44—10)



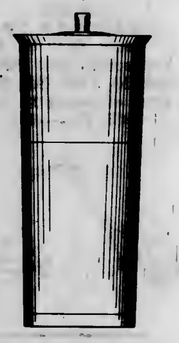
206,451
CHAMPAGNE BUCKET
Walter S. Taylor, Hunnewellspark, N.Y. 14840
Filed Jan. 7, 1965, Ser. No. 83,316
Term of patent 14 years
(Cl. D44—15)



206,452
CASSEROLE OR SIMILAR ARTICLE
Richard S. Latham, Chicago, Ill., assignor to American Home Products Corporation, a corporation of Delaware
Filed Oct. 4, 1965, Ser. No. 87,305
Term of patent 14 years
(Cl. D44—15)



206,453
BEVERAGE SERVER OR SIMILAR ARTICLE
Howard W. Phillips, Nashville, Tenn., assignor to Aladdin Industries, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Aug. 13 1965, Ser. No. 86,575
Term of patent 14 years
(Cl. D44—21)



206,454
WALL LUMINAIRE
Charles I. Rosen, Englewood, N.Y., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed July 1, 1965, Ser. No. 85,973
Term of patent 14 years
(Cl. D48—4)



206,455
LINE TIGHTENING WRENCH
Edwin R. Thompson, Canfield, Ohio, assignor to Western Reserve Plastics, Inc., Canfield, Ohio, a corporation of Ohio
Filed Apr. 1 1966, Ser. No. 1,735
Term of patent 14 years
(Cl. D49—1)



206,456
FLUTED DOOR KNOB
Fred J. Russell, 8635 Otis St., South Gate, Calif., and Martin H. Windemuth, Orange, Calif.; said Windemuth assignor to said Russell
Filed Dec. 27 1965, Ser. No. 330
Term of patent 14 years
(Cl. D50—3)



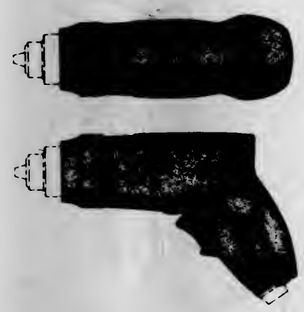
206,457
MEASURING TAPE
Charles Zelnick, Saginaw, Mich., assignor to The Lufkin Company, Saginaw, Mich. a corporation of Michigan
Filed Oct. 11 1965, Ser. No. 87,383
Term of patent 14 years
(Cl. D52—1)



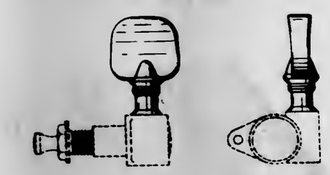
206,458
PORTABLE GAS DETECTOR OR THE LIKE
Howard M. Canterbury, 6306 Schevers, Houston, Tex. 77017
Filed Dec. 20, 1965, Ser. No. 250
Term of patent 14 years
(Cl. D52—6)



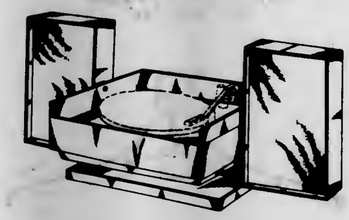
206,459
PORTABLE POWER-DRIVEN TOOL
Harper Landell, Fort Washington, Pa., and Thomas C. Abrahamson, Haddonfield, N.J., assignors to The Black and Decker Manufacturing Company, Towson, Maryland, a corporation of Maryland
Filed May 11, 1965, Ser. No. 2,256
Term of patent 14 years
(Cl. D54—14)



206,460
STRINGED INSTRUMENT GEAR PEG
Josephus B. Thompson, Covington, Ohio, assignor to Grover Musical Products, Inc., Cleveland, Ohio
Filed Aug. 19 1965, Ser. No. 86,650
Term of patent 14 years
(Cl. D56—1)



206,461
PORTABLE PHONOGRAPH OR SIMILAR ARTICLE
David Chapman and Marian Polhemus, Chicago, Ill., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 28, 1965, Ser. No. 85,512
Term of patent 14 years
(Cl. D56—4)



206,462
COMBINED BINOCULAR AND RADIO SET
Victor Petrunak, 14611 Halsted St., Harvey, Ill. 60426
Filed Aug. 6, 1965, Ser. No. 86,402
Term of patent 14 years
(Cl. D56—4)



206,463
BOTTLE
George J. Federighi, Belvedere, Calif. (% Stero Chemical Mfg. Co., 70 13th St., San Francisco, Calif. 94103)
Filed Oct. 18, 1965, Ser. No. 87,539
Term of patent 14 years
(Cl. D68—5)



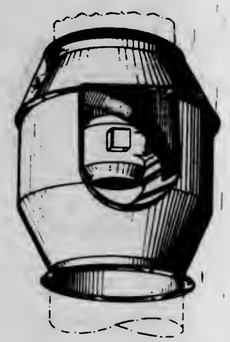
206,464
JAR
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Oct. 14, 1965, Ser. No. 87,478
Term of patent 14 years
(Cl. D68—25)



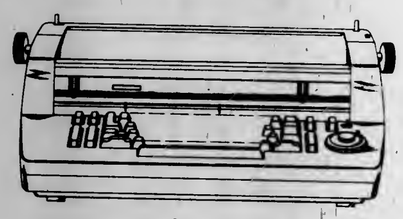
206,465
CAMERA
Karl Heinz Lange, Ennigloh-Bunde i.W., Germany, assignor to Voigtländer A.G., Braunschweig, Germany
Filed Aug. 30, 1965, Ser. No. 86,758
Term of patent 14 years
Claims priority, application Germany May 7, 1965
(Cl. D61—1)



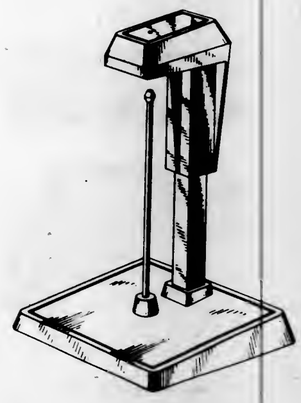
206,466
AIR CONDITIONING DUCT
Richard L. Hull, Davenport, Iowa, assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 83,996
Term of patent 14 years
(Cl. D62—4)



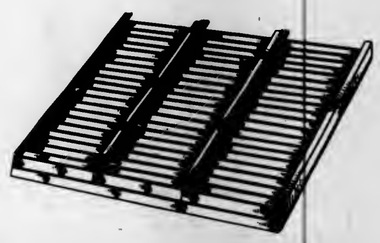
206,467
TYPEWRITER OR THE LIKE
Eliot F. Noyes, New Canaan, Conn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 1, 1965, Ser. No. 6
Term of patent 14 years
(Cl. D64—11)



206,468
MEMORANDA SPINDLE
Arnold Neustadter, 1185 Park Ave., New York, N.Y., and Hildaur L. Nelson, 2 Juniper St., Metuchen, N.J. 08840
Filed Aug. 12, 1965, Ser. No. 86,551
Term of patent 14 years
(Cl. D74—2)



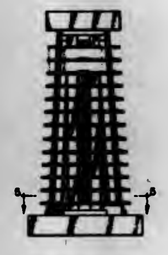
206,469
FILING TRAY OR THE LIKE
Lloyd M. Toms, Crozet, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Virginia
Filed Nov. 4, 1963, Ser. No. 77,319
Term of patent 14 years
(Cl. D74—9)



206,470
SWEATER HANGER
Daniel E. Gelles, Kerhonkson, N.Y. 12446
(1140 Broadway, New York, N.Y. 10001)
Filed June 16, 1966, Ser. No. 2,701
Term of patent 14 years
(Cl. D80—8)

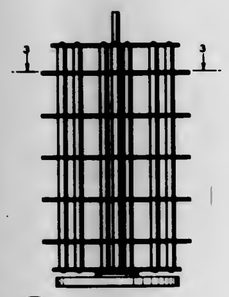


206,471
COMBINED DISPLAY AND DISPENSING STAND
Frank Mellion, Providence, R.I., assignor to Jo-Dee Corp., Warwick, R.I., a corporation of Rhode Island
Filed Apr. 1, 1965, Ser. No. 84,591
Term of patent 14 years
(Cl. D86—9)



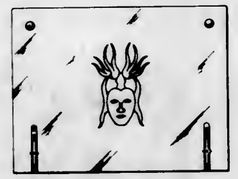


206,472
ROTATABLE DISPLAY RACK FOR PENS AND THE LIKE
Toma Georgieff, 1742 Maple Ave., Granite City, Ill. 62040
Filed Aug. 20, 1965, Ser. No. 86,663
Term of patent 14 years
(Cl. D88—9)

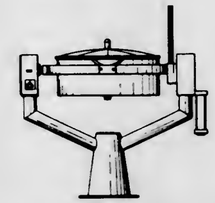




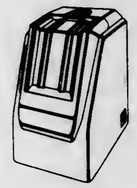
206,473
PORTABLE SUMMER FRONT FOR A FIREPLACE
Gladys M. Volz, 221 Day Drive, Ferguson, Mo. 63135
Filed Jan. 3, 1966, Ser. No. 402
Term of patent 7 years
(Cl. D81—5)



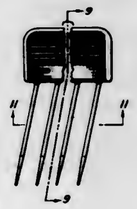
206,474
SUSPENDED COOKING VESSEL
Storm Hakon Lunde, Mosekollen 2, Oslo 7, Norway
Filed Aug. 17, 1965, Ser. No. 86,638
Term of patent 14 years
(Cl. D81—10)



206,475
PORTABLE SAUNA BATH
Robert E. Gorton, Hayward, Calif., assignor to Magna Five, Inc., San Jose, Calif.
Filed Jan. 10, 1966, Ser. No. 549
Term of patent 14 years
(Cl. D83—1)



206,476
HAIR STYLING TOOL
Hector S. Cournoyer, 7545 E. Treasure Drive, Treasure Island, Miami Beach, Fla. 33139
Continuation of design applications Ser. No. 85,312 and Ser. No. 85,313, May 17, 1965. This application Feb. 28, 1966, Ser. No. 1,427
Term of patent 14 years
(Cl. D86—8)



206,477
ILLUMINABLE VANITY CASE
John H. Ax, % London Leather Novelties, Inc., 19 W. 18th St., New York, N.Y. 10468
Filed Oct. 1, 1965, Ser. No. 87,279
Term of patent 14 years
(Cl. D67—5)



206,478
TOWEL
Leonard Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Nov. 1, 1965, Ser. No. 87,967
Term of patent 14 years
(Cl. D92—26)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 13TH DAY OF DECEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Buschow, Herman F., to Hydrocarbon Research, Inc. Transition couplings. Re. 26,126, 12–13–66, Cl. 285—284.
Chaney, Albert L. Reagents and analysis of nitrogen. Re. 26,125, 12–13–66, Cl. 195—103.5.
Davis, Derek E. T. Stove for grilling viands. Re. 26,123, 12–13–66, Cl. 126—25.
Hydrocarbon Research, Inc.: *See*—
Buschow, Herman F. Re. 26,126.
Koehn, Wilbur R. Injection set and flow meter for parenteral fluids. Re. 26,124, 12–13–66, Cl. 128—214.
Wade, Charles E. Sealing closure. Re. 26,127, 12–13–66, Cl. 220—46.

LIST OF PLANT PATENTEES

Conard-Pyle Co., The: *See*—
Meilland, Marie L. 2,691.
Meilland, Marie L. 2,692.
Meilland, Marie L. 2,693.
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Meilland, Marie L., to The Conard-Pyle Co. Rose plant. 2,692, 12–13–66, Cl. 21.
Meilland, Marie L., to The Conard-Pyle Co. Rose plant. 2,693, 12–13–66, Cl. 21.

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Acme Visible Records, Inc.: *See*—
Toms, Lloyd M. 206,469.
Aladdin Industries, Inc.: *See*—
Phillips, Howard W. 206,453.
Aldon Co., The: *See*—
Switzer, Ralph V. 206,447.
Alexander, Robert C., W. B. Ecoff, and L. C. Kouba, to Unipop Inc. Sign. 206,424, 12–13–66, Cl. D1—12.
Allen, Grant E., Jr., and F. Bohm, to Scientific-Atlanta, Inc. Trim molding for electronic equipment cabinets or similar articles. 206,431, 12–13–66, Cl. D13—6.
American Home Products Corp.: *See*—
Latham, Richard S. 206,452.
Ametek, Inc.: *See*—
Hull, Richard L. 206,466.
Ax, John H. Illuminable vanity case. 206,477, 12–13–66, Cl. D67—5.
Black and Decker Mfg. Co., The: *See*—
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Bohm, Fred: *See*—
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Cannon Mills Co.: *See*—
Clementi, Leonard. 206,478.
Canterbury, Howard M. Portable gas detector or the like. 206,458, 12–13–66, Cl. D52—6.
Cappucci, Edward M., and A. R. Marotta, to Robosonics, Inc. Housing for a remote control unit for a telephone answering apparatus or the like. 206,443, 12–13–66, Cl. D26—14.
Carrier Current Controls Corp.: *See*—
Lawlor, George R. 206,440.
Cartier, Inc.: *See*—
Mayeur, Jean. 206,446.
Chapman, David, and M. Polhemus, to Radio Corp. of America. Portable phonograph or similar article. 206,461, 12–13–66, Cl. D56—4.
Clementi, Leonard, to Cannon Mills Co. Towel. 206,478, 12–13–66, Cl. D92—26.
Cournoyer, Hector S. Hair styling tool. 206,476, 12–13–66, Cl. D86—8.
Crease, Pierre L., to The National Cash Register Co. Controller cabinet for data processing system or similar article. 206,438, 12–13–66, Cl. D26—5.
Doss, Nolon M., Sr. Chair for reverse sitting. 206,434, 12–13–66, Cl. D15—1.
Eckelman, David B., to Interstate Bakeries Corp. Cake or the like. 206,429, 12–13–66, Cl. D8—1.
Ecoff, William B.: *See*—
Alexander, Robert C., Ecoff, and Kouba. 206,424.
Emerson Electric Co.: *See*—
Rosen, Charles I. 206,454.
Etablissements Aesup: *See*—
Peclard, Michel. 206,437.
Faughnder, Ila E. Infant's bib. 206,425, 12–13–66, Cl. D3—26.
Federighi, George J. Bottle. 206,463, 12–13–66, Cl. D58—8.
Feldmahr, Walter, to Gary Industries, Inc. Binder spine. 206,428, 12–13–66, Cl. D6—1.
Forest Products Corp.: *See*—
Fowler, Norman H. 206,427.
Fowler, Norman H., to Forest Products Corp. Combined bed and bookcase unit. 206,427, 12–13–66, Cl. D5—4.
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Feldmahr, Walter. 206,428.
Gelles, Daniel E. Sweater hanger. 206,470, 12–13–66, Cl. D80—8.
Georgieff, Toma. Rotatable display rack for pens and the like. 206,472, 12–13–66, Cl. D80—9.
Gorton, Robert E., to Magna Five, Inc. Portable sauna bath. 206,475, 12–13–66, Cl. D63—1.
Grover Musical Products, Inc.: *See*—
Thompson, Josephus B. 206,460.
Hamon, Orville C. Vase. 206,445, 12–13–66, Cl. D29—28.
Hull, Richard L., to Ametek, Inc. Air conditioning duct. 206,466, 12–13–66, Cl. D62—4.
Hurban, Gary S., to National Gypsum Co. Acoustical correction tile. 206,436, 12–13–66, Cl. D18—2.
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Eckelman, David B. 206,429.
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Jo-Dee Corp.: *See*—
Mellion, Frank. 206,471.
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Kornfeld, Herbert L.: *See*—
Mueller, Robert J., and Kornfeld. 206,442.
Kouba, Leslie C.: *See*—
Alexander, Robert C., Ecoff, and Louba. 206,424.
Landell, Harper, and T. C. Abrahamsen, to The Black and Decker Mfg. Co. Portable power-driven tool. 206,459, 12–13–66, Cl. D54—14.
Lange, Karl H., to Voigtlander A.G. Camera. 206,465, 12–13–66, Cl. D61—1.
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Lawlor, George R., to Carrier Current Controls Corp. Push button housing. 206,440, 12–13–66, Cl. D26—13.
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Lunde, Storm H. Suspended cooking vessel. 206,474, 12–13–66, Cl. D81—10.
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Mayeur, Jean, to Cartier, Inc. Trophy or the like. 206,446, 12–13–66, Cl. D29—28.
Mellion, Frank, to Jo-Dee Corp. Combined display and dispensing stand. 206,471, 12–13–66, Cl. D80—9.
Menelly, Richard A., to Sylvania Electric Products Inc. Fluorescent lamp. 206,439, 12–13–66, Cl. D26—8.
Morandusso, Dario. Christmas tree ornament. 206,444, 12–13–66, Cl. D29—1.
Mueller, Robert J., and H. L. Kornfeld, to International Rectifier Corp. Housing for battery operated sound amplifier or similar electrical apparatus. 206,442, 12–13–66, Cl. D26—14.

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Neustadter, Arnold, and H. L. Neilsen. Memoranda spindle. 206,468, 12–13–66, Cl. D74—2.
Nieman, Thomas F., and M. J. Santeramo, to The Saturn Corp. Kite string holder. 206,448, 12–13–66, Cl. D41—1.
Noyes, Elliot F., to International Business Machines Corp. Typewriter or the like. 206,467, 12–13–66, Cl. D64—11.
Owens-Illinois, Inc.: *See*—
Roberts, Bruce L. 206,464.
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Petrusek, Victor. Combined binocular and radio set. 206,462, 12–13–66, Cl. D56—4.
Phillips, Howard W., to Aladdin Industries, Inc. Beverage server or similar article. 206,453, 12–13–66, Cl. D44—21.
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Radio Corp of America: *See*—
Chapman, David, and Polhemus. 206,461.
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Robosonics, Inc.: *See*—
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Rodrigo, Miguel. Arm chair. 206,435, 12–13–66, Cl. D15—1.
Rosen, Charles I., to Emerson Electric Co. Wall luminaire. 206,454, 12–13–66, Cl. D48—4.
Russell, Fred J., and M. H. Windemuth; said Windemuth assor. to said Russell. Fluted door knob. 206,456, 12–13–66, Cl. D50—3.
Santeramo, Michael J.: *See*—
Nieman, Thomas F., and Santeramo. 206,448.
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Thompson, Edwin R., to Western Reserve Plastics, Inc. Line tightening wrench. 206,455, 12–13–66, Cl. D49—1.
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Lange, Karl H. 206,465.
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Wise, George. Holder for shaving gear or the like. 206,426, 12–13–66, Cl. D4—3.
Zelnick, Charles, to The Lufkin Co. Measuring tape. 206,457, 12–13–66, Cl. D52—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 13TH DAY OF DECEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AGA-Platforadling Aktiebolag: *See*—
Lundberg, Olof. 3,291,445.
ACF Industries, Inc.: *See*—
Greif, Paul P. 3,291,320.
AMF International Ltd.: *See*—
Ward, Harry. 3,291,174.
AMP Inc.: *See*—
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Engelbart, Douglas C. 3,292,163.
Scheller, Wilfred R. 3,292,137.
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Dow, Irving A., Jr., and Aarflot. 3,291,182.
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Rockstrom, Leonard, Aaron, Crowe, and Pundyk. 3,291,412.
Abashian, Steven, to E. I. du Pont de Nemours and Co. Process of solvent bonding polyethylene terephthalate copolyester fabrics with dimethyl sulfoxide. 3,291,561, 12–13–66, Cl. 8—130.1.
Abbey Automation Systems, Inc.: *See*—
Abbey, Harold G., and Schore. 3,291,707.
Abbey, Harold G., and G. B. Schore, to Abbey Automation Systems, Inc. Bright zinc electroplating technique. 3,291,707, 12–13–66, Cl. 204—55.
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Tadanier, John S., and Cole. 3,291,836.
Abbott, Thomas I., and H. F. Huedepohl, to Eastman Kodak Co. Photographic element. 3,291,610, 12–13–66, Cl. 96—83.
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Aberg, Anders B. Distance piece for concrete-reinforcing rods. 3,290,842, 12–13–66, Cl. 52—309.
A.C. Rubber Mfg. Co. Ltd.: *See*—
Davis, John S. 3,291,252.
Adams, Frank E. Double-hung balanced take-out window. 3,290,825, 12–13–66, Cl. 49—481.
Adams, George L., and C. T. Govin, to The Salem Tool Co. Skids used on deep mine auger machines. 3,291,534, 12–13–66, Cl. 299—55.
Adams, Robert E., to Gifford-Wood, Inc. Conveyor unloading apparatus. 3,291,286, 12–13–66, Cl. 198—186.
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Aebersold, Stanley J. Floral arranger. 3,290,820, 12–13–66, Cl. 47—41.12.
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Aerojet-General Corp.: *See*—
Bost, John J., Bernard, and Joiner. 3,291,743.
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Martin, Fred E. 3,291,730.
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Ahlert, Wilhelm, E. Kruger, and P. Damm, to Elektro-Thermit G.m.b.H. Apparatus and method for the demolition of objects. 3,291,050, 12–13–66, Cl. 102—90.
Air Preheater Co., The: *See*—
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Lepisto, John G. 3,291,375.
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Allen, Harry W.: *See*—
Williams, Raymond F., Anerino, and Allen. 3,291,385.
Allen, Stanley E., Jr., to Varian Associates. Electron tube envelope walls of cooling coils welded together. 3,292,027, 12–13–66, Cl. 313—24.
Allen, Winston F.: *See*—
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Allinquant, Fernand S. Oleopneumatic suspensions having self-acting pumping. 3,291,475, 12–13–66, Cl. 267—64.
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Altenpohl, William F., Jr., to W. F. Altenpohl Inc. Poultry selector conveyor assembly. 3,291,303, 12–13–66, Cl. 209—121.
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Anderson, Gerald S., to Litton Systems Inc. Apparatus for cathode sputtering including a plasmaconfining chamber. 3,291,715, 12–13–66, Cl. 204—298.
Anderson, James H. Reinforced flexible diaphragm. 3,291,006, 12–13–66, Cl. 92—100.
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Andrae, Karl H., to Jeffrey Galion Mfg. Co. Continuous muller. 3,291,460, 12–13–66, Cl. 259—109.
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Armour, Walter B., and M. P. Diamantopoulos, to National Starch and Chemical Corp. Chlorinated polyolefin polymer mixtures. 3,291,862, 12–13–66, Cl. 260—897.
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Arneson, Howard M. Swimming pool cleaning device. 3,291,145, 12–13–66, Cl. 134—167.
Arnold, George D., to The Dewey Shepard Boiler Co., Inc. Apparatus for steaming food products. 3,291,030, 12–13–66, Cl. 99—234.
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Artco Inc.: *See*—
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Artru, Andre L. J., to D. and L. Lachenal and A. Gromelle. Safety system for skier's shoes. 3,291,499, 12–13–66, Cl. 280—11.35.
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Sohn, John P., and Little. 3,291,034.
Asahata, Yoshihiko. Needle eye threading device. 3,291,084, 12–13–66, Cl. 112—225.
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Atkins, Carl E., and R. L. Ziolkowski, to Tung-Sol Electric Inc. Liquid level detector. 3,291,149, 12–13–66, Cl. 137—392.
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Atkinson, Jerome T., Jr., and E. M. Moore. Indicator. 3,290,811, 12–13–66, Cl. 40—70.
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Ayuzawa, Mitsumasa, S. Sawada, and T. Shibukawa, to Sumitomo Electric Industries, Ltd. Method of manufacturing flexible waveguide. 3,290,762, 12–13–66, Cl. 29—155.5.
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Bains, William R., F. W. A. Knoll, and I. J. Spiro. Head motion sensing system. 3,290,985, 12–13–66, Cl. 88—1.
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Sheldon, Gilbert J. 3,291,584.
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Bebbington, Frank, and J. B. Rose, to Imperial Chemical Industries Ltd. Polymerisation of ethylene in the presence of aluminium trimethyl and titanium-trichloride which has been mixed one minute prior to injection into the reactor. 3,291,784, 12–13–66, Cl. 260—94.9.
Becalick, Alan J., and G. A. Haggis, to Imperial Chemical Industries Ltd. Preparation of polymeric compounds from carbamic esters. 3,291,763, 12–13–66, Cl. 260—13.
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Beckwith, Sterling, to Dual Jet Refrigeration Co. Air outlet nozzles for an air curtain device. 3,291,027, 12–13–66, Cl. 98—36.
Beebe, James R. Hoisting truck for a table having a single-throw lever and parallelogram members. 3,291,448, 12–13–66, Cl. 254—10.
Beebe, Roderick W., ⅛ to A. C. Nolte, Jr. Cleat device for water borne vessel. 3,291,094, 12–13–66, Cl. 114—218.
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Belic, August, and J. Ersen, to Institut za Elktroniko in Automatiko. Electromagnetic relay having separate make and break inductance coils. 3,292,122, 12–13–66, Cl. 335—154.
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Espinosa, Gerald P., and Geller. 3,291,740.
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Gallagher, Patrick K., and MacChesney. 3,292,062.
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Helm, Harry A. 3,291,972.
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Bell, Vincent G., Jr., C. D. Cassel, and J. A. Gwilliam, to Safeguard Corp. Mounting board for accounting forms. 3,291,505, 12–13–66, Cl. 282—29.
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Belval, Donald E. Toggle actuated tool having jaws for pipe alignment and clamping. 3,290,971, 12–13–66, Cl. 81—367.
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Benning, Gerald K., to Honeywell Inc. Amplifier circuit with unipolar output independently of input polarity. 3,292,098, 12–13–66, Cl. 330—69.
Bente, Alfred. Track shoe having heel cushioning means. 3,290,801, 12–13–66, Cl. 36—2.5.
Berger, Alfred, to Chs. Ltd. Process for dyeing wool yarn and preparations for use therein. 3,291,556, 12–13–66, Cl. 8—54.
Berghammer, Edward P. Panel form for concrete construction. 3,291,436, 12–13–66, Cl. 249—26.
Bergquist, Clifford A., and J. A. Over, to Pendleton Tool Industries, Inc. Reversible ratchet wrench having linear sliding manually actuated pawls. 3,290,969, 12–13–66, Cl. 81—63.1.
Bergstrasser, Georg, to Telefonbau und Normalzeit G.m.b.H. Bistable switching device. 3,292,121, 12–13–66, Cl. 335—153.
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Besmler, Jean. Clip for holding clothes, paper and the like. 3,290,751, 12–13–66, Cl. 24—262.
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Binford, Benjamin L., to Rockwell Mfg. Co. Metering system and components thereof. 3,291,380, 12–13–66, Cl. 235—94.
Bird, George R., and M. Parrish, Jr., to Polaroid Corp. Metallic grid light-polarizing device. 3,291,550, 12–13–66, Cl. 350—147.
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North, Henry W. 3,291,542.
Biribauer, Frank A., J. D. Bushnell, and H. N. Weinberg, to Esso Research and Engineering Co. Combination lube process. 3,291,718, 12–13–66, Cl. 208—36.
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Riley, Robert H., Jr., and Rosenthal. 3,291,927.
Black, Paul W., to Motorola, Inc. Combined encoder-decoder device providing rapid build up of oscillations. 3,292,085, 12–13–66, Cl. 325—18.
Black, Warren R., and R. L. Knapp, to American Seating Co. Function selecting mechanism. 3,290,956, 12–13–66, Cl. 74—365.
Blackhurst, Robert V., and G. C. May, to Rolls-Royce Ltd. Bladed structure, for example, for a gas turbine engine compressor. 3,291,382, 12–13–66, Cl. 230—133.
Blades, Alfred N., to Coulter Electronics, Inc. Apparatus for dispensing measured volumes of fluid. 3,291,347, 12–13–66, Cl. 222—136.
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Blair, Richard W., to Chicago Rawhide Mfg. Co. Mud face seal. 3,291,493, 12–13–66, Cl. 277—92.
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Blomqvist, Ake H. P., to Aktiebolage Bofors. Smoothing filter for a fire control system. 3,290,992, 12–13–66, Cl. 89—41.
Blue, Emmanuel M., to Chevron Research Co. Naphtha hydrofining to remove nitrogen. 3,291,723, 12–13–66, Cl. Cl. 208—254.
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Bodine, Albert G. Method and apparatus for removal of insulation coating of parts in spot welding. 3,291,957, 12–13–66, Cl. 219—86.
Boehs, Elmer J., to Fluid Circuits Co. Hydraulic control apparatus. 3,290,881, 12–13–66, Cl. 60—54.5.
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Foshag, William F., and Boehler. 3,291,236.
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Boij, Karl O. A., B. K. A. Johansson, deceased by A. E. A. Almqvist, administrator. Apparatus for burning spirit and similar liquid fuels. 3,290,907, 12–13–66, Cl. 67—80.

Boldt, Melvin H., and R. A. Hathaway, to Zenith Radio Corp. Phonograph. 3,291,487, 12–13–66, Cl. 274—2.

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Borrelli, Ronald N., and S. R. Olson, to SCM Corp. Data processing system having variable rate reader. 3,291,277, 12–13–66, Cl. 197—20.

Borst, Lyle B., to The Dow Chemical Co. Neutron amplifier. 3,291,994, 12–13–66, Cl. 176—11.

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North, John D. 3,291,067.

Bounds, Wallace A. Semi-automatic valves. 3,291,154, 12–13–66, Cl. 137—624.18.

Bourne, David A., to International Business Machines Corp. Identification and comparison apparatus for contour patterns such as fingerprints. 3,292,149, 12–13–66, Cl. 340—146.3.

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Bowden, George F., and R. C. Capek, to Symons Mfg. Co. Flexible panel with abutting reaction shoulders under compression. 3,291,437, 12–13–66, Cl. 249—48.

Bowen, Dudley H. Gun rack with locking means. 3,291,317, 12–13–66, Cl. 211—4.

Bowers, Theron L., to International Telephone and Telegraph Corp. Expandable printed circuit crosspoint switching network. 3,291,914, 12–13–66, Cl. 179—18.

Bowling, Joseph E., Jr., and G. W. Powell, to The Pangborn Corp. Particle throwing apparatus. 3,290,827, 12–13–66, Cl. 51—9.

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Boyer, James B. Manufacture of cigarette-type smoking media. 3,291,136, 12–13–66, Cl. 131—24.

Boyum, Asmund A., and L. M. Lehman, to Hydrocarbon Research, Inc. Solvent extraction. 3,291,728, 12–13–66, Cl. 208—321.

Braaten, Norman J., to Honeywell Inc. Apparatus for synchronizing cathode ray deflection to a rotating antenna using digital techniques. 3,292,034, 12–13–66, Cl. 315—24.

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Braine, Michael V., and W. J. Holt; said Holt assor. to Waro Inc. Speed monitoring apparatus using a saturated magnetic recording track. 3,292,082, 12–13–66, Cl. 324—70.

Bramley, Anthony. Electrically conducting rope. 3,291,897, 12–13–66, Cl. 174—126.

Brand, Charles. Lithographic press with reciprocating bed and pressure member interrupter. 3,291,045, 12–13–66, Cl. 101—146.

Brandon, Percy S., to The Marconi Co. Ltd. Pulsed radar systems and pulsed radar receivers. 3,292,175, 12–13–66, Cl. 343—17.2.

Brandon, Ronald E., to General Electric Co. Steam turbine rotor cooling. 3,291,447, 12–13–66, Cl. 253—39.1.

Brassel, Jakob, to Ciba Ltd. Dying anodised aluminum with cobaltiferous azo-dyestuffs. 3,291,651, 12–13–66, Cl. 148—6.1.

Brastad, William A., to General Mills, Inc. Classifying apparatus and process. 3,291,301, 12–13–66, Cl. 209—12.

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Bray, Bruce G., and G. W. Swift, to Continental Oil Co. Separation of H_2S from hydrocarbon in a gas-solid system. 3,290,890, 12–13–66, Cl. 62—12.

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Bridgeford, Douglas J., to Tee-Pak, Inc. Decausticisation of polysaccharide xanthates. 3,291,789, 12–13–66, Cl. 260—217.

Bridges, Lynton K., and H. C. Wackerman. Ratchet drive for pipe cutter. 3,290,779, 12–13–66, Cl. 30—99.

Brightman, Barrie, and U. A. Pommerening, to Stromberg-Carlson. Phase detecting system for determining the direction of a beam impinging upon a fixed receiving array. 3,292,177, 12–13–66, Cl. 343—113.

Brinck, Ernst J., and A. J. M. Priem, to Kousenfabrieken Hin N.V. Process and machine for packaging stockings and other articles. 3,290,855, 12–13–66, Cl. 53—21.

Brissey, George E., to Swift & Co. Defatting meat products. 3,291,616, 12–13–66, Cl. 99—107.

British Insulated Callender's Cables Ltd.: *See*—
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British Petroleum Co., Ltd., The: *See*—
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Britton, Thomas M., Jr., to Stencel Aero Engineering Corp. Self-compensating power-spread parachute apparatus. 3,291,423, 12–13–66, Cl. 244—149.

Broadbent, Kent D., to Interstate Electronics. Thin film shift register. 3,292,161, 12–13–66, Cl. 340—174.

Brocklebank, Norman, to Priestman Bros. Ltd. Crowd shovel excavators. 3,291,328, 12–13–66, Cl. 214—138.

Brockmuller, Wolfgang, W. Ibach, and R. Queck. Tensioned fuse device. 3,291,944, 12–13–66, Cl. 200—121.

Brodbeck, John J., to Chevron Research Co. Method of separating normal alkanes. 3,291,725, 12–13–66, Cl. 208—310.

Broderick, Frank W. Speed adjustment device. 3,290,961, 12–13–66, Cl. 74—665.

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Brooks, Lorimer P. Gas logs. 3,291,116, 12–13–66, Cl. 126—92.

Brooksby, Merrill W., to Hewlett-Packard Co. Logic circuit having inductive elements to improve switching speed. 3,292,014, 12–13–66, Cl. 307—88.5.

Broske, William F., to AMP Inc. Electrical connector for securing wires at right angles. 3,290,746, 12–13–66, Cl. 24—126.

Brossa, Francesco, R. Theisen, and L. Alfille, to European Atomic Energy Community-Euratom. Nuclear reactor fule element having a diffusion barrier. 3,291,700, 12–13–66, Cl. 176—82.

Broughton, Donald B., to Universal Oil Products Co. Continuous simulated countercurrent sorption process employing desorbent made in said process. 3,291,726, 12–13–66, Cl. 208—310.

Brown, Alfred W., to Owens-Corning Fiberglas Corp. Production of polarising elements. 3,291,868, 12–13–66, Cl. 264—2.

Brown, Alvin E., F. J. Suellentrop, E. Rule, and D. J. Hodgson, to Lockheed Aircraft Corp. Acoustic fluid metering device. 3,290,934, 12–13–66, Cl. 73—194.

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Schubert, Helmut. 3,291,946.

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Brown, Edgar D., Jr., to General Electric Co. Organopolysiloxane lubricants. 3,291,735, 12–13–66, Cl. 252—49.6.

Brown, Everett S., Sr. Heating and humidifying static eliminating apparatus. 3,292,043, 12–13–66, Cl. 317—2.

Brown, Graham: *See*—
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Brown, James, and J. A. Coetick, to Power Jets (Research & Development) Ltd. Pressure exchanger cell rings. 3,291,390, 12–13–66, Cl. 230—69.

Brown, James H., and W. J. Wester, to United States of America, Navy. Capacitor driven switch. 3,292,010, 12–13–66, Cl. 307—88.5.

Brown, Leonard C.: *See*—
Chope, Henry R., Clore, and Brown. 3,291,988.

Brown, Lloyd H., and J. B. Dede, Jr., to The Quaker Oats Co. Method for cold molding pitch bonded shaped carbon bodies. 3,291,872, 12–13–66, Cl. 264—29.

Brown, Malcolm. Rotary rasps, textile comb circles and similar articles. 3,290,755, 12–13–66, Cl. 2—78.

Brown, Morden G., to American Optical Co. Method for determining values of components of whole blood. 3,291,693, 12–13–66, Cl. 167—84.5.

Brown, Morris E., to Eastman Kodak Co. Exposure control systems for cameras. 3,291,022, 12–13–66, Cl. 95—64.

Browning, Iben. Photographic reproduction apparatus. 3,291,555, 12–13–66, Cl. 352—244.

Bruenner, Rolf S.: *See*—
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Brugger, Richard G., to Sperry Rand Corp. Gyroscopic compasses. 3,290,787, 12–13–66, Cl. 33—226.

Brundage, Robert W., to The Emerson Electric Co. Vane type oscillating hydraulic motor. 3,291,006, 12–13–66, Cl. 92—121.

Brunk, James E., and A. Flatau. Free spinning articulated rotor. 3,291,418, 12–13–66, Cl. 244—3.23.

Bruno, Gunther, and H. Schirp, to Henkel & Cie., G.m.b.H. Production of organo-aluminum compounds. 3,291,819, 12–13–66, Cl. 260—448.

Bryan, Thomas T., to Minnesota Mining and Mfg. Co. Color proofing constructions and their use. 3,291,603, 12–13–66, Cl. 96—20.

Bryant, John H., and W. A. Johnston, to Omni Spectra, Inc. Coaxial connector with means for preventing axial and rotational movement between connector components. 3,292,117, 12–13–66, Cl. 333—97.

Buck Mfg. Co.: *See*—
Palm, Barnhard A. 3,292,126.

Buckler, Sheldon A., and M. Epstein, to American Cyanamid Co. Tertiary phosphine oxides. 3,291,840, 12–13–66, 12–13–66, Cl. 260—606.5.

Buehler, Fritz A., and J. J. Giammaria, to Mobil Oil Corp. Grease compositions containing alkyl succinic partial esters. 3,291,736, 12–13–66, Cl. 252—49.6.

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Buehrle, William B., and L. R. Smith, to Motorola Inc. Core-transistor counter. 3,292,167, 12–13–66, Cl. 340—174.

Bueler, Richard C., to Wagner Electric Corp. Control valve. 3,291,539, 12–13–66, Cl. 303—52.

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Kaloplissis, Gregoire, and Bugaut. 3,291,823.

Buhler, Warren G., to OXY-Dry Sprayer Corp. Electrostatic powder sprayer. 3,292,045, 12–13–66, Cl. 317—3.

Buhler, Warren G., to OXY-Dry Sprayer Corp. Powder sprayer with flexible blades. 3,292,046, 12–13–66, Cl. 317—3.

Bulgin, Douglas, to Dunlop Rubber Co. Ltd. Vehicle anti-skid braking systems. 3,291,538, 12–13–66, Cl. 303—21.

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Bunting, Albert L., to The Interstate Sanitation Co. Heating element. 3,291,966, 12–13–66, Cl. 219—371.

Burbank, John E., to Scovill Mfg. Co. Plastic zippers and method of making the same. 3,290,747, 12–13–66, Cl. 24—205.16.

Burch, Donald C., E. E. Trosien, E. Helle, and R. C. Woofter, to General Motors. Vehicle-panel connector. 3,292,133, 12–13–66, Cl. 339—126.

Burch, Paul F., to Wolverine Shoe & Tanning Corp. Skinning machine. 3,291,175, 12–13–66, Cl. 146—130.

Burchfield, James A., J. E. Bellinger, Jr., and J. H. MacNeil, to Soroban Engineering, Inc. Page printer mechanism with tilting and travelling print head. 3,291,041, 12–13–66, Cl. 101—93.

Burelle, Pierre L. R., and C. F. P. Merieux. Scarificator for use in vaccination, skin tests or the like. 3,291,129, 12–13–66, Cl. 128—233.

Burke, John J., to Kaiser Steel Corp. Transfer device with an article bumper. 3,291,519, 12–13–66, Cl. 294—67.

Burke, Oliver W., Jr., and E. E. Stahly; said Stahly assignor to said Burke. Method of purifying tobacco smoke. 3,291,139, 12–13–66, Cl. 131—262.

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Burnham, John, and R. I. Ramos, said Ramos assor., to T-Tol Inc. Capacitor seal. 3,292,054, 12–13–66, Cl. 317—230.

Burnstein, Philip J.: *See*—
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Barton, Robert S., and Orr. 3,292,153.
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Burrows, Arthur T. C., to Geo. W. King, Ltd. Electrical switch unit with thin strip mount and sequentially operated snap switches. 3,291,933, 12–13–66, Cl. 200—76.

Burak, Max H., to Lee Wilson Engineering, S.A. Strip coiling apparatus. 3,291,415, 12–13–66, Cl. 242—80.

Burtoff, Carl. Safety gloves. 3,290,695, 12–13–66, Cl. 2—161.

Bushnell, James D.: *See*—
Biribauer, Frank A., Bushnell, and Weinberg. 3,291,718.

Buss, Waldeen C., to Chevron Research Co. Preparation of a catalyst containing a molybdenum compound dispersed within alumina. 3,291,751, 12–13–66, Cl. 252—439.

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Butler, James H., and D. De Witt, to International Business Machines Corp. Process of making tunnel diodes that results in a peak current that is maintained over a long period of time. 3,291,658, 12–13–66, Cl. 148—179.

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Butterworth, Harry S., and N. F. Smith, to Western Electric Co., Inc. Component insertion machine. 3,291,350, 12–13–66, Cl. 227—155.

Butts, Mervin E., to General Motors Corp. Refrigerating apparatus. 3,291,383, 12–13–66, Cl. 230—139.

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Martin, Ronald H., and Buxton. 3,292,088.

Byrne, Francis T. Pulsed optical beam generator. 3,292,102, 12–13–66, Cl. 331—94.5.

Byrne, Francis T.: *See*—
Soules, Jack A., and Byrne. 3,292,103.

Byrne, Robert E., Jr., and A. R. Tavarozzi, to Union Carbide Corp. Light diffusing panels. 3,290,850, 12–13–66, Cl. 52—630.

CPS Industries, Inc.: *See*—
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Caesar, Michael, to Berkey Photo, Inc. Method of re-registry of negatives and the like. 3,290,975, 12–13–66, Cl. 83—32.

Cain, Robert E. Floor treating machines. 3,290,716, 12–13–66, Cl. 15—358.

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Caliguiri, Gerald J. Paint container and brush holder. 3,291,295, 12–13–66, Cl. 206—15.3.

Calkin, Freeman B., to Clauss Cutlery Co. Soldering tool for electrical connections. 3,291,476, 12–13–66, Cl. 269—254.

Caly, Albert L., to The Kellems Co., Inc. Support device. 3,291,507, 12–13–66, Cl. 285—114.

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Campagna, Philip J., to Allied Chemical Corp. Process for producing oil-modified alkyd resins and such resins. 3,291,765, 12–13–66, Cl. 260—22.

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King, Charles C., Campagnolo, and Lehman. 3,291,849.

Campanella, Angelo J., to Industrial Nucleonics Corp. All weather angular tracking system. 3,291,989, 12–13–66, Cl. 250—83.3.

Campbell, Von C., F. A. Romano, and E. F. Schilling, to General Electric Co. Method for fabricating an electron discharge device. 3,291,549, 12–13–66, Cl. 316—21.

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Canadian Ingersoll-Rand Co. Ltd.: *See*—
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Martin, Ronald H., and Burton. 3,292,088.

Candy, Charles J. N., and D. E. Rowlinson, to Bell Telephone Laboratories, Inc. Storage diode pulse signal generator. 3,292,006, 12–13–66, Cl. 307—88.5.

Capek, Richard C.: *See*—
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Caratan, Luis M. and M. M. 3,291,075.

Carbaugh, Don L., and O. H. Heckathorne. Temperature sensing, indicating and recording means. 3,290,942, 12–13–66, Cl. 73—358.

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Carlson, Clarence W. Mechanical movement for translating rectilinear movement into rotary movement, and engine incorporating the same. 3,290,950, 12–13–66, Cl. 74—52.

Carle, Joseph T., to Borg-Warner Corp. Gas separator for submersible pump. 3,291,057, 12–13–66, Cl. 103—113.

Carman, Frank C., and L. Johnson. Piezoelectric musical pickup arrangement. 3,291,887, 12–13–66, Cl. 84—1.16.

Carney, Richard W., and G. A. Renberg, to Phillips Petroleum Co. Production of acetaldehyde. 3,291,839, 12–13–66, Cl. 260—606.

Carothers, Charles H., and P. W. Bogner, to Westinghouse Electric Corp. Explosive disconnect having the explosive means thermally and electrically isolated from resistance ignition means. 3,291,937, 12–13–66, Cl. 200—115.

Carroll, Joseph E.: *See*—
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Carslaw, Charles H., to Drysdale & Co. Ltd. Unloading of bulk liquid or pulverulent cargoes from cargo ships. 3,291,351, 12–13–66, Cl. 222—464.

Carson, David L., to United States of America, Navy. High pressure transducer calibration and test equipment. 3,292,142, 12–13–66, Cl. 340—8.

Carson, Don B., to Universal Oil Products Co. Hydrodealkylation of alkyl aromatic hydrocarbons. 3,291,850, 12–13–66, Cl. 260—672.

Carter, Eugene H., to Hoerner Boxes, Inc. Self-locking-closing carton. 3,291,367, 12–13–66, Cl. 229—33.

Carver, Lawrence M., to Stelma Inc. Signal monitoring and switching circuits for a terminal facility. 3,292,087, 12–13–66, Cl. 325—64.

Cascade Corp.: *See*—
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Case, J. I., Co.: *See*—
Ralston, Harold A. 3,291,222.
Casey, Richard H., and A. B. Popodi, to United States of America, Navy. Bandwidth compensation for high speed ramp voltage generator employing two series connected parallel RC networks. 3,292,011, 12–13–66, Cl. 307—88.5.
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Caterpillar Tractor Co.: *See*—
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Cave, Eric F., to Radio Corp. of America. Method of making a composite insulator semiconductor wafer. 3,290,760, 12–13–66, Cl. 29—155.5.
Celanese Building Components Ltd.: *See*—
Joyner, Vincent C. W., and Wood. 3,291,426.
Central National Bank of Cleveland, The: *See*—
Peterson, Thomas F. 3,290,953.
Chabrier, Henri P., and A. Saint Joanis, to Societe d'Electro-Chemie d'Electro-Metallurgie et des Acieries electriques d'Ugine. Fluid-actuated oscillators. 3,291,153, 12–13–66, Cl. 137—624.14.
Chambers, Philip: *See*—
Gotch, Richard J. 3,290,796.
Chang, Joseph J., to Bell Telephone Laboratories, Inc. Method of making semiconductor integrated circuit elements. 3,290,763, 12–13–66, Cl. 29—25.3.
Chapman, George C., Jr., and K. M. Henry, to Owens-Illinois, Inc. Solder glass compositions and method of sealing therewith. 3,291,586, 12–13–66, Cl. 65—33.
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Kenneke, Frederick J., and Salzer. 3,291,940.
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Chemclean Corp.: *See*—
Livingston, Howard. 3,291,640.
Chernock, Warren P., to Combustion Engineering, Inc. Fuel element for nuclear reactor. 3,291,697, 12–13–66, Cl. 176—60.
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Sproull, Leavis C., McIntosh, and Sedberry. 3,291,362.
Chevron Research Co.: *See*—
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Brockway, John J. 3,291,725.
Dale, Waldron C. 3,291,751.
Egan, Clark J. 3,291,852.
Mahoney, Bernard F. 3,291,579.
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Chibret, Jean and R., to Laboratoires Chibret. Method for packaging, mixing and dispensing a plurality of substances. 3,291,348, 12–13–66, Cl. 222—145.
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Chong, Carlos F., to Sperry Rand Corp. Data storage read-out network. 3,292,162, 12–13–66, Cl. 340—174.
Chope, Henry R., to Industrial Nucleonics Corp. All weather three-dimensional position indicating system. 3,291,987, 12–13–66, Cl. 250—83.3.
Chope, Henry R., W. R. Clore, and L. C. Brown, to Industrial Nucleonics Corp. All weather three-coordinate position indicating system. 3,291,988, 12–13–66, Cl. 250—83.3.
Chow, Wee F., to General Electric Co. Ultra high speed parametric digital circuits. 3,292,000, 12–13–66, Cl. 307—88.
Christiansson, Carl M., to Aktiebolaget Bofors. Cartridge magazine for a gun. 3,290,981, 12–13–66, Cl. 89—34.
Christie, Du Witt Jr., to John A. Manning Paper Co., Inc. Paper calender roll. 3,291,089, 12–13–66, Cl. 100—162.
Christoff, Charis A., and J. D. Gearheart, to Clary Corp. High speed printing mechanism. 3,291,042, 12–13–66, Cl. 101—93.
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Hasbany, George J., Jr. 3,291,446.
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Ciba Corp.: *See*—
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Heubner, Charles F. 3,291,794.
Walker, Gordon N., and Schenker. 3,291,806.
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Cioffi, Vincent, to Ionics, Inc. Noble metal coated valve metal electrodes useful in electrodialysis systems. 3,291,716, 12–13–66, Cl. 204—301.
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White, Edmund W. 3,291,717.
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Gordon, Richard O. 3,291,053.
Clark, Harry F., to General Motors Corp. Electrical apparatus. 3,292,067, 12–13–66, Cl. 318—221.
Clarke, Kenneth K., and D. T. Hess. Demodulator for frequency modulated signal. 3,292,093, 12–13–66, Cl. 329—129.
Clarke, Philip C., to Ametek, Inc. Heat-sensitive, non-cumulative force spiral spring and spring motor. 3,291,-474, 12–13–66, Cl. 267—1.
Clary Corp.: *See*—
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Clore, William R.: *See*—
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Mellgren, Svante, and Coffin. 3,291,597.
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Wilson, Franklin L. 3,292,171.
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Palchik, David, and Clayton. 3,291,106.
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Conover, Lloyd H., to Chas. Pfizer & Co., Inc. Anthelmintic tetrahydropyrimidines. 3,291,688, 12–13–66, Cl. 167—53.
Constantine, Gregory, Jr., to International Business Machines Corp. Parametric oscillator data shifting apparatus. 3,292,001, 12–13–66, Cl. 307—88.
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Bray, Bruce G., and Swift. 3,290,890.
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Cordis, Nat, deceased, by G. S. Cordis, executrix, ⅜ to C. F. Jensen and ⅛ to G. T. Dehle. Pump apparatus with scavenger for check valve assembly. 3,291,044, 12–13–66, Cl. 103—153.
Cornelius, David L., and A. C. Dahlquist, to West Bend Thermo-Serv, Inc. Dye metering method for injection molding operations. 3,291,883, 12–13–66, Cl. 264—329.
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Cornell, Robert W., to United Aircraft Corp. Machine for cold-rolling a nonuniform surface. 3,290,915, 12–13–66, Cl. 72—240.
Cornillaud, Jack T., and D. J. Wing, to General Motors Corp. Brake system. 3,291,264, 12–13–66, Cl. 188—152.
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Courson, Iber C., to Philco Corp. Door structure. 3,290,719, 12–13–66, Cl. 16—147.
Court, Patrick E. J. Lighter. 3,290,905, 12–13–66, Cl. 67—7.1.
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Cranage, Bidwell C., to Stile-Craft Manufacturers, Inc. Gas or vacuum-operated couplings. 3,291,442, 12–13–66, Cl. 251—149.1.
Cranch, George W., to Beetu Pure Drug Co., Ltd. Cattle dips. 3,291,697, 12–13–66, Cl. 167—93.
Crane, Carl J. Height indicating system for aircraft. 3,292,-176, 12–13–66, Cl. 343—108.
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Pratt, Jack B., and Sloan. 3,291,311.
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Crittenden, Eugene C., Jr., to The Bunker-Ramo Corp. Superconductive persistent current circuits. 3,292,160, 12–13–66, Cl. 340—173.1.
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Wagner, William F. 3,291,161.
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Justus, Edgar J., and Cronin. 3,291,680.
Cross, Roland C. Piston rings and pistons-and-rings assemblies. 3,291,497, 12–13–66, Cl. 277—169.
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Curtis, Wilbur D., and Lowry. 3,291,023.
Curtis, Wilbur D., and T. M. Lowry, to Curtis Automatics, Inc. Automatic coffee brewing machine. 3,291,023, 12–13–66, Cl. 99—283.
Cushing, Philip S., and H. E. Stone. Cap for paper core. 3,291,412, 12–13–66, Cl. 242—68.6.
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Pastene, Alexander J. 3,292,118.
Richter, Walther, and Gardner. 3,292,052.
Cyba, Henryk A., to Universal Oil Products Co. Phosphatylthioesperide. 3,291,909, 12–13–66, Cl. 260—327.
D-M-E Corp.: *See*—
Gesko, Mack. 3,290,966.
Daeniker, Hans U., to Ciba Corp. Sulfonamides. 3,291,793, 12–13–66, Cl. 260—239.65.
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Daily, Roy, to General Electric Co. Tone arm and cartridge combination. 3,291,488, 12–13–66, Cl. 274—24.
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Daniel, James A., Jr. Straight line carrier device. 3,291,431, 12–13–66, Cl. 245—277.
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Dascotte, Jean, to International Standard Electric Corp. Data transmission system employing a different sequence of distinct conditions to represent the two conditions of a binary bit. 3,292,147, 12–13–66, Cl. 340—146.1.
Dashio, John C., 33⅓ % to W. B. Jaspert. Combined wall and awning structure. 3,291,453, 12–13–66, Cl. 256—1.
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Davis, Harry E., and F. B. Pfeiffer. Method and apparatus for making drinking straws. 3,291,009, 12–13–66, Cl. 93—80.
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De Castelet, Gaetan de C., to Regie Nationale des Usines Renault. Assembly machine with swivelling table. 3,290,-766, 12–13–66, Cl. 29—208.
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Machell, Greville, and Thomas. 3,291,560.
Warthen, William P. 3,290,902.
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Mildbo, Guy E., and Wilkes. 3,291,281.
Defregger, Hans-Peter, G. Georgieff, and F. Hoffmann, to Ingrid Vogt. Reflective surface layers. 3,291,011, 12–13–66, Cl. 94—1.5.
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De Good, Maynard J., and C. L. Bowman, to The Rapids-Standard Co., Inc. Diverting conveyor. 3,291,279, 12–13–66, Cl. 198—20.

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DeLane, Merritt V., Jr., and D. C. Tabler, to Phillips Petroleum Co. Batch crystal purification. 3,290,891, 12–13–66, Cl. 62—58.

De Lay, Manford S. Automatically steerable trailer. 3,291,502, 12–13–66, Cl. 280—81.

Delitz, Herman O. Plug-and-cord holder for appliances. 3,290,808, 12–13–66, Cl. 40—2.

Dellinger, Carl L., to Universal American Corp. Combined Pillow block and bearing assembly. 3,291,541, 12–13–66, Cl. 308—6.

DeLucia, Santo. Sliding jaw wrench having claw handle jaw adjustment means. 3,290,970, 12–13–66, Cl. 81—127.

De May, Charles F., II, to The Perkin-Elmer Corp. Cameras for different size pictures. 3,291,021, 12–13–66, Cl. 95—36.

Den Brinker, Carl S., to Texas Instruments Inc. Astable multivibrator circuits employing auxiliary discharge paths for cross coupling capacitors. 3,292,105, 12–13–66, Cl. 331—113.

Deneen, Raymond J., Jr., to United States of America, Navy. Linear, automatic gain control amplifier. 3,292,096, 12–13–66, Cl. 330—29.

Denker, James M., to Instron Corp. Pneumatic servo especially useful in extensometers. 3,290,999, 12–13–66, Cl. 91—47.

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Dersch, Fritz, B. D. Fadden, and W. L. Wike, to General Aniline & Film Corp. Water-soluble polyoxyalkylenated butyne-2-diol-1, 4 developments accelerators. 3,291,607, 12–13–66, Cl. 96—59.

De Santis, Robert F.: *See*—
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De Saussure, William P. Locks for legs for folding table. 3,291,078, 12–13–66, Cl. 108—132.

Deschamps, Andre, to International Telephone and Telegraph Corp. Ferromagnetic materials and methods of fabrication. 3,291,739, 12–13–66, Cl. 252—62.5.

De Toledo, Fernando A.: *See*—
Scansborn, Ralph H., De Toledo, and Bell. 3,291,672.

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Deutsche Edelstahlwerke Aktiengesellschaft: *See*—
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Bilder, Erich, and Kottenhahn. 3,291,558.

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Dewey Shepard Boiler Co., Inc., The: *See*—
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Di Giacomo, Aniello, to General Instrument Corp. Anodized-film dielectric capacitor having colloidal graphite coating on the film. 3,292,053, 12–13–66, Cl. 317—230.

Dill, Kathleen R.: *See*—
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Dill, Thomas, deceased, by K. E. Dill, administratrix, to Mobil Oil Corp. Limited conversion of hydrocarbon over highly active catalyst. 3,291,719, 12–13–66, Cl. 208—72.

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Cordis, Nat. 3,291,066.

Dobres, Robert M., and W. A. Stover, to W. R. Grace & Co. Process for hydrorefining and hydrocracking of hydrocarbons with a rhodium sulfide supported catalyst. 3,291,720, 12–13–66, Cl. 208—88.

Doersam, Henry F., to General Electric Co. Latch for floor polisher handle. 3,291,540, 12–13–66, Cl. 306—13.

Dohmen, Hubert G., to General Motors Corp. Crystal growth. 3,291,571, 12–13–66, Cl. 23—273.

Dohmen, Hubert G., and H. A. Sims, to General Motors Corp. Control of crystal size. 3,291,650, 12–13–66, Cl. 148—1.6.

Dome, Robert B., to General Electric Co. Synchronous detector. 3,291,902, 12–13–66, Cl. 178—5.4.

Dome, Robert B., to General Electric Co. Two-stage intermediate frequency amplifier. 3,292,099, 12–13–66, Cl. 330—154.

Don, Jules M., to The Stanley Works. Method of producing a cutting tool. 3,290,917, 12–13–66, Cl. 72—338.

Donoian, Haig C. and J. M. Dowd, Jr., to American Cyanamid Co. Metal phthalocyanines as infrared absorbers. 3,291,746, 12–13–66, Cl. 252—300.

Donovan, George J., and M. S. Cohen, to Thiokol Chemical Corp. Reaction products of nitrile decaboranes with olefins. 3,291,661, 12–13–66, Cl. 149—22.

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Dorey, George B., to Enterprise Railway Equipment Co. Multiple closure toggle actuated hopper outlet assembly. 3,291,071, 12–13–66, Cl. 105—253.

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Dormaier, Elmer A., to Beckman Instruments, Inc. Closed circuit resistive shielding for multiwinding transformers. 3,292,127, 12–13–66, Cl. 336—84.

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Drinkwater, John W., to Shell Oil Co. Acoustic wire strain gauges. 3,290,930, 12–13–66, Cl. 73—136.

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Eggington, Wilfred J., and G. V. Watts, to Vickers-Armstrongs (Engineers) Ltd. Air cushion borne vehicles. 3,291,239, 12–13–66, Cl. 180—7.

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Emela, Reimer, and H. Schreiner, to Siemens-Schuckertwerke Aktiengesellschaft. Thermally stable semiconductor device with an intermediate plate for preventing flashover. 3,292,056, 12–13–66, Cl. 317—234.

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Engstrom, Carl-Gunnar D., and P. Herzog. Respirator with nebuliser. 3,291,122, 12–13–66, Cl. 128—145.8.

Enloe, Kenneth M., and L. L. Peterson, to Kimberly-Clark Corp. Method of compressing creped paper tissue stacks at specific moisture content. 3,291,676, 12–13–66, Cl. 162—113.

Enomoto, Hajime, and S. Shirai, to Kokusai Denshin Denwa Kabushiki Kaisha. Logical circuits. 3,292,002, 12–13–66, Cl. 307—88.

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Eustance, John W., to General Electric Co. Electrical capacitor with a polyphenylene ether dielectric. 3,292,061, 12–13–66, Cl. 317—258.

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Evans, John T., and L. U. C. Kelling, to General Electric Co. Automatic control apparatus. 3,291,970, 12–13–66, Cl. 235—151.31.

Evans, Wade V., Jr., to Tenneco Experiment Inc. Torque increasing device for a series commutator motor. 3,292,009, 12–13–66, Cl. 318—345.

Even, Shimon, to Sperry Rand Corp. Planar function generater using modulo 2 unprimed canonical form logic. 3,291,974, 12–13–66, Cl. 235—176.

Evstropiev, Konstantin S., and A. K. Yakhind. Optical glass. 3,291,620, 12–12–66, Cl. 106—47.

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Ezekiel, Frederick D. Ram apparatus with fast acting valve construction. 3,291,000, 12–13–66, Cl. 91—165.

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Fairley, Richard K., to Controls Co. of America. Spark ignition and flame sensing circuit. 3,291,183, 12–13–66, Cl. 156—38.

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Fan, Hsing Y., to Shell Oil Co. 1,3,methane-H-cyclopropa(cd) naphthalene-4,7-diones. 3,291,835, 12–13–66, Cl. 260—586.

Faraone, Giovanni, and A. Giorgetti, to S.p.A. Ferrania. Cellulose acetate solutions and the manufacture of self-sustaining films therefrom. 3,291,625, 12–13–66, Cl. 106—177.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
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Farrel Corp.: *See*—
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Farrissey, William J., Jr., to Esso Research and Engineering Co. Dehydration of hydroperoxides to ketones. 3,291,834, 12–13–66, Cl. 260—586.

Fashion Development Corp.: *See*—
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Fatica, Nicholas, to United States of America, Navy. Hydrogen generator. 3,291,572, 12–13–66, Cl. 23—281.

Favalier, Jean L., to Thomson-Varian. Plasma tube for microwave circuits. 3,292,101, 12–13–66, Cl. 331—83.

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Fender, Clarence L., to Columbia Records Distribution Corp. Bridge constructions for guitars. 3,290,980, 12–13–66, Cl. 84—307.

Fenwick, Jay G., to Morton Mfg. Co. Wall construction. 3,290,847, 12–13–66, Cl. 52—480.

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Fischer, John J., to The Patterson-Kelley Co., Inc. Water mill trunnion shaft mounting. 3,291,459, 12–13–66, Cl. 259—69.

Fischer, John P., to Packaging Corp. of America. Pallet container. 3,291,364, 12–13–66, Cl. 229—6.

Fitch, Frederick T., and J. G. Smith, to W. R. Grace & Co. Thorium silicate hydrosols. 3,291,748, 12–13–66, Cl. 252—301.1.

Flanagan, James L., to Bell Telephone Laboratories, Inc. Artificial larynx. 3,291,912, 12–13–66, Cl. 179—1.

Flanigan, James D., and K. A. Hollowell, to Air Products and Chemicals, Inc. Blender and process. 3,291,076, 12–13–66, Cl. 107—1.

Flatau, Abraham: *See*—
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Fleighner, George C., and D. D. Krehbiel, to Continental Oil Co. Separation of alpha-olefins containing at least 5 carbon atoms from mixtures containing the same using aluminum dialkyl hydride. 3,291,858, 12–13–66, Cl. 260—677.

Flint, Hyland C. Backrest support means. 3,291,524, 12–13–66, Cl. 297—302.

Flowers, Ralph G., and T. L. Sherer, to General Electric Co. Method of insulating electrical conductors. 3,291,639, 12–13–66, Cl. 117—232.

Floyd, Terence J., to Audco Ltd. Remote control of fluid valves. 3,290,996, 12–13–66, Cl. 91—1.

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Folkerts, Walter E., to Chrysler Corp. Rotary valve with bypass. 3,291,002, 12–13–66, Cl. 91—375.

Folkhard, W., and H. Keller, to Messer Griesheim G.m.b.H. Control appliance for sources of welding current. 3,291,960, 12–13–66, Cl. 219—131.

Foran, Charles D., Gardner-Denver Co. Drive coupling for drill string. 3,291,225, 12–13–66, Cl. 175—164.

Foreman, Archie R., to Production Machinery Corp. Electrical tension control device for strip processing line. 3,292,022, 12–13–66, Cl. 310—93.

Forniti, Philip M., to Hupp Corp. Infra-red heaters. 3,291,115, 12–13–66, Cl. 126—92.

Fortescue, Peter, to United States of America, Atomic Energy Commission. Fuel element. 3,291,696, 12–13–66, Cl. 176—68.

Foshag, William F., and G. D. Boehler, to Aerophysics Co. Ground effect machine. 3,291,236, 12–13–66, Cl. 180—7.

Foster, John E., to Art Metal Inc. Filing cabinet with movable drawer. 3,291,547, 12–13–66, Cl. 312—331.

Foster, Michael R., to General Motors Corp. Diaphragm pump with annular pumping chamber. 3,291,064, 12–13–66, Cl. 103—150.

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Foster, William R.: *See*—
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Smith, Traver J., and Daugherty. 3,291,173.

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Francis, Henry A., to Arthur D. Little, Inc. Method of forming fine wire grids. 3,291,871, 12–13–66, Cl. 264—1.

Frankhauser, Frederick M., to Mita-Flo Inc. Metal treating gas composition, and apparatus for its preparation. 3,291,581, 12–13–66, Cl. 48—197.

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Fraylick, John R., to The Standard Oil Co. Backwash shield assembly. 3,291,165, 12–13–66, Cl. 141—240.

Frane, Ermal C. Can top. 3,291,336, 12–13–66, Cl. 220—54.

Fredrickson, Gustav O., to The Superior Electric Co. Linear electric motor and control system. 3,292,065, 12–13–66, Cl. 318—135.

Freedman, Ely, M. J. Bernard, G. Meyer, and R. Mayer, to Temp-Tainer Corp. Method for forming plastic items. 3,291,875, 12–13–66, Cl. 264—93.

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Gould, Lawrence P., to Allied Chemical Corp. Corrosion inhibitor in dry cell battery. 3,291,646, 12–13–66, Cl. 136—107.

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Griffin, Warren R. Reclaiming process for fluorocarbon elastomers cross-linked through an amine bridge. 3,291,761, 12–13–66, Cl. 260—2.3.

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Grisham, Charles E., and L. D. Stanberry. Beverage containing and dispensing enclosure. 3,291,831, 12–13–66, Cl. 215—1.

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Grossoehme, Floyd, to General Electric Co. Mounting of solid state electronic components. 3,292,050, 12–13–66, Cl. 317—100.

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Grotta, Henry M., and M. N. Lugasch, deceased; (by P. T. Lugasch, heir), to Martin-Marietta Corp. Carbasoledisulfonic acid 3,6-tetrazonium dichloride. 3,291,787, 12–13–66, Cl. 260—141.

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Gulf Research & Development Co.: *See*—
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Spilners, Ilgvars J., and Tempalski. 3,291,782.

Gurda, Richard J., to Philip Chambers. Control apparatus. 3,290,796, 12–13–66, Cl. 35—36.

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Haas, Charles W., S. E. Pollack, and H. B. Callen, to Sperry Rand Corp. Thin film controlled emission amplifier. 3,292,-058, 12–13–66, Cl. 317—235.

Haas, Lowell E., to Clinton Engines Corp. Emergency brake for internal combustion engine. 3,290,871, 12–13–66, Cl. 56—25.6.

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Haddad, Manuel. Fabric sheet feeding device. 3,291,480, 12–13–66, Cl. 271—1.

Haensel, Vladimir, to Universal Oil Products Co. Catalytic methane burner for producing infra-red heat. 3,291,167, 12–13–66, Cl. 158—116.

Haensel, Vladimir, to Universal Oil Products Co. Catalytic dehydrogenation of paraffinic hydrocarbons. 3,291,855, 12–13–66, Cl. 260—683.3.

Haensel, Vladimir, and J. Hoekstra, to Universal Oil Products Co. Catalytic dehydrogenation catalyst for paraffinic hydrocarbons. 3,291,755, 12–13–66, Cl. 252—464.

Hagedorn, Erwin E., to Owens-Illinois Inc. Ultraviolet light-absorbing glass. 3,291,621, 12–13–66, Cl. 106—52.

Hagemeyer, Hugh J., Jr.: *See*—
Perry, Milton A., and Hagemeyer. 3,291,821.

Hagerty, Andrew T., M. H. Wilson, T. F. Brenneman, and C. M. Miller, to The Adams & Westlake Co. Venetian blind window. 3,291,193, 12–13–66, Cl. 160—107.

Hagerty, John C., to W. R. Grace & Co. Germicidal compositions containing complexes of iodine. 3,291,692, 12–13–66, Cl. 167—70.

Haggis, Geoffrey A.: *See*—
Becalick, Alan J., and Haggis. 3,291,763.

Halberg, Paul V., and C. S. Myers, to The Magnavox Co. Mooring apparatus. 3,291,092, 12–13–66, Cl. 114—206.

Halbrook, Noah J., and R. V. Lawrence, to United States of America, Agriculture. Diols of the reaction product of rosin and beta-propiolactone. 3,291,785, 12–13–66, Cl. 260—97.

Haldopoulos, Akis, to General Electric Co. Household refrigerator. 3,290,893, 12–13–66, Cl. 62—187.

Hale, Gordon B., to Outboard Marine Corp. Boat. 3,290,706, 12–13–66, Cl. 9—1.

Hall, Garth O., H. N. Tengler, and A. O. Radke, to Bostrom Corp. Vertical adjustable back. 3,291,527, 12–13–66, Cl. 297—353.

Hall, John R., and J. T. Van Gemert, to Imperial Chemical Industries of Australia and New Zealand Ltd. Electrodes. 3,291,714, 12–13–66, Cl. 204—250.

Hall, Robert N., to General Electric Co. Semiconductor strain sensitive devices. 3,292,128, 12–13–66, Cl. 338—2.

Halliburton Co.: *See*—
Hower, Wayne F. 3,291,214.

Halpert, Abby, to Halvin Products Co., Inc. Convertible fish displayer and breeder for aquariums. 3,291,096, 12–13–66, Cl. 119—5.

Halsman, Julius: *See*—
Goff, Theodore L., Gallagher, and Halsman. 3,290,784.

Halvin Products Co., Inc.: *See*—
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Hambling, James K., and J. Grebbell, to The British Petroleum Co., Ltd. Process for preparing a sodium potassium carbonate polymerization. 3,291,752, 12–13–66, Cl. 252—443.

Hamilton, Eugene C., to Hercules Inc. Nitrocellulos dispersions. 3,291,627, 12–13–66, Cl. 106—195.

Hamilton, Milon J.: *See*—
Coates, Herbert W., Baigas, Hamilton, and Haynes. 3,291,677.

Hamilton, Ralph A., to Lockheed Aircraft Corp. Hydraulic positioner. 3,291,321, 12–13–66, Cl. 214—1.

Hamm, Opal G., to Hedot Co. Vibratory article washer. 3,291,458, 12–13–66, Cl. 259—72.

Hammerschmidt, Rudolph L., and B. R. Sullivan. Carburetor having adjustable precision fuel metering means. 3,291,-464, 12–13–66, Cl. 261—142.

Hammons, Frank. Cultivator plant hoe. 3,291,223, 12–13–66, Cl. 172—556.

Hamreus, Robert G., and W. D. Huatting, to Gury F. Atkinson Co. Pump with removable bearing and seal assembly. 3,291,455, 12–13–66, Cl. 259—100.

Handlovits, Carl E., and J. B. Leach, to The Dow Chemical Co. Cuprous *o*-halothiophenoxide. 3,291,779, 12–13–66, Cl. 260—73.

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Hanisch, Helmut, and W. Biedermann, to Farbenfabriken Bayer Aktiengesellschaft. Molecular sieve formed bodies hardened with A binding agent. 3,291,754, 12–13–66, Cl. 252—455.

Hanna, Edward B., A. W. Ketfley, and T. N. Lowry, to Bell Telephone Laboratories, Inc. Telephone system signal converter. 3,291,913, 12–13–66, Cl. 179—16.

Hansen, Howard J., to The Hansen Mfg. Co. Dispensing device. 3,291,441, 12–13–66, Cl. 251—122.

Hansen Mfg. Co., The: *See*—
Hansen, Howard J. 3,291,441.

Hansen, Quinten A. Hydraulically operated clutch. 3,291,-273, 12–13–66, Cl. 192—85.

Hanson, Maynard P. Table cloth holding device. 3,290,743, 12–13–66, Cl. 24—81.

Hanson, Raymond A. Consolidating apparatus. 3,290,804, 12–13–66, Cl. 37—81.

Happich, G.m.b.H., Gebr.: *See*—
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Harker, John H., and J. Keyes, to International Telephone and Telegraph Corp. Gas separation pump for liquid circulating systems. 3,290,864, 12–13–66, Cl. 55—208.

Harley, Theodore H., to Vesuvius Crucible Co. Stopper for a ladle or similar receptacle. 3,290,739, 12–13–66, Cl. 23—85.

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Little, Harold R. 3,290,964.

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Harris, Philip H., and D. A. Johnson, to American Cement Corp. Apparatus for alkali metal condensation in cement kilns. 3,291,205, 12–13–66, Cl. 165—94.

Harrison, Alfred E., to Vitafoam Ltd. Resilient cushion and support therefor. 3,291,530, 12–13–66, Cl. 297—452.

Harrison, Arthur S. Machine for uncapping honeycombs. 3,290,705, 12–13–66, Cl. 6—12.

Harsco Corp.: *See*—
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Hartsock, Robert E., to United-Carr Inc. Multiple circuit selector switch. 3,291,925, 12–13–66, Cl. 200—46.

Harvey, Richard F., to Metaltronics, Inc. Metal processing. 3,290,936, 12–13–66, Cl. 72—203.

Haselton, Frederick R. Tandem propeller propulsion and control system. 3,291,086, 12–13–66, Cl. 114—16.

Haskell, Clyde C.: *See*—
Albenesius, Edward L., Haskell, and Hawkins. 3,291,997.

Hatco Corp.: *See*—
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Hatch, Gordon, to Hatco Corp. Electric water heater with sediment chamber. 3,291,955, 12–13–66, Cl. 219—314.

Hatch, Seymour A., J. P. Morley, and R. W. Blair, to Chicago Rawhide Mfg. Co. End face seal assembly. 3,291,494, 12–13–66, Cl. 277—92.

Hatcher, Cecil W., to Concut, Inc. Pavement slotting apparatus. 3,291,552, 12–13–66, Cl. 299—39.

Hatfield, Charles: *See*—
Oakes, Alfred C., Hatfield, and W. W. Oakes. 3,290,973.

Hatfield, John E., and E. D. Kenzie, to Irving Air Chute Co., Inc. Parachute release mechanism. 3,291,424, 12–13–66, Cl. 244—149.

Hathaway, Richard A.: *See*—
Boldt, Melvin H., and Hathaway. 3,291,487.

Hauschopp, Alois, to Gewerkschaft Eisenbutte Westfalia Werthmar. Coal plane with adjustable floor cutters. 3,291,531, 12–13–66, Cl. 299—34.

Hauser, Fred. Recording and reproducing machine. 3,291,-920, 12–13–66, Cl. 179—100.2.

Hauser, Fred. Sequential timing device with timing movement independent from power shaft. 3,291,922, 12–13–66, Cl. 200—37.

Haustovich, Paul F., to Aeroquip Corp. Conveyor belt. 3,291,-288, 12–13–66, Cl. 198—193.

Havens, Glenn G., to Whittaker Corp. Wheels for exploring the surface of the moon. 3,291,181, 12–13–66, Cl. 152—357.

Hawkins, Richard H.: *See*—
Albenesius, Edward L., Haskell, and Hawkins. 3,291,997.

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Coates, Herbert W., Baigas, Hamilton, and Haynes. 3,291,677.

Hayward, Stuart L.: *See*—
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Haseltine Research Inc.: *See*—
La Rosa, Richard. 3,292,115.
Walker, Charles E., and Goveia. 3,292,116.

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Headrick, Richard T. and E. E. Water purification system. 3,291,308, 12–13–66, Cl. 210—101.

Healey, Howard G.: *See*—
Frisble, Marshall H., and Healey. 3,291,498.

Hecht, Myer H. Dielectric fusing of plastic films. 3,291,671, 12–13–66, Cl. 156—273.

Heckathorne, Oren H.: *See*—
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Heiberger, Francis E., to Danly Machine Specialties, Inc. System for controlling the operating period of a responsive device during each cycle of a press or the like. 3,292,004, 12–13–66, Cl. 307—88.5.

Heiler, Paul S., to General Motors Corp. Concealed windshield wiper mechanism. 3,290,715, 12–13–66, Cl. 15—250.19.

Hein, Lester W. Paper sheet dispenser. 3,291,339, 12–13–66, Cl. 221—45.

Heinrich Frings Maschinen-und Apparatebau: *See*—
Ebner, Heinrich, and Eneukel. 3,290,924.

Heiss, Rudolf: *See*—
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Helberger, Johann H.: *See*—
Baumann, Horst, Helberger, and von Dobeneck. 3,291,-822.

Helitas, Jules V. R., to Le Foyer et Cie. Ball pens. 3,291,-101, 12–13–66, Cl. 120—42.03.

Helle, Raymond: *See*—
Burch, Donald C., Trosien, Helle, and Woofter. 3,292,-182.

Hellmig, Eberhard, to AGFA Aktiengesellschaft. Masking process for the production of photographic images. 3,291,-302, 13-12-66, Cl. 96—5.

Hellstrom, Elias, to Canada Iron Foundries, Ltd. Suction cylinder mold for making paper. 3,291,682, 12-13-66, Cl. 162—357.

Helm, Harry A., to Bell Telephone Laboratories Inc. Digital error correcting systems. 3,291,972, 12-13-66, Cl. 235—153.

Henkel & Cie., G.m.b.H.: *See*—
Sprung, Gunther, and Schirp. 3,291,819.

Henkel, Hans-Joachim, to Siemens-Schuckertwerke Aktiengesellschaft. Tunnel diode with parallel capacitance. 3,292,065, 13-12-66, Cl. 317—234.

Henningsen, Ettar A., R. S. Wilkes, and A. B. Skromme, to Deere & Co. Silo unloader. 3,291,825, 13-13-66, Cl. 214—17.

Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Self-braking hydraulic transmission for motor vehicles. 3,290,958, 12-13-66, Cl. 74—472.

Henry, Kenneth M.: *See*—
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Hercules Inc.: *See*—
Prescott, Leonard O. 3,291,572.
Hamilton, Eugene C. 3,291,627.

Herger, Hans, and A. Wunsch, to Brown, Boveri & Cie, Aktiengesellschaft. Pressure wave machine. 3,291,379, 12-13-66, Cl. 230—69.

Herglotz, Heribert K. J., to E. I. du Pont de Nemours and Co. Arc discharge lamp filled with electron-impact excitable material carried in an inert gas. 3,292,037, 12-13-66, Cl. 315—108.

Hermanns, Wilhelm. Homogenising silo for powdery or floury bulk material. 3,291,457, 12-13-66, Cl. 259—18.

Hermary, Maurice. Rotary fluid pressure device. 3,291,-062, 13-12-66, Cl. 103—190.

Herne, Fred M. Range hood with filtering means therein. 3,291,029, 13-12-66, Cl. 98—115.

Herz, Gerhard, to Mannich, G.m.b.H., Gebr. Two piece vehicle review mirror. 3,291,485, 13-13-66, Cl. 248—481.

Hersch, Paul A. Method and apparatus for analyzing gas. 3,291,705, 13-12-66, Cl. 204—1.

Herubel, Jean P., to N. Schlumberger & Cie. Needle bar mechanism for drawing fibers. 3,290,730, 12-13-66, Cl. 19—120.

Herzog, Paul: *See*—
Hagstrom, Carl-Gunnar D., and Herog. 3,291,122.

Herzog, Richard F., to GCA Corp. Vacuum gauge having an X-ray trap and a shield. 3,292,078, 12-13-66, Cl. 324—33.

Hess, Donald T.: *See*—
Clarke, Kenneth K., and Hess. 3,292,093.

Hess, Rolland, to Packaging Corp. of America. Self-sealing container and blank therefor. 3,291,368, 12-13-66, Cl. 229—37.

Hester, Jackson B., Jr., to The Upjohn Co. Process for production of 5-(indol-3-yl)-2-pyrrolidinones. 3,291,807, 12-13-66, Cl. 260—326.13.

Hewko, Lubomyr O., to General Motors Corp. Vehicle variable ratio steering system. 3,291,245, 12-13-66, Cl. 180—79.2.

Hewlett-Packard Co.: *See*—
Brockway, Merrill W. 3,292,014.

Heyer, Klaus, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Blowing lance for carrying out top-blowing processes. 3,291,471, 12-13-66, Cl. 266—34.

Heying, Theodore L., J. A. Reid, and S. I. Trotz, to Olin Mathieson Chemical Corp. Organoboron isocyanates and process for the preparation thereof. 3,291,830, 12-13-66, Cl. 260—453.

Hickerson, Alva J. Razor guard. 3,290,778, 12-13-66, Cl. 30—90.

Hickey, John J., to TRW Inc. Anode capacitor and support for image converter camera tube. 3,292,031, 12-13-66, Cl. 315—8.

Hicks, Duane L., and L. V. E. Morgan, to Pacific Scientific Co. Flexible connector system. 3,290,959, 12-13-66, Cl. 74—501.5.

Highberg, Carle W., and R. E. Bonnett, to Engelhard Hanovia, Inc. Apparatus for grinding. 3,290,832, 12-13-66, Cl. 51—165.

Hilgers, Karl: *See*—
Louis, Claus, and Hilgers. 3,290,916.

Hines, Frank F., to RDF Corp. Thermal measuring probe. 3,290,940, 12-13-66, Cl. 73—341.

Hines, Harley F., and H. R. Prince, Jr., to Texas Instruments Corp. Marine normal moveout determination. 3,292,141, 13-13-66, Cl. 340—7.

Hipple, George M., to Robertshaw Controls Co. Switch with pivoted push button and counterpush switch lever. 3,291,-930, 13-13-66, Cl. 200—67.

Hirsch, Nathan: *See*—
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Hirshaar, Thomas M., to General Motors Corp. Electric motor protector circuit. 3,292,070, 12-13-66, Cl. 318—472.

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Hitachi, Ltd.: *See*—
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Hitchcock, Paul C., to The Chase-Shawmut Co. Fuse structure having arc-quenching sleeve. 3,291,939, 13-13-66, Cl. 200—120.

Hitchens, Aaron L., to United States of America, Army. Impact spotter bullet. 3,291,049, 13-13-66, Cl. 102—87.

Hitt, Ira C., to E. I. du Pont de Nemours and Co. Device for testing multifilament yarns. 3,290,932, 12-13-66, Cl. 73—160.

Ho, Roland K., to Electra Mfg. Co. Method of manufacturing and attaching one-electrolytic tantalum capacitors. 3,290,-761, 13-12-66, Cl. 29—155.5.

Hoag, Ethan D., to Avco Corp. Superconductive device. 3,292,021, 12-13-66, Cl. 310—40.

Hodgson, Donald J.: *See*—
Brown, Alvin E., Suellentrop, Rule, and Hodgson. 3,290,-934.

Hoekstra, Gerard W.: *See*—
Taebel, Wilbert A., and Hoekstra. 3,291,665.

Hoekstra, James: *See*—
Haensel, Vladimir, and Hoekstra. 3,291,755.

Hoerner Boxes, Inc.: *See*—
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Hoff, James L., to Inductotherm Linemelt Corp. Drum type induction furnace. 3,291,472, 12-13-66, Cl. 266—38.

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Hoffmann-La Roche Inc.: *See*—
Reeder, Earl, and Sternbach. 3,291,791.
Uskokovic, Milan R., and Wenner. 3,291,824.
Wenner, Wilhelm. 3,291,799.

Hogan, Deany A.: *See*—
Parnock, Robert F., and Hogan. 3,290,968.

Hogan, Daniel H. Lettering guide device. 3,291,552, 12-13-66, Cl. 350—174.

Holden, Edward J., to M. S. E. Holdings Ltd. Saturable reactor motor speed control circuit. 3,292,068, 12-13-66, Cl. 318—337.

Holley Carburetor Co.: *See*—
Schneider, Alfred, and Slitti. 3,291,106.

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Sampson, James H. 3,291,804.

Holloran, Thomas P., P. R. Claes, and F. R. Goldammer, to The National Cash Register Co. Print read-out in computer systems using stored programs. 3,291,040, 12-13-66, Cl. 101—93.

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Holm, Roy T., to Shell Oil Co. Process for curing polyepoxides with a polyimine. 3,291,775, 12-13-66, Cl. 260—47.

Holmsen, Theodore W.: *See*—
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Braaten, Norman J. 3,292,034.
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Lindberg, Birger A. 3,291,186.
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Hooper, Charles K., and B. V. Gerber, to United States of America, Air Force. Dynamic braking circuit for induction motors. 3,292,066, 12-13-66, Cl. 318—211.

Hopkins, Leslie A., and A. E. Tripp, to Hovercraft Development Ltd. Vehicles for travelling over a surface. 3,291,-237, 12-13-66, Cl. 180—7.

Hopper, Alan G.: *See*—
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Horino, Masao. Light-inhibiting marine flasher. 3,292,089, 12-13-66, Cl. 315—150.

Horino, Masao. Watertight signal lamp. 3,292,172, 12-13-66, Cl. 340—331.

Horowitz, Isadore, and E. S. Smyral, to Gym-Dandy, Inc. Play equipment seat. 3,291,522, 12-13-66, Cl. 297—195.

Horton, Branton S., and J. D. Michaels, to General Motors Corp. Digital decoding apparatus. 3,292,173, 12-13-66, Cl. 340—347.

Hott, Ion V K., and D. M. Goldswig, to The Joyce-Cridland Co. Vehicle lift. 3,291,259, 12-13-66, Cl. 187—8.41.

House, Philip A., to United States of America, Air Force. Self-sealing construction for space vehicles. 3,291,333, 12-13-66, Cl. 220—15.

Houston, Reese T., to S. Webb. Drilling and coring apparatus and method. 3,291,229, 12-13-66, Cl. 175—60.

Hovercraft Development Ltd.: *See*—
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Hopkins, Leslie A., and Tripp. 3,291,237.

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Hower, Wayne F., to Halliburton Co. Dispersion method of sand consolidation. 3,291,214, 12-13-66, Cl. 166—33.

Howerton, William W. Curable polymers. 3,291,857, 12-13-66, Cl. 260—836.

Hsu, Stephen K., and A. Blatter, to The Bendix Corp. Transducer. 3,292,019, 12-13-66, Cl. 310—8.5.

Hsu, Stephen K., to The Bendix Corp. Transducer. 3,292,-020, 12-13-66, Cl. 310—8.6.

Hubbard, Winchester L., A. E. Smith, and E. A. Covey, to United States Rubber Co. Method of protecting plants against insects with mixed esters. 3,291,685, 12-13-66, Cl. 167—30.

Huber, J. M., Corp.: *See*—
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Huber, Walter E., to Dayco Corp. V-belt and method of manufacture. 3,290,964, 12-13-66, Cl. 74—233.

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Huddle, Harley R. Conveyor for handling fragile containers in spray cleaning apparatus. 3,291,143, 12-13-66, Cl. 134—68.

Huebner, Charles F., to Ciba Corp. N-(1,2,4-benzothiadiazine-7-sulfonyl)-7-sulfilimines. 3,291,794, 12-13-66, Cl. 260—243.

Huebner, Charles F., to Ciba Corp. 1-N-alkynyl-aminoacenaphthenes and salts thereof. 3,291,830, 12-13-66, Cl. 260—576.

Huebner, George J., Jr., to Chrysler Corp. Turbine wheel. 3,291,446, 12-13-66, Cl. 253—77.

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Abbott, Thomas L., and Huedepohl. 3,291,610.

Huffman, Kenneth R., and F. C. Schaefer, to American Cyanamid Co. Process for preparing N,N'-dicyanoamidine salts. 3,291,827, 12-13-66, Cl. 260—551.

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Moulin, Norbert L. 3,292,124.
Rosenblatt, Jerome J. 3,291,976.

Hughes, Lester Q. Cable pulleys. 3,291,440, 12-13-66, Cl. 254—134.2.

Hunkins, James J. Coupon calendar. 3,290,812, 12-13-66, Cl. 40—107.

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Hurok Mfg. Ltd.: *See*—
England, Hugh O. 3,291,562.

Hutchings, Elmer L. Fishing rod rack. 3,291,427, 12-13-66, Cl. 248—301.

Hutchison, Gibson T., to Crane Co. System for the treatment of sewage or the like. 3,291,209, 12-13-66, Cl. 210—151.

Hydorn, Allan E., and J. R. Meetz, to E. R. Squibb & Sons, Inc. 3 mono and 3,16-diesters of Δ^4-androstene-3β,16α-diol-17 one and process for the production thereof. 3,291,818, 12-13-66, Cl. 260—397.4.

Hydrocarbon Research, Inc.: *See*—
Boyum, Ammund A., and Lehman. 3,291,728.
King, Charles C., Campagnolo, and Lehman. 3,291,849.
Schuman, Seymour C. 3,291,721.

Hylten-Cavallius, Nils, K.-E. Olsson, L. Faxo, and S. Jacobsen. Means for decreasing radio disturbances generated in a static converter. 3,292,072, 12-13-66, Cl. 321—9.

Ibach, Werner: *See*—
Brockmuller, Wolfgang, Ibach, and Queck. 3,291,944.

Igneizi, Eugene. Vending apparatus adapted to store and process food items. 3,291,095, 12-13-66, Cl. 99—357.

Illinois Milling Inc.: *See*—
Liebig, Joseph M. 3,291,495.

Imperial Chemical Industries Ltd.: *See*—
Bebbington, Frank, and Gaze. 3,291,784.

Imperial Chemical Industries, Ltd.: *See*—
Becalick, Alan J., and Haggis. 3,291,763.

Imperial Chemical Industries of Australia and New Zealand Ltd.: *See*—
Hall, John R., and Van Gemert. 3,291,714.

Imperial-Eastman Corp.: *See*—
Kody, Joseph D. 3,291,510.

Imperial Oil Ltd.: *See*—
White, Edmund W. 3,291,717.

Independent Nail Corp., The: *See*—
MacDonald, Kenneth W., Nickelson, and Maber. 3,291,-061.

Inductotherm Linemelt Corp.: *See*—
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Industrial Nucleonics Corp.: *See*—
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Chope, Henry R. 3,291,967.
Chope, Henry R., Clore, and Brown. 3,291,968.
Lentz, John J. 3,291,990.

Ingrid Vogt: *See*—
Defregger, Hans-Peter, Georgieff, and Hoffmann. 3,291,-011.

Inkley, Deforest H.: *See*—
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Institut de Recherches de la Siderurgie Francaise: *See*—
Verge, Jacques, and Spire. 3,291,596.

Institut za Elktronsko in Automatik: *See*—
Belic, Avgust, and Ersen. 3,292,122.

Instron Corp.: *See*—
Deaker, James M. 3,290,999.

Integral Packaging Corp.: *See*—
Saidel, William R. 3,291,872.

Interchemical Corp.: *See*—
Gaylord, Norman G., and Tringall. 3,291,770.
Tringall, Alfred M., and Gaylord. 3,291,656.

Interlake Steel Corp.: *See*—
Kunkle, Bernard P., and Fawcett. 3,291,637.

International Business Machines Corp.: *See*—
Barnes, Gordon L., Greaves, Toepfer, and Muscatell. 3,292,151.
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Butler, James H., and De Witt. 3,291,958.
Constantinou, Gregory, Jr. 3,292,001.
Darwin, Daniel P., and Wilcox. 3,291,485.
Kosenko, Kurt M., Kulcke, and Max. 3,292,091.
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International Food Machine Corp.: *See*—
Perl, Murray A. 3,291,086.

International Harvester Co.: *See*—
Isbell, Perry T., and Lester. 3,291,535.
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May, Patrick L., and Sumpious. 3,291,284.

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International Patent Research Corp.: *See*—
Sharp, Bernard C. 3,291,696.

International Standard Electric Corp.: *See*—
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Slobodny, Emil, Bauer, and Saxon. 3,291,248.

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Harber, John H., and Kopas. 3,290,894.
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Interstate Electronics: *See*—
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Interstate Sanitation Co., The: *See*—
Bunting, Albert L. 3,291,906.

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Ionics, Inc.: *See*—
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Juda, Walter. 3,291,708.
Pard, Rogerio J. 3,291,712.

Iowa State University Research Foundation, Inc.: *See*—
Legvold, Sam. 3,292,424.

Irisarry, Antonio. Safety device for vehicles. 3,291,504, 12-13-66, Cl. 280—166.

Irusta, Isaac, to Bonifacio Echeverria Star, S.A. Release mechanism for automatic firearms. 3,290,986, 12-13-66, Cl. 89—140.

Irving Air Chute Co., Inc.: *See*—
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Isaksson, Erik H., to Gotaverken Aktiebolaget. Latching means for hatch covers. 3,291,514, 12-13-66, Cl. 292—256.5.

Isbell, Perry T., and W. D. Lester, to International Harvester Co. Cotton picker and fan assembly therefor. 3,291,535, 12-13-66, Cl. 302—37.

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Jackson, Carey B. to Scott Aviation Corp. Process for preparing superoxides. 3,291,567, 12-13-66, Cl. 23—157.

Jackson, Charles H., to Hi-Shear Corp. Zirconium composition with potassium perchlorate and graphite. 3,291,665, 12-13-66, Cl. 149—42.

Jackson, George E. and P. J. McCauley, to Mohr Lino-Saw Co. Automatic magazine control mechanism for linecasting machines. 3,291,291, 12-13-66, Cl. 199—16.

Jacobs, Albert J., to E. J. Carline. Rotary piston pump with single chamber. 3,291,063, 12-13-66, Cl. 103—133.

Jacobs, James W., J. Smilack, and I. L. Gould, to General Motors Corp. Dry cleaner with refrigerated solvent reclaiming system. 3,290,793, 12-13-66, Cl. 34—76.

Jacobsen, Svein: *See*—
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Jagger, Ernest T., and E. I. Hunter, to George Angus & Co. Ltd. Apparatus for moulding rubber and like articles. 3,290,725, 12-13-66, Cl. 18—2.

James, Claire L., and R. L. Nelson, to Eastman Kodak Co. Automatic searching film reader. 3,290,987, 12-13-66, Cl. 88—24.

James, Robert E., to Shunk Mfg. Co., Inc. Coil skid. 3,291,-073, 12-13-66, Cl. 105—367.

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Jarreby, Bertil, to Aktiebolaget Svenska Flaktfabriken. Web turning device. 3,290,705, 12-13-66, Cl. 34—122.

Jaspert, William B.: *See*—
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Javery, Robert F.: *See*—
Kaltman, Angel, Kinostian, and Javery. 3,290,690.

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Jeffreys, Roy A., to Eastman Kodak Co. Method of inhibiting discoloration of color photographic layers containing dye images and resulting photographic products. 3,291,906, 12-13-66, Cl. 96—55.

Jeffreys, Roy A., and D. M. Barness, to Eastman Kodak Co. Acetylated derivatives of dialdehydes and of their bemiacetals as gelatin hardeners. 3,291,624, 12-13-66, Cl. 106—125.

Jelinek, Jaroslaw. Master perspective. 3,290,814, 12-13-66, Cl. 40—137.

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Jenkins, Tobie W. Brush holder and wiper. 3,291,827, 12-13-66, Cl. 220—60.

Jennings, Charles H., and R. W. Vaughn, to Westinghouse Electric Corp. Pneumatically controlled portable heart massage apparatus. 3,291,124, 12-13-66, Cl. 128—53.

Jenny, Rudolf, to Maschinenfabrik Schweitert AG. Control device for a winding machine. 3,291,466, 12-13-66, Cl. 242—35.5.

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Jensen, Richard V., to Walker Mfg. Co. Disposable air filter for internal combustion engines. 3,290,870, 12–13–66, Cl. 55—486.

Jensen, Wayne L., to United States of America, Interior. Bacteria disintegrator. 3,291,400, 12–13–66, Cl. 241—172.

Jepson, Ivar, and S. E. Kukulski, to Sunbeam Corp. Electric dry shaver with common shaft for cutter and motor. 3,290,776, 12–13–66, Cl. 30—43.9.

Jepson, Ivar, and S. E. Kukulski, to Sunbeam Corp. Electric dry shaver with removable subassembly. 3,290,777, 12–13–66, Cl. 30—43.92.

Jerome, Elwood L., and G. C. Burns, to Pneumo Dynamics Corp. Low pressure pneumatic proportional control system. 3,290,997, 12–13–66, Cl. 91—3.

Jetru Inc.: *See*—
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Jimenez, Rudolf A., and B. M. Gallaway, to Texas A & M Research Foundation. Bituminous slurry seal. 3,291,628, 12–13–66, Cl. 106—283.

Joa, Curt G. Sanitary napkin, diaper, or hospital pad or the like. 3,291,131, 12–13–66, Cl. 128—290.

Johannson, Bertil K. A.: *See*—
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Williamson, George H. 3,291,010.

Johnson, August M., to Bell Telephone Laboratories, Inc. Traveling wave coaxial light modulator. 3,292,108, 12–13–66, Cl. 332—7.7.

Johnson, David A.: *See*—
Harris, Philip H., and Johnson. 3,291,205.

Johnson & Johnson: *See*—
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Johnson, Lynn: *See*—
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Johnson Products, Inc.: *See*—
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Johnson, Raymond K., to Metro-Goldwyn-Mayer Inc. Device for measuring length of motion-picture film in a roll. 3,290,785, 12–13–66, Cl. 33—128.

Johnson, Raymond K., to Metro-Goldwyn-Mayer Inc. Device for measuring length of motion-picture film in a roll. 3,290,785, 12–13–66, Cl. 33—128.

Johnston, Howard, and M. S. Tomita, to The Dow Chemical Co. Alkoxyethoxypolychloropyridines. 3,291,804, 12–13–66, Cl. 260—297.

Johnston, William A.: *See*—
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Johnstone, Robert D., and C. E. Wakefield, Jr., to Richfield Oil Corp. Drilling and production method. 3,291,210, 12–13–66, Cl. 166—.6.

Joiner, George R.: *See*—
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Joly, Robert, J. Warnant, A. Guillemette, and B. Gofinet, to Roussel-UCLAF. Novel 3-keto-4-fluoro-Δ^4-steroids and preparation thereof. 3,291,812, 12–13–66, Cl. 260—397.3.

Jones, Billie J., to Radio Corp. of America. Parallel amplifier circuit having load equalization means. 3,292,094, 12–13–66, Cl. 330—15.

Jones, Evan L., to Chrysler Corp. Closure actuated electric switch with manually operated holding means. 3,291,928, 12–13–66, Cl. 200—61.79.

Jones, Gordon H.: *See*—
McCann, Walter L., Jones, Muller, and Reader. 3,290,962.

Jones, Harold C.: *See*—
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Jones, Harold D., Jr. Screen door for sliding glass doors. 3,291,102, 12–13–66, Cl. 160—91.

Jones, Paul E., Jr.: *See*—
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Jones, Richard S., to Westland Aircraft Ltd. Flexible understructures for ground effect vehicles. 3,291,241, 12–13–66, Cl. 180—7.

Jones, Robert W., R. J. Blanchette, and F. D. Groves. Circuit connectors providing improved electrical contact and mechanical retention. 3,292,138, 12–13–66, Cl. 339—220.

Jones, Royston E., and R. T. Waters, to Associated Electrical Industries Ltd. Voltage-multiplier rectifier circuits. 3,292,073, 12–13–66, Cl. 321—15.

Jordan, O. F., Co., Inc.: *See*—
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Jorgensen, Adam A., to Stromberg-Carlson Corp. Signaling system. 3,219,916, 12–13–66, Cl. 179—86.

Josam Products Ltd.: *See*—
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Joyce-Cridland Co., The: *See*—
Hott, Ian V. K., and Goldswig. 3,291,259.

Joyce, James E., to American Metal Products Co. Paper grocery bag. 3,291,373, 12–13–66, Cl. 229—53.

Joyner, Russell J., and H. L. Thatcher. Bathroom deodorizer. 3,290,698, 12–13–66, Cl. 4—228.

Joyner, Vincent C. W., and T. H. Weed, to Celanese Building Components Ltd. Pipe mounting. 3,291,426, 12–13–66, Cl. 248—74.

Juda, Walter, to Ionics, Inc. Electrolytic process for producing a halogen from its respective acid and the apparatus therefor. 3,291,706, 12–13–66, Cl. 204—128.

Julian, Elmo C.: *See*—
Eldridge, Judson B., and Julian. 3,291,864.

Jung, Margarete, and H. H. Kroeger, to Varta Aktiengesellschaft. Catalytic electrode body and method of manufacture. 3,291,642, 12–13–66, Cl. 136—86.

Justus, Edgar J., and D. C. Cronin, to Beloit Corp. Cylinder machine press assembly. 3,291,680, 12–13–66, Cl. 162—272.

Justus, Edgar J., to Beloit Corp. Method and mechanism for biaxially orienting extruded tubular film. 3,291,876, 12–13–66, Cl. 264—95.

Justin Leather Goods Co.: *See*—
Elliff, Orla S. 3,291,178.

KVP Sutherland Paper Co.: *See*—
Rumberger, George G. 3,290,856.

K & W Enterprises, Inc.: *See*—
Worrall, Olga N. 3,290,703.

Kabelschlepp G.m.b.H.: *See*—
Waninger, Matthias G. 3,291,921.

Kabelschlepp G.m.b.H. Siegen: *See*—
Waninger, Matthias G. 3,291,921.

Kabushiki Kaisha Seisan Nikon Sha: *See*—
Naito, Kakuji. 3,291,177.

Kafka, Wilhelm, to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt. Superconducting three-phase current cable. 3,292,016, 12–13–66, Cl. 307—90.

Kaiser Jeep Corp.: *See*—
Sampietro, Achilles C., and Matthews. 3,290,740.

Kaiser Steel Corp.: *See*—
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Kaji, Walter U.: *See*—
Sweeney, Victor D., and Kaji. 3,291,473.

Kalopissis, Gregoire, and R. Bugant, to L'Oreal. 4-carboxymethylamino-3-nitro-1-methylamino benzene as a dyeing agent. 3,291,823, 12–13–66, Cl. 260—518.

Kalous, Leo E., to Collins Radio Co. Miniature single-pole double-throw switch. 3,291,951, 12–13–66, Cl. 200—155.

Kaltsas, Angel, G. Kinoulan, and R. F. Javery, to M.K.M. Knitting Mills, Inc. Cabling lace attachment. 3,290,899, 12–13–66, Cl. 66—98.

Kaman Aircraft Corp.: *See*—
McCullough, Charles E. 3,291,911.

Kammer, Andrew E. Post hole digger. 3,291,231, 12–13–66, Cl. 175—170.

Karakashian, Nubar A. Capillary fragility testing apparatus. 3,291,120, 12–13–66, Cl. 128—2.

Kartridg Pak Co., The: *See*—
Bousseau, Roy S., and Seiling. 3,291,463.

Kash Products, Inc.: *See*—
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Kashergen, Michael J., to Kash Products, Inc. Tool for assembling and disassembling teeth on excavating equipment and the like. 3,290,769, 12–13–66, Cl. 29—275.

Katagiri, Shinjiro, and H. Kimura, to Hitachi, Ltd. Multistage type high voltage electron gun with controllable electrode spacing. 3,292,041, 12–13–66, Cl. 315—357.

Katori, Mutsuhiko, to Howa Kogyo Kabushiki Kaisha. Rectilinear comber for cotton. 3,290,731, 12–13–66, Cl. 19—231.

Kaufman, Morris, to American Home Products Corp. Bake pan unit. 3,291,334, 12–13–66, Cl. 220—23.2.

Kavos, Stephane. Resilient shock absorbing bumper. 3,291,516, 12–13–66, Cl. 293—67.

Kayarian, Jacques K.: *See*—
Novales, William H., and Kayarian. 3,291,319.

Kearby, Kenneth K., to Esso Research and Engineering Co. Method of treating exhaust gases of internal combustion engines utilizing a stabilized alumina catalyst support. 3,291,564, 12–13–66, Cl. 23—2.

Kearns, Tommy C., to Swift & Co. High-nitrogen particulate fertilizer coated with neutralized superphosphoric acid. 3,291,595, 12–13–66, Cl. 71—49.

Keaton, Lawrence C., to Phillips Petroleum Co. Process and apparatus for improving quality of carbon black pellets. 3,290,791, 12–13–66, Cl. 34—13.

Keierleber, Arthur P., to All-Steel Equipment Inc. Locker hinge. 3,290,718, 12–13–66, Cl. 16—128.

Keith, Milroy A. Flexible conveyors. 3,291,283, 12–13–66, Cl. 198—109.

Kellems Co., Inc., The: *See*—
Caly, Albert L. 3,291,507.

Keller, Horst: *See*—
Folkhard, E., and Keller. 3,291,960.

Keller, Robert C., and J. F. Weber, to General Motors Corp. Transmission. 3,290,955, 12–13–66, Cl. 74—335.

Kellerman, David, Wound capacitors. 3,292,063, 12–13–66. Cl. 317—260.

Kelling, Leroy U. C.: *See*—
Evans, John T., and Kelling. 3,291,970.

Kellogg Co.: *See*—
Thompson, Joseph J., and Allen. 3,291,615.

Kelly, Earl M., to The Eimco Corp. Feed means for clarification apparatus. 3,291,316, 12–13–66, Cl. 210—520.

Kem-Wove Industries, Inc.: *See*—
Coates, Herbert W., Balgas, Hamilton, and Haynes. 3,291,677.

Kendall Co., The: *See*—
Seltzer, Norman L. 3,290,702.

Kenmoku, Masamichi, to Nippon Electric Co., Ltd. Ultra-high-frequency backward wave oscillator-klystron type amplifier tube. 3,292,033, 12–13–66, Cl. 315—3.6.

Kenneday, John W., to Esso Production Research Co. Depth control in well operations. 3,291,208, 12–13–66, Cl. 166—4.

Kenro Corp.: *See*—
Beattie, Kenneth B., R. P. Beattie II, and De Santis. 3,290,989.

Kensle, Ernest D.: *See*—
Hatfield, John E., and Kensle. 3,291,424.

Kesselring, Fritz, to Siemens-Schuckertwerke Aktiengesellschaft. Synchronous-type fluid-blast circuit interrupters having spaced nozzle-shaped contacts. 3,291,950, 12–13–66, Cl. 200—148.

Kettley, Arthur W.: *See*—
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Keverian, Jack: *See*—
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Keyes, Jack: *See*—
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Kido, Eyemon: *See*—
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Kimball, George E.: *See*—
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Kimberly-Clark Corp.: *See*—
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Greiner, Charles J., and Van Iten. 3,291,479.
Whitehead, Howard A. 3,291,130.

Kimura, Hirokazu: *See*—
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King, Charles C. J. P. Campagnolo, and L. M. Lehman, to Hydrocarbon Research, Inc. Hydrodealkylation. 3,291,849, 12–13–66, Cl. 260—672.

King, Charles W., and S. G. Kingma, to General Motors Corp. Electromagnetic relay having an anti-chatter feature. 3,292,118, 12–13–66, Cl. 335—104.

King, Elmore L. Packaging and dispensing apparatus. 3,290,809, 12–13–66, Cl. 40—10.

King, Geo. W., Ltd.: *See*—
Burrows, Arthur T. C. 3,291,933.

Kingma, Stanley G.: *See*—
King, Charles W., and Kingma. 3,292,119.

Kinoulan, Garabed: *See*—
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Kirtley, Clarence M., and E. J. Eldredge, Jr. Clamp and housing apparatus. 3,291,194, 12–13–66, Cl. 160—181.

Kitajima, Goichi, and H. Shidara. Projectile apparatus for flying objects. 3,291,047, 12–13–66, Cl. 102—54.1.

Kitawaki, Keizuro: *See*—
Sugino, Kiichiro, Shirai, and Kitawaki. 3,291,673.

Kitchin, Harry D., to The Marconi Co. Ltd. Amplitude control circuit for transistor oscillators. 3,292,104, 12–13–66, Cl. 331—109.

Klass, Donald L., and T. W. Martinek, to Union Oil Co. of California. Fluid flow control apparatus. 3,291,155, 12–13–66, Cl. 138—46.

Klahr, Carl N. Dustwall shielding. 3,292,044, 12–13–66, Cl. 317—8.

Kleen-Vu Industries, Inc.: *See*—
Osher, Benjamin B. 3,291,669.

Klemark, Inc.: *See*—
Pierce, Frank D. 3,291,008.

Klima, Karl G., and K. Noss, to Siemens & Halske Aktiengesellschaft. Apparatus for producing semiconductor devices. 3,290,758, 12–13–66, Cl. 22—75.

Klose, Hans-Peter. Multi-purpose boat. 3,291,088, 12–13–66, Cl. 114—39.

Klug, Helmut: *See*—
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Klumb, Harvey A.: *See*—
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Knapp, Robert L.: *See*—
Barschi, Chester J., and Knapp. 3,290,700.
Black, Warren R., and Knapp. 3,290,956.

Knight, Allen M.: *See*—
Garrison, Robert C., and Knight. 3,290,994.

Knoll, Felix W. A.: *See*—
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Knoth, Walter H., Jr., to E. I. du Pont de Nemours and Co. Compound and composition containing ammonia, hydrazine, and decaborane (8). 3,291,662, 12–13–66, Cl. 149—22.

Knowles, Richard E.: *See*—
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Kober, Ehrenfried H., H. F. Lederle, and G. F. Ottmann, to Olin Mathieson Chemical Corp. Cyclic polymeric phosphonitrilate compositions. 3,291,865, 12–13–66, Cl. 260—927.

Kober, William, to The Garrett Corp. Dynamoelectric machine. 3,292,024, 12–13–66, Cl. 310—201.

Kober, William, to The Garrett Corp. Dynamoelectric machine. 3,292,023, 12–13–66, Cl. 310—156.

Koch, Friedrich K.: *See*—
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Kochubievsky, Felix D.: *See*—
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Kody, Joseph D., to Imperial-Eastman Corp. Tube fitting. 3,291,510, 12–13–66, Cl. 285—340.

Koene, Hesendrik D. P. Container for breakable articles. 3,291,585, 12–13–66, Cl. 229—28.

Koenig, Francis L. Leak-proof centerboard construction for sail boats. 3,291,091, 12–13–66, Cl. 114—182.

Koerner, Ralph J., to The Bunker-Ramo Corp. Content addressable memory. 3,292,159, 12–13–66, Cl. 340—172.5.

Kokusai Denshin Denwa Kabushiki Kaisha: *See*—
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Kollerup, Vagn, to Aktieselskabet Burmeister & Wain's Maskin-OG. Sbet cleaning method for heat exchangers. 3,291,197, 12–13–66, Cl. 165—1.

Kolthoff, C. Paul, Jr., to International Harvester Co. Flexible fluid joint. 3,291,508, 12–13–66, Cl. 285—182.

Komroff, Paul. Convertible garment bag. 3,291,266, 12–13–66, Cl. 190—1.

Kondo, Yoshiharu, and S. Nakasawa, to Nippon Electric Co., Ltd. Apparatus for measuring the negative ratio of voltage. 3,292,081, 12–13–66, Cl. 324—57.

Koplar, Solomon E., to Timette, Inc. Gravity pendulum clock escapement. 3,290,874, 12–13–66, Cl. 58—124.

Koppers Co., Inc.: *See*—
Greco, Nicholas P. 3,291,825.

Koromatzu, Mikio, to Polyesterether Development Co., Ltd. Method for the manufacture of filaments and fibers from polyethylene oxybensoate. 3,291,778, 12–13–66, Cl. 260—47.

Koromatsu, Mikio, to Polyesterether Development Co., Ltd. Method for the manufacture of filaments and fibers from polyethylene oxybensoate. 3,291,778, 12–13–66, Cl. 260—47.

Kosak, John R., and W. E. Meece, to E. I. du Pont de Nemours and Co. Process for preparing 3,4 dichloro-aniline. 3,291,832, 12–13–66, Cl. 260—580.

Kosaka Kenkyusho Ltd.: *See*—
Shinohara, Kyuma. 3,291,061.

Kosanke, Kurt M., W. W. Kulcke, and E. Max, to International Business Machines Corp. Energy conserving circuit for capacitive load. 3,292,091, 12–13–66, Cl. 332—67.

Kotelly, John C., and A. Sciola. Internally generated and internally coupled tubing and pipe extensions. 3,291,157, 12–13–66, Cl. 138—119.

Kotera, Katsumi, and E. Kido, to Shionogi & Co., Ltd. 6-amino-6,7-dihydro-5H-dibenzo [A,C] cycloheptenes. 3,291,828, 12–13–66, Cl. 260—562.

Kottenhahn, Karl-Georg: *See*—
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Kovats, Andre, to Foster Wheeler Corp. Vane adjusting mechanism for variable pitch mixed flow pumps and turbine wheels. 3,291,221, 12–13–66, Cl. 170—160.44.

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Kozacka, Frederick J., and E. Salser, to The Chase-Shawmut Co. High interrupting capacity fuses having castings of inorganic material. 3,291,940, 12–13–66, Cl. 200—120.

Kozacka, Frederick J., to The Chase-Shawmut Co. Electric fuse with separate quartz fillers having different grain sizes. 3,291,942, 12–13–66, Cl. 200—120.

Kozacka, Frederick J., to The Chase-Shawmut Co. Time lag fuse with ribbon fuse link folded in longitudinal and in transverse direction. 3,291,943, 12–13–66, Cl. 200—120.

Krajewski, John J., to Swift & Co. Modifying isoelectric point of gelatin. 3,291,611, 12–13–66, Cl. 99—114.

Krasnick, Pauline. Life saving rescue capsule. 3,291,087, 12–13–66, Cl. 114—16.7.

Kratz, Gerd P., to Gebr. Lang. Light-weight cutter block for electric shaver and method of manufacture. 3,290,781, 12–13–66, Cl. 30—346.51.

Kravath, Stanley, to Stahlwood Toy Mfg. Co., Inc. Mobile toy. 3,290,817, 12–13–66, Cl. 46—32.

Kramer, Kenneth C., and H. N. Tobie, to Lear Siegler, Inc. Pitch controller for automatic landing. 3,291,421, 12–13–66, Cl. 244—77.

Krehbiel, Delmar D.: *See*—
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Krueger, Archie S., N. J. Slye, and B. E. Blanchard, to Alwin Mfg. Co. Paper dispenser. 3,291,411, 12–13–66, Cl. 242—56.59.

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Kuhrt, Friedrich, to Siemens-Schuckertwerke Aktiengesellschaft. Magneto-electric signal transmission system. 3,291,918, 12–13–66, Cl. 179—100.2.

Kukulski, Sigmund E.: *See*—
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Kunka, Bernard P., and P. W. Fawcett, to Interlake Steel Corp. End roll strapping apparatus. 3,291,037, 12–13–66, Cl. 100—4.

Kupersmith, Sam. Oil painting stretchers. 3,291,196, 12–13–66, Cl. 160—374.1.

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Silverman, Daniel, and Lang. 3,290,771.

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Laviana, Lawrence J., to M. H. Rhodes, Inc. Adjustable key lock assembly. 3,290,910, 12–13–66, Cl. 70—383.

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Leclerc, Bernard, G. Lemeale, and J. Vivien, to Commissariat a l'Energie Atomique. Charging device for a nuclear reactor refuelling facility. 3,291,236, 12–13–66, Cl. 214—18.

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Lewis, Armand F., to American Cyanamid Co. Adhesionable polyolefin blends. 3,291,861, 12–13–66, Cl. 260—876.

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Li, Hsin L., and R. R. Moneymaker, to E. I. du Pont de Nemours and Co. Method and apparatus for temperature measurement. 3,290,943, 12–13–66, Cl. 73—359.

Li, Yao T., and S.-Y. Lee. Differential pressure responsive device. 3,290,945, 12–13–66, Cl. 73—407.

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Limpert, Alexander S. and E. J. Self-purging proportioning pump for corrosive liquids. 3,291,055, 12–13–66, Cl. 103—44.

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Lindblad, Frederick W. Method of making a saw. 3,291,583, 12–13–66, Cl. 51—293.

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Lipman, Kenneth, to Westinghouse Electric Corp. Isolated multiple output circuit. 3,291,999, 12–13–66, Cl. 307—88.

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Giuliano, Vincent E., Jones, Kimball, Meyer, and Stein. 3,292,148.

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Lunenschloss, John T., and D. J. Busse. Automatic door operator control systems. 3,291,003, 12–13–66, Cl. 91—459.

Lutz, Hans G. Food ice machine with heating means therefor. 3,291,200, 12–13–66, Cl. 165—12.

Luvisi, John P., to Universal Oil Products Co. N-cycloalkenic derivatives of nitroanilines and a method for the preparation thereof. 3,291,831, 12–13–66, Cl. 260—576.

M.K.M. Knitting Mills, Inc.: *See*—
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Machell, Greville, and M. A. Thomas, to Deering Milliken Research Corp. Method of forming polymers on fibrous substrates through high velocity impingement with solutions containing unsaturated monomers and chemical catalyst. 3,291,560, 12–13–66, Cl. 8—116.

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MacMurray, Daniel P., to E. I. du Pont de Nemours and Co. Plastic covered wire bag tie and method of closing. 3,290,-854, 12–13–66, Cl. 53—14.

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Mader, Martin H., and E. G. Unger, to Mader Cabinet Works. Wall facing. 3,290,846, 12–13–66, Cl. 52—479.

Magian, Raymond E., to Ethyl Corp. Preparation of ketones. 3,291,838, 12–13–66, Cl. 260—591.

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Magne, Frank C., E. L. Skau, and R. E. Mod, to United States of America, Agriculture. Morpholides of a mixture of epoxidized, saturated, and monounsaturated fatty acids. 3,291,629, 12–13–66, Cl. 106—316.

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Majani, Pierre, and A. V. Rushton, to Schlumberger Technology Corp. Acoustic logging systems. 3,291,248, 12–13–66, Cl. 181—.5.

Malec, Jerry P. Fluid pump. 3,291,350, 12–13–66, Cl. 222—318.

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Mallinak, Frank J., and C. L. Mitchell, to The Cincinnati Milling Machine Co. High pressure hydraulic forming press. 3,290,919, 12–13–66, Cl. 72—453.

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Mamie, Philippe, to Societe Anonyme de la Fabrique d'Horlogerie Le Coultre et Cie. Assembly apparatus. 3,290,767, 12–13–66, Cl. 29—204.

Mandler, Walter, to Ernst Leitz, G.m.b.H. Photographic objective having four lens members. 3,291,553, 12–13–66, Cl. 350—209.

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Mango, Joseph R., to Westinghouse Electric Corp. Hair dryer. 3,290,794, 12–13–66, Cl. 34—99.

Mankin, Paul A., to John Wood Co. Fluid dispensing apparatus. 3,291,342, 12–13–66, Cl. 222—26.

Mann, John E., H. Trigger, and N. Hirsch, to TRW Semiconductors, Inc. Semiconductor alloying technique. 3,290,736, 12–13–66, Cl. 22—58.

Mann, Karl H., to O. Fuchs. Castings of magnesium-aluminum-zinc alloys. 3,291,656, 12–13–66, Cl. 148—161.

Mannes, Karl, R. Heiss, H. Polster, and G. Unterstenhofer, to Farbenfabriken Bayer Aktiengesellschaft. (Para nitro-2-tertiarypentadecanoyl) thiophosphoric acid esters. 3,291,-866, 12–13–66, Cl. 260—945.

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Marschner, Charles F., to Huck Mfg. Co. Lockbolt construction including swaged nut. 3,290,962, 12–13–66, Cl. 85—1.

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Martin, Allan D., to The Dow Chemical Co. Method and apparatus for fabricating plastic web. 3,291,879, 12–13–66, Cl. 264—167.

Martin, Alonza F., and D. B. Finnigan. Machine for grinding the cutting edge of a die. 3,290,836, 12–13–66, Cl. 51—100.

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Grotta, Henry M., and Lugasch. 3,291,787.

Martin, Richard P. Method of treating sewage. 3,291,729, 12–13–66, Cl. 210—12.

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Martin, William McK. Apparatus for sterile packaging. 3,291,563, 12–13–66, Cl. 21—94.

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Mattox, William J., to Esso Research and Engineering Co. Spent caustic recovery. 3,291,566, 12–13–66, Cl. 23—184.

Mauget, James J. Tool for setting feeding tubes in plants. 3,290,822, 12–13–66, Cl. 47—57.5

Maure, Elmer E., A. J. Stirton, and J. K. Weil, to United States of America, Agriculture. Emulsion containing long chain alkylsulfuric acids. 3,291,750, 12–13–66, Cl. 252—312.

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May, Patrick L., and D. A. Bumpious, to International Harvester Co. Mechanical drive for bale thrower. 3,291,284, 12–13–66, Cl. 198—128.

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Orloff, Daniel L., and Peley. 3,291,675.

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Mayet, Pierre E., and J. S. Bourdin, to Societe anonyme: Ruitrageries Bourdin & Chausse. Hydraulic motors. 3,291,001, 12–13–66, Cl. 91—180.

Maynard, Marvin E., to Deering Milliken Research Corp. Card clothing. 3,290,729, 12–13–66, Cl. 19—114.

Mayo, George L., to Clary Corp. Power saw. 3,291,166, 12–13–66, Cl. 143—6.

McAllister, William E., and J. Martella, Jr., to Philco Corp. Wash-conditioner dispensing means for clothes washing machines. 3,290,908, 12–13–66, Cl. 68—17.

McBride, Richard T., to E. I. du Pont de Nemours and Co. Surface treatment of shaped organic polymeric structures. 3,291,712, 12–13–66, Cl. 204—165.

McCann, Walter L., G. H. Jones, W. G. Muller, and J. T. Reader, deceased, by M. J. Reader, executrix, to Giddings & Lewis Machine Tool Co. Planetary transmission. 3,290,-968, 12–13–66, Cl. 74—760.

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McCarthy, Paul E., and C. S. Tempalski, to Gulf Research & Development Co. Grease composition. 3,291,733, 12–13–66, Cl. 252—28.

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Jackson, George E., and McCauley. 3,291,291.
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McCay, Frank V., Jr. Detent mechanism. 3,290,960, 12–13–66, Cl. 74—527.

McClellan, Clarence S., to United Electronics Inc. Magnetic tape recorder. 3,291,400, 12–13–66, Cl. 242—55.12.

McCombs, Donald E. Collapsible tube dispenser. 3,291,345, 12–13–66, Cl. 222—106.

McCormick, Barstow, Sheppard, Crolyle & Best, The Firm of: *See*—
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McCormick, Robert J., E. J. Turnen, and W. J. Rathbun, to The Dow Chemical Co. Traction element for formed containers. 3,291,363, 12–13–66, Cl. 229—5.5.

McCue, James H. Hip shingle package and method of packaging. 3,291,298, 12–13–66, Cl. 206—46.

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McCullough, Theron E., and C. C. Bolts, to Fair-Play Mfg. Co. Score board sign structure. 3,291,975, 12–13–66, Cl. 240—11.2.

McDowell, Robert C., to Olin Mathieson Chemical Corp. Antifriction former device. 3,291,007, 12–13–66, Cl. 93—20.

McFarlin, Stanley B., to The Gorman-Rupp Co. Quick priming centrifugal pump. 3,291,058, 12–13–66, Cl. 103—113.

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McIntosh, Harold A., and H. Rehrig, to Robertshaw Controls Co. Pilot burner for gas heater or the like. 3,291,185, 12–13–66, Cl. 158—113.

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Mellow, Martley F., to United States of America, Air Force. Digital satellite display system. 3,292,157, 12–13–66, Cl. 340—172.5.

Meunesson, Andre L., to Societe Industrielle de Brevets & d-Etudes S.I.B.E. Carburetors comprising an automatic auxiliary starting device. 3,291,462, 12–13–66, Cl. 261—39.

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Merli, Elio, to Comitato Nazionale per l'Energia Nucleare of Rome. Device for reducing the overpressures caused by failures of the heat exchanger in two loops pressurized organic cooled nuclear reactor plant. 3,291,695, 12–13–66, Cl. 176—20.

Merrill, Phillip E. Thermal trigger and member triggered thereby. 3,291,216, 12–13–66, Cl. 169—39.

Merrill, Phillip E., D. C. Barnett, and E. R. Plasko, to Micro Devices Corp. Thermal switch having temperature sensitive pellet and movable contact. 3,291,945, 12–13–66, Cl. 200—142.

Merta, George, to Trojan Rivet Corp. One revolution clutch stop means. 3,291,269, 12–13–66, Cl. 192—27.

Mesco, Bernard. Thermally controlled shut-off valve for shower heads. 3,291,391, 12–13–66, Cl. 236—93.

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Meyer, Richard F.: *See*—
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Meyer, Robert W. Tube dispensing device. 3,291,344, 12–13–66, Cl. 222—78.

Michael, Vesta F., to Rock Island Oil & Refining Co., Inc. Threaded pipe construction method. 3,291,881, 12–13–66, Cl. 264—266.

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Miescher, Guido M., to Commercial Solvents Corp. Enzymatic conversion of starch containing proteinaceous substances to dextrose. 3,291,702, 12–13–66, Cl. 195—31.

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Minnotte, Joseph F., Jr. Dispensing device. 3,291,299, 12–13–66, Cl. 206—58.

Mishima, Hideo, and N. Okamoto, to Shimadzu Seisakusho Ltd. Digital indicating device for balance. 3,292,235, 12–13–66, Cl. 177—178.

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Montague, Lewis D., and J. J. Rodden, to United States of America, Air Force. Attitude control system with magnetometer sensors. 3,291,419, 12–13–66, Cl. 244—14.

Montano, Albert J., to United Aircraft Corp. Fatigue testing apparatus. 3,290,936, 12–13–66, Cl. 73—67.3.

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Majani, Pierre, and Rushton. 3,291,248.

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Russell, William L. Method and apparatus for geophysical exploration utilizing variation in amplitude attenuation of different frequencies. 3,292,143, 12–13–66, Cl. 340—15.5.

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Sam, Ahmad, to Gould-National Batteries, Inc. Method of making dry charged lead-acid battery element by treating the assembled battery. 3,291,641, 12–13–66, Cl. 136—27.

Samet, Frank, to General Precision Inc. Flexural pivot. 3,290,949, 12–13–66, Cl. 74—5.

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Jackson, Charles B. 3,291,567.
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Simmons, Bernard R., and R. J. Myers, to R. & S. Machinery Co., Inc. Mine trailer. 3,291,237, 12-13-66, Cl. 214—83.34.
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Simmons, Hewitt P. Fluid gun for cleaning electric razors. 3,291,141, 12-13-66, Cl. 132—4.
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Triebett, Kenneth A., Simnad, and Malak. 3,291,600.
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Smith, Alva M. Station wagon utility compartment and removable cover therefor. 3,291,520, 12–13–66, Cl. 296—24.

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Smith, John E.: *See*—
Swoish, William R., and Smith. 3,292,048.

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Buehrle, William B., and Smith. 3,292,167.

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Smith, Philip S. Multi panel television system. 3,291,905, 12–13–66, Cl. 178—68.

Smith, Traver J., and R. K. Daugherty, ½ to G. I. Magnuson, and ½ to G. I. and R. Magnuson, and L. J. Fox, as trustees of the estate of R. M. Magnuson. Shuffle feed end trimmer for vegetables. 3,291,173, 12–13–66, Cl. 146—81.

Smith, Watt V. Submarine shaft seal and thrust compensator. 3,291,491, 12–13–66, Cl. 277—27.

Smith, William J.: *See*—
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Smoot, David K. Powdered material conveyor system. 3,291,536, 12–13–66, Cl. 302—49.

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Horowitz, Isadore, and Smyrni. 3,291,522.

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Snyder, Melvin E., to Camp and McInnes, Inc. Compressive hose and method of making same. 3,290,904, 12–13–66, Cl. 60—900.

Snyder, Paul V., to General Electric Co. Control mechanism for an electric cooking appliance. 3,291,968, 12–13–66. Cl. 219—439.

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Maxwell, Theodore B., and Sobel. 3,290,745.

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Societe Anonyme des Anciens Etablissements Albaret: *See*—
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Societe Anonyme Francaise: *See*—
Lesellier, Pierre A. G. 3,291,363.

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Societe Industrielle Bull-General Electric (Societe Anonyme): *See*—
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Societe Industrielle de Brevets & d'Etudes S.I.B.E.: *See*—
Meunasson, Andre L. 3,291,462.

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Solomon, Ralph R., to Deutsch Controls Corp. Thermally operated switch. 3,291,390, 12–13–66, Cl. 236—21.

Somerset, Sherman J., to Gremar Mfg. Co., Inc. Coaxial connector. 3,292,136, 12–13–66, Cl. 339—177.

Neumaberg, Ralph H., F. A. De Toledo, and R. Z. Bell, to Owens-Corning Fiberglas Corp. Method of forming a synthetic resin panel. 3,291,672, 12–13–66, Cl. 156—289.

Sorobon Engineering, Inc.: *See*—
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Soules, Jack A., and F. T. Byrne. Laser image amplifying system. 3,292,103, 12–13–66, Cl. 331—94.5.

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Seallow, Douglas M. 3,291,164.

Spatola, Joseph S. Shoe with a vulcanized outsole. 3,290,803, 12–13–66, Cl. 36—14.

Spatt, Milton E. Air conditioning apparatus for vehicles, especially for buses. 3,291,201, 12–13–66, Cl. 165—42.

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Spencer, Frank W., to United Shoe Machinery Corp. Apparatus for conditioning articles of manufacture. 3,290,708, 12–13–66. Cl. 12—1.

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Brugger, Richard G. 3,290,787.
Chong, Carlos F. 3,292,162.
Crane, Jack W. 3,291,038.
D'Alessandro, Ignatius A., and Muller. 3,292,169.
Even, Shimon. 3,291,974.
Grey, James L. 3,292,168.
Haas, Charles W., Pollack, and Callen. 3,292,058.
Milne, James F., and Norgren. 3,291,276.
Pataki, Andrew B. 3,291,388.
Raache, Robert E. 3,291,973.
Romeo, Albert J., Sekse, and Sevilla. 3,291,994.
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Spiewok, Leonhard: *See*—
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Springer, Kenneth E. Portable water heater. 3,291,112, 12–13–66, Cl. 126—5.

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Square D Co.: *See*—
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Hydorn, Allan E., and Moets. 3,291,813.
Ondetti, Miguel A., and Sheehan. 3,291,805.
Pan, Samuel C., and Principe. 3,291,792.

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Stahly, Eldon E.: *See*—
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Stark, Karl G., to A B Platmanufaktur. Tool for opening containers having removable plug-type closures. 3,290,967, 12–13–66, Cl. 81—3.46.

Starp, Franz W. R., to Alfred Gauthier G.m.b.H. Photographic camera. 3,291,023, 12–13–66, Cl. 95—64.

Steerup, James, to Triaxon, Inc. Photo-luminescent composition consisting essentially of boric acid and fluorescein. 3,291,749, 12–13–66, Cl. 252—301.3.

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Steinman, William W. Electric motor pump. 3,291,056, 12–13–66, Cl. 103—87.

Steinsalinger, Kurt, to Eastman Kodak Co. Camera with a movably mounted photoelectric member. 3,291,017, 12–13–66, Cl. 95—10.

Stelma Inc.: *See*—
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Stelniceann, Jacques. Folding tea cart. 3,291,501, 12–13–66, Cl. 280—36.

Stemmler, Kurt, to R. Winkler, and K. Dunnebier. Mechanism for feeding envelopes, cards or other sheets from under a pile into a machine for their processing. 3,291,482, 12–13–66, Cl. 271—11.

Stenard, Robert K., to Union Tank Car Co. Desuperheating deaerating heater. 3,291,105, 12–13–66, Cl. 122—406.

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Stern, Robert L.: *See*—
Rochow, Eugene G., and Stern. 3,291,783.

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Stevens, Marshall W., to The Gullard Co. Chill box. 3,291,469, 12–13–66, Cl. 266—6.

Stevenson, Billy R., and J. T. Ostgaard, to Royal Industries, Inc. Pneumatic brake setting means with emergency mechanical actuator therefor. 3,291,004, 12–13–66, Cl. 92—63.

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Cranage, Eldwell C. 3,291,442.

Stiller, Leonard A., to Lasco Industries, Inc. Salt water ice making machine having cleaning pin. 3,290,896, 12–13–66, Cl. 62—350.

Stimson, Allen G., to Eastman Kodak Co. Camera photocell with movable lens for maintaining a relatively constant vertical field angle as the camera is rotated. 3,291,996, 12–13–66, Cl. 250—234.

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Mauro, Elmer R., Stirton, and Weil. 3,291,750.

Stochel, Nathan H., to Bell Telephone Laboratories Inc. Data signal storage circuit. 3,292,156, 12–13–66, Cl. 340—172.5.

Stock, Arthur J. Calibrating means for radioactive test apparatus which tests fluent material moving through a conduit. 3,291,961, 12–13–66, Cl. 250—43.5.

Stolp, Harry J.: *See*—
Stolp, Larry J. 3,291,013.

Stolp, Larry J., ½ to H. J. Stolp. Wheeled compactor of the trailer types. 3,291,013, 12–13–66, Cl. 94—50.

Stolpe, John G., Sr. Paint can holder and brush rest. 3,291,517, 12–13–66, Cl. 294—31.

Stone, Harris E.: *See*—
Cushing, Philip S., and Stone. 3,291,418.

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Stonecutter Mills Corp.: *See*—
Veney, Silvio C., and Lancaster. 3,291,160.

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Stotz, Robert H.: *See*—
Nicklas, James P., and Stotz. 3,291,910.

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Straits, Brunet J. Chair construction. 3,291,529, 12–13–66, Cl. 297—448.

Stratton, Robert L.: *See*—
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Stromberg-Carlson Corp.: *See*—
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Struba, Richard E., to The Upjohn Co. Process for preparing dibenzodiazepinone compounds. 3,291,790, 12–13–66, Cl. 260—239.3.

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Sugino, Kiichiro, K. Shirai, and R. Kitawaki, to Nippon Carbide Industries Co., Inc. Process of bonding articles with alkylene diureaamide at temperatures below 100° C. 3,291,673, 12–13–66, Cl. 156—331.

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Jepsen, Ivar, and Kuhnlein. 3,290,777.
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Swanson, Gosta. Portable hand tool for cleaning pipe joints. 3,290,711, 12–13–66, Cl. 15—104.06.

Sweeney, Victor D., and W. U. Kaja, to Metal Pumping Services, Inc. Non-clogging pumps. 3,291,472, 12–13–66, Cl. 266—38.

Sweeny, James O., and W. D. Becher, to General Electric Co. Strain insulator for dead ending. 3,291,900, 12–13–66, Cl. 174—169.

Sweeny, James O., and N. F. Walters, to General Electric Co. Strain insulator. 3,291,890, 12–13–66, Cl. 174—80.

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Swoish, William R., and J. E. Smith, to McGraw-Edison Co. Protected electrical transformer. 3,292,048, 12–13–66, Cl. 317—16.

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Whitenack, Taylor D., Jr., and Anderson. 3,290,709.

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Takahashi, Tetsuji, to Nippon Communication Industrial Co., Ltd. Automatic dialer for telephones having a magnetic memory. 3,291,917, 12–13–66, Cl. 179—90.

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Zemrowski, Edmund A., 50% to S. A. Strzelecki, Sr. Divided panel board for hi-fi speaker systems. 3,291,251, 12–13–66, Cl. 181—31.
Zenger, Richard D.: *See*—
Tracy, Gerald T., and Zenger. 3,291,343.
Zenith Radio Corp.: *See*—
Boldt, Melvin H., and Hathaway. 3,291,487.
Zhevelev, Gessel I.: *See*—
Gaev, Nicholai N., Zhevelev, and Kochubievsky. 3,290,965.
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Zitner, Berthold B. Vertical feed cut-off saws. 3,291,168, 12–13–66, Cl. 143—57.
Zubaty, Martin V., to Mechanical Products, Inc. Circuit breaker. 3,291,928, 12–13–66, Cl. 200—116.

CLASSIFICATION OF PATENTS

ISSUED DECEMBER 13, 1966

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,290,693	29–155.5	3,290,762	52–461	3,290,844	73– 27	3,290,921	92– 63	3,291,004	106– 38.35:	3,291,618
90	3,290,694	157	3,290,763	478	3,290,845	52	3,290,922	100	3,291,005	46	3,291,619
161	3,290,695	157.3	3,290,764	479	3,290,846	57	3,290,923	121	3,291,006	47	3,291,620
323	3,290,696	182.2	3,291,577	489	3,290,847	61.3	3,290,924	93– 20	3,291,007	52	3,291,621
4–161	3,290,697	195	3,291,578	497	3,290,848	65	3,290,925	36.3	3,291,008	55	3,291,622
228	3,290,698	203	3,290,765	541	3,290,849	67.3	3,290,926	80	3,291,009	56	3,291,623
231	3,290,699	208	3,290,766	630	3,290,850	80	3,290,927	93	3,291,010	125	3,291,624
5– 63	3,290,700		3,290,767	701	3,290,851	88.5	3,290,928	94– 1.5	3,291,011	177	3,291,625
331	3,290,701	267	3,290,768	717	3,290,852	95	3,290,929	44	3,291,012	193	3,291,626
334	3,290,702	275	3,290,769	730	3,290,853	136	3,290,930	50	3,291,013	195	3,291,627
337	3,290,703	421	3,290,770	53– 14	3,290,854	141	3,290,931		3,291,014	283	3,291,628
	3,290,704		3,290,771	21	3,290,855	160	3,290,932	95– 4.5	3,291,015	316	3,291,629
6– 12	3,290,705	493	3,290,772	39	3,290,856	178	3,290,933	10	3,291,016	107– 1	3,291,076
8– 54	3,291,556	498	3,290,773	61	3,290,857	194	3,290,934		3,291,017	108– 10	3,291,077
94.21:	3,291,558	30– 34.1	3,290,774	112	3,290,858	200	3,290,935		3,291,018	132	3,291,078
94.22:	3,291,557	34.2	3,290,775	160	3,290,859	231	3,290,937		3,291,019	156	3,291,079
108	3,291,559	43.9	3,290,776	184	3,290,860	290	3,290,938	13	3,291,020	110– 45	3,291,080
116	3,291,560	43.92:	3,290,777	214	3,290,861	299	3,290,939	36	3,291,021	112–104	3,291,081
130.1	3,291,561	90	3,290,778	228	3,290,862	341	3,290,940	64	3,291,022	158	3,291,082
142	3,291,562	99	3,290,779	258	3,290,841	355	3,290,941		3,291,023	219	3,291,083
9– 1	3,290,706	294	3,290,780	360	3,290,863	358	3,290,942	77.5	3,291,024	225	3,291,084
307	3,290,707	346.51:	3,290,781	55–203	3,290,864	359	3,290,943	98	3,291,025	262	3,291,085
12– 1	3,290,708	33– 1	3,290,782	216	3,290,865	368	3,290,944	96– 1	3,291,600	114– 16	3,291,086
14– 71	3,290,709	23	3,290,783	229	3,290,866	407	3,290,945	1.1	3,291,601	16.7	3,291,087
	3,290,710	63	3,290,784	258	3,290,867	425.6	3,290,946	5	3,291,602	39	3,291,088
15–104.03:	3,290,711	128	3,290,785	343	3,290,868	505	3,290,947	20	3,291,603	65	3,291,089
105.5	3,290,712	206	3,290,786	417	3,290,869	74– 5	3,290,948	29	3,291,604	109	3,291,090
180	3,290,713	226	3,290,787	486	3,290,870		3,290,949	38.3	3,291,605	132	3,291,091
182	3,290,714	34– 5	3,290,788	56– 25.4	3,290,871	52	3,290,950	55	3,291,606	206	3,291,092
250.19:	3,290,715		3,290,789	57– 53	3,290,872	68	3,290,951	59	3,291,607	208	3,291,093
353	3,290,716	9	3,290,790	58.3	3,290,873	87	3,290,952	66	3,291,608	218	3,291,094
563	3,290,717	13	3,290,791	58–124	3,290,874	141.5	3,290,953	76	3,291,609	235	3,291,095
16–128	3,290,718	58	3,290,792	125	3,290,875	233	3,290,954	83	3,291,610	116– 63	3,291,096
147	3,290,719	76	3,290,793	60– 29	3,290,876	335	3,290,955	114	3,291,611	117– 18	3,291,630
17– 7	3,290,720	99	3,290,794	39.16:	3,290,878	365	3,290,956	98– 10	3,291,026	19	3,291,631
32	3,290,721	122	3,290,795	39.39:	3,290,879	472	3,290,957	36	3,291,027	54	3,291,632
43	3,290,722	35– 10.4	3,291,884	39.5	3,290,877		3,290,958	40	3,291,028	100	3,291,633
18– 1	3,290,723		3,291,885	39.65:	3,290,880	501.5	3,290,959	115	3,291,029	135.5	3,291,634
2	3,290,724	23	3,290,796	54.5	3,290,881	527	3,290,960	99– 21	3,291,612	138.5	3,291,635
	3,290,725	24	3,290,797		3,290,882	665	3,290,961	33	3,291,613	212	3,291,636
5.3	3,290,726	31	3,290,798	55	3,290,883	760	3,290,962	56	3,291,614		3,291,637
13	3,290,727	44	3,290,799	59	3,290,884	810	3,290,963	98	3,291,615	231	3,291,638
19	3,290,728	71	3,290,800	226	3,290,885	75– 3	3,291,593	107	3,291,616	232	3,291,639
19–114	3,290,729	36– 2.5	3,290,801		3,290,886	49	3,291,596	192	3,291,617	118–109	3,291,097
129	3,290,730	11.5	3,290,802	229	3,290,887	63	3,291,597	234	3,291,030	119– 5	3,291,098
231	3,290,731	14	3,290,803	61– 28	3,290,888	101	3,291,598	236	3,291,031	29	3,291,099
255	3,290,732	37– 81	3,290,804	62– 3	3,290,889	103	3,291,599	238	3,291,032	51	3,291,100
21– 94	3,291,563	126	3,290,805	12	3,290,890	76– 82	3,290,964	283	3,291,033	120– 42.03:	3,291,101
22– 10	3,290,733	129	3,290,806	58	3,290,891	77– 3	3,290,965	291	3,291,034	46	3,291,102
57.2	3,290,734	38– 71	3,290,807	137	3,290,892	22	3,290,966	357	3,291,035	122– 33	3,291,103
57.3	3,290,735	40– 2	3,290,808	187	3,290,893	81– 3.46:	3,290,967	358	3,291,036	240	3,291,104
58	3,290,736	10	3,290,809	216	3,290,894	53	3,290,968	100– 4	3,291,037	406	3,291,105
65	3,290,737	23	3,290,810	298	3,290,895	63.1	3,290,969	139	3,291,038	479	3,291,106
75	3,290,738	70	3,290,811	320	3,290,896	127	3,290,970	162	3,291,039	123– 90	3,291,107
85	3,290,739	107	3,290,812	64– 9	3,290,897	367	3,290,971	101– 93	3,291,040	148	3,291,108
200	3,290,740	129	3,290,813	65– 11	3,291,584	82– 5.5	3,290,972		3,291,041		3,291,109
200.1	3,290,741	137	3,290,814	18	3,291,585	83– 11	3,290,973		3,291,042		3,291,110
	3,290,742	42– 74	3,290,815	33	3,291,586	23	3,290,974	96	3,291,043	124– 23	3,291,111
23– 2	3,291,564	43– 21.2	3,290,816	43	3,291,587	33	3,290,975	118	3,291,044	126– 5	3,291,112
183	3,291,565	44– 7	3,291,579	75	3,291,588	302	3,290,976	146	3,291,045	19	3,291,113
184	3,291,566	53	3,291,580	152	3,291,589	467	3,290,977	102– 28	3,291,046	25	Re.26,123
187	3,291,567	46– 32	3,290,817	182	3,291,590	578	3,290,978	34.1	3,291,047		3,291,114
258.5	3,291,568	221	3,290,818	66– 50	3,290,898	84– 1.01:	3,291,886	41	3,291,048	92	3,291,115
260	3,291,569	47– 41.1	3,290,819	96	3,290,899	1.16:	3,291,887	87	3,291,049		3,291,116
273	3,291,570	41.12:	3,290,820	115	3,290,900		3,291,888	90	3,291,050	113	3,291,117
	3,291,571	48.5	3,290,821	130	3,290,901	104	3,290,979	103– 5	3,291,051	271.2	3,291,118
281	3,291,572	57.5	3,290,822	132	3,290,902	307	3,290,980		3,291,052	350	3,291,119
284	3,291,573	48–197	3,291,581	155	3,290,903	326	3,290,981	40	3,291,054	128– 2	3,291,120
301	3,291,574	212	3,291,582	200	3,290,904	85– 1	3,290,982	44	3,291,055	36	3,291,123
	3,291,575	49–403	3,290,823	67– 7.1	3,290,905	23	3,290,983	87	3,291,056	53	3,291,124
302	3,291,576	420	3,290,824	31	3,290,906	87– 51	3,290,984	113	3,291,057	130	3,291,125
24– 81	3,290,743	431	3,290,825	80	3,290,907	88– 1	3,290,985		3,291,058	142.4	3,291,126
90.5	3,290,744	440	3,290,826	68– 17	3,290,908	14	3,290,986	126	3,291,053	145.7	3,291,121
120	3,290,745	51– 9	3,290,827	23	3,290,909	24	3,290,987		3,291,059	145.8	3,291,122
126	3,290,746	73	3,290,828	70–383	3,290,910		3,290,988		3,291,060	207	3,291,127
205.16:	3,290,747	100	3,290,829	459	3,290,911		3,290,989	128	3,291,061	214	Re.26,124
214	3,290,748	103	3,290,830	71– 2.5	3,291,591		3,290,990	130	3,291,062	218	3,291,128
227	3,290,749	106	3,290,831		3,291,592	89– 34	3,290,991	132	3,291,063	253	3,291,129
234	3,290,750	165	3,290,832	41	3,291,594	41	3,290,992	150	3,291,064	285	3,291,130
262	3,290,751		3,290,833	49	3,291,595	140	3,290,993		3,291,065	290	3,291,131
28– 74	3,290,752	206	3,290,834	72– 9	3,290,912	90– 13.5	3,290,994	153	3,291,066	483	3,291,132
29– 25.3	3,290,753	209	3,290,835	12	3,290,913	24	3,290,995	162	3,291,067	129– 16.1	3,291,133
33	3,290,754	293	3,291,583	117	3,290,914	91– 1	3,290,996		3,291,068	26	3,291,134
78	3,290,755	317	3,290,836	203	3,290,936		3,290,998	232	3,291,069	131– 20	3,291,135
155.5	3,290,756	52– 30	3,290,837	240	3,290,915	3	3,290,997	104– 88	3,291,070	24	3,291,136
	3,290,757	173	3,290,838	285	3,290,916	47	3,290,999	105–253	3,291,071	84	3,291,137
	3,290,758	188	3,290,839	333	3,290,917	165	3,291,000	367	3,291,072	256	3,291,138
	3,290,759	223	3,290,840	340	3,290,918	180	3,291,001		3,291,073	262	3,291,139
	3,290,760	309	3,290,842	453	3,290,919	375	3,291,002	368	3,291,074		3,291,140
	3,290,761	323	3,290,843	73– 1	3,290,920	459	3,291,003	369	3,291,075	132– 33	3,291,141

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Design Patents

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 13, 1966 Volume 833 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 600,018 (PLAYBOY), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 610,986** ("PLA-BOY"), Guy Barnette & Company, Inc., Boats and boat transporting trailers; **Reg. No. 642,986** (DESIGN OF RABBIT'S HEAD), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 645,396** (PLAYBOY), same, Cuff links; **Reg. No. 666,418**, same, Mechanically grooved phonograph records; **Reg. No. 676,736**, same, Compilations of stories issued annually, and calendars; **Reg. No. 711,695** (PLAYBOY'S PENTHOUSE), same, Title of a television program; **Reg. No. 719,686** (PLAYBOY LIQUOR CADDY), same, Bottle holder; **Reg. No. 737,213** (PLAYBOY TOURS), same, Arranging and conducting travel tours and arranging hotel accommodations and entertainment for tourists; **Reg. No. 743,134** (REPRESENTATION OF RABBIT'S HEAD AND DESIGN), same, Operating private social clubs which feature food, drinks, and entertainment; **Reg. No. 744,920** (PLAYBOY), Leaf Brands, Inc., Candy; **Reg. No. 746,267** (THE PLAYBOY CLUB), HMH Publishing Co., Inc., Operating private social clubs which feature food, drinks, and entertainment; **Reg. No. 755,261** (PLAYBOY), same, Cigarette lighters; **Reg. No. 762,884** (BUNNY COSTUME DESIGN), same, Operating establishments which feature food, drink and entertainment; **Reg. No. 764,230** (PLAYBOY), same, Perfume; **Reg. No. 769,702**, same, Operation of establishments which feature food, drink and entertainment; **Reg. No. 772,121**, same, Cigarettes; **Reg. No. 772,122**, same, Puppets; **Reg. No. 791,734**, same, Playing cards, filed Oct. 28, 1966, D.C., E.D. Mich. (Detroit), Doc. 29134, *HMH Publishing Co., Inc. et al.* v. *Nick's Playboy Signs.*

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	27,254
Date of oldest new application	Sept. 13, 1965
Date of oldest amended application (filing date)	Sept. 11, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 13, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-13-65	3-5-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 23, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-21-65	9-11-63
Renewals (All Classes)	9-2-66	
Sec. 12(c) Publications (All Classes)	9-27-66	

Applications filed during the month of October—2,265

Registrations Issued	402—No. 820,135 to No. 820,536
Renewals Issued	70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.106.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 199,811. The Esbec Corporation, Bridgeport, Conn. Filed Aug. 13, 1964.

ESBEC

Owner of Reg. Nos. 680,378, 687,430, and 689,642.

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions—Namely, Scale and Corrosion Inhibitors for Use in Steam and Return Lines and Cooling Water Systems, Boiler Compounds, and Catalysts.

Class 52—Detergents and Soaps

For Cleaning Compositions, Metal Cleaners, Scale, and Corrosion Removers and Detergents.

First use May 4, 1953.

SN 203,525. Harsco Corporation, Galion, Ohio, assignee of The Perfection Steel Body Company, Galion, Ohio. Filed Oct. 7, 1964.

PERFECTION

Class 2—Receptacles

For Burial Vaults and Containers for Self-Loading Refuse Collection Trucks.
First use June 1, 1915.

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Valves.
First use Feb. 1, 1928.

Class 19—Vehicles

For Truck and Trailer Bodies and Beds, Wagons, Wagon Gear, Cargo Hauling Trailers, Self-Loading Refuse Collection Trucks.
First use June 1, 1915.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Farm Machinery for Forage and Tillage, Fertilizer Spreaders, Power Operated Elevating Tailgates, Hydraulic Cylinders, Hydraulic Pumps, Fluid Motors, and Dump Hoists, Mobile and Truck Cranes.
First use Jan. 1, 1939.

SN 204,133. Circle Chemical Co., Inc., Chicago, Ill. Filed Oct. 16, 1964.



Class 6—Chemicals and Chemical Compositions

For Brightening Agents for Copper, Zinc Phosphate, Sodium Nitrite Solution, and Manganese Phosphate Solution.

Class 52—Detergents and Soaps

For Degreasing Agents and Pickling Agents.

First use June 30, 1958.

SN 204,134. Circle Chemical Co., Inc., Chicago, Ill. Filed Oct. 16, 1964.

SIR CHEM

Class 6—Chemicals and Chemical Compositions

For Brightening Agents for Copper, Zinc Phosphate, Sodium Nitrite Solution, and Manganese Phosphate Solution.

Class 52—Detergents and Soaps

For Degreasing Agents and Pickling Agents.

First use June 30, 1958.

SN 204,135. Circle Chemical Co., Inc., Chicago, Ill. Filed Oct. 16, 1964.

SIRKOTE

Class 6—Chemicals and Chemical Compositions

For Brightening Agents for Copper, Zinc Phosphate, Sodium Nitrite Solution, and Manganese Phosphate Solution.

Class 52—Detergents and Soaps

For Degreasing Agents and Pickling Agents.

First use Sept. 17, 1959.

SN 224,638. Ohio Metalsmiths Corporation, Wooster, Ohio. Filed July 30, 1965.

METALSMITHS

Class 2—Receptacles

For Structures Fabricated From Steel and Other Metals—Namely Storage Bins and Hoppers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Vehicle Mounted Aerial Ladders and Accessories.

Class 32—Furniture and Upholstery

For Structures Fabricated From Steel and Other Metal—Namely Metal Framework for Chassis for Mounting Electronic Equipment, Control Consoles (Cabinets), Cabinet Enclosures for Vending Machines, and Storage Cabinets.

First use on or about May 10, 1964.

SN 230,109. Vivians Woodard Corporation, Panorama City, Calif. Filed Oct. 13, 1965.



The mark comprises the letters V and W joined together in cartouche lettering. Owner of Reg. No. 705,234.

Class 29—Brooms, Brushes, and Dusters

For Lipstick Brushes.

Class 40—Fancy Goods, Furnishings, and Notions

For Eyelash Combs.

Class 51—Cosmetics and Toilet Preparations

For Bath Oil, Eye Shadow, Eye and Throat Emollient, Eyebrow Pencil, Hand and Body Lotion, Eyelash Liner Pencils Lipstick, Liquid Facial Make-Up Base, Mascara; Nail Care Preparations—Namely, Cuticle Conditioner and Base Coat and Protector Coat; Perfume; Preparations for Facial Care—Namely, Cleansers and Lotions and Astringents, Rouge, Skin Freshener, Skin Moisturisers; Sun Tan Lotion, and Translucent Face Powder.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Apr. 14, 1965.

SN 233,422. Rosemount Engineering Company, Minneapolis, Minn. Filed Nov. 9, 1965.



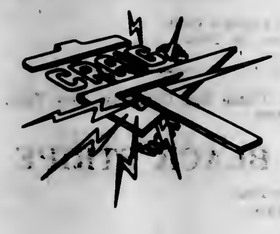
Class 21—Electrical Apparatus, Machines, and Supplies

For Amplifiers.
First use on or about July 28, 1965.

Class 26—Measuring and Scientific Appliances

For Resistance Thermometers, Calibration Bath Apparatus, Temperature Actuated Alarms, Standard Thermometers, Bridge Instruments for Use With Resistance Thermometers and Other Sensors, Bridges for Measuring Resistances, and Mass Flow Sensors.
First use on or about Feb. 20, 1965.

SN 235,822. Cubic Systems Corporation, Lawrence, Mass. Filed Jan. 5, 1966.



Class 2—Receptacles

For Transit Cases and Parts Thereof.

Class 12—Construction Materials

For Shelters, Antenna Masts, and Parts Thereof.

Class 19—Vehicles

For Trailer Dollies and Parts Thereof.

Class 50—Merchandise Not Otherwise Classified

For Shock-Absorbing Skids.

First use on or before Dec. 31, 1951.

SN 237,641. Dupli-Color Products Co., Inc., Elk Grove Village, Ill. Filed Feb. 1, 1966.

DUPLI-COLOR

Owner of Reg. Nos. 387,689, 575,722, and 596,696.

Class 4—Abrasives and Polishing Materials

For Polishes—Namely Automobile Polishes.
First use Dec. 29, 1947.

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions—Namely, Waterproofing Agents, Fire Extinguisher Compounds, Penetrants for Loosening Nuts and the Like, and Deicers Sold in Pressurized or Aerosol Containers.
First use Feb. 6, 1960.

Class 16—Protective and Decorative Coatings

For Touch-Up Products—Namely, Paints, Lacquers, Enamels, and Varnishes Sold in Convenient Packages Equipped With Brushes or Other Applicators, and Paints, Lacquers, Enamels, Varnishes, Battery Terminal Coatings, and Chrome Protectors Sold in Pressurized or Aerosol Containers.
First use Nov. 6, 1940.

Class 52—Detergents and Soaps

For Motor and Engine Cleaners, Degreasers, Rust Dissolvers, and Paint and Varnish Removers Sold in Pressurized or Aerosol Containers.
First use Feb. 6, 1960.

SN 240,207. Sellstrom Manufacturing Company, Palatine, Ill. Filed Mar. 4, 1966.

SELLSTROM SAFEGUARDS

Applicant disclaims the term "Safeguards" apart from the mark as shown and without waiving any of its common law rights in that term. Owner of Reg. Nos. 585,629, 588,214, and others.

Class 26—Measuring and Scientific Appliances

For Industrial and Sporting Goggles, Spectacles, Welders' Helmets With Shield and Eye and Face Shields and Parts Thereof, and Lenses for Such Spectacles and Goggles.

Class 39—Clothing

For Welders' Helmets Without Shield.

First use July 1944.

SN 245,655. The Dorsey Company, New York, N.Y. Filed May 16, 1966.

DORSEY

Owner of Reg. Nos. 697,495 and 814,079.

Class 39—Clothing

For Infants' Underwear (Including Lap Pads and Diaper Liners, Covers and Holders), Sleeping Garments and Bags, Bootees, Socks, Pants, and Bibs.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Infants' Towels and Wash Cloths, Mattress Covers, Crib Pads and Sheets, and Pillowcases.

First use at least as early as during the year 1951.

SN 252,926. John O. Butler Company, Chicago, Ill. Filed Aug. 23, 1966.

BUTLER

Class 6—Chemicals and Chemical Compositions

For Disinfectant and Defogging Compositions.
First use in or about 1958.

Class 18—Medicines and Pharmaceutical Preparations

For Compositions for Disclosing Bacteria on the Teeth.
First use in or about March 1962.

Class 29—Brooms, Brushes, and Dusters

For Toothbrushes, Denture Brushes, Bridge and Clasp Brushes, and Scrub Brushes.
First use in or about 1926.

Class 44—Dental, Medical, and Surgical Appliances

For Interdental Stimulators, Stimulator Tips, and Stimulator Handles.
First use in or about 1950.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 232,663. Chemplast Inc., East Newark, N.J. Filed Nov. 15, 1965.

ZITEX

For Fibrous, Porous Materials in Tissue Like Sheets, in Single and Multi-Layered Sheets, in Strips in Cylindrical and Cup Shapes, in Membranes, Mats, Gauses, Blocks, Bars, and Tubes All Made of Pure Polytetrafluorethylene and of Polytetrafluorethylene in Combination With Other Synthetic Resins, Synthetic Organic and Inorganic Substances.
First use June 28, 1965.

SN 242,808. Filmcraft-Chicago, Chicago, Ill. Filed Apr. 6, 1966.

FILCRALENE

For Polyethylene Film in Sheet and Roll Form.
First use Feb. 7, 1965.

SN 247,109. DPR Incorporated, Belleville, N.J. Filed June 2,1966.

CYCLO-RUBBER

For Resins Derived From Rubber for Use in Coating Compositions, Primers, and Inks.
First use Dec. 18, 1963.

SN 247,410. Resistoflex Corporation, Roseland, N.J. Filed June 6, 1966.

RESISTOFLEX

Owner of Reg. No. 422,982.
For Extruded and Molded Tubes, Sheets, and Special Shapes Made of Plastic Material.
First use June 25, 1945.

SN 247,762. Air Reduction Company, Incorporated, New York, N.Y. Filed June 10, 1966.

AIRCO

Owner of Reg. Nos. 119,236, 619,230, and others.
For Plastic Sheet and Film Material.
First use Feb. 27, 1961.

SN 247,824. Montello, Inc., Sand Springs, Okla. Filed June 10, 1966.

VISBESTOS

For Drilling Fluid Additive Consisting of Ground Asbestos.
First use Apr. 5, 1966.

Class 2—Receptacles

SN 215,656. I. Smallman & Sons Co., Brooklyn, N.Y. Filed Apr. 2, 1965.

CRAFTSMAN ACCESSORIES

Applicant disclaims the term "Accessories" separate and apart from the mark as shown. Owner of Reg. No. 797,007.
For Insulated Bags for Babies and Insulated Bags for Picnics, Both Bags Being Lined With a Flexible, Thermally Insulated Material, so as To Retain the Contents of the Bags at a Relatively Constant Temperature for a Prolonged Period.
First use Mar. 18, 1965.

SN 225,351. Plastic Container Corp., Brooklyn, N.Y. Filed Aug. 9, 1965.

Prex-Cor

For Plastic Capsule Vials.
First use Nov. 20, 1964.

SN 225,404. Chase Bag Company, New York, N.Y. Filed Aug. 10, 1965.

BLACK STRIPE

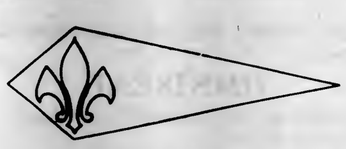
For Textile Bags.
First use 1916.

SN 226,811. Western Kraft Corporation, Portland, Oreg. Filed Aug. 30, 1965.

WET-GARD

For Paperboard Cartons.
First use June 17, 1965.

SN 227,590. The La Fleur Corporation, Los Angeles, Calif. Filed Sept. 10, 1965.



For Receptacles—Namely, Pressure Vessels, and Vacuum or Otherwise Insulated Vessels and Tanks for Volatile Liquids, Liquefied Gases, and Cryogenic Liquids.
First use on or about June 11, 1963.

SN. 227,592. The La Fleur Corporation, Los Angeles, Calif. Filed Sept. 10, 1965.



For Receptacles—Namely, Pressure Vessels, and Vacuum or Otherwise Insulated Vessels and Tanks for Volatile Liquids, Liquefied Gases, and Cryogenic Liquids.
First use on or about June 11, 1963.

SN 227,739. American Can Company, New York, N.Y. Filed Sept. 14, 1965.

Vel tone

For Plastic Coated Meat Trays Made of Paper or Fiber.
First use May 19, 1965.

SN 228,567. Reynolds Metals Company, Richmond, Va. Filed Sept. 24, 1965.

TAPPER

Owner of Reg. No. 752,299.
For Hollow Pressurizable Aluminum Keg-Like Containers for Transporting and Dispensing Beverages.
First use Aug. 3, 1960.

SN 228,609. Bemis Company, Inc., Minneapolis, Minn, by change of name from Bemis Bro. Bag Company, Minneapolis, Minn. Filed Sept. 27, 1965.

TUF-WELD

Owner of Reg. Nos. 607,487 and 634,253.
For Plastic Bags.
First use Mar. 19, 1965.

SN 230,554. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Oct. 19, 1965.

frost kraft

For Cartons.
First use Aug. 8, 1964; Feb. 15, 1956, as to "Frost Kraft."

SN 232,338. Mutual Plastic Mold Corporation, La Mirada, Calif. Filed Nov. 8, 1965.

CRYSTAL PACK

The word "Pack" is disclaimed apart from the mark as shown.
For Clear, Translucent, and Colored Plastic Containers for Packing and Storing Food Products, and Plastic Drinking Cups.
First use at least as early as July 1952.
Subj. to Intf. with SN 225,010.

SN 250,905. Home Dental Aids Company, d.b.a. Home Dental Aids Co., Inc., Bakersfield, Calif. Filed July 25, 1966.

Tidee-Dent

For Children's Combination Toothbrush-Toothpaste Holders With Built-In Cup for Rinsing Mouth.
First use June 17, 1966.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 172,374. Dax Sales Company, New York, N.Y. Filed July 3, 1963.

DAX

For Wallets.
First use Dec. 1, 1961.

SN 232,858. Emilio Pucci S.r.l., Florence, Italy. Filed Nov. 17, 1965.

EMILIO PUCCI

For Handbags, Wallets, Eyeglass Cases, and Cosmetic Cases.
First use March 1965; in commerce July 30, 1965.

SN 240,383. Brightman Products Co., Inc., Long Island City, N.Y. Filed Mar. 7, 1966.



Applicant disclaims the words "Leather Bag" and design apart from the mark as shown.
For Hand Bags.
First use Dec. 1, 1964.

SN 252,709. Sireo Products Co. Inc., Mount Vernon, N.Y. Filed Aug. 19, 1966.

CITY SLICKER

For Wallets, Purses, Clutch and Hand Bags.
First use Aug. 16, 1966.

Class 4 — Abrasives and Polishing Materials

SN 233,518. National Home Products Co., Ltd., Los Angeles, Calif. Filed Nov. 29, 1965.

Snap

For Spray-Type Shoe Shine.
First use Nov. 11, 1965.

SN 233,597. Holland-Rantos Company, Inc., New York, N.Y. Filed Nov. 30, 1965.

ROYAL

For Shoe Shining Kit Comprised of a Treater Shoe Shining Pad Enclosed in an Hermetically Sealed Foil Packet.
First use on or about May 8, 1964.

SN 233,769. Atlas Abrasives Corporation, Greenwich, Conn. Filed Dec. 2, 1965.

VERTICOAT

For Coated Abrasives.
First use Mar. 11, 1935.

SN 235,815. C. A. Zoes Manufacturing Co., Chicago, Ill. Filed Jan. 5, 1966.

VENETIAN

For Leather Cream and Shoe Cream.
First use at least 1905.

SN 254,010. S. C. Johnson & Son, Inc., Racine, Wis. Filed Sept. 8, 1966.

NINE LIVES

For Floor Wax.
First use on or about Aug. 10, 1966.

SN 254,093. S. C. Johnson & Son, Inc., Racine, Wis. Filed Sept. 9, 1966.

PROMISE

For Furniture Polish.
First use Aug. 15, 1966.

SN 255,165. Masury-Young Company, Melrose Park, Ill. Filed Sept. 27, 1966.

COTILLION

For Floor Polishing and Floor Finish Products.
First use Feb. 21, 1966.

SN 255,166. Masury-Young Company, Melrose Park, Ill. Filed Sept. 27, 1966.

DECOR

For Chemical Preparations for Treating and Waxing Floors.
First use Feb. 14, 1966.

Class 5 — Adhesives

SN 229,811. Curtis S. Ingram, Jr., d.b.a. Curtis Associates, San Diego, Calif. Filed Oct. 11, 1965.

OMNISEAL

For Adhesive for Use as a Contact Type Cement.
First use Nov. 15, 1963.

SN 230,471. John J. Conway, d.b.a. Great Lakes Thread Company, Detroit, Mich. Filed Oct. 18, 1965.

CARPET PRO

Applicant disclaims the word "Carpet" apart from the mark as shown.
For Fast Drying Carpet Cement.
First use Dec. 10, 1963.

SN 230,868. Miracle Adhesives Corporation, Bellmore, N.Y. Filed Oct. 21, 1965.

WHITE N' TITE

The word "White" is disclaimed apart from the mark as shown.
For Glue.
First use July 15, 1965.

SN 240,290. H. B. Fuller Company, St. Paul, Minn. Filed Mar. 7, 1966.

BLACK STUFF

Applicant disclaims the word "Black" apart from the mark as shown.
For Plastic Construction Adhesives for Use in Bonding Panels to Framing Members and to Each Other.
First use Nov. 11, 1963.

SN 240,291. H. B. Fuller Company, St. Paul, Minn. Filed Mar. 7, 1966.

WHITE STUFF

Applicant disclaims the word "White" apart from the mark as shown.
For Plastic Construction Adhesives for Use in Bonding Panels to Framing Members or to Each Other.
First use Aug. 12, 1965.

SN 244,374. Wilhold Glues, Inc., Los Angeles, Calif. Filed Apr. 26, 1966.

Saver TIME

Owner of Reg. No. 805,834.
For Concrete Adhesive, Plastic Resin Glue, Contact Cement, White Glue, and Panel Adhesive.
First use Apr. 4, 1966.

SN 246,447. Benjamin Foster Company, Philadelphia, Pa. Filed May 24, 1966.

FAS-CLIP

Owner of Reg. Nos. 671,504, 678,675, and others.
For Elastomeric Based Adhesives for Bonding Metallic or Non-Metallic Fasteners to Construction Surfaces.
First use Oct. 19, 1965.

Class 6 — Chemicals and Chemical Compositions

SN 207,432. The Richardson Company, Melrose Park, Ill. Filed Dec. 3, 1964.

RICHONIC

For Organic Acids Used in the Production of Detergents.
First use June 29, 1964.

SN 209,223. American Home Products Corporation, New York, N.Y. Filed Jan. 4, 1965.

BLEACH BOMBS

Applicant disclaims any right in the word "Bleach" apart from the mark as shown.
For Laundry Bleach in Unit Dispensing Form.
First use Dec. 14, 1964.

SN 225,290. Luis G. M. Costa, Sao Paulo, Brazil. Filed Aug. 9, 1965.

ICEBERG

For Menthol Crystals.
First use Jan. 26, 1963; in commerce Jan. 23, 1963.

SN 228,000. Tenneco Chemicals, Inc., New York, N.Y., by merger of Berkshire Color and Chemical Co., Reading, Pa. Filed Sept. 17, 1965.

BERKSHIRE

For Dyestuffs and Dyeing Assistants.
First use on or about Dec. 31, 1935.

SN 228,211. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 20, 1965.

NULIX

For Metal Resinates of Rosin.
First use on or about Mar. 20, 1951.

SN 228,292. The Sealex Corporation, San Jose, Calif. Filed Sept. 20, 1965.

S

For Anti-Rust and Sealing Solution for Automobile Radiators.
First use Mar. 30, 1965.

SN 230,854. Lazarus Laboratories, Inc., Long Island City, N.Y. Filed Oct. 21, 1965.

DONE-4

For Liquid Weed Killer.
First use Oct. 1, 1965.

SN 232,892. Bardmatic Corporation, Evanston, Ill. Filed Nov. 18, 1965.

SANELIM

For Chemical Preparation To Kill Flies and Larvae and Stop Odors in Garbage Cans.
First use July 28, 1954.

SN 233,023. Universal Oil Products Company, Des Plaines, Ill. Filed Nov. 19, 1965.

MUSK 31

Applicant disclaims the word "Musk" apart from the mark as shown.
For Aroma Chemical.
First use June 23, 1964.

SN 233,024. Universal Oil Products Company, Des Plaines, Ill. Filed Nov. 19, 1965.

MUSK 36-A

Applicant disclaims the word "Musk" apart from the mark as shown.
For Aroma Chemical.
First use Nov. 22, 1954.

SN 236,526. Stauffer Chemical Company, New York, N.Y. Filed Jan. 14, 1966.

SILBOND

For Ethyl Silicate.
First use Dec. 15, 1965.

SN 237,895. Waters Associates, Inc., Framingham, Mass. Filed Feb. 2, 1966.

porapak

For Porous Aromatic Polymers for Use in Gas Chromatography.
First use Dec. 14, 1965.

SN 238,098. Milchem Incorporated, Houston, Tex. Filed Feb. 4, 1966.

MILWHITE MD

For Drilling Detergent Composition for Use in Drilling Muds.
First use Sept. 29, 1960.

SN 238,181. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed Feb. 7, 1966.

MONO-TEST

For Diagnostic Reagent To Detect Infectious Mononucleosis.
First use July 21, 1965.

SN 238,460. Synthron, Inc., Ashton, R.I. Filed Feb. 9, 1966.

DURASHAPE

For Anti-Creasing Agent for Textiles.
First use Jan. 21, 1966.

SN 238,461. Synthron, Inc., Ashton, R.I. Filed Feb. 9, 1966.

REACTACREASE

For Anti-Creasing Agent for Textiles.
First use Sept. 1, 1965.

SN 239,632. Kolene Corporation, Detroit, Mich. Filed Feb. 25, 1966.

DGS

For Molten Alkali Salt Compositions for Electrolytic and Non-Electrolytic Descaling and Deglassing of Metals.
First use Aug. 20, 1962.

SN 239,633. Kolene Corporation, Detroit, Mich. Filed Feb. 25, 1966.

KOLENE

Owner of Reg. Nos. 527,826 and 628,651.
For Molten Alkali Salt Composition for the Descaling, Deglassing, and Degreasing of Metals.
First use Feb. 21, 1966.

SN 241,485. The Matheson Company, Inc., East Rutherford, N.J. Filed Mar. 21, 1966.

MC/B

Owner of Reg. No. 664,239.
For Chemicals for Laboratory or Manufacturing Use—Namely, Organic Chemicals, Biological Stains, Laboratory Reagents, Indicator and Spectro Quality Solvents.
First use Apr. 1, 1963.

SN 242,901. Lever Brothers Company, New York, N.Y. Filed Apr. 7, 1966.

STOPS LIVING DIRT

For Multi-Purpose Household Disinfectant.
First use Mar. 14, 1966.

SN 244,206. Fine Organics, Inc., Lodi, N.J. Filed Apr. 25, 1966.

TEMASEPT

For Mixtures of Disbromosalicylanilide and Tribromosalicylanilide.
First use Oct. 12, 1960.

SN 244,436. Synthron, Inc., Ashton, R.I. Filed Apr. 27, 1966.

REACTAPRESS

For Anti-Creasing Agent for Textiles.
First use Mar. 3, 1966.

SN 244,972. Clack Corporation, Madison, Wis. Filed May 5, 1966.

COROSEX D

Owner of Reg. No. 814,782.
For Magnesia Oxide for Use in Filters To Neutralize Acidity in Water Supplies and Increase the pH Value.
First use about July 1963.

SN 245,912. Claremont Polychemical Corporation, Roslyn Heights, N.Y. Filed May 18, 1966.

INSTAVIN

For Series of Pigment Dispersions Consisting of Pigments Dispersed in Soluble Resins Used in the Production of Vinyl Inks and Lacquers.
First use Mar. 9, 1966.

SN 246,894. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 31, 1966.

MERPACYL

For Dyes.
First use Mar. 29, 1966.

Class 7 — Cordage

SN 225,053. Pacific-Western Materials, Inc., Pico Rivera, Calif. Filed Aug. 5, 1965.

SHELCO

For Webbing, Slings, and Belt-Type Slings.
First use in or about March 1965; October 1962 as to "Shelco Enterprises."

SN 241,525. Schermerhorn Bros. Co., Chicago, Ill. Filed Mar. 21, 1966.

BRAND X

The word "Brand" is disclaimed apart from the mark as shown. The drawing is lined for the color red.
For Cordage—Namely, Binder and Baler Twines.
First use Sept. 21, 1965.

SN 254,969. Davis Cordage Company, Portland, Oreg. Filed Sept. 23, 1966.

PIPPIN

For Sewing Twine.
First use on or before Jan. 1, 1930.

SN 254,970. Davis Cordage Company, Portland, Oreg. Filed Sept. 23, 1966.

EMERALD ISLE

For Baler Twine.
First use on or before Jan. 1, 1951.

SN 254,971. Davis Cordage Company, Portland, Oreg. Filed Sept. 23, 1966.

GEM

For Sisal Twine.
First use on or before Jan. 1, 1930.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 245,888. Kanamaru Shoten, Ltd., Daito-ku, Tokyo, Japan. Filed May 18, 1966.

COLLETTE

For Lighters.
First use May 17, 1966; in commerce May 17, 1966.

SN 253,781. Peterson's Ltd., Inc., New York, N.Y. Filed Sept. 2, 1966.

L'AIGLON

For Smoking Pipes.
First use at least as early as 1961.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 229,157. Weatherby, Inc., South Gate, Calif. Filed Oct. 1, 1965.

TOMORROW'S RIFLES TODAY

For Rifles.
First use on or about Sept. 15, 1945.

Class 10 — Fertilizers

SN 191,089. Tempoku Kagaku Kabushiki Kaisha, d.b.a. Tempoku Chemical Company, Ltd., Chiyoda-ku, Tokyo, Japan. Filed Apr. 14, 1964.

TEMPORON

Priority claimed under Sec. 44(d) on Japanese application filed Jan. 10, 1964; Reg. No. 699,499, dated Feb. 16, 1966.
For Soil Conditioners.

SN 213,423. Finch & Knight Limited, Waltham Cross, England. Filed Mar. 5, 1965.

BIO

Owner of British Reg. No. B735,433, dated Oct. 26, 1954.
For Fertilisers.

SN 234,442. Los Angeles Seed Co., Inc., Los Angeles, Calif. Filed Dec. 13, 1965.

ANGEL CITY

For Fertilisers in Liquid and Powder Form for Lawns and Plants, Mix and Mulch for Roses, Trees, Shrubs, and Flower Beds, Liquid Iron for Correcting Yellowing of Foliage Due to Iron Deficiency and Vitamin B-1 for Preventing Transplant Shock of Plants and Trees.
First use 1960.

SN 235,345. Sherritt Gordon Mines Limited, Toronto, Ontario, Canada. Filed Dec. 27, 1965.

NITRO-PLUS

For Fertilisers.
First use Aug. 24, 1965; in commerce Aug. 24, 1965.

SN 235,410. Lee Patten Seed Company, Moonachie, N.J. Filed Dec. 28, 1965.

INSTA-GRO

For Water Soluble Fertilizer.
First use Oct. 28, 1965.

Class 11 — Inks and Inking Materials

SN 237,391. Sperry Rand Corporation, New York, N.Y. Filed Jan. 26, 1966.

REMINGTON

Owner of Reg. No. 288,154.
For Carbon Paper.
First use Sept. 24, 1965.

Class 12 — Construction Materials

SN 236,449. Apex Pool Equipment Corporation, White Plains, N.Y. Filed Jan. 14, 1966.

APEX

For Prefabricated Swimming Pools and Accessories Therefor Sold Together.
First use June 1964.

SN 236,450. Apex Pool Equipment Corporation, White Plains, N.Y. Filed Jan. 14, 1966.

APEX

For Prefabricated Swimming Pools and Accessories Therefor Sold Together.
First use June 1964.

SN 238,074. General Refractories Company, Philadelphia, Pa. Filed Feb. 4, 1966.

RC

For Refractory Castable.
First use at least as early as 1956.

SN 238,159. Beta Industries, Inc., Collierville, Tenn. Filed Feb. 7, 1966.

MAREZ

For Binder and Filler for Mixing To Form Flooring Systems Having a Terrasso-Like Appearance.
First use Feb. 11, 1963.

SN 238,918. Boise Cascade Corporation, Boise, Idaho. Filed Feb. 16, 1966.

TILEMATE-X

For Plywood Sheets.
First use Sept. 16, 1965.

SN 240,317. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Mar. 7, 1966.

SCOTCH-SEAL

For Marine Sealant.
First use Feb. 23, 1966.

SN 240,335. Permaglass, Inc., Woodville, Ohio. Filed Mar. 7, 1966.



Owner of Reg. No. 776,891.
For Architectural Glass Panels.
First use November 1965.

SN 242,498. H. H. Robertson Company, Pittsburgh, Pa. Filed Apr. 1, 1966.

Q-LOCK

Owner of Reg. Nos. 395,248, 775,828, and others.
For Corrugated Metal Flooring.
First use Mar. 24, 1966.

SN 243,956. Cambridge Acoustical Associates, Inc., Cambridge, Mass. Filed Apr. 21, 1966.

SOUNDBLOX

For Sound-Absorptive Masonry Blocks.
First use Oct. 3, 1958.

SN 245,799. United States Plywood Corporation, New York, N.Y. Filed May 17, 1966.

TUDOR OAK

Applicant disclaims exclusive rights to the word "Oak" except when used in the combination "Tudor Oak."
For Wood and Lumber Products, i.e., Plywood.
First use Feb. 25, 1965.

SN 245,800. United States Plywood Corporation, New York, N.Y. Filed May 17, 1966.

GLEN OAK

Applicant disclaims any exclusive right to the word "Oak" except when used in the combination "Glen Oak."
For Lumber and Wood Products, i.e., Plywood.
First use Mar. 19, 1965.

SN 252,147. Nalco Chemical Company, Chicago, Ill. Filed Aug. 11, 1966.

NALGUN

For Dry Granular Alumino-Silicate Refractory Substances Employed as Refractory Liner Material Used in the Metal Processing Industries.
First use Mar. 30, 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 219,650. William T. Wills, Jr., d.b.a. Americle Co., Los Angeles, Calif. Filed May 24, 1965.

FAUCET FRIEND

For Coupling for Releasably Connecting a Hose to a Faucet.
First use May 3, 1965.

SN 229,299. Screw and Bolt Corporation of America, Pittsburgh, Pa. Filed Oct. 4, 1965.

SAV-A-SCREW

For Combination Machine and Wood Screw.
First use Jan. 29, 1965.

SN 229,887. The Stocker Hinge Mfg. Co., Brookfield, Ill. Filed Oct. 11, 1965.

STOCKER

For Hinges and Metal Stampings.
First use during 1937.

SN 232,608. Società Metallurgica Italiana Giunti Yorkshire, Florence, Italy. Filed Nov. 12, 1965.

SMIGY

Owner of Italian Reg. No. 162,708, dated July 2, 1963.
For Joints Made of Copper and Copper Alloys for Jointing the Connection of Metal Pipes, for Sanitation, Heating, Transport and Distribution Systems for Gases or Other Fluids; Accessories and Fittings, Made of Copper and Copper Alloys for Sanitation, Heating, Transport and Distribution Systems for Gases or Other Fluids; Taps and Cocks of Copper and Copper Alloys of Its Own Manufacture and Commerce.

SN 232,609. Società Metallurgica Italiana Giunti Yorkshire, Florence, Italy. Filed Nov. 12, 1965.

SMY

Owner of Italian Reg. No. 162,713, dated July 2, 1963.
For Joints Made of Copper and Copper Alloys for Jointing the Connection of Metal Pipes, for Sanitation, Heating, Transport and Distribution Systems for Gases or Other Fluids; Accessories and Fittings, Made of Copper and Copper Alloys for Sanitation, Heating, Transport and Distribution Systems for Gases or Other Fluids; Taps and Cocks of Copper and Copper Alloys of Its Own Manufacture and Commerce.

SN 236,655. Club Aluminum Products Company, La Grange Park, Ill. Filed Jan. 10, 1966.

DURABOND

For Metal Hollow Cookware Incorporating a Specialized Finish Thereon.
First use Jan. 7, 1966.

SN 239,208. Beltaise Marguet & Cie, Paris, France. Filed Feb. 21, 1966.

TWIX

Priority claimed under Sec. 44(d) on French Reg. No. 704,205, dated Jan. 25, 1966.
For Screws, Nuts, Pins, and Bolts.

SN 240,571. Americana Cookware Company, d.b.a. Four Seasons Cookware, Skokie, Ill. Filed Mar. 10, 1966.



For Cookware for Use in the Preparation of Foods—Namely, Pots and Pans Including Skillets, Sauce Pans, Griddles, Dutch Ovens, Chicken Fryers, and the Like.
First use Feb. 1, 1966.

SN 245,543. Universal Pole Bracket Corporation, Houston, Tex. Filed May 13, 1966.

BEAUTILITY

For Non-Insulated Pole Brackets for Supporting Electrical Transformers and Capacitors.
First use May 9, 1966.

SN 246,252. Barwood Manufacturing Corp., Everett, Mass. Filed May 23, 1966.



Applicant disclaims the words "Washers" and "Gaskets" except in association with the other features of the mark. Owner of Reg. Nos. 664,949, 760,501, and others.
For Washers, Gaskets, and Headed Fasteners With Sealing Washers.
First use 1926.

Class 14—Metals and Metal Castings and Forgings

SN 237,185. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Jan. 24, 1966.

KAL-ROOF

For Aluminum Alloy Sheets.
First use at least as early as Sept. 13, 1965.

Class 15—Oils and Greases

SN 227,639. Applied Power Industries, Inc., West Allis, Wis. Filed Sept. 13, 1965.

BLACKHAWK

Owner of Reg. Nos. 204,588, 682,830, and others.
For Hydraulic Oils for Fluid Actuated Equipment Such as Jacks and Rams.
First use on or about July 1, 1929.

SN 228,293. The Sealex Corporation, San Jose, Calif. Filed Sept. 20, 1965.



For Automobile Transmission Sealer Penetrating Oil and Automobile Motor Oil Additive.
First use Mar. 30, 1965.

SN 237,717. MacMillan Ring-Free Oil Co., Inc., New York, N.Y. Filed Feb. 1, 1966.



No claim is made to the representation of the container for the goods. Owner of Reg. Nos. 302,949, 757,503, and others.
For Lubricating Oils.
First use Oct. 18, 1965; Nov. 2, 1932, as to "Ring-Free."

SN 239,062. Metal Lubricants Co., Chicago, Ill. Filed Feb. 17, 1966.

MELSYN

Owner of Reg. No. 587,874.
For Non-Inflammable Hydraulic Oils.
First use on or about Nov. 11, 1965.

SN 239,818. Standard Oil Company of California, San Francisco, Calif. Filed Feb. 28, 1966.

CHEVRON

Owner of Reg. Nos. 661,819 and 687,775.
For Emulsified Petroleum Hydrocarbon Additive for Water To Be Used To Prevent Sticking of Asphalt Aggregate to Rubber Tired or Steel Wheeled Rollers.
First use July 20, 1965.

SN 239,819. Standard Oil Company of California, San Francisco, Calif. Filed Feb. 28, 1966.



The drawing is lined for red and blue, and applicant claims the colors red, white, and blue. Owner of Reg. Nos. 640,575 and 641,258.

For Emulsified Petroleum Hydrocarbon Additive for Water To Be Used To Prevent Sticking of Asphalt Aggregate to Rubber Tired or Steel Wheeled Rollers.

First use July 20, 1965.

SN 253,472. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 31, 1966.

KRYTOX

For Fluorinated Oils and Greases.
First use July 6, 1966.

Class 16—Protective and Decorative Coatings

SN 239,459. Taylor & Art, Inc., d.b.a. Taylor & Art Plastics, Inc., Oakland, Calif. Filed Feb. 23, 1966.

DAM-IT

For Plastic Composition Adapted To Harden Upon Exposure to Air To Simulate Lead and Produced Decorative Beading on a Surface.
First use Jan. 11, 1966.

SN 242,456. Lasting Products Company, Baltimore, Md. Filed Apr. 1, 1966.

LASTING

PROTECTION

Owner of Reg. Nos. 422,843, 677,216, and others.

For Paints in the Dry Form, Paste Paints, Ready Mixed Paints, Cold Water Paints, Paint Roof Coatings; Paint Enamels; Stains; Varnishes; Lacquers; Paint Driers; Paint Vehicles and Paint Thinners.
First use January 1933.

Class 17—Tobacco Products

SN 239,654. Perilly's Tobacco Manufacturers (Proprietary) Limited, Johannesburg, Transvaal, Republic of South Africa. Filed Feb. 25, 1966.

PERILLY'S

Owner of South African Reg. No. 64/2869, dated July 11, 1964.
For Cigarettes.

SN 240,054. The American Tobacco Company, New York, N.Y. Filed Mar. 3, 1966.

COLD HARBOR

For Cigarettes.
First use Feb. 7, 1966.

SN 240,173. Harald Halberg, Svendborg, Denmark. Filed Mar. 4, 1966.

SYMPHONY

For Smoking Tobacco, Specifically Pipe Tobacco Mixtures.
First use Nov. 29, 1965; in commerce Dec. 5, 1965.

SN 240,493. The American Tobacco Company, New York, N.Y. Filed Mar. 9, 1966.

PALLADIUM

For Cigarettes.
First use Feb. 7, 1966.

SN 240,831. The American Tobacco Company, New York, N.Y. Filed Mar. 14, 1966.

BLONDE

For Cigarettes.
First use Mar. 7, 1966.

SN 240,832. The American Tobacco Company, New York, N.Y. Filed Mar. 14, 1966.

PALO ALTO

For Cigarettes.
First use Mar. 7, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 207,449. The Upjohn Company, Kalamazoo, Mich. Filed Dec. 3, 1964.

ANODIA

For Medicinal Preparations.
First use Nov. 24, 1964.

SN 229,897. Uni-Tech Chemical Manufacturing Company, Sun Valley, Calif. Filed Oct. 11, 1965.

GEL-A-DEX

For Chemical Preparation for Use in a Glucose Tolerance Test.
First use May 17, 1965.

SN 231,297. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. Filed Oct. 22, 1965.

F·A·D

For Medicated Shoe, Helmet, and Pad Spray.
First use Aug. 25, 1964.

SN 231,298. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. Filed Oct. 22, 1965.

CHEW-C

For Vitamin Tablets.
First use Aug. 25, 1964.

SN 231,303. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. Filed Oct. 22, 1965.

MISTI·CON

For Medicated Room Spray for Use as a Decongestant Vaporizer.
First use Aug. 25, 1964.

SN 231,309. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. Filed Oct. 22, 1965.

THERMO·FLEX

For Liniment for External Use.
First use Aug. 25, 1964.

SN 236,444. American Home Products Corporation, New York, N.Y. Filed Jan. 14, 1966.

TRIVIB

For Vibriosis Vaccine for Veterinary Use.
First use Dec. 27, 1965.

SN 238,310. S.E.M.S. Societe d'Etudes et d'Exploitation de Marques et Brevets, Societe Anonyme, d.b.a. Laboratoires Stago, Asnieres, Hauts-de-Seine, France. Filed Feb. 7, 1966.

STAGO

Owner of French Reg. No. 444,153, dated July 1, 1954 (Seine); Natl. Inst. No. 38,843.
For Pharmaceutical Products.

SN 238,861. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 15, 1966.

PILOPEX

For Anti-Infective and Anti-Pruritic Preparations for the Skin.
First use Jan. 28, 1966.

SN 246,461. Paul B. Elder Company, Bryan, Ohio. Filed May 24, 1966.

MYONESIN

For Muscle Relaxant, Tranquilizing, and Analgesic Composition.
First use Apr. 16, 1966.

SN 247,395. Obrig Chemical Corp., Sarasota, Fla. Filed June 6, 1966.

O-4

For Ophthalmic Irrigation Solution.
First use October 1961.

SN 247,396. Obrig Chemical Corp., Sarasota, Fla. Filed June 6, 1966.

O-3

For Physiological Solution for Use With Contact Lenses.
First use May 1960.

SN 247,397. Obrig Chemical Corp., Sarasota, Fla. Filed June 6, 1966.

O.W.S.

For Antiseptic Cleaning and Wetting Solution for Contact Lenses and Artificial Eyes.
First use May 1960.

SN 247,711. Medicenticals, Inc., Tuckahoe, N.Y. Filed June 9, 1966.

FEMPAIN

For Preparation for the Relief of Pain, and Particularly Menstrual Pain, Headaches, and Neuralgia.
First use May 27, 1966.

SN 249,117. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

TETRAVITE

For Veterinary Preparation for the Treatment and Prevention of Bacterial Scours, Respiratory Infections Such as Pneumonia, Shipping Fever, Bronchitis, and Pleurisy and Naval Ill in Animals.
First use Nov. 3, 1965.

SN 249,118. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

STREPTO-SUL V

For Veterinary Pharmaceutical Preparation for Use in the Treatment of Bacterial Enteritis and Diarrhea in Dogs and Cats.
First use Mar. 17, 1958.

SN 249,120. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

REPO-B

For Veterinary Pharmaceutical Preparation for Use as a Vitamin B Complex Repository.
First use Jan. 20, 1959.

SN 249,121. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

NEO-CORTICIN

For Veterinary Ophthalmic Ointment.
First use May 26, 1961.

SN 249,123. Burns Pharmaceuticals, Inc, d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

PROTEPLEX

For Veterinary Pharmaceutical Preparation Used as an Aid in the Supportive Treatment of General Debilitation and Replacement of Essential Amino Acids.
First use July 26, 1965.

SN 249,124. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

NUTRI-PLEX

For Veterinary Dietary Supplement.
First use Dec. 13, 1965.

SN 249,128. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

EQUIPLEX

For Veterinary Preparation for the Treatment of Avitaminosis-B and Hypocalcemia and Useful Further for Debilitated Conditions, Convalescence, Allergic Disorders, Pruritus, Hypoparathyroidism, Eclampsia and Restoration of Metabolic Functions Dependent on Micronutrient Deficiencies.
First use Jan. 7, 1966.

SN 249,130. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

GUANIBON BUBOLS

For Veterinary Aid in the Treatment of Dysentaries.
First use Oct. 17, 1958.

SN 249,131. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

AURIMITE

For Veterinary Pharmaceutical Preparation for the Ear, To Aid in the Treatment of Fungus and Bacteria, To Aid in Eliminating Mites and Ticks and To Remove Wax Accumulation.
First use July 13, 1965.

SN 249,132. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

BEUTHANASIA

For Veterinary Pharmaceutical Preparation Which Is a Toxic Barbiturate Solution Specially Designed for Rapid, Painless, and Humane Euthanasia.
First use May 12, 1958.

SN 249,133. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed June 28, 1966.

CALCIROL

For Veterinary Preparation Containing Fortified Cod Liver Oil and Calcium.
First use Jan. 9, 1959.

SN 253,085. A. H. Robins Company, Incorporated, Richmond, Va. Filed Aug. 25, 1966.

ATAPOISE

For Pharmaceutical Preparation Used as a Tranquilliser.
First use Aug. 16, 1966.

SN 254,976. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Sept. 23, 1966.

ANUSOL

Owner of Reg. Nos. 404,287, 635,448, and 811,621.
For Preparation for the Relief of Simple Anorectal Discomfort.
First use spring of 1896.

Class 19—Vehicles

SN 206,647. Republic Industrial Corporation, New York, N.Y. Filed Nov. 20, 1964.

UNI-GRIP

Owner of Reg. No. 729,937.
For Automotive Door Seal and Trim Strips.
First use Oct. 1, 1963.

SN 209,418. Carr Automotive Manufacturing Corporation, Tappahannock, Va. Filed Jan. 6, 1965.

CAMCO

The drawing is lined for blue and red.
For New and Rebuilt Equipment and Parts for Automobiles and Trucks—Namely, Rebonded Brake Shoes, Brake Cylinders and Power Brake Units.
First use at least as early as July 1961.

SN 227,593. The La Fleur Corporation, Los Angeles, Calif. Filed Sept. 10, 1965.

LA FLEUR

For Vehicles—Namely, Tank Trucks and Pumper Trucks for Transporting Volatile Liquids, Liquefied Gases, and Cryogenic Liquids.
First use on or about June 11, 1963.

SN 237,770. Westerly Marine Construction Limited, Waterlooville, Hampshire, England. Filed Feb. 1, 1966.



Owner of British Reg. No. 860,560, dated Feb. 21, 1964.
For Boats, and Parts and Fittings Therefor.
First use at least as early as February 1964; in commerce June 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 203,283. Hi-G Incorporated, Windsor Locks, Conn. Filed Oct. 5, 1964.

SIDE-STEP

For Relays.
First use on or before Sept. 1, 1964.

SN 225,490. Modern Light & Equipment Co., Chicago, Ill. Filed Aug. 11, 1965.

MC modern-lite

Applicant disclaims the words "Modern-Lite" apart from the composite mark as shown, and without any disclaimer of any common law rights of the composite mark. Owner of Reg. No. 535,804.
For Incandescent and Fluorescent Lighting Fixtures for Indoor and for Outdoor Use, and Accessories Therefor.
First use Dec. 24, 1964; Mar. 15, 1938, as to "Modern-Lite."

SN 228,525. General Electric Company, Pittsfield, Mass. Filed Sept. 24, 1965.

SEAL-PAC

For Electrical Apparatus—Namely, Transformers.
First use at least as early as July 1964.

SN 229,608. United States Rubber Company, New York, N.Y. Filed Oct. 7, 1965.

FISK

Owner of Reg. Nos. 128,063, 266,188, and 780,997.
For Automotive Ignition Tune-Up Kit, Comprising Points, Rotor, Condenser, and Related Accessories.
First use Sept. 17, 1965.

SN 229,863. Oceanographic Engineering Corporation, La Jolla, Calif. Filed Oct. 11, 1965.



For Electric Alarm Systems for Boats, Oceanographic Electric Cable, Batteries, D.C.-A.C. Power Inverters, Portable Generators, Hydrophones, and Underwater Lamps.
First use June 10, 1963; Dec. 14, 1961, in a different form.

SN 231,600. Servel, Inc., Freeport, Ill. Filed Oct. 24, 1965.

SAFARI LITE

Applicant disclaims the word "Lite" apart from the mark as shown. Owner of Reg. No. 693,781.
For Portable Electric Light Operated by Self-Contained Battery or External Power Source.
First use Oct. 15, 1965.

SN 232,741. Trak Microwave Corporation, Tampa, Fla. Filed Nov. 15, 1965.

SELECTA-VOLT

For Fluorescent Lighting Fixtures.
First use on or before June 30, 1965.

SN 236,139. Ransburg Electro-Coating Corp., Indianapolis, Ind. Filed Jan. 10, 1966.

R-E-P

Owner of Reg. Nos. 775,279 and 785,510.
For Coating Apparatus and Parts Thereof, and Attachments and Accessories for Use Therewith—Namely, Electrostatic Coating Apparatus for Powder and Other Non-Liquid Coating Materials With Accessory Equipment Including Voltage Supply Units; Electrical Cable, Electrical and Pneumatic Controls for Coating Apparatus, Electrodes for Coating Apparatus; Coating Material Reservoirs, and Pumps, for Moving Powder and Other Non-Liquid Coating Materials Sold as a Unit.
First use on or about Dec. 30, 1965.

SN 237,836. Hankscraft Company, Reedsburg, Wis. Filed Feb. 2, 1966.

Apothec-aire

For Electrically Operated Vaporiser-Humidifiers.
First use Dec. 10, 1965.

SN 238,076. Gill Electric Manufacturing Corporation, Redlands, Calif. Filed Feb. 4, 1966.

Gill

For Storage Batteries.
First use July 16, 1921.

SN 238,356, E. J. Korvette, Inc., New York, N.Y. Filed Feb. 8, 1966.

XAM

For Audio Appliances—Namely, Radios of Portable and Console Types for the Production of Monaural and Stereophonic Sound and Including Phonographs, and Components Therefor, Namely, Speakers, Pre-Amplifiers, Amplifiers, Tuners, and Headphones.
First use Nov. 30, 1959.

SN 238,586. Universal Manufacturing Corporation, Paterson, N.J. Filed Feb. 10, 1966.

THERM-O-MATIC-X

Owner of Reg. No. 763,390.
For Fluorescent Lamp Ballasts.
First use June 1, 1965.

SN 243,445. High Vacuum Electronics, Inc., South Pasadena, Calif. Filed Apr. 14, 1966.

KILOVAC

For Vacuum Electronic Components, Particularly Relays, Switches, and Capacitors.
First use Mar. 16, 1966.

SN 245,541. Ameco, Inc., Phoenix, Ariz. Filed May 13, 1966.



For Community, Master, and Closed Circuit Television Transmission Equipment.
First use Jan. 13, 1964.

SN 247,858. Electronic Engineering Company of California, Santa Ana, Calif. Filed June 13, 1966.

INTRAPAK

For Interconnectors for Connecting and/or Packaging Microelectric Circuits—Namely, Integrated Circuits, Hybrid Circuits, and Like Arrangements of Electrical Circuit Elements.
First use May 3, 1966.

Class 22—Games, Toys, and Sporting Goods

SN 165,498. John M. Hopson, d.b.a. Creative Ideas Company, Hawthorne, Calif. Filed [illegible], 1965.

TOOTI BAGS

Applicant disclaims "Bags" apart from the mark as shown.
For Toy Building Bags.
First use November 1962.

SN 215,950. Dam Things Establishment, Vaduz Liechtenstein. Filed Apr. 7, 1965.

IGGY NORMOUS

For Dolls.
First use on or about Sept. 1, 1964; in commerce on or about Sept. 1, 1964.

SN 228,728. Mattel, Inc., Hawthorne, Calif. Filed Sept. 27, 1965.

FLUFF

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 8, 1965.

SN 230,457. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed Oct. 19, 1965.

DAVOS

"Davos" is the name of a town in Switzerland.
For Snow Skis.
First use Aug. 1, 1960.

SN 232,231. Playskool Manufacturing Company, Chicago, Ill. Filed Nov. 5, 1965.

ANI-MATES

For Pull Toys.
First use on or about July 15, 1965.

SN 236,898. Charles Lehmann, Rosedale, N.Y. Filed Jan. 20, 1966.

RACE-O-RINO

For Game Boards for Playing a Horse Racing Game.
First use Dec. 28, 1965.

SN 237,007. Mattel, Inc., Hawthorne, Calif. Filed Jan. 21, 1966.

M

Owner of Reg. No. 635,129.
For Toys.
First use Dec. 29, 1965.

SN 237,013. Leonardo Moody, d.b.a. Leonard Game Company, Chicago, Ill. Filed Jan. 21, 1966.

THAT'S IT!

For Equipment Sold as a Unit for Playing a Card Game.
First use Oct. 19, 1965.

SN 248,761. True Temper Corporation, Cleveland, Ohio. Filed June 23, 1966.

VISA-MATIC

For Fishing Reels.
First use on or about May 25, 1966.

SN 252,319. Mattel, Inc., Hawthorne, Calif. Filed Aug. 15, 1966.

BABY PRETTY-POUT

No claim of exclusive right is made to "Baby," apart from the mark as shown, for the goods recited.
For Dolls, Doll Clothing and Doll Accessories.
First use July 26, 1966.

SN 252,324. Mattel, Inc., Hawthorne, Calif. Filed Aug. 15, 1966.

LUCKY LOCKET

No claim of exclusive right to the term "Locket," apart from the mark as shown, is made for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories.
First use July 26, 1966.

SN 252,448. Howe Plastics & Chemical Co., Inc., New York, N.Y. Filed Aug. 16, 1966.

ORIGINAL POTSY HOPSCOTCH

Applicant disclaims any rights in the words "Original" and "Hopscotch" apart from the mark as shown.
For Equipment in the Form of a Lined and Numbered Plastic Sheet for Playing the Child's Game of Hopscotch.
First use September 1960.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 199,726. Edward Kusters, d.b.a. Eduard Kusters Maschinenfabrik, Krefeld, Germany. Filed Aug. 12, 1964.

SWIMMING ROLL KUSTERS

The word "Roll" is disclaimed apart from the mark as shown, but applicant by this disclaimer does not intend to waive any of its common law rights in the mark or any feature thereof. Owner of German Reg. No. 784,223, dated Nov. 16, 1963.
For Paper Mill Rolls.

SN 206,924. Halliburton Company, Fort Worth, Tex. Filed Dec. 28, 1964.



The drawing is lined for the color red, but color is not claimed.
For Hydraulic Cushioning Draft Appliance for Railway Cars.
First use June 2, 1964.

SN 218,576. C. C. King & Company Limited, Winnipeg, Manitoba, Canada. Filed Mar. 8, 1965.



Owner of Canadian Reg. No. 128,230, dated Dec. 4, 1964.
For Cultivator Steels or Blades, Rotary Tillers and Attachment, Gang Mowers, Harrow Sections, Auger Elevators, Multiple Row Seeders, Hand Seeders, Tractor Sprayers, Boomless Sprayers, Hand Sprayers; Combine Pickup Reels, Gasoline Engines, Cultivators, Land Packers, Fertiliser Distributors, Portable Air Compressors, Grain Grinders, Hydraulic Equipment Consisting of Hydraulic Pumps and Hydraulic Piston and Cylinder Assemblies; Garden Tractors and Parts Thereof, Power Lawn Mowers, Harrow Drawbars, Bale Hooks, Tractor Cushions, Grain Cleaners, Broadcast Seeders, Hand Cultivators, Trailer Sprayers, Tank Sprayers, Chisel Plows, Grain Roller Mills, Hammermills, Hammermill Mixer Units, Tractor and Combine Cabs, and Truck Hoists.

SN 261,253. Societe des Fabrications Unicum, S.A.R.L., Paris, France. Filed Oct. 22, 1965.

UNICUM

Priority claimed under Sec. 44(d) on French Reg. No. 521,361, dated Apr. 15, 1964 (Paris); Natl. Inst. No. 221,021.
For Speed-Change Gears, Speed-Reducing Gears, Speed-Boxes, Coupling Sleeves, and Like Devices.
First use 1959; in commerce 1959.

SN 237,126. The Youngstown Sheet and Tube Company, Youngstown, Ohio. Filed Jan. 24, 1966.

DURA-TUBE

For Pump Barrel Tubes.
First use July 9, 1964.

SN 237,465. Maquinaria Textil del Norte de España, S.A., Barcelona, Spain. Filed Jan. 27, 1966.

IWER

Owner of Spanish Reg. No. 261,503, dated Sept. 6, 1954.
For Machines for the Spinning, Twisting, and Textile Industry, Particularly Spinning Frames, Winding Frames, and Devices for Controlling Thread Tension.

SN 247,891. Brilliant Abrasive Corporation, Kansas City, Mo. Filed June 13, 1966.

BRILLIANT

Owner of Reg. No. 715,935.
For Metal Cut-Off Saws.
First use July 22, 1965.

SN 247,992. International Minerals & Chemical Corporation, Skokie, Ill. Filed June 14, 1966.

REDFORD

For Foundry Mold and Core Making Machinery Parts Therefor.
First use 1944.

SN 248,136. Houdaille Industries, Inc., Buffalo, N.Y. Filed June 15, 1966.

BURGMASTER

Owner of Reg. No. 800,941.
For Machine Tools—Namely, Turret Drills, Turret Drill Heads, and Accessories Therefor, Namely, Hydraulic Power Units and Manifolds for the Turret Drills, Holders for Drilling, Boring, Reaming and Tapping Tools, for Bore Spindles, and for Collet Chucks; Bore Spindles, Collets, Collet Chucks, Drill Chucks, Spindle Extensions, Taper Sleeves, Adapters, Recessing Tools, Boring Heads, Drill Speeders, Reversible Tapping Heads, Outboard Spindle Mill Supports, Feed Valves for the Turret Drills, Machine Lights for the Turret Drills, Floor Cabinets for the Turret Drills, Sub-Plates, Vertical and Horizontal Indexing Tables, and Workpiece Positioning Tables.
First use about June 1948.

SN 255,502. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 30, 1966.



For Print Maker's Press.
First use Sept. 15, 1964.

Class 26—Measuring and Scientific Appliances

SN 179,632. Kabushiki Kaisha Hattori Tokeiten, Tokyo, Japan. Filed Oct. 26, 1962.

SEIKOSHA

Owner of Japanese Reg. No. 241,936, dated Mar. 24, 1933.
For Camera Parts—Namely, Shutters.

SN 187,160. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Feb. 20, 1964.

SONY

Owner of U.S. Reg. Nos. 691,940, 692,023, and 705,902.
For Engine Tachometers.
First use on about Nov. 1, 1963; in commerce on about Nov. 1, 1963.

SN 222,028. Jon W. Hauser, Inc., St. Charles, Ill. Filed June 25, 1965.

AERO-DESK

For Flight Case Containing a Clipboard With Blank Navigator's Charts Adapted for Carrying Instruments Useful for Navigation—Namely, Scales, Computers, and Accessories Such as Maps, Sunglasses, and Flashlights.
First use Apr. 15, 1965.

SN 224,227. Mohawk Data Sciences Corporation, Herkimer, N.Y. Filed July 26, 1965.

MDS

The drawing is lined for the color red.
For Data Handling Apparatus, and Parts and Accessories Therefor—Namely, Optional Keyboards, Stroke Counters, Punched Card Readers and Printing Units.
First use Apr. 2, 1965.

SN 227,086. Tiffen Optical Co., Roslyn Heights, N.Y. Filed Sept. 2, 1965.

TIFFEN

Owner of Reg. No. 515,830.
For Lenses for Cameras, Filter Lenses, Frames for Lenses, Lens Shades, Leather Pouches for Filter and Other Types of Camera Lenses, Tripods, Lens Adapters, and Projectors.
First use July 20, 1946.

SN 230,188. Parfa Parfumerie & Kosmetik AG, Zurich, Switzerland. Filed Oct. 14, 1965.

VAPSILATOR

Owner of Swiss Reg. No. 205,485, dated July 20, 1964.
For Laboratory Equipment—Namely, Rotating Evaporators, Vacuum Evaporators, Distilling Apparatus, Evacuatory Tumblers, Rotating Mixers and Evacuatory and Rotary Reactors for Chemical and Related Laboratories.
First use 1964; in commerce September 1964.

SN 232,080. Spiratone, Inc., Flushing, N.Y. Filed Nov. 2, 1965.

ULTRATEL

For Photographic Lenses.
First use Oct. 15, 1965.

SN 232,269. American Bosch Arma Corporation, Garden City, N.Y. Filed Nov. 8, 1965.

TD

For Components and Systems for Telemetry—Namely, Oscillators, Amplifiers, Modulators, Power Supplies, Mixers, Transducers, Transmitters, Receivers, Discriminators, Commutators, Recorders, and Readers.
First use September 1965, on oscillators, amplifiers, and mixers.

SN 232,952. Vision Engineering Ltd., Send, Woking, Surrey, England. Filed Nov. 18, 1965.



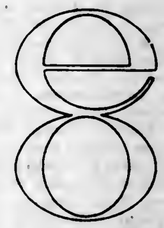
For Optical Instruments for Inspection and Measurement.
First use Feb. 15, 1958; in commerce on or about Jan. 30, 1961.

SN 234,801. Buck Engineering Company Inc., Farmingdale, N.J. Filed Dec. 17, 1965.

LAB-LOGIC

For Digital Training Aids for Instructional Purposes in Explaining the Operation and Use of Digital Computers and Other Logical Circuits.
First use Dec. 6, 1965.

SN 234,890. Electro-Optical Industries, Inc., Goleta, Calif. Filed Dec. 20, 1965.



For Electromagnetic Radiation Devices, Including Black Body Radiation Sources, Radiometers, Energy Modulators, Collimators, and R.M.S. Calibrators.
First use in or about February 1965.
Subj. to Intf. with SN 238,202.

SN 235,337. Ray-Tek Inc., Mountain View, Calif. Filed Dec. 27, 1965.

RAYNGER

For Infrared Thermometer for Temperature Measurement Without Contact.
First use Oct. 11, 1965.

SN 236,037. Allen-Bradley Company, Milwaukee, Wis. Filed Jan. 10, 1966.



The word "Quality" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 422,065, 606,401, and others.
For Laboratory Instrument—Namely, a Reciprocating Air Column Sieving Device for Particle Size Separation.
First use Oct. 8, 1965.

SN 236,038. Allen-Bradley Company, Milwaukee, Wis. Filed Jan. 10, 1966.

ALLEN-BRADLEY

Owner of Reg. Nos. 712,800 and 712,896.
For Laboratory Instrument—Namely, a Reciprocating Air Column Sieving Device for Particle Size Separation.
First use Oct. 8, 1965.

SN 236,039. Allen-Bradley Company, Milwaukee, Wis. Filed Jan. 10, 1966.



Owner of Reg. No. 768,655.
For Laboratory Instrument—Namely, a Reciprocating Air Column Sieving Device for Particle Size Separation.
First use Oct. 8, 1965.

SN 237,878. Precision Scientific Company, Chicago, Ill. Filed Jan. 26, 1966.

JAXLINE

No claim is made to the representation of goods in the mark as shown.
For Platform Power Jacks for Laboratory Use.
First use Dec. 15, 1965.

SN 245,293. Jack B. Congalton, Rocky River, Ohio. Filed May 10, 1966.

POSI-FEED

For Pre-Timed Animal Food Dispenser.
First use Apr. 20, 1966.

SN 247,554. Marquette Corporation, Minneapolis, Minn. Filed June 8, 1966.

MARQUE 8

For Engine Efficiency Tester and Analyzer.
First use Nov. 18, 1965.

SN 248,151. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 15, 1966.

ELECTROCOLOR

Owner of Reg. No. 805,153.
For Photographic Print Processors.
First use Apr. 24, 1963.

SN 251,767. Kalimar, Inc., St. Louis, Mo. Filed Aug. 5, 1966.

AUTO-CUBE

For Flash Guns.
First use Jan. 5, 1966.

Class 27—Horological Instruments

SN 232,975. Morris Chaitlen, d.b.a. C. & E. Marshall Co., Chicago, Ill. Filed Nov. 19, 1965.

PERMATEX

For Watch Crystals.
First use on or about Feb. 21, 1938.

Class 28—Jewelry and Precious-Metal Ware

SN 249,917. Kirk Dial Corporation, Beverly Hills, Calif. Filed July 11, 1966.

HAPPY FAMILY KD

For Finger Rings and Charms.
First use June 7, 1966.

Class 29—Brooms, Brushes, and Dusters

SN 204,393. South Eastern Cordage Co., Cleveland, Ohio, assignee of Theron V. Moss, d.b.a. South Eastern Cordage, Cleveland, Ohio. Filed Oct. 20, 1964.

RINGTAIL BELL

Owner of Reg. No. 789,051.
For Wet and Dust Mop Heads.
First use July 21, 1964.

Class 31 — Filters and Refrigerators

SN 227,898. J. E. Watkins Co., Maywood, Ill. Filed Sept. 15, 1965.

SUPER CYCLE CENTER

For Refrigeration Apparatus and Components Thereof, for Supermarkets and Other Commercial and Industrial Installations.
First use Nov. 13, 1963.

SN 228,162. Lasco Industries, Inc., Fort Lauderdale, Fla. Filed Sept. 20, 1965.

LASCO

For Refrigeration Equipment—Namely, Ice Making Machines.
First use July 27, 1965.

SN 240,574. Aqua Systems, Inc., Los Angeles, Calif. Filed Mar. 10, 1966.

metrosoft

For Equipment Used in the Conditioning of Water, Including Water Softening, Filtering, and Deionising.
First use Oct. 6, 1964.

SN 243,693. Robert J. Matthews Company, Canton, Ohio. Filed Apr. 18, 1966.

6QB

For Milk Filter Disks.
First use Apr. 4, 1966.

SN 244,569. Cambridge Filter Corporation, Syracuse, N.Y. Filed Apr. 29, 1966.

SIDELOCK

For Air Filters.
First use at least as early as Apr. 11, 1966.

Class 32 — Furniture and Upholstery

SN 230,441. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company, Chicago Heights, Ill. Filed Oct. 18, 1965.

CORVAL

For Window Shade Components, Specifically Shade Pull Hem Guards.
First use Mar. 30, 1960.

SN 233,040. Aireloom Bedding Company, Alhambra, Calif. Filed Nov. 22, 1965.

THE RIP VAN WINKLE

For Mattresses and Box Springs.
First use 1927.

SN 234,870. Sleep Specialists Inc., Bronx, N.Y. Filed Dec. 10, 1965.

ROYAL LINE

For Mattresses.
First use Nov. 23, 1965.

SN 238,472. Watson Manufacturing Company, Inc., Jamestown, N.Y. Filed Feb. 9, 1966.

"PIGGY BACK"

For Filing Cabinets.
First use Nov. 9, 1965.

SN 238,731. The General Fireproofing Company, Youngstown, Ohio. Filed Feb. 15, 1966.

OVER FILE

Without prejudice to its common law rights, applicant disclaims the word "File" apart from the mark as shown.
For Filing Cabinets.
First use Dec. 21, 1965.

SN 245,140. Acme Visible Records, Inc., Crozet, Va. Filed May 9, 1966.

POTO-MATIC

For Rotary Record Files.
First use on or about Apr. 15, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 233,162. Acme Engineering and Manufacturing Corporation, Muskogee, Okla. Filed Nov. 23, 1965.

BREEZE-MATIC

For Horticultural Package Ventilators, Including Assembled Fan, Motor, Housing, Weather Hood With Safety Guard, and Inside Mounted Backdraft Damper.
First use Nov. 19, 1965.

SN 239,094. The Williamson Company, Cincinnati, Ohio. Filed Feb. 17, 1966.

FIVE IN ONE

For Combination Unit for Heating, Cooling, Humidifying, Dehumidifying, and Cleaning Air in a Building.
First use Dec. 11, 1965.

SN 240,562. Williams Furnace Company, Buena Park, Calif. Filed Mar. 9, 1966.

FORSAIRE

For Gas and/or Electric Fan-Type Wall Furnaces or Heaters.
First use in or about October 1954.

SN 243,518. Air Products and Chemicals, Inc., Allentown, Pa. Filed Apr. 15, 1966.

VisArc

Owner of Reg. No. 667,685.
For Welding Torches.
First use May 7, 1957.

SN 244,158. United Lighting and Ceiling Co., Oakland, Calif. Filed Apr. 22, 1966.

LIGHT-LOK

For Plastic Louvers and Light Diffusing Ceiling Systems.
First use Nov. 17, 1965.

SN 244,487. Holophane Company, Inc., New York, N.Y. Filed Apr. 28, 1966.

VELOURE

For Illumination Equipment—Namely, Lamp Panels, Screens, Globes, Reflectors, Refractors, and Fixtures.
First use June 18, 1965.

SN 244,653. Atlantic Research Corporation, Alexandria, Va. Filed May 2, 1966.

ARCAT

For Gas Treating Apparatus and Devices—Namely, Burners.
First use May 14, 1965.

SN 244,715. S. H. Leggitt Company, Marshall, Mich. Filed May 2, 1966.

WEATHER SHIELD

For Space Heating Units and Parts Therefor, for Use in Mobile Homes and Travel Trailers.
First use Feb. 23, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 225,141. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 6, 1965.

CUSHION BELT

For Tires.
First use June 29, 1965.

SN 230,596. The Anchor Packing Company, Philadelphia, Pa. Filed Oct. 20, 1965.

MOL-ANKO-THANE

For Molded, Self-Lubricating, Elastomeric Machinery Packing.
First use Dec. 9, 1963.

SN 230,597. The Anchor Packing Company, Philadelphia, Pa. Filed Oct. 20, 1965.

POLYFLEX

For Molded, Self-Lubricating, Elastomeric Machinery Packing.
First use Dec. 9, 1963.

SN 230,821. The B. F. Goodrich Company, Akron, Ohio. Filed Oct. 21, 1965.

APACHE

For Pneumatic Tires.
First use early June 1965.

SN 231,783. Union Oil Company of California, Los Angeles, Calif. Filed Oct. 28, 1965.

PURELON

Owner of Reg. Nos. 413,492 and 545,476.
For Tires Made of Rubber and Other Elastomers.
First use on or about Sept. 13, 1965.

SN 231,859. Sovereign Tire & Rubber Corporation, Newark, N.J. Filed Oct. 29, 1965.

SOVEREIGN

For Tires for Vehicles.
First use Apr. 6, 1965.

SN 231,862. Vulcanizers Material Company, Grand Rapids, Mich. Filed Oct. 29, 1965.

BOW TIE

For Tire Repair Plugs.
First use Mar. 1, 1964.

SN 232,202. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 5, 1965.

DLC-100

For Resilient Vehicle Tires.
First use Oct. 28, 1965.

SN 232,306. The General Tire & Rubber Company, Akron, Ohio. Filed Nov. 8, 1965.

JET-TRAC

Owner of Reg. Nos. 715,078, 758,853, and others.
For Pneumatic Tires.
First use Oct. 19, 1965.

SN 232,681. Dodge Manufacturing Corporation, Mishawaka, Ind. Filed Nov. 15, 1965.

DYNAFACE

For Shaft and Bearing Seals.
First use Aug. 18, 1965.

SN 232,906. Consumers Cooperative Association, Kansas City, Mo. Filed Nov. 18, 1965.

CCA

Owner of Reg. No. 794,887.
For Tires for Motor Vehicles.
First use Aug. 2, 1965.

SN 232,917. The B. F. Goodrich Company, Akron, Ohio. Filed Nov. 18, 1965.

SUN-N-SNOW

For Pneumatic Tires.
First use Oct. 20, 1965.

SN 233,483. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 29, 1965.

TOURNEY

For Pneumatic Vehicle Tires.
First use Oct. 26, 1965.

SN 235,729. Techno-Chemie Kessler & Co., GmbH, Limited, Frankfurt am Main, Germany. Filed Jan. 3, 1966.

TECHNO-CHEMIE

Owner of German Reg. No. 786,552, dated Dec. 24, 1962.
For Hoses for Industrial Uses; Armored Flexible Hoses; Air Hoses; Armored High Pressure Hoses; Vacuum Hoses; Hoses for Carrying Aggressive Materials; Hoses for Carrying Lubricants; and Hoses for Carrying Oil.
First use 1935; in commerce 1936.

SN 244,691. Electro-Coatings, Inc., Oakland, Calif. Filed May 2, 1966.

CHANNELGARD

For Piston Rings.
First use Dec. 23, 1965.

Class 36 — Musical Instruments and Supplies

SN 222,352. Emco, Inc., Washington, D.C. Filed June 30, 1965.

MEYER RESPONSER

For Tape Recorders and Playback Machines.
First use on or about Sept. 17, 1962.

SN 226,963. Zenith Radio Corporation, Chicago, Ill. Filed Sept. 1, 1965.

ZENITH

For Tape Recorders.
First use at least as early as June 3, 1965.

SN 227,829. Dubbings Electronics, Inc., Hewlett, N.Y. Filed Sept. 15, 1965.

DASHBOARD

For Recorded Magnetic Tape, Provided in Cartridges, for Use on a Player Without Threading.
First use Aug. 31, 1965.

SN 227,830. Dubbings Electronics, Inc., Hewlett, N.Y. Filed Sept. 15, 1965.

TURNPIKE

For Recorded Magnetic Tape, Provided in Cartridges, for Use on a Player Without Threading.
First use Aug. 31, 1965.

SN 248,086. WMI Corporation, Evanston, Ill. Filed June 15, 1966.

CHECKMATE

For Musical Instruments, Amplifiers, and Speakers—Namely, Electric Organs and Accessories, Electrical Amplifiers for Electric Organs and Guitars, and Speakers for Use Therewith.
First use Feb. 9, 1966.

SN 255,500. The Gramophone Company Limited, Hayes, Middlesex, England. Filed Sept. 30, 1966.



For Albums Containing Phonograph Records.
First use Aug. 10, 1966; in commerce Aug. 10, 1966.

SN 255,567. Screen Gems, Inc., New York, N.Y. Filed Oct. 3, 1966.



For Phonograph Records and Tape Recordings.
First use Aug. 15, 1966.

SN 255,568. Colgems Records (joint venture), New York, N.Y. Filed Oct. 3, 1966.

COLGEMS

For Phonograph Records and Tape Recordings.
First use Aug. 15, 1966.

Class 37 — Paper and Stationery

SN 205,207. Uarco Incorporated, Barrington, Ill. Filed Oct. 30, 1964.

MULTI-STIK

For Protective Tape for Releasably Covering a Strip of Pressure Sensitive Transferable Adhesive on a Business Form.
First use Sept. 14, 1964.

SN 214,773. The Mead Corporation, Dayton, Ohio. Filed Mar. 23, 1965.

WHITE PEACOCK

Owner of Reg. No. 209,179.
For Book and Printing Papers, Including Coated Letterpress, Offset, and Writing Papers.
First use as early as Jan. 1, 1924.

SN 231,942. The Mead Corporation, Dayton, Ohio. Filed June 24, 1965.

MEAD COPY COTE BOND

Applicant disclaims the words "Copy Cote Bond" apart from the mark as shown. Owner of Reg. Nos. 404,980, 443,716, and 444,833.
For Bond Paper.
First use July 11, 1962.

SN 226,459. The Mead Corporation, Dayton, Ohio. Filed Aug. 25, 1965.



For Bond, Ledger, Index, Onion Skin, and Specialty Papers.
First use Feb. 1, 1963.

SN 227,682. Judi, Beverly Hills, Calif. Filed Sept. 13, 1965.



For Paper and Stationery, Such as Calendars and Memo Pads.
First use July 22, 1965.

SN 237,657. Cedartown Paper Board Co., Cedartown, Ga. Filed Feb. 1, 1966.



For Paper—Namely, Paper Board; Paper for Making Posters and Placards; Doctor's Examination Table Paper; Adding Machine Rolls; and Printing Blanks.
First use Oct. 1, 1964.

SN 240,837. Arvey Corporation, Chicago, Ill. Filed Mar. 14, 1966.

SCRIPTEMPOS

For Envelopes and Letterets.
First use on or about Feb. 9, 1966.

SN 244,992. Jacques Kreisler Manufacturing Corporation, North Bergen, N.J. Filed May 5, 1966.

KARAT CROWN

For Writing Instruments—Namely, Pens and Pencils.
First use Apr. 27, 1966.

SN 246,375. Scripto, Inc., Atlanta, Ga. Filed May 23, 1966.

PUSSYCAT

For Ball Point Pens.
First use May 9, 1966.

SN 247,681. Easton, Incorporated, Silsbee, Tex. Filed June 9, 1966.

TEX-PLATE

Owner of Reg. Nos. 637,744, 797,819, and others.
For Coated Paperboard To Be Printed and Converted Into Paper Plates.
First use May 25, 1966.

Class 38 — Prints and Publications

SN 234,711. Airstream, Inc., Center, Ohio. Filed Dec. 16, 1965.



Applicant disclaims the exclusive right to use of the words "Club News" apart from the mark as shown. Owner of Reg. No. 695,445.
For Periodical Newsletter.
First use Dec. 9, 1965.

Class 39 — Clothing

SN 197,352. Wells Lamont Corporation, Chicago, Ill. Filed July 7, 1964.

LITTLE NEL

For Work Gloves.
First use on or about Mar. 31, 1956.

SN 201,648. Beau-Bra Foundations, Inc., Jersey City, N.J. Filed Sept. 11, 1964.



For Brassieres for Women.
First use 1937.

SN 202,018. Corsets Silhouette Limited, London, England. Filed Sept. 16, 1964.

SILHOUETTE

Owner of British Reg. No. B847,413, dated Apr. 4, 1963.
For Swimwear.

SN 215,577. American Needle & Novelty Co., Chicago, Ill. Filed Apr. 2, 1965.

MAGNA-SIZE

"Magna" is translated to mean "great."
For Men's and Boys' Caps.
First use Mar. 29, 1965.

SN 217,205. Parkland of Dallas, Inc., Dallas, Tex. Filed Apr. 23, 1965.



For Dresses.
First use Jan. 24, 1959.

SN 225,675. Seilon, Inc., Toledo, Ohio. Filed Aug. 13, 1965.
For Heels for Shoes.

MODERN

First use May 4, 1959.

SN 225,894. Carlo Belli, Florence, Italy. Filed Aug. 17, 1965.

TWIN MATCH

DOUBLE WEAR
FOR HER

No claim is made to the representation of bathing suits or the words "Double Wear for Her" apart from the mark as shown. Owner of Italian Reg. No. 171,228, dated June 10, 1965.
For Bathing Suits.

SN 227,995. Leombruno-Bodi, Rome, Italy, and New York, N.Y., assignee of Jacob L. Becker, New York, N.Y. Filed Sept. 17, 1965.

MICIA

For Ladies' and Misses' Knitted Dresses, Sweaters, Blouses, Coats, Suits, Skirts, Hats, Shoes, and Hosiery.
First use July 2, 1962; in commerce July 3, 1962.

SN 231,171. Morganton Hosiery Mills, Inc., Morganton, N.C. Filed Oct. 22, 1965.

Flatterait by Huffman

Owner of Reg. Nos. 380,973 and 683,720.
For Ladies' Hosiery.
First use June 1958.

SN 231,352. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Oct. 22, 1965.

Mr. George of FIFTH AVENUE

The name "Mr. George" is fanciful. No exclusive claim is made to the words "of Fifth Avenue" apart from the mark as shown.
For Ladies' Hosiery.
First use Mar. 16, 1962.

SN 231,683. Grampian Holdings (USA), Inc., Stamford, Conn. Filed Oct. 27, 1965.

Grampian

For Golf Shoes.
First use on or about July 30, 1965.

SN 232,616. Tracy, Inc., East Brunswick, N.J. Filed Nov. 12, 1965.

ANTHONY WAYNE

The name "Anthony Wayne" is fanciful.
For Underwear, T-Shirts, Swim Suits, Sports Coats, Sports Slacks, Cabana Sets, Handkerchiefs, Shirts of Any Description, Socks, Jackets of Any Description, Belts, Ties, Overcoats, Raincoats, Any Type of Outercoat, Scarves, and Shoes.
First use on or about Aug. 15, 1965.

SN 233,539. Truval Shirt Company, Inc., New York, N.Y. Filed Nov. 29, 1965.

Surf Man

For Sport Shirts, Knitted Sport Shirts and Beachwear, Including, but Not Limited to, Swim Suits and Beachwear.
First use July 1, 1965.

SN 235,555. Edlen Herman Products, Inc., d.b.a. Seegull Manufacturing Company, Jenkintown, Pa. Filed Dec. 30, 1965.

SEEGULL

Owner of Reg. Nos. 418,998, 419,206, and 419,510.
For Men's Underwear Shorts, Children's Shorts, and Gym Shorts.
First use on or about July 1, 1918.

SN 235,624. Comptoir de l'Industrie Textile de France, Paris, France. Filed Jan. 3, 1966.

ROYAL
BLIZZAND

Owner of French Reg. No. 530,730, dated Apr. 29, 1965 (Seine); Natl. Inst. No. 247,028; and U.S. Reg. No. 673,908.
For Rainwear.

SN 235,625. Comptoir de l'Industrie Textile de France, Paris, France. Filed Jan. 3, 1966.



Owner of French Reg. No. 530,729, dated Apr. 29, 1965 (Seine); Natl. Inst. No. 247,028; and U.S. Reg. No. 673,908.
For Rainwear.

SN 236,980. Export-Import Company of California, Los Angeles, Calif. Filed Jan. 21, 1966.

BREDFORD

For Men's Hosiery Imported From Greece.
First use Dec. 6, 1965.

SN 237,226. William B. Kessler, Inc., Hammonton, N.J. Filed Jan. 25, 1966.

Calvert

Owner of Reg. Nos. 247,463 and 593,927.
For Men's Clothing—Namely, Suits, Jackets, Topcoats, Trousers, and Sportcoats.
First use March 1950.

SN 237,227. William B. Kessler, Inc., Hammonton, N.J. Filed Jan. 25, 1966.

CALVERT CLOTHES

The word "Clothes" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 247,463 and 593,927.
For Men's Clothing—Namely, Suits, Jackets, Topcoats, Trousers, and Sports Coats.
First use January 1922.

SN 237,398. The Strong-Wear Co., Baltimore, Md. Filed Jan. 26, 1966.

ROYALE
SUPREME

For Men's and Students' Suits, Sport Coats, Topcoats, and Rainwear.
First use Dec. 26, 1965.

SN 237,402. B. E. Taylor Corporation, Freeport, Maine. Filed Jan. 26, 1966.

THOMAS CORT

The name "Thomas Cort" is fanciful. No claim of exclusive right is made to the word "Shoes" apart from the mark as shown.
For Men's Shoes.
First use 1960; 1957 as to "Thomas Cort."

SN 237,771. White Swan Uniforms, Inc., New York, N.Y. Filed Feb. 1, 1966.

SWAN PRESS

The word "Press" is disclaimed apart from the mark as shown. Owner of Reg. No. 530,868.
For Uniforms of All Kinds.
First use Jan. 12, 1966.

SN 237,850. R. Lowenbaum Manufacturing Company, St. Louis, Mo. Filed Feb. 2, 1966.

IN THE MINX MOOD

Owner of Reg. No. 856,817.
For Juniors' and Misses' Dresses.
First use Jan. 4, 1966.

SN 238,825. Aimcee Wholesale Corporation, New York, N.Y. Filed Feb. 15, 1966.

BEACH WARMER

For Men's Beachwear and Swimwear—Namely, Coats, Jackets, Shirts, and Bathing Suits.
First use Oct. 13, 1965.

SN 238,842. Craddock-Terry Shoe Corporation, Lynchburg, Va. Filed Feb. 15, 1966.

ALL-ROUNDERS

For Shoes.
First use Jan. 18, 1966.

SN 238,982. Susan Thomas Incorporated, New York, N.Y. Filed Feb. 16, 1966.

VIVO

For Ladies' Blouses, Skirts, and Jackets.
First use Feb. 1, 1966.

SN 239,356. Weldon, Inc., New York, N.Y. Filed Feb. 21, 1966.

SAN BLAS

For Men's and Women's Pajamas, Hats, and Sleeping Shirts; Women's Sarongs; and Men's Robes, Walking Shorts, and Sport Shirts.
First use Feb. 11, 1966.

SN 239,750. Divina Footwear, Inc., St. Louis, Mo. Filed Feb. 28, 1966.

la Redoute

The word "Redoute" means to "fear, shy away or dread."
For Women's Shoes.
First use Jan. 25, 1966.

SN 239,751. Divina Footwear, Inc., St. Louis, Mo. Filed Feb. 28, 1966.

Dressoir

For Women's Shoes.
First use Jan. 25, 1966.

SN 239,752. Divina Footwear, Inc., St. Louis, Mo. Filed Feb. 28, 1966.

Séduisante

For Women's Shoes.
First use Jan. 25, 1966.

SN 239,753. Divina Footwear, Inc., St. Louis, Mo. Filed Feb. 28, 1966.

Raoul

For Women's Shoes.
First use Jan. 25, 1966.

SN 239,842. The Villager, Inc., Philadelphia, Pa. Filed Feb. 28, 1966.

The Villager GOLFER

Owner of Reg. Nos. 702,965, 756,955, and 763,997.
For Women's Wear—Namely, Shirts, Blouses, Dresses, Jackets, Slacks, Neckwear, Belts, Skirts, Suspenders, Dickies, Kerchiefs, Headbands, Sashes, Cummerbunds, Sweaters, Kilts, Dress Ensembles of Skirts and Blouses, Blouses and Slacks, Sweaters and Slacks and Sweaters and Skirts, Raincoats, Ascots, Suits, Bermuda Shorts, Hats, Knee Socks, Neck Mufflers, Coats, Swim Suits; and Sportswear—Namely, Dresses.
First use Dec. 16, 1965.

SN 240,661. S. Schwab Company, Cumberland, Md. Filed Mar. 10, 1966.

A peek-a-toe

For Infants' Stretch Coveralls and Non-Stretch Coveralls With a Convertible Toe.
First use May 1, 1965.

SN 241,143. Genesco, Inc., Nashville, Tenn. Filed Mar. 16, 1966.

BALLANTRAE

For Suits, Topcoats, Overcoats, Slacks, Sport Coats, Jackets, and Raincoats, for Men, Boys, and Youths.
First use Mar. 1, 1966.

SN 242,501. Rudin & Roth, Inc., New York, N.Y. Filed Apr. 1, 1966.

ONCE IN A LIFETIME

For Socks.
First use Mar. 16, 1966.

SN 242,507. Sears, Roebuck and Co., Chicago, Ill. Filed Apr. 1, 1966.

ROYAL INTERNATIONALE

For Men's Underwear.
First use Mar. 4, 1966.

SN 242,614. Korach Bros. Company, Chicago, Ill. Filed Apr. 4, 1966.

Johnnye

Owner of Reg. No. 710,650.
For Women's Dresses.
First use Dec. 1, 1965.

SN 242,888. Frederick W. Donnelly & Son, Inc., Trenton, N.J. Filed Apr. 7, 1966.

REEDPORT

For Men's Suits, Sport Coats, and Topcoats.
First use Mar. 10, 1966.

SN 243,012. J. C. Penney Company, New York, N.Y. Filed Apr. 8, 1966.

BIG MAC

Owner of Reg. Nos. 164,833 and 265,370.
For Men's Work Suits, Overalls, Jeans, Pants, Jackets, Rainwear, Belts, Suspenders, Caps, Socks, and Bandanas.
First use 1949 on work pants.

SN 243,707. Paula Post, Inc., New York, N.Y. Filed Apr. 18, 1966.

PAULA POST

The name "Paula Post" is fictitious.
For Ladies' Dresses.
First use Feb. 1, 1965.

SN 244,181. Neuville & Co., Inc., New York, N.Y. Filed Apr. 22, 1966.

PURR-SUEDE

For Hosiery.
First use Apr. 20, 1966.

SN 235,266. Blue Bell, Inc., Greensboro, N.C. Filed Sept. 28, 1966.

Wrangler

Owner of Reg. Nos. 441,727, 811,849, and others.
For Hats.
First use Sept. 6, 1966; Jan. 19, 1939, as to the word "Wrangler" on related goods.

Class 40—Fancy Goods, Furnishings, and Notions

SN 233,634. Reeve & Mitchell Company, Inc., d.b.a. Reeve & Mitchell Co., Yonkers, N.Y. Filed Nov. 30, 1965.

Sudden Magic

For Hair Rollers.
First use Oct. 27, 1964.

SN 236,988. Gerate- und Vorrichtungsbau AG. EAC. (Equipment and Appliance Construction Ltd. EAC.), Zurich, Switzerland. Filed Jan. 21, 1966.

VICKY

Priority claimed under Sec. 44(d) on Swiss Reg. No. 212,230, dated Aug. 12, 1965.
For Wigs Made of Artificial Hair for Human Use.

SN 241,077. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Mar. 15, 1966.

HEIRESS

For Bobby Pins.
First use on or about Feb. 10, 1966.

SN 241,078. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Mar. 15, 1966.

ENGAGE

For Bobby Pins.
First use in or about December 1964.

SN 243,582. Remarque Associates, Inc., New York, N.Y. Filed Apr. 15, 1966.

MERRI-MARKS

For Beauty Mark Patches for Application to the Skin.
First use on or about Apr. 1, 1966.

SN 243,584. Remarque Associates, Inc., New York, N.Y. Filed Apr. 15, 1966.

BIKINI-BITS

For Beauty Mark Patches for Application to the Skin.
First use on or about Apr. 1, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 233,192. Onite Corporation, Chicago, Ill. Filed Nov. 23, 1965.

TOWN 'N' TERRACE

For Carpeting.
First use Oct. 22, 1965.

SN 233,193. Onite Corporation, Chicago, Ill. Filed Nov. 23, 1965.

TOWN 'N' TERRACE

For Carpeting.
First use Oct. 22, 1965.

SN 238,931. Coronet Industries, Inc., Dalton, Ga. Filed Feb. 16, 1966.

Coronet

The word "Quality" is disclaimed.
For Tufted Carpeting.
First use Oct. 1, 1961.

SN 239,281. The John P. King Mfg. Co., Augusta, Ga. Filed Feb. 21, 1966.

Charm Spreads

The word "Spreads" is disclaimed apart from the mark as shown.
For Cotton Bedspreads.
First use Sept. 14, 1962.

SN 241,420. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Mar. 21, 1966.

PLUSH-AIRE

For Textile Rugs, Carpets, and Floor Mats.
First use Mar. 1, 1966.

SN 244,187. Registered Fabrics Corp., New York, N.Y. Filed Apr. 22, 1966.

SURF BATISTE

The word "Batiste" is disclaimed apart from the mark as shown.
For Fabrics Made of Polyester Fibres and Cotton.
First use Nov. 9, 1965.

SN 247,004. Cannon Mills Company, Kannapolis, N.C. Filed June 1, 1966.

RENOWN

Owner of Reg. No. 801,955.
For Sheets, Pillowcases, Bedspreads, Towels, Wash Cloths, and Blankets.
First use as early as June 1, 1949.

Class 43—Thread and Yarn

SN 241,084. Societe Rhovyl, Paris, France. Filed Mar. 15, 1966.

CLEVYLAINE

Owner of French Reg. No. 537,233, dated July 26, 1965 (Paris); Natl. Inst. No. 260,231; and U.S. Reg. No. 784,079, and others.
For Threads and Yarns Made Wholly of Wool or in Substantial Part of Wool.

SN 241,808. Collins & Aikman Corporation, New York, N.Y. Filed Mar. 18, 1966.

KOLOR-KROSS

For Yarns.
First use Dec. 15, 1965.

SN 246,337. Lily Mills Company, Shelby, N.C. Filed May 23, 1966.

TRINKLETTE

For Hand Knitting and Crochet Yarn.
First use on or about May 2, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 208,527. Rudolph Beaver, Inc., Belmont, Mass., assignee of Rudolph Beaver, Belmont, Mass. Filed Dec. 21, 1964.

MINI-BLADE

For Surgical Blades.
First use Oct. 23, 1963.

SN 215,694. B.M.J. Mfg. Co., Omaha, Nebr. Filed Apr. 5, 1965.

AUTOMATIC SANITATION
By Sterilmeter

No claim is made to the words "Automatic Sanitation by" apart from the mark.
For Sertilising Unit Comprising Two Tanks for Holding and Sterilising Barber Tools, the Sterilising Fluid Being Circulated by Means of an Electric Pump.
First use on or about Feb. 20, 1965.

SN 231,284. Svedia Dental-Industri AB, Enkoping, Sweden. Filed Oct. 22, 1965.

SVEDOPTER

For Optical Saliva Ejectors.
First use in or about 1952; in commerce in or about 1952.

SN 235,372. Zest-Way, San Diego, Calif. Filed Dec. 27, 1965.

tension-eze

For Electrical Actuated Body Vibrator for Therapeutic Use.
First use Oct. 23, 1965.

SN 239,157. Kerr Manufacturing Company, Detroit, Mich. Filed Feb. 18, 1966.

SPHERALOY

For Dental Amalgam.
First use Feb. 7, 1966.

SN 252,787. Lanvin-Charles of the Rits, Inc., New York, N.Y. Filed Aug. 22, 1966.

LANVIN

Owner of Reg. Nos. 556,672, 697,884, and others.
For Atomizers.
First use March 1964.

SN 252,931. Astic Products Inc., Camden, N.J. Filed Aug. 23, 1966.

SIL-SYRINGE

The word "Syringe" is disclaimed apart from the mark as shown.
For Medical Irrigating Syringes.
First use July 12, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 225,169. Sol Lensner Corporation, Buffalo, N.Y. Filed Aug. 6, 1965.

COLDWELL

Owner of Reg. No. 415,552.
For Carbonated Soft Drinks.
First use Aug. 1, 1944.

SN 227,759. Edward Helig, d.b.a. Edward Helig Associates, Munich, Germany. Filed Sept. 14, 1965.

OBM
GIVE A OBM, MAKE A FRIEND

For Carbonated Soft Drink.
First use Sept. 8, 1965; in commerce Sept. 8, 1965.

SN 244,247. Bartolo Raffaele, Jr., Brooklyn, N.Y. Filed Apr. 25, 1966.

COLITA

For Soft Drinks.
First use Apr. 8, 1965.

SN 252,619. Easy-Mix Corp., West Sayville, N.Y. Filed Aug. 18, 1966.

IDLE HOUR

For Non-Alcoholic Mix for Making Alcoholic Cocktails.
First use Aug. 11, 1966.

Class 46—Foods and Ingredients of Foods

SN 190,361. Fountain Fresh, Inc., Greenville, Del. Filed Apr. 6, 1964.

FOUNTAIN FRESH

The word "Fresh" is disclaimed apart from the mark as shown.
For Candies.
First use Mar. 20, 1964.

SN 191,852. Gaucho Food Products, Inc., Chicago, Ill. Filed Apr. 23, 1964.

GAUCHO

Owner of Reg. No. 687,656.
For Frozen Meat Products, Specifically Sliced Beef and Chipped Beef.
First use on or about Dec. 19, 1958.

SN 203,258. Copper Crock Club, Inc., Columbus, Wis. Filed Oct. 5, 1964.

Copper Crock Club

For Cheese.
First use Oct. 21, 1963.

SN 206,747. New York Bagel Bakery, New Haven, Conn. Filed Nov. 23, 1964.



No registration rights are claimed herein for the representation of the goods apart from the mark as shown; but the applicant waives none of its common law rights in said mark or any feature thereof.
For Bakery Goods, Comprising Fresh Bagels in Particular.
First use Aug. 19, 1949.

SN 217,754. Milani Foods, Inc., Los Angeles, Calif. Filed Apr. 30, 1965.

S-Z SEAFOOD ZIP

The words "Seafood Zip" are disclaimed apart from the mark as a whole.
For Seasoning Preparation for Making Seafood Cocktail Sauce by Adding It to Catsup or Chili Sauce.
First use June 29, 1964.

SN 221,061. Harold L. Jones, St. Louis, Mo. Filed June 14, 1965.

YUMEPOLES

For Candy.
First use Apr. 15, 1965.

SN 221,062. Harold L. Jones, St. Louis, Mo. Filed June 14, 1965.

TANGYS

For Candy.
First use Apr. 15, 1965.

SN 221,063. Harold L. Jones, St. Louis, Mo. Filed June 14, 1965.

LICK-UR

For Candy.
First use Apr. 15, 1965.

SN 222,650. Chateau Food Products, Inc., Cicero, Ill. Filed July 6, 1965.



The drawing is lined for the colors red and blue, but no claim is made as to the colors so named.
For Frozen Meats, Frozen Prepared Meat Products, Frozen Dough Dumplings, Frozen Bread Dumplings, and Frozen Potato Dumplings.
First use May 17, 1949.

SN 224,543. Mark Morris Associates, Inc., Topeka, Kans. Filed July 29, 1965.

d/d

For Animal Food for Dogs, Cats, Birds, Horses, and Tailed Primates.
First use June 9, 1965.

SN 234,841. Carnation Company, Los Angeles, Calif. Filed Aug. 3, 1965.

SKILLET DINNERS

For Canned, Prepared Sauces for Use in Casseroles.
First use June 3, 1965.

SN 225,489. Miceli Dairy Products Co., Cleveland, Ohio. Filed Aug. 11, 1965.

BLOC O PIZZA

For Cheeses.
First use June 14, 1965.

SN 225,636. Country Gardens, Inc., Warden, Wash. Filed Aug. 13, 1965.

NORTHWEST



The map representation and illustrative design of cut potatoes are disclaimed apart from the mark as shown.
For Partially Pre-Cooked and Frozen French Fried Potatoes.
First use Oct. 5, 1961.

SN 226,906. G.C.R. Bakery Corporation, Astoria, N.Y. Filed Sept. 1, 1965.

LO-CARBO

For Italian Bread.
First use July 31, 1965.

SN 229,071. The Creamette Company, Minneapolis, Minn. Filed Oct. 1, 1965.

KET-L-KUT

For Spaghetti.
First use March 1965.

SN 229,167. Wm. Wrigley Jr. Company, Chicago, Ill. Filed Oct. 1, 1965.



For Chewing Gum.
First use June 15, 1965; as early as February 1963 in a different form.

SN 229,724. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

SUS-TANE

For Food for Fish.
First use in or about September 1958.

SN 230,054. International Salt Company, Clarks Summit, Pa. Filed Oct. 13, 1965.

STERLING

Owner of Reg. No. 589,172.
For Food Products—Namely, Jams, Jellies, Mustard, Ketchup, Sugar, Sugar Substitutes, Salt, Salt Substitutes, and Pepper.
First use on or about Sept. 1, 1965.

SN 231,105. General Mills, Inc., Minneapolis, Minn. Filed Oct. 22, 1965.

GREAT DAY!

For Ready-To-Eat Breakfast Cereals.
First use Oct. 8, 1965.

SN 233,517. Milk Proteins, Inc., Detroit, Mich. Filed Nov. 29, 1965.

HOLLY

For Flavored Base for Egg Nog.
First use Sept. 30, 1965.

SN 234,070. Roman Meal Company, Tacoma, Wash. Filed Dec. 6, 1965.



For Seasoning Mix Comprising a Cereal Grain Mix, Non-Fat Dry Milk, Dry Onions, Salt and Spices for Use in the Preparation of Meat Dishes, Such as Meat Loaf, Hamburger Patties, and Meat Balls, and Fish Dishes, Such as Salmon or Tuna Loaf.
First use Aug. 5, 1965.

SN 234,107. Anvil Mineral Products Corporation, Bay Springs, Miss. Filed Dec. 7, 1965.

ANVIL SILO-MIN

For Preparation for Treating Silage, e.g. To Prevent Heating, To Retard Spoilage, To Preserve the Food Value, and To Keep It Fresh.
First use May 1963.

SN 234,237. Robert Redenbaugh, d.b.a. Sno-White Farms, Modesto, Calif. Filed Dec. 8, 1965.



No claim is made to the words "I'll Say They're Fresh" or to the representation of the goods apart from the mark as shown without waiving any common law rights therein.
For Fresh Eggs.
First use May 20, 1965.

SN 234,331. Bishop Baking Company, Cleveland, Tenn. Filed Dec. 10, 1965.



The name "Bonnie Lynn" is not known to be the name of any particular living individual.
For Cakes and Cookies.
First use Sept. 26, 1965.

SN 234,332. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company, Corpus Christi, Tex. Filed Dec. 10, 1965.

SANTA ROSA

Owner of Reg. Nos. 649,019 and 679,743.
For Canned Fruit Juices; Canned Vegetable Juices; Canned Fruit (Not Including Canned Plums); Canned Vegetables; Tomato Catsup; Tomato Sauce; and Vinegar.
First use at least as early as May 1948 on canned vegetables.

SN 234,348. Sidney Gould, d.b.a. MDR Nutrients Company, Chicago, Ill. Filed Dec. 10, 1965.

DERMO

For Nutrient Supplement To Be Incorporated Into the Regular Food for Household Pets and Fur-Bearing Animals.
First use April 1960.

SN 234,520. Anton Riemerschmid, Weinbrennerei, Likor- und Essigfabrik, Munich, Germany. Filed Feb. 8, 1966.

SANGRITA

Owner of German Reg. No. 812,587, dated Aug. 16, 1965.
For Fresh Bottled Vegetable and Fruit Juices.

SN 234,542. A Company of Fine Family Foods, Holly Hill, Fla. Filed Dec. 14, 1965.

TOMAYONNAISE

For Salad Dressing Which May Also Be Used as a Sandwich Spread.
First use July 13, 1964.

SN 234,749. Helme Products, Inc., New York, N.Y. Filed Dec. 16, 1965.



For Corn Snack Food Product—Namely, Caramel Covered Corn Puffs.
First use Nov. 18, 1965.

SN 234,910. Lakeland Grocery Co., Minneapolis, Minn. Filed Dec. 20, 1965.

ENVOY

For Food Products—Namely, Coffee.
First use Nov. 13, 1965.

SN 235,827. The Fleming Co. Incorporated, d.b.a. Certified Bakers, Topeka, Kans. Filed Jan. 5, 1966.

MARY BAKER

"Mary Baker" is not the name of a living individual.
For Cookies, Cakes, Rolls, Fresh and Frozen Pastries, Crackers, Cake and Cake Mixes.
First use Dec. 3, 1962.

SN 236,093. Holly Farms Poultry Industries, Inc., Wilkesboro, N.C. Filed Jan. 10, 1966.

HOLLY

Owner of Reg. Nos. 626,645 and 793,721.
For Whole Chickens, Chicken Parts Such as Wings, Jumbo Pack Wings, Thighs, Drumsticks, Legs, Breast With Ribs, Whole Birds Cut Up, Hearts and Gizzards, Backs and Necks, etc.
First use Dec. 1, 1965.

SN 236,572. Delson Candy Co., Inc., New York, N.Y. Filed Jan. 17, 1966.

RING A LINGS

Owner of Reg. Nos. 805,662 and 805,683.
For Chocolate Candy.
First use May 13, 1964.

SN 236,645. Patio Foods, Inc., San Antonio, Tex. Filed Jan. 17, 1966.

PATIO

Owner of Reg. Nos. 678,568 and 714,474.
For Frozen and Canned Prepared Foods—Namely, Barbecue Beef, Chili With Beans, Fried Beans, Tamales With Chili Gravy, Beef Tripe Stew, Mexican Style Beans, Chili, Re-Fried Beans With Bacon, Chicken Tamales With Chicken Chili Gravy, Cubed Beef Chili, Chicken Enchiladas With Chili Gravy, Beef Enchiladas With Chili Gravy, Cocktail Tamales, Mexican Style Dinner Composed of Beef Chili Gravy, Rice, Beans, Tamales and Beef Enchilada; Mexican Style Combination Dinner Composed of Tamales With Beef Chili Gravy, Pinto Beans and Beef Tacos; Italian Style Dinner Composed of Spaghetti, Meatballs in Sauce and Pizza Pie; Beef Steak Dinner Composed of Breaded, Chopped Beef Steak, Corn, Peas and Potatoes; Beef Dinner Composed of Sliced Beef and Barbecue Sauce, Beans and Spiced Apple Rings; Barbecue Beef Dinner Composed of Barbecued Beef and Sauce, Whole Kernel Corn, Pinto Beans and New Potatoes; Western Style Dinner Composed of Sliced Beef With Barbecue Sauce, Corn Bread, Pinto Beans and Smoked Cured Pork Sausage; Beef Enchilada Dinner Composed of Enchiladas With Beef Chili Gravy, Re-fried Beans and Beef Tacos; Cheese Enchilada Dinner Composed of Cheese Enchiladas With Chili Gravy, Pinto Beans and Mexican Style Corn; Cheese Enchiladas With Meatless Chili Gravy and Onions; Beef Enchiladas With Beef Chili Gravy and Cheese; Tamales and Beef Chili Gravy; Chicken Tamales, Tamales, Tortillas, Tacos; Breakfast Composed of Sausage and Waffles With Egg; Breakfast Composed of Scrambled Eggs, Hashed Brown Potatoes and Canadian Style Bacon; Breakfast Composed of Cheese Omelet, Baked Sliced Apples and Canadian Style Bacon; Pickles and Potato Chips.
First use 1947.

SN 236,827. International Salt Company, Clarks Summit, Pa. Filed Jan. 19, 1966.

NAFERITE

For Additive Comprising Yellow Prussiate of Soda Incorporated as an Ingredient of Salt for Human Consumption.
First use on or about May 3, 1962.

SN 237,582. National Biscuit Company, New York, N.Y. Filed Jan. 28, 1966.

SHAPIES

For Cheese Curls.
First use Dec. 30, 1965.

SN 238,848. General Foods Corporation, White Plains, N.Y. Filed Feb. 8, 1966.

OPEN HOUSE

Owner of Reg. No. 701,944.
For Cereal-Derived Ready-To-Eat Snacks.
First use Dec. 7, 1965.

SN 240,522. Kellogg Company, Battle Creek, Mich. Filed Mar. 9, 1966.



No claim is made to the exclusive right to use the word "Super" or the word "Mink," but applicant waives none of its common law rights.
For Feed for Mink.
First use Feb. 22, 1966.

SN 240,781. The Procter & Gamble Company, Cincinnati, Ohio. Filed Mar. 11, 1966.

CITATION

For Instant Coffee.
First use Nov. 17, 1965.

SN 240,874. Food-N-Cup Corporation, Rahway, N.J. Filed Mar. 14, 1966.

FOOD -N- CUP

For Food Products—Namely, Macaroni With Meat, Chicken Chow Mein, Beef Ravioli, and Chili Con Carne.
First use Feb. 16, 1966.

SN 241,138. Henry P. Garin, d.b.a. H. P. Garin Co., Salinas, Calif. Filed Mar. 16, 1966.



For Fresh Vegetables.
First use Oct. 14, 1965.

SN 241,164. Nalley's, Inc., Tacoma, Wash. Filed Mar. 16, 1966.



For Salad Dressing, Relish Spread, Mayonnaise, Mustard, Jellies, Macaroni, Noodles, Spaghetti, Catsup, and Tomato Puree.
First use Sept. 26, 1939.

SN 248,193. Ralston Purina Company, St. Louis, Mo. Filed June 16, 1966.

SNACKADOOS

For Cereal Derived Snack Food Product.
First use June 9, 1966.

SN 252,024. Nebraska Consolidated Mills Company, d.b.a. Fant Milling Company, Omaha, Nebr. Filed Aug. 9, 1966.



Owner of Reg. Nos. 102,277 and 392,684.
For Flour.
First use on or about June 29, 1966; 1913 in a different form.

SN 252,235. Lever Brothers Company, New York, N.Y. Filed Aug. 12, 1966.

GOLDEN GLOW

Owner of Reg. Nos. 94,876, 396,850, and 744,171.
For Meatless Gravy Mix.
First use July 25, 1966.

SN 253,083. Hunt Foods and Industries, Inc., d.b.a. Hunt-Wesson Sales Co., Fullerton, Calif. Filed Aug. 25, 1966.

CRUSTENE

Owner of Reg. No. 426,103.
For Vegetable Oils for Salads and Cooking, and Vegetable Oil Shortening.
First use October 1937.

SN 255,497. Giampaoli & Marchini Co., Le Grand, Calif. Filed Sept. 30, 1966.

Live Oak

For Fresh Vegetables.
First use June 1, 1929.

Class 47 — Wines

SN 235,289. E. & J. Gallo Winery, d.b.a. De Montcort Champagne Cellars, Modesto, Calif. Filed Dec. 27, 1965.



The name "André de Montcort" and the picture are fanciful. Owner of Reg. No. 807,607.
For Champagnes.
First use Dec. 6, 1965; June 7, 1965, as to "André de Montcort."

SN 237,674. Delaforce Sons & Ca Limitada, Villa Nova de Gaya, Portugal. Filed Feb. 1, 1966.

TROCADERO PORT

Applicant disclaims the word "Port" apart from the mark as shown. Owner of Portuguese Reg. No. 126,620, dated Dec. 10, 1904.
For Port Wine.

SN 238,350. John Harvey & Sons Ltd., Bristol, England. Filed Feb. 8, 1966.

LA LINOTTE

The French words "La Linotte" means "the linnet."
For Wine.
First use June 3, 1965; in commerce June 8, 1965.

SN 239,920. Paul Masson, Inc., d.b.a. Paul Masson, and Paul Masson Vineyards, San Francisco, Calif. Filed Mar. 1, 1966.

PINNACLE

For Light Red Wine.
First use Dec. 29, 1965.

SN 240,751. Les Caves Sequanaises, Societe Anonyme, Paris, France. Filed Mar. 10, 1966.

LE FIDELE REFLET DE LA VIGNE

The English translation of the mark "Le Fidele Reflet de la Vigne" is "the faithful reflection of the vine." Owner of French Reg. No. 490,797, dated Nov. 3, 1961 (Paris); Natl. Inst. No. 173,254.
For Wines.

Class 48 — Malt Beverages and Liquors

SN 212,279. Atlantic Brewing Company, Chicago, Ill. Filed Feb. 18, 1965.

HOME-TAP

For Beer.
First use Feb. 10, 1965.

SN 220,059. Aktieselskabet Ringnes Bryggeri, Oslo, Norway. Filed June 1, 1965.

RINGNES

For Beer.
First use 1876; in commerce 1889.

SN 239,379. Carling Brewing Company Incorporated, d.b.a. Carling Brewing Company, Cleveland, Ohio. Filed Feb. 23, 1966.



The drawing is lined for the colors red, gold, and green. The word "Ale" is disclaimed from the mark as shown. Owner of Reg. No. 321,266.
For Ale.
First use July 1961.

Class 49 — Distilled Alcoholic Liquors

SN 216,603. Lantana Corporation Limited, Nassau, Bahamas. Filed Apr. 15, 1965.



No claim is made to the exclusive use of the word "Nassau" or of the names of islands apart from the mark as shown.
For Liqueur.
First use Feb. 19, 1960; in commerce Nov. 9, 1964.

SN 231,242. Schenley Distillers, Inc., New York, N.Y. Filed Oct. 22, 1965.

ENTERTAINER

For Blended Scotch Whisky.
First use Aug. 31, 1965.

SN 237,926. Victor J. Bergeron, San Francisco, Calif. Filed Feb. 3, 1966.

SENOR PICO

Owner of Reg. Nos. 799,251 and 814,631.
For Tequila.
First use Jan. 20, 1966.

SN 239,210. Victor J. Bergeron, San Francisco, Calif. Filed Feb. 21, 1966.



The drawing is lined for the colors gold, red, orange, brown, pink, and green. Owner of Reg. Nos. 799,251 and 814,631.
For Tequila.
First use Jan. 20, 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 200,970. The Petersen System, Inc., Greensburg, Pa. Filed Aug. 31, 1964.

COLORGRAPH

For Step-By-Step Letter Forms Used in Teaching Handwriting.
First use on or about Feb. 28, 1963.

SN 230,435. Ralphabet Enterprises, Fresno, Calif. Filed Oct. 18, 1965.

KISSY WOO

For Stuffed Novelty Pillows.
First use Jan. 16, 1964.

SN 247,106. Carey-McFall Company, Philadelphia, Pa. Filed June 2, 1966.

WOODS-SPRITE

For Artificial Christmas Trees.
First use Apr. 27, 1966.

SN 247,152. Scott Plastics Corporation, Hartford, Conn. Filed June 2, 1966.

BREETH-IN

For Bottle Caps and Liners Therefor.
First use Dec. 13, 1963.

SN 247,184. Allied Plastics, Inc., Gastonia, N.C. Filed June 3, 1966.

MAGNA-COVER

For Covers for Windshields, Windows, and the Like.
First use September 1963.

SN 247,981. International Paper Company, New York, N.Y. Filed June 13, 1966.



For Handles Made of Plastic.
First use Oct. 26, 1965.

SN 254,965. Harte & Company, Inc., New York, N.Y. Filed Sept. 23, 1966.

VISTA VINYL

No claim is made to the word "Vinyl" apart from the mark as shown. Owner of Reg. No. 715,240.
For Vinyl Floor Mats.
First use Aug. 24, 1966.

SN 255,503. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 30, 1966.

3M

For Print Maker's Plate and Color Plate.
First use June 3, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 209,993. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 15, 1965.

TRI-BASIC

For Tooth Powder.
First use Nov. 2, 1942.

SN 211,461. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Feb. 5, 1965.

ENGAGE

For Women's Cosmetics and Toiletries—Namely, Beauty and Skin Creams and Oils, Bath Preparations, Rinses, Hair Sprays, and Cuticle Removers.
First use on or about Dec. 10, 1964, on cuticle removers.

SN 211,462. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Feb. 5, 1965.

HEIRESS

For Women's Cosmetics and Toiletries—Namely, Beauty and Skin Creams and Oils, Bath Preparations, Rinses, Hair Sprays, and Cuticle Removers.
First use on or about Dec. 10, 1964, on cuticle removers.

SN 213,330. Laboratorios Limousin, S.A., Mixcoac, Mexico City, Mexico. Filed Mar. 4, 1965.



Owner of Mexican Reg. No. 481,505, dated Aug. 26, 1944.
For Lotions, Facial Creams, Face Powder, Brilliantine, Cosmetics for Eyes and Lips, Rouges, Depilatories, Deodorants, and Dentifrices.
First use 1944; in commerce May 15, 1964.

SN 214,907. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 24, 1965.

CORT CRYSTAL COLOGNE MIST

Applicant disclaims the term "Cologne Mist" apart from the mark as shown. Owner of Reg. No. 790,889.
For Toilet Waters and Cologne.
First use Oct. 5, 1963.

SN 225,067. Puritan Fashions Corporation, New York, N.Y. Filed Aug. 5, 1965.



The words "Savage de Foret" are French for "savage of the forest."
For Men's Cologne and After Shave Lotion.
First use July 28, 1965.

SN 226,508. Hazel Bishop Inc., Union, N.J. Filed Aug. 26, 1965.



Owner of Reg. Nos. 661,750 and 769,285.
For Face Powder.
First use May 26, 1965.

SN 226,888. Anson Incorporated, Providence, R.I. Filed Sept. 1, 1965.

ANSON

Owner of Reg. Nos. 672,804, 678,494, and 678,271.
For Men's Cologne and After Shave Lotion.
First use Apr. 16, 1965.

SN 229,021. Sea & Ski Corporation, Millbrae, Calif. Filed Sept. 30, 1965.

LIP SAVERS

For Lip Balm.
First use Aug. 27, 1965.

SN 229,890. Yardley of London, Inc., Totowa, N.J. Filed Oct. 5, 1965.

BODY ENGLISH

For Talcum Powder, Dusting Powder, Hand Cream, and After Bath Freshener.
First use Sept. 3, 1965.

SN 231,899. Elizabeth of Sweden, Haledon, N.J. Filed Oct. 29, 1965.

CRÈME SOLAIRE TROPICALE

Without derogation of common law rights, applicant disclaims the words "Crème Solaire" apart from the mark as shown.
For Suntan Creme.
First use November 1963.

SN 231,969. Evyan Perfumes, Inc., New York, N.Y. Filed Nov. 2, 1965.

THE BARON

For Men's After Shave Lotion.
First use on or about Oct. 29, 1965.

SN 231,998. Hawaiian Surf Industries, Inc., New York, N.Y. Filed Nov. 2, 1965.

HAWAIIAN MIST

The word "Mist" is disclaimed apart from the mark. Owner of Reg. Nos. 784,145 and 806,071.
For Cologne.
First use on or about Sept. 17, 1965.

SN 232,146. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Nov. 4, 1965.

ROGER

For Men's Shaving Preparations and Deodorants.
First use on or about Sept. 20, 1965.

SN 238,416. Marie Ferguson, New York, N.Y. Filed Feb. 9, 1966.

"YOUNG & YOUTHFUL"

For Hair Pomade and Hair Groom.
First use Dec. 4, 1965.

SN 240,186. The Noxzema Chemical Company, Baltimore, Md. Filed Mar. 4, 1966.

COVER GIRL

Owner of Reg. No. 793,773 and others.
For Medicated Makeup.
First use Sept. 10, 1960.

SN 240,284. Max Factor & Co., d.b.a. Max Factor, Hollywood, Calif. Filed Mar. 7, 1966.

SOPHISTI-CAT

For Perfumes, Toilet Waters, and Colognes.
First use September 1958.

SN 242,254. Sybil Ives Incorporated, White Plains, N.Y. Filed Mar. 30, 1966.

DRESS AND GLOW

For Cosmetics and Toilet Preparations—Namely, Hair Dressing.
First use Nov. 16, 1965.

SN 242,427. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 1, 1966.

CW
CARTER-WALLACE

For Personal Deodorant.
First use Jan. 13, 1966.

SN 246,856. Avon Products, Inc., New York, N.Y. Filed May 31, 1966.

LORELEI

For After Bath Freshener.
First use May 20, 1966.
Subj. to Intf. with SN 247,176.

SN 247,176. Richardson-Harris, Inc., New York, N.Y. Filed June 3, 1966.

LORELEI

For Aerosol Dispensed Colognes, Toilet Waters, Perfumes, and Hand Cream.
First use May 25, 1966.
Subj. to Intf. with SN 246,856.

SN 252,986. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 24, 1966.

BREATH BUDS

For Breath Freshening Capsules.
First use July 26, 1966.

SN 253,475. Alexandra de Markoff Sales Corporation, New York, N.Y. Filed Aug. 31, 1966.

ALEXANDRA DE MARKOFF

The name sought to be registered is the name of a deceased person. Owner of Reg. Nos. 280,660, 634,466, and others.
For Cosmetics—Namely, Rouge, Mascara, Eye Shadow Stick, Eye Pencil, Eyeliner, Eyebrow Powder, Face Powder, Foundation Make-Up, Liquid Face Make-Up, Skin Cleansing Preparations, Skin Oil, Creams and Lotions, Facial Mask, Eye Oil, Eye Oil Stick, Lip Emollient, Complexion Freshener, Astringent, Body Perfume and Cologne, Antiperspirant and Deodorant.
First use at least as early as Feb. 28, 1930.

SN 253,821. Dep Corporation, Los Angeles, Calif. Filed Sept. 6, 1966.

Cloud Set

Applicant disclaims the word "Set" apart from the mark as shown.
For Foam Conditioning and Hair Setting Preparation.
First use Aug. 12, 1966.

SN 254,021. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 8, 1966.

OLAY

Owner of U.S. Reg. No. 787,645.
For Skin Lotion.
First use 1951; in commerce June 1, 1957.

SN 254,025. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 8, 1966.



Owner of U.S. Reg. No. 787,645.
For Skin Lotion.
First use 1951; in commerce June 1, 1957.

SN 254,026. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 8, 1966.



The drawing is lined for pink and black, however, no claim is made to color as a feature of the mark. Owner of U.S. Reg. No. 787,645.
For Skin Lotion.
First use 1951; in commerce June 1, 1957.

SN 254,027. Adams National Industries (Pty.) Ltd., Durban, Natal, Republic of South Africa. Filed Sept. 8, 1966.



Applicant disclaims the words "Vitalising Night Cream" apart from the mark as shown. Owner of U.S. Reg. No. 787,645.
For Skin Lotion.
First use 1951; in commerce June 1, 1957.

Class 52—Detergents and Soaps

SN 210,183. Garden Pharmaceuticals, Inc., Oceanside, N.Y. Filed Jan. 11, 1965.

DANDRID

For Medicated Hair Shampoo.
First use July 1, 1962.
Subj. to Intf. with SN 185,535.

SN 218,250. Alberto-Culver Company, Melrose Park, Ill. Filed May 7, 1965.

LIGHT TOUCH

For Preparation for Cleaning Glass.
First use Apr. 9, 1965.

SN 221,694. Brunswick Corporation, Chicago, Ill. Filed June 22, 1965.

CLARION

XIV

For Detergent for Use in Hospitals, Clinics, Doctors' and Dentists' Offices, and Laboratories.
First use Sept. 19, 1963.

SN 237,173. Target Stores, Inc., Minneapolis, Minn. Filed Jan. 24, 1966.

TARGET

For Liquid and Solid Dry Detergent for Household Use Such as Dishwashing, Laundry, and the Like; and Hair Shampoo.
First use on or about Oct. 1, 1964.

SN 240,870. Economics Laboratory, Inc., St. Paul, Minn. Filed Mar. 14, 1966.

MEDISOLV

Owner of Reg. No. 681,963.
For General Purpose Detergent for Laboratory and Surgical Equipment.
First use Apr. 25, 1965.

SN 241,489. The Mennen Company, Morristown, N.J. Filed Mar. 21, 1966.

CAPTAIN KIDD

For Little Boys' Soap.
First use Mar. 8, 1966.

SN 245,278. Alconox, Inc., New York, N.Y. Filed May 10, 1966.

ALCOJET

For Cleaning and Detergent Compound for Laboratory Washing Machines, and Other Mechanical Washers.
First use Aug. 12, 1959.

SN 253,596. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

LALIXE

For Toilet Soap.
First use Aug. 16, 1966.

SN 253,598. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

VOLANT

For Toilet Soap.
First use Aug. 15, 1966.

SN 253,600. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

BART

For Toilet Soap.
First use Aug. 19, 1966.

SN 253,604. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

BRUXAINE

For Toilet Soap.
First use Aug. 17, 1966.

SN 253,605. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

RONDOLAY

For Toilet Soap.
First use July 27, 1966.

SN 262,606. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

ULENA

For Toilet Soap.
First use Aug. 18, 1966.

SN 262,607. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 1, 1966.

ZALL A

For Toilet Soap.
First use Aug. 15, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 163,479. Hamburg Heaven, Inc., New York, N.Y. Filed Feb. 26, 1963.

HAMBURG HEAVEN

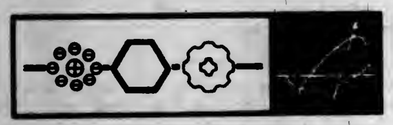
Without disclaiming its common law rights and for the purpose of this registration only, applicant makes no claim to the notation "Hamburg" apart from the mark as shown. Owner of Reg. No. 553,866.
For Catering Services.
First use in or about 1940.

SN 201,841. Hospitality Motor Inns, Cleveland, Ohio. Filed Sept. 14, 1964.

hospitality motor inn

The words "Hospitality Motor Inn" are disclaimed apart from the mark as shown.
For Motel Services, Including Providing Lodgings and Meals in Motels.
First use at least as early as Aug. 1, 1964.

SN 227,918. Booz-Allen Applied Research, Inc., Chicago, Ill. Filed Sept. 16, 1965.



Owner of Reg. Nos. 537,165 and 718,356.
For Research, Development, Engineering, Testing, Economic, Analysis and Consultation Services in the Life Sciences, in the Physical Sciences, and in Mathematics.
First use Jan. 4, 1965.

SN 233,308. B/G Foods, Inc., Chicago, Ill. Filed Nov. 26, 1965.

LE PETIT B/G

"Le Petit" is disclaimed apart from the mark as shown. Owner of Reg. No. 640,161.
For Restaurant Services.
First use Sept. 26, 1965.

SN 236,895. Kennat, Inc., Washington, D.C. Filed Jan. 20, 1966.

LES AMBASSADEURS

The French words "Les Ambassadeurs," when translated into English, means "the ambassadors."
For Restaurant and Cocktail Lounge Services.
First use Jan. 3, 1966.

Class 101 — Advertising and Business

SN 206,731. International Automotive Service Industries Show (joint venture), Chicago, Ill. Filed Nov. 23, 1964.

INTERNATIONAL AUTOMOTIVE SERVICE INDUSTRIES SHOW

Owner of Reg. Nos. 663,610 and 789,494.
For Services in Arranging for Exhibit of the Automotive Products of Applicants' Members, and Promoting and Conducting Expositions and Conventions for Manufacturers Whose Products Are Sold in the Automotive Field.
First use May 29, 1958.

SN 212,176. American Family Mutual Insurance Company, Madison, Wis. Filed Feb. 17, 1965.

AMPLAN

For Monthly Record-Keeping Service for Insurance Policyholders and To Facilitate Accounting and Billing Services Rendered to Insurance Agents.
First use Jan. 1, 1965.

SN 222,752. Radcliffe Advertising, Inc., Jacksonville, Fla. Filed July 6, 1965.

MAGIC BINGO

The drawing is lined for the color purple. Applicant disclaims the word "Bingo" apart from the mark as shown.
For Promoting the Sale of Goods and Services of Others by Means of a Bingo Type Game Utilizing Cards Obtained by the Public at Participating Stores.
First use June 1, 1965.
Subj. to Intf. with SN 238,832.

SN 228,242. Computer Sciences Corporation, El Segundo, Calif. Filed Sept. 21, 1965.

REMOTRAN

For Data Processing by Transmission of Data Between a High Speed Computer and Remote Users.
First use July 13, 1965.

SN 232,885. WOFAC Corporation, Haddonfield, N.J. Filed Nov. 17, 1965.

IMI

For Analysis, Evaluation, Design, and Implementation of Information and Electronic Data Processing Systems for Business, Governmental, and Other Users.
First use July 21, 1965.

SN 233,739. Poppy Productions, Tulsa, Okla. Filed Dec. 1, 1965.

BOWL IT RICH

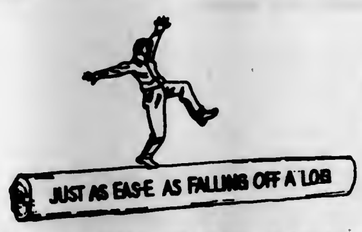
For Promoting the Sale of Goods of Retail Merchants Through the Conduct of Contests.
First use Nov. 2, 1965.

SN 238,832. Bradfute Corporation, Eastchester, N.Y. Filed Feb. 15, 1966.

Magic Bingo

Applicant disclaims the use of the word "Bingo" apart from the mark as shown.
For Promoting the Sale of the Goods and Services of Others by Means of a Bingo-Type Game Utilizing Cards Obtained by the Public at Participating Stores.
First use May 7, 1965.
Subj. to Intf. with SN 222,752.

SN 241,246. Ess-E Ordering, Inc., Chicago, Ill. Filed Mar. 17, 1966.



For Advice and Consultation Services in Purchasing Draperies for Schools, Churches, and Other Institutions.
First use Feb. 26, 1966.

SN 242,094. Advanced Computer Techniques Corporation, New York, N.Y. Filed Mar. 29, 1966.

ACT

For Computer and Data Processing Services.
First use June 18, 1962.
Subj. to Intf. with SN 238,686.

Class 102 — Insurance and Financial

SN 153,505. National Association Plans, Inc., Washington, D.C., by change of name from National Insurance Plans, Inc., Washington, D.C. Filed Sept. 19, 1962.

TESTAMENTARY LIFE

Reserving all common law rights, applicant disclaims the exclusive right to the use of the word "Life" except as a part of its mark, as shown.
For Placing Life Insurance With Underwriters and Administration of Said Insurance.
First use Aug. 8, 1962.

SN 153,506. National Association Plans, Inc., Washington, D.C., by change of name from National Insurance Plans, Inc., Washington, D.C. Filed Sept. 19, 1962.

TESTAMENTARY LIFE

Reserving all common law rights, applicant disclaims the exclusive right to the use of the word "Life" except as a part of its mark, as shown.
For Placing Life Insurance With Underwriters and Administration of Said Insurance.
First use Aug. 8, 1962.

SN 178,660. The State Automobile & Casualty Underwriters, Des Moines, Iowa. Filed Sept. 28, 1962.



All wording except the expression "X Marks the Spot" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 389,343 and 536,958.
For Underwriting of Insurance.
First use Dec. 20, 1933.

SN 238,242. Security Bank of Oregon, Portland, Oreg. Filed Nov. 5, 1965.

PACKAGED BANKING

The generic term "Banking" is disclaimed apart from the mark as shown.
For Banking Service—Namely, a Combination Checking and Savings Account Service.
First use December 1959.

Class 103 — Construction and Repair

SN 209,710. Model Coverall Service, Inc., Grand Rapids, Mich. Filed Jan. 11, 1965.



The wording "Coverall Service" is disclaimed. The drawing is lined to indicate the color blue.
For Renting and Cleaning Articles of Clothing, Cleaning Rags, Towels, and Mats.
First use October 1962.

SN 232,272. Auto Glass Specialists, Inc., Madison, Wis. Filed Nov. 8, 1965.



For Delivery and Installation of Glass for Automobiles.
First use July 8, 1965.

Class 104 — Communication

SN 238,686. The Western Union Telegraph Company, New York, N.Y. Filed Feb. 11, 1966.

ACTS

For Automatic Computer Telex Services.
First use on or about Dec. 19, 1965.
Subj. to Intf. with SN 242,094.

Class 107 — Education and Entertainment

SN 244,178. Larry Attabery, Chicago, Ill. Filed Apr. 25, 1966.

PRIVATE LINE

For Entertainment Services in the Form of a Televisio Discussion Program.
First use on or about Jan. 18, 1965.

COLLECTIVE MEMBERSHIP MARKS

SN 246,741. American Camping Association, Inc., Martinsville, Ind. Filed May 27, 1966.

For Indicating Membership in the Applicant.
First use Dec. 60, 1964.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

820,135. CEGEITE. Compagnie Generale d'Electricite. SN 211,876. Pub. 9–27–66. Filed 2–12–65.

820,136. LONE STAR. Texas Farm Products Company. MULTIPLE CLASS (Classes 1, 10, 18, and 46). SN 213,826. Pub. 9–27–66. Filed 3–11–65.

820,137. ARTFOAM. Strux Corporation, assignee of Aircraft Specialties Company, Inc. SN 223,273. Pub. 5–24–66. Filed 7–14–65.

820,138. XENA. Beaunit Corporation. SN 231,024. Pub. 9–27–66. Filed 10–22–65.

820,139. XENA, THE COMPATIBLE FIBER. Beaunit Corporation. SN 231,577. Pub. 9–27–66. Filed 10–23–65.

820,140. SELECT SIRES ETC. AND DESIGN. Select Sires, Inc. SN 234,080. Pub. 9–27–66. Filed 12–6–65.

820,141. SHRINKFLEX. Haveg Industries, Inc. SN 238,430. Pub. 9–27–66. Filed 2–9–66.

820,142. STRATOFILM. Winsen Research Inc. SN 239,480. Pub. 9–27–66. Filed 2–23–66.

820,143. CURONEX. Reeves Brothers, Inc. SN 240,200. Pub. 9–27–66. Filed 3–4–66.

820,144. PERRY PENGUIN'S. Olen R. Creager, d.b.a. Vending Enterprises. SN 240,859. Pub. 9–27–66. Filed 3–14–66.

Class 2 — Receptacles

820,145. AM PAK PLASTICS AND DESIGN. American Forest Products Corporation. SN 199,947. Pub. 11–9–65. Filed 8–17–64.

820,146. ABBEY RENTS AND DESIGN. Abbey Rents. MULTIPLE CLASS (Classes 2, 4, 6, 13, 15, 19, 21, 22, 23, 26, 28, 30, 31, 32, 33, 34, 36, 41, 42, 44, 50 and 52). SN 228,861. Pub. 9–27–66. Filed 9–29–65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

820,147. CRUISER. Jack C. Abert, d.b.a. Mechanical Products Company. SN 225,244. Pub. 9–27–66. Filed 8–9–65.

820,148. PONDEROSA. Jack C. Abert, d.b.a. Mechanical Products Company. SN 225,245. Pub. 9–27–66. Filed 8–9–65.

820,149. ATLANTIC AND DESIGN. Atlantic Products Corporation. MULTIPLE CLASS (Classes 3 and 22). SN 226,496. Pub. 9–27–66. Filed 8–26–65.

820,150. COINPAK. St. Thomas, Incorporated. SN 229,878. Pub. 9–27–66. Filed 10–11–65.

820,151. BAYLOR. Zale Corporation. SN 238,135. Pub. 9–27–66. Filed 2–4–66.

Class 4 — Abrasives and Polishing Materials

820,146. (See Class 2 for this trademark.)

820,152. VEND-A-WAX. Weben Industries, Inc. SN 225,218. Pub. 9–27–66. Filed 8–6–65.

Class 6 — Chemicals and Chemical Compositions

820,146. (See Class 2 for this trademark.)

820,153. TRITAC. Hooker Chemical Corporation. SN 162,160. Pub. 9–27–66. Filed 2–6–63.

820,154. GLYTAC. Hooker Chemical Corporation. SN 163,050. Pub. 9–27–66. Filed 2–19–63.

820,155. ROACH-TOX. Geigy Chemical Corporation. SN 202,468. Pub. 9–27–66. Filed 9–23–64.

820,156. FLY-TOX. Geigy Chemical Corporation. SN 202,469. Pub. 9–27–66. Filed 9–23–64.

820,157. FLEA-TOX. Geigy Chemical Corporation. SN 202,470. Pub. 9–27–66. Filed 9–23–64.

820,158. BOMYL. Allied Chemical Corporation. SN 211,411. Pub. 9–27–66. Filed 2–5–65.

820,159. IRCOGEL. The Lubrizol Corporation. SN 224,768. Pub. 9–27–66. Filed 8–2–65.

820,160. EXPORSAN. Stauffer Chemical Company. SN 225,078. Pub. 9–27–66. Filed 8–5–65.

820,161. DAISY FRESH. De Mert & Dougherty, Inc. SN 228,660. Pub. 9–27–66. Filed 9–27–65.

820,162. GELTONE. National Lead Company. SN 232,011. Pub. 7–19–66. Filed 11–2–65.

820,163. SF–100. National Lead Company. SN 232,013. Pub. 9–27–66. Filed 11–2–65.

820,164. BRAZINYL. Rhodia Inc. SN 232,934. Pub. 9–27–66. Filed 11–18–65.

820,165. PHOSFLEX. Stauffer Chemical Company. SN 232,942. Pub. 9–27–66. Filed 11–18–65.

820,166. AMAZOL. Philip A. Hunt Chemical Corporation. SN 234,426. Pub. 9–27–66. Filed 12–13–65.

820,167. CLEARFIL. Schwarz Services International Limited. SN 234,774. Pub. 9–27–66. Filed 12–16–65.

820,168. VIBRODAMPER. Korfund Dynamics Corporation. SN 236,273. Pub. 9–27–66. Filed 1–12–66.

820,169. MY GAS AND DESIGN. Tropical Gas Company, Inc. SN 236,938. Pub. 9–27–66. Filed 1–20–66.

820,170. SIAPRIT. Societa Italo Americana Prodotti Antiparassitari. SN 241,190. Pub. 9–27–66. Filed 3–16–66.

820,171. SCRATCHEX. Westchester Veterinary Products, Inc. SN 241,298. Pub. 9–27–66. Filed 3–17–66.

820,172. REX–121. R. M. Davis Chemical Corporation. SN 241,583. Pub. 9–27–66. Filed 3–22–66.

Class 7 — Cordage

820,173. PERMALON. The Goodyear Tire & Rubber Company. SN 239,768. Pub. 9–27–66. Filed 2–28–66.

820,174. ALWAYS A JUMP AHEAD! ETC. AND DESIGN. The Wear-Flex Corporation. SN 241,398. Pub. 9–27–66. Filed 3–18–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

820,175. ANOGEL. Commercial Solvents Corporation. SN 223,871. Pub. 9–27–66. Filed 7–21–65.

820,176. OLGEL. Commercial Solvents Corporation. SN 223,872. Pub. 9–27–66. Filed 7–21–65.

820,177. STYLIZED L. Loral Corporation. SN 224,219. Pub. 9–27–66. Filed 7–26–65.

820,178. RCBS. RCBS Inc. SN 226,073. Pub. 9–27–66. Filed 9–17–65.

820,179. DOW AND DESIGN. The Dow Chemical Company. SN 230,141. Pub. 9–27–66. Filed 10–14–65.

820,180. WARHEAD. R & S Marketing Service, Inc. SN 230,564. Pub. 9–27–66. Filed 10–19–65.

820,181. STINGER. R & S Marketing Service, Inc. SN 230,565. Pub. 9–27–66. Filed 10–19–65.

820,182. GRIZZLY. R & S Marketing Service, Inc. SN 230,566. Pub. 9–27–66. Filed 10–19–65.

Class 10—Fertilizers

820,136. (See Class 1 for this trademark.)

820,183. K-MAG. Duval Corporation. SN 209,152. Pub. 9–27–66. Filed 12–31–64.

820,184. D-FGAN. Samuel J. Porter. SN 227,065. Pub. 9–27–66. Filed 9–2–65.

820,185. DANF. Samuel J. Porter. SN 227,066. 9–27–66. Filed 9–2–65.

Class 11—Inks and Inking Materials

820,186. TYPE BAR. Columbia Ribbon & Carbon Manufacturing Co., Inc. SN 230,787. Pub. 9–27–66. Filed 10–21–65.

820,187. SECRETARIAL. Columbia Ribbon & Carbon Manufacturing Co., Inc. SN 230,788. Pub. 9–27–66. Filed 10–21–65.

Class 12—Construction Materials

820,188. DIAMODIZED. Marine Railings Company, Incorporated. SN 227,305. Pub. 9–27–66. Filed 9–7–65.

820,189. M AND DESIGN. Montezuma Plywood Company. SN 235,211. Pub. 9–27–66. Filed 12–23–65.

820,190. LAVREZ. E. J. Lavino and Company. SN 238,240. Pub. 9–27–66. Filed 2–7–66.

820,191. BONDREZ. E. J. Lavino and Company. SN 238,241. Pub. 9–27–66. Filed 2–7–66.

820,192. BONSTAR. E. J. Lavino and Company. SN 238,242. Pub. 9–27–66. Filed 2–7–66.

820,193. PRESTAR. E. J. Lavino and Company. SN 238,243. 9–27–66. Filed 2–7–66.

820,194. HP AND DESIGN. Edward Hines Lumber Co. SN 245,801. Pub. 9–27–66. Filed 5–17–66.

820,195. CONODEC. Conodec, Inc. SN 247,462. Pub. 9–27–66. Filed 6–7–66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

820,146. (See Class 2 for this trademark.)

820,196. MIDGITROL. International Telephone and Telegraph Corporation. SN 238,229. Pub. 9–27–66. Filed 2–7–66.

820,197. HYDRO GEM. Crane Co. SN 238,332. Pub. 9–27–66. Filed 2–8–66.

820,198. BAL-FLO. Preferred Utilities Manufacturing Corp. SN 238,446. Pub. 9–27–66. Filed 2–9–66.

820,199. BELFAB. Bailey Meter Company. SN 239,581. Pub. 9–27–66. Filed 2–25–66.

Class 15—Oils and Greases

820,146. (See Class 2 for this trademark.)

820,200. SMITH OIL AND DESIGN. Smith Oil Corporation. SN 222,772. Pub. 9–27–66. Filed 7–6–65.

820,201. FLAME (DESIGN). Victrylite Candle Company. SN 229,317. Pub. 9–27–66. Filed 10–4–65.

Class 17—Tobacco Products

820,202. GRAND NATIONAL. Poul Petersen Tobaksfabriker, d.b.a. Pete Bros. SN 234,253. Pub. 9–27–66. Filed 12–8–65.

820,203. ORLY. Turmac Tobacco Company N.V. SN 234,256. Pub. 9–27–66. Filed 12–8–65.

Class 18—Medicines and Pharmaceutical Preparations

820,136. (See Class 1 for this trademark.)

820,204. WOLINS. Wolins Pharmacal Corp. SN 216,767. Pub. 9–27–66. Filed 4–16–65.

820,205. MISCELLANEOUS DESIGN. Wolins Pharmacal Corp. SN 216,768. Pub. 9–27–66. Filed 4–16–65.

820,206. WOLINS AND DESIGN. Wolins Pharmacal Corp. SN 216,769. Pub. 9–27–66. Filed 4–16–65.

820,207. DIACELS AND DESIGN. Winston Pharmaceuticals, Incorporated. SN 224,491. Pub. 9–27–66. Filed 7–28–65.

820,208. PHARM-A-SUITABLE. Pharm-A-Suitable Co. SN 224,710. Pub. 9–27–66. Filed 8–2–65.

820,209. NEO-CAL. Sandos, Inc. SN 225,999. Pub. 9–27–66. Filed 8–18–65.

820,210. SANDOPTAL. Sandos, Inc. SN 226,292. Pub. 9–27–66. Filed 8–23–65.

820,211. DECAZOLE. Merck & Co., Inc. SN 226,545. Pub. 9–27–66. Filed 8–26–65.

820,212. PROMONTA. Chemische Fabrik Promonta Gesellschaft mit beschrankter Haftung. SN 227,248. Pub. 9–27–66. Filed 9–7–65.

820,213. SPROUT. Fleet Wholesale Supply Co., Inc. SN 229,971. Pub. 9–27–66. Filed 10–12–65.

820,214. API AND DESIGN. American Promotions, Inc. SN 230,023. Pub. 9–27–66. Filed 10–13–65.

820,215. ACTIMETS. Eli Lilly and Company. SN 232,570. Pub. 9–27–66. Filed 11–12–65.

820,216. INTENSOL. Anasco GmbH. SN 234,526. Pub. 9–27–66. Filed 12–14–65.

820,217. ROCAS. Geigy Chemical Corporation. SN 234,558. Pub. 9–27–66. Filed 12–14–65.

820,218. RECTOPLEXIL. Societe des Usines Chimiques Rhone-Poulenc. SN 235,592. Pub. 9–27–66. Filed 12–30–65.

820,219. VIT-A-TERRAMYCIN. Chas. Pfizer & Co., Inc. SN 235,608. Pub. 9–27–66. Filed 12–20–65.

820,220. FERROSEL "B." Vitamix Pharmaceuticals Incorporated. SN 236,790. Pub. 9–27–66. Filed 1–18–66.

820,221. CALMOL 4. Chas. Pfizer & Co., Inc. SN 237,150. Pub. 9–27–66. Filed 1–24–66.

820,222. PHETOBESE. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and/or Cole Chemical Company. SN 238,053. Pub. 9–27–66. Filed 2–4–66.

820,223. SANA-RINSE. Huntington Laboratories, Inc. SN 238,639. Pub. 9–27–66. Filed 2–11–66.

820,224. SETIMAL. Geigy Chemical Corporation. SN 238,863. Pub. 9–27–66. Filed 2–15–66.

820,225. KINESED. Atlas Chemical Industries, Inc. SN 239,108. Pub. 9–27–66. Filed 2–18–66.

820,226. HYDRODIURIL-KALETS. Merck & Co., Inc. SN 239,427. Pub. 9–27–66. Filed 2–23–66.

820,227. NAVARON. Chas. Pfizer & Co., Inc. SN 239,538. Pub. 9–27–66. Filed 2–24–66.

820,228. SLIDEX. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 230,884. Pub. 9–27–66. Filed 3–1–66.

820,229. CABNET AND DESIGN. Kirkman Laboratories, Inc., d.b.a. Cabnet Pharmacal Co. SN 241,256. Pub. 9–27–66. Filed 3–17–66.

820,230. SIGNEF. Betan Company, Inc. SN 246,865. Pub. 9–27–66. Filed 5–31–66.

820,231. DERMASOL. Betan Company, Inc. SN 246,866. Pub. 9–27–66. Filed 5–31–66.

Class 19—Vehicles

820,146. (See Class 2 for this trademark.)

820,232. ROLITE. Rolite, Inc. SN 234,243. Pub. 9–27–66. Filed 7–26–65.

820,233. TANGIER. Bel-Craft, Inc. SN 231,721. Pub. 9–27–66. Filed 10–28–65.

820,234. HUSTLER. The Hustler Co. SN 232,048. Pub. 9–27–66. Filed 11–3–65.

820,235. SKYLARK. Star Tank and Boat Company Inc., d.b.a. Starcraft Boat Company. SN 232,162. Pub. 9–27–66. Filed 11–4–65.

820,236. ALUMIVAN. Joines Body Company. SN 232,698. Pub. 9–27–66. Filed 11–15–65.

820,237. JEEPSTER. Kaiser Jeep Corporation. SN 233,715. Pub. 9–27–66. Filed 12–1–65.

Class 21—Electrical Apparatus, Machines, and Supplies

820,146. (See Class 2 for this trademark.)

820,238. PRESTO-PATCH. Major Equipment Company, Inc. SN 155,466. Pub. 9–27–66. Filed 10–9–62.

820,239. LD. Atlantic Research Corporation. SN 219,311. Pub. 9–27–66. Filed 5–20–65.

820,240. POLYVISION. Compagnie Francaise Thomson-Houston. SN 223,780. Pub. 9–27–66. Filed 7–20–65.

820,241. MICROSCAN. Packard-Bell Electronics Corporation. SN 228,903. Pub. 8–2–66. Filed 7–21–65.

820,242. AVISO. Loewe Opta GmbH. SN 234,105. Pub. 9–27–66. Filed 7–23–65.

820,243. LUMINAGE. Earl M. Reiback. MULTIPLE CLASS (Classes 21 and 50). SN 229,027. Pub. 9–27–66. Filed 9–30–65.

820,244. YE (DESIGN). Kabushiki Kaisha Yaskawa Denki Seisakushno, d.b.a. Yaskawa Electric Mfg. Co., Ltd. SN 230,653. Pub. 9–27–66. Filed 10–20–65.

820,245. SOUNDSERVO. Vega Electronics Corporation. SN 232,571. Pub. 9–27–66. Filed 11–8–65.

820,246. HORNET. Merrell Electronics Corp. SN 232,411. Pub. 9–27–66. Filed 11–8–65.

820,247. GOLDEN-TOUCH. McCulloch Corporation. SN 236,615. Pub. 9–27–66. Filed 1–17–66.

Class 22—Games, Toys, and Sporting Goods

820,146. (See Class 2 for this trademark.)

820,149. (See Class 3 for this trademark.)

820,248. SPIRAFLEX BY GATORGLASS AND DESIGN. J & J Enterprises, Inc. SN 219,881. Pub. 9–27–66. Filed 5–27–65.

820,249. SPIRALITE BY GATORGLASS AND DESIGN. J & J Enterprises, Inc. SN 219,882. Pub. 9–27–66. Filed 5–27–65.

820,250. SPIN-PLAY BASKETBALL AND DESIGN. Jerry Lucas Part-Time Games, Inc. SN 220,861. Pub. 9–27–66. Filed 6–10–65.

820,251. ULLR. Varian Associates. SN 220,887. Pub. 9–27–66. Filed 6–10–65.

820,252. EBERHARD FABER. Eberhard Faber Inc. SN 221,915. Pub. 9–27–66. Filed 6–24–65.

820,253. G GABRIEL CHANEL-SLIDE AND DESIGN. Gabriel Industries, Inc. SN 223,000. Pub. 9–27–66. Filed 7–8–65.

820,254. WILLIAM BANCROFT. Bancroft Racket Company. SN 224,912. Pub. 9–27–66. Filed 8–4–65.

820,255. MUSKY IKE. Lasy Ike Corporation. SN 227,043. Pub. 9–27–66. Filed 9–2–65.

820,256. HUSKY IKE. Lasy Ike Corporation. SN 227,044. Pub. 9–27–66. Filed 9–2–65.

820,257. STRUCTO AND ARROW DESIGN. King-Seeley Thermos Co., d.b.a. Structo Division. SN 227,352. Pub. 9–27–66. Filed 9–7–65.

820,258. STRUCTO AND OVAL DESIGN. King-Seeley Thermos Co., d.b.a. Structo Division. SN 227,354. Pub. 9–27–66. Filed 9–7–65.

820,259. LITTLE MISS NO-NAME. Hassenfeld Bros., Inc. SN 229,804. Pub. 9–27–66. Filed 10–11–65.

820,260. STARDUST AND DESIGN. Hassenfeld Bros., Inc. SN 229,807. Pub. 9–27–66. Filed 10–11–65.

820,261. CADDY CRUISER. A J Industries Corporation. SN 229,929. Pub. 9–27–66. Filed 10–12–65.

820,262. TRAPPE. Old Pal Inc. SN 230,183. Pub. 9–27–66. Filed 10–14–65.

820,263. PENGUIN. Anderson & Thompson Ski Co., Inc. SN 230,484. Pub. 9–27–66. Filed 10–19–65.

820,264. MARK II. Anderson & Thompson Ski Co., Inc. SN 230,489. Pub. 9–27–66. Filed 10–19–65.

820,265. MATTEL-O-PHONE. Mattel, Inc. SN 231,440. Pub. 9–27–66. Filed 10–23–65.

820,266. BUNSON BURNIE. Mattel, Inc. SN 231,443. Pub. 9–27–66. Filed 10–23–65.

820,267. OOGLE BEADS. Lisbeth Whiting Company, Inc. SN 231,645. Pub. 9–27–66. Filed 10–26–65.

820,268. THE GREAT SOCIETY. Sara Y. Belknap. SN 231,803. Pub. 9–27–66. Filed 10–29–65.

820,269. STRAITSHOOTER. Parris Mfg. Co. SN 232,341. Pub. 9–27–66. Filed 11–8–65.

820,270. HERCULON. The Program Aids Company, Inc. SN 232,592. Pub. 9–27–66. Filed 11–12–65.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

820,146. (See Class 2 for this trademark.)

820,271. VARATORQ. The Pneumatic Applications Company. SN 210,042. Pub. 9–27–66. Filed 1–15–65.

820,272. THRIFTY-LIFTY. Stone Conveyor Co., Inc. SN 216,540. Pub. 9–27–66. Filed 4–14–65.

820,273. HICOFINER. Escher Wyss G.m.b.H. SN 217,435. Pub. 9–27–66. Filed 2–18–65.

820,274. VEND-A-WASH. Weben Industries, Inc. SN 220,888. Pub. 9–27–66. Filed 6–10–65.

820,275. VIBE-O-DECK. Bath Iron Works Corporation. SN 222,248. Pub. 9–27–66. Filed 6–29–65.

820,276. ASTROVEYOR. Conveyor Dynamics, Inc. SN 231,890. Pub. 9–27–66. Filed 10–28–65.

820,277. MISCELLANEOUS DESIGN. Conveyor Dynamics, Inc. SN 231,891. Pub. 9–27–66. Filed 10–28–65.

820,278. AEROKNIVES. Cincinnati Screen Process Supplies, Inc. SN 232,527. Pub. 9–27–66. Filed 11–12–65.

820,279. T TORRINGTON AND DESIGN. The Torrington Company. SN 232,615. Pub. 9–27–66. Filed 11–12–65.

820,280. VENDGISTOR. Tateisi Electronics Co. SN 232,767. Pub. 9–27–66. Filed 11–15–65.

820,281. PREHI. The Smith and Winchester Manufacturing Company. SN 233,127. Pub. 9–27–66. Filed 11–22–65.

820,282. PHYLON MASTER'S PRIDE AND DESIGN. Erman-Bach, Ltd. SN 233,332. Pub. 9–27–66. Filed 11–26–65.

820,283. LADY GILLETTE. The Gillette Company. SN 233,349. Pub. 9–27–66. Filed 2–8–66.

820,284. 4 DISC AND DESIGN. Bolton-Emerson, Inc. SN 239,488. Pub. 9–27–66. Filed 2–24–66.

Class 26—Measuring and Scientific Appliances

820,146. (See Class 2 for this trademark.)

820,285. OS. Firma Hellma GmbH, Glastechnische Werkstatten. SN 221,730. Pub. 9–27–66. Filed 6–22–65.

820,286. QI. Firma Hellma GmbH., Glastechnische Werkstatten. SN 221,731. Pub. 9–27–66. Filed 6–22–65.

820,287. UNIVERSALAIRE. Freeland Gauge Company. SN 228,901. Pub. 9–27–66. Filed 9–29–65.

820,288. D. Dytronics Company, Inc. SN 229,643. Pub. 9–27–66. Filed 10–8–65.

820,289. VERTICAM. Hoffman Camera Corporation. SN 230,539. Pub. 9–27–66. Filed 10–19–65.

820,290. TINTASLIDE. Paul S. Heitman, d.b.a. Gem-Mounts and Gem-Masks Co. SN 230,823. Pub. 9–27–66. Filed 10–21–65.

820,291. DEPENDEX. High Voltage Engineering Corporation. SN 240,610. Pub. 9–27–66. Filed 6–10–66.

820,292. TYPE-FLEX. Wendell P. Dubbs. SN 247,552. Pub. 9–27–66. Filed 6–8–66.

Class 27—Horological Instruments

820,283. ODO. Odo. SN 231,150. Pub. 9–27–66. Filed 10–22–65.

Class 28—Jewelry and Precious-Metal Ware

820,146. (See Class 2 for this trademark.)

820,294. LIB AND DESIGN. Baumgold Bros. Inc. SN 230,026. Pub. 9–27–66. Filed 10–18–65.

820,295. BAYLOR. Zale Corporation. SN 238,134. Pub. 9–27–66. Filed 2–4–66.

820,296. BAYLOR. Zale Corporation. SN 238,136. Pub. 9–27–66. Filed 2–4–66.

Class 30—Crockery, Earthenware, and Porcelain

820,146. (See Class 2 for this trademark.)

Class 31—Filters and Refrigerators

820,146. (See Class 2 for this trademark.)

820,297. AMERICAN FINAL/FILTER AND DESIGN. The American Oil Company. SN 181,104. Pub. 9–27–66. Filed 11–14–63.

Class 32—Furniture and Upholstery

820,146. (See Class 2 for this trademark.)

820,298. MISCELLANEOUS DESIGN. The Ohio Desk Company. SN 210,150. Pub. 9–27–66. Filed 1–18–65.

820,299. TELESCOPIC AND DESIGN. Vita-Pakt Citrus Products Co. SN 228,224. Pub. 9–27–66. Filed 9–20–65.

820,300. CIRCUL-AIR. Southern Equipment Company, d.b.a. Main Line Company. SN 234,777. Pub. 9–27–66. Filed 12–16–65.

Class 33—Glassware

820,146. (See Class 2 for this trademark.)

Class 34—Heating, Lighting, and Ventilating Apparatus

820,146. (See Class 2 for this trademark.)

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

820,301. SAFTIPREME. The Hercules Tire & Rubber Company. SN 229,246. Pub. 9–27–66. Filed 10–4–65.

820,302. FT-10. United States Rubber Company. SN 229,383. Pub. 9–27–66. Filed 10–5–65.

Class 36—Musical Instruments and Supplies

820,146. (See Class 2 for this trademark.)

820,303. SOUND CAMERA. Concord Electronics Corporation. SN 208,815. Pub. 9–27–66. Filed 12–24–64.

Class 37—Paper and Stationery

820,304. SEATIES. C. A. Spaulding, d.b.a. The Seaties Company. SN 230,941. Pub. 9–27–66. Filed 10–21–65.

820,305. TWINWELL. Textron, Inc., assignee of W. A. Sheaffer Pen Company. SN 233,641. Pub. 7–26–66. Filed 11–30–65.

820,306. PRESSPERFECT. Champion Papers Inc. SN 234,621. Pub. 9–27–66. Filed 12–15–65.

820,307. DURA-HINGE. Westab Inc. SN 239,561. Pub. 9–27–66. Filed 2–24–66.

820,308. VALORE. Brown Company. SN 239,878. Pub. 9–27–66. Filed 3–1–66.

820,309. TRAN-ECON. General Aniline & Film Corporation. SN 239,894. Pub. 9–27–66. Filed 3–1–66.

820,310. WEYERHAEUSER. Weyerhaeuser Company. SN 240,995. Pub. 9–27–66. Filed 3–14–66.

820,311. HIGH CHIEF AND DESIGN. King Kullen Grocery Co., Inc. SN 248,395. Pub. 9–27–66. Filed 6–20–66.

Class 38—Prints and Publications

820,312. WHAT CONSTITUTES DOING BUSINESS. The Corporation Trust Company. SN 201,822. Pub. 9–27–66. Filed 9–14–64.

820,313. QUIK CASH. Spot-O-Gold Corporation. SN 215,657. Pub. 9–27–66. Filed 4–2–65.

820,314. CHARLEY'S CHUCKLE CARDS, INC. AND DESIGN. Charley's Chuckle Cards of Oklahoma, Inc. SN 224,071. Pub. 9–27–66. Filed 7–23–65.

820,315. MR. FLUBBERS. Ned L. Jones. SN 225,426. Pub. 9–27–66. Filed 8–10–65.

820,316. CANNY GREETING. Cube Card Corporation. SN 225,737. Pub. 9–27–66. Filed 8–16–65.

820,317. TELL CHART. The Reuben Filter Company. SN 227,616. Pub. 9–27–66. Filed 9–10–65.

820,318. INTERNATIONAL RAILWAY JOURNAL. Simmons-Boardman Publishing Corporation. SN 230,440. Pub. 9–27–66. Filed 10–18–65.

820,319. SCRIPTFORMATION. Rowell Laboratories, Inc. SN 230,570. Pub. 9–27–66. Filed 10–19–65.

820,320. AV AND DESIGN. Artemis Verlags Aktiengesellschaft. SN 231,016. Pub. 9–27–66. Filed 10–22–65.

820,321. SIMILUX. The Sillcocks-Miller Co. SN 231,498. Pub. 9–27–66. Filed 10–26–65.

820,322. FOOD MART NEWS. Michael & Ginsberg Publishing Co., assignee of Lake Shore National Bank of Chicago, Illinois, trustee of the estate of James B. Haboush, d.b.a. Food Mart News. SN 231,573. Pub. 7–5–66. Filed 10–24–65.

820,323. DELTA UPSILON QUARTERLY. The Delta Upsilon Fraternity. SN 233,586. Pub. 9–27–66. Filed 11–30–65.

820,324. INDUSTRIAL ELECTRONICS CONTROL INSTRUMENTATION AND DESIGN. The Institute of Electrical and Electronics Engineers, Incorporated. SN 233,907. Pub. 9–27–66. Filed 12–3–65.

820,325. ME, MYSELF AND I. Norcross, Inc. SN 234,059. Pub. 9–27–66. Filed 12–6–65.

820,326. SQUARECASTER. Associated Square Dancers of Superior California. SN 234,169. Pub. 9–27–66. Filed 12–8–65.

820,327. MARINE PRODUCTS. Chilton Company. SN 234,335. Pub. 9–27–66. Filed 12–10–65.

820,328. TRANSITIONS. B. T. Heins, d.b.a. B. T. Heins Co. SN 234,350. Pub. 9–27–66. Filed 12–10–65.

820,329 BOOTS. Newspaper Enterprise Association, Inc. SN 234,455. Pub. 9–27–66. Filed 12–13–65.

820,330. THE SQUIRT REPORTER AND DESIGN. The Squirt Company. SN 234,947. Pub. 9–27–66. Filed 12–20–65.

820,331. A FANTASY CARD. Gibson Greeting Cards, Inc. SN 235,179. Pub. 9–27–66. Filed 12–23–65.

820,332. KIMCAL. Kimball Systems, Inc. SN 236,097. Pub. 9–27–66. Filed 1–10–66.

820,333. YOUR FAMILY'S FUTURE. The Merrill Anderson Company, Inc. SN 237,577. Pub. 9–27–66. Filed 1–28–66.

820,334. WONDER WOMAN. National Periodical Publications, Inc. SN 237,867. Pub. 9–27–66. Filed 2–2–66.

820,335. TORCHBOOKS. Harper & Row, Publishers, Incorporated. SN 238,428. Pub. 9–27–66. Filed 2–9–66.

Class 39—Clothing

820,336. FIBER FOAM. Peter Pan Foundations, Inc. SN 230,885. Pub. 9–27–66. Filed 10–21–65.

820,337. CALIFAMOUS AND DESIGN. Blou-Slip Co., Inc. SN 231,637. Pub. 9–27–66. Filed 10–26–65.

820,338. RUSTLER. Blue Bell, Inc. SN 232,183. Pub. 9–27–66. Filed 11–5–65.

820,339. CAL-PREST. Jobill Sportsman, Inc. SN 236,315. Pub. 9–27–66. Filed 1–12–66.

820,340. COL-AND. C. W. Anderson Hosiery Company. SN 236,349. Pub. 9–27–66. Filed 1–13–66.

820,341. RANCORA AND SHEEP DESIGN. Joseph Bancroft & Sons Co. SN 237,647. Pub. 9–27–66. Filed 2–1–66.

820,342. NAMESAKE. Vanity Fair Mills, Inc. SN 240,094. Pub. 9–27–66. Filed 6–27–66.

Class 40—Fancy Goods, Furnishings, and Notions

820,343. MISCELLANEOUS DESIGN. Colorado Ski Country U.S.A., by change of name from Ski Country USA, Inc. SN 216,739. Pub. 9–27–66. Filed 4–16–65.

820,344. DOVE AND DESIGN. Alexander Brenton, d.b.a. Terramar International. SN 226,324. Pub. 9–27–66. Filed 8–24–65.

Class 41—Canes, Parasols, and Umbrellas

820,146. (See Class 2 for this trademark.)

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

820,146. (See Class 2 for this trademark.)

820,345. HARDWICK THE BEAUTY THAT ENDURES AND DESIGN. Hardwick & Magee Company. SN 238,958. Pub. 9–27–66. Filed 2–16–66.

820,346. WEAR PURE. West Point-Pepperell, Inc., d.b.a. Pepperell Mfg. Co. SN 248,878. Pub. 9–27–66. Filed 6–24–66.

Class 43—Thread and Yarn

820,347. PINGOUIN SKIEUR. Filatures Prouvost & Cie La Lainiere de Roubaix. SN 235,659. Pub. 9–27–66. Filed 1–3–66.

Class 44—Dental, Medical, and Surgical Appliances

820,146. (See Class 2 for this trademark.)

820,348. VOLU-TROLE. Cutter Laboratories, Inc. SN 228,648. Pub. 9–27–66. Filed 9–27–65.

820,349. SYRIJET. Missy, Inc. SN 238,440. Pub. 9–27–66. Filed 2–9–66.

Class 45—Soft Drinks and Carbonated Waters

820,350. VIRGINIA DARE AND DESIGN. Virginia Dare Extract Co., Inc. SN 177,391. Pub. 9–27–66. Filed 9–19–63.

820,351. BIG K. The Kroger Co. SN 209,186. Pub. 9–27–66. Filed 12–31–64.

820,352. ROYAL CASTLE AND DESIGN. Royal Castle System, Inc. SN 220,322. Pub. 9–27–66. Filed 6–8–65.

820,353. TAYLOR MAID. Seven-Up Bottling Company, Inc. SN 224,802. Pub. 9–27–66. Filed 8–2–65.

820,354. REPRESENTATION OF HUMAN AND JUG. Lee Henry Clarson, d.b.a. Double Cola Bottling Co. and Hill Billy Beverages. SN 226,336. Pub. 9–27–66. Filed 8–24–65.

820,355. THE DOG HOUSE AND DESIGN. The Dog House, Inc. SN 232,682. Pub. 9-27-66. Filed 11-15-65.

820,356. ZANY ZOO. The Kroger Co., d.b.a. Wesco Foods Co. SN 234,649. Pub. 9-27-66. Filed 12-15-65.

820,357. SEA LION STRAWBERRY. The Kroger Co., d.b.a. Wesco Foods Co. SN 234,650. Pub. 9-27-66. Filed 12-15-65.

820,358. APE GRAPE. The Kroger Co., d.b.a. Wesco Foods Co. SN 234,651. Pub. 9-27-66. Filed 12-15-65.

820,359. CHEETAH CHERRY. The Kroger Co., d.b.a. Wesco Foods Co. SN 234,652. Pub. 9-27-66. Filed 12-15-65.

820,360. OSTRICH ORANGE. The Kroger Co., d.b.a. Wesco Foods Co. SN 234,653. Pub. 9-27-66. Filed 12-15-65.

820,361. RHINO RASPBERRY. The Kroger Co., d.b.a. Wesco Foods Co. SN 234,654. Pub. 9-27-66. Filed 12-15-65.

820,362. MOUNTAIN DEW. PepsiCo, Inc. SN 243,574. Pub. 9-27-66. Filed 4-15-66.

Class 46 — Foods and Ingredients of Foods

820,136. (See Class 1 for this trademark.)

820,363. ROBERN. Robera Dried Fruit Co. Pty., Ltd. SN 187,610. Pub. 10-6-64. Filed 2-27-64.

820,364. POLAR ROLLER. Continental Enterprises, Inc. SN 188,340. Pub. 12-29-64. Filed 3-10-64.

820,365. POLARICE. Continental Enterprises, Inc. SN 193,940. Pub. 2-9-65. Filed 5-21-64.

820,366. PIONEER. Pioneer Box Lunch, Inc. SN 201,546. Pub. 9-27-66. Filed 9-9-64.

820,367. FIEMA. Les Etablissements Edouard Materne. SN 208,467. Pub. 9-20-66. Filed 12-18-64.

820,368. FISHNAK AND DESIGN. The Big A System, Inc. SN 211,694. Pub. 6-14-66. Filed 2-10-65.

820,369. DORETTES. Stella d'Oro Biscuit Company, Inc. SN 212,913. Pub. 9-27-66. Filed 2-26-65.

820,370. REGINETTES. Stella d'Oro Biscuit Company, Inc. SN 212,914. Pub. 9-27-66. Filed 2-26-65.

820,371. STELLARETTES. Stella d'Oro Biscuit Company, Inc. SN 212,915. Pub. 9-27-66. Filed 2-26-65.

820,372. JAPANESE CHARACTER WITHIN CIRCLE (DESIGN). Kabushiki Kaisha Kato Shoten. SN 213,683. Pub. 9-27-66. Filed 6-9-65.

820,373. SOCA. Terres Noires Ltee, d.b.a. Terres Noires Ltd. SN 215,582. Pub. 9-27-66. Filed 4-1-65.

820,374. YOUR CHOICE. Fred Meyer, Inc. SN 217,918. Pub. 9-27-66. Filed 5-3-65.

820,375. SCOOP CINADROP AND DESIGN. Automatic Canteen Company of America. SN 219,757. Pub. 9-27-66. Filed 5-26-65.

820,376. PETER RABBIT AND DESIGN. F. C. Matson, d.b.a. J. G. Maples Co. SN 220,224. Pub. 9-27-66. Filed 6-2-65.

820,377. LATIMER'S ETC. AND DESIGN. Caesar C. Latimer, d.b.a. Latimer's Famous Barbecue Sauce. SN 221,066. Pub. 9-27-66. Filed 6-14-65.

820,378. MR. APPLE AND DESIGN. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, assignee of Joe Lowe Corporation. SN 221,618. Pub. 9-27-66. Filed 6-21-65.

820,379. BAR-B LOAF. Peter Eckrich and Sons, Inc. SN 223,103. Pub. 9-27-66. Filed 7-12-65.

820,380. STAR ROLL AND DESIGN. Hoben Candy Corp. SN 223,310. Pub. 9-27-66. Filed 7-14-65.

820,381. PARKER'S AND DESIGN. Parker Products, Inc. SN 224,640. Pub. 7-19-66. Filed 7-30-65.

820,382. BUBBLE-A-GO-GO. Leaf Brands, Inc. SN 225,962. Pub. 9-27-66. Filed 8-18-65.

820,383. BURGERS' OZARK AND DESIGN. Burgers' Ozark Country Cured Hams, Inc. SN 226,217. Pub. 9-27-66. Filed 8-23-65.

820,384. BOWS. General Mills, Inc. SN 227,276. Pub. 9-27-66. Filed 9-7-65.

820,385. BUTTONS 'N BOWS. General Mills, Inc. SN 227,277. Pub. 9-27-66. Filed 9-7-65.

820,386. DELMARK COUNTRY OVEN. The Dietene Company, d.b.a. The Delmark Company. SN 227,485. Pub. 9-27-66. Filed 9-9-65.

820,387. PRECISION AND DESIGN. Kent Feeds, Inc. SN 228,535. Pub. 9-27-66. Filed 9-24-65.

820,388. PROSAGE. Worthington Foods, Inc. SN 229,906. Pub. 9-27-66. Filed 10-11-65.

820,389. FANCIFUL FIGURE (DESIGN). Meshulam's Inc., d.b.a. Fruit Fair. SN 231,168. Pub. 9-27-66. Filed 10-22-65.

820,390. MAPLE VALLEY. Swift & Company. SN 231,504. Pub. 9-27-66. Filed 10-23-65.

820,391. MAPLE HILL. Swift & Company. SN 231,505. Pub. 9-27-66. Filed 10-23-65.

820,392. LUCKY ROSE. Nishimoto Trading Co., Ltd., of Hawaii, d.b.a. Nishimoto Trading Co., Ltd. SN 231,625. Pub. 9-27-66. Filed 10-25-65.

820,393. BUTTER KIST. Waldman's Meats, Inc., d.b.a. Waldman's Meats. SN 231,863. Pub. 9-27-66. Filed 10-29-65.

820,394. FLAVORZYME. Flavor Corporation of America. SN 231,905. Pub. 9-27-66. Filed 11-1-65.

820,395. M AND DESIGN. Murphy Products Company, Inc. SN 232,082. Pub. 9-27-66. Filed 11-3-65.

820,396. CATCHY. Hilton Seafoods Company, Inc. SN 232,128. Pub. 9-27-66. Filed 11-4-65.

820,397. BINGMONT. E. J. Brach & Sons. SN 233,446. Pub. 9-27-66. Filed 11-29-65.

820,398. KWICK OVEN. Modern Bakeries, Inc. SN 233,931. Pub. 9-27-66. Filed 12-3-65.

820,399. RUDY'S. Rudy's Farm Company. SN 236,846. Pub. 9-27-66. Filed 1-19-66.

820,400. DINNER BELL (DESIGN). Rudy's Farm Company. SN 236,847. Pub. 9-27-66. Filed 1-19-66.

820,401. DUTCH VALLEY. Weis Markets, Inc. SN 236,940. Pub. 9-27-66. Filed 1-20-66.

820,402. SKY-RAY. Good Humor Corporation. SN 245,366. Pub. 9-27-66. Filed 5-5-66.

820,403. SPINCRISP. Mars, Incorporated, d.b.a. M & M Candies. SN 246,917. Pub. 9-27-66. Filed 5-31-66.

820,404. ALL STAR. Best Kosher Sausage Co. SN 247,766. Pub. 9-27-66. Filed 6-10-66.

820,405. SILVER VALLEY. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company. SN 248,389. Pub. 9-27-66. Filed 6-20-66.

820,406. HIGH CHIEF AND DESIGN. King Kullen Grocery Co., Inc. SN 248,392. Pub. 9-27-66. Filed 6-20-66.

820,407. QUISP AND DESIGN. The Quaker Oats Company. SN 248,399. Pub. 9-27-66. Filed 6-20-66.

820,408. SEADOG AND DESIGN. The Quaker Oats Company. SN 248,759. Pub. 9-27-66. Filed 6-28-66.

820,409. DON RIO. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company, and Harlingen Canning Co. SN 248,943. Pub. 9-27-66. Filed 6-27-66.

Class 47 — Wines

820,410. SC BANKETT AND DESIGN. Sektkellerei Carstens KG. SN 224,242. Pub. 9-27-66. Filed 7-27-65.

820,411. CUVEE DOM PERIGNON. Chandon Champagne Corporation. SN 227,477. Pub. 9-27-66. Filed 9-9-65.

820,412. SPRINGBOK. South African Wine Farmers Association (London) Limited. SN 233,140. Pub. 9-27-66. Filed 11-22-65.

820,413. LEAPING SPRINGBOK (DESIGN). South African Wine Farmers Association (London) Limited. SN 233,141. Pub. 9-27-66. Filed 11-22-65.

Class 48 — Malt Beverages and Liquors

820,414. MEISTER BRAU AND DESIGN. Peter Hand Brewery Company (Delaware corporation), assignee of Peter Hand Brewery Company (Illinois corporation). SN 211,742. Pub. 9-27-66. Filed 2-10-65.

Class 49 — Distilled Alcoholic Liquors

820,415. CLAN MACIVER. Popper Morson Corp., assignee of London & Company, Inc. SN 182,234. Pub. 8-18-64. Filed 12-4-63.

820,416. BOLS KAYA AND DESIGN. Erven Lucas Bols Incorporated. SN 213,752. Pub. 9-27-66. Filed 3-10-65.

820,417. HUDSON HOUSE. E. Martinoni Company, d.b.a. Stewart & Co. SN 226,756. Pub. 9-27-66. Filed 8-30-65.

820,418. RACQUET CLUB. E. Martinoni Company, d.b.a. Stewart & Co. SN 231,159. Pub. 9-27-66. Filed 10-22-65.

820,419. PLYM-GIN. Coates & Co. (Plymouth) Limited. SN 235,276. Pub. 9-27-66. Filed 12-27-65.

820,420. GOLD ROOM. E. Martinoni Company, d.b.a. Stewart & Co. SN 236,114. Pub. 9-27-66. Filed 1-10-66.

Class 50 — Merchandise Not Otherwise Classified

820,146. (See Class 2 for this trademark.)

820,346. (See Class 21 for this trademark.)

820,421. GO GO GLOVES. Charm Originals, Inc. SN 227,247. Pub. 9-27-66. Filed 9-7-65.

820,422. MISCELLANEOUS DESIGN. Thermark Corporation. SN 229,911. Pub. 9-27-66. Filed 9-24-65.

820,423. FEELEY. Dixon Corporation. SN 236,067. Pub. 9-27-66. Filed 1-10-66.

820,424. MERBA. Erman-Bach, Ltd. SN 238,506. Pub. 9-27-66. Filed 2-10-66.

820,425. RAPIDEX. Rapidgum Limited. SN 241,060. Pub. 9-27-66. Filed 3-15-66.

Class 51 — Cosmetics and Toilet Preparations

820,426. MISS AMERICA. Miss America Pageant, assignee of Corodon W. Gibson, d.b.a. Gibson Products Co. SN 158,968. Pub. 6-8-65. Filed 12-12-62.

820,427. LORD BEASTLY. C. L. Cleek. SN 213,204. Pub. 9-27-66. Filed 3-3-65.

820,428. COOL-IT. Cool-It, Inc. SN 220,469. Pub. 9-27-66. Filed 6-7-65.

820,429. Auto-Lashique. Lanvin-Charles of the Ritz, Inc. SN 221,612. Pub. 9-27-66. Filed 6-21-65.

820,430. VYEO. Dae Health Laboratories, Limited. SN 222,130. Pub. 9-27-66. Filed 6-28-65.

820,431. SCHIAPARELLI. Parfums Schiaparelli, Inc. SN 222,406. Pub. 9-27-66. Filed 6-30-65.

820,432. CROWN & SCEPTER. King Arthur, Inc. SN 222,584. Pub. 9-27-66. Filed 7-2-65.

820,433. GO GO LIGHT. John H. Breck, Inc. SN 223,772. Pub. 9-27-66. Filed 7-20-65.

820,434. GO LIGHTS. John H. Breck, Inc., assignee of Clairol Incorporated. SN 224,510. Pub. 9-27-66. Filed 7-29-65.

820,435. PERFECT FINISH. Elizabeth Arden Sales Corporation. SN 224,709. Pub. 9-27-66. Filed 8-2-65.

820,436. NORMAN SOLDIER (DESIGN). Merle Norman Cosmetics, Inc. SN 225,063. Pub. 9-27-66. Filed 8-5-65.

820,437. SHEER GLORY. Alberto-Culver Company. SN 225,093. Pub. 9-27-66. Filed 8-5-65.

820,438. FLOWER (DESIGN). Merle Norman Cosmetics, Inc. SN 225,194. Pub. 9-27-66. Filed 8-6-65.

820,439. COSMANTIC. Shields Inc. of Attleboro, Mass. SN 225,609. Pub. 9-27-66. Filed 8-12-65.

820,440. MATICARA. Stanley Home Products, Inc. SN 226,174. Pub. 9-27-66. Filed 8-20-65.

820,441. DIABLO. Bristol-Myers Company. SN 226,720. Pub. 9-27-66. Filed 8-30-65.

820,442. PRET A PORTER READY TO WEAR. Maria Chemu. SN 227,479. Pub. 9-27-66. Filed 9-9-65.

820,443. SHOW OFF. Harts Mountain Products Corp. SN 230,535. Pub. 9-27-66. Filed 10-19-65.

820,444. PRISMATIC. Alexandra de Markoff Sales Corporation. SN 231,365. Pub. 9-27-66. Filed 10-28-65.

820,445. ENDOCIL. N.V. Organon. SN 231,843. Pub. 9-27-66. Filed 10-29-65.

820,446. EYE ACCENT. Cecilia Products, Ltd. SN 233,683. Pub. 9-27-66. Filed 12-1-65.

820,447. ENCORE. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 233,822. Pub. 9-27-66. Filed 12-2-65.

820,448. CRISTINA ARDAY. Higinio Arriasa, d.b.a. Arday International Co. SN 234,201. Pub. 9-27-66. Filed 12-8-65.

820,449. CIRCULAR CONFIGURATION ENCIRCLING A CAT (DESIGN). DAS, Inc. SN 234,338. Pub. 9-27-66. Filed 12-10-65.

820,450. KAT-NIP. DAS, Inc. SN 234,339. Pub. 9-27-66. Filed 12-10-65.

820,451. FLAMENCO. Duvidell Sales Corporation. SN 234,811. Pub. 9-27-66. Filed 12-17-65.

820,452. BOARD ROOM. Duvidell Sales Corporation. SN 234,812. Pub. 9-27-66. Filed 12-17-65.

820,453. PARA DENTOL AND DESIGN. Para-Dentol Inc. SN 234,867. Pub. 9-27-66. Filed 12-17-65.

820,454. CUSTOM FORMULA 7000. Invincible Products Corporation. SN 237,708. Pub. 9-27-66. Filed 2-1-66.

820,455. IN. The Visual Company, Inc. SN 237,894. Pub. 9-27-66. Filed 2-2-66.

820,456. QUEEN'S LACE. C. P. Baker & Company. MULTIPLE CLASS (Classes 51 and 52). SN 237,917. Pub. 9-27-66. Filed 2-3-66.

820,457. MASQUE DE MARKOFF. Alexandra de Markoff Sales Corporation. SN 238,033. Pub. 9-27-66. Filed 2-4-66.

820,458. SIROLENE. The Denver Chemical Manufacturing Company, d.b.a. Sirodi Laboratories, Inc. SN 241,322. Pub. 9-27-66. Filed 3-18-66.

820,459. ZINZIN. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,066. Pub. 9-27-66. Filed 6-1-66.

820,460. ZORRO. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,067. Pub. 9-27-66. Filed 6-1-66.

820,461. ZANZAN. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,069. Pub. 9-27-66. Filed 6-1-66.

820,462. JUMPING BEAN. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,070. Pub. 9-27-66. Filed 6-1-66.

820,463. SIBON. Monico, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 247,549. Pub. 9-27-66. Filed 6-8-66.

820,464. B IS FOR BODY AND DESIGN. The Gillette Company, d.b.a. The Toni Company. SN 247,553. Pub. 9-27-66. Filed 6-8-66.

820,465. GYRO. The Gillette Company. SN 248,062. Pub. 9-27-66. Filed 6-15-66.

820,466. NINE FLAGS. The Gillette Company. SN 248,064. Pub. 9-27-66. Filed 6-15-66.

Class 52 — Detergents and Soaps

820,146. (See Class 2 for this trademark.)

820,456. (See Class 51 for this trademark.)

820,463. (See Class 51 for this trademark.)

820,467. WASH-AWAY. Lasier Incorporated. SN 224,868. Pub. 9–27–66. Filed 8–3–65.

820,468. EMERALD SEA AND DESIGN. Bymart-Tintair, Inc. SN 227,556. Pub. 9–27–66. Filed 9–10–65.

820,469. ALUMA KLEEN AND DESIGN. Sita Distributors. SN 228,949. Pub. 9–27–66. Filed 9–29–65.

820,470. WHITFIELD. Chester Whitfield Smith, d.b.a. Whitfield Chemical Company. SN 232,375. Pub. 9–27–66. Filed 11–8–65.

820,471. PINK STORM. Purex Corporation, Ltd. SN 224,768. Pub. 9–27–66. Filed 12–16–65.

Service Marks

Class 100 — Miscellaneous

820,472. ALPHA. Alpha Engineering, Inc., assignee of The Kartridg Pak Co. SN 219,003. Pub. 8–16–66. Filed 5–17–65.

820,473. REPRESENTATION OF BOY AND DOG. Kemp's Hamburger Shops of America, Inc., d.b.a. Kemp's of America. SN 221,833. Pub. 9–27–66. Filed 6–23–65.

820,474. MISCELLANEOUS DESIGN. The Contractor's Engineer. SN 224,396. Pub. 9–27–66. Filed 7–28–65.

820,475. MISCELLANEOUS DESIGN. Matthew R. Perkins, d.b.a. Perkins Pancake Houses. SN 224,442. Pub. 9–27–66. Filed 7–28–65.

820,476. TEMLIN. HMH Publishing Co., Inc. SN 233,497. Pub. 9–27–66. Filed 11–29–65.

820,477. COUNTRY KITCHEN AND DESIGN. Country Kitchen Incorporated, of Middletown, Ohio. SN 234,884. Pub. 9–27–66. Filed 12–20–65.

Class 101 — Advertising and Business

820,478. FIVE STATES WITHIN OUTLINE (DESIGN). S. K. Foster and Associates, Inc. SN 213,000. Pub. 9–27–66. Filed 3–1–65.

820,479. "TELE-CIGARS." National Tele-Cigar, Inc. SN 221,948. Pub. 9–27–66. Filed 6–24–65.

820,480. LBW. The National Liquor Authority, Inc. SN 224,323. Pub. 9–27–66. Filed 7–27–65.

820,481. MENSSCENTER. Humiston, Keeling and Company. SN 224,943. Pub. 9–27–66. Filed 8–4–65.

820,482. MAN HOLDING BAG (DESIGN). Olean Wholesale Grocery Coop., Inc. SN 226,558. COLLECTIVE MARK. Pub. 9–27–66. Filed 8–26–65.

820,483. MISCELLANEOUS DESIGN. Omni-Card Systems, Inc. SN 227,610. Pub. 9–27–66. Filed 9–10–65.

820,484. OMNI-CARD SYSTEMS. Omni-Card Systems, Inc. SN 227,611. Pub. 9–27–66. Filed 9–10–65.

820,485. TREASURE ISLAND. Bonded Oil Company. SN 228,124. Pub. 9–27–66. Filed 9–20–65.

820,486. TREASURE CHIP. Bonded Oil Company. SN 228,125. Pub. 9–27–66. Filed 9–20–65.

820,487. MEDISERVE. Mediserve Associates, Incorporated. SN 229,106. Pub. 9–27–66. Filed 10–1–65.

820,488. FLORSHEIM GAY NINETIES BARBER SHOP. Interco Incorporated, d.b.a. The Florsheim Shoe Company, by change of name from International Shoe Company, d.b.a. e Florsheim Shoe Company. SN 229,980. Pub. 9–27–66. Filed 10–12–65.

820,489. LP AND DESIGN. Laird Productions Incorporated. SN 230,172. Pub. 9–27–66. Filed 10–14–65.

Class 102 — Insurance and Financial

820,490. M MID-CONTINENT AND DESIGN. Mid-Continent Investors Corporation. SN 224,624. Pub. 9–27–66. Filed 7–30–65.

820,491. WRH. Weyerhaeuser Company. SN 227,901. Pub. 9–27–66. Filed 9–15–65.

820,492. MISCELLANEOUS DESIGN. Anderson, Clayton & Co. SN 233,242. Pub. 9–27–66. Filed 11–24–65.

820,493. R. The First National Bank of Ripon. SN 234,406. Pub. 9–27–66. Filed 12–13–65.

820,494. SERVICE BEYOND DUTY ETC. AND DESIGN. Provident Life Insurance Company. SN 235,604. Pub. 9–27–66. Filed 11–29–65.

820,495. DIAL. Dial Finance Company. SN 236,575. Pub. 9–27–66. Filed 1–17–66.

820,496. INA CHALLENGER. Insurance Company of North America. SN 237,223. Pub. 9–27–66. Filed 1–25–66.

Class 103 — Construction and Repair

820,497. CONTINENTAL. Continental Motors Corporation. SN 166,070. Pub. 4–12–66. Filed 4–4–63.

820,498. AMERICAN BUILDINGS COMPANY AND DESIGN. American Buildings Company. SN 220,816. Pub. 8–16–66. Filed 6–10–65.

820,499. "COST GUARD." Harbor Service Stations, Inc., by change of name from Westway Petroleum Co. SN 224,356. Pub. 9–27–66. Filed 7–27–65.

820,500. FLEX-A-BUDGET. Bond-Bilt Construction Company. SN 224,381. Pub. 9–27–66. Filed 7–28–65.

820,501. MERIT AND DESIGN. Merit Developers. SN 228,061. Pub. 9–27–66. Filed 9–17–65.

820,502. WT AND DESIGN. Walcott-Taylor Company Incorporated. SN 230,011. Pub. 9–27–66. Filed 10–12–65.

820,503. I.C.E.S. AND DESIGN. Inter-Continental Engine Service, Inc. SN 230,157. Pub. 9–27–66. Filed 10–14–65.

820,504. CHEM-I-GARD. Adler and Son. SN 237,190. Pub. 9–27–66. Filed 1–25–66.

Class 104 — Communication

820,505. PICTUREPHONE. American Telephone and Telegraph Company. SN 216,378. Pub. 9–27–66. Filed 4–13–65.

Class 105 — Transportation and Storage

820,506. FUN IN THE SUN. Fun in the Sun Tours, Inc., assignee of Sol Whiteman and H. J. Whiteman (joint owners). SN 201,988. Pub. 9–27–66. Filed 9–15–64.

820,507. EMERY AIR FREIGHT AIR PROCUREMENT SERVICE AND DESIGN. Emery Air Freight Corporation. SN 222,014. Pub. 9–27–66. Filed 6–25–65.

820,508. AMBUCAB. Guy Mullen Ambulance Service. SN 227,859. Pub. 9–27–66. Filed 9–15–65.

820,509. POSTAIR. Air Express International Corp. SN 228,434. Pub. 9–27–66. Filed 9–23–65.

820,510. MISTER LEASE AND DESIGN. Mister Lease, Inc. SN 230,867. Pub. 9–27–66. Filed 10–21–65.

820,511. UNITED-BUCKINGHAM. United-Buckingham Freight Lines. SN 230,967. Pub. 9–27–66. Filed 10–21–65.

820,512. AACTION AND DESIGN. Aaction Rent-A-Car, Inc. SN 231,658. Pub. 9–27–66. Filed 10–27–65.

Class 106 — Material Treatment

820,513. C·P COUPON PHOTO AND DESIGN. Management and Advertising Consultants, Inc. SN 204,386. Pub. 9–27–66. Filed 10–20–64.

820,514. Q-P Q-PON PHOTO AND DESIGN. Management and Advertising Consultants, Inc. SN 204,387. Pub. 9–27–66. Filed 10–20–64.

820,515. WDP. Water Damage Protection Company. SN 229,388. Pub. 9–27–66. Filed 10–5–65.

Class 107 — Education and Entertainment

820,516. OCCUPATIONAL GUIDELINES ETC. Cedric Hugh Spencer, d.b.a. H-Test Reporting Service. SN 198,298. Pub. 9–27–66. Filed 7–21–64.

820,517. DANCE, INC. D.A.N.C.E., Inc. SN 216,808. Pub. 9–27–66. Filed 4–19–65.

820,518. THE JERMS AND DESIGN. The Jerms, Inc. SN 226,747. Pub. 9–27–66. Filed 8–30–65.

820,519. THE WITNESS. The Domestic and Foreign Missionary Society of The Protestant Episcopal Church in the United States of America. SN 229,642. Pub. 9–27–66. Filed 10–8–65.

820,520. GROUCH CLUB. Storer Broadcasting Company. SN 230,006. Pub. 9–27–66. Filed 10–12–65.

820,521. BUCKAROO 500. Leonard Buckley Weaver. SN 230,331. Pub. 9–27–66. Filed 10–15–65.

820,522. GOOFERS. W. Arthur Fielden, d.b.a. Art/Co. SN 230,525. Pub. 9–27–66. Filed 10–19–65.

820,523. THE BELVEDERES. The Belvederes. SN 230,606. Pub. 9–27–66. Filed 10–20–65.

Collective Membership Mark

Class 200

820,524. INDEPENDENT CERTIFIED MARKET AND DESIGN. Independent Livestock Marketing Association. SN 225,425. Pub. 9–27–66. Filed 8–10–65.

Certification Marks

Class A — Goods

820,525. SYMBOL OF QUALITY FOR APPALACHIAN OAK AND DESIGN. Appalachian Hardwood Manufacturers, Inc. SN 205,233. Pub. 9–27–66. Filed 11–2–64.

820,526. MISCELLANEOUS DESIGN. National Woodwork Manufacturers Association, Inc. SN 230,419. Pub. 9–27–66. Filed 10–18–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 21 — Electrical Apparatus, Machines, and Supplies

820,527. Phillips Manufacturing Company, Inc., Minneapolis, Minn. SN 209,726. Filed P.R. 1–11–65; Am. S.R. 9–29–66.



For Electric Stock Tank Heaters, Electrical Starting Aid Kits, Starting Fluid Injectors, Electric Dip Stick Heaters, Electric Head-Bolt Heaters, Electric Frost Plug Heaters, Electric External Tank Type Heaters, Electric Oil Pan Heaters, Electric Diesel Engine Block Heaters, and Electric Battery Warmers.
First use January 1964.

820,528. Marden Electronics Company, Inc., Burlington, Wis. SN 224,956. Filed P.R. 8–4–65; Am. S.R. 10–5–66.

MARDEN

For Manufactured Quartz Oscillator Plates for Electrical Circuits Commonly Used for Frequency Stabilization, Timing Devices, and Communications.
First use on or about July 1, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

820,529. Paul G. Williams, Jr., Bonne Terre, Mo. SN 205,376. Filed P.R. 11–2–64; Am. S.R. 10–7–66.



For Metal Cutting Tools.
First use Oct. 20, 1964.

820,530. Engel Equipment, Inc., St. Louis, Mo. SN 233,701. Filed P.R. 12–1–65; Am. S.R. 10–12–66.

COILINE

For Metal Feed Apparatus for Stamping Machines and the Like.
First use Sept. 11, 1965.

Class 32 — Furniture and Upholstery

820,531. Aluminum Refrigerator Door Co., Inc., Chicago, Ill. SN 232,442. Filed P.R. 11–10–65; Am. S.R. 10–7–66.

SPEED-SHELF

For Commercial Display Shelving Units.
First use on or about Aug. 5, 1965.

Class 34 — Heating, Lighting, and Ventilating

820,532. Allied Thermal Corporation, New Britain, Conn. SN 223,206. Filed P.R. 7-13-65; Am. S.R. 10-12-66.

STANDARDLINE

For Grills and Registers for Air Distribution Systems.
First use at least as early as 1962.

Class 37 — Paper and Stationery

820,533. Paper Service Company, Incorporated, Kansas, City, Kans. SN 180,677. Filed P.R. 11-7-63; Am. S.R. 10-3-66.

QUIVIRA LAKE

For Printing and Duplicating Paper.
First use During March 1963.

820,534. Kimberly-Clark Corporation, Neenah, Wis. SN 210,134. Filed P.R. 1-18-65; Am. S.R. 10-6-66.

PEEL & SEEL

For Envelopes.
First use Dec. 11, 1964.

820,535. International Paper Company, New York, N.Y. SN 211,071. Filed P.R. 2-1-65; Am. S.R. 9-1-66.

LOUISIANA

For Printing and Writing Papers.
First use December 1961.

Class 39 — Clothing

820,536. The Electric Storage Battery Company, Philadelphia, Pa. SN 184,708. Filed P.R. 1-16-64; Am. S.R. 10-12-66.

SOUND SILENCER

For Ear Protectors in the Form of Ear Muffs for Protection Against Noise.
First use Dec. 31, 1963.

TRADEMARK REGISTRATIONS RENEWED

56,558. IXL. Cl. 23. 10-9-06.
56,918. THE DE LAVAL SEPARATOR CO. AND DESIGN. Cl. 23. 10-23-06.
57,329. MERIDEN B. COMPANY AND DESIGN. Cl. 28. 11-13-06.
57,596. MEYER'S MODEL FLOUR AND DESIGN. Cl. 46. 11-13-06.
57,742. THOR. Cl. 23. 11-27-06.
59,032. LUX. Cl. 52. 1-1-07.
59,614. MORSE. Cl. 23. 1-15-07.
60,075. GOLD DUST. Cl. 52. 1-29-07.
60,241. BOTTLE (DESIGN). Cl. 49. 1-29-07.
60,261. VIM. Cl. 52. 2-5-07.
60,918. RED CROSS (DESIGN). Cl. 9. 2-26-07.
61,432. FLYER. Cl. 22. 3-19-07.
61,433. FLEXIBLE. Cl. 22. 3-19-07.
212,699. SUPERFLEX. Cl. 32. 5-11-26.
216,745. WILLCLAR AND DESIGN. Cl. 36. 8-17-26.
217,759. PETER PAN AND DESIGN. Cl. 46. 9-7-26.
219,072. DELTOX. Cl. 42. 10-12-26.
219,161. BUENEX. Cl. 18. 10-12-26.
219,164. BROWN TOP. Cl. 39. 10-12-26.
219,165. BLUE TOP. Cl. 39. 10-12-26.
219,174. BIRD ON A TREE STUMP (DESIGN). Cl. 6. 10-12-26.
219,296. BANNOCK CHIEF. Cl. 46. 10-12-26.
219,449. NON PAREIL. Cl. 46. 10-19-26.
219,620. SER-VAL. Cl. 39. 10-19-26.
219,828. G.W.H. Cl. 46. 10-26-26.
220,188. STERLING SYSTEM HOMES AND DESIGN. Cl. 12. 11-2-26.
220,276. WISCONSIN LAND O' LAKES. Cl. 37. 11-9-26.
220,747. HUDSONS BAY "POINT." Cl. 42. 11-16-26.
220,890. VICTOR. Cl. 24. 11-16-26.
221,013. THREE M. Cl. 4. 11-23-26.
221,014. 3M CO. AND DESIGN. Cl. 4. 11-23-26.
221,055. MELORIPE. Cl. 46. 11-23-26.
222,221. BYE-LO. Cl. 39. 12-28-26.
222,452. WILKNIT. Cl. 39. 1-4-27.
222,928. DIAGONAL STRIPE (DESIGN). Cl. 18. 1-11-27.
223,189. PIECES OF 8. Cl. 28. 1-18-27.
223,204. BUSINESS CONDITIONS WEEKLY. Cl. 38. 1-18-27.
223,206. INVESTMENT BULLETIN. Cl. 38. 1-18-27.
224,090. ANESTUBE. Cl. 44. 2-15-27.
224,953. ZINO. Cl. 44. 3-8-27.
224,995. SUPER SERVICE. Cl. 23. 3-8-27.
225,238. ROYAL FLUSH. Cl. 46. 3-15-27.
225,246. BATES. Cl. 11. 3-15-27.
225,272. MEDICAL. Cl. 44. 3-15-27.
225,592. PROXLIN. Cl. 18. 3-22-27.
225,659. SPRAMALT. Cl. 46. 3-22-27.
225,932. WM. M. SCHOLL M.D. Cl. 44. 3-29-27.
226,105. SILVER ARROW. Cl. 46. 3-29-27.
424,344. SUDDEN SHOWER AND DESIGN. Cl. 39. 10-1-46.
424,449. DRYDENE. Cl. 18. 10-8-46.
424,623. DURACHRON. Cl. 27. 10-15-46.
424,689. CUE. Cl. 45. 10-22-46.
425,283. ISO CAST AND DESIGN. Cl. 14. 11-12-46.
425,338. BELLWETHER. Cl. 42. 11-12-46.
425,630. TABU. Cl. 29. 11-26-46.
425,961. NYRAY. Cl. 42. 12-10-46.
426,085. CINDERELLA LITTLE MISS. Cl. 39. 12-17-46.
426,259. AINSWORTH. Cl. 26. 12-24-46.
426,547. WM. TELL. Cl. 15. 12-31-46.
426,617. ELECTRO-LUX. Cl. 21. 1-7-47.
426,668. RESISTO. Cl. 25. 1-7-47.
426,795. HARBORMASTER. Cl. 23. 1-14-47.
426,816. WORLDGRAM. Cl. 38. 1-14-47.
427,012. MIRACULENE. Cl. 46. 1-21-47.
427,066. FABULOUS. Cl. 42. 1-28-47.
427,413. CHEM-TREET. Cl. 52. 2-11-47.
427,433. FLEXSEAL. Cl. 44. 2-11-47.
428,380. OSTEOPLASTIC. Cl. 44. 3-25-47.
428,392. ARTCRAFTER'S AND DESIGN. Cl. 42. 3-25-47.
428,547. CHEM-ROCK. Cl. 12. 3-25-47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

674,691. SPICENT. Cl. 46. 2-24-59.
676,511. BROWNELL. Cl. 1. 4-7-59.
677,603. MUSCLAX. Cl. 18. 4-28-59.
677,604. TITEN-ZEM. Cl. 18. 4-28-59.
678,225. LAMP POST CORNER. Cl. 100. 5-5-59.
681,182. THONG-EEZ. Cl. 39. 6-30-59.

681,239. GRAPH-A-PLAN. Cl. 50. 6-30-59.
681,556. STERIL-FOAM. Cl. 42. 7-7-59.
681,616. EASY BRIGHT. Cl. 52. 7-7-59.
681,919. ROYAL R. Cl. 46. 7-14-59.
682,410. WETHERBEE. Cl. 13. 7-28-59.
682,559. WHEEL-A-WAY AND DESIGN. Cl. 32. 7-28-59.
685,149. STAR-X AND DESIGN. Cl. 36. 9-15-59.
704,374. TRAVEL TRAC. Cl. 99. 9-13-60.
705,178. MURALSTONE. Cl. 32. 10-4-60.
706,061. ROBERTS J AND DESIGN. Cl. 39. 10-18-60.

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706,158. LOOK-N-LOCK. Cl. 2.
706,164. CORNPAL. Cl. 6.
706,166. PERK UP. Cl. 6.
706,167. MECHIM AND DESIGN. Cl. 6.
706,170. UNION CARBIDE AND DESIGN. Cl. 6.
706,172. LW LETOURNEAU WESTINGHOUSE AND DESIGN. Cls. 7, 13, and 23.
706,174. AGRON. Cl. 10.
706,175. VEGESEAL. Cl. 10.
706,176. HI-N-DRI. Cl. 10.
706,181. FC AND DESIGN. Cl. 12.
706,182. P.I. PIPE. Cl. 12.
706,184. "CONCRETE IN A CAN" AND DESIGN. Cl. 12.
706,185. TIMBERLOCK. Cl. 12.
706,187. BAROMIX. Cl. 12.
706,188. THERMAFORM. Cl. 12.
706,190. FIBRA-SORB. Cl. 12.
706,189. THERMASLAB. Cl. 12.
706,191. SKREW-SET. Cl. 13.
706,194. VOSS ETC. AND DESIGN. Cl. 13.
706,195. PS ETC. AND DESIGN. Cl. 13.
706,206. ORBIT. Cl. 15.
706,209. THERMOMET. Cl. 16.
706,211. MELOSEM. Cl. 18.
706,213. ETHICAINE. Cl. 18.
706,214. ETHIZYME. Cl. 18.
706,220. DRYNOR. Cl. 18.
706,223. CHAMP AND DESIGN. Cl. 19.
706,225. ISABELLA. Cl. 19.
706,229. LAND YACHT ETC. AND DESIGN. Cl. 19.
706,238. MINIT STEAM AND DESIGN. Cl. 21.
706,239. SWIZZLE. Cl. 21.
706,242. GHOST BEACON. Cl. 21.
706,243. VAC-RUPT. Cl. 21.
706,248. MAGIC-CARPET. Cl. 21.
706,250. SANTON. Cl. 21.
706,251. ACROSTAT AND DESIGN. Cl. 21.
706,256. ASTROMICS. Cl. 21.
706,257. STATRONIC. Cl. 21.
706,258. SIGMATIC. Cl. 21.
706,259. A. Cl. 21.
706,262. PONY. Cl. 21.
706,270. DUPLICARBO. Cl. 23.
706,271. BIZ-E-BOY. Cl. 23.
706,272. FP. Cl. 23.
706,273. BRITISH SANDPIPER AND DESIGN. Cl. 23.
706,278. HOMAWAY. Cl. 23.
706,280. HYDRO PAK. Cl. 23.
706,281. FLOWMASTER. Cl. 23.
706,283. GLENCO AND DESIGN. Cl. 23.
706,286. DYNA-THRUST. Cl. 23.
706,294. FP. Cl. 26.
706,295. BLEND RITE AND DESIGN. Cl. 26.
706,296. TRELITE. Cl. 26.
706,298. FOCAFLEX. Cl. 26.
706,299. WINTRONIX AND DESIGN. Cl. 26.
706,306. STRAINISTOR. Cl. 26.
706,307. VACUPUMP. Cl. 26.
706,309. MOLECTRONIC AND DESIGN. Cl. 26.
706,310. CINEVISION. Cl. 26.
706,318. FINGERPRINT AND REPRESENTATION OF A HUMAN FINGERPRINT. Cl. 26.
706,319. FINGERPRINT. Cl. 26.
706,320. ELIPTON. Cl. 26.
706,325. ME-HI. Cl. 26.
706,326. SQUIRE. Cl. 26.
706,329. MINIVOX. Cl. 27.
706,330. CHRONOVOX. Cl. 27.
706,332. SONAC. Cl. 27.
706,334. BERBAJJE. Cl. 28.
706,335. SI AND DESIGN. Cl. 31.
706,344. JARKE AND DESIGN. Cl. 32.
706,350. VINTAGE. Cl. 32.
706,356. REVERSAMATIC. Cl. 34.
706,362. PLEASON. Cl. 36.
706,367. "TIE-ON." Cl. 39.
706,368. STORK MATES. Cl. 39.
706,372. MR. ZEE AND DESIGN. Cl. 39.
706,374. KOM-OVA. Cl. 39.
706,376. LADY CUE. Cl. 39.
706,379. ROMANELLA. Cl. 42.
706,380. ROMANTICA. Cl. 42.
706,381. BANCARE ETC. AND DESIGN. Cl. 42.
706,385. X-TELL. Cl. 42.
706,386. GUIDED COTTONS. Cl. 42.
706,392. SWEET WOO. Cl. 46.
706,394. PIG HUSTLE-TONE. Cl. 46.
706,399. EARLY RISER. Cl. 46.
706,410. SQUE. Cl. 51.
706,411. GERI-DERM. Cl. 51.
706,420. FALA. Cl. 101.
706,421. KNIFE AND FORK DINNER CLUB. Cl. 101.
706,422. EASTERN BROKERAGE CO. Cl. 102.
706,430. NEVERSTICK. Cl. 32.
706,432. RASCH KUNSTLER TAPETEN. Cl. 37.
706,444. VAPAKURL. Cl. 51.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

54,541. QUAKER AND DESIGN. Cl. 46. 6-26-06. The American Cereal Company. The Quaker Oats Company, Chicago, Ill. Amended: In the statement, column 2, lines 4 through 6, "cracked wheat, rolled wheat, farina, hominy grits, pearled barley, prepared rice" is deleted.

54,568. QUAKER FIGURE. Cl. 46. 6-26-06. The American Cereal Company. The Quaker Oats Company, Chicago, Ill. Amended: In the statement, column 2, lines 5 and 6, "cracked wheat, rolled wheat, farina, hominy grits, pearled barley, prepared rice" is deleted.

67,536. SWAN AND DESIGN. Cl. 52. 11-13-06. Lever Brothers Company, Cambridge, Mass. Amended to appear:

SWAN

58,223. THE OVERLAND. Cl. 17. 12-11-06. S. S. Pierce Co., Boston, Mass. Amended to appear:

OVERLAND

211,267. RIDGEWOOD AND DESIGN. Cl. 39. 4-6-26. Murphy-Gorman Company. John B. Stetson Company, Philadelphia, Pa. Amended: In the statement, column 2, lines 6 through 8 are deleted, and the drawing is amended to appear as follows:

RIDGEWOOD

212,535. UNIVERSITY CLUB EXTRA QUALITY AND DESIGN. Cl. 39. 5-4-26. Murphy-Gorman Company. John B. Stetson Company, Philadelphia, Pa. Amended: In the statement, column 2, lines 6 through 8 are deleted, and the drawing is amended to appear as follows:

university club

328,941. SHAW ETC. Cl. 49. 10–8–35. Alex D. Shaw & Co., Inc. Munson G. Shaw Co., Inc., New York, N.Y. Amended: In the statement, column 2, lines 1 through 7 are deleted, and the drawing is amended to appear as follows:

SHAW

330,006. SHAW ETC. Cl. 47. 11–19–35. Alex D. Shaw & Co., Inc. Munson G. Shaw Co., Inc., New York, N.Y. Amended: In the statement, column 2, lines 3 through 8 are deleted, and the drawing is amended to appear as follows:

SHAW

384,409. PENNANT AND DESIGN. Cl. 46. 1–21–41. Gray & Company, Portland, Oreg. Amended: In the statement, column 2, line 29, "ice cream powder;" is deleted.

430,164. CLIMAX. Cl. 44. 6–10–47. The Ohio Chemical & Mfg. Co., Cleveland, Ohio. Amended: In the statement, column 1, line 7, "dental and" is deleted.

510,183. CAPSUDS AND DESIGN. Cl. 4. 5–31–49. Sugar Beet Products Company, Inc., Saginaw, Mich. Corrected: In the certificate, lines 5 and 16, in the heading, signature and in the statement, column 1, line 1, ", Inc." should be deleted.

533,721. BEETSOL AND DESIGN. Cl. 52. 11–21–50. Sugar Beet Products Company, Inc., Saginaw, Mich. Corrected: In the certificate, lines 5 and 15, in the heading, signature and in the statement, column 1, line 1, ", Inc." should be deleted.

541,106. DESIGN OF MAN CARRYING BLANK SIGN. Cl. 52. 4–17–51. Sugar Beet Products Company, Inc., Saginaw, Mich. Corrected: In the certificate, lines 5 and 15, in the heading, signature and in the statement, column 1, line 1, ", Inc." should be deleted.

541,107. DESIGN OF MAN CARRYING SIGN WITH SBS–11 ON IT. Cl. 52. 4–17–51. Sugar Beet Products Company, Inc., Saginaw, Mich. Corrected: In the certificate, lines 4, 5 and 15, in the heading, signature and in the statement, column 1, line 1, ", Inc." should be deleted.

678,769. HOBART. Cl. 18. 5–19–59. Hobart Laboratories, Inc., Chicago, Ill. Amended: In the statement, column 1, line 8, "for the treatment of pneu-" is deleted and line 9 through column 2, line 2 is deleted and line 3, "aemias" is deleted.

683,457. ECHT STONSDORFER, ETC. AND DESIGN. Cl. 49. 8–11–59. W. Koerner & Co. Die Stonsdorferei W. Koerner & Co., Harkshcide-Stonsdorf, Germany. Amended: In the statement, column 1, after line 8, , *now owned by Die Stonsdorferei W. Koerner & Co., Harkshcide-Stonsdorf, Germany* is inserted, and the drawing is amended to appear as follows:



810,189. STOFFELS AQUAPERL AND DESIGN. Cl. 42. 6–21–66. Stoffel AG (Stoffel S.A.) (Stoffel Ltd.), St. Gall, Switzerland. Corrected: In the statement, column 2, line 2, "207,697" should be deleted and *270,697* should be inserted.

811,291. JUMBLE-FITS. Cl. 22. 7–19–66. Alex D. Palmer, doing business as Tek Method Company. Cadaco, Inc., Chicago, Ill. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Delaware* should be inserted.

815,117. KNUCKLE HEAD. Cl. 49. 9–13–66. The Drambuie Liqueur Co., Ltd., Edinburgh, Scotland. Corrected: In the statement, column 1, line 1, "Scottish" should be deleted and *British* should be inserted.

815,535. ORTHOBITE. Cl. 44. 9–20–66. Unitek Corporation, Monrovia, Calif. Corrected: In the statement, column 2, line 4, "1964" should be deleted and *1965* should be inserted.

815,579. RUSTY NAIL. Cl. 49. 9–20–66. The Drambuie Liqueur Co., Ltd., Edinburgh, Scotland. Corrected: In the statement, column 1, line 1, "Scottish" should be deleted and *British* should be inserted.

816,075. TAPERFLEX. Cl. 22. 10–4–66. Chartered Enterprises, doing business as Superior Sports Specialties, San Fernando, Calif. Corrected: In the statement, column 1, line 2, after "Superior" *Sports* should be inserted.

816,513. SPASMAMIDE. Cl. 18. 10–11–66. Società Italiana Prodotti Schering S.p.A., Milan, Italy. Corrected: In the statement, column 1, line 1, "Societa" should be deleted and *Società* should be inserted and in column 2, line 2, "rations" should be deleted and *tions* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

421,734. ANDEROMETER. Cl. 26. Ernest J. Abbott, doing business as Physicists Research Company (Not Inc.). 6–18–46. New Cert. Sec. 7(c) to The Bendix Corporation, Detroit, Mich.

426,761. BARN-TOX. Cl. 6. Shell Oil Company, Incorporated. 1–7–47. New Cert. Sec. 7(c) to Shell Oil Company, New York, N.Y.

428,234. ENDROP. Cl. 6. Shell Oil Company, Incorporated. 3–11–47. New Cert. Sec. 7(c) to Shell Oil Company, New York, N.Y.

433,760. VPI. Cl. 6. Shell Chemical Corporation. 10–28–47. New Cert. Sec. 7(c) to Shell Oil Company, New York, N.Y.

687,495. LAMPLIGHTER. Cl. 21. The Acme Wire Company. 11–3–59. New Cert. Sec. 7(c) to Cardinal Control Company, Incorporated, Kensington, Conn.

INDEX OF REGISTRANTS

DECEMBER 13, 1966

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AJ Industries Corp., Delavan, Wis. 820,261, pub. 9–27–66. Cl. 22.
Aaction Rent-A-Car, Inc., Chicago, Ill. 820,512, pub. 9–27–66. Cl. 105.
Abbey Rents, Los Angeles, Calif. 820,146, pub. 9–27–66. Multiple Class (Classes 2, 4, 6, 13, 15, 19, 21, 22, 23, 26, 28, 30, 31, 32, 33, 34, 36, 41, 42, 44, 50, and 52).
Abert, Jack C., d.b.a. Mechanical Products Co., Phoenix, Ariz. 820,147, pub. 9–27–66. Cl. 3.
Abert, Jack C., d.b.a. Mechanical Products Co., Phoenix, Ariz. 820,148, pub. 9–27–66. Cl. 3.
Acme Quality Paints, Inc.: *See*—
Acme White Lead & Color Works.
Acme White Lead & Color Works, Hamtramck, to Acme Quality Paints, Inc., Detroit, Mich. 225,592, ren. 12–13–66. Cl. 18.
Acromag, Inc., Southfield, Mich. 706,251, canc. Cl. 21.
Adamek, Ben F., d.b.a. Sunrise Packing Co., Blythe, Calif. 706,309, canc. Cl. 46.
Adler and Son, Vauxhall, N.J. 820,504, pub. 9–27–66. Cl. 103.
Aim Engineering Co., Seattle, Wash. 706,280, canc. Cl. 23.
Ainsworth, Wm., & Sons, Inc., Denver, Colo. 426,259, ren. 12–13–66. Cl. 26.
Air Express International Corp., New York, N.Y. 820,509, pub. 9–27–66. Cl. 105.
Aircraft Specialties Co., Inc.: *See*—
Strux Corp.
Airstream Trailer Sales, Inc., Jackson Center, Ohio. 706,229, canc. Cl. 19.
Aktieselskabet Ernst Voss's Fabrik, Fredericia, Denmark. 706,104, canc. Cl. 13.
Alberto-Culver Co., Melrose Park, Ill. 820,437, pub. 9–27–66. Cl. 51.
Allen, S. L., & Co., to S. L. Allen & Co., Inc., Philadelphia, Pa. 61,432, ren. 12–13–66. Cl. 22.
Allen, S. L. & Co., to S. L. Allen & Co., Inc., Philadelphia, Pa. 61,433, ren. 12–13–66. Cl. 22.
Allen, S. L., & Co., Inc.: *See*—
Allen, S. L., & Co.
Allied Chemical Corp., New York, N.Y. 820,158, pub. 9–27–66. Cl. 6.
Allied Thermal Corp., New Britain, Conn. 820,532. Cl. 34.
Alpha Engineering, Inc., Mount Prospect, Ill., from Kartridg Pak Co., Davenport, Iowa. 820,472, pub. 8–16–66. Cl. 100.
Aluminum Refrigerator Door Co., Inc., Chicago, Ill. 820,531. Cl. 32.
Amchem Products, Inc.: *See*—
Nellson Chemical Co.
American Breddo Corp., New York, N.Y., to Breddo Food Products Corp., Inc., Kansas City, Kans. 427,012, ren. 12–13–66. Cl. 46.
American Bldg. Co., Atlanta, Ga. 820,498, pub. 8–16–66. Cl. 103.
American Cereal Co., The, The Quaker Oats Co., Chicago, Ill. 54,541. Am. 7(d). Cl. 46.
American Cereal Co., The, The Quaker Oats Co., Chicago, Ill. 54,566. Am. 7(d). Cl. 46.
American Energetics Corp., Washington, D.C. 706,238, canc. Cl. 21.
American Forest Products Corp., San Francisco, Calif. 820,145. pub. 11–9–65. Cl. 2.
American Home Products Corp.: *See*—
Deshell Laboratories, Inc.
American Oil Co., The, Chicago, Ill. 820,297, pub. 9–27–66. Cl. 31.
American Promotions, Inc., Indianapolis, Ind. 820,214, pub. 9–27–66. Cl. 18.
American Statronic Corp., New York, N.Y. 706,257, canc. Cl. 21.
American Telephone and Telegraph Co., New York, N.Y. 820,505, pub. 9–27–66. Cl. 104.
Anasco GmbH, Wiesbaden, Germany. 820,216, pub. 9–27–66. Cl. 18.
Andersen-Smith Milling Co., San Francisco, Calif. 706,175, canc. Cl. 10.
Anderson, C. W., Hosiery Co., Clinton, S.C. 820,340, pub. 9–27–66. Cl. 39.
Anderson, Clayton & Co., Houston, Tex. 820,492, pub. 9–27–66. Cl. 102.
Anderson & Thompson Ski Co., Inc., Seattle, Wash. 820,263, pub. 9–27–66. Cl. 22.
Anderson & Thompson Ski Co., Inc., Seattle, Wash. 820,264. pub. 9–27–66. Cl. 22.
Appalachian Hardwood Mfg., Inc., Cincinnati, Ohio. 820,525. pub. 9–27–66. Cl. A.
Arday International Co.: *See*—
Arriaza, Higinio.
Arden, Elizabeth, Sales Corp., New York, N.Y. 820,435, pub. 9–27–66. Cl. 51.
Arriaza, Higinio, d.b.a. Arday International Co., Bergenfield, N.J. 820,448, pub. 9–27–66. Cl. 51.
Arrow Packing Co., to Exeter Grape Growers, Exeter, Calif. 226,105, ren. 12–13–66. Cl. 46.
Art/Co.: *See*—
Fielden, W. Arthur.
Artemis Verlags Aktiengesellschaft, Zurich, Switzerland. 820,520, pub. 9–27–66. Cl. 38.
Arvin Industries, Inc., Columbus, Ind. 706,259, canc. Cl. 21.
Associated Square Dancers of Superior California, Sacramento, Calif. 820,526, pub. 9–27–66. Cl. 28.
Atlantic Products Corp., Trenton, N.J. 820,149, pub. 9–27–66. Multiple Class (Classes 3 and 22).
Atlantic Research Corp., Alexandria, Va. 820,239, pub. 9–27–66. Cl. 21.
Atlas Chemical Industries, Inc., Wilmington, Del. 820,225, pub. 9–27–66. Cl. 18.
Aurora Automatic Machinery Co., to Thor Power Tool Co., Aurora, Ill. 57,742, ren. 12–13–66. Cl. 23.
Austenal Laboratories, Inc., to Howmet Corp., New York, N.Y. 427,433, ren. 12–13–66. Cl. 44.
Automatic Canteen Co. of America, Chicago, Ill. 820,375, pub. 9–27–66. Cl. 46.
B & K Mfg. Co., Chicago, Ill. 706,262, canc. Cl. 21.
Bailey Meter Co., Wickliffe, Ohio. 820,199, pub. 9–27–66. Cl. 13.
Baker, C. P., & Co., Philadelphia, Pa. 820,456, pub. 9–27–66. Multiple Class (Classes 51 and 52).
Bancroft, Joseph, & Sons Co., Wilmington, Del. 706,851, canc. Cl. 42.
Bancroft, Joseph, & Son Co., Wilmington, Del. 820,341, pub. 9–27–66. Cl. 39.
Bancroft Racket Co., Pawtucket, R.I. 820,254, pub. 9–27–66. Cl. 22.
Barth Levitt Products, Lynbrook, N.Y. 706,411, canc. Cl. 51.
Bates Mfg. Co., The, Orange, N.J. 225,246, ren. 12–13–66. Cl. 11.
Bath Iron Works Corp., Bath, Maine. 820,275, pub. 9–27–66. Cl. 23.
Batten, P. S., Service Co., Inc., Astoria, N.Y. 706,195, canc. Cl. 13.
Banmgold Bros., Inc., New York, N.Y. 820,294, pub. 9–27–66. Cl. 28.
Beaunit Corp., New York, N.Y. 820,155, pub. 9–27–66. Cl. 1.
Beaunit Corp., New York, N.Y. 820,139, pub. 9–27–66. Cl. 1.
Bel-Craft, Inc., Linkwood, Md. 820,233, pub. 9–27–66. Cl. 19.
Belknap, Sara Y., Gainesville, Fla. 820,268, pub. 9–27–66. Cl. 22.
Belvederes, The, Norfolk, Va. 820,523, pub. 9–27–66. Cl. 107.
Bendictine, Distillerie de la Liqueur de l'Ancienne Abbaye de Fecamp: *See*—
Societe Anonyme de la Distillerie de la Liqueur Bendictine de l'Abbaye de Fecamp.
Berry Asphalt Co., Magnolia, Ark. 706,187, canc. Cl. 12.
Best Kosher Sausage Co., Chicago, Ill. 820,404, pub. 9–27–66. Cl. 46.
Betan Co., Inc., Knoxville, Tenn. 820,230, pub. 9–27–66. Cl. 18.
Betan Co., Inc., Knoxville, Tenn. 820,231, pub. 9–27–66. Cl. 18.
Big A System, Inc., The, St. Louis, Mo. 820,368, pub. 6–14–66. Cl. 46.
Bis-E-Boy Products Co. from Bis-E-Boy Products Co., Kansas City Mo. 706,271, canc. Cl. 23.
Bion-Slip Co., Inc., San Francisco, Calif. 820,337, pub. 9–27–66. Cl. 39.
Blue Bell, Inc., Greensboro, N.C. 820,338, pub. 9–27–66. Cl. 39.
Blue Magic, Inc., Passaic, N.J. 681,616, canc. Cl. 52.
Bois, Erven Lucas, Inc., Fair Lawn, N.J. 820,416, pub. 9–27–66. Cl. 49.
Bolton-Emerson, Inc., Lawrence, Mass. 820,284, pub. 9–27–66. Cl. 23.
Bonacina, Egidio, Airuno (Como), Italy. 706,270, canc. Cl. 23.
Bond-Bilt Construction Co., Oak Park, Mich. 820,500, pub. 9–27–66. Cl. 106.
Bonded Oil Co., Springfield, Ohio. 820,485, pub. 9–27–66. Cl. 101.
Bonded Oil Co., Springfield, Ohio. 820,486, pub. 9–27–66. Cl. 101.
Borgward, Carl F. W., G.m.b.H., Bremen, Germany. 706,225, canc. Cl. 19.
Brach, E. J., & Sons, Chicago, Ill. 820,397, pub. 9–27–66. Cl. 46.
Breck, John H., Inc., Springfield, Mass. 820,483, pub. 9–27–66. Cl. 51.
Breck, John H., Inc., Springfield, Mass., from Clairol Inc., New York, N.Y. 820,484, pub. 9–27–66. Cl. 51.
Breddo Food Products Corp., Inc.: *See*—
American Breddo Corp.
Brenton, Alexander, d.b.a. Terramar International, Beverly Hills, Calif. 820,344, pub. 9–27–66. Cl. 40.
Bristol-Myers Co., New York, N.Y. 820,441, pub. 9–27–66. Cl. 51.
Brown Co., Berlin, N.H. 820,308, pub. 9–27–66. Cl. 37.
Brownell Rose Research Gardens and or Brownell Roses: *See*—
Rhode Island Hospital Trust Co.

Burgers' Ozark Country Cured Hams, Inc., California, Mo. 820,233, pub. 9–27–66. Cl. 46.
Burlington Industries, Inc.: *See*—
Hafner Associates, Inc.
Butt, H. E., Grocery Co., d.b.a. Harlingen Canning Co., Corpus Christi, Tex. 820,405, pub. 9–27–66. Cl. 46.
Butt, H. E., Grocery Co., d.b.a. Harlingen Canning Co., Corpus Christi, Tex. 820,409, pub. 9–27–66. Cl. 46.
Bymart-Tintair, Inc., New York, N.Y. 820,468, pub. 9–27–66. Cl. 52.
Cadaco, Inc.: *See*—
Palmer, Alex D.
Cal-New Yorker, Inc., New York, N.Y. 678,225, canc. Cl. 100.
Canfield Oil Co., The, to Fleet-Wing Corp., Cleveland, Ohio. 426,547, ren. 12–13–66. Cl. 15.
Carruthers, J. H., & Co. Ltd., Glasgow, Scotland. 706,281, canc. Cl. 28.
Cecilia Products, Ltd., New York, N.Y. 820,446, pub. 9–27–66. Cl. 51.
Central Tablet Mfg. Co., Columbus, Ohio. 705,178, canc. Cl. 22.
Century Electronics & Instruments, Inc., Tulsa, Okla. 706,306, canc. Cl. 26.
Champion Papers Inc., Hamilton, Ohio. 820,306, pub. 9–27–66. Cl. 37.
Chance Vought Aircraft, Inc., Dallas, Tex. 706,318, canc. Cl. 26.
Chance Vought Aircraft, Inc., Dallas, Tex. 706,319, canc. Cl. 36.
Chandon Champagne Corp., New York, N.Y. 820,411, pub. 9–27–66. Cl. 47.
Charley's Chuckle Cards of Oklahoma, Inc., Tulsa, Okla. 820,314, pub. 9–27–66. Cl. 38.
Charm Originals, Inc., Kansas City, Mo. 820,421, pub. 9–27–66. Cl. 50.
Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. 816,075, cor. Cl. 22.
Chemische Fabrik Promonta Gesellschaft mit beschrankter Haftung, Hamburg, Germany. 820,212, pub. 9–27–66. Cl. 18.
Chenu, Maria, Neuilly-sur-Seine, France. 820,442, pub. 9–27–66. Cl. 51.
Chilton Co., Philadelphia, Pa. 820,327, pub. 9–27–66. Cl. 38.
Cincinnati Bickford Tool Co., The, Oakley, Cincinnati, Ohio, to Giddings & Lewis Machine Tool Co., Fond du Lac, Wis. 224,995, ren. 12–13–66. Cl. 23.
Cincinnati Screen Process Supplies, Inc., Cincinnati, Ohio. 820,278, pub. 9–27–66. Cl. 23.
Cippy Inc., Clifton, N.J. 706,410, canc. Cl. 51.
Claifol Inc.: *See*—
Breck, John H., Inc.
Clarson, Lee H., d.b.a. Double Cola Bottling Co., and Hill Billy Beverage, Richland Center, Wis. 820,354, pub. 9–27–66. Cl. 45.
Cleek, C. L., Pacific Palisades, Calif. 820,427, pub. 9–27–66. Cl. 51.
Coates & Co., Plymouth, England. 820,419, pub. 9–27–66. Cl. 49.
Cohen, A., & Sons Corp., New York, N.Y. 706,332, canc. Cl. 27.
Cole Pharmacal Co., Inc., d.b.a. Cole Chemical Co., St. Louis, Mo. 820,222, pub. 9–27–66. Cl. 18.
Colorado Milling & Elevator Co., The: *See*—
Meyer, John F., & Sons Milling Co.
Colorado Milling & Elevator Co., The, Denver, Colo. 219,296, ren. 12–13–66. Cl. 46.
Colorado Milling & Elevator Co., The, Denver, Colo. 219,449, ren. 12–13–66. Cl. 46.
Colorado Ski Country U.S.A., from Ski Country USA, Inc., Denver, Colo. 820,343, pub. 9–27–66. Cl. 40.
Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, N.Y. 820,186, pub. 9–27–66. Cl. 11.
Commercial Solvents Corp., New York, N.Y. 706,176, canc. Cl. 10.
Commercial Solvents Corp., New York, N.Y. 820,175, pub. 9–27–66. Cl. 9.
Commercial Solvents Corp., New York, N.Y. 820,176, pub. 9–27–66. Cl. 9.
Compagnie Francaise Thomson-Houston, Paris, France. 820,240, pub. 9–27–66. Cl. 21.
Compagnie Generale d'Electricite, Paris, France. 820,135, pub. 9–27–66. Cl. 1.
Concord Electronics Corp., Los Angeles, Calif. 820,303, pub. 9–27–66. Cl. 36.
Conodec, Inc., Easton, Pa. 820,195, pub. 9–27–66. Cl. 12.
Consolidated Cosmetics, Chicago, Ill., to Les Parfums de Dana, Inc., New York, N.Y. 425,630, ren. 12–13–66. Cl. 29.
Consolidated Foods Corp., d.b.a. Joe Lowe Co., Chicago, Ill., from Joe Lowe Corp., Englewood, N.J. 820,378, pub. 9–27–66. Cl. 46.
Continental Enterprises, Inc., Twin Falls, Idaho. 820,364, pub. 12–29–64. Cl. 46.
Continental Enterprises, Inc., Twin Falls, Idaho. 820,365, pub. 2–9–65. Cl. 46.
Continental Motors Corp., Muskegon, Mich. 820,497, pub. 4–12–66. Cl. 103.
Contractor's Engineer, The, Neodesha, Kans. 820,474, pub. 9–27–66. Cl. 100.
Controls Co. of America, Schiller Park, from Electrosnap Corp., Chicago, Ill. 706,296, canc. Cl. 26.
Conveyor Dynamics, Inc., Syracuse, N.Y. 820,276, pub. 9–27–66. Cl. 23.
Conveyor Dynamics, Inc., Syracuse, N.Y. 820,277, pub. 9–27–66. Cl. 23.
Cool-It, Inc., Chicago, Ill. 820,428, pub. 9–27–66. Cl. 51.
Cordle, Glen A., Norfolk, Va. 706,283, canc. Cl. 23.
Corporation Trust Co., The, New York, N.Y. 820,312, pub. 9–27–66. Cl. 38.
Country Kitchen Inc. of Middletown, Ohio, Cincinnati, Ohio. 820,477, pub. 9–27–66. Cl. 100.
Craig Mfg. Co., Inc.: *See*—
Peterson Bros. Inc.
Crane Co., New York, N.Y. 820,197, pub. 9–27–66. Cl. 13.
Creager, Olen R., d.b.a. Vending Enterprises, Fresno, Calif. 820,144, pub. 9–27–66. Cl. 1.
Cube Card Corp., San Rafael, Calif. 820,316, pub. 9–27–66. Cl. 38.
Cutter Laboratories, Inc., Berkeley, Calif. 820,348, pub. 9–27–66. Cl. 44.
D.A.N.C.E, Inc., Dayton, Ohio. 820,517, pub. 9–27–66. Cl. 107.
Dae Health Laboratories, Ltd., London, England. 820,430, pub. 9–27–66. Cl. 51.
Dan River Mills, Inc.: *See*—
Riverside & Dan River Cotton Mills, Inc.
Das, Inc., Seattle, Wash. 820,449, pub. 9–27–66. Cl. 51.
Das, Inc., Seattle, Wash. 820,450, pub. 9–27–66. Cl. 51.
Davis, E. E., Chemical Corp., Chicago, Ill. 820,172, pub. 9–27–66. Cl. 6.
Delaney, Frank A., to Frank A. Delaney, Inc., New York, N.Y. 428,392, ren. 12–13–66. Cl. 42.
Delaney, Frank A., Inc.: *See*—
Delaney, Frank A.
De Laval Separator Co., The, Poughkeepsie, N.Y. 56,918, ren. 12–13–66. Cl. 23.
Delmark Co., The: *See*—
Dietene Co., The.
Delta Upsilon Fraternity, The, New York, N.Y. 820,323, pub. 9–27–66. Cl. 38.
Deltox Inc.: *See*—
Deltox Rug Co.
Deltox Rug Co., to Deltox Inc., Oshkosh, Wis. 219,072, ren. 12–13–66. Cl. 42.
De Markoff, Alexandra, Sales Corp., New York, N.Y. 820,444, pub. 9–27–66. Cl. 51.
De Markoff, Alexandra, Sales Corp., New York, N.Y. 820,457, pub. 9–27–66. Cl. 51.
Derby Foods, Inc.: *See*—
Inderrieden, J. B., Co.
Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 820,228, pub. 9–27–66. Cl. 18.
Denver Chemical Mfg. Co., The, d.b.a. Siroll Laboratories, Inc., Stamford, Conn. 820,458, pub. 9–27–66. Cl. 51.
Deshell Laboratories, Inc., Chicago, Ill., to American Home Products Corp., New York, N.Y. 222,928, ren. 12–13–66. Cl. 18.
Dial Finance Co., Des Moines, Iowa. 820,495, pub. 9–27–66. Cl. 102.
Die Stonsdorferei W. Koerner & Co.: *See*—
Koerner, W., & Co.
Dietene Co., The, d.b.a. The Delmark Co., Minneapolis, Minn. 820,356, pub. 9–27–66. Cl. 46.
Dixon Corp., Bristol, R.I. 820,423, pub. 9–27–66. Cl. 50.
Dog House, Inc., The, Youngstown, Ohio. 820,355, pub. 9–27–66. Cl. 45.
Domestic and Foreign Missionary Society of The Protestant Episcopal Church in the United States of America, New York, N.Y. 820,519, pub. 9–27–66. Cl. 107.
Double Cola Bottling Co. and HillBilly Beverages: *See*—
Clarson, Lee H.
Dow Chemical Co., The, Midland, Mich. 820,179, pub. 9–27–66. Cl. 9.
Drambuie Liqueur Co., Ltd., The, Edinburgh, Scotland. 815,177, cor. Cl. 49.
Drambuie Liqueur Co., Ltd., The, Edinburgh, Scotland. 815,579, cor. Cl. 49.
Dryden, Frank W., & Sons, to Dryden Oil Co., Inc., Baltimore, Md. 424,449, ren. 12–13–66. Cl. 15.
Dryden Oil Co., Inc.: *See*—
Dryden, Frank W., & Sons.
Dubbs, Wendell P., Palo Alto, Calif. 820,292, pub. 9–27–66. Cl. 26.
Du Pont de Nemours, E. I., and Co.: *See*—
Eastern Dynamite Co., The.
Duval Corp., Houston, Tex. 820,183, pub. 9–27–66. Cl. 10.
Duvidell Sales Corp., New York, N.Y. 820,451, pub. 9–27–66. Cl. 51.
Duvidell Sales Corp., New York, N.Y. 820,452, pub. 9–27–66. Cl. 51.
Dyna-Thruset Corp., Columbia, S.C. 706,286, canc. Cl. 23.
Dytronics Co., Inc., Columbus, Ohio. 820,288, pub. 9–27–66. Cl. 26.
Eastern Brokerage Co., Philadelphia, Pa. 706,423, canc. Cl. 102.
Eastern Dynamite Co., The, Kenvil, N.J., to E. I. du Pont de Nemours and Co., Wilmington, Del. 60,918, ren. 12–13–66. Cl. 9.
Eastman Kodak Co., Rochester, N.Y. 426,668, ren. 12–13–66. Cl. 26.
Eastman Kodak Co., Rochester, N.Y. 706,320, canc. Cl. 26.
Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. 820,252, pub. 9–27–66. Cl. 22.
Ecirich, Peter, and Sons, Inc., Fort Wayne, Ind. 820,379, pub. 9–27–66. Cl. 46.
Electric Storage Battery Co., The, Philadelphia, Pa. 820,536. Cl. 39.
Electrolux Corp., New York, N.Y. 426,617, ren. 12–13–66. Cl. 21.
Electrosnap Corp.: *See*—
Controls Co. of America.
Emery Air Freight Corp., Wilton, Conn. 820,507, pub. 9–27–66. Cl. 105.
Empire Steel Castings, Inc., Reading, Pa. 425,283, ren. 12–13–66. Cl. 14.
Engel Equipment, Inc., St. Louis, Mo. 820,530. Cl. 23.
Erman-Bach, Ltd., New York, N.Y. 820,282, pub. 9–27–66. Cl. 23.
Erman-Bach, Ltd., New York, N.Y. 820,424, pub. 9–27–66. Cl. 50.
Escher Wyss G.m.b.H., Wurttemberg, Germany. 820,273, pub. 9–27–66. Cl. 23.

Esposito Jewelry, Inc., Providence, R.I. 706,894, canc. Cl. 28.
Ethicon, Inc., Somerville, N.J. 706,213, canc. Cl. 14.
Ethicon, Inc., Somerville, N.J. 706,214, canc. Cl. 18.
Exeter Grape Growers: *See*—
Arrow Packing Co.
Fabricated Products Co., West Newton, Pa. 682,410, canc. Cl. 13.
Fairbank, N. K., Co., The, Chicago, Ill., to Lever Brothers Co., New York, N.Y. 60,076, ren. 12–13–66. Cl. 52.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 706,164, canc. Cl. 6.
Federal Sweets & Biscuit Co., Inc.: *See*—
Federal Sweets & Wafer Co., Inc.
Federal Sweet & Wafer Co., Inc., New York, N.Y., to Federal Sweets & Biscuit Co., Inc., Clifton, N.J. 236,238, ren. 12–13–66. Cl. 46.
Fibreboard Paper Products Corp., San Francisco, Calif. 706,158, canc. Cl. 2.
Fielden, W. Arthur, d.b.a. Art/ Co., Miami, Fla. 820,526, pub. 9–27–66. Cl. 107.
Fifth Avenue Lithographic Associates, Inc., New York, N.Y. 706,420, canc. Cl. 101.
Fig-O-Lax Ovals Co., Inc., New York, N.Y., to Charles S. and Irving H. Silber, Newark, N.J. 219,161, ren. 12–13–66. Cl. 18.
Filatures Prouvost & Cie Le Laniere de Roubaix, Roubaix (Nord), France. 820,347, pub. 9–27–66. Cl. 43.
Firma Hellma G.m.b.H., Glastechnische Werkstatten, Mullheim, Baden, Germany. 820,285, pub. 9–27–66. Cl. 26.
Firma Hellma G.m.b.H., Glastechnische Werkstatten, Mullheim, Baden, Germany. 820,286, pub. 9–27–66. Cl. 26.
First National Bank of Ripon, The, Ripon, Wis. 820,493, pub. 9–27–66. Cl. 102.
Fischer & Porter Co., Hatboro, Pa. 706,272, canc. Cl. 23.
Fischer & Porter Co., Hatboro, Pa. 706,294, canc. Cl. 26.
Flavor Corp. of America, Northbrook, Ill. 820,394, pub. 9–27–66. Cl. 46.
Fleet Wholesale Supply Co., Inc., Appleton, Wis. 820,213, pub. 9–27–66. Cl. 18.
Fleet-Wing Corp.: *See*—
Canfield Oil Co., The.
Flexnit Co., Inc., Elizabeth, N.J. 706,376, canc. Cl. 39.
Florsheim Shoe Co.: *See*—
Interco Inc.
International Shoe Co.
Fome-Cor Corp., Springfield, Mass. 706,181, canc. Cl. 12.
Food Mart News: *See*—
Lake Shore National Bank of Chicago, Ill.
Foster, S. K., and Associates, Inc., Cincinnati, Ohio. 820,478, pub. 9–27–66. Cl. 101.
Freeland Gauge Co., Detroit, Mich. 820,287, pub. 9–27–66. Cl. 26.
Fruit Fair: *See*—
Meshulam's Inc.
Fun in the Sun Tours, Inc., from Sol Whiteman and H. J. Whiteman, Abington, Pa. 820,506, pub. 9–27–66. Cl. 105.
Gabriel Industries, Inc., New York, N.Y. 820,353, pub. 9–27–66. Cl. 22.
Geigy Chemical Corp., Ardsley, N.Y. 820,155, pub. 9–27–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 820,156, pub. 9–27–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 820,157, pub. 9–27–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 820,217, pub. 9–27–66. Cl. 18.
Geigy Chemical Corp., Ardsley, N.Y. 820,224, pub. 9–27–66. Cl. 18.
Gem-Mounts and Gem-Masks Co.: *See*—
Heitman, Paul S.
General Aniline & Film Corp., New York, N.Y. 820,309, pub. 9–27–66. Cl. 37.
General Mills, Inc., Minneapolis, Minn. 706,184, canc. Cl. 12.
General Mills, Inc., Minneapolis, Minn. 820,384, pub. 9–27–66. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 820,385, pub. 9–27–66. Cl. 46.
Genie Metallurgique et Chimique, S.A., Brussels, Belgium. 706,167, canc. Cl. 6.
Ghost Beacon Corp., Miami, Fla. 706,242, canc. Cl. 21.
Gibson, Corodon W.: *See*—
Miss America Pageant.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 820,331, pub. 9–27–66. Cl. 38.
Gibson Products Co.: *See*—
Gibson, Corodon W.
Giddings & Lewis Machine Tool Co.: *See*—
Cincinnati Bickford Tool Co., The.
Gilbert Paper Co., Menasha, Wis., to The Mead Corp., Dayton, Ohio. 220,276, ren. 12–13–66. Cl. 37.
Gillette Co., The, Boston, Mass. 820,283, pub. 9–27–66. Cl. 28.
Gillette Co., The, d.b.a. The Toni Co., Chicago, Ill. 820,464, pub. 9–27–66. Cl. 51.
Gillette Co., The, Boston, Mass. 820,465, pub. 9–27–66. Cl. 51.
Gillette Co., The, Boston, Mass. 820,466, pub. 9–27–66. Cl. 51.
Good Humor Corp., Englewood Cliffs, N.J. 820,402, pub. 9–27–66. Cl. 44.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 820,173, pub. 9–27–66. Cl. 7.
Gorman, Murphy Co. John B. Stetson Co., Philadelphia, Pa. 211,267. Am. 7(d). Cl. 39.
Gorman, Murphy Co. John B. Stetson Co., Philadelphia, Pa. 212,535. Am. 7(d). Cl. 39.
Governor and Co. of Adventurers of England Trading into The Hudson's Bay, to The Governor and Co. of Adventurers of England Trading into Hudson's Bay, d.b.a. Hudson's Bay Co., London, England and Winnipeg, Canada. 220,747, ren. 12–13–66. Cl. 42.
Graham, John H., & Co., Inc., New York, N.Y. 706,373, canc. Cl. 23.
Grand, O. P., Inc., Alhambra, Calif. 706,190, canc. Cl. 12.
Gray & Co., Portland, Oreg. 384,400. Am. 7(d). Cl. 46.
Green Giant Co., Le Sueur, Minn. 681,919, canc. Cl. 46.
HMH Publishing Co., Inc., Chicago, Ill. 820,476, pub. 9–27–66. Cl. 100.
Hafner Associates, Inc., New York, N.Y., to Burlington Industries, Inc., Greensboro, N.C. 427,066, ren. 12–13–66. Cl. 42.
Hamilton, Alexander, Institute, to Alexander Hamilton Institute Inc., New York, N.Y. 223,204, ren. 12–13–66. Cl. 38.
Hamilton, Alexander, Institute, to Alexander Hamilton Institute Inc., New York, N.Y. 223,206, ren. 12–13–66. Cl. 38.
Hamilton, Alexander, Institute Inc.: *See*—
Hamilton, Alexander, Institute.
Hand, Peter, Brewery Co., Chicago, Ill. 820,414, pub. 9–27–66. Cl. 48.
Harbor Service Stations, Inc., from Westway Petroleum Co., Portland, Oreg. 820,490, pub. 9–27–66. Cl. 103.
Hardwick & Magee Co., Philadelphia, Pa. 820,345, pub. 9–27–66. Cl. 42.
Harlingen Canning Co.: *See*—
Butt, H. E., Grocery Co.
Harlingen Canning Co.: *See*—
Butt, H. E., Grocery Co.
Harper & Row, Publishers, Inc., New York, N.Y. 820,335, pub. 9–27–66. Cl. 38.
Harts Mountain Products Corp., New York, N.Y. 820,443, pub. 9–27–66. Cl. 51.
Hassenfeld Bros., Inc., Pawtucket, R.I. 820,259, pub. 9–27–66. Cl. 22.
Hassenfeld Bros., Inc., Pawtucket, R.I. 820,260, pub. 9–27–66. Cl. 22.
Havez Industries, Inc., Wilmington, Del. 820,141, pub. 9–27–66. Cl. 1.
Heinz, B. T., d.b.a. B. T. Heinz Co., Seattle, Wash. 820,228, pub. 9–27–66. Cl. 38.
Heinz, B. T., Co.: *See*—
Heinz, B. T.
Heitman, Paul S., d.b.a. Gem-Mounts and Gem-Masks Co., New York, N.Y. 820,290, pub. 9–27–66. Cl. 26.
Hercules Tire & Rubber Co., The, Stamford, Conn. 820,301, pub. 9–27–66. Cl. 35.
High Voltage Engineering Corp., Burlington, Mass. 820,291, canc. Cl. 26.
Hilton Seafoods Co., Inc., Seattle, Wash. 820,396, pub. 9–27–66. Cl. 46.
Hines, Edward, Lumber Co., Chicago, Ill. 820,194, pub. 9–27–66. Cl. 12.
Hobart Laboratories, Inc., Chicago, Ill. 678,769. Am. 7(d). Cl. 18.
Hoben Candy Corp., Ashley, Ill. 820,380, pub. 9–27–66. Cl. 46.
Hoffman Camera Corp., Farmingdale, N.Y. 820,289, pub. 9–27–66. Cl. 26.
Hooker Chemical Corp., Niagara Falls, N.Y. 820,153, pub. 9–27–66. Cl. 6.
Hooker Chemical Corp., Niagara Falls, N.Y. 820,154, pub. 9–27–66. Cl. 6.
Hornstein Photo Sales, Inc., Chicago, Ill. 706,326, canc. Cl. 26.
Howmet Corp.: *See*—
Austenal Laboratories, Inc.
H-Test Reporting Service: *See*—
Spencer, Cedric H.
Hudson's Bay Co.: *See*—
Governor and Co. of Adventurers of England Trading into Hudson's Bay, The.
Hume, G. W., Co., Turlock, Calif. 219,838, ren. 12–13–66. Cl. 46.
Humiston, Keeling and Co., Chicago, Ill. 820,481, pub. 9–27–66. Cl. 101.
Hunt, Philip A., Chemical Corp., Palisades Park, N.J. 820,166, pub. 9–27–66. Cl. 6.
Huntington Laboratories, Inc., Huntington, Ind. 820,223, pub. 9–27–66. Cl. 18.
Hustler Co., The, Bossier City, La. 820,284, pub. 9–27–66. Cl. 19.
Independent Livestock Marketing Association, Columbus, Ohio. 820,524, pub. 9–27–66. Cl. 200.
Inderrieden, J. B., Co., to Derby Foods, Inc., Chicago, Ill. 217,759, ren. 12–13–66. Cl. 46.
Insurance Co. of North America, Philadelphia, Pa. 820,496, pub. 9–27–66. Cl. 102.
Institute of Electrical and Electronics Engineers, Inc., New York, N.Y. 820,324, pub. 9–27–66. Cl. 38.
Interco Inc., d.b.a. The Florsheim Shoe Co., from International Shoe Co., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 820,488, pub. 9–27–66. Cl. 101.
Inter-Continental Engine Service, Inc., Brownsville, Tex. 820,503, pub. 9–27–66. Cl. 103.
International Paper Co., New York, N.Y. 820,535. Cl. 37.
International Shoe Co.: *See*—
Interco Inc.
International Silver Co., to The International Silver Co., Meriden, Conn. 57,239, ren. 12–13–66. Cl. 28.
International Silver Co., to The International Silver Co., Meriden, Conn. 223,189, ren. 12–13–66. Cl. 28.
International Silver Co., The: *See*—
International Silver Co.
International Telephone and Telegraph, New York, N.Y. 820,196, pub. 9–27–66. Cl. 13.
Invincible Products Corp., Chicago, Ill. 820,454, pub. 9–27–66. Cl. 51.

J & J Enterprises, Inc., Coral Gables, Fla. 820,248, pub. 9-27-66. Cl. 22.
J & J Enterprises, Inc., Coral Gables, Fla. 820,249, pub. 9-27-66. Cl. 22.
Jarke Mfg. Co., Chicago, Ill. 706,244, canc. Cl. 32.
Jerma, Inc., The, Topeka, Kans. 820,518, pub. 9-27-66. Cl. 107.
Jerrold Electronics Corp., Philadelphia, Pa. 706,248, canc. Cl. 21.
Jet Corp. of America, Philadelphia, Pa. 706,239, canc. Cl. 21.
Jetronic Industries, Inc., Philadelphia, Pa. 706,299, canc. Cl. 26.
Jobill Sportsman, Inc., Los Angeles, Calif. 820,339, pub. 9-27-66. Cl. 39.
Joines Body Co., Galax, Va. 820,236, pub. 9-27-66. Cl. 19.
Jones, Ned L., Yakima, Wash. 820,515, pub. 9-27-66. Cl. 38.
Joslyn Mfg. and Supply Co., Chicago, Ill. 706,243, canc. Cl. 21.
K.S. Corp., New York, N.Y. 706,385, canc. Cl. 42.
Kabushiki Kaisha Kato Shoten, Prefecture, Japan. 820,372, pub. 9-27-66. Cl. 46.
Kabushiki Kaisha Yaskawa Denki Seisakushuo, d.b.a. Yaskawa Electric Mfg. Co., Ltd., Yahata-ku, Kitakushu-Shi, Japan. 820,244, pub. 9-27-66. Cl. 21.
Kaiser Jeep Corp., Toledo, Ohio. 820,237, pub. 9-27-66. Cl. 19.
Kantzler, John, & Sons, Bay City, Mich. 220,138, ren. 12-13-66. Cl. 12.
Kartridg Pak Co., The: *See*—
Alpha Engineering, Inc.
Kaufmann, Arthur C., and Associates, Inc., Philadelphia, Pa. 706,267, canc. Cl. 39.
Kees, F. D., Mfg. Co., Beatrice, Nebr. 706,185, canc. Cl. 12.
Kemp's Hamburger Shops of America, Inc., d.b.a. Kemp's of America, Boston, Mass. 820,473, pub. 9-27-66. Cl. 100.
Kemp's of America: *See*—
Kemp's Hamburger Shops of America, Inc.
Kent Feeds, Inc., Muscatine, Iowa. 820,387, pub. 9-27-66. Cl. 46.
Kent-Coffey Mfg. Co., Lenoir, N.C. 706,350, canc. Cl. 32.
Kimball Systems, Inc., Belleville, N.J. 820,332, pub. 9-27-66. Cl. 36.
Kimberly-Clark Corp., Neenah, Wis. 820,524. Cl. 37.
King Arthur, Inc., Memphis, Tenn. 820,432, pub. 9-27-66. Cl. 51.
King Kullen Grocery Co., Inc., Westbury, N.Y. 820,311, pub. 9-27-66. Cl. 37.
King Kullen Grocery Co., Inc., Westbury, N.Y. 820,406, pub. 9-27-66. Cl. 46.
King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. 820,257, pub. 9-27-66. Cl. 22.
King-Seeley Thermos Co., d.b.a. Structo Division, Freeport, Ill. 820,258, pub. 9-27-66. Cl. 22.
Kirkman Laboratories, Inc., Portland, Oreg. 820,229, pub. 9-27-66. Cl. 18.
Knife & Fork Club, Inc., Green Bay, Wis. 706,421, canc. Cl. 101.
Koerner, W., & Co. Die Stonsdorferei W. Koerner & Co., Harkabeidestonsdorf, Germany. 683,457. Am. 7(d). Cl. 49.
Kohnstamm, V. & E., Inc., Brooklyn, N.Y. 424,689, ren. 12-12-66. Cl. 45.
Korfund Dynamics Corp., Westbury, N.Y. 820,168, pub. 9-27-66. Cl. 6.
Kress, S. H., and Co., New York, N.Y. 706,386, canc. Cl. 42.
Kroger Co., The, Cincinnati, Ohio. 820,351, pub. 9-27-66. Cl. 46.
Kroger Co., The, d.b.a. Wesco Foods Co., Cincinnati, Ohio. 820,356, pub. 9-27-66. Cl. 45.
Kroger Co., The, d.b.a. Wesco Foods Co., Cincinnati, Ohio. 820,357, pub. 9-27-66. Cl. 45.
Kroger Co., The, d.b.a. Wesco Foods Co., Cincinnati, Ohio. 820,358, pub. 9-27-66. Cl. 45.
Kroger Co., The, d.b.a. Wesco Foods Co., Cincinnati, Ohio. 820,359, pub. 9-27-66. Cl. 45.
Kroger Co., The, d.b.a. Wesco Foods Co., Cincinnati, Ohio. 820,360, pub. 9-27-66. Cl. 45.
Kroger Co., The, d.b.a. Wesco Foods Co., Cincinnati, Ohio. 820,361, pub. 9-27-66. Cl. 45.
Krolik Corp., The: *See*—
National Textile Distributors Corp.
Labelon Tape Co., Inc., Rochester, N.Y. 681,239, canc. Cl. 50.
Laird Productions Inc., Harrisburg, Pa. 820,489, pub. 9-27-66. Cl. 101.
Lake Shore National Bank of Chicago, Ill.: *See*—
Michael & Ginsberg.
Lanvin-Charles of The Rits, Inc., New York, N.Y. 820,429, pub. 9-27-66. Cl. 51.
Latimer, Caesar C., d.b.a. Latimer's Famous Barbecue Sauce, Tulsa, Okla. 820,377, pub. 9-27-66. Cl. 46.
Latimer's Famous Barbecue Sauce: *See*—
Latimer, Caesar C.
Lavino, E. J., and Co., Philadelphia, Pa. 820,190, pub. 9-27-66. Cl. 12.
Lavino, E. J., and Co., Philadelphia, Pa. 820,191, pub. 9-27-66. Cl. 12.
Lavino, E. J., and Co., Philadelphia, Pa. 820,192, pub. 9-27-66. Cl. 12.
Lavino, E. J., and Co., Philadelphia, Pa. 820,193, pub. 9-27-66. Cl. 12.
Lazy Ike Corp., Fort Dodge, Iowa. 820,255, pub. 9-27-66. Cl. 22.
Lazy Ike Corp., Fort Dodge, Iowa. 820,256, pub. 9-27-66. Cl. 22.
Leaf Brands, Inc., Chicago, Ill. 820,382, pub. 9-27-66. Cl. 46.
Les Etablissements Edouard Materne, Jambes, Belgium. 820,367, pub. 9-20-66. Cl. 46.
Les Parfums de Dana, Inc.: *See*—
Consolidated Cosmetics.
LeTourneau-Westinghouse Co., Peoria, Ill. 706,172, canc. Cl. 7 and 19.
Lever Bros. Co., Cambridge, Mass. 57,586. Am. 7(d). Cl. 52.
Lever Bros. Co., New York, N.Y. 59,032, ren. 12-13-66. Cl. 52.
Lever Bros. Co.: *See*—
Fairbank, N. K., Co., The.
Lever Bros. Co., New York, N.Y. 60,261, ren. 12-13-66. Cl. 52.
Levy Bros. & Adler Rochester, Inc., to Michaels Stern & Co. Inc., Rochester, N.Y. 424,344, ren. 12-13-66. Cl. 39.
Lilly, Eli, and Co., Indianapolis, Ind. 820,215, pub. 9-27-66. Cl. 18.
Lisbeth Whiting Co., Inc., Brooklyn, N.Y. 820,267, pub. 9-27-66. Cl. 22.
Loewe Opta GmbH, Berlin, Germany. 820,242, pub. 9-27-66. Cl. 21.
London & Co., Inc.: *See*—
Popper Morson Corp.
Loral Corp., Scarsdale, N.Y. 820,177, pub. 9-27-66. Cl. 9.
Lowe, Joe, Corp.: *See*—
Consolidated Foods Corp.
Lubrizol Corp., Cleveland, Ohio. 820,159, pub. 9-27-66. Cl. 6.
Lucas, Jerry, Pass-Time Games, Inc., Columbus, Ohio. 820,250, pub. 9-27-66. Cl. 22.
Luzier Inc., Kansas City, Mo. 820,467, pub. 9-27-66. Cl. 52.
M & M Candies: *See*—
Mars, Inc.
Madeleine de Martel Cosmetics: *See*—
Sherman, Robert M.
Main Line Co.: *See*—
Southern Equipment Co.
Major Equipment Co., Inc., Chicago, Ill. 820,238, pub. 9-27-66. Cl. 21.
Management and Advertising Consultants, Inc., Mobile, Ala. 820,513, pub. 9-27-66. Cl. 106.
Management and Advertising Consultants, Inc., Mobile, Ala. 820,514, pub. 9-27-66. Cl. 106.
Maples, J. G., Co.: *See*—
Matson, F. C.
Marden Electronics Co., Inc., Burlington, Wis. 820,528. Cl. 21.
Marine Railings Co., Inc., St. Petersburg, Fla. 820,188, pub. 9-27-66. Cl. 12.
Mars, Inc., d.b.a. M & M Candies, Wilmington, Del. 820,403, pub. 9-27-66. Cl. 46.
Martinoni, E., Co., d.b.a. Stewart & Co., San Francisco, Calif. 820,417, pub. 9-27-66. Cl. 49.
Martinoni, E., Co., d.b.a. Stewart & Co., San Francisco, Calif. 820,418, pub. 9-27-66. Cl. 49.
Martinoni, E., Co., d.b.a. Stewart & Co., San Francisco, Calif. 820,420, pub. 9-27-66. Cl. 49.
Matson, F. C., d.b.a. J. G. Maples Co., Martinsburg, W. Va. 820,376, pub. 9-27-66. Cl. 46.
Mattel, Inc., Hawthorne, Calif. 820,265, pub. 9-27-66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 820,266, pub. 9-27-66. Cl. 22.
McCulloch Corp., Los Angeles, Calif. 820,247, pub. 9-27-66. Cl. 21.
Mead Corp., The: *See*—
Gilbert Paper Co.
Mechanical Products Co.: *See*—
Abert, Jack C.
Mediserve Associates, Inc., Collegeville, Pa. 820,487, pub. 9-27-66. Cl. 101.
Merck & Co., Inc., Rahway, N.J. 820,211, pub. 9-27-66. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 820,226, pub. 9-27-66. Cl. 18.
Merit Developers, Washington, D.C. 820,501, pub. 9-27-66. Cl. 103.
Merle Norman Cosmetics, Inc., Los Angeles, Calif. 820,436, pub. 9-27-66. Cl. 51.
Merle Norman Cosmetics, Inc., Los Angeles, Calif. 820,438, pub. 9-27-66. Cl. 51.
Merrell Electronic Corp., Brooklyn, N.Y. 820,246, pub. 9-27-66. Cl. 21.
Merrill Anderson Co., Inc., The, New York, N.Y. 820,332, pub. 9-27-66. Cl. 35.
Meshulam's Inc., d.b.a. Fruit Fair, Los Angeles, Calif. 820,389, pub. 9-27-66. Cl. 46.
Meyer, Fred, Inc., Portland, Oreg. 820,374, pub. 9-27-66. Cl. 46.
Meyer, John F., & Sons Milling Co., St. Louis, and Springfield, Mo., to The Colorado Milling & Elevator Co., Denver, Colo. 57,596, ren. 12-13-66. Cl. 46.
Michael & Ginsberg Publishing Co., Wilmette, Ill., from Lake Shore National Bank of Chicago, Illinois, trustee of the estate of James S. Haboush, d.b.a. Food Mart News, Chicago, Ill. 820,322, pub. 7-5-66. Cl. 38.
Mid-Continent Investors Corp., Denver, Colo. 820,490, pub. 9-27-66. Cl. 102.
Minnesota Mining & Mfg. Co., to Minnesota Mining Mfg. Co., St. Paul, Minn. 221,013, ren. 12-13-66. Cl. 4.
Minnesota Mining & Mfg. Co., to Minnesota Mining and Mfg. Co., St. Paul, Minn. 221,014, ren. 12-13-66. Cl. 4.
Miss America Pageant, Atlantic City, N.J., from Cordon W. Gibson, d.b.a. Gibson Products Co., Lancaster, N.Y. 820,426, pub. 6-8-65. Cl. 51.
Mister Lease, Inc., Springfield, Mass. 820,510, pub. 9-27-66. Cl. 105.
Mitchell Camera Corp., Glendale, Calif. 706,256, canc. Cl. 21.

Missy, Inc., Clifton Forge, Va. 820,649, pub. 9-27-66. Cl. 44.
Modern Bakeries, Inc., Culver City, Calif. 820,398, pub. 9-27-66. Cl. 46.
Molectronics Corp., South El Monte, Calif. 706,209, canc. Cl. 26.
Monico, Inc., New York, N.Y. 820,463, pub. 9-27-66. Multiple Class (Classes 51 and 52).
Monsanto Chemical Co., St. Louis, Mo. 706,206, canc. Cl. 18.
Montezuma Plywood Co., San Francisco, Calif. 820,189, pub. 9-27-66. Cl. 12.
Morse Twist Drill & Machine Co., New Bedford, Mass., to Universal American Corp., New York, N.Y. 59,614, ren. 12-13-66. Cl. 23.
Mullen, Guy, Ambulance Service, St. Louis, Mo. 820,508, pub. 9-27-66. Cl. 106.
Murphy Gorman Co. John B. Stetson Co., Philadelphia, Pa. 58,283. Am. 7(d). Cl. 17.
Murphy Products Co., Inc., Burlington, Wis. 820,395, pub. 9-27-66. Cl. 46.
Murray & Tregurtha, Inc., Quincy, Mass. 426,795, ren. 12-13-66. Cl. 23.
N.V. Organon, Oss, Holland. 820,445, pub. 9-27-66. Cl. 51.
National Gypsum Co., Buffalo, N.Y. 706,188, canc. Cl. 12.
National Gypsum Co., Buffalo, N.Y. 706,189, canc. Cl. 12.
National Lead Co., New York, N.Y. 820,162, pub. 7-19-66. Cl. 6.
National Lead Co., New York, N.Y. 820,163, pub. 9-27-66. Cl. 6.
National Liquor Authority, Inc., Miami, Fla. 820,480, pub. 9-27-66. Cl. 101.
National Periodical Publications, Inc., New York, N.Y. 820,334, pub. 9-27-66. Cl. 38.
National Tele-Cigar, Inc., Tampa, Fla. 820,479, pub. 9-27-66. Cl. 101.
National Textile Distributers Corp., New York, N.Y., to The Krolik Corp., Detroit, Mich. 219,630, ren. 12-13-66. Cl. 39.
National Textile Distributers Corp., New York, N.Y., to The Krolik Corp., Detroit, Mich. 222,221, ren. 12-13-66. Cl. 39.
National Woodwork Mfg. Association, Inc., Chicago, Ill. 820,526, pub. 9-27-66. Cl. A.
Neilson Chemical Co., Detroit, Mich., to Amchem Products, Inc., Ambler, Pa. 427,413, ren. 12-13-66. Cl. 52.
Nestleform Co., Inc., Baltimore, Md. 706,061, canc. Cl. 39.
New Products Corp., Denver, Colo. 706,211, canc. Cl. 18.
Newspaper Enterprise Association, Inc., Cleveland, Ohio. 820,329, pub. 9-27-66. Cl. 38.
Nishimoto Trading Co., Ltd. of Hawaii, d.b.a. Nishimoto Trading Co., Ltd., Honolulu, Hawaii. 820,392, pub. 9-27-66. Cl. 46.
Nishimoto Trading Hawaiian Corp.: *See*—
Nishimoto Trading Co., Ltd. of Hawaii.
Noreross, Inc., New York, N.Y. 820,325, pub. 9-27-66. Cl. 35.
Nordson Pharmaceutical Laboratories, Inc., Irvington, N.J. 706,220, canc. Cl. 18.
Novocol Chemical Mfg. Co., Inc., Brooklyn, N.Y. 224,090, ren. 12-13-66. Cl. 44.
Odo, Mores, France. 820,293. pub. 9-27-66. Cl. 27.
Ohio Chemical & Mfg. Co., The, Cleveland, Ohio. 430,164. Am. 7(d). Cl. 44.
Ohio Desk Co., The, Cleveland, Ohio. 820,298, pub. 9-27-66. Cl. 32.
Old Pal Inc., Lititz, Pa. 820,262, pub. 9-27-66. Cl. 23.
Olean Wholesale Grocery Coop., Inc., Olean, N.Y. 820,482, pub. 9-27-66. Cl. 101.
Olin Mathieson Chemical Corp., East Alton, Ill. 706,191, canc. Cl. 18.
Omni-Card Systems, Inc., Maspeth, N.Y. 820,483, pub. 9-27-66. Cl. 101.
Omni-Card Systems, Inc., Maspeth, N.Y. 820,484, pub. 9-27-66. Cl. 101.
Optique et Precision de Levallois, Seine, France. 706,298, canc. Cl. 26.
Packard-Bell Electronics Corp., Los Angeles, Calif. 820,341, pub. 9-2-66. Cl. 21.
Palmer, Alex D., d.b.a. Tek Method Co. Cadaco, Inc., Chicago, Ill. 811,291, canc. Cl. 22.
Paper Service Co., Inc., Kansas City, Kans. 820,533. Cl. 37.
Para-Dentol Inc., Brooklyn, N.Y. 820,453, pub. 9-27-66. Cl. 51.
Parfums Schiaparelli, Inc., New York, N.Y. 820,431, pub. 9-27-66. Cl. 51.
Parker, Gerald D., Cohoes, N.Y. 706,362, canc. Cl. 36.
Parker Products, Inc., Holliston, Mass. 820,381, pub. 7-19-66. Cl. 46.
Parris Mfg. Co., Savannah, Tenn. 820,269, pub. 9-27-66. Cl. 22.
Peates Music House, Inc., to Peate's Music House, Inc., Utica, N.Y. 216,745, ren. 12-13-66. Cl. 36.
Peavey, F. H., & Co., Minneapolis, Minn. 706,394, canc. Cl. 46.
Pepperell Mfg. Co.: *See*—
West Point-Pepperell, Inc.
PepsiCo, Inc., New York, N.Y. 820,362, pub. 9-27-66. Cl. 45.
Perfection Bedding Co.: *See*—
Perfection Mattress and Spring Co.
Perfection Mattress and Spring Co., to Perfection Bedding Co., Birmingham, Ala. 812,699, ren. 12-13-66. Cl. 32.
Perkins, Matthew R., d.b.a. Perkins Pancake House, Cincinnati, Ohio. 820,475, pub. 9-27-66. Cl. 100.
Perkins Pancake House: *See*—
Perkins, Matthew R.
Peter Pan Foundations, Inc., New York, N.Y. 820,336, pub. 9-27-66. Cl. 39.
Petersen, Poul, Tobaksfabriker, Horsens, Jutland, Denmark. 820,302, pub. 9-27-66. Cl. 17.
Peterson Bros. Inc., from Craig Mfg. Co., Inc., Jacksonville, Fla. 706,223, canc. Cl. 19.
Pfanstiehl Laboratories, Inc., Waukegan, Ill. 706,174, canc. Cl. 10.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,219, pub. 9-27-66. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,221, pub. 9-27-66. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 820,227, pub. 9-27-66. Cl. 18.
Pharm-A-Suitable Co., Grand Rapids, Mich. 820,208, pub. 9-27-66. Cl. 18.
Phillips Mfg. Co., Inc., Minneapolis, Minn. 820,527. Cl. 21.
Pioneer Box Lunch, Inc., Garfield, N.J. 820,266, pub. 9-27-66. Cl. 46.
Pneumatic Applications Co., Simsbury, Conn. 820,271, pub. 9-27-66. Cl. 23.
Popper Morson Corp., New York, N.Y., from London & Co., Inc., Elizabeth, N.J. 820,415, pub. 8-18-64. Cl. 49.
Porter, Samuel J., Arlington, Va. 820,184, pub. 9-27-66. Cl. 10.
Porter, Samuel J., Arlington, Va. 820,185, pub. 9-27-66. Cl. 10.
Powers, Bernard E., Fitchburg, Mass. 706,374, canc. Cl. 39.
Preferred Utilities Mfg. Corp., Danbury, Conn. 820,196, pub. 9-27-66. Cl. 13.
Production Finance Ltd., Vancouver, British Columbia, Canada. 706,278, canc. Cl. 28.
Program Aids Co., Inc., The, Mount Vernon, N.Y. 820,270, pub. 9-27-66. Cl. 22.
Provident Life Insurance Co., Bismarck, N. Dak. 820,494, pub. 9-27-66. Cl. 102.
Purex Corp., Ltd., Lakewood, Calif. 820,471, pub. 9-27-66. Cl. 52.
Quaker Oats Co., The: *See*—
American Cereal Co., The.
Quaker Oats Co., The, Chicago, Ill. 820,407, pub. 9-27-66. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 820,408, pub. 9-27-66. Cl. 46.
RCBS Inc., Oroville, Calif. 820,178, pub. 9-27-66. Cl. 9.
R & S Marketing Service, Inc., Bozeman, Mont. 820,180, pub. 9-27-66. Cl. 9.
R & S Marketing Service, Inc., Bozeman, Mont. 820,181. pub. 9-27-66. Cl. 9.
R & S Marketing Service, Inc., Bozeman, Mont. 820,182, pub. 9-27-66. Cl. 9.
Rapidgum Ltd., Warrington, England. 820,425, pub. 9-27-66. Cl. 50.
Reeves Bros., Inc., New York, N.Y. 820,143, pub. 9-27-66. Cl. 1.
Reiback, Earl M., New York, N.Y. 820,243, pub. 9-27-66. Multiple Class (Classes 21 and 50).
Rensie Watch Co., Inc., New York, N.Y. 706,329, canc. Cl. 27.
Rensie Watch Co., Inc., New York, N.Y. 706,330, canc. Cl. 27.
Revco, Inc., Deerfield, Mich. 706,356, canc. Cl. 34.
Rexall Drug and Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 820,447, pub. 9-27-66. Cl. 51.
Rexall Drug Co.: *See*—
Rexall Drug and Chemical Co.
Rhode Island Hospital Trust Co., administrator of the estate of Walter D. Brownell, deceased, d.b.a. Brownell Rose Research Gardens and/or Brownell Roses, Providence, R.I. 676,511, canc. Cl. 1.
Rhodia Inc., New York, N.Y. 820,164, pub. 9-27-66. Cl. 6.
Riverside & Dan River Cotton Mills, Inc., now by change of name Dan River Mills, Inc., Danville Va. 425,338, ren. 12-13-66. Cl. 42.
Riverside & Dan River Cotton Mills, Inc., now by change of name Dan River Mills, Inc., Danville, Va. 425,961, ren. 12-13-66. Cl. 42.
Robern Dried Fruit Co. Pty, Ltd., South Australia, Australia. 820,363, pub. 10-6-64. Cl. 46.
Robins, G. S., & Co., St. Louis, Mo. 219,174, ren. 12-13-66. Cl. 6.
Rock-Tred Corp., Skokie, Ill. 428,547, ren. 12-13-66. Cl. 12.
Rolite, Inc., Grantsburg, Wis. 820,232, pub. 9-27-66. Cl. 19.
Rosaen Filter Co., The, Hazel Park, Mich. 820,317, pub. 9-27-66. Cl. 38.
Rosenau Bros., to Rosenau Bros., Inc., Philadelphia, Pa. 426,085, ren. 12-13-66. Cl. 39.
Rosenau Bros., Inc.: *See*—
Rosenau Bros.
Rowell Laboratories, Inc., Baudette, Minn. 820,319, pub. 9-27-66. Cl. 38.
Royal Castel System, Inc., Miami, Fla. 820,252, pub. 9-27-66. Cl. 45.
Rudy's Farm Co., Nashville, Tenn. 820,399, pub. 9-27-66. Cl. 46.
Rudy's Farm Co., Nashville, Tenn. 820,400, pub. 9-27-66. Cl. 46.
St. Thomas, Inc., Gloversville, N.Y. 820,150, pub. 9-27-66. Cl. 3.
Sandos, Inc., Hanover, N.J. 820,209, pub. 9-27-66. Cl. 18.
Sandos, Inc., Hanover, N.J. 820,210, pub. 9-27-66. Cl. 18.
Santon Ltd., Newport, England. 706,250, canc. Cl. 21.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 294,953, ren. 12-13-66. Cl. 44.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 295,272, ren. 12-13-66. Cl. 44.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 295,932, ren. 12-13-66. Cl. 44.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 428,330, ren. 12-13-66. Cl. 44.
Schreiber Products Corp., Buffalo, N.Y., to Standard Brands Inc., New York, N.Y. 225,659, ren. 12-13-66. Cl. 46.

Schwarz Services International Ltd., Mount Vernon, N.Y. 820,167, pub. 9–27–66. Cl. 6.
Scotts Co., The: *See*—
Spaulding, C. A.
Seltsthalerei Carstens Kg., Weinstrasse, Germany. 820,410, pub. 9–27–66. Cl. 47.
Select Sires, Inc., Columbus, Ohio. 820,140, pub. 9–27–66. Cl. 1.
Seven-Up Bottling Co., Inc., St. Louis, Mo. 820,363, pub. 9–27–66. Cl. 46.
Shaw, Alex D., & Co. Munson G. Shaw Co., Inc., New York, N.Y. 823,941. Am. 7(d). Cl. 49.
Shaw, Alex D., & Co., Inc. Munson G. Shaw Co., Inc., New York, N.Y. 820,006. Am. 7(d). Cl. 47.
Shaw, Lucille A.: *See*—
Shaw's Travel Tric, Inc.
Shaw, Munson G., Co.: *See*—
Shaw, Alex D., & Co.
Shaw, Munson G., Co., Inc.: *See*—
Shaw, Alex D., & Co., Inc.
Shaw's Travel Tric, Inc., from Lucille A. Shaw, Administrator of Bert J. Shaw, deceased, Brainerd, Minn. 704,874, canc. Cl. 50.
Sheaffer, W. A., Pen Co.: *See*—
Textron, Inc.
Sherman, Robert M., d.b.a. Madeleine De Martel Cosmetics, New York, N.Y. 820,459, pub. 9–27–66. Cl. 51.
Sherman, Robert M., d.b.a. Madeleine De Martel Cosmetics, New York, N.Y. 820,460, pub. 9–27–66. Cl. 51.
Sherman, Robert M., d.b.a. Madeleine De Martel Cosmetics, New York, N.Y. 820,461, pub. 9–27–66. Cl. 51.
Sherman, Robert M., d.b.a. Madeleine De Martel Cosmetics, New York, N.Y. 820,462, pub. 9–27–66. Cl. 51.
Shields Inc. of Attleboro, Mass., Attleboro, Mass. 820,439, pub. 9–27–66. Cl. 51.
Silber, Irving H. and Charles S.: *See*—
Fig-O-Lax Ovals Co., Inc.
Sillcocks-Miller Co., Maplewood, N.J. 820,321, pub. 9–27–66. Cl. 38.
Simmons-Boardman Publishing Corp., New York, N.Y. 820,318, pub. 9–27–66. Cl. 38.
Siroil Laboratories, Inc.: *See*—
Denver Chemical Mfg. Co., The.
Sita Distributors, Collingdale, Pa. 820,469, pub. 9–27–66. Cl. 52.
Ski Country USA, Inc.: *See*—
Colorado Ski Country U.S.A.
Smith, Alva T., Co., The, Milwaukee, Wis. 706,295, canc. Cl. 26.
Smith, Chester W., d.b.a. Whitfield Chemical Co., Detroit, Mich. 820,470, pub. 9–27–66. Cl. 52.
Smith & Davis Mfg. Co., St. Louis, Mo. 682,559, canc. Cl. 32.
Smith Oil Corp., Rockford, Ill. 820,200, pub. 9–27–66. Cl. 15.
Smith and Winchester Mfg. Co., The, South Windham, Conn. 820,281, pub. 9–27–66. Cl. 23.
Smucer, Roman, d.b.a. Roman Smucer Woolen Co., New York, N.Y. 706,380, canc. Cl. 42.
Smucer, Roman, d.b.a. Roman Smucer Woolen Co., New York, N.Y. 706,379, canc. Cl. 42.
Smucer, Roman, Woolen Co.: *See*—
Smucer, Roman.
Societi Italiana Prodotti Schering S.p.A., Milan, Italy. 816,518, cor. Cl. 18.
Societa Italo Americana Prodotti, Rome, Italy. 820,170, pub. 9–27–66. Cl. 6.
Societe Anonyme de la Distillerie de la Liqueur Bendictine de l'Abbaye de Fecamp, to Bendictine, Distillerie de la Liqueur de l'Ancienne Abbaye de Fecamp, Fecamp, France. 60,241, ren. 12–13–66. Cl. 49.
Societe des Usines Chimiques Rhone-Poulenc, Paris, France. 820,218, pub. 9–27–66. Cl. 18.
Sondra Mfg. Co., Inc., from Sondra Undergarments Co., Inc., New York, N.Y. 681,182, canc. Cl. 39.
Sondra Undergarments Co., Inc.: *See*—
Sondra Mfg. Co., Inc.
Sonoco Products Co., Hartsville, S.C. 706,182, canc. Cl. 12.
South African Wine Farmers Association (London) Ltd., London, England. 820,412, pub. 9–27–66. Cl. 47.
South African Wine Farmers Association (London) Ltd., London, England. 820,413, pub. 9–27–66. Cl. 47.
Southern Equipment Co., d.b.a. Main Line Co., St. Louis, Mo. 820,300, pub. 9–27–66. Cl. 32.
Spaulding, C. A., d.b.a. The Scatties Co., Winnetka, Ill. 820,304, pub. 9–27–66. Cl. 37.
Spencer, Cedric H., d.b.a. H-Test Reporting Service, Ardmore, Pa. 820,516, pub. 9–27–66. Cl. 107.
Spicene Co. of America, Inc., North Bergen, N.J. 674,691, canc. Cl. 46.
Spot-O-Gold Corp., Philadelphia, Pa. 820,313, pub. 9–27–66. Cl. 38.
Springer Industries, Inc., Long Island City, N.Y. 706,335, canc. Cl. 21.
Squirt Co., The, Sherman Oaks, Calif. 820,330, pub. 9–27–66. Cl. 38.
Standard Brands Inc.: *See*—
Schrader Products Corp.
Standard Scientific Supply Corp., New York, N.Y. 706,307, canc. Cl. 26.
Stanley Home Products, Inc., Westfield, Mass. 820,440, pub. 9–27–66. Cl. 51.
Star Tank and Boat Co., Inc., Goshen, Ind. 820,235, pub. 9–27–66. Cl. 19.
Star-X-Corp., Detroit, Mich. 685,149, canc. Cl. 36.
Stauffer Chemical Co., New York, N.Y. 820,160, pub. 9–27–66. Cl. 6.
Stauffer Chemical Co., New York, N.Y. 820,165, pub. 9–27–66. Cl. 6.
D'Oro, Stella, Biscuit Co., Inc., New York, N.Y. 820,369, pub. 9–27–66. Cl. 46.
D'Oro, Stella, Biscuit Co., Inc., New York, N.Y. 820,370, pub. 9–27–66. Cl. 46.
D'Oro, Stella, Biscuit Co., Inc., New York, N.Y. 820,371, pub. 9–27–66. Cl. 46.
Stern, Michaels, & Co., Inc.: *See*—
Levy Bros. & Adler Rochester, Inc.
Stetson, John B., Co.: *See*—
Gorman, Murphy Co.
Stoffel AG (Stoffel S.A.) (Stoffel Ltd.), St. Gall, Switzerland. 810,189, cor. Cl. 42.
Stone Conveyor Co., Inc., Honeoye, N.Y. 820,272, pub. 9–27–66. Cl. 28.
Storer Broadcasting Co., Miami Beach, Fla. 820,520, pub. 9–27–66. Cl. 107.
Stork Mates, Inc., Boston, Mass. 706,368, canc. Cl. 39.
Stroyman, Herschel J., New York, N.Y. 706,325, canc. Cl. 26.
Structo Division: *See*—
King-Seely Thermos Co.
Strux Corp., Lindenhurst, from Aircraft Specialties Co., Inc., Hicksville, N.Y. 820,137, pub. 3–24–66. Cl. 1.
Sugar Beet Products Co., Inc., Saginaw, Mich. 510,188, cor. Cl. 4.
Sugar Beet Products Co., Inc., Saginaw, Mich. 533,731, cor. Cl. 52.
Sugar Beet Products Co., Inc., Saginaw, Mich. 541,106, cor. Cl. 52.
Sugar Beet Products Co., Inc., Saginaw, Mich. 541,107, cor. Cl. 52.
Sunrise Packing Co.: *See*—
Adamek, Ben F.
Superior Sports Specialties: *See*—
Chartered Enterprises.
Swift & Co., Chicago, Ill. 820,390, pub. 9–27–66. Cl. 46.
Swift & Co., Chicago, Ill. 820,391, pub. 9–27–66. Cl. 46.
T.M. Products Co., Chicago, Ill. 706,166, canc. Cl. 6.
Tapetenfabrik Gebr. Rasch & Co., Bramsche, near Osnabruck, Germany. 706,432, canc. Cl. 37.
Tateisi Electronics Co., Ukyo-ku, Kyoto, Japan. 820,280, pub. 9–27–66. Cl. 23.
Tek Method Co.: *See*—
Palmer, Alex D.
Terramar International: *See*—
Brenton, Alexander.
Terres Noires Ltd.: *See*—
Terres Noires Ltee.
Terres Noires Ltee, d.b.a. Terres Noires Ltd., Sherrington, Napierville, Quebec, Canada. 820,373, pub. 9–27–66. Cl. 46.
Texas Farm Products Co., Nacogdoches, Tex. 820,136, pub. 9–27–66. Multiple Class (Classes 1, 10, 18, and 46).
Textron, Inc., Providence, R.I., from W. A. Sheaffer Pen Co., Fort Madison, Iowa. 820,305, pub. 7–26–66. Cl. 37.
Thermark Corp., Munster, Ind. 820,422, pub. 9–27–66. Cl. 50.
Thermomet, San Fernando, Calif. 706,209, canc. Cl. 16.
Thor Power Tool Co.: *See*—
Aurora Automatic Machinery Co.
Toni Co., The: *See*—
Gillette Co., The.
Torrington Co., The, Torrington, Conn. 820,279, pub. 9–27–66. Cl. 23.
Triangel Mfg. Co., Baltimore, Md. 681,556, canc. Cl. 42.
Tropical Gas Co., Inc., Coral Gables, Fla. 820,169, pub. 9–27–66. Cl. 6.
Turmac Tobacco Co. N.V., Amsterdam, Netherlands. 820,208, pub. 9–27–66. Cl. 17.
Unaguata Mfg. Corp., Hazelwood, N.C. 706,430, canc. Cl. 32.
Union Carbide Corp., New York, N.Y. 706,170, canc. Cl. 6.
Union Carbide Corp., New York, N.Y. 706,258, canc. Cl. 21.
United Fruit Co., Boston, Mass. 221,085, ren. 12–13–66. Cl. 46.
United States News Publishing Corp., to U.S. News & World Report, Inc., Washington, D.C. 426,816, ren. 12–13–66. Cl. 38.
U.S. News & World Report, Inc.: *See*—
United States News Publishing Corp.
U.S. Photo Supply Co., Inc., Washington, D.C. 706,310, canc. Cl. 26.
United States Rubber Co., New York, N.Y. 820,302, pub. 9–27–66. Cl. 35.
United States Time Corp., The, Middlebury, Conn. 424,623, ren. 12–13–66. Cl. 27.
United-Buckingham Freight Lines, Rapid City, S. Dak. 820,511, pub. 9–27–66. Cl. 105.
Unitek Corp., Monrovia, Calif. 815,535, cor. Cl. 44.
Universal American Corp.: *See*—
Morse Twist Drill & Machine Co.
Vanity Fair Mills, Inc., Reading, Pa. 820,842, pub. 9–27–66. Cl. 39.
Vapora Co., Salt Lake City, Utah. 706,444, canc. Cl. 51.
Varian Associates, Palo Alto, Calif. 820,251, pub. 9–27–66. Cl. 22.
Vega Electronics Corp., Santa Clara, Calif. 820,245, pub. 9–27–66. Cl. 21.
Veading Enterprises: *See*—
Creager, Olen R.
Victor Equipment Co.: *See*—
Victor Oxy-Acetylene Equipment Co.
Victor Oxy-Acetylene Equipment Co., to Victor Equipment Co., San Francisco, Calif. 220,890, ren. 12–13–66. Cl. 34.
Victrylite Candle Co., Oshkosh, Wis. 820,301, pub. 9–27–66. Cl. 15.
Virginia Dare Extract Co., Inc., Brooklyn, N.Y. 820,350, pub. 9–27–66. Cl. 46.
Vitamix Pharmaceuticals Inc., Philadelphia, Pa. 820,220, pub. 9–27–66. Cl. 18.
Vita-Pakt Citrus Products Co., Covina, Calif. 820,299, pub. 9–27–66. Cl. 32.
Visuall Co., Inc., The, New York, N.Y. 820,455, pub. 9–27–66. Cl. 51.

Walcott-Taylor Co., Inc., Bethesda, Md. 820,502, pub. 9–27–66. Cl. 102.
Waldman's Meats: *See*—
Waldman's Meats, Inc.
Waldman's Meats, Inc., d.b.a. Waldman's Meats, New Castle, Pa. 820,503, pub. 9–27–66. Cl. 46.
Wampole Laboratories: *See*—
Denver Chemical Mfg. Co., The.
Water Damage Protection Co., Detroit, Mich. 820,515, pub. 9–27–66. Cl. 106.
Wear-Flex Corp., The, Milwaukee, Wis. 820,174, pub. 9–27–66. Cl. 7.
Weaver, Leonard B., San Jose, Calif. 820,521, pub. 9–27–66. Cl. 107.
Weben Industries, Inc., Dallas, Tex. 820,152, pub. 9–27–66. Cl. 4.
Weben Industries, Inc., Dallas, Tex. 820,274, pub. 9–27–66. Cl. 23.
Weis Markets, Inc., Sunbury, Pa. 820,401, pub. 9–27–66. Cl. 46.
Wells Lamont Corp.: *See*—
Wells-Lamont Mfg. Co.
Wells-Lamont Mfg. Co., Minneapolis, Minn., to Wells Lamont Corp., Chicago, Ill. 219,164, ren. 12–13–66. Cl. 39.
Wells-Lamont Mfg. Co., Minneapolis, Minn. to Wells Lamont Corp., Chicago, Ill. 219,165, ren. 12–13–66. Cl. 39.
Wesco Foods Co.: *See*—
Kroger Co., The.
West Point-Pepperell, Inc., d.b.a. Pepperell Mfg. Co., New York, N.Y. 820,346, pub. 9–27–66. Cl. 42.
Westab Inc., Dayton, Ohio. 820,307, pub. 9–27–66. Cl. 37.
Westchester Veterinary Products, Inc., White Plains, N.Y. 820,171, pub. 9–27–66. Cl. 6.
Westway Petroleum Co.: *See*—
Habor Service Stations, Inc.
Weyerhaeuser Co., Tacoma, Wash. 820,310, pub. 9–27–66. Cl. 37.
Weyerhaeuser Co., Tacoma, Wash. 820,491, pub. 9–27–66. Cl. 102.
Whiteman, Sol and H. J. Whiteman: *See*—
Fun in the Sun Tours, Inc.
Whitfield Chemical Co.: *See*—
Smith, Chester W.
Wilkmit Hosiery Co., to Wilkmit Hosiery Co., Inc., Greenfield, Ohio. 823,402, ren. 12–12–66. Cl. 39.
Wilkmit Hosiery Co., Inc.: *See*—
Wilkmit Hosiery Co.
Williams, Paul G., Jr., Bonne Terre, Mo. 820,520. Cl. 28.
Winston Pharmaceuticals, Inc., Winston-Salem, N.C. 820,307, pub. 9–27–66. Cl. 18.
Winson Research Inc., Minneapolis, Minn. 820,142, pub. 9–27–66. Cl. 1.
Wolins Pharmacal Corp., Farmingdale, N.Y. 820,204, pub. 9–27–66. Cl. 18.
Wolins Pharmacal Corp., Farmingdale, N.Y. 820,205, pub. 9–27–66. Cl. 18.
Wolins Pharmacal Corp., Farmingdale, N.Y. 820,206, pub. 9–27–66. Cl. 18.
Woo, George, Los Angeles, Calif. 706,892, canc. Cl. 46.
Worthington Foods, Inc., Worthington, Ohio. 820,288, pub. 9–27–66. Cl. 46.
Wostenholm, George, & Son, Ltd., Sheffield, England. 56,558, ren. 12–13–66. Cl. 28.
Yaskawa Electric Mfg. Co., Ltd.: *See*—
Kabushiki Kaisha Yaskawa Denki Seisakusho.
Zale Corp., Dallas, Tex. 820,151, pub. 9–27–66. Cl. 2.
Zale Corp., Dallas, Tex. 820,295, pub. 9–27–66. Cl. 28.
Zale Corp., Dallas, Tex. 820,296, pub. 9–27–66. Cl. 28.
Zatlow Brothers Co., Inc., New York, N.Y. 706,372, canc. Cl. 39.
Zirin, Benjamin, d.b.a. Zirin Enterprises, Hialeah, Fla. 677,603, canc. Cl. 18.
Zirin, Benjamin, d.b.a. Zirin Enterprises, Hialeah, Fla. 677,604, canc. Cl. 18.
Zirin Enterprises: *See*—
Zirin, Benjamin.

U.S. GOVERNMENT PRINTING OFFICE: 0——1966

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 20, 1966 Volume 833 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1966

Examiner affirmed	160
Examiner affirmed in part	32
Examiner reversed	49
Total	241

International Convention for the Protection of Industrial Property

Adherence of Israel to the Lisbon 1958 revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Israel to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect on July 18, 1966.

EDWARD J. BRENNER,
Nov. 28, 1966. *Commissioner of Patents.*

Classification Order No. 385

Classification Order No. 385, dated November 28, 1966, incorporates changes in the following classes:

88, OPTICS
128, SURGERY
137, FLUID HANDLING
161, STOCK MATERIAL AND MISCELLANEOUS ARTICLES
248, SUPPORTS
260, CHEMISTRY, CARBON COMPOUNDS
332, MODULATORS
350, OPTICS, SYSTEMS AND ELEMENTS (Established) Bulletin No. 472

All of the above changes will be incorporated in the Manual of Classification replacement pages dated January 1967.

C. D. ANGEL,
Acting Director, Office of Patent Classification.

Publication of Material in "Notices" Sections of Patents and Trademarks Official Gazette

Effective Jan. 3, 1967, publication of material in the Patent and Trademark "Notices" sections of the OFFICIAL GAZETTE will occur only once.

Dec. 1, 1966.

Disclaimers

2,911,312.—*Lewis C. Hofman*, Scotch Plains, N.J. NON-TOXIC ALUMINUM ENAMEL FRITS. Patent dated Nov. 3, 1959. Disclaimer filed Aug. 12, 1966, by the inventor and the assignee, *E. I. du Pont de Nemours and Company.*

Hereby enter this disclaimer as to claims 1 and 2 of said patent.

3,189,924.—*Jacob S. Kamborian*, West Newton, and *Henry v. d. Benken*, West Roxbury, Mass. UPPER STRETCHING AND HEEL SEAT LASTING MACHINE. Patent dated June 22, 1965. Disclaimer filed Aug. 16, 1966, by the assignee, *Jacob S. Kamborian.*

Hereby enters this disclaimer as to claims 37 and 38 of said patent.

3,191,848.—*George L. Meyers*, Menasha, Wis. TAMPER-PROOF RECLOSABLE CARTON. Patent dated June 29, 1965. Disclaimer filed Sept. 29, 1966, by the assignee, *American Can Company.*

Hereby enters this disclaimer as to claims 1, 2, 3 and 6 of said patent.

3,248,486.—*Paul W. Wadsworth*, Massapequa Park, N.Y. LINE SWITCHING EQUIPMENT FOR SWITCHBOARDS. Patent dated Apr. 26, 1966. Disclaimer filed Sept. 28, 1966, by the assignee, *Bell Telephone Laboratories, Incorporated.*

Hereby enters this disclaimer as to claim 21 of said patent.

New Applications Received During October 1966

Patents	7539
Designs	351
Plant Patents	7
Reissues	17
Total	7944

Issue—December 20, 1966

Patents	1480	No. 3,292,179 to No.	3,293,656, incl.
Designs	39	No. 206,479 to No.	206,517, incl.
Reissues	2	No. 26,128 to No.	26,129, incl.
Total	1521		

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 24, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—L. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-2-66	10-10-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager Heterocyclic; Amides; Alkaloids; Aso; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-4-66	8-31-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-1-66	8-21-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	3-4-66	3-3-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-66	10-20-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-2-66	8-3-62
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-8-66	4-25-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	2-13-66	6-13-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	8-13-66	7-31-61
PHYSICS, GROUP 260—E. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-13-66	10-25-62
DESIGNS, GROUP 280—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	6-15-66	2-6-66

Total number of pending applications (excluding Designs)	195, 508
Total number of Design applications pending	4, 290
Total number of applications awaiting action (excluding Designs)	143, 916
Total number of Design applications awaiting action	2, 461
Date of oldest new application awaiting action	Feb. 5, 1963
Date of oldest amended application awaiting action	June 12, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1962*.

Patents ..... Numbers 3,289,511 to 3,288,512, inclusive

Plant Patents ..... Numbers 904 to 910, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—P. H. MCNAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-66	8-22-66
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Joints; Fasteners.	7-1-66	3-28-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-2-66	3-22-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GARRAU, Manager Power Plants; Combustion Engines; Fluid Meters; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-7-66	10-31-62
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structure; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-10-66	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, Including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Freezing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-6-66	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office
Commissioner's Decision

WENNER *v.* KOCH

Interference No. 95,386. Decided July 6, 1966

1. INTERFERENCE—MOTION FOR SUMMARY JUDGMENT—RULES 204(c) AND 228 CONSTRUED.

Rule 204(c), by its terms, is applicable only "When the effective filing date of an applicant is more than three months subsequent to the effective filing date of the patentee," and Rule 228 relates to a case in which "an interference is declared on the basis of a showing under Rule 204(c)." The Examiner, rightly or wrongly, considered the effective filing date of the applicant to be prior to that of the patentee, as a result of which there is no Rule 204(c) showing to be considered. Clearly, therefore, the present situation does not fall within the letter of any rule calling for consideration by the Board of Patent Interferences.

2. SAME—SAME—SAME.

In substance the motion here under consideration merely raises the question as to whether Wenner's patent is entitled to the benefit of an application filed prior to Koch's effective date, and is, in effect, a motion to shift the burden of proof. Such a motion would not be considered by the Board but by the Examiner, whose decision would be reviewable by the Board at final hearing. The petitioner's arguments have been carefully considered, but it is not thought that the fact that a Rule 204(c) showing would have been necessary if the Examiner had taken a different view of the disclosure of the earlier Wenner case justifies such a departure from normal procedure as is proposed by the petition. The question raised is a procedural one and the action of the Patent Interference Examiner deprives the petitioner of no substantive right.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition by the party Wenner from the action of the Patent Interference Examiner denying the petitioner's motion that an order to show cause or, alternatively, a summary judgment, be entered against the party Koch.

It appears from the record that, when the claims in issue were first presented in the Koch application, the Examiner refused to declare an interference because of the lack of a showing under Rule 204(c). In so holding he stated that the effective filing date of the patent, on the basis of an earlier filed case, was March 6, 1962. In response to that action Koch argued that the earlier case did not disclose the claimed invention and the Examiner, apparently accepting that argument, forwarded the interference for declaration without indicating that the patent was entitled to the earlier date and making Koch the senior party. It is Wenner's contention that since the Board of Patent Interference would have passed on the sufficiency of a Rule 204(c) showing if one had been filed, it should pass on Wenner's contention that his earlier case discloses the claimed invention and that a Rule 204(c) showing is, therefore, necessary.

[1] Rule 204(c), by its terms, is applicable only "When the effective filing date of an applicant is more than three months subsequent to the effective filing date of the patentee," and Rule 228 relates to a case in which "an interference is declared on the basis of a showing under Rule 204(c)." The Examiner, rightly or wrongly, considered the effective filing date of the applicant to be prior to that of the

patentee, as a result of which there is no Rule 204(c) showing to be considered. Clearly, therefore, the present situation does not fall within the letter of any rule calling for consideration by the Board of Patent Interferences.

[2] In substance the motion here under consideration merely raises the question as to whether Wenner's patent is entitled to the benefit of an application filed prior to Koch's effective date, and is, in effect, a motion to shift the burden of proof. Such a motion would not be considered by the Board but by the Examiner, whose decision would be reviewable by the Board at final hearing. The petitioner's arguments have been carefully considered, but it is not thought that the fact that a Rule 204(c) showing would have been necessary if the Examiner had taken a different view of the disclosure of the earlier Wenner case justifies such a departure from normal procedure as is proposed by the petition. The question raised is a procedural one and the action of the Patent Interference Examiner deprives the petitioner of no substantive right.

The petition is denied.

The petitioner's request for an oral hearing is noted but it is not the practice to grant such hearings on petitions and no sufficient reason is found for making an exception in the present case.

In the United States Patent Office
Commissioner's Decision

IN RE DISMISSAL OF APPEAL TO BOARD OF APPEALS IF NO BRIEF IS FILED

Decided July 22, 1966

1. RULE 192(b)—APPEAL DISMISSED IF NO BRIEF FILED.

Rule 192(b) provides that an appeal shall be dismissed if no brief is filed. In this case no brief was filed as to the rejection for failure to state the invention with sufficient particularity and accordingly it was proper to dismiss the appeal as to that ground. The rule clearly contemplates that the Board shall not be required to review a rejection in the absence of a brief dealing with it. If the applicant does not point out any alleged errors in the Examiner's action the Board cannot properly be required to assume the burden of searching for such errors.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition from the dismissal of the appeal in the above application by the Board of Appeals.

It appears that claims 18 to 22, which were the only ones before the Board for decision, were substituted for other claims after the final rejection was made. The Examiner, in his advisory action of March 1, 1965, indicated that these claims would be "subject to rejections under 35 U.S.C. 112, and as lacking basis in the specification, and as being directed to new matters." The reasons for this holding were set forth in detail and were amplified somewhat in the advisory action of August 2, 1965. The claims were further held to be rejectable on specified prior art.

Under these circumstances, as noted by the Examiner and the Board, claims 18 to 22 stood rejected "as failing to state the invention with the particularity required by 35 U.S.C. 112" as well as on prior art. The appeal brief, however, made no response to the former rejection. Further, although this deficiency was pointed out by the Examiner

in his answer and by the Board in its decision, the applicant did not seek to file a reply brief responding to the rejection and did not respond to it even at the time of filing the present petition.

[1] Rule 192(b) provides that an appeal shall be dismissed if no brief is filed. In this case no brief was filed as to the rejection for failure to state the invention with sufficient particularity and accordingly it was proper to dismiss the appeal as to that ground. The rule clearly contemplates that the Board shall not be required to review a rejection in the absence of a brief dealing with it. If the applicant does not point out any alleged errors in the Examiner's action the Board cannot properly be required to assume the burden of searching for such errors.

It follows that the appeal was properly dismissable as to the ground in question and the other ground was therefore rendered moot. Hence, there was no error in dismissing the entire appeal.

The petition is denied.

In the United States Patent Office
Commissioner's Decision

IN RE COMPLETE APPLICATION—DRAWING REQUIRED

Decided July 5, 1966

1. DRAWING—REQUIRED WHEN NATURE OF CASE ADMITS IT.

Title 35 of the United States Code, sections 111 and 113, provide that a patent application shall include a drawing when the nature of the case admits it and Patent Office Rule 83 provides that the drawing must show every feature of the invention specified in the claims. It is evident that these conditions are not satisfied in the present case since claims 4 to 13 inclusive comprise various specific structural limitations. The fact that this application refers to an earlier case which includes a drawing is not controlling here. Every application must be complete in itself so far as the illustration of what is claimed is concerned and the question is not whether the invention can be understood without a drawing but whether the nature of the case admits of one.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the above papers be accepted as a complete application notwithstanding the fact that they do not include a drawing. The record shows that the Director of the Mechanical Engineering Operation held that "a drawing is required to illustrate the structural characteristics of the fasteners which are set forth in claims 4 to 13 inclusive."

[1] Title 35 of the United States code, sections 111 and 113, provide that a patent application shall include a drawing when the nature of the case admits it and Patent Office Rule 83 provides that the drawing must show every feature of the invention specified in the claims. It is evident that these conditions are not satisfied in the present case since claims 4 to 13 inclusive comprise various specific structural limitations. The fact that this application refers to an earlier case which includes a drawing is not controlling here. Every application must be complete in itself so far as the illustration of what is claimed is concerned and the question is not whether the invention can be understood without a drawing but whether the nature of the case admits of one.

The petition is denied.

In the United States Patent Office
Commissioner's Decision

IN RE APPLICATION PAPERS FILED NOVEMBER 12, 1965

Decided January 4, 1966

1. APPLICATION—FILING DATE—FILING FEE—PRELIMINARY AMENDMENT.

The Patent Office cannot properly undertake to enter a preliminary amendment and then assess a reduced fee on the basis of the case as amended. The application must be on file before it can be amended and the filing fee must be assessed on the basis of the papers as executed by the applicant and presented to the Patent Office.

2. SAME—SAME—SAME—CLAIMS IN EXCESS OF 10—PUBLIC LAW 89-83 CONSTRUED.

As regards the contention that a fee of only $10 is due for independent claim 11 it is to be noted that the applicable law (Public Law 89-83, 89th Congress, H.R. 4185) requires a fee of $10 for each independent claim which is in excess of one, and an additional fee of $2 for each claim "whether independent or dependent," which is in excess of ten. The clear purport of the quoted language is that this $2 fee applies to all claims in excess of ten, regardless of form or other payments.

3. SAME—SAME—SAME—NOTICE IN 818 O.G. 1207 AND 1208 CONSTRUED.

Petitioner's interpretation of the notice published in 818 O.G. 1207 and 1208 as meaning "that filing dates will be given if the basic fee of $65 is paid" is also incorrect. That notice expressly states that if, through error, the additional fee is insufficient the original filing date may be accorded "upon timely payment of the remainder of the fee *and a showing of circumstances of the character specified in Rule 183*" [emphasis added]. Those circumstances, as expressly stated in the rule, require "an extraordinary situation when justice requires" the relief requested.

ON PETITION.

GRANTED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the above-identified papers be accorded a filing date of November 12, 1965. The papers then presented included fourteen claims, of which three were independent so that a fee of $93 was due, and were accompanied by a fee of $83, a proposed amendment changing one claim from independent to dependent form, and request that $2 be refunded on the ground that since a $10 fee had been paid for claim 11 a further fee of $2 was not applicable to it. The Application Branch refused a filing date for lack of a sufficient fee. The additional $10 is tendered with the petition, but various questions are raised with respect to the propriety of the procedure followed, which will be answered below.

[1] The Patent Office cannot properly undertake to enter a preliminary amendment and then assess a reduced fee on the basis of the case as amended. The application must be on file before it can be amended and the filing fee must be assessed on the basis of the papers as executed by the applicant and presented to the Patent Office. Accordingly, the independent claim affected by the proposed amendment was properly charged as an independent claim.

[2] As regards the contention that a fee of only $10 is due for independent claim 11 it is to be noted that the applicable law (Public Law 89-83, 89th Congress, H.R. 4185) requires a fee of $10 for each independent claim which is in excess of one, and an additional fee of $2 for each claim "whether independent or dependent," which is in excess of ten. The clear purport of the quoted language is that this $2 fee applies to all claims in excess of ten, regardless of form or other payments.

From the foregoing it follows that the fee was properly computed by the Application Branch.

The petitioner complains because the Application Branch did not give earlier notification of the deficiency in fee. While it is the practice of this Office to notify attorneys promptly when errors are discovered, it manifestly cannot assume the burden of discovering them within any specified time. The unprecedented number of applications filed in October 1965 as the result of the new fee bill have caused many unusual delays.

The petitioner's contention that the refusal of the requested filing date herein would in some way violate rights under the International Convention is not well taken. Those rights depend upon the filing of a proper application in this country and clearly do not require that an application be accepted prior to the payment of all fees required by law.

[3] Petitioner's interpretation of the notice published in 818 O.G. 1207 and 1208 as meaning "that filing dates will be given if the basic fee of $65 is paid" is also incorrect. That notice expressly states that if, through error, the additional fee is insufficient the original filing date may be accorded "upon timely payment of the remainder of the fee *and a showing of circumstances of the character specified in Rule 183*" [emphasis added]. Those circumstances, as expressly stated in the rule, require "an extraordinary situation when justice requires" the relief requested.

While the action of the Application Branch herein was the only one which it could properly have taken, the Commissioner may, under appropriate circumstances, accord a filing date notwithstanding a deficiency in the additional fees due. The circumstances here present, involving the interpretation of new laws and procedures, are thought to justify the relief requested and the petition is therefore granted, on that ground alone.

In the United States Patent Office
Commissioner's Decision

BILLETER *v.* RAUGLAS

Interference No. 95,207. Decided June 1, 1966

1. INTERFERENCE—SHOWING UNDER RULE 204(c)—PETITION UNDER RULE 183 TO SUSPEND SERVICE ON ADVERSARY.

Upon considering the petition under Rule 183 of an applicant in interference that his showing under Rule 204(c) should not be made available to the patentee, before the latter executes his preliminary statement, because of the comparative newness of the present Rule 204(c) practice and because applicant alleged his dates of invention with unnecessary exactness, *Held* that "These facts are not considered to be of the character necessary to satisfy the conditions imposed by Rule 183. The fact that it may have been drawn more specifically than was necessary does not constitute an extraordinary circumstance."

2. SAME—SAME—SAME.

Rules 204(c) and 228 clearly contemplate that if there is to be an inter partes consideration of an applicant's showing, the patentee shall be as fully informed of the nature of that showing as the applicant and the Board of Patent Interferences. Even apart from the express requirement of the rule, it would require a most convincing showing of unusual circumstances to justify such a proposal as has been made here involving a hearing or argument in which the applicant and the Board work from the original papers and the patentee from copies of such papers in which portions are blocked out. It is not thought that such unusual circumstances are present here.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

The party Billeter petitions that the requirement of Rule 204(c) that a copy of his original showing under that rule be served on Rauglas be suspended under Rule 183. The latter rule requires first that there be an extraordinary situation and second that justice should require the relief requested.

[1] The petitioner alleges that, because the present Rule 204(c) practice was comparatively new, he alleged his dates of invention with unnecessary exactness, and that it would not be fair to allow Rauglas to see these dates before he executes his preliminary statement.

These facts are not considered to be of the character necessary to satisfy the conditions imposed by Rule 183. Rule 228 clearly required that the original showing under Rule 204(c) must be served on the opposing party in the event of an order to show cause and a response thereto and the showing should have been drawn with that in mind. The fact that it may have been drawn more specifically than was necessary does not constitute an extraordinary circumstance.

Further, it is not apparent that the disclosure of the original showing will result in injustice. There is no reason to assume that Rauglas will falsify his preliminary statement to antedate whatever dates are alleged by Billeter, and even if he did so he could not prevail unless he actually established his alleged dates by evidence.

[2] Rules 204(c) and 228 clearly contemplate that if there is to be an inter partes consideration of an applicant's showing, the patentee shall be as fully informed of the nature of that showing as the applicant and the Board of Patent Interferences. Even apart from the express requirement of the rule, it would require a most convincing showing of unusual circumstances to justify such a proposal as has been made here involving a hearing or argument in which the applicant and the Board work from the original papers and the patentee from copies of such papers in which portions are blocked out. It is not thought that such unusual circumstances are present here.

In an unsigned memorandum filed May 9, 1966, apparently by counsel for Billeter, it is pointed out that paragraph 1101.03 of the Manual of Patent Examining Procedure states that affidavits under Rule 204 are available for inspection by opposing parties when the preliminary statements are opened. It is argued that this provision is in conflict with the requirement of Rule 228 for the furnishing of a copy of such an affidavit as a part of the proceedings on an order to show cause. It is not thought that such conflict exists since the Manual does not state that the affidavits are never made available prior to the opening of the statements. Moreover, if there were a conflict, the rule would clearly be controlling.

The petition is denied.

In the United States Patent Office
Commissioner's Decision

IN RE REFUSAL TO RECORD AN ASSIGNMENT

Decided February 24, 1966

1. ASSIGNMENT—IDENTIFICATION OF APPLICATION—RULE 331 CONSTRUED.

While the quoted language of the rule is exemplary only it is not thought to be complied with, either as to letter or spirit, by the paper here under consideration. The present assignment not only fails to give the date of

execution of the application but does not expressly state that an application has actually been executed. The statement that the assignors are "about to make application" is vague and might cover a period of several months. The title is generic and might apply to a number of applications. It is alleged that only one application of this title was filed, but the Patent Office cannot assume the responsibility of ascertaining or verifying this and moreover it is conceivable that the application to which the assignment relates was never prepared, or if prepared was not filed but was replaced by another.

2. SAME—SAME—SAME.

While identification of an application not yet filed cannot well be made with absolute certainty, the date set forth in the rule is normally minimal and the Office should accept less only under extraordinary circumstances where justice requires it. Such circumstances are not present here. If the application was executed before the assignment it could and should have been identified in the manner specified by the rule. On the other hand, if the assignment was executed first and refers to some paper not yet in being, it is clearly indefinite in its identification.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition from the refusal of the Assignment Branch to record an assignment because it does not sufficiently identify the application to which it allegedly relates.

Patent Office Rule 331 provides that if an assignment is executed before an application is filed it "should adequately identify the application, as by its date of execution and name of the inventor and title of the invention; so that there can be no mistake as to the patent or application intended." The paper here sought to be recorded identifies the subject matter to be assigned only as "certain improvements in polyurethane materials, for which we are about to make application for Letters Patent in the United States of America."

[1] While the quoted language of the rule is exemplary only it is not thought to be complied with, either as to letter or spirit, by the paper here under consideration. The present assignment not only fails to give the date of execution of the application but does not expressly state that an application has actually been executed. The statement that the assignors are "about to make application" is vague and might cover a period of several months. The title is generic and might apply to a number of applications. It is alleged that only one application of this title was filed, but the Patent Office cannot assume the responsibility of ascertaining or verifying this and moreover it is conceivable that the application to which the assignment relates was never prepared, or if prepared was not filed but was replaced by another.

[2] While identification of an application not yet filed cannot well be made with absolute certainty, the date set forth in the rule is normally minimal and the Office should accept less only under extraordinary circumstances where justice requires it. Such circumstances are not present here. If the application was executed before the assignment it could and should have been identified in the manner specified by the rule. On the other hand, if the assignment was executed first and refers to some paper not yet in being, it is clearly indefinite in its identification.

The action of the Assignment Branch is considered to have been proper and the petition is denied.

The assignment is returned herewith.

In the United States Patent Office
Commissioner's Decision

IN RE AFFIDAVIT FILED AFTER FINAL REJECTION

Decided July 25, 1966

1. PRACTICE—FINAL REJECTION—AFFIDAVIT FILED THEREAFTER—EXCUSE FOR DELAY NECESSARY.

The consideration of an affidavit filed after a final rejection would be subject to the same objections as consideration of an amendment filed at that time and the applicant's contention that such an affidavit can be presented at any time prior to appeal as a matter of right and without any excuse for the delay cannot be accepted.

2. DISMISSAL—RULE 181(f).

It is noted, moreover, that the original petition of May 27, 1966 was filed more than four months after the action complained of therein and would accordingly have been subject to dismissal under Rule 181(f).

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

The request for reconsideration of the Director's decision filed July 12, 1966 in the above application has been considered as a petition for review of the said decision.

The record has been carefully reviewed in the light of this request but it is not found that a situation is presented in which supervisory action would be justified. On the contrary, the procedure followed seems to have been entirely regular and in accordance with the present approved practice. [1] The consideration of an affidavit filed after a final rejection would be subject to the same objections as consideration of an amendment filed at that time and the applicant's contention that such an affidavit can be presented at any time prior to appeal as a matter of right and without any excuse for the delay cannot be accepted.

[2] It is noted, moreover, that the original petition of May 27, 1966 was filed more than four months after the action complained of therein and would accordingly have been subject to dismissal under Rule 181(f).

The present petition is denied.

In the United States Patent Office
Commissioner's Decision

IN RE APPLICATION PAPERS FILED DECEMBER 13, 1965

Decided February 1, 1966

1. APPLICATION—UNSIGNED—35 U.S.C. 111 CONSTRUED.

It is contended in the petition that the execution of the assignment [which described the application as having been 'executed by the undersigned concurrently herewith'] constitutes a signature to the application papers, but that position is not considered sound. It is evident that the assignment and application are distinct documents requiring separate execution. Specifically, it is quite clear that the applicants could never be subjected to any penalty for willful false statements, if such appeared in the application papers, on the basis of having executed the assignment.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition requesting that the above identified papers be accepted as a complete application and accorded a filing date of December 13, 1965 which date was refused by the Application Branch

for the reason that the application papers submitted were completely unexecuted, although accompanied by an executed assignment which described the application as having been "executed by the undersigned concurrently herewith."

Title 35, section 111 of the United States Code provides that an application for patent "must be signed by the applicant." This is a statutory requirement and cannot be waived under Rule 183 which is limited by its terms to execlude such requirements.

[1] It is contended in the petition that the execution of the assignment constitutes a signature to the application papers, but that position is not considered sound. It is evident that the assignment and application are distinct documents requiring separate execution. Specifically, it is quite clear that the applicants could never be subjected to any penalty for willful false statements, if such appeared in the application papers, on the basis of having executed the assignment. Further, the printed statement on the last page of the application papers that the inventors "hereby subscribe our names" makes it clear that the paper was intended to be signed rather than vicariously executed by the signature of some other paper.

While the petition refers to possible loss of priority under the International Convention, the unexecuted declaration, which was filed in the Patent Office on December 10, 1965, states that the only foreign application filed was in Germany on December 11, 1965. If that date is correct it is not clear how any priority right is involved.

For the reasons above given, it must be held that the Patent Office has no legal authority to accord the requested filing date on the basis of the papers submitted and the petition is accordingly denied.

In the United States Patent Office
Commissioner's Decision

KEMMLER *v.* YAKUBIK

Interference No. 93,852. Decided August 31, 1965

1. INTERFERENCES—PATENTS AND SINGLE APPLICATION—PATENTEE LAST TO FILE—ORDER SETTING TESTIMONY IN THAT CASE FIRST PROPER.

The present interference includes a patent of the petitioner granted on an application filed March 7, 1956 and an application of Kemmler filed January 3, 1958, while Interference No. 93,108 includes the same Kemmler application and a patent of the petitioner granted on an application filed March 31, 1958. It thus appears that the last filed of the three cases involved was the last mentioned application of the petitioner and that under the present order of taking testimony the testimony as to that case is to be taken first. This procedure is considered logical and is in accordance with the established practice. While it is urged by the petitioner that the subject matter in the two interferences is so closely related as to constitute in effect a single controversy, it is not thought that the petitioner is in a favorable position to advance such a contention in view of the fact that his two cases involved were separately patented and that one of them is directed to an article of manufacture and the other to a process.

ON PETITION.

DENIED.

REYNOLDS, *First Assistant Commissioner.*

This is a petition from the action of the Patent Interference Examiner setting times for taking testimony in the above interference and in companion Interference No. 93,108 in such a manner that the petitioner will be required to take testimony in that interference prior

to the taking of any testimony by the party Kemmler in either interference.

[1] The present interference includes a patent of the petitioner granted on an application filed March 7, 1956 and an application of Kemmler filed January 3, 1958, while Interference No. 93,108 includes the same Kemmler application and a patent of the petitioner granted on an application filed March 31, 1958. It thus appears that the last filed of the three cases involved was the last mentioned application of the petitioner and that under the present order of taking testimony the testimony as to that case is to be taken first. This procedure is considered logical and is in accordance with the established practice. While it is urged by the petitioner that the subject matter in the two interferences is so closely related as to constitute in effect a single controversy, it is not thought that the petitioner is in a favorable position to advance such a contention in view of the fact that his two cases involved were separately patented and that one of them is directed to an article of manufacture and the other to a process.

The action of the Patent Interference Examiner is thought to have been correct for the reasons above indicated as well as for those fully stated by him, which are hereby adopted.

The petition is denied.

In the United States Patent Office
Before the Board of Patent Interferences

BEAL AND PIKE *v.* MULLER AND POITTEVIN

Patent Interference No. 92,008. Decided May 28, 1965

1. APPLICATION—35 U.S.C. 119—CONVENTION APPLICATION—INCORPORATION BY REFERENCE THEREIN TO EARLIER FOREIGN APPLICATION OF SAME INVENTOR.

"It is our opinion that the record is sufficient to establish that French application Serial No. 797,731 is the application referred to in the French convention application. Here the assignee is the same and the same inventor is involved in both French applications (note *In re Blout et al.*, 52 CCPA —, 809 O.G. 18, 1964 C.D. 865, 142 USPQ 173). It is obvious that both the assignee and the inventor, when they filed the French convention application, had actual knowledge of Serial No. 797,731. Under the circumstances here we have no doubt that the French application of June 17, 1959, referred to in the convention application is Serial No. 797,731 and is adequately identified in the French convention application.

2. SAME—SAME—SAME—SAME.

"We are of the opinion that * * * the French application referred to (Serial No. 797,731) is properly incorporated by reference into the French convention application and may be properly relied upon for a disclosure of the preparation of the intermediate used in the preparation of the compound of the count. It is evident from the Fridenson affidavit that the practice of incorporating the disclosure of a previously filed French application into the disclosure of a later filed French application by reference is similar to the practice in this country. We find no reason why the practice followed in *Ex parte Haresnape*, supra, should not apply to the instant situation.

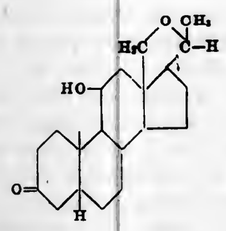
Before LEVIN, CREWS AND BAILEY, *Examiners of Interferences*

BAILEY, *Examiner of Interferences.*

This interference involves an application of Muller and Poittevin (hereinafter referred to as Muller et al.) filed June 27, 1960, assigned to Les Laboratoires Francais de Chimiotherapie, and an application of Beal and Pike (hereinafter referred to as Beal et al.) filed May 2, 1960, assigned to The Upjohn Company (Paper No. 4).

The subject matter relates to a compound and is adequately described in the count which reads as follows:

Count 2



Both parties filed briefs but only Muller et al. were represented at final hearing. Beal et al. have the burden of establishing priority by a preponderance of the evidence.

Muller et al. brought a timely motion to shift the burden of proof, urging that they have complied with the requirements of 35 U.S.C. 119 and that they are entitled to the benefit of their French application Serial No. 800,347 filed July 17, 1959. This motion was opposed by Beal et al. In his decision of August 6, 1963 (Paper No. 24) the Examiner denied this motion; however, after a request for reconsideration, he granted this motion in his decision of January 6, 1964 (Paper No. 32) and Muller et al. were made senior party. Neither party has presented any priority testimony and the sole issue presented at final hearing is the right of Muller et al. to rely on their above mentioned French application.

It has not been questioned that the above mentioned French convention application discloses the compound of the count, a process for preparing the compound and its utility. It is urged by Beal et al. that the French application does not include an adequate disclosure of 3α-acetoxy-18,20β-oxido-5β-pregnane-11-one, the starting material employed in the preparation of the compound of the count. It does not appear that the starting compound in question is described in any known prior publication.

The French application states that the above mentioned starting material is

". . . obtained in accordance with the French patent application of June 17, 1959, entitled 'Novel 18,20-Oxygenated Steroids.' . . ." (See page 2 of the English translation of French application Serial No. 800,347, filed as Paper No. 3 in the involved Muller et al. application.)

Part (*a*) of the example in the French application relied on for priority (on page 3, English translation) describes the above mentioned starting compound as

". . . having been obtained by oxidation of 3α-acetoxy-20β-hydroxy-5β-pregnane-11-one with lead tetra-acetate according to the process described in the French patent application of June 17, 1959, entitled 'Novel 18,20-Oxygenated Steroids.'"

In his initial decision on motions (Paper No. 24) the Examiner held that the disclosure in the French convention application was incomplete because of the failure of the French convention application to identify the prior French application by serial number. The Examiner also held that the disclosure of the oxidation with lead tetra-acetate was not sufficient to complete the disclosure of the preparation of the intermediate.

In connection with their request for reconsideration of Examiner's decision on motion (Paper No. 29) Muller et al. submitted the following:

(1) A certified copy of French application Serial No. 797,731 entitled "New 18,20-Oxygenated Steroids." Inventor: Georges Muller.

(2) An English translation of French application Serial No. 797,731.

(3) An affidavit by Alexandre Fridenson, Director of the Patent Department of Roussel-UCLAF, S.A. a corporation of France (now owner of the patent application of Les Laboratoires Francais de Chimiotherapie).

(4) An attestation by The Inspector General of Industry and Commerce. Director of the National Institute of Industrial Property.

It also appears that French convention application Serial No. 800,347 issued as Patent No. 1,242,888 and that French application Serial No. 797,731 issued as Patent No. 1,242,878. The affidavit of Fridenson states that the above French application Serial No. 797,731 is the only application entitled "Novel 18,20-Oxygenated Steroids" filed by Roussel-UCLAF, S.A. on that date (June 17, 1959) and that that application is the one referred to in French application Serial No. 800,347. The affidavit also states that at the time of filing of this French application the identification of French application No. 797,731 by title and filing date was sufficient to distinguish it from any other patent application filed at any time by Roussel-UCLAF, S.A. and sufficient under French law and patent practice to incorporate the disclosure of French application Serial No. 797,731 into the disclosure of French application Serial No. 800,347.

In the above attestation it is stated that:

"The citation of the French patent application appearing on page 1 of Patent 1,242,888 (P.V. No. 800,347), filed by the company Les Laboratoires Francais de Chimiotherapie—identifies perfectly—a French patent application filed June 17, 1959 by the company Les Laboratoires Francais de Chimiotherapie, of whom the company Roussel-UCLAF has its rights, registered in this institute under the number of official papers 797,731."

It is further stated therein that No. 797,731 is the only application filed by Les Laboratoires de Chimiotherapie on June 17, 1959.

In his decision on request for reconsideration (Paper No. 32) the Examiner held that, in view of the above newly presented evidence, Muller et al. were entitled to the benefit of the July 17, 1959 filing date of French application Serial No. 800,347 and granted the motion to shift the burden of proof. The Examiner, in his decision on reconsideration referred to the reasons given in his decision in Interference No. 92,009, involving the same parties in interest, in which the same issue, also involving French application Serial No. 797,731, was presented. It appears to have been the position of the Examiner that the record establishes that French application Serial No. 797,731 was in fact the application referred to in the Muller et al. French convention application Serial No. 800,347 and that the earlier French application was properly incorporated thereinto by reference and completed the disclosure.

Muller et al. urge at final hearing that the description of the starting material (3α-acetoxy-18,20β-oxido-5β-pregnane-11-one) in their French convention application is adequate on two grounds: first, because the reference to the oxidation of 3α-acetoxy-20β-hydroxy-5β-pregnane-11-one with lead tetraacetate in the specification of the French convention application is sufficient to enable one skilled in the art to prepare this starting material. Muller et al. have also referred to an article by Cainelli et al., Helv. Chim. Acta, vol. 42,

May 4, 1959, pages 1124–27, as describing the oxidation of other 3-acetoxy-pregnane-20-ols with lead tetraacetate to form the corresponding 18,20-oxido-pregnanes and the procedural details of the process.

Beal et al. urge that reference to the French application (Serial No. 797,731) alleged to be the application referred to in the Muller et al. convention application shows that Muller himself was surprised to find that oxidation of the mentioned 20β-hydroxy compound gave the starting material in question and that Muller predicates invention in French application Serial No. 797,731 on the fact that this particular oxidation will go without an attack upon the C ring of the steroid molecule by lead tetraacetate. Beal et al. contend that in view of the above it cannot be stated that it would be obvious to one skilled in the art from the statement in the French convention application how to prepare the starting material.

The French convention application clearly discloses that the starting material, 3α-acetoxy-18,20β-oxido-5β-pregnane-11-one, may be prepared by the oxidation of 3α-acetoxy-20β-hydroxy-5β-pregnane-11-one with lead tetraacetate. The question presented is whether this disclosure is sufficient to teach one skilled in the art how to carry out this oxidation process. The above Cainelli et al. article, shows how to carry out the oxidation of a similar steroid with lead tetraacetate to produce the corresponding 18,20β-oxido steroid. It is noted that this article (authored by Cainelli, Mihailovic, Arigoni and Jeger) has been referred to as prior art in the French application Serial No. 797,731 and thus appears to have been available to the public prior to the filing of the French convention application. It is our view that, having been taught by the French convention application that the starting material in question may be prepared by the lead tetraacetate oxidation method it would be obvious to one skilled in this art to carry out the process in the manner taught in the Cainelli et al. article. It is noted that this publication discloses a process similar to that disclosed in the involved Muller et al. application.

We do not believe that the statement in French application Serial No. 797,731 with respect to the application of this oxidation process to steroids having the ketonic function in the C_{11} position and the 5β configuration or the alleged basis of invention in that application is material to the above question. Here, there is an unequivocal statement in the French convention application as to the process to be used in preparing the starting material and it is our view that the Cainelli et al. article teaches a steroid chemist how to carry out the oxidation of this type of steroid to produce the 18,20β-oxido derivative. For these reasons we regard the disclosure in the French convention application sufficient to support the count.

The second ground urged by Muller et al. in support of their contention that the description of the starting material in their French convention application is adequate is that the French application filed June 17, 1959 entitled "Novel 18,20-Oxygenated Steroids" is French application Serial No. 797,731 and that this application is properly incorporated into their convention application by reference. Muller et al. contend that they are entitled to the benefit of their French convention application on the present record as interpreted by the Board of Appeals in *Ex parte Haresnape et al.*, 98 USPQ 275. Since we have found that the disclosure in the Muller et al. French convention application itself is sufficient to support the count, it is not necessary to our conclusion that we consider this second ground. However, in order that our opinion include a consideration of all the principal issues raised, we shall also consider the second ground relied upon by Muller et al.

Beal et al. urge that the prior French application is not adequately identified in the Muller et al. French convention application as the name of neither the applicant nor the assignee is given. Beal et al. also contend that, although incorporation by reference is proper in the case of United States applications, this practice does not extend to the facts here as it does not appear that an application corresponding to the French application Serial No. 797,731, alleged to be the application referred to in the French convention application was ever filed in the United States. It is the position of Beal et al. that in view of the above, the situation here distinguishes from that of *Ex parte Haresnape*, supra. Beal et al. cite *Broos* v. *Barton*, 31 CCPA 1089, 1944 C.D. 428, 568 O.G. 11, 61 USPQ 447 and *Wickman et al.* v. *Vinco Corporation et al.*, 129 USPQ 43 holding that the law of the United States governs and urge that the evidence produced by Muller et al. as to the adequacy of the cross reference under French patent practice is irrelevant.

It has not been denied that French application Serial No. 797,731 was filed on the date given and has the title given for the application referred to in the French convention application. Nor has it been denied that French application Serial No. 797,731, in fact, discloses the preparation of 3α-acetoxy-18,20β-oxido-5β-pregnane-11-one by oxidation of 3α-acetoxy-20β-hydroxy-5β-pregnane-11-one with lead tetraacetate. The affidavits of Fridenson and the Attestation show that French application Serial No. 797,731 was the only application filed by the assignee on June 17, 1959 entitled "Novel 18,20-Oxygenated Steroids." The record shows that Georges Muller is given as an inventor in both French applications.

[1] It is our opinion that the record is sufficient to establish that French application Serial No. 797,731 is the application referred to in the French convention application. Here the assignee is the same and the same inventor is involved in both French applications (note *In re Blout et al.*, 52 CCPA —, 809 O.G. 18, 1964 C.D. 865, 142 USPQ 173). It is obvious that both the assignee and the inventor, when they filed the French convention application, had actual knowledge of Serial No. 797,731. Under the circumstances here we have no doubt that the French application of June 17, 1959 referred to in the convention application is Serial No. 797,731 and is adequately identified in the French convention application. In this connection attention is directed to Rule 65 which requires that, if any application for patent on the same invention has been filed in a foreign country, the oath include the name of the country and the date of filing of the first such application (and of every foreign application filed more than 12 months before the filing of the application in this country). No other information need be included in the application in order for applicant to seek the right of priority under 35 U.S.C. 119, providing a request for priority and a certified copy of the foreign application (and translation, when required) are filed. See section 201.14(b) Manual of Patent Examining Procedure, Third ed.

The Board of Appeals, in their decision in *Ex parte Haresnape et al.*, supra, held that an applicant was entitled to the benefit of the

filing date of a British Convention application which referred to another copending British application for completing the disclosure. It has been pointed out by Beal et al. that in the *Haresnape* case there were applications corresponding to both British applications filed in the United States so that each of the British applications could therefore be given the benefit of 35 U.S.C. 119 and could be regarded as though it had been filed in the United States on the same day on which it was filed in England. Beal et al. urge that the French application (Serial No. 797,731) "is something to which no one in this country ever had access" and that a U.S. applicant cannot complete his disclosure by reference to a document which is not available in this country.

It is conceded by Beal et al that a disclosure in an application filed in the United States may be completed by reference to a concurrently or previously filed United States application. As pointed out in sec. 608.01(p) of the Manual of Patent Examining Procedure, 3rd edition, such concurrently or previously filed application can be relied upon for the description of the preparation of a new chemical starting material. It might be mentioned that it was held in *In re Fried et al.*, 51 CCPA 1118, 1964 C.D. 452, 805 O.G. 610, 141 USPQ 27 that such incorporation by reference of a commonly assigned application is not barred merely because of different inventorship. It is evident that such an application referred to in the specification of an application which issues as a patent is not open to the general public as in the case of the usual printed publication. Access to an application (pending or abandoned), referred to in an issued patent, may be secured only by filing a petition for access to the Commissioner (see section 103, Manual of Patent Examining Procedure, 3rd edition).

If Beal et al., in their above mentioned argument with respect to access, are referring to publication prior to the filing date of the French convention application, then it must be pointed out that such prior publication is not necessary even in the case of incorporation by reference in the case of a United States application. Here, the requirement of 35 U.S.C. 119 has been complied with by filing certified copies of both the French convention application and the French application referred to in the specification thereof together with translations thereof. It is clear that these two applications together completely disclose the invention of the count. Due to such compliance access may be had to the French application incorporated by reference to the same extent as access is had to the convention application itself. Moreover, both of these French applications have issued as patents and are in fact available to the public in general.

[2] We are of the opinion that under the circumstances here the French application referred to (Serial No. 797,731) is properly incorporated by reference into the French convention application and may properly be relied upon for a disclosure of the preparation of the intermediate used in the preparation of the compound of the count. It is evident from the Fridenson affidavit that the practice of incorporating the disclosure of a previously filed French application into the disclosure of a later filed French application by reference is similar to the practice in this country. We find no reason why the practice followed in *Ex parte Haresnape*, supra, should not apply to the instant situation.

In view of the above it is our conclusion that Muller et al. are entitled to July 17, 1959, the date of their French convention application for conception and reduction to practice. Since Beal et al. have presented no evidence of invention prior to that date he cannot prevail.

Priority of invention of the subject matter of the count is hereby awarded to Georges Muller and Andre Poittevin, the senior party.

CREWS concurring.

I agree with the position of the majority as to the first ground of its decision but not as to the second. The disclosure of a patent application to satisfy 35 U.S.C. 112 should, in my judgment, be more certain and definite than to require for its completion an investigation to identify a foreign patent application relied upon to complete the disclosure, and facts subsequent to filing such as the demonstrated willingness of applicant or the foreign patent office to supply a copy of the relied-upon foreign application. The adequacy of the U.S. application at time of filing should be the determining factor.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,372,013, R. A. Rockwell, AMPLIFYING FLUID PRESSURE DEVICE; **2,386,230**, same, VALVE APPARATUS; **2,386,252**, same, POWER INTENSIFIER VALVE; **2,537,482**, same, SERVOMOTOR; **2,572,530**, same, MECHANISM FOR THE OPERATION OF VALVES; **2,637,736**, same, POWER UNIT FOR DELIVERING HYDRAULIC POWER; **2,646,065**, same, FLUID PRESSURE INTENSIFYING MEANS; **2,667,861**, same, FLUID PRESSURE VALVE; **2,703,451**, same, GROMMET VALVE MEANS; **2,707,397**, same, FLUID CONTROL VALVE CONSTRUCTION; **2,704,220**, same, POWER AUGMENTATION APPARATUS FOR HYDRAULIC MOTOR SYSTEMS; **2,186,021**, same, HYDRAULIC BRAKE BOOSTER, filed June 10, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c946, *Edward A. Rockwell et al.* v. *The Bendix Corporation*. Consent judgment—action dismissed without prejudice Oct. 14, 1966.

2,386,230. (See 2,372,013.)

2,386,252. (See 2,372,013.)

2,434,545, W. H. Brady, Jr. et al., ADHESIVE LABEL DISPENSER, filed Sept. 8, 1961, D.C., E.D. Wis. (Milwaukee), Doc. 61–C–228, *W. H. Brady Co.* v. *Standard Electric Supply Co.* Action dismissed Oct. 18, 1966.

2,462,926, F. D. Wilson et al., FULL CIRCLE BOOM CRANE; **2,787,382**, Antos and Brown, same, filed Apr. 6, 1962, D.C., S.D. Tex. (Houston), Doc. 14255, *Baldwin-Lima-Hamilton Corporation* v. *Pettibone Mulliken Corp. et al.* Complaint and supplemental complaint dismissed (notice Oct. 28, 1966).

2,476,837, E. L. Cline, ENGINE COOLING MEANS AND METHOD; **2,709,982**, S. M. Marcus et al., VEHICLE TESTING DEVICES, filed July 16, 1963, D.C., E.D. Pa. (Philadelphia), Doc. 33843, *Clayton Manufacturing Co.* v. *Lloyd R. Maxwell et al.* Stipulation of dismissal without prejudice Aug. 4, 1966.

2,537,482. (See 2,372,013.)

2,572,530. (See 2,372,013.)

2,637,736. (See 2,372,013.)

2,646,065. (See 2,372,013.)

2,667,861. (See 2,372,013.)

2,702,049, M. M. Seeloff, FLUID VALVE, filed Oct. 20, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1899, *Veres Products Co., Inc.* v. *Rex Chainbelt, Inc.*

2,703,451. (See 2,372,013.)

2,709,982. (See 2,476,837.)

2,717,793, J. F. Negsell, FLUID SEAL AND APPARATUS FOR MANUFACTURE THEREOF, filed Oct. 12, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66–1637–CC, *Parker-Hannifin Corp. et al.* v. *Douglas Aircraft Company et al.*

2,720,134, D. Farandatos, CORK EXTRACTOR WITH GAS PRESSURE GENERATING MEANS, filed June 6, 1962, D.C., S.D.N.Y., Doc. 62/2013, *Denis Farandatos* v. *Douglas Spencer et al.* Consent judgment dismissing action and counterclaim Oct. 17, 1966.

2,744,689, W. H. Jacobs, BEVERAGE DISPENSER; **2,745,641**, same, filed Feb. 25, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–359–JWC, *Dispensers, Inc.* v. *Jet Spray Cooler, Inc.* Order of dismissal Sept. 19, 1966.

2,745,641. (See 2,744,689.)

2,750,727, P. M. Wright, AUTOMATIC HEADER CONTROL MEANS, filed Aug. 30, 1965, D.C., S.D. Iowa (Des Moines), Doc. 6–1719–C–2, *Roper-Wright Mfg. Co., Inc. et al.* v. *Seymour Mfg. Co. et al.* Final judgment in favor of plaintiffs; patent held valid and infringed; defendants enjoined Oct. 28, 1966.

2,753,694, Trow and Nelson, ICE DISINTEGRATING AND CHIP DELIVERING SPIRAL ICE CHIP PRODUCING MACHINE, filed Aug. 21, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c1394, *King-Seeley Thermos Co.* v. *Frees-King Corporation*. Judgment for plaintiff; injunction issued Mar. 26, 1965. Defendant appealed—mandate returned from Court of Appeals; judgment of District Court affirmed Oct. 25, 1966.

2,787,227. (See 2,372,013.)

2,787,382. (See 2,462,926.)

2,794,230. (See 2,372,013.)

2,795,435, P. J. Ortis et al., VEHICLE TOWING DEVICE, filed Mar. 31, 1966, D.C.N.J. (Newark), Doc. 324–66, *Philip J. Ortis* v. *Nussbaum's Sales Company*. Stipulation and order for voluntary dismissal Oct. 19, 1966.

2,813,516, A. J. Piel, ANIMAL ACTUATED LIQUID APPLICATOR FOR HIDE, filed Feb. 28, 1963, D.C., N.D. Iowa (Fort Dodge), Doc. 63–C–2006–C, *Piel Manufacturing Company, Incorporated et al.* v. *Palo Alto Manufacturing Co. et al.* Order of dismissal Oct. 24, 1966.

2,821,602, Cordora and Carlin, CONTROL SYSTEM AND CONDUIT CABLE, filed Jan. 28, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 34964, *Teleflex, Inc.* v. *Esnco, Inc.* Consent judgment in favor of plaintiff; injunction granted Oct. 11, 1966.

2,835,933, E. L. Evans, DOOR FRAME, filed Mar. 1, 1965, D.C. Ariz. (Phoenix), Doc. 5440 Phx., *Kewanee Manufacturing Company* v. *Presto Doors, Inc.* Claims of Patent No. 2,835,933 held valid and infringed; defendant's counterclaim dismissed (notice Oct. 27, 1966).

2,839,900, J. E. Morgan, KNITTED FABRIC, filed May 31, 1966, D.C., E.D. Pa. (Philadelphia), Doc. 40892, *J. E. Morgan Knitting Mills, Inc.* v. *Royal Manufacturing Co., Inc.* Order dismissing action with prejudice Aug. 19, 1966. Same, filed July 26, 1966, D.C., E.D. Pa. (Philadelphia), Doc. 40808, *J. E. Morgan Knitting Mills, Inc.* v. *Bruton Knitting Mills, Inc.* Consent judgment in favor of plaintiff and granting an in-

junction Oct. 12, 1966. **Same, filed** Oct. 17, 1966, D.C., N.D. Ga. (Atlanta), Doc. 10480, *J. E. Morgan Knitting Mills, Inc. v. E-Z Mills, Inc.* **Same, filed** Oct. 28, 1966, D.C., W.D. Va. (Roanoke), Doc. 66–C–97–R, *J. E. Morgan Knitting Mills, Inc. et al. v. Roanoke Mills, Inc.* **Same, filed** Oct. 31, 1966, D.C., W.D. Va. (Danville), Doc. 66–C–42–D, *J. E. Morgan Knitting Mills, Inc. v. Pannill Knitting Co., Inc.*

2,859,897, D. F. Bloom, METHOD OF SAMPLING WELL FLUIDS, **filed** Oct. 20, 1966, D.C., E.D. Calif. (Fresno), Doc. F–66–19, *Aircushion Patents Corp. et al. v. Big Three Industrial Gas and Equipment Co., doing business as Nowsco and as Nitrogen Well Service Co.*

2,859,949, J. J. Willard, FORWARD DISCHARGING TRANSIT CONCRETE MIXER, **filed** Feb. 25, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–351–PH, *Royal William Sims et al. v. Willard Co., Inc. et al.* Consent judgment dismissing complaint and counterclaim with prejudice Aug. 19, 1966.

2,896,352, A. Strauss, now by change of name A. Marlo, ARTIFICIAL ARTICLES IMITATING NATURAL ARTICLES, **filed** Mar. 16, 1964, D.C.N.J. (Camden), Doc. 226–64, *Arvid Marlo v. Montgomery Ward & Co.* Order dismissing case Oct. 24, 1966. **Same, filed** May 26, 1964, D.C.N.J. (Camden), Doc. 260–64, *Arvid Marlo v. J. C. Penney Company.* Decree as above.

2,896,857, G. R. Tompkins, WASHING APPARATUS, **filed** Nov. 26, 1963, D.C., E.D. Wis. (Milwaukee), Doc. 63–C–290, *Resarco, Inc. et al. v. Robot Manufacturing Corp. et al.* Consent decree holding patent valid and infringed; defendants enjoined Oct. 31, 1966.

2,950,793, W. G. Axtell, LUGGAGE CASE; **Des. 185,511,** J. M. Powell et al., same, **filed** Apr. 30, 1963, D.C., C.D. Calif. (Los Angeles), Doc. 63–499–JWC, *Shwayder Brothers, Inc. v. Reliable Luggage, Inc. of California et al.* Stipulation and order dismissing action without prejudice Oct. 10, 1966.

2,962,837, J. H. Lemelson, TOY GUN CONTAINING RICOCHET NOISE MECHANISM; **3,006,474,** Hirsch and Merl, TOY REPEAT FIRING CAP GUN WITH PERCUSSIVE FIRING NOISE AND SIMULATED USED SHELL EJECTION, **filed** Aug. 9, 1966, D.C., S.D.N.Y., Doc. 66/2468, *Jerome H. Lemelson v. Louis Marx & Co.*

2,966,110, J. E. Quarnstrom, TELEPHONE SUPPORTING INDEX DEVICE, **filed** Sept. 20, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45662, *John E. Quarnstrom v. Standard Packaging Corporation.*

2,962,222, J. K. Seits, CARD-CARRYING CASE OR POCKET SECRETARY, **filed** Aug. 17, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1326–JWC, *Bri-Son Company, Inc. v. Apex Products Corp. et al.* Consent judgment in favor of plaintiff; patent held valid; defendants enjoined Oct. 19, 1966.

2,962,950, D. V. Hanneken, ANTENNA FOR BOTH HORIZONTALLY AND VERTICALLY POLARIZED WAVES, **filed** July 9, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63–802–S, *Dietrich Von Hanneken v. Marina Communications et al.* Stipulation and final decree in favor of plaintiff; defendants enjoined Oct. 3, 1966.

3,006,474. (See 2,962,837.)

3,165,031. (See 2,372,013.)

Des. 185,511. (See 2,950,793.)

REISSUES

DECEMBER 20, 1966

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification: matter printed in italics indicates additions made by reissue.

26,128

TENNIS RACKETS AND THE LIKE

Jean René Lacoste, Paris, France

Original No. 3,078,098, dated Feb. 19, 1963, Ser. No. 96,949, Mar. 20, 1961. Application for reissue Feb. 14, 1966, Ser. No. 532,515

6 Claims. (Cl. 273—73)



1. A tennis racket comprising a frame and a handle, a flat resilient annular member conforming in general contour with that of said frame and positioned within the frame, said member formed with spaced serrations of generally triangular shape projecting outward therefrom toward the frame, retainer means engaging the tops of said serrations for attaching the member to the frame, and racket strings passed in engagement with said member across the bases of said serrations and having relatively parallel spaced portions stretch across the frame, said member being of a material having sufficient rigidity to permanently retain said serrations independently of the action of said retainer means and said strings, the portions of said member between said serrations extending parallel with the said [member] *frame* a distance at least equal to the base of said serrations to space apart adjoining parallel portions of said strings accordingly.

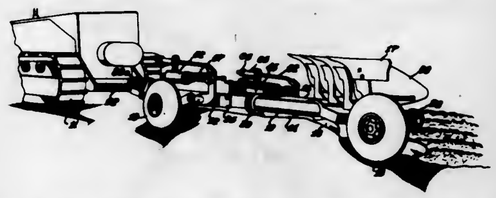
26,129

TWO WAY PLOW

Harry A. Pursche, 16813 S. Vermont Ave., Gardena, Calif. 90247

Original No. 2,625,090, dated Jan. 13, 1953, Ser. No. 760,846, July 14, 1947. Application for reissue July 11, 1962, Ser. No. 211,930

28 Claims. (Cl. 172—286)



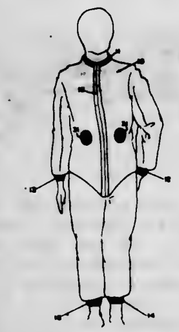
1. In a two-way plow assembly, the combination of a mobile frame, a carrier mounted *to turn* on the frame [and provided with a right hand plow and a left hand plow, means on the frame adapted to turn the carrier] about an axis extending longitudinally of the frame, *a set of right hand plows and a set of left hand plows fixed on said carrier on opposite sides of said axis, means including hydraulic turning mechanism operatively interposed between said frame and said carrier to turn the carrier about said axis independently of either simultaneous forward movement or simultaneous lifting movement of said frame* to bring either [plow] *set of plows* into operative position, and a single supporting wheel on the carrier laterally offset from said axis to roll on unplowed ground when either [plow] *set of plows* is in operation.

PATENTS

GRANTED DECEMBER 20, 1966

GENERAL AND MECHANICAL

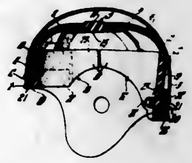
3,292,179
PROTECTIVE GARMENT
Vincent D. Iacono, Jr., Branford, and Leo A. Spano, Cumberland Hill, R.I., assignors to the United States of America as represented by the Secretary of the Army
Filed May 19, 1964, Ser. No. 368,721
8 Claims. (Cl. 2—2)



1. A unitary, multi-layer, impermeable protective garment adapted to inclose the torso, arms and legs of a wearer, with the arm and leg portions of said garment adapted to terminate at the wrists and ankles respectively of the wearer and the torso portion of said garment adapted to terminate at the neck of the wearer, and with means surrounding the neck, wrist and ankle openings of said garment which are adapted to form an air-tight seal about the neck, wrists and ankles of the wearer, said garment having an outer gas-impermeable covering, a gas-impermeable divider wall affixed to and spaced from said outer covering and adapted to be spaced from the body of the wearer forming an inner air passageway extending throughout said garment between said divider wall and the body of the wearer and an outer air passageway similarly extending throughout said garment between said divider wall and said outer covering, said inner and outer air passageways communicating at the wrist and ankle extremities of the garment, air inlet means communicating from the exterior of said garment to the inner air passageway, air exhaust means communicating from the outer air passageway to the exterior of said garment, whereby air is introduced under pressure through said air inlet means into said inner air passageway and caused to flow over the entire surface of the body of the wearer toward the ankle and wrist extremities and thence into the outer air passageway and caused to flow away from the extremities toward and out the air exhaust means.

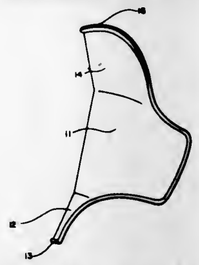
3,292,180
HELMET
Michael T. Mariotta, 5538 University Blvd., Dallas, Tex. 75206
Filed Dec. 15, 1964, Ser. No. 418,470
3 Claims. (Cl. 2—3)

1. A helmet, comprising, a one-piece outer shell having a lower rim adapted to extend over the forehead in the front and dropping in the rear to a point adjacent the back of the neck, suspension means including a top head harness assembly fixedly attached within said shell, front and rear mounting means of substantially rigid material anchored within said shell immediately adjacent the front and rear of said lower rim, head size regulating means removably connected to said mounting means, said regulating means comprising frontal and posterior cushion



elements releasably connected to said front and rear mounting means respectively and each including an outer backing layer of semi-flexible material co-extensively adhered to an inner layer of resilient padding adapted to engage the periphery of the wearer's head, and said cushion elements extending from said harness assembly to said lower rim in the front and rear of said shell.

3,292,181
ARMORED BODY SHIELD
Stephen J. Kennedy, Needham Heights, Edward R. Barron, Framingham, and Mildred K. Holly, Maynard, Mass., and Dale W. Buffington, San Francisco, Calif., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 4, 1964, Ser. No. 349,506
7 Claims. (Cl. 2—2.5)



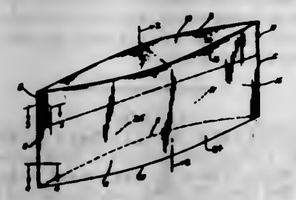
1. An armored shield to protect the torso of a seated wearer from small arms fire and other high velocity projectiles, said shield comprising
(1) a midsection adapted to cover the abdomen and sides of a wearer thereof,
(2) a lower section comprising a downward extension of said midsection, said lower section having sides inwardly tapered and thereby being adapted to extend downwardly between the thighs of a seated wearer and to have its base rest on the surface on which said wearer is seated,
(3) an upper section comprising an upward extension of said midsection and inclined outwardly therefrom, said upper section being adapted to substantially cover the chest of a wearer and to permit unrestricted movements of the head and neck of a wearer and,
(4) fastening means attached to said shield and adapted to hold said shield in place in front of said wearer.

3,292,182
INBAND VISOR CAP
Walter E. Schwenker, 800 Redbud Lane, Wilmette, Ill. 60091
Filed Mar. 17, 1965, Ser. No. 440,504
11 Claims. (Cl. 2—173)



1. A cap and face mask combination, comprising a cap body of flexible but substantially unstretchable material having a lower edge generally extending along a single plane; said cap body having side, front, rear and top portions adapted to extend over the temple, forehead, rear and crown areas of a wearer's head; and an inband secured to said cap body along the side and rear lower edge portions thereof; said inband being foldable between a raised position disposed within said cap against the inside surfaces of said side and rear portions and a lowered position extending downwardly from the lower edges of said side and rear portions; said inband when in lowered position being adapted to cover the ears and lower rear head portion of a wearer and having leading edges being adapted to extend on opposite sides of a wearer's face between his eyes and temples; and a stretchable, porous, horizontally elongated face mask stretchable in both longitudinal and transverse directions, said mask having free upper and lower longitudinal edges and being secured only at its ends to the inband adjacent said leading edges thereof; the longitudinal dimensions of said face mask in an unstretched state being substantially the same as the circumferential distance along the inside of the cap body's front portion between the leading edges of the raised inband; whereby, when said inband is lowered, said face mask may be stretched downwardly away from the cap body and over the lower portion of a wearer's face to protect the wearer and to hold the cap body and the lowered inband in snug engagement with the wearer's head.

3,292,183
HEAD COVERING
Milton Story, 232 Knickerbocker Ave., Hillsdale, N.J. 07642
Filed Dec. 30, 1964, Ser. No. 422,351
1 Claim. (Cl. 2—200)



An expandable stitchless end edge heat sealed thermoplastic film cap formed into a single integral elongated folded rectangular sheet of thermoplastic synthetic film folded upon a central fold line longitudinally of said sheet, said fold line defining front and rear sections and an intermediate section therebetween, said intermediate section extending to a depth generally one-third of the height of the cap, heat-sealing means provided along the length of the opposite side edges of said cap, said heat sealing means securing the side edges said front, rear and intermediate sections together on both ends of the cap forming a four ply sealed thickness at the upper end edges of the front, rear and intermediate sections and a double seal thickness along the remaining side end edges of said cap.

3,292,184
ADJUSTABLE WAISTBAND FOR GARMENTS
Robert F. Anderson, 825 Wisconsin Ave., Racine, Wis.
Filed Aug. 19, 1964, Ser. No. 390,663
1 Claim. (Cl. 2—221)

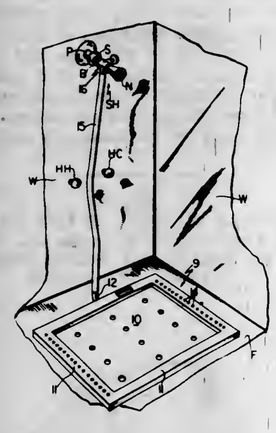


An adjustable band in a garment having a body portion, said garment comprising a rear portion and a front portion including an opening, said body portion terminating in a continuous upper peripheral edge extending around said body portion and terminating adjacent said opening, said band comprising in combination a belt of a continuous length of material extending about said peripheral edge, said belt being folded longitudinally to have an inner and an outer layer defining a space therebetween, said rear portion of said peripheral edge being positioned in said space intermediate said layers, means securing said layers to said rear portion of the peripheral edge, said belt terminating forwardly at both ends in tongues mutually overlapping at said front portion, said tongues being free of said peripheral edge forwardly from opposed points on said edge, a pair of sleeves, means securing each of said sleeves to substantially the entire peripheral edge of said front portion, one of said sleeves freely surrounding each of said tongues, each of said sleeves defining a peripheral gap therebetween and terminating at a position spaced peripherally and forwardly from said points, and mutual means to secure said tongue together in said overlapped relationship within said gap.

3,292,185
BATH MAT SHOWER MEANS
Armine N. Lucian, P.O. Box 300, Manasquan, N.J. 08736
Filed Dec. 1, 1964, Ser. No. 415,882
15 Claims. (Cl. 4—145)

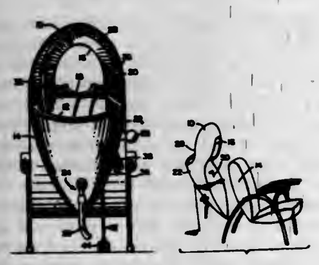
1. A bath mat comprising a base constructed to rest securely on a supporting surface and to provide safe footing for a person when standing on the base, tubular means on said base having an inlet and being formed with a row

of apertures arranged for directing sprays of water upwardly and directly against the body of the person standing on said base, and an associated controlled conduit



means having a first end connected to said inlet and having a second end for connection to a source of water under pressure.

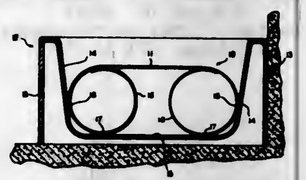
3,292,186
HAIR WASHING AND TINTING UNIT
Bernard A. Turmenne, 407 Montello St., and Paul A. Raiche, 225 Webster St., both of Lewiston, Maine 04240
Filed June 29, 1964, Ser. No. 378,776
9 Claims. (Cl. 4—159)



1. A hair washing and tinting unit comprising a casing having a hood portion and a sink portion, means providing a water spray within the hood, means supporting the casing relative to the back of a chair, said hood portion having a front opening arranged to support within the hood the head of a person seated in the chair, and a back opening providing access for the operator to work on the person's hair.

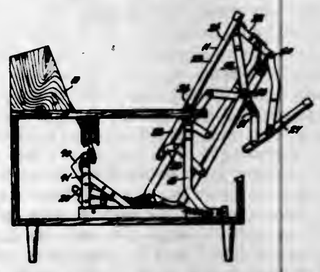
3,292,187
ADJUSTABLE SEAT
Edward T. Bender, 2483 S. Delaware, Milwaukee, Wis. 53207
Filed June 15, 1964, Ser. No. 375,018
6 Claims. (Cl. 4—185)

1. An improved adjustable seat that can provide resilient support in tubs of various widths, comprising: a band of resilient pliable material, a radial formation at each end of said band formed by winding each of the ends of said band to a position where the width of said seat equals the tub it is to be inserted in, whereby said adjustable seat can be inserted in said tub and the radial



formations assume an oval contour by closely contacting the sides of a tub when weight is exerted on said resilient pliable material.

3,292,188
CHESTERFIELD BED MECHANISMS AND LOCKING MEANS THEREFOR
William Valentine Gerth, Kitchener, Ontario, Canada, assignor to Waterloo Spring Company Limited, Kitchener, Ontario, Canada
Filed Nov. 30, 1964, Ser. No. 414,617
17 Claims. (Cl. 5—13)

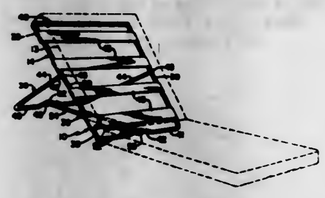


1. In a chesterfield bed mechanism consisting of a multi-section foldable-frame and a frame supporting structure, a head locking assembly for use in combination with at least one of the pair of main support levers operatively and pivotally interconnecting said frame and an associated chesterfield frame, said locking assembly comprising a bell-crank and tension-arm, said tension-arm being pivotally connected to said bell-crank, said bell-crank comprising a locking arm and an operating arm, and being pivoted for rotation in a vertical plane on at least one side of said folding-frame with its interior angle inferior, said operating assembly, as considered in the bed position of said folding-frame intersecting said lever, said bell-crank being pivoted as aforesaid on the head side of the point at which said lever is operatively connected to said folding-frame, the said pivot points of said bell-crank and lever which are operatively connected with said folding-frame being in substantially the same vertical plane, said tension-arm lying substantially horizontal, and extending from its point of connection to said operating arm toward the foot of said folding-frame, the distal end of said locking arm being angulated, and bearing downwardly against said lever, and thereby creating a bound system as to that part of said folding-frame which is on the head side of the connecting points of said levers thereto against downward effort applied to said headside.

3,292,189
ADJUSTABLE RECLINING LOUNGE
John F. Parker and Barbara J. Parker, both of 7001 S. Willow St., Englewood, Colo.
Filed Dec. 28, 1964, Ser. No. 421,415
9 Claims. (Cl. 5—327)

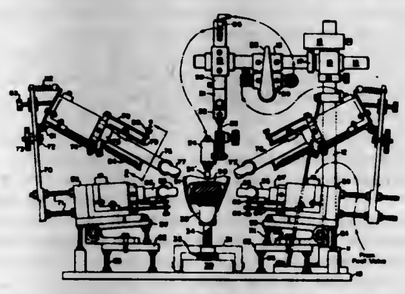
1. A lounge chair comprising a seat cushion and a back rest cushion connected in hinged together relation, and a back supporting frame assembly for said back rest cushion

comprising a main frame member secured to the rear surface of said back rest cushion, a brace member pivotally connected to said main frame member and terminating in a lower supporting end portion, a telescoping adjustable locking member extending intermediately between the lower supporting end portion of said brace member and the lower end of said frame member to provide for angular adjustment of said main frame mem-



ber between a substantially upright and a reclined position, said adjustable locking means and said brace member being collapsible into coextensive relation with said main frame member along the rear surface of said back rest cushion in the fully reclined position, and said seat cushion being foldable over said frame assembly with said frame assembly retained in collapsed relation between said seat cushion and back rest cushion.

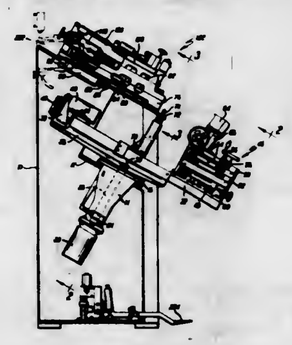
3,292,190
PROCESS OF LASTING TACKLESS SHOES
Verne L. Knoeland, 3 Smith Ave., Manchester, N.H.
Filed Dec. 27, 1963, Ser. No. 333,953
5 Claims. (Cl. 12—145)



1. A shoemaking process employing a tackless insole and characterized by the steps of supporting a last in inverted position with an upper assembled thereon, clamping the upper to the sides of the last while leaving the last bottom exposed, slipping an imperforate insole into position on the exposed last bottom, pressing the insole by external hold downs against the last bottom and thereby fixing its position thereon, and cement-lasting the upper to the insole while the latter is held in position by the hold downs.

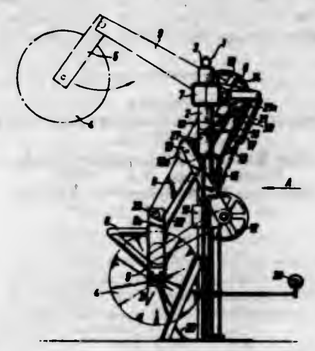
3,292,191
APPLICATION OF CEMENT TO A SHOE UPPER
Jacob S. Kamberian, 70 Crestwood Road, West Newton, Mass. 02165
Filed May 11, 1964, Ser. No. 366,494
27 Claims. (Cl. 12—145)

1. A method of applying cement to a selected portion of the margin of a shoe upper preparatory to wiping said margin against the corresponding portion of a shoe insole comprising: providing a shoe assembly that includes a last having the upper mounted thereon; supporting the shoe assembly with said margin portion extending away from the shoe assembly bottom; moving an applicator



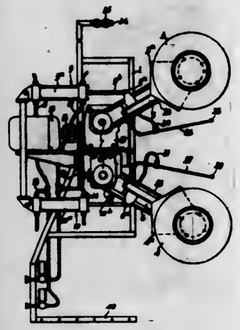
against said margin portion; thereafter extruding cement from said applicator against said margin portion; and thereafter moving the applicator away from the shoe assembly bottom along said margin portion to spread the cement along said margin portion.

3,292,192
VEHICLE CLEANING APPLIANCE
Eustace Maxwell, Edinburgh, Scotland, assignor to 4-Minute Car Wash Company Limited, Edinburgh, Scotland, a British company
Filed Aug. 10, 1965, Ser. No. 478,542
Claims priority, application Great Britain, Aug. 11, 1964, 32,583/64; June 21, 1965, 26,874/65
10 Claims. (Cl. 15—21)



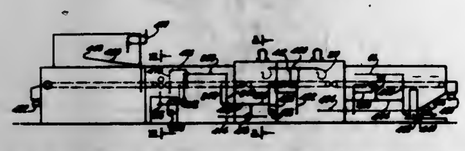
1. A vehicle cleaning appliance comprising stand means, a vehicle-engaging cleaning member, a first support means movably mounted on the stand means, a second support means pivotally mounted about a horizontal axis on the first support means and supporting the vehicle-engaging member so that it lies substantially horizontally across the path of a vehicle passing the stand means and motive means coupled to said support means and responsive to contact pressure between the member and a vehicle, whereby said member rises and falls to follow closely the contour of the vehicle during relative motion between the vehicle and the stand means.

3,292,193
DEVICE FOR USE IN CLEANING WINDOWS OR THE LIKE
Garrick Lewis Little, Forest Hill Road, Henderson R.D. 1, Auckland, New Zealand
Filed Mar. 22, 1965, Ser. No. 441,740
10 Claims. (Cl. 15—50)



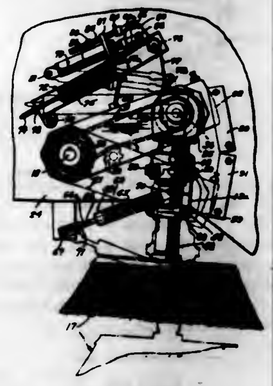
1. An apparatus for cleaning windows and the like in the vertical wall of a building structure, including frame means adapted to be moved over the vertical wall, upper and lower horizontally extending shafts turnably mounted in the frame means, an arm pivotally mounted at one end on each of the shafts, upper and lower cylindrical brushes, means rotatably mounting each brush on an arm, a prime mover on the frame means, drive connections between the prime mover and the upper and lower shafts, additional drive connections between the upper and lower shafts and the means rotatably mounting the upper and lower brushes on the arms, means for spraying water carried by the frame means and located between the upper and lower brushes, and hoist ropes adapted to be fixed to the building structure and operably connected to the prime mover whereby upon activation of the prime mover, the hoist ropes move the frame means over the vertical wall while simultaneously the upper and lower brushes are rotated via the drive and additional drive connections with the water spraying means directing water onto the vertical wall.

3,292,194
MACHINE FOR CLEANSING SHEETS OF MATERIAL
Max Randall, 525 Longview Road, South Orange, N.J. 07079
Filed Sept. 9, 1965, Ser. No. 485,986
16 Claims. (Cl. 15—77)



1. In a sheet cleaning machine, an initial washing station including spray means for spraying a liquid solvent on the sheets passing through said washing station, a scrubbing station including brush means for brushing the upper surface of sheets passing throug said brushing station, and conveyor means for transporting the sheets through the machine in substantially a horizontal plane, said conveyor means including a plurality of transversely spaced fabric belts adapted to receive the wet sheets across adjacent ones of said plurality of belts to carry the wet sheets through said scrubbing station, the said belts being formed of a material which will provide adhesion between the said belts and the said plates whereby the sheets adhere to said adjacent ones of said plurality of fabric belts, means associated with said conveyor means to break the adhesion between said belts and said sheets whereby the sheets may be easily removed therefrom.

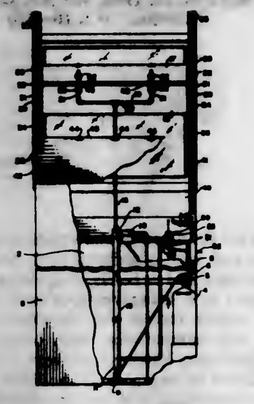
3,292,195
STREET SWEEPING MACHINE
Robert F. Schmidt, Elgin, and Henry A. Leidecker, Wheaton, Ill., assignors to Elgin Sweeper Company, Elgin, Ill., a corporation of Delaware
Filed Aug. 6, 1964, Ser. No. 387,965
15 Claims. (Cl. 15—87)



3. In a street sweeping machine,
a driven shaft,
a side broom,
means coupling said side broom wth said driven shaft,
a first pivot means supporting said side broom for back and forth longitudinal swinging movement and a second pivot means supporting said side broom for in and out transverse swinging movement,
yieldable means for maintaining said side broom in a given sweeping position and for permitting the side broom to swing longitudinally back and forth on said pivot means in line with the path of travel of the machine to clear a fixed abutment and for returning the side broom to said given sweeping position,
yieldable means for maintaining said side broom in said sweeping position and for permitting the side broom to swing transversely in and out on said pivot means and for returning said side broom to said given position when the side broom is moved after striking a curb and the like, and
means for moving the side broom vertically in a substantially straight line into and out of said sweeping position.

3,292,196
AUTOMATIC WINDOW WASHER DEVICES
Betty I. Windsor, Cincinnati, Ohio
(17434 Five Points, Detroit, Mich. 48240)
Filed June 22, 1964, Ser. No. 376,756
10 Claims. (Cl. 15—103)

1. A cleaning device for a window pane comprising an hydraulically actuated means, limit switch means adapted to automatically move said hydraulically actuated means through a continuous upward and downward movement; a sponge in contact with pane during said upward and downward stroke of said hydraulically actuated means on a support means movably supported on said hydraulically actuated means adapted to reciprocate perpendicularly to said hydraulically actuated means and a squeegee adapted to be held from contact with said pane during the upward stroke and in contact with said pane during the downward stroke of said hydraulically actuated means having support means movably supported on said hydraulically actuated means adapted to reciprocate perpendicularly to said hydraulically actuated means and



window pane and parallel to said sponge support means during an up stroke and a down stroke of said hydraulically actuated means.

3,292,197
PIPE LINE SCRAPER WITH MAGNETIC PICKUP MEANS
James R. Stephens, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,181
12 Claims. (Cl. 15—104.06)

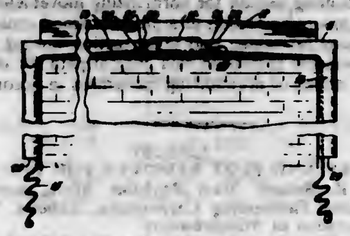


1. A pipe line scraper comprising:
(a) a shaft having a leading end and a trailing end;
(b) a plurality of cups centrally mounted transversely to said shaft and longitudinally spaced thereon;
(c) scraper means carried by said shaft between said cups; and
(d) magnet means carried by the trailing end of said shaft between the end of the trailing end of said shaft and said cups for attracting and holding iron particles, said magnet means being positioned and shaped such that the iron particles cannot accumulate between said magnet means and a pipe through which the pipe line scraper is being moved.

3,292,198
DEVICE FOR CLEARING GUTTERS
Steven E. Portel, 211 N. Lake Drive, Lakewood, N.J. 08701
Filed Oct. 13, 1965, Ser. No. 495,402
10 Claims. (Cl. 15—104.16)

1. A gutter clearing device comprising:
a cylindrical body having truncated ends of closed construction,
each of said ends being truncated in a direction opposite to the other end, said truncated ends each defining a sloped plow-like end surface,

sling means for attachment to said truncated ends of said cylinder, and



engaging means for securing said sling means to said truncated ends of said cylinder.

3,292,199
PLASTIC PAINT BRUSH IMPROVEMENTS
Jeremiah Lauriale, New Providence, N.J., assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware
Filed July 27, 1965, Ser. No. 475,132
6 Claims. (Cl. 15—193)



1. In brush construction, a handle member molded of synthetic plastic material having an elongated hand grip portion terminating in a peripheral laterally outwardly flaring base, a hollow sleeve extending longitudinally outwardly from said base and terminating in an outer free end portion, bristles adhesively bound together adjacent one end in an adhesive mass and extending longitudinally outwardly of said sleeve, a plurality of holes extending laterally through said sleeve end portion for effecting interlocking engagement between said sleeve and said adhesive mass, said holes forming a larger opening at the exterior surface of said sleeve than at the interior surface, and a tubular ferrule tightly engaged about said sleeve in surface contact with said end portion and extending longitudinally outwardly thereof so as to encircle said bound end of said bristles.

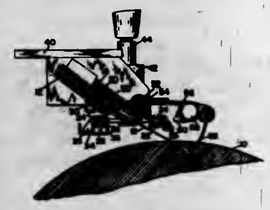
3,292,200
WINDSHIELD CLEANER
Anthony C. Scinta, Riverdale, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Jan. 16, 1964, Ser. No. 338,180
16 Claims. (Cl. 15—250.36)



3. An oscillatory windshield wiper actuating arm adapted for use on curved window surfaces comprising, an arm structure having a mounting section adapted for con-

nection to a drive shaft with said arm structure extending generally radially thereof and another section carried by said mounting section for normalizing movement relative to said mounting section in a predetermined conical path, and means for urging said other section toward an associated window surface in said conical path for determining the extent of normalizing movement in accord therewith.

3,292,201
BROKE AND FUZZ REMOVER FOR DOCTORS
Roger E. Bedard, West Boylston, Mass., assignor to Lodding Engineering Corporation, Auburn, Mass., a corporation of Massachusetts
Filed Mar. 26, 1965, Ser. No. 442,963
9 Claims. (Cl. 15—308)



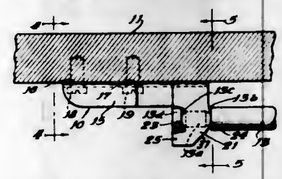
1. A broke and fuzz remover for a doctor blade including a supporting doctor back and a doctor blade holder mounted on the doctor back, said remover comprising a pair of plates, one of which is mounted at one side of the doctor blade and the other at the opposite side thereof, each plate including a track, one forwardly of the doctor blade as respects the surface to be doctored, and the other to the rear of the doctor blade, a continuous driven element in the track, and paddles on the continuous driven element, said paddles traveling in general along said doctor blade in close association with the doctoring edge thereof and along the length of the doctor blade from one side of the doctored surface to the other.

3,292,202
MANICURE DEVICE
George P. Cochran, P.O. Box 2496, Birmingham, Ala. 35201
Filed Oct. 3, 1963, Ser. No. 313,639
2 Claims. (Cl. 15—610)



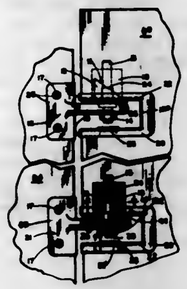
1. A maincure device comprising:
(a) a housing having a smooth, generally cylindrical inner portion adjacent an open end thereof of a size to reecive the end of a finger and having a threaded opening at the other end thereof,
(b) a threaded sleeve in threaded engagement with said threaded opening to vary the axial position of said sleeve relative to said housing,
(c) an actuating member mounted for rotation in said sleeve, and
(d) a brush mounted on said actuating member within the cylindrical inner portion of said housing and having bristles extending toward said open end in position to engage the end of a finger positioned within said cylindrical portion.

3,292,203
DOOR BRACKET
Elbert M. Spencer, Wildwood, Ill., assignor to Illinois Lock Company, a corporation of Illinois
Filed Feb. 10, 1964, Ser. No. 343,758
5 Claims. (Cl. 16—66)



1. A bracket for a piston and cylinder door closer having a piston rod with a reduced neck portion defining a pair of shoulders and a head, comprising: a leg portion fixedly secured to a swingable door and a pair of spaced apart arms which receive the reduced neck portion of said piston rod therebetween, each of said arms having a pair of oppositely directed convexly rounded bearing surfaces adapted to engage said shoulders and means on said arms for retaining said rod therebetween.

3,292,204
DOOR AND HINGE COMBINATION
John P. Tansey, Dunedin, Fla., assignor to The Tansey Company, Pinellas, Fla., a corporation of Florida
Filed Feb. 5, 1964, Ser. No. 342,759
5 Claims. (Cl. 16—153)



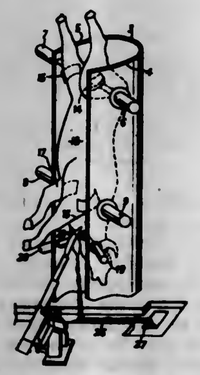
1. In combination, a door and hinges therefor,
said door having vertically spaced notches adjacent its rear edge,
means on said door defining an upper opening at the top side of each said notch,
means defining a lower opening aligned with said upper opening,
a female cam extending into said upper opening,
said female cam having a hollow cavity therein,
a downwardly facing cam surface in said cavity,
a male cam having a generally cylindrical portion terminating at its upper end in an upwardly facing cam surface disposed in said cavity,
said cam surfaces engaging each other,
hinge members having means thereon for attaching them to a pilaster,
said hinge members extending into said notches,
and a star shaped counterbore in the top of each said hinge member,
said male cam having a lower end having a noncircular shape disposed in each said star shaped counterbore holding said male cam against rotation and permitting said female cam to be selectively positioned to adjust the position at which said door is closed.

3,292,205
COMBINED SLAUGHTERING AND BLOOD EXTRACTION DEVICE
Luis Rizzi, 1584 Tucuman St., Buenos Aires, Argentina
Filed June 17, 1964, Ser. No. 375,759
14 Claims. (Cl. 17—1)



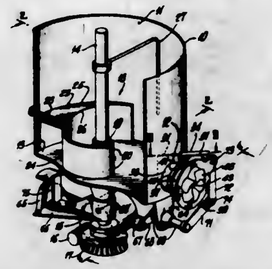
1. A combined slaughtering and blood extracting device, comprising a tubular member having a first open end and a second open end, a vein cutting blade mounted on said first open end and projecting away therefrom, anchoring means for anchoring said tubular member within a cut throat of an animal under slaughter procedure, said anchoring means comprising angularly spaced wedge-shaped brackets on said tubular member adjacent said first open end, said wedge-shaped brackets having wedging points directed towards said first open end and anchoring members pivotally supported by said wedge-shaped brackets and adapted to be housed within and projecting out of said wedge-shaped brackets, means for position controlling said anchoring members, and said second open end being connectable to a suction source.

3,292,206
SLAUGHTERING APPARATUS
Georges Aubert, 6 Rue Pierre Dupre, Marseille, France
Filed Feb. 10, 1965, Ser. No. 431,529
Claims priority, application France, Feb. 10, 1964, 20,462, Patent 1,382,677
2 Claims. (Cl. 17—1)



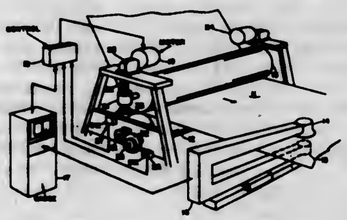
1. Apparatus for the mechanized bleeding of slaughtered animals in abattoirs, comprising a casing to receive the carcass, means on said casing to engage with and hold the carcass in head-down position therein, opposed suction devices movably mounted in the casing at a position corresponding to the throat of the carcass and adapted to grip and stretch the skin of the carcass at the throat, and a power-operated knife positioned to reciprocate in the casing at the position of the throat of the carcass.

3,292,207
MACHINE FOR AUTOMATICALLY MAKING MEATBALLS AND THE LIKE
James E. Herrick, 24 Ocean Drive W., Stamford, Conn. 06902
Filed June 8, 1964, Ser. No. 373,470
17 Claims. (Cl. 17—32)



16. In an apparatus for forming spherical food patties comprising extrusion means for extruding food through a round orifice whose diameter is cyclically varied from a small value to a maximum value and back to a small value, means for cyclically varying the pressure applied to said food at said exit orifice from a low value to a maximum value and back to a low value in synchronism with the variation of said orifice diameter, whereby the pressure of the meat varies internally of the food patty.

3,292,208
PROCESS CONTROL SYSTEM
John G. Wood, Hingham, Mass., assignor to Laboratory For Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 317,011
6 Claims. (Cl. 18—2)



1. A control system for a process wherein a mechanically movable element is used to vary a characteristic of the product, said control system comprising means to measure the product characteristic to be controlled, means to generate a first train of pulses having a count determined by the measure of the characteirstic relative to a predetermined measure, means to displace the movable element so as to vary the characteristic when the actual measure differs from said predetermined measure, means to generate a second train of pulses having a count representing the displacement of said movable element, and means to disable said means for displacing the movable element when a predetermined numerical relation

exists between the first and second counts, said means to disable the displacing means including a counter responsive to the difference between the first and second counts.

3,292,209
LABELING APPARATUS
Frank Frederick Buchanan, Union, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 10, 1963, Ser. No. 329,435
4 Claims. (Cl. 18—5)



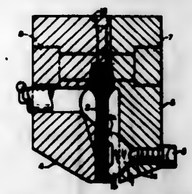
1. Apparatus for conveying a label from a label supplying means to the interior surface of a section of an open blow mold so that the label thereafter may be affixed to a container as it is blown from a parison within the blow mold when the latter is in a closed position comprising:
a stationary supporting frame,
an actuating cylinder held in a fixed position by said frame,
a piston slideably mounted in said cylider and having a piston rod,
support means pivotally connected with said piston rod,
rotating means to rotate said support means with respect to said piston rod,
a label supporting plate having a label supporting surface of a shape corresponding to that of said section of said blow mold,
vacuum means in communication with said label supporting surface for selectively retaining thereon a label received from said supplying means,
a plurality of links pivotally connected to said support means and said label supporting plate,
means to rotate said links to move said label supporting plate away from said support means,
whereby said actuating cylinder is actuated to withdraw said support means from said blow mold, and thereafter said rotating means rotates said support means so that said label supporting plate is in close proximity with said label supplying means, and thereafter said vacuum means is actuated to retain on said label supporting surface a label supplied by said label supplying means, and thereafter said rotating means is rotated to move said means away from said label supplying means, and thereafter said actuating cylinder is actuated to move said support means and said label supporting plate in the direction of the longitudinal axis of said blow mold and into said blow mold and thereafter actuating said means to rotate said links to move said label supporting plate away from said support means to place said label against said section of said open blow mold, and then deactivating said vacuum means to allow said label to be retained of said surface of said blow mold, and then actuating said means to rotate said links to move said label supporting plate away from said surface of said blow mold, and then actuating said cylinder to withdraw in the direction of the longitudinal axis of said blow mold the support means and said label supporting plate from said blow mold.

3,292,210
CONTINUOUS SPINNING FRAME FOR THE WET-SPINNING OF ARTIFICIAL YARNS, IN PARTICULAR VISCOSE RAYON
Giacinto Diotti, Milan, Italy, assignor to Finotti e Brevetti Applicazioni Tessili S.R.L., Milan, Italy, a company of Italy
Filed July 22, 1964, Ser. No. 384,309
Claims priority, application Italy, July 26, 1963, Patent 703,414
10 Claims. (Cl. 18—8)



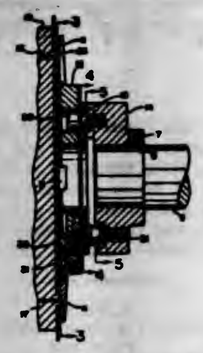
1. Apparatus for wet-spinning artificial yarns, comprising spinneret means for substantially vertically and downwardly extruding viscose, coagulating liquid bath container means surrounding said spinneret means and in which said spinneret means is immersed, a first vertical tubular duct co-axial to said spinneret means and having its upper end connected to the bottom of said container and having a throat connected to its lower end to control the flow rate of the liquid flowing downwardly through said duct and frictionally guiding the extruded viscose filament, a substantially horizontal second tubular duct having an inlet end connected to said lower end of said first duct and a liquid exhaust passage and second filament guide means at its outlet end, discharge duct means connected to said outlet end to exhaust said flowing liquid, and a vertical tubular passageway having its lower end located above said second guide means and having a closed connection therewith to receive and conduct the filament upwardly, and collecting means disposed to cause upward travel of the filament in said passageway and to collect the upwardly traveling filament while the said flowing liquid is exhausted through said discharge duct means.

3,292,211
SELF-ADJUSTING EXTRUSION DIE
Charles A. Strange, 2 Rock Road, Morningside, Milford, Conn.
Filed May 27, 1963, Ser. No. 283,511
9 Claims. (Cl. 18—12)



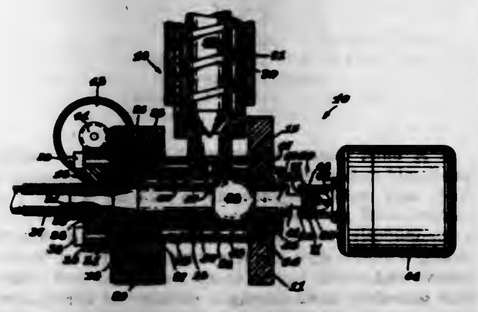
1. A die for extruding a viscous melt in sheet form, said die including a chamber having an outlet passage therefrom, the outlet passage being an elongated slot, the width of which extends lengthwise of the chamber, walls forming a top and bottom of the outlet passage and terminating in lips at the discharge end of the passage, at least one of the passage walls being movable with respect to the other to adjust the spacing of the lips from one another and the resulting thickness of the extruded sheet, means for applying force to the movable wall near the lip end of the movable wall of the passage and in a direction to move the lips closer together, said means including a force-transmitting operative connection connected with a part of a wall of the chamber that is exposed to pressure of the viscous melt in the chamber, said force-transmitting connection being constructed and arranged to move the lips closer together in response to increase in pressure in the chamber.

3,292,212
PELLETING APPARATUS
Anthony W. Pemper, New Market, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 27, 1964, Ser. No. 370,618
8 Claims. (Cl. 18—12)



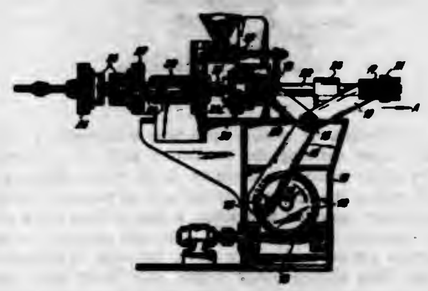
1. In a pellet cutting apparatus having a rotating pellet cutting blade support mounted on a shaft to rotate therewith and operating relative a cutting face comprising, a blade holder, a resilient plate to which said blade holder is secured, said plate biasing said blade holder to said cutting face, and means on said shaft supporting said plate.

3,292,213
TUBE EXTRUSION APPARATUS
Harold Jack Donald, Midland, and Walter H. West, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 23, 1964, Ser. No. 398,541
6 Claims. (Cl. 18—14)



1. An extrusion apparatus comprising
an extrusion head, the extrusion head comprising a housing defining a generally cylindrical cavity, the cavity having a longitudinal axis,
the housing having a first end and a second end, the cavity terminating in a generally cylindrical opening adjacent the first end of the housing, the housing defining
an extrude passageway intermediate between the first and second ends and in communication with the cavity,
a mandrel of a generally cylindrical configuration disposed within the cavity, the mandrel terminating adjacent the first end of the housing and in cooperative combination with the housing defining an annular extrusion orifice having an axis of generation, the mandrel supported within the housing by
a bearing means at the second end of the housing, the bearing means so constructed and arranged so as to permit pivoting of the portion of the mandrel adjacent the first end of the housing in a generally radial direction relative to the axis of generation,
an extruder adapted to supply a heat plastified thermoplastic resinous material in communication with the first end of the cavity, and
means to rotate the mandrel.

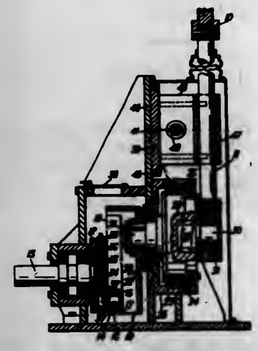
3,292,214
DIE-CASTING MACHINE WITH BELL CRANK DRIVE
Werner Battenfeld and Siegfried Schindler, Meinerzhagen, Germany, assignors to Firma Gebruder Battenfeld, Meinerzhagen, Germany, a corporation of Germany
Filed Mar. 17, 1964, Ser. No. 352,519
Claims priority, application Germany, Mar. 25, 1963, B 71,200
2 Claims. (Cl. 18—30)



1. A die-casting machine for the working of thermoplastic artificial material comprising
a frame,
a crank-drive including a connecting rod mounted in said frame,
two pairs of bell-cranks of different lengths pivotally connected at a center pivot with the free end of said connecting rod,
said crank drive constituting the sole drive for the closing and opening movement of a mold as well as for the working stroke and the return stroke of a feeding-piston,
a cross-traverse pivotally connected with the longer one of said pairs of bell-cranks,
two longerons connected by said cross-traverse and carrying a mold carrying plate,
a piston carrier plate having a piston reciprocating therein and pivoted to the shorter of said pairs of bell-cranks,
a pressure pillow built into said piston carrier plate and retarding the axial movement of said piston, so that the die-casting mold is rigidly locked, prior to the termination of the movement of said piston,
all three bearings of said pairs of bell-cranks are movably disposed relative to said drive, and
at the start of the mold-closing movement the driving connecting rod and the longer of said pairs of bell-cranks being disposed substantially in the same direction and exerting a pushing pressure upon the longer of said pairs of bell-cranks, while at the start of the mold opening movement said driving connecting rod and the shorter of said pairs of bell-cranks being

disposed substantially in the same direction and exerting a drawing effect upon the shorter of said pairs of bell-cranks.

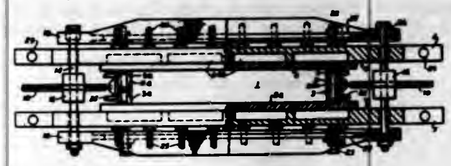
3,292,215
APPARATUS FOR LONGITUDINAL RECIPROCATION OF A MOLD FOR CONTINUOUS CASTING
Alan K. Taylor, Workington, Cumberland, England, and Alfred Turnovszky, Zurich, Switzerland, assignors to Concast AG., Zurich, Switzerland
Filed May 19, 1964, Ser. No. 368,482
4 Claims. (Cl. 22—57.2)



1. A continuous casting apparatus comprising a mold, guide means defining the oscillation path of said mold, rotary drive means, said rotary drive means being provided with a pin eccentric to the axis of rotation thereof, a pivotably mounted first lever, a first sliding block slidably mounted within said first lever and engaged by said eccentric pin on said rotary drive, the path of movement of said first sliding block within said lever being confined to and displaced to one side of the pivot point of said first lever to convert the rotary motion of said rotary drive transmitted through the eccentric pin engagement with said first sliding block to oscillatory motion of said pivoted first lever, said rotary drive containing means including a first threaded shaft engaging said pin for adjusting the eccentricity of said pin with respect to the axis of rotation of said drive and, thus, for adjusting the maximum velocity and amplitude of oscillation of said first lever about said pivot point, a second sliding block mounted in said first lever, a push rod pivotably coupled at one end thereof to said second sliding block, means including a second threaded shaft for changing the distance between said second sliding block and said pivot point of said first lever to change the amplitude of push rod oscillatory motion with respect to the amplitude of oscillation of said first lever, whereby both the maximum velocity and maximum displacement of the mold can be adjusted independently.

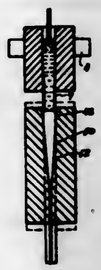
3,292,216
ADJUSTABLE MOLD FOR CONTINUOUS CASTING INSTALLATION
Enzo Colombo, Genova-Quinto, Italy, assignor to Concast AG., Zurich, Switzerland
Filed June 25, 1963, Ser. No. 290,521
2 Claims. (Cl. 22—57.2)

2. A continuous casting mold comprising a first and second side wall mold plate, a first and second frame member, said first and second side wall plate being respectively secured to said first and second frame member, each of said frame members having channels therein closed by said respective plate to define passages for cooling water flow, a first and second beam member positioned astraddle said mold and extending beyond the ends of said plates and frames, clamping means positioned at each end of said mold for clamping together the respective ends of said beams, a first and second end wall adjustably positioned between said side walls, and second clamping means adjustably positioned in said beams to apply clamp-



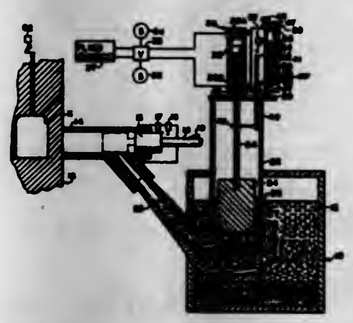
ing pressure to said frames to clamp said side walls into supporting engagement with said end walls, said second clamping means being positioned at the location of said end walls to avoid bending moments acting on the side walls, said first and second side wall mold plate being free to expand under the temperature of casting without relative motion between said side and end walls.

3,292,217
CONTINUOUS CASTING AND FORMING PROCESS
Arnold H. Boehm, 5629 Rand Ave., Cote Saint Luc-Montreal, Quebec, Canada
Original application Aug. 10, 1961, Ser. No. 131,056, now Patent No. 3,147,521, dated Sept. 8, 1964. Divided and this application Dec. 27, 1963, Ser. No. 333,891
4 Claims. (Cl. 22—57.2)



1. A billet casting arrangement comprising a casting mold, said casting mold having a mold shaft of rectangular form, said mold being adapted to cool the periphery of molten metal poured therein to solidify said material in a continuously issuing strand having a peripheral skin enclosing a molten core, and a secondary mold positioned to receive said strand and to crimp the skin of said strand, said secondary mold having a plurality of corrugations formed on the interior surface thereof, said corrugations extending along the axis of said strand and increasing in the depth of corrugation from the top to bottom of said mold, the spacing between said corrugations decreasing as they extend downwardly along said mold, said decrease in spacing of said corrugations being linearly related to the increase in corrugation depth so that said crimping of the skin of said strand is accomplished without change in the peripheral length of the skin thereby to form a plurality of billets of small cross sectional area attached together by said skin and maintained in side-by-side position.

3,292,218
AUTOMATIC METAL INJECTION SYSTEM
Joseph A. Kozma, Jr., Dearborn, Mich., assignor to J. A. Kozma Company, Dearborn, Mich., a corporation of Michigan
Filed Apr. 29 1965, Ser. No. 451,759
6 Claims. (Cl. 22—70)



1. A metal injection system for delivering molten metal from a furnace to a die casting machine or the like comprising,
(a) a reservoir member adapted to be carried in the furnace beneath the level of molten metal therein and having a chamber and intake ports communicating therewith,
(b) a piston axially reciprocally slidably carried in said chamber,
(c) a delivery tube connecting said chamber with the receiving chamber of the die casting machine or the like,
(d) means for axially moving said piston in said chamber from an initial position, and
(e) means associated with said piston and operable upon a selectively variable displacement of said piston from said initial position to render said moving means ineffective so that a selectively variable shot of molten metal is delivered from said reservoir to the receiving chamber of said machine.

3,292,219
MOLD FOR THE CENTRIFUGAL CASTING OF METAL CYLINDERS
Shungo Kawabata, Ashiya, Hyogo Prefecture, Japan, assignor of one-half to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed July 31, 1963, Ser. No. 298,864
4 Claims. (Cl. 22—113.5)



1. A sand cylinder for use in a centrifugal casting mold having a metal flask which is rotatable about the longitudinal axis thereof, said cylinder being made of a baked mixture of thermo-setting resin and silica sand and having a smooth accurate inner surface corresponding to the outer surface of the piece to be cast, and having a free outside surface spaced radially from the said inner surface with respect to the longitudinal axis thereof, and projection means on the outside surface thereof with the diameter of the sand cylinder measured across the extremities of said projection means being substantially the same as the inside diameter of the flask, whereby the sand cylinder can be inserted into the flask with the longitudinal axes thereof coaxial and a space will exist between the free outside surface of the sand cylinder and the inside surface of the flask.

3,292,220
METHOD OF MAKING SHELL MOULDS
Harold Garton Emblem, Grappenhall, and Earl Whiteway Fothergill, Liverpool, England, assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 5, 1963, Ser. No. 321,425
Claims priority, application Great Britain, Nov. 16, 1962, 43,526/62
10 Claims. (Cl. 22—196)

1. A method of making a shell mould which comprises applying to an expendable pattern alternately a coating of a gel forming acid-hydrolysed alkyl silicate solution and a coating of a quaternary ammonium silicate solution, at least one of the two solutions having refractory material suspended therein, the quaternary ammonium silicate solution acting to cause the gelation of the acid-hydrolysed solution.

3,292,221
CABLE CLAMPING DEVICE
Charles W. Baugh, St. Clair Shores, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 17, 1964, Ser. No. 397,189
1 Claim. (Cl. 24—123)



A two-part fastener comprising a hairpin shaped member having a pair of elongated substantially straight facing legs and having an open ring shaped pocket portion intermediate the ends, longitudinally extending grooves formed in the facing surfaces of said legs, transverse locking grooves formed on the exterior of said legs from positions adjacent the ends of said pocket toward the ends of said legs, and a tubular collar member receivable around said legs and adapted to be swaged into said locking grooves adjacent the ends of said pocket portion.

3,292,222
REVERSE TENSIONING LEVER DEVICE FOR JOINING TWO BORDERS TO BE UNITED
Adalberto S. Stolzberg, Via Francesco Ii 25, Milan, Italy
Filed May 6, 1965, Ser. No. 453,678
Claims priority, application Italy, Sept. 1, 1964, 18,810/64
3 Claims. (Cl. 24—68)



1. Tensioning and connecting device of the lever actuated type for joining together two bodies to be united, comprising a base member attached to one of said bodies having spaced shoulders projecting upwardly therefrom having on their inner faces grooves extending substantially perpendicular with respect to the base member, a lever having pins on opposite sides thereof engaging in

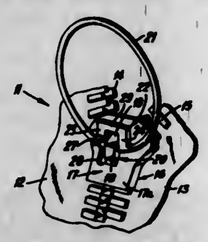
said grooves, said lever having side walls substantially parallel to and located between said shoulders, said pins extending from said side walls, a pivot carried by said side walls remote from said pins; a hook member connected to said pivot between said walls, said lever having a handle portion on the opposite side of said pins from said pivot, said hook member extending toward the other body, the other body having a member thereon engageable with said hook member.

3,292,223
INTEGRAL SNAP-ACTION CLIPS
Vincent J. Esposito, Jr., 31 Jackson Ave., Wayne, N.J. 07470
Filed Mar. 11, 1965, Ser. No. 438,997
12 Claims. (Cl. 24—137)



1. A clip of the character described comprising a closed integral ring structure sectionalized into a relatively rigid support section carrying opposite resilient arm sections each terminating in a foldable thin web portion, a pair of jaw sections, one extending from each web portion and connected to each other by a third foldable thin web portion, said jaw sections being selectively retained in open and closed positions by said resilient arm sections and being movable between said positions.

3,292,224
LOCK SLIDER FOR SLIDE FASTENERS
David Silberman, New York, N.Y., assignor, by mesne assignments, to Talon, Inc., a corporation of Pennsylvania
Filed Apr. 30, 1965, Ser. No. 452,249
5 Claims. (Cl. 24—205.14)



1. In a slide fastener including a pair of stringers having mutually interengageable rows of teeth, a slider mounted thereon for engaging and disengaging the same comprising;
an annular ring having a relatively large opening therethrough adapted to receive one or more fingers of the hand for manual application of a substantial pulling force thereto,
means arranged on the front wall of said slider to which said ring is pivotally attached,
said ring having a peripheral segment rotatably mounted in said first means whereby said ring is pivotally attached to said slider,
means arranged integral with the interior peripheral surface of said ring adjacent said peripheral segment and extending radially inwardly therefrom and around said first means for positioning and limiting the movement of said ring relative thereto, and
a locking pin mounted on said second means and positioned radially inwardly of said ring and laterally of said peripheral mounted segment thereof,
the forward wall of said slider having an opening therein through which the locking pin is adapted to project into engagement with the teeth within said slider when in locking position,
said second means being constructed and arranged so that it is adapted to abut the outer surface of the forward wall of said slider and the said first means to limit the movement of the ring relative to said slider.

3,292,225
EXPANSIBLE FASTENER DEVICE
Anthony J. Burnicki, Warson Woods, Mo., assignor to Prince Gardner Company, Inc., St. Louis, Mo., a corporation of Pennsylvania
Filed Sept. 3, 1963, Ser. No. 305,926
1 Claim. (Cl. 24—217)



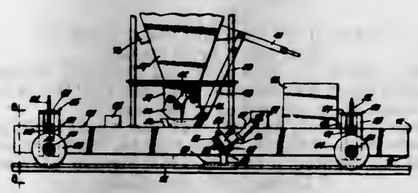
Means for fastening two panels together comprising
(A) two panels, the first panel having overlapping portions,
(B) a male snap member mounted on a flat base secured between overlapping portions of the first of said panels, and
(C) a female snap member mounted on the second of said panels, said female snap member including
(1) a one piece housing secured to said second panel, said housing being provided with an elongated slot and having a resilient track confined therein above the plane of the second panel, said track slidably receiving and retaining the male snap member,
(D) the male snap having an enlarged head connected to a necked-down portion, said head passing through the resilient track to retain the snap members in engaged position, and the necked-down portion being slidably received therein and being provided with grooves to grip the resilient track.

3,292,226
SNAP HOOKS
Harry G. Foster, 610 Mecum Ave., Mullens, W. Va. 25882
Filed Sept. 29, 1964, Ser. No. 399,987
8 Claims. (Cl. 24—239)



1. A snap hook comprising an elongated tubular housing having an open end, said housing having a pair of slots in a side thereof and spaced apart lengthwise of the housing, a hook member telescoped in the housing and having a hook on one end thereof, projecting from the open end, means mounting an end portion of the hook member completely within the housing for longitudinal and swinging movements relative to the housing, a thumb-engaging hook on one side of the hook member projecting through one of the slots and with a notch in a side thereof in position to receive an edge of the housing at one end of said slot, the hook being in position to enter the other slot and having a notch in an edge thereof in position to receive an edge of the housing at one end of said slot, and means spaced lengthwise of the housing on the opposite side of the mounting means from both slots and yieldably urging said end portion of the hook member in a longitudinal direction to engage the edge portions of the slots with the notches to close the snap hook.

3,292,227
MOLDING APPARATUS
Lee A. Olds, 6965 Clay St., Thompson, Ohio 44086
Filed May 18, 1965, Ser. No. 456,730
1 Claim. (Cl. 25—2)



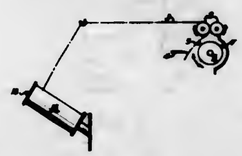
Apparatus for molding concrete mix and the like in extrudable manner, comprising a carriage movable along a pair of rails, an elongated mold box carried by said carriage so that its length is aligned with the path of said rails, said mold box having an open end and also being open at its bottom with the latter closed by a base surface which is disposed between said rails and extends along the path of said rails, a hopper carried by said carriage, said hopper having a movable bottom closure which when opened permits concrete mix to flow from said hopper to the interior of said mold box, a ram reciprocable lengthwise of and within said mold box, in one direction moving toward said open end to act on concrete mix inserted into said mold box for compacting mix within said mold box, a fluid cylinder for moving said ram, the latter being movable at least partially beyond the open bottom of said hopper, said ram having a tail which restricts concrete mix from dropping behind said ram, brake means carried by said carriage and having a brake shoe adapted to frictionally engage a rail, and a fluid cylinder for applying pressure to said brake means to press said brake shoe against said rail and to oppose movement of said carriage, whereby when the reactive force brought about by the force of the ram against the resistance of the compacted concrete mix overcomes the opposing force of said friction brake said carriage will be moved along said rails by said reactive force until the reactive force is diminished and overcome by the force of said friction brake, such carriage movement sliding said mold box along said base surface, and said molded concrete mix being extruded lengthwise on said base surface from the open end of said mold box during such movement of said carriage.

3,292,228
SPRAY METHOD FOR UNTWISTING WOVEN PILE FIBERS
Hope H. Tigner, Rte. 1, Box 105A, West Point, Ga.
Filed Sept. 30 1963, Ser. No. 312,653
3 Claims. (Cl. 26—2)



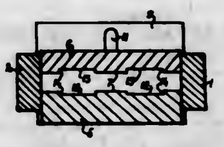
1. A continuous method for untwisting and separating twisted pile fibers produced by cutting fiber loops on one side of a woven textile corduroy-like cloth, comprising continuously advancing the cloth beneath a series of sprays and sequentially spraying a liquid under pressure onto the surface of the cloth against the untwisted fibers for a period of time at a temperature between 130° and 190° Farenheit and a pressure sufficient to untwist same to create even rows of untwisted pile.

3,292,229
MACHINE FOR STRIPPING CHENILLE CURLS FROM CORE THREADS
Petr Georgievich Sergeev, Leningrad, U.S.S.R., assignor to Tekhnoteksnaya Fabrika "Proletarsky Trud," Leningrad, Tsvetochnaya
Filed Feb. 13, 1964, Ser. No. 344,710
5 Claims. (Cl. 28—1)



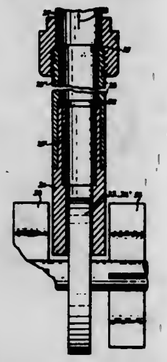
1. A machine for stripping chenille curls from core threads of a chenille material, said machine comprising: a frame; a drawing mechanism mounted upon said frame for the feeding of chenille material; means for driving said drawing mechanism; a reversibly rotating cylinder mounted on the said frame under said drawing mechanism; means for stripping the chenille curls, mounted on the aforementioned cylinder; and means for cutting the core threads also mounted on said cylinder.

3,292,230
STUFFING BOX CRIMPER
Miloslav Čech, Brno, Czechoslovakia, assignor to Elitex, Sdružení podniků textilního strojírenství, Liberec, Czechoslovakia
Filed Jan. 8, 1965, Ser. No. 426,201
Claims priority, application Czechoslovakia, Jan. 22, 1964, 36,064
5 Claims. (Cl. 28—1)



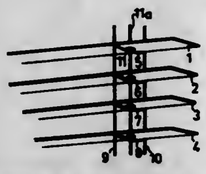
1. An apparatus for crimping fibrous tow, comprising a stuffing box including a pair of spaced opposed long walls and a pair of spaced opposed short walls defining a channel having an inlet end an outlet; elongated feed means located adjacent to said inlet extending in direction of said spaced opposed long walls for introducing the fibrous tow through said inlet at such rate of feed that the tow tends to accumulate and expand in all directions in said channel; yarn restraining means associated with said channel; and at least two grooves in one of said spaced opposed long walls extending in the direction from said inlet to said outlet of said channel and spaced from said spaced opposed short walls so as to impede expansion of said tow in said channel in direction towards said spaced opposed short walls, thereby preventing undesired pressure of said expanding tow against said short walls and thus reducing the friction between said short walls and said tow.

3,292,231
STUFFER CRIMPING APPARATUS
Hermann Epstein, 548 S. 11th St., Newark, N.J. 07103
Filed Nov. 4, 1964, Ser. No. 408,832
2 Claims. (Cl. 28—1)



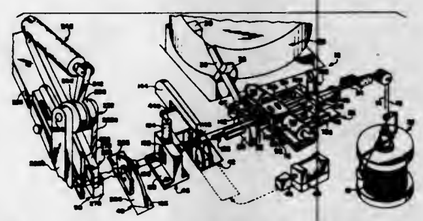
1. In an apparatus for the crimping of synthetic multifilament fibers, means forming a first substantially cylindrical surface presenting sufficient resistance to said fibers when pushed against it to cause their deformation, means for feeding said fibers upward in a direction substantially parallel to said surface to be deviated from said direction and pushed against said surface and means following said first surface and forming a second surface which is substantially softer than said first surface; said second surface being followed by means forming a third surface of substantially the same material as that of said second surface, but of a radial extension larger than that of said second surface, fourth means surrounding said third surface material with substantially the same material as that of said first surface material, said fourth means extending beyond said third surface material to overlap at least partially said first surface material, said second and third surface materials formed by self-lubricating plastic cylinders of different diameter, one arranged above the other, and said first and fourth surface materials formed by metal cylinders, one overlapping the other.

3,292,232
METHOD AND APPARATUS FOR ASSEMBLING VENETIAN BLINDS
Erik Gunnar Nilsson, Alsagatan 12E, Mjolby, Sweden
Filed Sept. 21, 1964, Ser. No. 397,705
Claims priority, application Sweden, Sept. 24, 1963, 10,424/63; Feb. 26, 1964, 2,341/64
9 Claims. (Cl. 29—24.5)



1. An apparatus for assembling Venetian blind slats in cord ladders with the lifting cord openings in the slats located adjacent the cross-cords supporting the slats and interconnecting the two side cords of the ladder, to form a plurality of slat receiving openings, comprising a frame, means for supporting a Venetian blind head member in a horizontal position and guiding the same for vertical movement, means for receiving and guiding a slat in a horizontal starting position when said slat is advanced in a horizontal path into two registering slat receiving openings of two ladders depending from said head member, means for raising said slat from its starting position to an upper position wherein said head supporting means engage said slat to support superposed slats and said head member, said raising means at each ladder being provided to displace the ladder alternately to either side of the aligned lifting cord openings of the assembled slats so as to enable a weaving of the lifting cord relative to said cross-cords when inserting the lifting cord through said lifting cord openings of the complete stack of assembled slats.

3,292,233
METHOD OF ASSEMBLING LEADS TO WOUND CAPACITORS
James G. Black, Jr., Springfield, and Charles C. Rayburn, Falls Church, Va., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Original application Apr. 13, 1961, Ser. No. 102,753, now Patent No. 3,117,364, dated Jan. 14, 1964. Divided and this application Oct. 22, 1963, Ser. No. 317,946
2 Claims. (Cl. 29—25.42)



1. The method of automatically assembling leads to wound capacitor blanks including the steps of dereeling wires and presenting the wires in spaced substantially parallel relation at an assembly station, placing between the spaced wires at said assembly station a capacitor blank of convolutely wound alternate layers of thermoplastic films and electrode foils in which the edges of said thermoplastic films extend beyond the edges of said electrode foils and constitute the ends of said capacitor blank, bringing current carrying electrodes into contact with each of said wires at points on each side of said capacitor blank and closely adjacent thereto, simultaneously passing electrical current through the portions of said wires between said points on each of said wires to heat said portions while laterally moving the heated portions toward each other, melting the thermoplastic ends of said capacitor blank with said heated wire portions, applying a force to each end of said capacitor blank to reduce the axial length of said blank while simultaneously embedding the wires in physical and electrical contact with a plurality of electrode foils within said capacitor blank, and severing the wires at points spaced away from the capacitor blank thereby forming a completed and discrete capacitor unit.

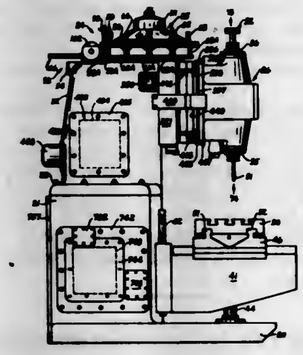
3,292,234
METHOD OF PRODUCING AN ELECTRICAL CAPACITOR
Margaret M. Layton, Corning, Robert B. Ramsdale, Painted Post, and George F. Stockdale, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Original application May 5, 1959, Ser. No. 811,186, now Patent No. 3,169,216, dated Feb. 9, 1965. Divided and this application May 15, 1964, Ser. No. 374,222
2 Claims. (Cl. 29—25.42)

2. In a method for producing a glass encapsulated capacitor composed of a capacitor element made up of electrodes separated by dielectric material and electrically conducting leads attached to said electrodes and extending outwardly through a glass casing that encapsulates the element, the improvement which comprises attaching to each electrode a composite electrically conducting lead composed of a relatively inflexible, metal clad first portion, one end of which is attached to said electrode, and a highly flexible second portion integral therewith and extending from the other end of said first portion, mounting



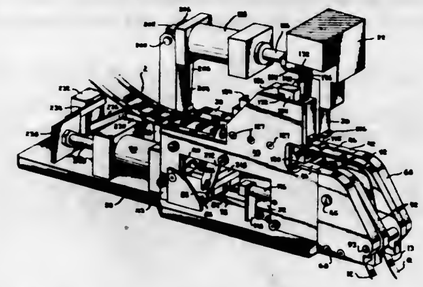
the capacitor element between opposed glass covers having lateral edgesw hich overlie the clad portion of said lead, applying sufficient heat and pressure to produce an adherent, but substantially undistorted, unit, and applying localized heat to form a fusion seal between said lead and the glass casing, the highly flexible portion of said lead being wholly external of said glass casing.

3,292,235
MACHINE TOOL WITH A COMBINED TOOL STORAGE AND CHANGING MECHANISM
Kurt A. Riedel, Milwaukee, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Aug. 20, 1963, Ser. No. 303,280
8 Claims. (Cl. 29—26)



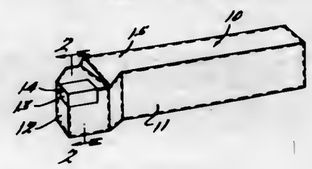
1. In a machine tool;
a frame;
a spindle rotatably supported by said frame and adapted to receive a cutting tool for performing a work operation;
a tool storage magazine supported by said frame and adapted to removably carry a plurality of cutting tools;
a plurality of grips in said magazine with each of said grips being adapted to grip one tool for movement with said magazine;
means for rotating said magazine to move said grips for selecting a desired tool for use in a work operation; and,
means for moving said magazine in a translatory movement to move one of said grips into gripping engagement with a tool that is in the spindle and withdraw the tool from the spindle and to move a grip with a newly selected tool into alignment with the spindle, insert the selected tool into the spindle for use in a work operation and move said magazine away from said spindle to disengage the grip from the tool that was inserted into said spindle.

3,292,236
CRIMPING APPARATUS
Willard Le Roy Bauler, Kenneth Foster Folk, and Milton Dean Ross, all of Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 28, 1965, Ser. No. 451,601
5 Claims. (Cl. 29—33.5)



1. Apparatus for crimping an open-sided connecting device onto a conductor comprising, a crimping die and a crimping anvil, said die and anvil being movable relatively towards each other along a predetermined path from an open position to a closed position, conductor cutting means movable from a first position in which said cutting means is between said die and anvil when in their open positions to a second position remote from between said die and anvil, and means for sequentially actuating said cutting means to trim a wire positioned between said die and anvil, for thereafter moving said cutting means from said first position to said second position, and for moving said die and anvil from said open position to said closed position whereby, said wire is trimmed and said connector is crimped onto said wire.

3,292,237
VIBRATION DAMPING MEANS FOR TOOLS
Kenneth R. Fisher, Grosse Pointe, Mich., assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 19, 1963, Ser. No. 310,015
1 Claim. (Cl. 29—95)

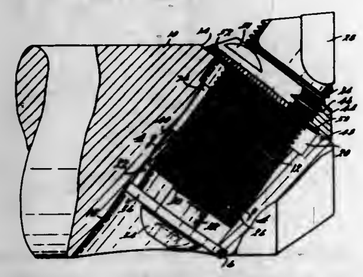


A cutting tool having a body and a cutting head, a hard fragile insert supported by said cutting head, means for roughing the surface of said body, a material to which a plastic material will bond secured to said roughened surface, and a plastic material bonded to said secured material.

3,292,238
ADJUSTABLE CUTTING TOOL
Charles B. De Vlieg, Bloomfield Hills, and Allen N. Sweeny, Grosse Pointe, Mich., assignors to De Vlieg Machine Company, Royal Oak, Mich., a corporation of Michigan
Filed Jan. 4, 1965, Ser. No. 422,897
7 Claims. (Cl. 29—96)

1. An adjustable metal cutting tool including a tool holder body having a bore and a flat annular locating surface disposed about and perpendicular to the axis of said bore at one end of said bore, a cutter element nonrotatably supported in said bore for adjustment along the

axis thereof, said cutter element having an external thread provided with a trailing flank disposed at an angle of at least 17° to said locating surface, and a crest surface conformably engageable with the wall of said bore to maintain said cutter element in an alignment with the axis of said bore, a cutting tip at one end of said cutter element, an adjusting collar threaded on said cutter element and having a seat engageable with said locating sur-



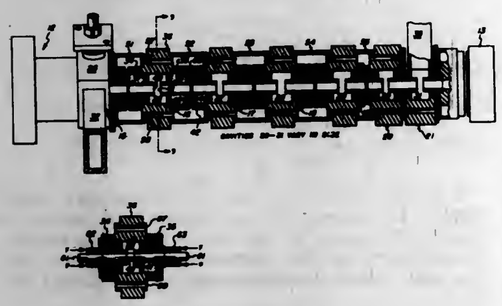
face, said collar being unrestrained by said tool holder body in a direction parallel to said locating surface, and locking means engageable with said cutter element and operable to apply a force thereto in a direction seating said collar against said locating surface, said collar having a thread flank conformably engageable with said cutter element thread trailing flank whereby said collar will be positioned with respect to said cutter element by said engaging thread flanks.

3,292,239

METHOD OF MANUFACTURING A MULTI-CAVITY ELECTRON BEAM TUBE, THE TUBE COMPRISING MULTIPLE RESONATOR MODULES

James T. Sadler, Garden City, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed June 12, 1963, Ser. No. 287,310
1 Claim. (Cl. 29—155.5)



A method for constructing a plural cavity electron beam tube using pretuned cavity component parts comprising

forming each cavity from first and second longitudinally-extending cavity end members, each said member being apertured longitudinally to permit the passage of an electron beam therethrough, the adjacent faces of said first and second members having respective longitudinally-extending portions in the region immediately surrounding the respective apertures, said longitudinally-extending portions being spaced to provide a gap therebetween, each said cavity having a trim tuner,

pretuning each cavity to a predetermined frequency by subjecting said first and second members to forces directed longitudinally inwardly whereby the spacing of the respective gap is permanently reduced and the resonant frequency of the respective cavity is set to a desired value,

joining the pretuned cavities to form a composite plural cavity electron beam tube, and

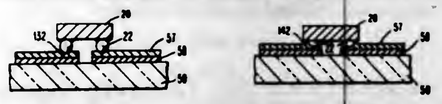
adjusting each said trim tuner to closely set the resonant frequency of the respective cavity to the respective desired value.

3,292,240

METHOD OF FABRICATING MICROMINIATURE FUNCTIONAL COMPONENTS

Robert D. McNutt, Edward M. Davis, Jr., and Arthur H. Moses, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 8, 1963, Ser. No. 300,855
8 Claims. (Cl. 29—155.5)



1. A method of fabricating functional components comprising the steps of printing on a substrate a conductive pattern having a plurality of connecting points therein,

coating said conductive pattern with a metallic alloy having a first eutectic temperature,

fabricating a chip device having metal alloy contacts of a selected thickness and a second eutectic temperature greater than that of the first eutectic temperature,

positioning the device on preselected connecting points, and

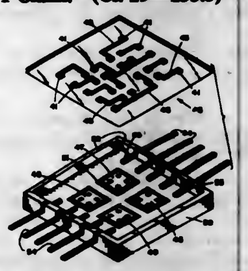
firing the substrate with a chip positioned thereon for a time interval and at a temperature to establish a fusing temperature which is less than the second eutectic temperature but greater than the first eutectic temperature to melt the coating with substantially no effect upon the metal alloy contact thickness whereby the device is joined to one surface of the substrate and assumes an elevated position with respect to the substrate.

3,292,241

METHOD FOR CONNECTING SEMICONDUCTOR DEVICES

Arlan J. Carroll, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 28, 1964, Ser. No. 368,578
1 Claim. (Cl. 29—155.5)



A method of interconnecting a number of monolithic integrated circuits having bonding islands of aluminum comprising:

(a) forming an aluminum coating on a surface of each of a number of integrated circuits opposite to that on which bonding islands are disposed,

(b) forming an aluminum coating on portions of a header,

(c) depositing a film of germanium material on said aluminum coated portions,

(d) positioning said integrated circuits on said header with said aluminum coated surfaces of said integrated circuits in contact with said germanium film portions of said header,

(e) forming metal strips on a dielectric substrate,

(f) forming raised pads of aluminum on said metal strips and depositing a film of germanium material on said pads,

(g) positioning said dielectric substrate with respect to said integrated circuits and said header so that said raised pads rest on said bonding islands of said integrated circuits,

(h) heating said bonding islands, raised pads, aluminum coatings and germanium material above 424° C. to form aluminum-germanium alloys, and

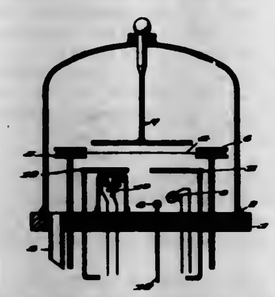
(i) cooling said alloys to secure said integrated circuits to said header and said metal strips to said bonding islands to interconnect said integrated circuits.

3,292,242

PROCESS FOR THE PRODUCTION OF A SUPERCONDUCTIVE MEMBER

Johannes Giger, Baden, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Dec. 19, 1963, Ser. No. 331,698
Claims priority, application Switzerland, Feb. 4, 1963, 1,342/63
1 Claim. (Cl. 29—155.5)



In the method of producing a magnetically hard superconductor member having a superficial superconductive layer established by two different components, the steps which comprise providing a basic carrier member of electrically conductive material, said carrier member being passive as regards any superconductive effect and whose surface is resistant to any diffusion effect with either of said superconductive components, applying said superconductive components to said diffusion-resistant surface in correlated spatially separated regions of said superconductive layer to be formed, and passing an electric current through said carrier member to heat said components and thereby effect a mutual diffusion thereof.

3,292,243

PRODUCTION OF METAL COILS

Erich Hoffing, Kreuzlingen, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a joint-stock company of Switzerland

No Drawing. Filed Aug. 6, 1963, Ser. No. 300,185
Claims priority, application Switzerland, Aug. 13, 1962, 9,681/62
3 Claims. (Cl. 29—155.57)

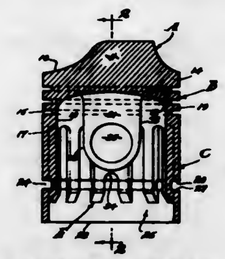
1. A method of producing metal coils, which comprises winding metal foil with a layer of insulating material thereon under a decreasing tension, the mean tension being more than 50% of the tensile strength of the foil, to produce thereby a coil comprising layers of metal foil separated by insulating material but having exposed side edges, which may be in contact with one another, and immersing the side faces of the coil in a chemical reacting liquid having the effect of causing adjacent side edges of the foil to become insulated from one another.

3,292,244

METHOD FOR THE MANUFACTURE OF HEAT DISSIPATING PISTONS

Richard W. Case, Huntington Park, Calif., assignor to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California

Continuation of application Ser. No. 231,750, Oct. 19, 1962, which is a division of application Ser. No. 49,763, Aug. 15, 1960, now Patent No. 3,091,502. This application Sept. 3, 1965, Ser. No. 492,963
1 Claim. (Cl. 29—156.5)



The method of manufacturing a heat dissipating piston by means of plastic deformation of metal and including, placing a disc-shaped blank in a female die and applying pressure with a mating male die to extrude a cylindrical skirt portion with diametrically opposite, inwardly disposed wrist pin bosses depending from a head portion, and simultaneously extruding longitudinally disposed parallel columnar ribs, said ribs extending from said head portion and wrist pin bosses and projecting radially inward along substantially the length of said skirt portion, said ribs being extruded with substantially no draft, with each having a substantially uniform cross section throughout its entire length whereby said ribs form heat transfer members of increased area for conducting heat from said wrist pin bosses and the walls of said piston to fluids within said piston and including severing a lower terminal end portion from said skirt portion by machining a groove through said skirt portion whereby said lower terminal end portion is integrally joined to said skirt portion only by said ribs.

3,292,245

PROCESS AND APPARATUS FOR MAKING ROTORS

Hans Pfau, Duisburg, Germany, assignor to DEMAG Aktiengesellschaft, Duisburg, Germany

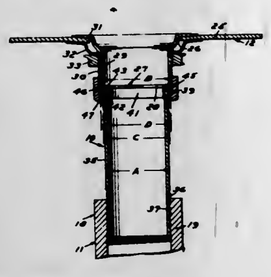
Filed Feb. 20, 1962, Ser. No. 174,621
4 Claims. (Cl. 29—156.8)



1. A process for manufacturing a rotor for an axial compressor, turbine and the like from individual blade elements having foot portions which are elongated in an

axial direction, comprising positioning a pair of individual blade elements of the rotor together, joining the pair of elements together along their foot portions by welding to form a segment, adding an additional blade element one at a time to the blade element segment thus formed and welding along their foot portions while releasing the added blade element to permit stress relieving after each is welded, repeating the adding of blade elements to form an entire ring, thereafter placing a body member centrally of the ring thus formed and joining the body member to the ring by welding.

3,292,246
METHOD OF CONNECTING TUB AND PUMP UNITS
Axel L. Nielsen, 1316 E. Elza, Hazel Park, Mich. 48030
Filed Aug. 25, 1965, Ser. No. 482,470
5 Claims. (Cl. 29—157)



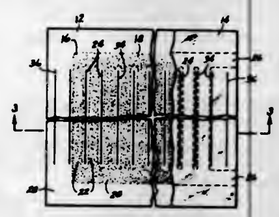
1. A method of suspending a motor driven pump at the internal threading of its intake from a rigid tub or like container discharge fitting which is externally threaded but incapable of threadedly mating with the pump intake threading, comprising providing a tubular adapter externally threaded at one end thereof for mating threaded engagement with said pump intake threading and having a radially outwardly projecting flange of predetermined outer diameter, providing a jam nut internally threaded for mating engagement with the threading of said container discharge fitting and having an internal flange of smaller inner diameter than the outer diameter of said adapter flange, telescoping said jam nut on said adapter with the nut rotatable about said adapter and the nut flange positioned for supporting engagement from beneath with the adapter flange, then threading said adapter into fixed threaded engagement with the pump intake, manually supporting said pump and adapter thereon above the floor beneath the tub and under said discharge fitting in a predetermined angular relationship to the latter, and then rotating said nut into threaded engagement with the container discharge fitting, while thus supporting and without rotating said pump and adapter from said predetermined angular position, to bring said adapter, as sustained by said nut and sustaining said pump, into fixed and sealed communication with said container fitting.

3,292,247
METHOD OF FABRICATING HEAT EXCHANGERS
Theron F. Pauls, Godfrey, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application May 27, 1965, Ser. No. 459,197. Divided and this application Sept. 15, 1965, Ser. No. 499,133
1 Claim. (Cl. 29—157.3)

A method of fabricating a heat exchange device from a plurality of composite sheets each formed of two superposed planar sheets having a pattern of weld-preventing material interposed between said sheets, said pattern including a pair of parallel spaced-apart bands located adjacent opposite edges of said composite sheet and extending to a transverse edge of said sheet and a plurality of closely spaced-apart bands lying parallel to said transverse edge and joined at opposite ends with said pair of bands, said pair of bands and plurality of bands thereby defining islands free of said weld-preventing material, said method comprising the steps of

(A) slitting each said composite sheet in said weld-preventing material free islands over a major portion of the length thereof to provide a plurality of individual first strips of said composite sheet,

(B) slitting each said composite sheet in a peripheral margin area thereof parallel to said weld-preventing material free islands to provide at least one second strip of said composite sheet, said second strip being devoid of weld-preventing material,



(C) twisting said first and second strips out of the normal plane of said composite sheet over a major portion of the length of said first and second strips to dispose said first and second strips in parallel spaced-apart relationship lying in planes substantially at right angles to said plane of said composite sheet, thereby forming elongate apertures between adajcent confronting surfaces of said first and second strips,

(D) forming a system of internal passageways within each said composite sheet corresponding to said pattern of weld-preventing material by applying thereto a fluid under pressure to expand the areas of said composite sheet covered with said weld-preventing material,

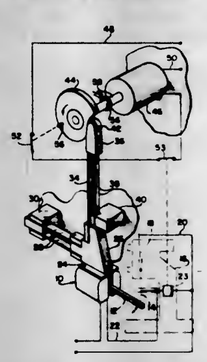
(E) joining said composite sheets in superposed, spaced-apart relationship with the elongate apertures of each said composite sheet in aligned relationship,

(F) inserting a continuous strip of fin stock in the aligned elongate apertures of the superposed, spaced-apart composite sheets, and

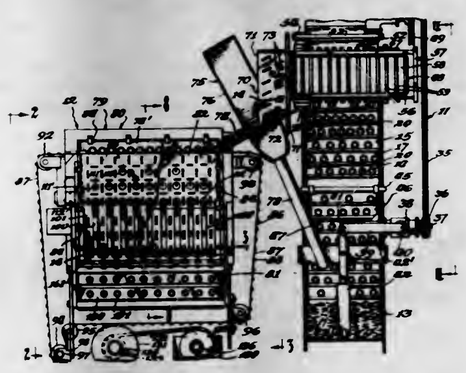
(G) securing said fin stock to said confronting surfaces of said first and second strips.

3,292,248
PRECISION ADVANCE MECHANISM
Mordechai Wiesler, Brookline, and Avigdor Goren, Cambridge, Mass., assignors to Transistor Automation Corp., Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 29, 1963, Ser. No. 319,711
11 Claims. (Cl. 29—203)

11. An apparatus for positioning a movable part in precise relation to another part, comprising a supporting structure, a member adapted to engage said movable part, a first pair of normally flat parallel and facing springs for supporting said member, said springs being joined in fixed relation to one another at one end, the opposite end of one of said springs being fixed to said supporting structure and the opposite end of the other of said springs being connected to said member, means restraining said member for movement only in one plane, said plane being coplanar with said other spring and drive means for laterally displacing the upper ends of said springs whereby said member and said movable part will be displaced in said plane.

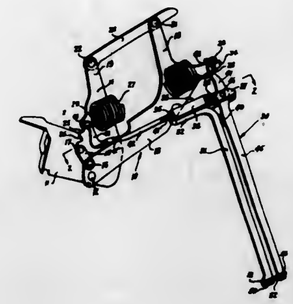


3,292,249
MACHINE FOR ASSEMBLING TWO-PIECE OVERCAPS
Henry S. Banks, Chicago, Ill., assignor to Helene Curtis Industries, Inc., a corporation of Illinois
Filed July 10, 1964, Ser. No. 381,791
17 Claims. (Cl. 29—211)



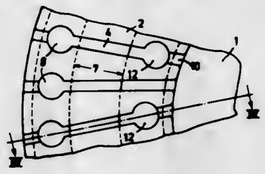
1. In combination, a disk distributing mechanism having a plurality of discharge chutes spaced laterally across its lower portion, means for selectively removing individual disks from a source of disks wherein the disks are in haphazard arrangement, means for moving said individual disks into alignment with the upper portion of said disk distribution mechanism, means for supporting said individual disks in said disk distribution mechanism above said discharge chutes and insuring substantially uniform distribution of said disks along the entire length of said disk distribution mechanism, means to intermittently cause said disks to be displaced from said supporting means and to cause said individual disks to drop downwardly into said discharge chutes, conveyor means for moving a plurality of tubular shells below the lower ends of said discharge chutes to locate a tubular shell in alignment with the lower end of each of said discharge chutes, means in each of said discharge chutes to release a disk from said chute when a tubular shell is positioned in alignment therewith, whereby each disk released from said discharge chutes enters a tubular shell, and means positioned adjacent said conveyor means rearwardly of said distribution means for securing each disk to the shell in which it is seated.

3,292,250
SPRING EXPANDER
Robert Augustus Miller, 143 W. Granada Ave., Hershey, Pa. 17033
Filed Mar. 23, 1965, Ser. No. 442,099
5 Claims. (Cl. 29—227)



1. A spring expander comprising a handle member having a right angled extension at one end, a yoke having extending free ends and a bight secured to said extension, the free ends of said yoke extending beyond the intersection of said handle and said extension, a second handle pivotally mounted between said free ends, and having a portion extending beyond the pivot point defining a hook for engaging one end of a spring, a rod secured to the bight of said yoke and an offset portion at the other end of said rod defining a second hook for engaging the other end of a spring disposed in parallelism to said first mentioned hook.

3,292,251
SLOTTED SHEAR PLATE FOR ELECTRIC SHAVERS
Eppe Bakker and Eildert Kingma, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,004
Claims priority, application Netherlands, July 26, 1963, 295,888
2 Claims. (Cl. 30—346.51)



1. A shear plate for use with a rotating rim of cutters in a shaving head of a dry shaver having a top surface extending in a substantially flat plane and provided with a plurality of spaced slots therein, said shear plate having an outer substantially flat side wall extending substantially perpendicular to the plane of the top surface of said shear plate, each of said slots being widened into generally circular apertures at the end of the top surface of said shear plate adjacent to the outer periphery thereof, said apertures being located in said top surface of said shear plate beyond the rotational path of said cutters but within said outer side wall of said shear plate and spaced therefrom.

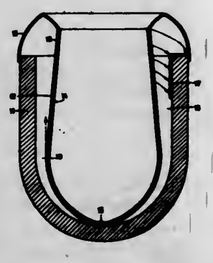
3,292,252
METHOD OF MAKING LUGGAGE AND INTERMEDIATE CASES THEREFOR
Robert J. Reading, 325 Sunnybank Ave., Stratford, Conn.
Filed Oct. 24, 1963, Ser. No. 318,586
10 Claims. (Cl. 29—416)



1. The method of making luggage which comprises the steps of: forming a hollow intermediate article of box-like configuration with an annular portion comprising first and second interconnected flanges offset from the adjacent wall thereof; separating said article by removing the interconnecting portion of material connecting the flanges to form first and second luggage sections, the first luggage section having the first flange along its separated edge and the second section having the second flange along its separated edge; and hingedly joining the first and second sections to form a hinged luggage case with said first and second flanges in nested relationship.

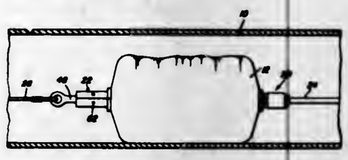
6. A hollow intermediate article for use in the manufacture of luggage comprising a substantially enclosed shell at least partially circumscribed by first and second interconnected flanges, each of said flanges being dependent from a shelf member that is substantially perpendicular to a surface of said shell, one of said flanges being spaced inwardly from the other, said flanges being positioned so that removal of interconnecting material by cutting along first and second parallel planes separates said flanges into interlocking sealing members.

3,292,253
METHOD OF SEAMLESS EXPLOSIVE PLATING OR CLADDING OF THICK-WALLED VESSELS
Wolfgang Rösner and Hans Joachim Lippmann, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, and Erlangen, Germany, a corporation of Germany
Filed Dec. 15, 1964, Ser. No. 418,392
Claims priority, application Germany, Dec. 24, 1963, S 88,892
10 Claims. (Cl. 29—421)



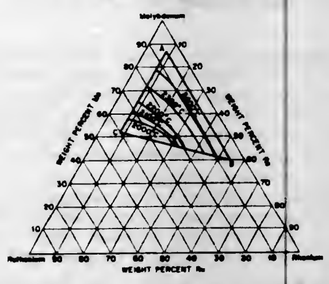
1. The method of seamless explosion-plating prefabricated vessels, which comprises prefabricating a vessel-shaped insert of plating material and inserting it into the vessel, leaving between the respective bottoms of vessel and insert a gap widening in the direction away from the bottom center, lining the insert with an explosion foil, and igniting the foil from the center point at the vessel bottom.

3,292,254
INFLATABLE WELDING PURGING DEVICE AND METHOD
Mario S. Sloan, Bakersfield, Calif., assignor of thirty-three and one-third percent to Paul E. Griffiths, Bakersfield, Calif.
Filed Dec. 10, 1963, Ser. No. 329,572
10 Claims. (Cl. 29—494)



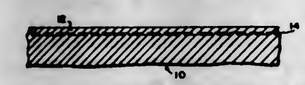
1. A purging device for welding hollow bodies comprising a bag-like collapsible container having opposing end wall portions, said container constituting an inflatable sealer adapted for freely sliding in a hollow body when deflated and having a side wall portion intermediate and connecting the end wall portions, said side wall portion being adapted to sealingly engage the interior of a hollow body and form a gas-tight partition across said hollow body when inflated, moving means secured to one end wall portion of said container for bodily positioning it in a hollow body adjacent an area thereof to be welded, conduit means connected to the opposing end wall portion and communicating with the interior of said container for supplying an inert purging gas thereinto for inflating said container, and discharge means connected to the one end wall portion and communicating with the interior of the container for discharging said inert purging gas into said hollow body adjacent said area to be welded, said discharge means being operable for the discharge of gas at a pressure in excess of a predetermined pressure by which said container is inflated to assume a sealed position in the hollow body.

3,292,255
BRAZING ALLOYS FOR TUNGSTEN AND MOLYBDENUM
James C. Marshall and Harlos G. Smith, both of Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 25, 1964, Ser. No. 397,352
2 Claims. (Cl. 29—494)



1. The method of joining tungsten, molybdenum and alloys containing a predominant proportion of said metals to themselves and to one another which comprises disposing surfaces of the parts to be joined in abutting relationship with a brazing alloy disposed adjacent said abutting surface, said brazing alloy consisting of 40 to 87 weight percent molybdenum, 5 to 40 weight percent ruthenium and 8 to 55 weight percent rhenium, the composition of said brazing alloy being further limited to the area bounded by ABC in the accompanying figure, heating the resulting assembly to brazing temperature in the range of 1950° C. to 2500° C. under non-oxidizing conditions and cooling the resulting brazed joint.

3,292,256
PRESSURE BONDING OF DISSIMILAR METALS
Jack B. Morgan, New Kensington, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1964, Ser. No. 358,559
6 Claims. (Cl. 29—497.5)



1. A method of bonding a steel plate member to an aluminum member comprising, the steps of interleaving aluminum foil having a thickness of not greater than 0.05" between the faces of the members to be bonded, heating the assembled members and foil to between 700° F. and 1000° F., and then exerting a pressure of at least 680 p.s.i., and preferably about 1700 p.s.i. against said heated members to thereby cause the aluminum foil to bond the members together.

3,292,257
CULINARY DEVICE FOR SHELLING CORN, CORING AND SUCH
Samuel J. Popell, 2920 N. Commonwealth, Chicago, Ill. 60657
Filed July 24, 1964, Ser. No. 384,920
9 Claims. (Cl. 30—301)

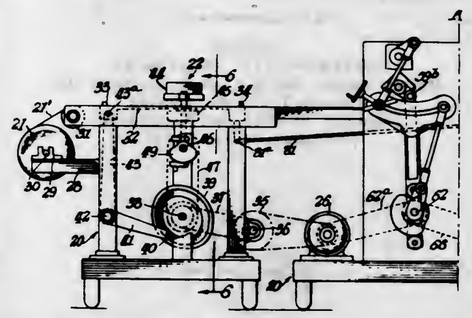


1. A culinary device comprising, a hollow handle, one end of said handle tapering to define a constricted open end portion, a tubular cutter portion, said tubular cutter portion having a length diameter ratio of 1:1 to 2:1, a collar portion joining the cutter to the handle, the cutter diameter being less than the handle diameter, a plurality of tooth segments at the outer end of the cutter defining slots therebetween, the remainder of the tubular cutter portion having a cylindrical imperforate open ended body tapering convergingly both interiorly and exteriorly toward the teeth from the collar in a range between ½° and 3° and a plurality of teeth at the outer end of the tooth segments, the tubular handle being of sufficient length to be grasped by the hand and oscillated.

ERRATUM
For Class 30—346.51 see:
Patent No. 3,292,251

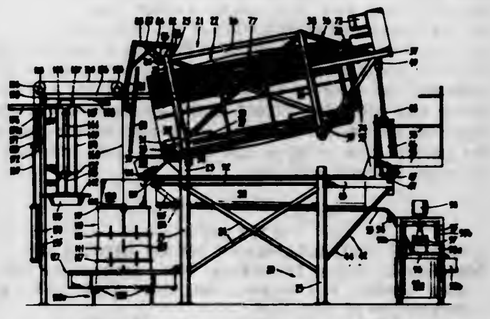
3,292,258
APPARATUS FOR THE FLUID CASTING OF DECORATIVE-SURFACED BUTTER PATTIES
Leo Peters, 780 Plymouth Road SE., Grand Rapids, Mich., and Albert P. Burke, Birmingham, Mich.; said Burke assignor to said Peters
Original application Sept. 13, 1963, Ser. No. 308,785. Divided and this application Apr. 13, 1965, Ser. No. 458,501
5 Claims. (Cl. 31—7)

1. In apparatus for the casting of butter patties, or the like, an elongated frame, means at one end of said frame for providing a continuous web of flexible thermoplastic material, means on said frame adjacent said one end for developing transverse rows of embossed molds in said web, means on said frame intermediate the ends



thereof for simultaneously filling a transverse row of said molds with fluidized butter, and means adjacent the other end of said frame for mechanically settling said butter to develop a substantially flat top surface on the butter in said molds.

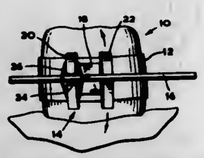
3,292,259
APPARATUS FOR SEPARATING CHEESE CURD AND WHEY
Douglas R. M. Lambert, Caulfield, Victoria, and Joseph M. Sharkey, Box Hill, Victoria, both of Australia, assignors, by mesne assignments, to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,003
Claims priority, application Australia, Aug. 14, 1964, 48,142/64
3 Claims. (Cl. 31—48)



1. An apparatus for separating cheese curd and whey comprising, a frame, a rotatable hollow generally cylindrical trommel having a peripheral wall, an inlet end and a discharge end pivotably mounted on said frame adjacent said discharge end, motor means for rotating said trommel, means for pivoting said trommel, means for delivering a mixture of curd granules and whey into the inlet end of said trommel and means for discharging said granules from the discharge end of said trommel, a plurality of paralled spaced apart helically extending rod-like lifting members mounted in the interior of said trommel in spaced relationship to the inner surface of said peripheral wall, said peripheral wall of said trommel having an axially extending perforate segment and an axially extending imperforate segment, said perforate segment including about one-third of said peripheral wall, said perforate segment being formed by a plurality of elongated circumferentially extending slots dis-

posed in axial rows in said peripheral wall, said slots having a width less than the minimum diameter of the cheese curd granules excluding fines, and having a length substantially greater than the maximum diameter of the cheese curd granules.

3,292,260
ORTHODONTIC BRACKETS
Harvey Jenkins, 200 St. Clair St. W., Suite 318, Toronto 7, Ontario, Canada
Filed Jan. 20, 1966, Ser. No. 524,985
4 Claims. (Cl. 32—14)



1. In orthodontic apparatus for use in connecting tooth position, and including a tooth band, a rigid metal bracket on said tooth band, arch wire, ligature wire to ligate the bracket to the arch wire in the application of corrective forces, the improvement comprising said rigid metal bracket having a base, a seating bar on said base, a guide bar on said base, said guide bar having a smooth elongated guide surface, said seating bar having a seat for the arch wire, said seat comprising the bottom of an open slot in said seating bar to receive the arch wire, the width of said slot being greater than the width of the arch wire, and said seat being adapted to turn with respect to said arch wire whereby said bracket can turn through a corrective arc of between 10° and 35° with respect to the arch wire when said seat cooperates with the arch wire, said guide surface having an extent adapted to engage with the arch wire as it moves through said corrective arc, said elongated guide surface of said guide bar extending substantially at right angles to said slot in said seating bar, the height of said seat above said base being substantially the same as the height of said guide surface above said base, first anchor means for ligature wire to ligate the arch wire to said seat, and second anchor means for ligature wire to ligate said bracket to the arch wire to rotate it about said seat.

3,292,261
GIRDLE AND BRASSIERE MEASURING TAPE
Madeline L. Hayes, Douglaston, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 12, 1965, Ser. No. 432,199
6 Claims. (Cl. 33—2)



1. A girdle and brassiere measuring tape comprising an elongated tape-like strand of flexible material, one surface of the tape having scale markings thereon for taking hip measurements for girdles, said markings registering with a gauge at one end portion of said surface of the tape, the other surface of the tape having two sets of scale markings thereon, one set of markings measuring the chest adjacent and beneath the breasts of a person, the other set of markings being arranged adjacent said end portion of the tape on said second surface for indicating the cup-size of a brassiere to be selected in a predetermined known size, said end portion of the tape having a predetermined length foldable upon the adjacent part of the tape in taking the chest measurement adjacent and beneath the breasts, the fold having a gauge marking registering with the scale markings on the second named surface of the tape in determining the brassiere size, and the scale marking of the determined size registering with one of the cup scale markings indicating the cup size to be selected when said folded end portion of the tape is in extended position and placed around the chest and over the breasts of the person.

3,292,262
BEAM COMPASS
Worth J. Moll, 1579 Peacock Ave., Sunnyvale, Calif. 94087
Filed Aug. 18, 1965, Ser. No. 480,657
13 Claims. (Cl. 33—27)



1. A beam compass comprising:
a base provided with a surface engaging face, said base also including an upstanding boss having a bore therethrough and a shelf extending outwardly therefrom in spaced relation to said surface engaging face;
a ring member surrounding said boss and rotatably supported in a horizontal plane on said shelf;
an annular plate member having a bore therethrough removably attached to the top surface of said boss, said plate member extending outwardly from said boss and extending over said ring member thereby confining said ring member on said shelf, the bore in said plate member being in substantial alignment with the bore in said boss;
a solid transparent viewing cylinder snugly positioned in the bore of said boss and extending upwardly through the bore in said plate member, said cylinder having a centrally disposed needle point which extends downwardly from its lower end portion of engagement with a working surface;
an arm member pivotally secured to said ring member; and
carriage means slidably positioned on said arm member, said carriage means including clamping means for clamping said carriage means on said arm member and further including holding means for engaging a tool in a vertical position.

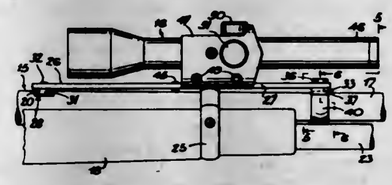
3,292,263
COMBINATION SCRIBE TOOL
George D. Berry, P. O. Box 728, and Fabian F. Soukup, P.O. Box 322, both of Healdsburg, Calif. 95448
Filed Nov. 10, 1964, Ser. No. 410,099
8 Claims. (Cl. 33—42)

1. A tool of the character described comprising a blade slidable on a workpiece, spaced guides on the blade for slidably receiving the workpiece therebetween, and at least one scriber mounted for longitudinal sliding adjustment on the blade between the guides and operatively engageable with the workpiece, said scriber including a generally U-shaped resilient clip mounted transversely on one of the longitudinal marginal portions of the blade and projecting



laterally therefrom, and a marker comprising a headed pin threadedly mounted in the clip for clampingly engaging same with the blade.

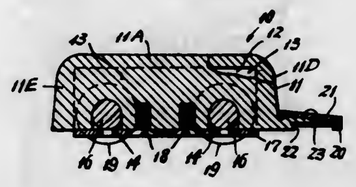
3,292,264
TELESCOPE SIGHT MOUNTING
Leo T. Kincannon, 7358 N. Port Washington Road, Milwaukee, Wis. 53203
Filed May 11, 1965, Ser. No. 454,869
4 Claims. (Cl. 33—50)



1. A telescope sight mounting for a rifle having a barrel with a receiver and a transverse dovetail top groove forward of the receiver, comprising a track-forming base bar extending longitudinally above the rifle barrel forward of the receiver, front and rear fastening means rigidly and detachably securing said base bar to the rifle barrel, said front fastening means having a detachable vertical-axis swivel connection with the barrel to permit turning of the base bar thereon to a position in substantial alignment with the barrel, and said rear fastening means including a dovetail tenon engageable in said dovetail barrel groove and releasably clamped therein, said track-forming base bar being adapted to interengageably support a telescope sight thereon forward of the receiver in longitudinally adjusted clamped position.

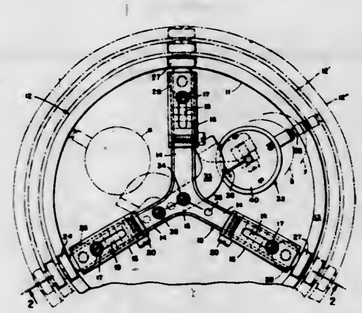
3,292,265
NAVIGATION RULE
Thomas G. Bowe, 1477 Broadbridge Ave., Stratford, Conn. 06497
Filed Oct. 26, 1964, Ser. No. 406,312
2 Claims. (Cl. 33—109)

1. A navigational rule for quickly and accurately charting a course on a navigation chart comprising:
(a) an elongated housing having a recess formed therein
(b) said recess being substantially co-extensive the length of said housing,
(c) a plurality of webs extending transversely of said recess at longitudinally spaced intervals therealong,
(d) a pair of elongated shafts,
(e) means formed in each of said webs and in the ends of sai dhousing for accommodating each of said shafts,
(f) means for rotatably journalling said shafts in said means,
(g) and a means forming a non-skid surface disposed about each of said shafts,
(h) each of said non-skid surfaces extending along the portion of said shaft extending between adjacent webs,
(i) said housing including a laterally extending flange portion extending longitudinally thereof along an edge portion thereof to define a straight edge,
(j) said flange being substantially coextensive the length of said body and disposed adjacent the bottom thereof,



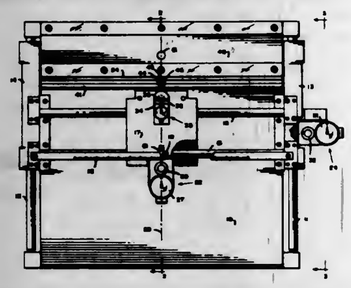
(k) means defining a scale fixed to the upper surface of said flange,
(l) said flange having a keyway formed on the under surface thereof, said keyway extending longitudinally of said flange and
(m) a slide slidably disposed in said keyway whereby said slide is rendered relatively movable with respect to said flange within said keyway to form an extension of said scale.

3,292,266
TEST GAGE
Millard F. Smith, Detroit, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 1, 1964, Ser. No. 364,174
9 Claims. (Cl. 33—178)



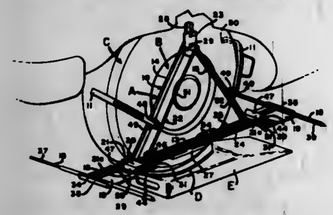
1. A test gage for measuring an object having a cylindrical surface and a transverse surface, comprising: a manually rotatable frame; a plurality of first rollers mounted on said frame and being engageable with said transverse surface for positioning said gage relative to said object; a plurality of second rollers engageable with said cylindrical surface, at least one of said second rollers being fixed radially relative to said frame; means biasing said frame for maintaining said one second roller in engagement with said cylindrical surface, said biasing means including at least one member pivotally mounted on said frame, at least one of said first rollers being mounted on said member, and at least one other of said second rollers being mounted on said member; and a measuring device mounted on said frame for measuring the distance from a point on said frame fixed relative to said one second roller to said cylindrical surface.

3,292,267
PRESET TOOLING
Meredith W. Wittenlink, Easton, Leroy E. Alvey, Bridgeport, and Jesse W. Mendenhall, Fairfield, Conn., assignors to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 22, 1964, Ser. No. 361,784
7 Claims. (Cl. 33—185)



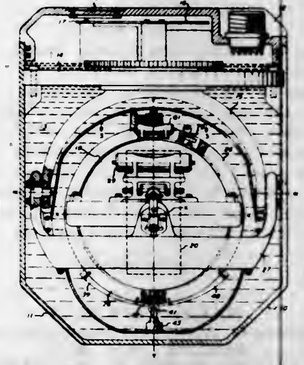
1. Apparatus for presetting tools mounted in tool blocks comprising in combination, a base; a carriage mounted on said base for universal movement within a plane; tool block supporting means on said base, said supporting means being identical to that employed in the machine tool for which the tools are to be preset; at least one tool block mountable on said supporting means; means for supporting a master bar in parallel relation to said tool block supporting means; means for locating said master bar on said base relative to datum lines corresponding to identical datum lines on said machine tool; indicator means on said carriage for indicating the position of said carriage relative to said datum lines; and locating means within each tool block for facilitating the marking on said master bar of the preset location of said tool block relative to said datum lines.

3,292,268
AUTOMOBILE FRONT WHEEL ALIGNING MECHANISM
Harry L. Knight, 758 Struthers, Grand Junction, Colo. 81501
Filed May 7, 1965, Ser. No. 453,905
7 Claims. (Cl. 33—203.18)



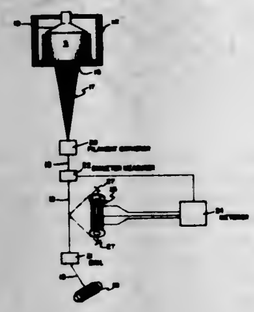
1. Mechanism for measuring alignment characteristics of a pneumatic tired dirigible wheel of an automobile comprising
- a frame for mounting on the outer side wall of the tire of such dirigible wheel,
- support means for supporting the frame in engagement with the outer sidewall of such tire and substantially parallel to the plane of wheel rotation,
- a wheel angle indicating member mounted for horizontal pivotal movement about a vertical axis on the frame,
- means for retaining the wheel angle indicating member against pivotal displacement during a turning movement of the frame in conjunction with a dirigible wheel upon which it is mounted,
- means for indicating the angular position of the angle indicating member relative to the frame,
- a pendulum suspended from an upper portion of the frame and in outwardly spaced relation to the frame,
- an elongated bottom member affixed to the pendulum in position to be horizontal and substantially parallel to the plane of rotation of a wheel upon which the frame is mounted when the pendulum is suspended freely from the frame,
- means for releasably retaining each end of the pendulum bottom member in a selected zero position while leaving the pendulum bottom member free for pivotal movement about the retaining means,
- a pointed projection on each end of the pendulum bottom member,
- a pair of pendulum position indicating members on each end of the frame, each pair of said indicating members being located and spaced apart to receive each pointed projection of the pendulum bottom member with slight clearance therebetween when the frame is in upright position and the pendulum is suspended freely from the frame,
- a scale for indicating the position of each pointed projection of the pendulum relative to the frame,
- manually controlled damping means mounted on the frame for releasably engaging the pendulum to reduce swinging movement thereof,
- a sliding weight mounted for sliding movement lengthwise of the pendulum bottom member,
- and a scale for indicating the position of the sliding weight relative to the pendulum bottom member.

3,292,269
GYROSCOPIC COMPASSES
Richard G. Brugger, Hempstead, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y.
Filed June 27, 1963, Ser. No. 291,132
14 Claims. (Cl. 33—226)



6. A combination for orienting and levelling the directive member of a gyroscopic compass during start-up conditions in which the compass includes a ring mounted to move about a vertical axis, a circuit connecting the member to the ring in follow-up relation having a servomotor connected to move the ring, a pendulous yoke mounted on the ring with freedom about a normally horizontal axis, a gimbal mounted on the yoke with freedom about a normally horizontal axis perpendicular to the axis of the yoke on which the member is mounted with freedom about a normally vertical axis; means including a normally open circuit for caging the member and gimbal to the yoke, means including a normally open circuit for providing an orienting input to the servomotor, normally ineffective means for opening the follow-up circuit, means for simultaneously conditioning the caging and orienting circuits for operation and for rendering the follow-up circuit opening means effective, and means operable upon restoration of the caging, orienting and follow-up circuits to normal condition to level the oriented member with respect to the gimbal axis.

3,292,270
DRYING PROCESS AND APPARATUS USING A COHERENT LIGHT SOURCE
Shepard A. Sprout, 147 Coolidge St., Brookline, Mass.
Filed Apr. 1, 1964, Ser. No. 356,607
16 Claims. (Cl. 34—1)



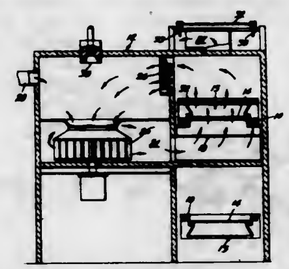
9. A process for drying strands, the steps which comprise: generating energy waves from a coherent source of light; passing said strand through said energy waves thereby drying it and winding the dried strand upon a spindle.

3,292,271
DEHYDRATION AND PRESERVATION OF ANIMAL HIDES AND SKINS
William J. Hopkins, Philadelphia, Fred P. Luvisi, Elkins Park, and Edward M. Filachione, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed July 9, 1964, Ser. No. 381,593
10 Claims. (Cl. 34—9)

1. A process for preparing hides for air-drying without the use of solvent-extractants which comprises applying to a hide a compound selected from the group consisting of diethylene glycol monobutyl ether, 1-butoxyethoxy-2-propanol, diethylene glycol diethyl ether, triethylene glycol monoethyl ether, triethylene glycol monomethyl ether, a polyethylene glycol having an average molecular weight of about 400 to 1,000, and mixtures thereof and drying said hide.

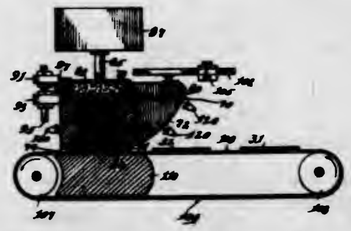
3,292,272
APPARATUS FOR TREATING FLUENT SOLID MATERIALS WITH FLUIDIZING GASES
John W. Powischill, Cheltenham, Pa., assignor to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1964, Ser. No. 400,387
8 Claims. (Cl. 34—57)

1. Apparatus for treating fluent solid material in a fluidized bed, comprising in combination, a treating enclosure, means for supporting and moving material holding means through said enclosure, material holding means including a plurality of separate compartment forming walls and perforate bottoms for the compartments, and a supply duct beneath said supporting means for supplying a conditioned gaseous medium upwardly through the compartments to fluidize the material therein, the walls of said compartments having straight parallel portions extending for a distance upward above the bottom to hold the upflowing gaseous medium at constant velocity and being flared



above the parallel portions to cause the velocity of the upflowing gaseous medium to be reduced to drop material back out of suspension.

3,292,273
APPARATUS FOR DRYING COATINGS
Reinoldus Pipyne, Evanston, Ill., assignor to The Celotex Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 20, 1963, Ser. No. 259,833
4 Claims. (Cl. 34—155)

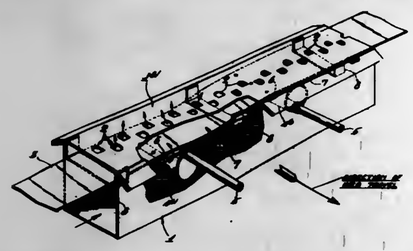


2. An apparatus for drying a paint coating on a surface of a base material comprising a heating element having a smooth flat surface over a major portion thereof, separate heating means for heating said element, said surface having a plurality of perforations therethrough dispersed over said surface, means connected to said heating element for supplying steam through said perforations, and means for slidably conveying a base material with its painted surface closely adjacent said smooth flat surface, whereby said paint coating is dried by the simultaneous application of heat and steam.

3,292,274
ARRANGEMENT IN A DRYER OR A SIMILAR TREATMENT PLANT
Elmar Sefk, Jonkoping, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Mar. 18, 1964, Ser. No. 353,033
Claims priority, application Sweden, Mar. 19, 1963, 30,806/63
4 Claims. (Cl. 34—155)

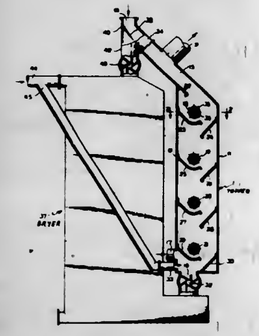
1. In a dryer for a web or sheet-like material comprising a plurality of distributing boxes having a perforated top wall for supplying treating medium, said boxes being disposed one after the other in the transport direction with their longitudinal axes substantially perpendicular with respect to the direction of travel of said web, at least one of the distributing boxes of the dryer having means for the correction of the dry-content profile of said web; said means comprising at least one damper means interiorly of said distributing box adjacent the perforated top wall, said damper means comprising a resilient band of material extending longitudinally and transversely of

said distribution box, and including at least one maneuvering means positioned interiorly of said box, underlying said band to raise and lower at least a portion of



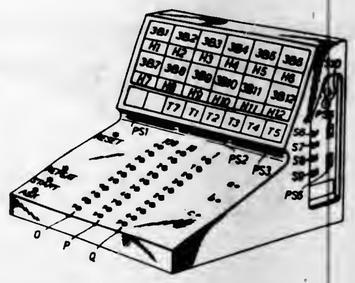
said resilient band and thereby shield selected portions of said perforated surface upon actuation by said maneuvering means.

3,292,275
APPARATUS FOR RESTORING MOISTURE TO COTTON
Gerald N. Franks, Greenville, Miss., assignor to the United States of America as represented by the Secretary of Agriculture
Filed Apr. 8, 1964, Ser. No. 358,384
2 Claims. (Cl. 34—171)



1. In combination with a seedcotton drying apparatus, a seedcotton moisturizing by-pass comprising:
(a) an elongated, vertical, enclosed tower adjacent to and substantially coextensive with said drying apparatus;
(b) a cotton inlet connected to the top of the drying apparatus and the tower;
(c) means inside the cotton inlet for selectively directing cotton to the drying apparatus and the tower;
(d) inlet means for introducing humid air into the bottom of the tower;
(e) a plurality of horizontal, parallel, vertically-stacked cylinders, having radially-extending spikes on their surfaces, rotatably mounted in the tower;
(f) an inclined, rectilinear, perforated baffle secured to an inside wall of the tower for directing seedcotton at the uppermost of the cylinders;
(g) an inclined, contoured, perforated baffle secured to an inside wall of the tower extending under each of the cylinders;
(h) a plurality of inclined, rectilinear, perforated baffles secured to an inside wall of the tower opposite the contoured baffles in staggered relation thereto and extending under said contoured baffles; and
(i) means for removing moistened cotton from the bottom of the tower.

3,292,276
TEACHING MACHINES
Charles Edward Mark Hassel, 4 Acacia Drive, Altrincham, England
Filed Jan. 4, 1965, Ser. No. 423,042
Claims priority, application Great Britain, Mar. 17, 1964, 11,282/64
11 Claims. (Cl. 35—9)



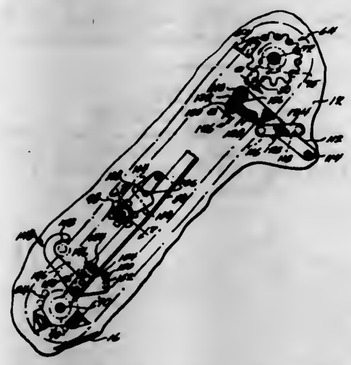
1. A teaching machine comprising a main program selection apparatus operative to select a first sequence of questions to be presented to a pupil, a question presentation apparatus for presenting said first sequence of questions to said pupil, manually operable switch means for actuation by said pupil for recording his selected response to each question in said sequence, means for interrupting said first sequence in response to the improper actuation of said manually operable means thereby indicating a missed question, said interrupting means including answer presentation apparatus for presenting the correct answer to said pupil to the missed question in said first sequence, a subsidiary program selection apparatus operative to select a second sequence of questions, said question presentation apparatus being operative to present said second sequence of questions to said pupil in response to proper actuation of said manually operable means to indicate the answer to said missed question, said second sequence of questions including said missed question, and means to reinstate the presentation of said first sequence of questions by said question presentation apparatus.

3,292,277
SHOE
Earle J. Teschon, Nashville, Tenn., assignor to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Feb. 3, 1964, Ser. No. 342,139
2 Claims. (Cl. 36—71)



1. In a shoe, having a sole member and upper defining an instep portion, and a cushion extending upwardly from the sole member and being exposed on the inside of the upper at the instep portion, said cushion overlying the junction between the sole member and the upper and terminating substantially below the top line of the shoe, said cushion having a length substantially less than the maximum width of the sole member, a width substantially less than the minimum width of the sole member and a thickness, when free of load, not substantially greater than about half its width, said cushion being floatingly attached to the sole member and free of direct attachment to the upper whereby said cushion is free for limited movement lengthwise of the sole member.

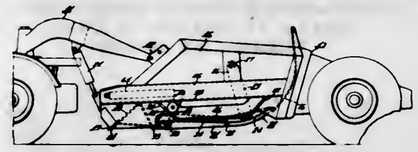
3,292,278
ELEVATING SCRAPER
Charles M. Johnson, Lubbock, Tex., assignor to Johnson Manufacturing Company, Lubbock, Tex., a corporation of Texas
Filed Sept. 17, 1963, Ser. No. 309,474
14 Claims. (Cl. 37—8)



1. An earth scraping machine comprising: a mobile, open-front, open-top earth carrying container having laterally spaced side walls; a downwardly and forwardly extending earth scraping blade carried at the front of said container between said side walls; an elongated endless conveyor between said side walls at a position above said scraping blade, said conveyor extending upwardly and rearwardly and having an elongated rigid frame means; means for pivotally mounting said conveyor for movement in a vertical plane, said means including a forwardly and upwardly extending conveyor support link pivoted about a transverse axis at its upper end to said frame means intermediate the ends of said frame means and about another transverse axis at its lower end to one of said side walls; biasing means yieldably urging the lower forward end of said conveyor downwardly; and means for guiding the lower end of said conveyor from a first position above the level of said scraping blade assumed when no dirt is passing over said blade to an intermediate position forwardly and downwardly of said first position assumed when a moderate amount of dirt is passing over said blade and then to a final position forwardly and upwardly of said intermediate position, said guide means including a rigid guide element disposed along the inside of one of said side walls adjacent the lower portion of said conveyor and having a guide surface engaged by said conveyor, said guide element being supported by said one side wall; and means for preventing upward movement of the lower end of said conveyor beyond a predetermined point.

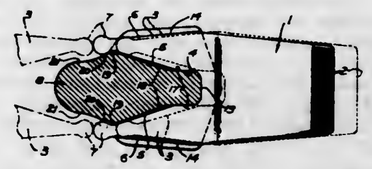
3,292,279
SCRAPER BOTTOM DUMP MECHANISM
Harvey W. Rockwell, Cedar Rapids, and Dale W. Hawk, Marion, Iowa, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 6, 1964, Ser. No. 349,961
8 Claims. (Cl. 37—129)

1. An earthmover comprising:
a wheeled draft frame,
a wheeled scraper bowl pivotally connected to said draft frame for vertical swinging movement about a transverse pivot axis including
a pair of transversely spaced side walls,
a transversely extending excavating blade structure rigidly secured at its opposite ends to the lower forward portions of said side walls, respectively,
transversely extending means rigidly interconnecting the rear portions of said side walls and
a pair of longitudinally extending tracks on said side walls, respectively,
a bottom dump mechanism for said bowl including



a rear bottom section pivotally secured to said bowl on a transverse axis spaced forwardly of said transversely extending means and above the bottom of said side walls,
a front bottom section having a rear portion pivotally secured to the forward portion of said rear section on a transverse pivot axis and having a strikeoff edge rigidly secured to its forward portion,
support means connecting said forward portion of said front bottom section to said tracks for movement therealong and vertical load support thereby, and
power means for moving said bottom dump mechanism between closed and open positions.

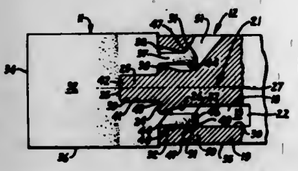
3,292,280
DIGGING TOOTH FOR EARTH-MOVING EQUIPMENT
Richard L. Launder and Ernie L. Launder, both of Whittier, Calif. (both % H & L Tooth Company, P.O. Box 330, Montebello, Calif. 90640)
Filed Dec. 20, 1963, Ser. No. 332,067
4 Claims. (Cl. 37—142)



1. The combination of a holder and a removable tooth, said holder having opposed relatively tapering walls and essentially parallel upper and lower walls bordering said tapered walls to form longitudinally extending guide ways open at their forward and rearward ends and having retension shoulders in said tapering walls at said rearward end, said tooth comprising:
(a) a flat body having a chisel-pointed end;
(b) and a pair of tines coplanar with each other and with said body and extending from the end thereof opposite from said chisel-pointed end;
(c) said tines being widest adjacent their attached ends and their confronting sides diverging toward their extended ends;
(d) said tines being laterally enlarged at their extended ends;
(e) said tines being capable of limited elastic deflection and dimensioned to be deflected as they are guided along the tapering walls of the holder until said lateral enlargements are forced over said shoulders for securing said tooth to said holder;

(f) the extremities of said tines being exposed for longitudinal engagement when said tooth is secured to said holder, whereby said tooth may be driven free of said holder by longitudinal engagement with the extremities of said tines.

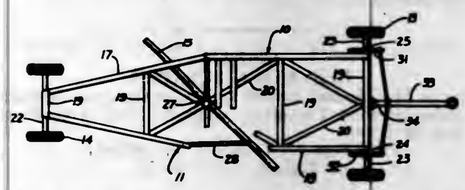
3,292,281
REVERSIBLE TOOTH WITH SNAP-ON HOLDING MEANS
Gerald A. Peterson, Sunnyvale, Calif., assignor of one-half to Anita E. Peterson, Saratoga, Calif.
Filed Jan. 17, 1964, Ser. No. 338,465
7 Claims. (Cl. 37—142)



1. In combination, a tooth and a tooth-holder, said tooth comprising a unitary piece of hard material having a distal portion formed with a cutting edge and a proximal portion, said proximal portion having top and bottom surfaces and formed with a substantially medial slot extending forward from the proximal end of the tooth extending between said top and bottom surfaces and dividing said proximal end into two prongs each substantially rectangular in cross-section, each said prong formed with a protuberance along one side edge adjacent the proximal end of said tooth, said prongs being resiliently flexible in directions toward and away from said slot, said protuberances moving toward and away from each other upon flexing of said prongs said tooth having its distal portion projecting out of said tooth-holder and said prongs in said tooth-holder, said tooth-holder comprising top and bottom walls engaging said top and bottom surfaces of said proximal portion of said tooth, a web interconnecting said top and bottom walls and traversing said slot, said web having a forward extension fitting into said forward extension of said slot, said tooth-holder having substantially vertical walls formed with sockets to receive said protuberances on said prongs, said walls slanted forwardly of said sockets to engage said protuberances as said tooth is driven into said tooth-holder and to bend said prongs by said slanted surfaces wedging said protubernaces relative to each other, whereby said prongs bend and then return to original position relative to each other with said protuberances fitting in said sockets to restrain unintentional withdrawal of said tooth from said tooth-holder and said extension of said web filling said extension of said slot.

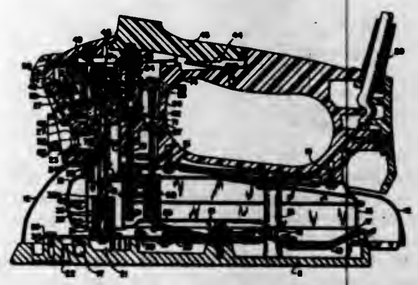
3,292,282
LAND PLANE
Eugene R. Reynolds, McAllen, Tex., assignor to Reynolds Research & Manufacturing Corporation, McAllen, Tex., a corporation of Texas
Filed May 14, 1964, Ser. No. 367,595
7 Claims. (Cl. 37—179)

7. A land plane, comprising a longitudinally extending frame having a pair of laterally spaced-apart wheels on at least one end, a blade supported on the frame and extending transversely of an intermediate portion thereof for working the ground as the frame moves thereover, each wheel of said pair of wheels having a separate axle which is pivotable about a vertical axis spaced laterally from the axis about which the other axle pivots, means for swinging said wheels about said axes between inboard and outboard positions relative to the frame, and means for reducing the lateral extension of the ends of the blade



from a width in which they are outboard of the frame to one in which they are inboard of the frame.

3,292,283
ELECTRIC SAD IRON
George E. Hauser, Mansfield, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Aug. 29, 1963, Ser. No. 305,475
9 Claims. (Cl. 38—77)



1. An electric sad iron adapted to emit steam comprising in combination, a base member including a sole plate, steam-generating chamber and reservoir, a handle member of heat-insulating molded plastic material secured to the base member, a valve member controlling intercommunication between the water reservoir and steam-generating chamber whereby controlled quantities of water are admitted to the steam-generating chamber from the water reservoir, a stem member in axial alignment with the valve member, a tube telescopically connecting said stem member and valve member, a first resilient member biasing said valve member to open position and toward said tube, a rotatable cam member rotatably carried by said handle member, said cam member having an arcuate cam surface disposed over said stem member, and a second resilient member biasing said stem member toward said cam member whereby rotation of the cam member causes axial movement of the stem member toward said tube and said second resilient member causes axial movement of the tube toward said valve member, the arrangement providing for operation of said valve member by rotation of said cam member.

3,292,284
RECORDING INDEX
Eugene Manno, 6500 NW. 35th Ave., Miami, Fla.
Filed Apr. 22, 1964, Ser. No. 361,735
8 Claims. (Cl. 40—62)

1. A device for recording information, said device comprising:

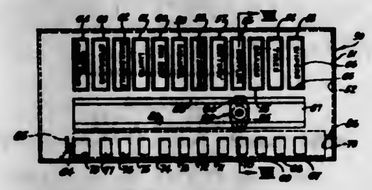
an elongated substantially flat frame member, said frame member having a plurality of transversely directed slots extending therethrough, and a downwardly directed skirt extending around the periphery of said frame, said skirt having an inwardly projecting lower edge;

a plurality of block-shaped buttons;

means supporting said buttons for sliding movement in said slots,

said buttons being movable in said slots between operative positions at each end of said slots, each of said buttons having indicia thereon which is associated with the information to be recorded; and

an elongated indicator strip extending longitudinally of said frame under said slots and supported on the lower edge of said skirt, said strip having at least two different, longitudinally directed colored portions thereon, each of said buttons covering one of the colored portions of said strip underlying its associated



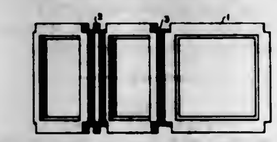
slot when the button is in one of its operative positions, each button in its other operative position covering the other colored portion of said strip underlying its associated slot, the means supporting said buttons comprises,

fins connected with said buttons and extending longitudinally of the bottom thereof and between said frame and said indicator strip,

a detent recess located in each of said fins; and

parallel, longitudinal directed detent projections carried by said frame and extending between said slots, said detent recess an said detent projections constituting detent means for locking said buttons in their operative positions.

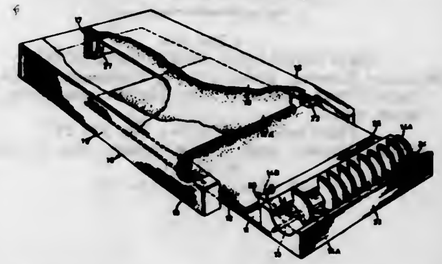
3,292,285
FOLDABLE FRAME STRUCTURE FOR FILM FRAMES OR FILM MOUNTS
Nobuhiko Kitayama, 29 Asakusa Kojima-cho 1-chome, Taito-ku, Tokyo, Japan
Filed Apr. 9, 1964, Ser. No. 358,602
Claims priority, application Japan, Apr. 18, 1963, 38/20,346
3 Claims. (Cl. 40—64)



1. Foldable frame structure comprising a plurality of parallel frame elements having first pairs of connecting members engaging surface means for detachably engaging connecting members when the lateral frame element edges are adjacent the connecting members, second pairs of connecting members engaging surface means for detachably engaging connecting members when a frame element has been rotated to place the upper and lower frame element edges adjacent the connecting members, a connecting member interposed between adjacent frame elements and swingably engaging a first pair of connecting member engaging surface means on each of the adjacent frame elements by means of a pair of recess-projection connections, each pair of the recess-projection connections defining an axis, the thickness of said frame elements and the distance between the two axes taken in said connecting member for swingably engaging the two frame elements adjacent thereto having dimensions satisfying the relation

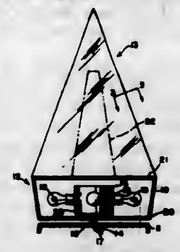
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3,292,286
TELEPHONE INDEX
Stig Bommer, Tingvagen 1, Haddings-Stockholm, Sweden
Filed Dec. 17, 1964, Ser. No. 419,142
Claims priority, application Sweden, Jan. 15, 1964, 457/64
7 Claims. (Cl. 40—65)



1. A telephone index of the type comprising a flat case in which there is movably guided a tray carrying a pile of index cards, said case being open at one end for permitting the tray with a desired number of index cards to be pulled out, while the other index cards remain in the case, and the index being provided with a number of aligned, pivotally journalled double-armed levers having one end actuatable manually for the purpose of selecting the desired number of index cards and having the other end adapted to engage the index cards on actuating of the lever in question, characterized in that at their fore edges located next to the open end of the case, the index cards are provided with aligned holes for engagement with said second lever ends in a number decreasing from top to bottom from one card to the other in the pile in such a way that on actuation of a lever the other end thereof engages holes in those cards which have a position corresponding to the position of the lever in the row, while the remaining cards are raised at least slightly, and in that near its open end the case has rearwardly directed inner hooks or stops which on outward movement of the tray catch the cards thus raised and prevent them from being pulled out.

3,292,287
DISPLAY
Louis A. Marra, Prospect Heights, Ill., assignor to Century Display Mfg. Corp., Chicago, Ill., a corporation of Illinois
Filed Aug. 24, 1964, Ser. No. 391,669
4 Claims. (Cl. 40—77)



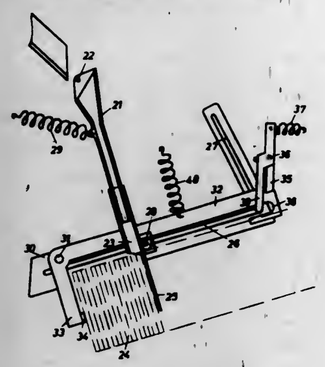
1. A display device particularly adapted for displaying an object in three-dimensions including providing multiple reflections of the same comprising in combination, a

housing adapted to support a cover, said housing having an upper transparent object supporting surface adapted to support said object to be displayed, said upper transparent object supporting surface having marginal sidewalls extending downwardly, a polyhedral cover over said object and said upper object supporting transparent surface, said cover being formed from material being either reflective or transparent depending on the level of illumination within the cover and means to illuminate the interior of said polyhedral cover thereby illuminating said object to provide multiple images reflected off the interior walls and visible exteriorly of the display regardless of the angle of viewing.

3,292,288
PHOTOGRAPHIC SLIDE PROJECTOR

Reinhard Sobotta, Braunschweig, Germany, assignor to Rollei-Werke Franke & Heidecke, Braunschweig, Germany, a firm

Filed June 1, 1964, Ser. No. 371,277
Claims priority, application Germany, June 1, 1963, R 35,314
20 Claims. (Cl. 40—78)



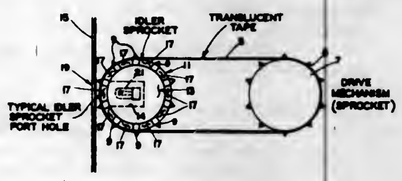
1. A photographic slide projector comprising means for holding a removable slide magazine containing a stack of a variable number of slides, means for raising a single slide from one end of the stack to a projection position above the magazine, a return chute extending in a downward inclination from an upper entrance end to a lower outlet end for guiding a slide after projection thereof downwardly to the opposite end of the stack, and means pivotally mounting said chute near its upper end for oscillation of the lower end thereof in the direction of the length of the magazine.

3,292,289
MEANS FOR TRANSILLUMINATING AN INDICATOR PRESENTATION

Wolfgang Fuhr, Hasbrouck Heights, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Mar. 8, 1963, Ser. No. 263,936
5 Claims. (Cl. 40—96)

1. An indicator device comprising an indicator mask having an aperture therein for viewing reference indications, a translucent tape bearing a series of reference indications, an idler sprocket carrying a portion of the indicator tape adjacent the aperture in the indicator mask, a drive mechanism sprocket bearing another portion of the translucent tape for driving the tape and sprocket in relation thereto, a source of light rays positioned within the idler sprocket, the idler sprocket including slots in the peripheral edge thereof, and means carried by the idler sprocket to synchronize the slots with the reference indications on the translucent tape as the same come into view through the aperture in the indicator mask whereupon the source of light rays within the idler sprocket

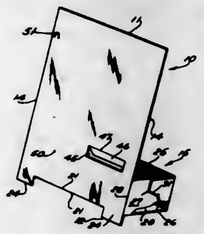


may be effective to transilluminate the reference indication on the tape in alignment with the aperture in the indicator mask and the slot in the idler sprocket being in coincidence therewith.

3,292,290
DISPLAY UNIT

Ralph Chandler Potter, 97 Mammoth Drive, Warwick, R.I.

Filed Aug. 27, 1964, Ser. No. 392,444
6 Claims. (Cl. 40—124.1)

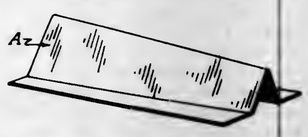


1. A display unit comprising a single sheet of material having a front display wall with bottom and side edges, a bottom wall extending rearwardly from said bottom edge and joined thereto by a fold of the sheet materiaal, a rear wall joined to the bottom wall by a fold of the sheet material and extending from the bottom wall generally parallel to the front wall, opposite spaced side walls bridging said front and rear walls and joined to one of said walls by a fold of the sheet material, means to hold said walls in substantially right angular relation to provide a container, said container serving as a support for said front display wall in an easel-like fashion, said front display wall having legs extending below the fold line joining it with the bottom wall, which legs are formed by cutting out portions of the bottom wall.

3,292,291
CAR TOP SIGN

Thomas J. Kelley, 821 Osceola Ave., St. Paul, Minn.

Filed Mar. 21, 1966, Ser. No. 535,960
5 Claims. (Cl. 40—129)



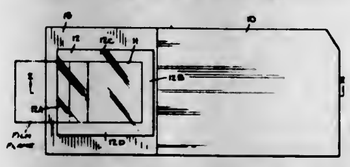
1. A car top carrier for use in conjunction with the top surface of a vehicle the sign including:
a pair of side wall panels hingedly connected along a common line of fold and adapted to be supported with the fold line extending longitudinally of the car, and the side walls at an acute angle and sloping toward the top surface,

means for adhesively securing said side wall panels to said top surface to present a passage of substantially triangular cross-section between said panels and said top surface, said means including flanges hinged to the lower edges of said side wall panels and adapted to be adhesively attached in face contact with said top surface,
the width of said panels increasing from the forward edge thereof to the rear edge thereof to present a passage of gradually increasing cross-sectional area from front to rear of said panels where the forward edges of said panels face the front of said car.

3,292,292
SUSPENSION TYPE APERTURE CARD

Stanley Engelstein, 320 West End Ave., New York, N.Y.

Filed Jan. 29, 1963, Ser. No. 254,709
1 Claim. (Cl. 40—158)

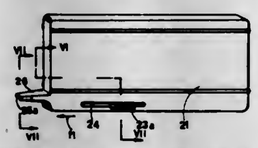


An aperture card of the suspension type, comprising a card having a rectangular aperture therein and a depressed channel roll embossed on either face of said card extending a full dimension of said card and having a width encompassing said aperture, and a panel overlying said aperture within said channel on either face thereof, the borders of the top and bottom panels being bonded to the edges of said aperture except for one portion of the top panel which provides an opening for the suspension compartment, the thickness of said panels being equal to the depth of said channels, whereby the panels are flush with said card.

3,292,293
CONTAINER AND LOADER FOR CAP EXPLOSIVE CAPSULES

Carlo Chiasera and Giuseppe Pochintesta, Milan, and Giampiero Ferri, Via Stoppani 38, and Jori Marinai, Via Stoppani 29, Florence, Italy, assignors to Giampiero Ferri and Jori Marinai, both of Florence, Italy

Filed Jan. 28, 1965, Ser. No. 428,776
Claims priority, application Italy, Feb. 1, 1964, 2,230/64; Nov. 28, 1964, 26,237/64
4 Claims. (Cl. 42—49)



1. A container and loader for cap explosive capsules having a substantially cylindrical wall configuration and a bottom, said container and loader comprising: a capsule-confining chamber for holding capsules in predetermined orientation, an exit orifice communicating with said chamber through which capsules may be fed one at a time, a delivery extension communicating with said orifice and projecting outwardly of said container said delivery extension having a top wall separating a pair of side edges between which a capsule is delivered, the distance between said side edges being such that a capsule delivered along its bottom thereto against the top wall is frictionally supported by said side edges, a sliding member and a longitudinal seat in which said member is slidably supported associated with said container, said sliding member and seat being substantially coaxial with said delivery extension, and means by which said sliding member may be manually actuated such that a capsule fed through the orifice may be moved by said sliding member to the delivery extension between the gripping edges thereof preliminary to the loading of said capsule in a toy weapon.

3,292,294
ILLUMINABLE FISHING DEVICE

Milton L. Beach, 722 Maple Heights Drive, and William R. Fisher, Township Road 92, both of Gallon, Ohio 44833

Filed Sept. 23, 1964, Ser. No. 398,682
2 Claims. (Cl. 43—17.5)



1. An illuminable buoyant fishing device comprising:
a hollow buoyant body having a portion thereof adapted to permit the passage of light therethrough;
an opening formed in said body;
a tubular member extending into the hollow interior of said body through said opening;
illuminating means carried by the interior end of said tubular member;
cap means closing the other end of said tubular member;
means securing said tubular member in said opening;
a battery disposed in said tubular member;
first spring means in said tubular member biasing said battery away from engagement with said illuminating means;
second spring means in said tubular member biasing said battery toward engagement with said illuminating means; and
switch means extending through said cap member into the interior of said tubular member;
said switch means including a first leg member extending into said tubular member and being operable to overcome the bias of said second spring means whereby said battery may be displaced away from engagement with said illuminating means;
said switch means further including a second leg extending transverse to said first leg;
a slot formed in said cap and being adapted to receive said second leg in one position of said switch;
said switch being rotatable between said one position and a second position wherein said leg extends across said slot.

3,292,295
FISHING PISTOL

Norman H. Saltness, 900 Parker Ave., Falls Church, Va. 22046

Filed Sept. 23, 1964, Ser. No. 398,685
4 Claims. (Cl. 43—19)

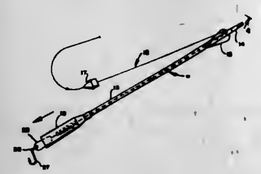
1. In apparatus for use with a fish lure attached to one end of a line, the other end of which line is to be payed out from a supply reel, the combination including a projectile for carrying said lure and said one end of the line, and a projector for propelling said projectile thru the air, said projectile having a specific gravity less than water and being provided with means to pay out a predetermined length of said line after landing on the water,

said projectile being provided with a central passage extending completely therethrough, said line passing through said passage, said projectile also including a bait cup



separably attached to the main body of the projectile, said bait cup being detachable from the body on impact with the water.

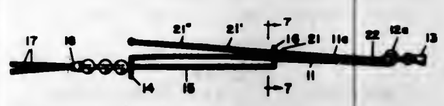
3,292,296
LURE CHAMBER FISHING ARROW
Henry Viveiros, 1983 Camden Ave., San Jose, Calif.
Filed Oct. 26, 1964, Ser. No. 407,281
1 Claim. (Cl. 43—19)



A casting arrow comprising a hollow shaft, a nock on one end of said hollow shaft provided with a longitudinal bore, a chamber forming element on the other end of said shaft having an enlarged open end, a hollow chamber head having a portion seated within said enlarged open end to provide a releasable closure for said chamber element, said chamber head having a line receiving aperture therein, a plurality of weights having through bores slidably received in said hollow shaft, said nock having a line receiving aperture therein, a fishing lure, a line connected at one end to said lure and adapted to have its other end connected to a reel, said line having a portion adjacent said lure threaded through said hollow shaft, said weights, and said longitudinal bore in said nock, a second portion joined to said first portion and extending from said nock along the exterior of said hollow shaft and chamber element and releasably secured between said chamber element and chamber head, and a third portion extending outwardly through said aperture in said nock to a position between said chamber element and chamber head and then outwardly through said aperture in said chamber head to said reel.

3,292,297
EXPANSIBLE FISH HOOK DEVICES
Armand Dupont, 67 Harris St., Granby, Mass. 01033
Substituted for abandoned application Ser. No. 189,448, Apr. 23, 1962. This application Jan. 2, 1964, Ser. No. 337,706
2 Claims. (Cl. 43—36)

1. A self-contained expansible fish hook device comprising in combination, a pair of arms connected together at one end thereof and resiliently biased to spread their other ends apart by movement of the arms in a given plane, hook members provided at said other ends of said arms, an elongated eye secured to the connected ends of said arms and projecting therefrom in a plane perpendicular to said given plane of spreading movement of the arms, a stem extending slidably through said eye and having a front end adapted for connection to a fishing line, a loop provided at the rear end of said stem in a plane parallel to said eye, said loop frictionally embracing both said arms at a point spaced longitudinally from said eye and constituting sole means for retaining said arms in a drawn together position, but being slidable along said arms toward said eye during sliding of the stem through the eye whereby to permit the arms to be resiliently spread apart, and a resilient tensioning rod rigidly secured at one end thereof to the front end of said stem and extending slidably through said eye alongside the stem with the



inherent resiliency of the rod biasing the same away from the stem in a plane perpendicular to said given plane of spreading movement of said arms, said tensioning rod being of substantially the same length as the stem with the rear end of the rod terminating adjacent but outside of said loop and with the intermediate portion of the tensioning rod being permanently extended through and in frictional engagement with said eye, whereby to adjustably control the force required for sliding of said loop along said arms toward said eye.

3,292,298
FISHHOOK GUARD AND LEADER ALIGNING DEVICE
Arthur J. Mullikin, 610 Cravens Bldg., Oklahoma City, Okla. 73101
Filed Oct. 12, 1964, Ser. No. 403,117
4 Claims. (Cl. 43—43.15)



1. A fishhook guard for a fishing line having a fishhook equipped leader attached thereto, comprising: a tube formed of pliable material, having one end portion surrounding the fishing line and having a length at least as great as the fishhook on the fishing line and having an inside diameter greater than the diameter of the fishing line, said fishing line having a knot frictionally contacting a portion of the inside wall area of said tube, said tube having a slit in its wall for receiving and releasing the barbed end portion of a fishhook, said tube having a circular opening in its wall in communication with the slit, said circular opening being of a size for snugly surrounding a portion of a fishhook intermediate the ends of the latter, whereby a fishhook may be manually pulled through the slit to position the fishhook within the said circular opening; and means frictionally connecting said tube to said fishing line.

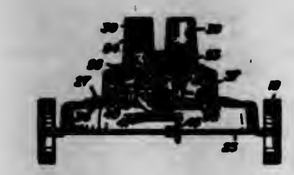
3,292,299
SPRING ACTUATED FLY SWATTER
Gordon E. Mettler, Churchs Ferry, N. Dak. 58325
Filed Aug. 30, 1965, Ser. No. 483,717
6 Claims. (Cl. 43—135)

1. In a fly swatter, a handle; a swat arm having one end portion pivotally mounted in said handle and having a swat pad on its other end portion, said swat arm being movable between a swatting position and a cocked position; a latch means in the handle positioned to hold said swat arm in its cocked position; a trigger pivoted in the handle; spring means connected between the trigger and the swat arm, said trigger constituting a means to free the spring of tension when the trigger is in a released position and to tension it by squeezing pivotal movement to impart swatting movement to the swat arm; and a



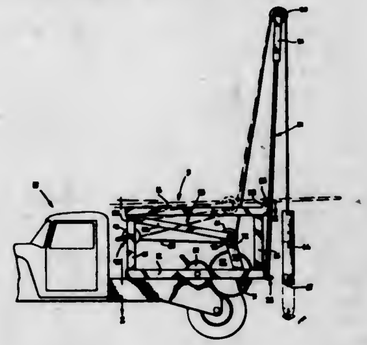
return spring on the trigger and abutting a portion of the handle for urging the trigger and swat arm into a cocked position, said latch means being actuated by said trigger to release said swat arm when said trigger is squeezed into a fully retracted position.

3,292,300
TOY LAWN MOWER WITH VISIBLE RECIPROCATING PISTONS
George W. Lescher, Nashville, Carl B. Denny, Vanleer, and Arnold E. Brown, Nashville, Tenn., assignors to Kusan, Inc., Nashville, Tenn., a corporation of Kentucky
Filed Oct. 28, 1963, Ser. No. 319,461
4 Claims. (Cl. 46—39)



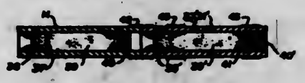
1. A toy lawn mower comprising, in combination, a housing with a supporting structure thereon; an elongate propelling handle connected with said housing; a transparent engine element simulating the configuration of a reciprocating engine mounted on said supporting structure and including a pair of vertically disposed transparent cylinders visible to the operator; a piston reciprocably mounted in each of said cylinders; a horizontally disposed, simulated cutting blade including a hub rotatably mounted below said pistons and visible to the operator; at least one axle and pair of wheels mounted on and supporting said housing; and means for driving said piston and blade including a drive wheel fixed to said axle and drivably supporting the hub of said blade; an arcuate cam fixed to the upper surface of said hub; and a pivotally mounted walking beam having arcuate bottom edges alternately drivably supported by said hub cam, said beam being pivotally connected to said pistons to effect reciprocation thereof upon rotation of said wheels, drive wheel, and said cam.

3,292,301
TOY OIL DRILLING APPARATUS
Lloyd E. Freeman, R.R. 1, Cowpert, Ind.
Filed Feb. 24, 1964, Ser. No. 346,611
3 Claims. (Cl. 46—39)



3. A toy drilling rig for mounting on the rear of a truck having a bed portion or the like comprising a frame, a crank extending horizontally and transversely of the bed portion and rotatably mounted on said frame at the central lower portion thereof with the offset handle of said crank on one side of said frame, a pair of meshing spur gears one smaller and one larger, said smaller spur gear fixedly mounted on said crank for rotation thereby to drive said larger spur gear, said larger spur gear being rotatably mounted on the lower rearward portion of said frame, a first pulley, a pulley mount including a pair of diverging members with said first pulley rotatably mounted at the converging distal ends of said diverging members for rotation about a horizontal axis and the diverging ends of said diverging members swingably mounted on the forward end of said frame for swinging about a horizontal axis transverse of the bed of said truck, a link pivotally connected at its upper end to said pulley and pivotally connected at its lower end to said larger spur gear adjacent the periphery thereof, a tower pivotally connected at its lower central portion to the upper rear of said frame, a snap at the lower rear of said frame releasably engaging the lower end of said tower and maintaining it in an upright condition, a second pulley rotatably mounted at the upper end of said tower, a drill weight, a line connected to said drill weight and hanging it from said second pulley, said line extending from said drill weight over said second pulley downwardly beneath said first pulley and forwardly to the forward portion of said frame whereby said crank can be rotated to reciprocate said drill weight.

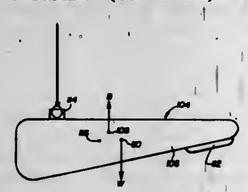
3,292,302
MULTISTAGE MODEL ROCKET
Vernon D. Estes and William M. Simon, Penrose, Colo., assignors to Estes Industries, Inc., a corporation of Colorado
Filed Sept. 14, 1964, Ser. No. 396,254
3 Claims. (Cl. 46—74)



1. In a model rocket having at least two separable stages, the combination comprising:
at least two separable rocket casing members;
a first pyropropulsive rocket motor member mounted within one of said casing members;

a second pyropropulsive rocket motor member mounted within the other of said casing members;
said casing members, and hence said first and second motor members, being arranged in end-to-end aligned relationship forming an interface between said casing members and an interface between said first and second motor members;
releasable coupling means provided at one of said interfaces to maintain said members in said aligned relationship;
said releasable coupling means including a strip of material at least partially surrounding said one interface, said strip having a portion thereof secured to the exterior of each of the aligned members forming said one interface;
said coupling means maintaining said members in said aligned relationship so long as said motor members are unignited;
said first motor member having means ignitable to thereby create a positive pressure at said one interface and to eventually ignite said second motor member;
said positive pressure serving as means to release said coupling means to thereby permit said casing members to separate from one another.

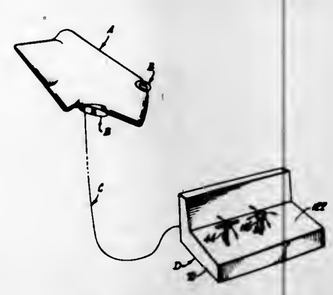
3,292,303
CONTROLLABLY SUBMERSIBLE TOY
James A. Fors, 4958 W. Parker Ave., Chicago, Ill. 60639
Filed Aug. 27, 1964, Ser. No. 393,485
6 Claims. (Cl. 46—94)



1. A submersible toy which comprises an elongated body having a specific gravity less than that of water and shaped to facilitate its movement through water in a path extending in a predetermined direction generally axially of said body, the center of buoyancy of said body in water being located forwardly of the center of gravity of said body in said predetermined direction, means including a weight and means for supporting the same manually, and means on said body having an open upper end for receiving said weight and located on a portion of said body designed to remain uppermost, said open upper end being located forwardly of the centers of horizontal pressure of the water on the sides of said body and forwardly of the said center of buoyancy of said body in a relation causing said body to move forwardly with said weight and supporting means, and said weight having a value sufficient to submerge said body completely and to tilt the axis of said body downwardly in water when the weight is so received on said body.

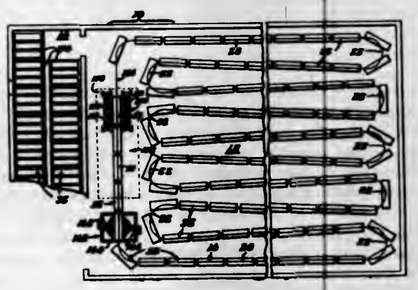
3,292,304
REMOTELY CONTROLLED TOY SPACE SHIP
Robert A. Wolfe, 455 Elizabeth Ave., Newark, N.J. 07112
Filed Apr. 17, 1964, Ser. No. 360,711
8 Claims. (Cl. 46—244)

1. A toy space ship comprising container means adapted to be filled with a gas which is lighter than air and, when filled with said gas, floating in the air in a state of substantial equilibrium, said container means having a configuration which simulates the configuration of a space ship, a first reversible electric motor means carried by said container means, downwardly directed propeller means operatively connected to said motor means to be driven thereby and located at the exterior of said container means beneath the latter so that when said motor means drives said propeller means in one direction, said container means will move up, while when said motor means drives said propeller means in the opposite direction, said container means will move down, second reversible electric motor means carried by said container means, horizontally directed propeller means operatively



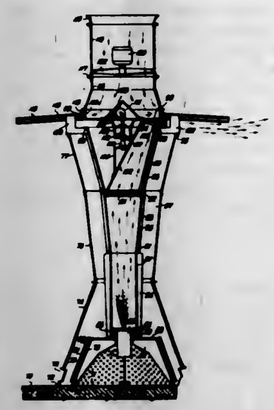
connected to said second motor means to be driven thereby and secured to the exterior of said container means so that when said motor means drives said propeller means in one direction, said container means will move in a direction substantially horizontal and forward, and while said motor means drives said propeller in the opposite direction, said container means will move backwards along a substantially horizontal path, and means for controlling said first and second motor means from a remote location so as to selectively move said container means horizontally and vertically.

3,292,305
MUSHROOM CULTIVATION
Paul G. Stengel, R.D. 2, Kennett Square, Pa. 19348
Filed Sept. 29, 1964, Ser. No. 400,053
4 Claims. (Cl. 47—1.1)



1. Apparatus for commercially cultivating mushrooms, the combination comprising an endless track enclosed conveyor system, a series of shallow upright frames adapted for mushroom cultivation on each side thereof, means for suspending said frames from said tracks, casing means at a station adjacent said conveyor and adapted for the casing of at least one side of each frame as it passes by said casing station, and a spray means at a second station adjacent said conveyor and adapted for spraying at least one side of each frame as it passes by said spraying station.

3,292,306
METHODS AND APPARATUS FOR ACHIEVING CONTROLLED LARGE-SCALE CLIMATE AND ATMOSPHERIC EFFECTS
Drexel T. Carlson, Kansas City, Mo. 64100
Filed Apr. 15, 1965, Ser. No. 448,330
19 Claims. (Cl. 47—2)



11. A device for distribution and conditioning of air with respect to areas surrounding same comprising
a first vertically disposed tubular body extending from adjacent ground level to a substantial height thereabove,
air accelerating means in said first body adapted to aid in forcing air upwardly therein,
a second vertically disposed tubular body positioned above and substantially axially in line with said first body,
air accelerating means in said second body adapted to force air downwardly therein,
at least one air intake opening in the upper end of the second body and in the lower end of the first body,
said first and second bodies open for air discharge at their upper and lower ends, respectively,
a third vertical tubular body substantially axially in line with said first and second bodies and positioned concentrically outwardly of said first body,
said third body open at its upper end and having at least one air intake opening in its lower end,
the internal diameter of the second body lower discharge end greater than the internal diameter of the first body upper discharge end and less than the inner diameter of the third body upper discharge end,
a substantially flat baffle of area at least equal to the cross-sectional end area of the lower end of the upper body,
said baffle disposed intermediate the respective lower and upper ends of said second and first and third bodies, respectively, whereby to receive air discharge from said bodies substantially normal thereto on each side thereof, distribute same radially and entrain air from the annulus between the first and third bodies.

3,292,307
METHOD OF SPOT SEEDING
Charles O. Finn, Cincinnati, Ohio, assignor to The Finn Equipment Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 6, 1963, Ser. No. 321,814
3 Claims. (Cl. 47—58)

1. The method of spot planting which comprises thoroughly intermixing lengths of fiberglass rovings, cellulose fiber, plant seed, water and fertilizer materials, and discharging the same as an aqueous slurry with sufficient velocity to create airborne wads which subsequently are scattered on the ground.

3,292,308
PROCESS OF PRESERVING GRASS SEED
Benjamin S. Goldberg, 5106 Levindale Road, Baltimore, Md. 21225
No Drawing. Filed Apr. 7, 1965, Ser. No. 446,425
1 Claim. (Cl. 47—58)

A process of treating grass seeds comprising coating said grass seeds with cotton seed meal and adding a coating of soya bean meal.

3,292,309
ADJUSTABLE BLIND ASSEMBLY
Carl L. Horner, Birmingham, Mich., assignor to Thermalouver Corporation, Dearborn, Mich., a corporation of Michigan
Filed May 25, 1964, Ser. No. 369,692
3 Claims. (Cl. 49—64)



1. Adjustable sun control, view control, and privacy control blind means particularly suitable for installation between the spaced double glass panels of a sealed thermal insulating window unit with said blind means being operable inside the unit from a position outside the window unit to locate the blind means inside the window unit in the desired angular position without disturbing the sealed thermal insulating condition of the unit, comprising
spaced parallel support members having aligned bearing means such as apertures,
blind strips lying between said support members having opposite ends adjacent said support members,
pivotal means such as pivot pins on said opposite ends of said blind strips lying in said bearing means of said support members swingably mounting said blind strips between said support members,
cranks on said pivot pins at one said support member,
a linearly movable actuator member adjacent said one support member having cam means such as slots engaging said cranks;
linear movement of said actuator member swinging said cranks to swing said blind strips angularly between a position parallel to a line of sight, a position normal to a line of sight, and various adjusted positions between said parallel position and said normal position;
operating means connected to said actuator member for moving said actuator member linearly inside a sealed glass window unit in which said adjustable blind means is contained,
an operator assembly associated with said actuator member comprising a channel member U-shaped in cross-section having a web portion and extending flanges;

at least one said flange having slots leading to a root constituting partial bearing means;
said crank pivot pins lying in said slots at said roots of said flanges;
said actuator member lying in said channel member and having a base slidably positioned on said web portion of said channel member and an extending stem lying parallel to said channel member flanges having cam slots engaging said cranks on said pivot pins; and
a retainer molding lying on said channel member flanges having at least one extending rib lying parallel to said channel member flanges abutting said crank pivot pins constituting partial bearing means for said pivot pins in cooperation with said partial bearing means of said roots of said slots in said flange of said channel member.

3,292,310
APPARATUS FOR GRINDING BRICKS OR THE LIKE

Martial A. Lefevre, Oise, France, assignor, by mesne assignments, to International Diamond Products Limited, Shannon, Ireland, a corporation of Ireland
Filed Feb. 20, 1964, Ser. No. 346,339
23 Claims. (Cl. 51—118)



1. In a brick grinding apparatus for conditioning pairs of opposite faces of bricks, in combination, means establishing a receiving station, a transfer station, a grinding station and a discharge station, a feed conveyor having a fixed framework and including a series of brick-supporting trays movable in feed and return relation between the receiving and transfer stations and adapted to receive a succession of bricks at the former station and transfer them to the latter station, a brick-clamping conveyor having a fixed framework and including a series of brick-clamping cradles movable in advance and return relation between the transfer and grinding stations and adapted to receive the bricks from the feed coveyor at the transfer station and conduct them to the grinding station, a pair of grinding wheels at the grinding station and having opposed grinding surfaces between which the clamped bricks in the cradles are adapted to pass, each tray including a pair of tray sections movable between closed brick-supporting and open brick-releasing positions, spring means yieldingly urging said tray sections toward their open positions, latch means automatically operable to maintain the tray sections in their closed position against the action of said spring means, cam means operable during the return movements of the trays for moving said tray sections to their closed position, each cradle including a pair of brick-clamping jaws movable between closed brick-clamping and open brick-releasing positions, means for moving said conveyors in timed relation so that the trays and cradles arrive in matched pairs at the transfer station, means operable upon arrival of each tray at the transfer station to trip the latch means thereof to open the tray sections and release the brick supported thereby, means operable upon arrival of each cradle at the transfer station to close the jaws thereof in order to clamp therebetween a brick released from the feed conveyor, and means operable upon arrival of each cradle at the discharge station for opening the jaws thereof to release the ground bricks.

3,292,311
ABRASIVE WHEELS

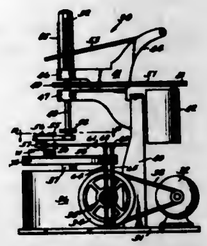
James J. Hensley, Clinton, Tenn.
(P.O. Box 1269, Knoxville, Tenn.)
Original application Dec. 6, 1961, Ser. No. 157,514, now Patent No. 3,255,289, dated June 7, 1966. Divided and this application Oct. 16, 1964, Ser. No. 404,267
2 Claims. (Cl. 51—206)



2. An abrasive wheel comprising a plastic body having abrasive particles embedded therein, said body having a thicker peripheral portion and a relatively thinner intermediate web portion forming recesses at opposite sides of the body, a plurality of sheets of material extending throughout the respective recesses and with the outer faces of the plurality of sheets co-planar with the outer faces of the thicker peripheral portion, and means for attaching the sheets to the web portion for handling and for peeling of the sheets therefrom when the wheel is to be put into service.

3,292,312
METHOD OF ABRADING A WORKPIECE

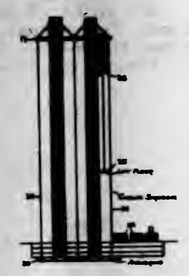
John Y. Snyder, New Orleans, La., assignor of five percent to James H. Drury, five percent to Bernard M. Casimir, five percent to Rapier, Barre & Rapier, one and one-quarter percent to Mr. L. C. Lohmann, one and one-quarter percent to Mrs. L. C. Lohmann, five percent to Jake Polito, ten and one-half percent to Millard P. Snyder and eight percent each to Patricia S. Lancelotta, Elizabeth A. Snyder, Sara Jane Snyder and Mary J. Snyder
Original application May 2, 1962, Ser. No. 191,834, now Patent No. 3,201,905, dated Aug. 24, 1965. Divided and this application Jan. 12, 1965, Ser. No. 432,926
3 Claims. (Cl. 51—281)



1. A method of abrading a workpiece on a planar active abrading surface, comprising the steps of:
placing a workpiece to be abraded upon said abrading surface with a surface of said workpiece contacting said active abrading surface;
applying pressure to said workpiece to press said workpiece surface against said active abrading surface;
rotating said abrading surface about an imaginary central axis;
revolving said workpiece about said imaginary central axis as said abrading surface rotates; and,
preventing said workpiece from rotating about its own axis while it revolves about said imaginary central axis, thereby maintaining said workpiece in substantially fixed orientation even while said workpieces surface is being abraded by said active abrading surface.

3,292,313
TENSILE SYSTEM OF BUILDING CONSTRUCTION

Clive E. Entwistle, 210 E. 50th St., New York, N.Y. 10022
Filed July 17, 1962, Ser. No. 210,487
7 Claims. (Cl. 52—74)



1. A building structure comprising:
(a) a vertically extending spine adapted to take all vertical and compressive loads of the structure,
(b) a horizontal platform supported on said spine adjacent the upper end thereof,
(c) a grid surrounding said spine and constituted by an array of tensile cables extending vertically from the edge of said platform to anchor points in the ground, the area between said grid and said spine defining the building space,
(d) a series of floors within said space supported by said spine and said cables, each floor being formed by a group of bay units which are secured to each other to define a multiple-bay floor which surrounds said spine and which occupies the space between said spine and said cables, and
(f) means connecting each multiple-bay floor to said cables and said spine.

3,292,314
MOVABLE HOUSE TENT

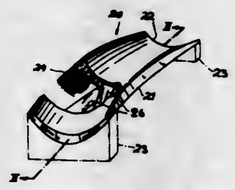
Hermann Heise, an der Silberkuhle 2, Hannover, Germany
Filed Nov. 8, 1963, Ser. No. 322,396
Claims priority, application Germany, Mar. 13, 1963, C 29,364
3 Claims. (Cl. 52—79)



1. A combined housing and tent unit comprising a portable house having walls which meet to define corners, support and leveling means mounted at each corner whereby the house may be mounted level on uneven terrain, and tent floor supporting means projecting laterally from said housing and mounted on said support and leveling means and constituting the sole means for mounting and supporting a tent floor.

3,292,315
SHELL STRUCTURE FOR CONCRETE ROOFS AND THE LIKE

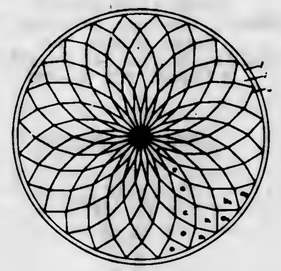
Wilhelm Johannes Silberkuhl, Uwe Kastl, and Ernst Haeussler, all of Moorenstrasse 24, Essen, Germany
Filed Nov. 22, 1963, Ser. No. 325,703
Claims priority, application Germany, Nov. 28, 1962, S 82,610
13 Claims. (Cl. 52—80)



1. A structure adapted to be used in roof construction and the like, comprising a concrete shell of substantially rectangular horizontal outline with upwardly arched longitudinal edges at the longer sides of the rectangle, said shell being of upwardly concave transverse curvature at least over the major part of its surface and having a central cross-section substantially in the shape of a diverging meniscus, and reinforcing means imbedded within the body of said shell, said shell having a high center of gravity and inwardly directed edge torques in the region of said central cross-section.

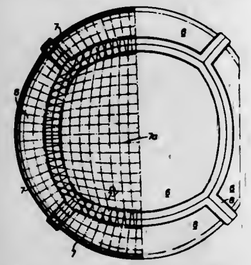
3,292,316
SELF-SUPPORTING ROOF

Bertil Olov Zelnatz, 7 Storgatan, Stockholm, Sweden
Filed Sept. 26, 1961, Ser. No. 140,788
Claims priority, application Sweden, Oct. 1, 1960, 9,389/60; Mar. 23, 1961, 3,104/61
12 Claims. (Cl. 52—81)



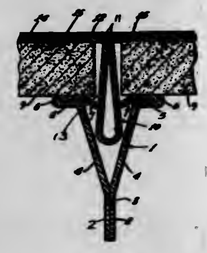
1. A self-supporting roof for a building having the form of
(a) a curved shell formed of a plurality of panel elements arranged to form a generally curved surface,
(b) tension members associated with each panel element interconnecting several points spaced about each panel element,
(c) means interconnecting the individual panel elements with the tension members for compressing the individual panel elements when the tension members surrounding the panel elements are connected and drawn together, and
(d) means to place the said tension members under tension and to interconnect them with tension members of adjacent panels, whereby the tension members compressed the individual panel elements and join them together.

3,292,317
PRESTRESSED CONCRETE PRESSURE VESSEL
Norman Thomas Barrett, Culcheth, near Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed May 13, 1963, Ser. No. 279,732
Claims priority, application Great Britain, May 25, 1962, 20,305/62
7 Claims. (Cl. 52—81)



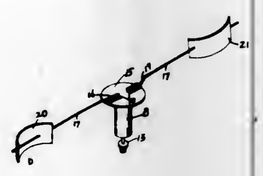
5. A prestressed concrete pressure vessel having a hemispherical part which comprises concrete panels, each panel braced by a structure of tensioned tendons lying within the concrete, said tendons being disposed in at least two arrays, each array lying on a portion of a sphere and each tendon of that array lying on a great circle of the sphere which great circle passes through the poles of the sphere, said spheres being substantially concentric and the poles of the said spheres all lying in substantially the same plane, the corresponding poles of each sphere being spaced apart in said plane, and all said sphere portions intersecting a radial line which lies in the plane of that great circle of each sphere which plane is normal to the said plane of the poles.

3,292,318
RETAINING CLIP FOR CONSTRUCTION PANELS WITH TEAR STRIPS
Clifton L. Clevenger, 5020 55th Ave., Rogers Heights, Md.
Filed Aug. 30, 1963, Ser. No. 305,711
3 Claims. (Cl. 52—98)



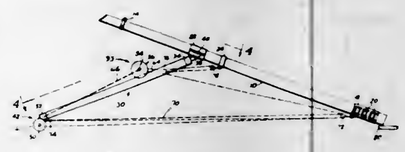
1. In combination with building panels in edge-to-edge coplanar arrangement, a connecting clip member formed of a strip of sheet material bent into a substantially T-shaped cross-section with its marginal portions defining co-planar flanges, said clip member being interposed between abutting edges of adjoining panels whereby said flanges will flatly engage the outer faces of said panels, flexible flat strip means engaging a substantial portion of the outer faces of said flanges and extending longitudinally thereof intermediate the marginal edges of said flanges, said clips, strip means and panels having a decorating coating material thereover forming a continuous wall structure, one end of said flexible strip means being free of said coating material whereby a pull exerted on said free end will cause said flexible strip means to tear through said coating material to uncover said flanges for ready removal of said clips for disassembly of said panels without marring thereof whereby said panels may thereafter be used.

3,292,319
SEA GULL GUARD
Henry J. McCarthy, Sargent Road, Marblehead, Mass.
Filed June 22, 1964, Ser. No. 376,705
2 Claims. (Cl. 52—101)



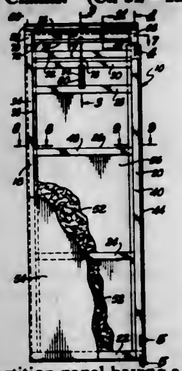
1. A sea gull deterent means comprising a self-propelled device having a rotatable hub bearing member defining a central axial passageway open at one end and adapted to be freely suspended by means of a shaft positioned within said passageway, a plurality of elongated arm members pivotally mounted and radially disposed on said hub bearing member, said arm members extending transversely from said hub bearing member and having adjacent the ends of said arm members concavo-convex shaped members with the concave surfaces facing in opposite directions to effect movement of the deterent means in a horizontal plane.

3,292,320
PORTABLE SPAR POLE
Milo L. Laharty, Roseburg, Oreg., assignor to Forrest Industries, Inc., Dillard, Oreg., a corporation of Oregon
Filed Apr. 9, 1965, Ser. No. 446,942
8 Claims. (Cl. 52—119)



1. A portable spar pole comprising
(a) a long pole having a bottom end adapted to butt against the ground and a top end adapted to support log hauling apparatus,
(b) thrust lever means positioned beneath the pole parallel thereto and extending from an intermediate point of the pole toward the top thereof,
(c) pivotal connecting means pivotally connecting the intermediate point of the pole and the adjacent end of the thrust lever means, and
(d) cable and pulley means interconnecting the base of the pole and the unsecured end of the thrust lever means for raising the pole to an erect position, and
(e) wedge means between the pole and thrust lever means and movable toward said pivotal connecting means for wedging the pole away from the thrust lever means.

3,292,321
MOBILE PARTITION
Paul A. Vander Schaaf, Anaheim, Calif. (930 Maryland Drive, Vista, Calif. 92083)
Filed Dec. 24, 1963, Ser. No. 333,108
6 Claims. (Cl. 52—122)



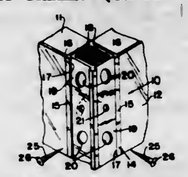
1. A mobile partition panel having a top, bottom, edges and surfaces adapted to be positioned between a floor and a ceiling to divide a room, said panel comprising first and second uprights in said panel defining the edges of said panel, fixed cross rails extending between and secured to said uprights, skin secured to said uprights and said cross rails to define the visible surface of said panel, means adjacent the bottom of said panel adapted to engage a floor, and movable means at the top of said panel adapted to engage a ceiling, said movable means comprising an upper cross rail, means to control said movable cross rail, said means to control including a movable spring seat connected to said upper cross rail, said movable spring seat being connected to said upper cross rail by mechanical means limiting the maximum separation therebetween and by a compression spring positioned between said movable spring seat and said upper cross rail, said spring means urging the maximum separation therebetween so that upward motion of said spring seat positions said upper cross rail, and means to move said movable spring seat, said means to move being manually controlled by means accessible externally of said panel.

3,292,322
RETRACTABLE SIGNAL SUPPORT
Henry C. Pfaff, Jr., Summit, and Francis G. Schlosser, Ridgefield Park, N.J., assignors to Pfaff and Kendall, Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 4, 1964, Ser. No. 342,428
3 Claims. (Cl. 52—122)



1. A retractable signal support comprising a base section to be secured at one end to a supporting surface and extending upwardly therefrom, a first brace plate remote from the lower end of the base section and secured to the base section, said first plate having an opening therein, an elongated support shaft which, above the plate, carries a signal, said support shaft being movably positioned in the opening of said first plate, a second brace plate secured to the base section below said first plate and provided with an opening therein aligned with the opening in the first plate, a collar having an inner liner sleeve of plastic material, said collar being affixed to the plates in alignment with the openings therein, and shaft shifting means comprising a cable means engaging a portion movable with the shaft and extending about the first plate and thence to the bottom of the base section for controlled displacement of the shaft through said openings to thereby shift said signal with respect to the base section.

3,292,323
EXTRUDED AND APERTURED CONSTRUCTION MEMBERS
Leo F. Hagan, 244 Townsend, Birmingham, Mich. 48009
Filed Oct. 23, 1965, Ser. No. 503,630
15 Claims. (Cl. 52—127)

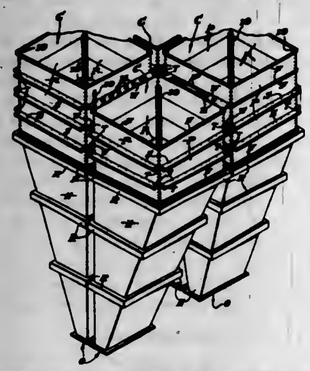


1. A construction member for the fabrication of assembled furniture and like structural items, comprising a hollow elongated extrusion of closed, generally square cross section defined by walls at least some of which have external dovetail type recesses extending along lengthwise zones thereof, one of said recessed walls having a number of apertures through the recessed zone thereof, including longitudinally spaced apertures of predetermined size, an opposed wall also having a number of apertures therethrough, including longitudinally spaced apertures of smaller size than and in alignment respectively with the larger sized apertures of said one wall for the reception of headed securing elements through said walls, with the heads of said elements in securing relation to the inner surface of said opposed wall, and an elongated finish strip having a width substantially equaling that of said dovetail recess and secured in dovetail fashion in the latter to extend therealong and cover the apertures thereof.

3,292,324
SILOS AND LIKE CONTAINERS
Robert T. Cole, "Dragons Weeke," Winchester, Hampshire, England
Filed July 24, 1963, Ser. No. 297,464
Claims priority, application Great Britain, July 24, 1962, 28,443/62
9 Claims. (Cl. 52—197)

1. A silo assembly consisting of a number of individual containers of polygonal shape in horizontal cross section and arranged in close proximity to each other, the walls of each container comprising a plurality of rectangular plates whose inner surfaces are free of inwardly directed horizontal projections, flanges extending outwardly from the top and bottom edges of each of said plates, connecting means securing together contiguous flanges of adjacent plates disposed one above the other, web strips uniting the flanges of an individual container where said flanges are adjacent to and substantially co-planar

with the flanges of another container, and tie means at the corners of each said container and extending from



the end of a flange assembly on one side of a container to the end of a flange assembly at the next adjacent side of said container.

3,292,325
CONNECTING STRUCTURE BETWEEN WALL AND ROOF
Hernando Clemente Nicolini, 949 Esmeralda St., Buenos Aires, Argentina
Filed Feb. 19, 1962, Ser. No. 173,877
6 Claims. (Cl. 52—227)



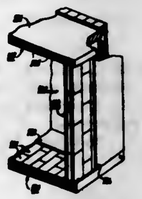
1. A building or the like comprising a plurality of wall structures each comprising a base sill, uniformly spaced vertical pillars secured to said base sill, each pillar comprising at least one vertically extending groove, a plurality of horizontally extending wall panels arranged between two adjacent pillars, each panel having lateral end portions received in said grooves, and a horizontal beam above the uppermost row of panels for connecting the top portions of said pillars together, said beam having an outwardly projecting horizontal flange, the lateral end portion of each wall structure being joined to the adjacent end portion of a similar adjacent wall structure; a roof structure comprising a frame surrounding the same and sheetings secured to said frame; a connecting structure securing said roof structure to the horizontal beams comprised in each of said wall structures, said connecting structure including a closure frame comprising inverted L-shaped members, each L-shaped member having a horizontal leg and a downwardly depending vertical leg, said horizontal leg being fixed to said roof structure, said vertical legs surrounding the horizontal flanges of said horizontal beams; and means for exerting pressure on said panels to urge the same towards said base sill.

3,292,326
HEAT-RESISTANT STRUCTURAL ELEMENT AND THE LIKE
Wilhelm Holzwarth, Frankfurt am Main, Germany, assignor to Glasalith Patentverwertungs A.G.
Filed May 28, 1963, Ser. No. 284,780
Claims priority, application Germany, May 29, 1962, H 45,916
10 Claims. (Cl. 52—232)



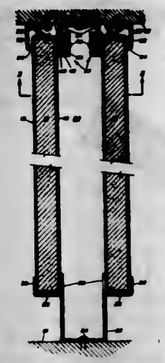
1. A composite structural element having fire-resistant and heat-insulating properties, comprising, in combination, a plurality of shaped solid bodies consisting of a mixture of (1) a substance selected from the group consisting of expanded perlite and vermiculite, (2) clay and (3) cement, said shaped solid bodies being arranged adjacent to each other with adjacent edge faces of adjacent bodies spaced from each other but a short distance defining a narrow open space therebetween; and a solid binder consisting essentially of an intimate mixture of perlite, glass powder, water glass and clay substantially filling said narrow open space thereby firmly adhering said shaped solid bodies to each other.

3,292,327
PLURAL STORY BUILDING COMPRISING SUPERIMPOSED BOX-SHAPED DWELLING UNITS
Cornelis Van Der Lely, Zug, Switzerland, assignor to Patent Concern N.V., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands Antilles
Filed Sept. 8, 1961, Ser. No. 136,797
Claims priority, application Netherlands, Sept. 14, 1960, 255,903
3 Claims. (Cl. 52—236)



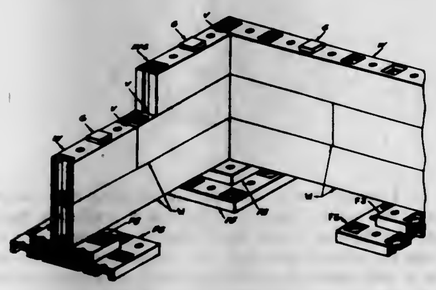
1. A building having at least a lower story and an upper story which is constructed from a plurality of box-shaped prefabricated elements, at least one of said elements in said upper story being superimposed on an element of said lower story, each of said elements having substantially the same cross-sectional rectangular configuration from a side elevation and including a floor, walls and ceiling, at least one of said elements on said lower story including two parallel spaced apart vertical walls composed of a stony material, said parallel spaced apart vertical walls having their upper edges higher than the upper side of the ceiling of said element which includes said vertical walls, the walls of said superimposed element resting at least in part on and being carried by said upper edges of said vertical walls, said elements aligned with respect to their walls, floors and ceilings and secured together.

3,292,328
SELF-SUPPORTING PANEL PARTITION WITH MAGNETIC LATCH MEANS THEREFOR
Stanley T. Lewis, 3 Pooks Hill Road, Bethesda, Md., and Mary M. Darling, 4000 Tunlaw Road, Washington, D.C.
Filed June 8, 1962, Ser. No. 200,996
11 Claims. (Cl. 52—238)



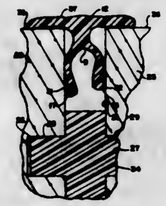
1. A demountable partition for the interior of buildings comprising, a floor-engaging support member, a ceiling-engaging support member, said ceiling-engaging support member including first and second latch means in parallel spaced apart relation, at least one first self-supporting panel having a third latch means associated therewith, the at least one first panel addressing the two support members so that the first latch means engages the third latch means, and at least one second self-supporting panel having a fourth latch means associated therewith, the at least one second self-supporting panel addressing the two support members so that the second latch means engages the fourth latch means whereby the first and second panels are firmly held in opposed relationship to one another forming a partition.

3,292,329
BUILDING CONSTRUCTION
Mikles Garraczy, 3072 Livingstone Road, Cleveland, Ohio 44120
Filed Mar. 21, 1963, Ser. No. 266,949
8 Claims. (Cl. 52—251)



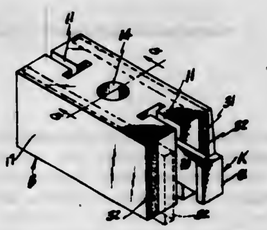
5. A concrete block building including footer blocks and wall blocks, all blocks having a length, width and height, equal to a multiple of a module unit each block having a vertical bore centrally positioned in each module length and width, means at one end of each bore adapted to receive a nut, means at the other end of each bore adapted to receive a key, alternate bores being inverted so that one bore has its key receiving means upwardly and the next has its key receiving means downwardly, removable concrete keys in at least certain of the bores of the footer blocks received in the bores of the lower course of wall blocks, removable concrete keys positioned in the bores between adjacent courses of the wall blocks, nuts carried in the bores of at least certain of the footer blocks, nuts carried in the opposed bores of the lower course of wall blocks, relatively short bolts joining the nuts of the footer blocks and the wall blocks, nuts in opposed bores of wall blocks forming adjacent wall courses, and relatively short bolts joining the nuts of the wall blocks forming adjacent courses.

3,292,330
CLOSURE FOR AN EXPANSION JOINT
Arthur R. Tennison, Batavia Township, Clermont County, Ohio (4041 Edwards Road, Cincinnati, Ohio 45209)
Filed May 24, 1965, Ser. No. 457,951
3 Claims. (Cl. 52—403)



1. In combination with spaced apart walls forming an elongated expansion joint, a closure for the expansion joint which comprises an elongated strip of resilient rubber-like material which includes a central portion, a pair of leg members integral therewith and diverging from one end of said central portion and received in the expansion joint, and outwardly extending flanges integral therewith and extending from the opposite end of the central portion and bridging and closing the expansion joint, and outwardly extending flanges at free ends of the legs engaging walls of the joint, the legs being bent inwardly intermediate the ends thereof thereby forming restricted spaces between the walls and the portions of the legs between the flanges and the bends thereof, and adhesive in said restricted spaces attaching said portions of the legs to the walls, the remainder of the closure being adapted to flex to accommodate limited relative movement of the walls.

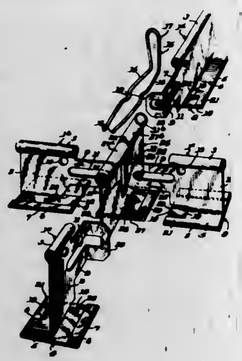
3,292,331
INTERLOCKING BLOCKS AND WALL CONSTRUCTION
Carl R. Sams, 302 Ottawa Ave., Oscoda, Mich. 48753
Filed Jan. 24, 1964, Ser. No. 339,948
1 Claim. (Cl. 52—405)



A wall construction for buildings comprising, a plurality of preformed blocks, each block having a central,

vertically disposed passage extending therethrough; T-shaped slots in the end walls of each block; longitudinally disposed passages in said blocks adjacent the inner and outer walls thereof and extending from end to end of each block, slabs of material slidably mounted in said longitudinal passages, keys engageable in the T-shaped slots of the blocks to secure the blocks in end to end relation, and vertically disposed, reinforcing means provided in said vertically disposed passages to form a rigid wall.

3,292,332
SUSPENDED CEILING STRUCTURE
Martin Jahn, Chicago, Ill., assignor to Chicago Metallic Sash Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 21, 1960, Ser. No. 77,452
24 Claims. (Cl. 52—484)



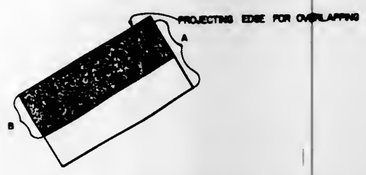
1. A ceiling suspension grid system comprising a plurality of runners disposed in generally parallel relation, and a plurality of cross runners extending transversely to said first-mentioned runners and connected thereto, said runners having their ends identically formed for engagement with an interlocking means associated with adjacent cooperable runners.

3,292,333
WEAR-RESISTANT REFRACTORY LINING ARTICLE
Karl H. Sandmeyer and Eugene L. O'Meara, Jr., Jamestown, N.Y., assignors to Harbison-Carborundum Corporation, Falconer, N.Y., a corporation of Delaware
Filed May 1, 1963, Ser. No. 277,359
3 Claims. (Cl. 52—509)



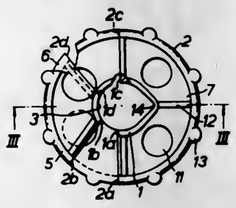
1. An abrasion-resistant article which comprises a fused cast refractory block having top and bottom surfaces, side edge faces and end edge faces, said side edge faces being parallel and in spaced relation and said end edge faces being parallel and in spaced relation, one set of said edge faces being beveled and having, at the base of that edge face which the top of said block overhangs, a recess, said recess extending into said block, having side walls, a top wall, and a rear wall, and a metal anchoring clip adhesively bonded solely to said rear wall of said recess, said clip being free of contact with the top wall of said recess.

3,292,334
ROOFING ELEMENT AND ROOF SURFACE
Willis G. Craig, Willoughby, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
Filed June 5, 1962, Ser. No. 200,098
9 Claims. (Cl. 52—516)



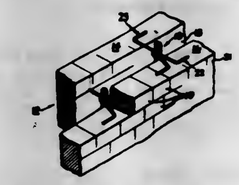
1. A roofing element comprising a laminate of a substantially rectangular bitumen-impregnated roofing felt component and a substantially rectangular bonded glass mat component, said bonded glass mat component having at least 10 percent of voids which extend therethrough; and said laminate being characterized further in that (a) the width of the bonded glass mat component is from about one-third to about two-thirds the width of the bitumen-impregnated roofing felt component, and (b) a longitudinal edge of the bonded glass mat component projects in a substantially parallel manner at least about one inch beyond a longitudinal edge of the bitumen-impregnated roofing felt component.

3,292,335
UNITARY, FLEXIBLE SPACERS FOR CONCRETE REINFORCEMENT
Wilhelm Stöber, 17a Bahnhofstrasse, Lehrte, Hannover, Germany
Filed Mar. 9, 1964, Ser. No. 350,394
Claims priority, application Germany, Mar. 20, 1963, St 15,772 (utility model); Oct. 17, 1963, St 21,197
8 Claims. (Cl. 52—677)



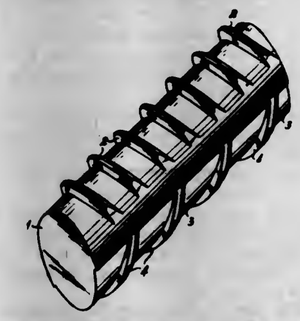
1. A spacer for a concrete reinforcing rod comprising a one piece, wheel-like body of a resiliently flexible material having a hub for closely embracing said rod, a rim for spacing said rod from an adjacent component, and a web joining said hub and rim, angularly substantially coextensive peripheral arcs of said hub and web being split by a slot substantially perpendicular to the axis of said body and extending inwardly from the periphery of the rim substantially to a diameter of said wheel-like body to form narrow hub and rim portions on each side of the slot, said narrow hub and rim portions and said webs having a pair of radial gaps extending therethrough offset from one another and disposed at opposite ends of said slot.

3,292,336
REVERSIBLE WALL TIE
Wilfred Brynjolfsson and William H. Bartlett, Cedar Rapids, Iowa, assignors to Dur-O-Wal National, Inc., a corporation of Iowa
Filed Oct. 17, 1963, Ser. No. 317,083
6 Claims. (Cl. 52—713)



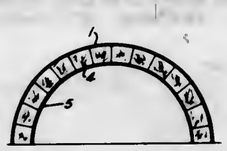
3. A reversible wall tie for cosecuring spaced wythes formed of horizontal courses of block elements secured together by cementing means, comprising: a male member having a base portion substantially disposed in a single plane for installation in the cementing means between a single pair of courses of one wall wythe with elongated means extending from the base portion into the space between said wythes, and a male connector including a loop having upper and lower outer portions connected to said elongated means and an inner portion extending substantially rectilinearly between said outer portions perpendicularly to the plane of the base portion to be disposed substantially vertically in said space between said wythes; and a female member having a base portion for installation in the cementing means between courses of the other wall wythe with elongated means extending from the base portion into said space between said wythes, and a female connector including a turned distal end of said elongated means slidably engaging said inner portion of the male member for interlocked relationship therewith at substantially any point along the vertical extent thereof.

3,292,337
ARMORING RODS FOR REINFORCED CONCRETE
Ulrich Finsterwalder, Munich, Obermenzing, Germany, assignor to Dyckerhoff & Widmann Kommanditgesellschaft, Munich, Germany
Filed Nov. 4, 1963, Ser. No. 321,136
Claims priority, application Germany, Nov. 7, 1962, D 40,212
4 Claims. (Cl. 52—738)



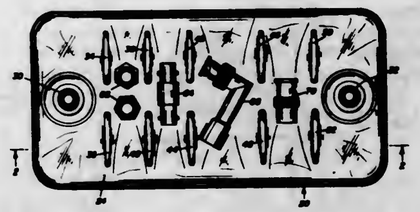
1. Armoring rod for reinforced concrete, said rod having two sides, one said side presenting a plurality of rolled ribs forming parts of a helical thread along one portion of the circumference of said rod, said thread being adapted to receive an internally threaded body, the other said side opposite said side presenting said ribs having depressions, said depressions defining between them lands or ribs of a height corresponding essentially to the original surface of said rod.

3,292,338
INCORPORATION OF AN INFLATED BAG AS A ROOF INTO A PERMANENT STRUCTURE
John MacClarence, Rte. 1, Box 443, Stafford, Va. 22554, and Swante B. Swenson, 306 Cambridge Road, Alexandria, Va. 22314
Filed Sept. 24, 1963, Ser. No. 311,264
5 Claims. (Cl. 52—746)



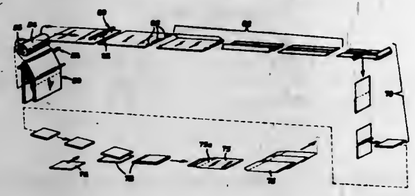
1. A method for constructing a structure comprising the steps of:
(a) impregnating a fiber glass cloth material of predetermined bag configuration with a resin plastic material;
(b) securing said resin impregnated, bag configured fiber glass cloth material to a base in air-tight relation;
(c) applying air pressure supply means and inflating said bag;
(d) securing by adhesive means a plurality of modular structural units to the underside of said inflated bag to form a continuous surface;
(e) securing a liner material to the under surface of said plurality of modular structural units to be coextensive therewith;
(f) curing said resin plastic impregnated material to a rigidized state; and
(g) removing said air pressure supply means.

3,292,339
INFLATABLE INTERCONNECTED DEPARTMENTALIZED CONTAINER
Joseph J. Esty, 1812 Traffa St., San Diego, Calif. 92106
Filed July 5, 1963, Ser. No. 293,899
8 Claims. (Cl. 53—21)



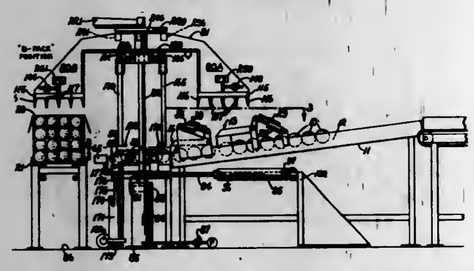
1. Those steps in the process of treating materials and packaging the same, which steps consist in:
(A) Placing the materials in spaced relationship on an impervious section of weldable plastic substance;
(B) welding another section of weldable plastic substance onto the first section to form a peripherally sealed container and welding the sections at portions intermediate the materials to form interconnected compartments with the materials separated from one another by the intermediate welded portions of the sections;
(C) treating the materials to a fluid while in the interconnected compartments by causing the fluid to flow through at least one opening in the container;
(D) and then sealing the container about the opening.

3,292,340
ASSEMBLING AND PACKAGING OF SHEET MATERIAL
Edwin K. Smith, Jr., Haworth, N.J., Robert Foster, Forest Hills, N.Y., and Clinton F. Brundage, Mahwah, and Nelson D. Tremaine, Glen Rock, N.J., assignors to McCall Corporation, Dayton, Ohio, a corporation of Delaware
Filed June 19, 1963, Ser. No. 288,978
18 Claims. (Cl. 53—54)



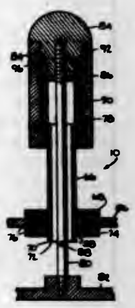
5. A machine for assembling and packing groups of individual thin flexible sheets from separate bundles thereof, comprising pickup means for withdrawing a single sheet from each bundle, means operative in conjunction with said withdrawing means to assemble such single sheets into a group, folding apparatus receiving such groups of sheets and operating on each group to fold it to a predetermined size, means providing a supply of packaging envelopes, loading means receiving the folded groups from said folding apparatus for receiving said envelopes singly in succession operating to place each folded group in an envelope, control means responsive to failure of any one pickup means to remove a sheet from the corresponding bundle, and a reject mechanism operated by said control means to remove an incomplete group from the machine before such group is conveyed to said loading means.

3,292,341
ORIENTING AND PACKING APPARATUS
James D. Frost, P.O. Box 775, Porterville, Calif. 93257
Filed Aug. 27, 1963, Ser. No. 304,824
21 Claims. (Cl. 53—61)



4. Apparatus for packing a plurality of substantially uniform articles in predetermined relative positions comprising means to deliver a supply of said articles; reception means in receiving relation to said supply means to hold a predetermined quantity of said articles; power means operatively connected to said reception means sequentially to effect arrangement of said articles therein in a predetermined substantially coplanar order and to compress the articles into engagement in said order in the plane; gripping means adapted to hold said arranged articles in compressive engagement; power means operatively connected to said gripping means to effect powered adjustment thereof between released and gripping conditions; transport means operatively supporting said gripping means to carry said articles to a packing container in compressive engagement and to deposit the articles therein while maintaining said pre-arranged order; power means connected to said transport means to effect the carrying and depositing functions of said transport means; and control means operatively connected to each of said power means to effect sequential individual operation thereof in a predetermined order.

3,292,342
DEVICE FOR VACUUM SEALING
Martin Kapeker, Brooklyn, N.Y., assignor to Copiague Research and Development Company, Copiague, N.Y.
Filed Jan. 16, 1964, Ser. No. 338,228
6 Claims. (Cl. 53—101)

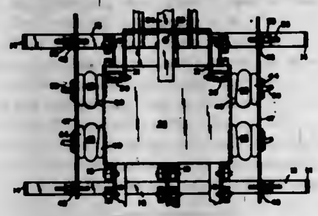


1. In combination with a freeze drying apparatus of the type described, provided with a vacuum chamber,
a vacuum sealing device comprising a sealing plate provided with a central opening,
a tubular member disposed through the opening at right angles to the sealing plate,
means to lock the tubular member to the sealing plate in air-tight engagement,
a sleeve slidably mounted upon the tubular member,
a rod freely disposed within the tubular member and extending therefrom through each end thereof,
a push plate secured to the lower end of the rod and disposed below and parallel to the sealing plate, and a plug secured to the upper end of the rod,
the base of the plug disposed within the upper opening in the sleeve in air-tight engagement therewith and spaced from the tubular member to define a central pocket in the sleeve,
whereby reciprocal movement of the sleeve along the tubular member provides reciprocal movement to the push plate.

3,292,343
APPARATUS FOR COMPRESSING THE FLAPS OF LOADED SHIPPING CASES
Arthur C. Schroeder, Sr., Skaneateles, N.Y., assignor to Schroeder Machines Corporation, Syracuse, N.Y., a corporation of New York
Filed Sept. 27, 1963, Ser. No. 312,236
6 Claims. (Cl. 53—387)

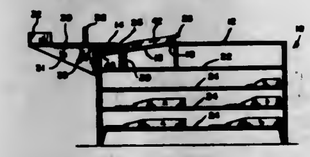
1. Apparatus for compressing the closure flaps of a single loaded paperboard shipping case, the closure flaps being pre-served with adhesive and folded to overlapping closed position, said apparatus comprising pad supporting means, a pair of compression pads mounted on said supporting means and arranged in spaced apart relation to receive a case therebetween, means for supporting a case between said compression pads with areas of said

flaps spaced inwardly from the side and end edges of the case aligned with said compression pads, and means operable to cause engagement of said compression pads only



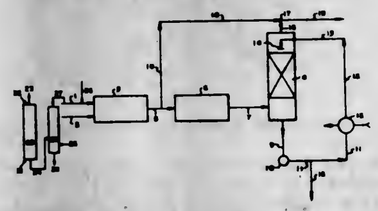
with said flap areas under a predetermined pressure, said compression pads having universal movements relative to said pad supporting means.

3,292,344
WRAPPING TABLE
Phillip J. Fellner, 8210 Northwestern Ave., Racine, Wis. 53406
Filed Feb. 28, 1964, Ser. No. 348,100
10 Claims. (Cl. 53—390)



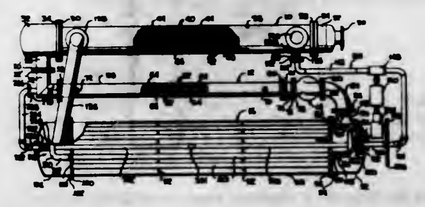
1. The combination of means for wrapping an article having a front edge, a rear edge, and a substantially flat bottom comprising
a work surface for supporting said article,
said surface having a front lip,
an adjustable stop on said work surface for engaging the front edge of said article and aligning the rear edge with said lip,
tray means for retaining a plurality of wrapping sheets in a stack,
means for supporting said tray means with one corner of said sheets extending beneath said lip,
spring means for biasing said means for supporting against the underside of said work surface, whereby said corner of said wrapping sheet is clamped between the work surface and said means for supporting.

3,292,345
PROCESS FOR CONVERTING COKE OVEN AMMONIA AND HYDROGEN SULFIDE
Gunther Wunderlich, Sterkrader Str. 37, Bottrop, Germany, and Heinrich Weber, Lenaustrasse 2, Recklinghausen, Germany
Filed June 25, 1963, Ser. No. 292,190
4 Claims. (Cl. 55—46)



1. A process for the conversion of ammonia and hydrogen sulfide contained in coke oven gases to substantially avoid air pollution comprising scrubbing said coke oven gases with water to obtain water enriched with ammonia and hydrogen sulfide, desorbing the enriched water with steam to obtain vapors enriched with ammonia and hydrogen sulfide, burning with air the ammonia and hydrogen sulfide enriched vapors to produce combustion gases and precooling the combustion gases in a waste heat vessel to produce steam, passing precooled combustion gases to a direct cooler wherein the gases are contacted with water and steam is separated from the contacted water.

3,292,346
GAS DRYING APPARATUS
Renard P. Adams, 87 Nottingham Terrace, Buffalo, N.Y. 14216
Filed Mar. 6, 1964, Ser. No. 349,901
11 Claims. (Cl. 55—180)

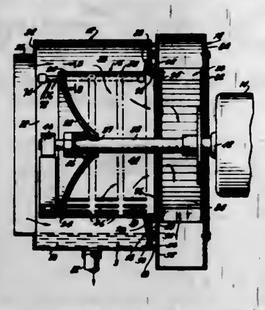


1. Gas drying apparatus comprising first heat exchanger means, said first heat exchanger means defining a first fluid flow path and a second fluid flow path, a second heat exchanger means defining a third fluid flow path connected in communication with the first fluid flow path of said first heat exchanger means, separator means including an inlet and an outlet, said inlet being connected in communication with said third fluid flow path through said second heat exchanger means, drier means including an inlet portion and an outlet portion and having a drying portion connected between said inlet and outlet portions, the outlet of said separator means being connected in communication with the inlet portion of said drier means, said outlet portion of said drier means being connected directly with the second fluid flow path of said first heat exchanger means, said drying portion of the drier means including means for drying gas passing therethrough, and drier regenerating means for removing moisture from the drying portion of said drier means, said regenerating means being connected with the second fluid flow path of said first heat exchanger means and being adapted to circulate hot dry gas through the drying portion of said drier means.

3,292,347
DUST AND LINT DISPOSAL APPARATUS
Francis Piercy Hodgkinson, Syracuse, N.Y., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,687
3 Claims. (Cl. 55—257)

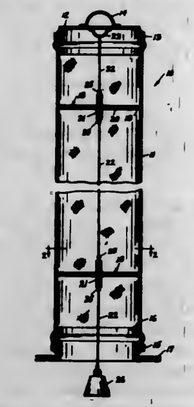
1. Apparatus for collecting and disposing of dust and lint-laden air from a laundry dryer comprising an open ended cylindrical housing, a horizontally oriented cylindrical drum forming a separating chamber which is arranged coaxially of and within said housing and cooperating therewith to define a substantially annular air-cleansing space therebetween having a closed end and an open end, means journaling said drum for rotation within said housing about an axis oriented substantially parallel to the horizontal, means connected to one end of said housing and the adjacent open end of said air-cleansing space for introducing dust and lint-laden air into said housing, the end of said drum contiguous to said one end of said housing being closed such that said dust and lint-laden air only is directed into said air-cleansing

space, perforated conduit means in said annular air-cleansing space on opposite sides of and substantially parallel to and above said drum axis, said perforated conduit means being substantially coextensive in length with said drum and in spaced apart confronting relation with both said drum and housing, said perforated conduit means having nozzle apertures spaced along the length thereof for introducing a spray of water into said air-cleansing space such that the dust and lint from said dust and lint-laden air is washed downwardly by said water spray into a lower portion of said air-cleansing



space serving as a disposal trap, said drum having elongated slotted apertures in communication with said air-cleansing space such that the cleansed air may be admitted into the interior of said drum, a blower in communication with the interior of said drum for drawing dust and lint-laden air into said air-cleansing space and cleansed air into said drum, beveled edges formed on the elongated portions of said apertures for excluding colloidal dust particles from said separating chamber, an air outlet in communication with said blower for passing cleansed air to the atmosphere, and drive means operatively connected to said drum and to said blower.

3,292,348
SUSPENSION MEANS FOR FILTER BAGS
James K. Normand, Big Spring, Tex., assignor to Sid Richardson Carbon & Gasoline Co., Fort Worth, Tex., a corporation of Texas
Filed Apr. 24, 1964, Ser. No. 362,341
2 Claims. (Cl. 55—379)



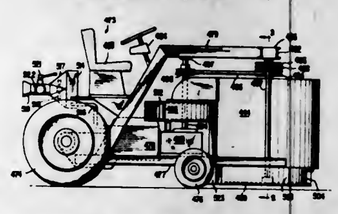
1. In a filter bag for separating solid particles from a gaseous fluid, the combination of a supporting cap, a vertically disposed tubular bag body suspended by its upper end from said cap and open at the bottom thereof, an annular floor thimble having the lower end of said bag body connected thereto, a plurality of vertically spaced rings provided in said body normally in loose engagement with the inner surface of the latter to prevent collapsing but free of attachment thereto, each of said rings including an annulus and a support element provided at the center thereof, and vertically extending flexible and continuous cable means disposed coaxially in said body and connected at the upper end thereof to said cap, the support elements of said rings being mounted on said cable means and the latter constituting sole means for supporting the rings in said body, said rings also including a transverse bar spanning said annulus, each of said support elements comprising an upright post secured to said bar, said cable means extending through each of said posts.

3,292,349
AIR FILTER HAVING DUCTILE METAL FRAME
Robert J. Cuta, Madison, Wis., assignor to Research Products Corporation, Madison, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 251,164, Jan. 14, 1963. This application Sept. 22, 1965, Ser. No. 497,583
8 Claims. (Cl. 55—511)



7. A framed air filter adapted to be bent into any one of a plurality of shapes, said filter having a generally planar filter media of crushable material of substantial thickness providing peripheral edge portions and a ductile metal frame facilitating flexing with a minimum of distortion and enveloping and compacting said edge portions, said frame comprising side members having an upper leg and a lower leg closely confining and gripping the corresponding edge portions of said filter media, and an outwardly curved loop joining said legs at the outer marginal edge of the frame with said legs converging inwardly of said loop to additionally crush the filter media inwardly of said loop to a thickness substantially less than its original thickness and substantially less than the thickness of the filter media in said loop, said legs forming an enlarged pocket substantially filled with the edge portions of said filter media to prevent separation of the same from the frame upon bending of the filter.

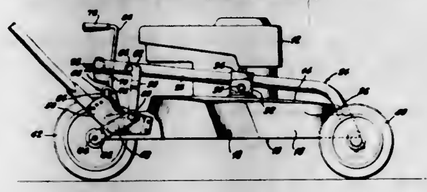
3,292,350
CONTINUOUS FLOW THROUGH CENTRIFUGE
Everett J. Tasset, 420 E. Chestnut St., Springfield, Mo. 65806
Filed Oct. 15, 1964, Ser. No. 403,986
20 Claims. (Cl. 56—1)



1. A continuous flowthrough centrifuging apparatus comprising:
- a support having a central rotative axis therethrough;
- a plurality of containers positioned on said support, each of said containers having an independent rotative axis therethrough;
- drive means carried by said support and connected to said containers for rotating said containers as a unit about said central axis;

- a second drive means carried by said support and connected to said containers for rotating each of said containers about their respective independent axis;
- means located at one end of said containers to deliver material to said containers; means in each of said containers to convey material therethrough; and means located at the other end of said containers to discharge material therefrom, said containers and the material therein upon rotation as a unit about said central axis being affected by a first centrifugal force, the rotation of said containers about said independent axes producing a plurality of seconary centrifugal forces that serve to continually alter the disposition of and the direction of said first centrifugal force.

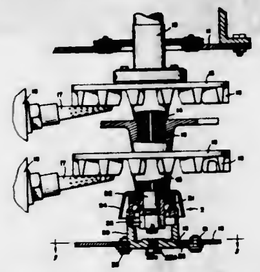
3,292,351
LAWN MOWER HEIGHT ADJUSTING APPARATUS
Walter J. Larson and Harold D. Cook, Des Moines, Iowa, assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 14, 1964, Ser. No. 403,712
7 Claims. (Cl. 56—25.4)



1. Apparatus for adjusting the height of a rotary lawn mower body comprising: frame means adapted to extend longitudinally over substantially the full length of the body, means to connect said frame means to the body for pivotal movement about a generally central transverse axis of said body, a pair of front wheels connected directly to the front end of said frame means, bracket means for connection to the rear end of the body, centrally pivoted lever means on said bracket means and carrying rear wheels on one end thereof, the other ends of said lever means being connected to said frame means toward the rear end thereof whereby pivotal movement of said frame means effects simultaneous movement in the same direction of said front and rear wheels relative to the body, and latch means for adjustably securing the rear end of said frame means in spaced relation to said bracket means.

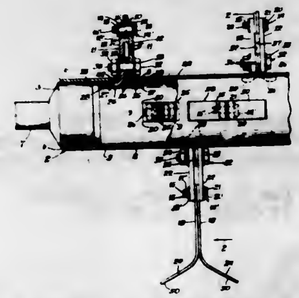
3,292,352
ADJUSTABLE MEANS FOR COTTON PICKER DOFFER
Clarence Battle Shaw, 505 N. Washington St., Brownsville, Tenn. 38012
Filed Aug. 18, 1964, Ser. No. 390,311
1 Claim. (Cl. 56—41)

In a cotton harvester, the combination of revolving picking spindles, a substantially vertically mounted doffer shaft having doffer disks spaced vertically apart thereon, an upper bearing for the doffer shaft mounted on a housing in said harvester and a lower bearing for the same mounted in a cup-shaped cavity member, said cup-shaped cavity member having openings therein removed from the lower bearing, said cup-shaped cavity member being movably mounted in a cut-out in the bottom of said machine housing with means for moving the position of the cavity member and bearing thereon so that the doffers contact the picking spindle at the proper point for the removal of cotton from said spindle, said means for moving the position of the cavity member and the bearing thereon being eccentric face blocks having openings therethrough, the faces of the eccentric blocks extending through said openings in said cup-shaped cavity member with means to retain said eccentric blocks in their fixed



position by retaining members extending through the machine housing.

3,292,353
FLAIL MOWER STRUCTURE
Robert W. Woodring, La Grange, and Bruno J. Panek, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 28, 1964, Ser. No. 399,586
12 Claims. (Cl. 56—294)

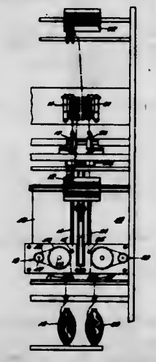


1. In a cutter, a rotor shaft having a wall portion with a radial opening, said wall portion presenting inner and outer abutment surfaces, and knife holder means projecting through the opening and having inner end portions extending beyond the periphery of the opening and in engagement with inner surface of said wall portion, said holder means having portions overlapping said outer abutment surface, and means securing said holder means through respective portions thereof against said outer surface of said wall portion and reactively against said inner surface.

3,292,354
APPARATUS FOR PROCESSING YARN
Frederic E. Chalfant and Guy E. Perkins, Warwick, R.I., assignors to Lesscona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Apr. 20, 1965, Ser. No. 449,487
7 Claims. (Cl. 57—34)

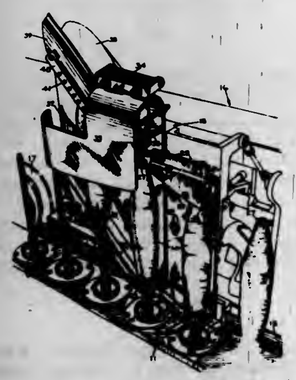
1. In apparatus for processing yarn having thermoplastic qualities comprising false-twisting means operable to twist the yarn in advance thereof and to untwist the yarn thereafter, a heating zone in advance of said false twist means operable to heat the yarn to a temperature sufficient to afford molecular reorientation of the molecules of the yarn while it is twisted, supply means for said yarn to supply yarn to said heating zone, delivery feed rolls to receive the untwisted yarn from said false twist means, and yarn take up means operable to collect the yarn from said delivery feed roll means; the improvement comprising a preheating assembly intermediate said supply means and said twisting and heating zone to

uniformly heat the yarn to a temperature below the temperature necessary to effect reorientation of the molecules of the yarn, said preheater assembly comprising a pair of spaced apart feed rolls, drive means for said feed rolls operable in timed relation to the delivery feed rolls so as



to control the tension of the yarn intermediate said delivery and said preheater feed rolls, and means to heat said preheater feed rolls to a preselected temperature to effect heating of the yarn to the desired temperature below the temperature necessary to effect reorientation of the molecules of said yarn.

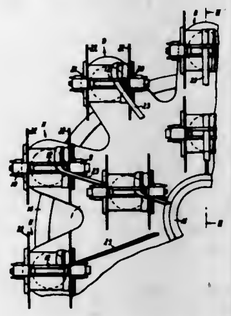
3,292,355
BOBBIN DOFFING DEVICE
Joseph W. Dubois, North Smithfield, R.I., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Feb. 12, 1964, Ser. No. 344,402
11 Claims. (Cl. 57—53)



1. A device for doffing bobbins from a row of spindles, each of said bobbins having a tip end held upwardly by said spindles, said device comprising a carriage, doffing means attached to said carriage combining a first doffing unit and a second doffing unit in trailing relationship to said first doffing unit, said first doffing unit including a unitary dual camming member and a bobbin tip retaining member, said camming member comprising a first camming edge at an inclination to the horizontal and a second camming edge in continuation of said first camming edge and at an increased inclination to the latter, said tip retaining member being spaced apart vertically from said camming member and including a downwardly extending tip retaining edge being directed generally in a parallel relationship with said camming member, said retaining edge maintaining contact with said bobbin tip during passage over said bobbin.

3. A device for doffing bobbins from a row of spindles, each of said bobbins having a tip end held upwardly by said spindles, said device comprising a carriage, doffing means attached to said carriage combining a first doffing unit and a second doffing unit in trailing relationship to said first doffing unit, said first unit having a unitary dual camming member comprising a first camming edge at an inclination to the horizontal and a second camming edge in continuation of said first camming edge and at an increased inclination to the latter, said second doffing unit including a further camming edge at an inclination greater than said first or second camming edges, a releasably pivotable bobbin shield mounted on said carriage to pass over said bobbins and being adapted to yield outwardly upon pressure being applied by a bobbin, and a bobbin tip guide supported directly above and inclined generally parallel to said further camming edge.

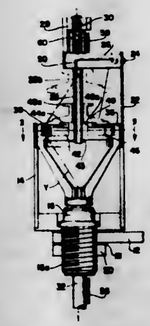
3,292,356
APPARATUS FOR THE MANUFACTURE OF TRANSPOSED MULTIPLE STRIP CONDUCTOR
Ronald Hinds, Stockton Heath, England, assignor to British Insulated Callender's Cables Limited, London, England, a British company
Filed Dec. 4, 1963, Ser. No. 327,968
Claims priority, application Great Britain, Dec. 7, 1962, 46,272/62
11 Claims. (Cl. 57—59)



1. In a stranding machine for the manufacture of transposed multiple strip conductor of substantially rectangular cross-section comprising a transposing device and a bobbin planeting device for supporting a plurality of bobbins of strip, a plurality of guiding means, one for guiding each strip in its path between one of the bobbins and the transposing device, each comprising a guide having a throated aperture, of which the throat is of rectangular cross-section and has a width such as to allow free passage of the strip and a length at least several times that of the width of the strip, and means for moving this guide with the bobbin about the machine axis while maintaining major transverse axis of its aperture substantially parallel with the bobbin axis and hence with the major transverse axis of the cross-section of the strip as it passes through the transposing device.

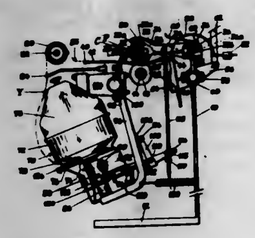
3,292,357
FALSE TWIST SPINDLE
Hans H. Richter, Cranston, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Delaware
Filed June 2, 1966, Ser. No. 554,754
8 Claims. (Cl. 57—77.45)

1. A false twist device comprising an annular member, yarn twisting means having a peripheral surface of revolution, means for rotatably supporting said yarn twisting means, and means for driving said yarn twisting means relative to said annular member, said driving means being



operable to bias said yarn twisting means into rolling engagement with the inside surface of said annular member.

3,292,358
STOP MOTION FOR WINDING AND TWISTING MACHINE
Joseph E. Di Meglio, Providence, R.I., and William Sandager, North Dighton, Mass., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed May 12, 1964, Ser. No. 366,773
7 Claims. (Cl. 57—89)



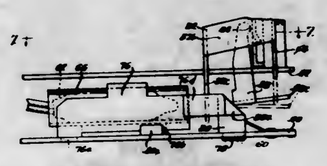
1. A machine for twisting and winding a strand of yarn comprising, a rotatable spindle for supporting a yarn supply, said spindle having a whorl, drive means engageable by said whorl for rotating said whorl and spindle to impart twist in a strand of yarn drawn from said supply, a pivotally mounted support for said spindle swingable to selectively engage said whorl with said drive means and to disengage said whorl therefrom; winding means including a pivotally mounted package support arm, a take-up roll carried on said arm, a drive roll for engaging and rotating said take-up roll to wind yarn on said take-up roll; reciprocable stop motion means operable in the absence of yarn flowing from said supply to said take-up roll to pivot said arm to disengage said take-up roll from said drive roll, means for reciprocating said stop-motion means, a linkage connected with said arm and movable therewith to move said whorl out of engagement with said drive means as said arm is pivoted to disengage said take-up roll from said drive roll, and a stationary brake positioned to receive said whorl upon disengagement from said drive means to arrest rotation of said spindle.

3,292,359
TRAVELER HAVING A WEAR RESISTANT ELEMENT
Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,900
6 Claims. (Cl. 57—125)



1. A traveler of the character defined comprising a molded plastic body having relatively flexing hook end portions joined in a neck, a molded ceramic wear resistant element having predetermined longitudinal peripheral contour, the neck of the traveler having a contoured surface conforming with the longitudinal peripheral contour of said element, at least a portion of the element being displaceable with respect to the traveler, and said traveler and element having interengaging means retaining the element against displacement in flexing of the hook end portions of the traveler when mounting the traveler upon a traveler ring.

3,292,360
ALARM SET INDICATOR
Joseph J. Mahon, Villa Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 7, 1961, Ser. No. 129,637
9 Claims. (Cl. 58—22.7)

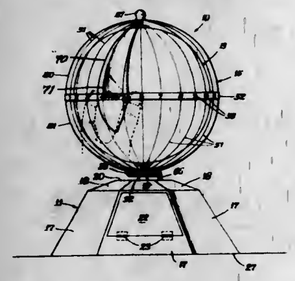


1. In an electric alarm clock, an alarm movement, a motor driving said movement, a housing for said motor and movement, an audible vibrator positioned adjacent said motor field and restrained by said alarm movement until release at a predetermined time, a manual alarm shutoff movable between an alarm shutoff position in which it restrains said vibrator and an alarm position in which it releases said vibrator for control by said movement, an electric light bulb mounted in said housing, an electric power supply cord connected to said motor and to said light bulb, said housing having an opening through which light from said bulb passes, shutter means connected to said alarm shutoff and movable therewith to prevent passage of said light through said opening when said alarm shutoff is in the alarm shutoff position.

3,292,361
WORLD TIME CLOCK
Foster Van Dillard Redmond, 1631 Sherman Place, Des Plaines, Ill. 60016
Filed Aug. 18, 1965, Ser. No. 480,552
3 Claims. (Cl. 58—44)

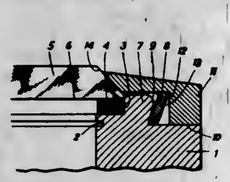
1. A world clock, comprising: a supporting base; an elongate shaft fixably connected to said supporting base and extending upwardly therefrom; a spherically shaped world globe fixably mounted to said shaft, said globe in-

cinding oppositely spaced portions representing the North and South Poles of the earth through which said shaft impales said globe; a pair of hemispherically shaped and transparent hollow shells of substantially identical shape and having mating edges to permit their assembly into a sphere having an inside diameter slightly larger than the outside diameter of said globe, said assembled sphere having a pair of holes on diametrically opposed sides thereof for mounting said sphere on said shaft, said sphere carrying a plurality of twenty-four equally spaced lines on its inner surface, said lines being placed along great circles intersecting said diametrically opposed holes to divide said sphere into twenty-four segments representing 15 degrees



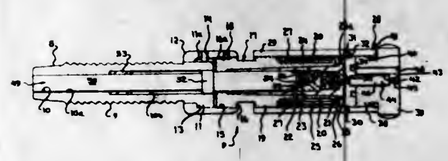
each, a plurality of time designating numerals attached to said sphere and accompanying said lines, said sphere being rotatably mounted on said shaft around and concentrically with said globe; means carried by said shaft for spacing said globe and sphere concentrically with one another; an electric clock motor mounted in said base, said clock motor having an output shaft which makes two revolutions per day; and a two to one reducing gear drive connecting said motor output shaft and said transparent sphere for driving said sphere rotatably at the rate of one revolution per day causing said lines and time designating numerals to rotate from East to West about said globe and indicate the proper time at all locations in the world.

3,292,362
WATCHCASE
Hans Ulrich Klingenberg, St. Niklaus, near Meringen, Switzerland
Filed Apr. 30, 1965, Ser. No. 452,240
Claims priority, application Switzerland, May 1, 1964, 5,719/64
5 Claims. (Cl. 58—91)



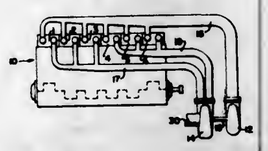
1. In a watchcase having two relatively hard rigid sections removably fixed together by means of snap fit, in combination, an elastically yieldable ring having a truncated conical surface portion and being formed of a separate piece from and fixed to one of said watchcase sections, the other watchcase section being provided with an annular surface portion having a shape adapted to fit the truncated conical surface portion of said ring for constituting a snap fit therewith.

3,292,363
EXPLOSIVELY-OPERATED TOOL
Frederick William Wahl, Middletown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 30, 1964, Ser. No. 341,282
1 Claim. (Cl. 60—26.1)



In a power unit of an explosively-operated device, breech means having a chamber therein to receive an explosive cartridge therein, said explosive cartridge having a hollow portion and a plug member provided with primer means therein, extension means on said plug member extending outwardly beyond said primer means, ram means movably mounted in said breech means including a section for disposition in said hollow portion and along therewith defining an enclosed chamber, means on said section of said ram means for disposition within said extension means and including a flat surface perpendicular to a longitudinal axis of said chamber, said flat surface being at least coextensive with an exterior surface of said primer means to maintain said primer means in snug engagement with said plug member during movement of said plug member to prevent escape of explosion gases from said enclosed chamber, and means on said means for disposition within said extension means to engage and actuate said primer means.

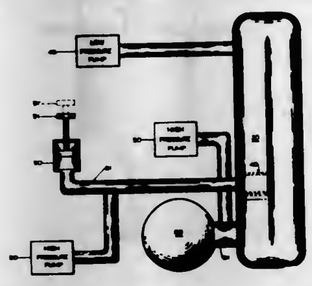
3,292,364
GAS TURBINE WITH PULSATING GAS FLOWS
John M. Cazier, Los Angeles, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 299,849, Aug. 5, 1963. This application Sept. 6, 1963, Ser. No. 307,136
3 Claims. (Cl. 60—13)



1. In combination:
a plurality of sources of pulsating gas flow each having flow surges at different times than the other sources;
turbine means including a turbine wheel having blades thereon with channels therebetween adapted to be driven by gases from said sources;
at least two gas ducts, each of which is adapted to deliver to the turbine means in a stream separated from the other duct gases from at least one of the sources so that gas surges occur at the turbine means in each gas stream at different times from the surges in the other gas stream; and
means at the turbine means forming a separate gas inlet for each gas stream delivered by each of said ducts and passage means individually related to each of said inlet means for separately conducting its respective stream separately to the turbine wheel substantially around the circumference of said turbine wheel;

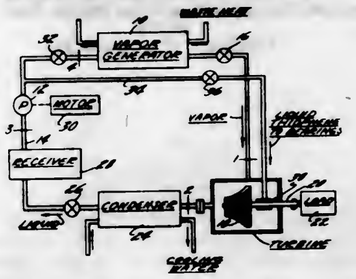
each channel between successive blades on the turbine wheel receiving gas from a plurality of said gas passages, said separate gas streams intermingling in the channels.

3,292,365
POWER CONVERSION APPARATUS AND METHOD UTILIZING GRAVITATIONAL AND BUOYANT FORCES
Dan K. McCoin, Box 126, Chalmers, Ind. 47929
Filed July 9, 1965, Ser. No. 470,860
6 Claims. (Cl. 60—22)



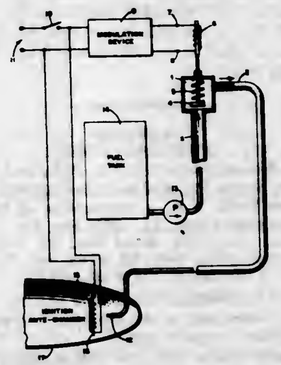
1. In an energy conversion system, a housing providing a pair of first and second adjacent vertical elongated hollow chambers communicating at the top and bottom thereof and defining a uniform closed path of travel along which bodies of corresponding size may be continuously moved in one direction; a plurality of disconnected uniform bodies confined in said housing and arranged for individual successive circulatory movement around said path by traveling downwardly through said first chamber and upwardly through said second chamber; valve means for dividing said first chamber into upper and lower subchambers and establishing a pressure seal therebetween, said upper subchamber occupying a major portion of said first chamber and said lower chamber occupying a minor portion thereof, said valve means having a central normally closed extensible opening capable of passing said bodies under the influence of the intermittent kinetic energy obtained by said bodies free falling successively through said upper subchamber and during said passing maintaining said seal; means for maintaining said upper subchamber at a substantially low pressure and said lower subchamber at a substantially high pressure; an expansion chamber substantially larger in volume than the volume of an individual one of said bodies and communicating with said lower subchamber and having the same high pressure maintained therein; and liquid means filling said second chamber to the top thereof as well as a minor portion of the bottom of said lower subchamber and being maintained in such position by the effect of said low and high pressures in said respective subchambers, said bodies being arranged when said system is operative in a manner wherein said bodies except at least one form a stack of such bodies which extends from one body floating in said liquid means at the top of said second chamber to a body floating in said liquid means confined in said minor portion of said lower subchamber, said excepted body being a body which is urged out of the top of said liquid means by the force of buoyancy asserted on said stack by said liquid means whereby to cause said excepted body to free fall under the force of gravity through said first chamber such that said excepted body contacts the body at the end of said stack to initiate another such body moving through said first chamber, said valve means being effective to convert kinetic energy from said excepted body to useful energy while passing through said first chamber and said expansion chamber being effective to maintain said high pressure upon entry of said excepted body in said lower subchamber.

3,292,366
POWER GENERATING SYSTEM USING THIOPHENE AS A WORKING FLUID
Ned C. Rice, Hartford, Frank R. Biancardi, Vernon, and Abraham M. Landerman, Storrs, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,492
5 Claims. (Cl. 60—36)



1. A method for operating a power generating system comprising the steps of
vaporizing in a vapor generator a working fluid consisting entirely of thiophene
isentropically expanding said vaporized thiophene through a turbomachine to produce work,
removing heat from said vaporized thiophene in a condenser to liquify said vapor,
and pumping said liquid thiophene into said vapor generator.

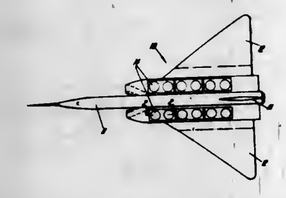
3,292,367
IGNITION OF JET ENGINES
Louis Jules Bangor, Vanves, and Pierre Jean Victor Negre, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Mar. 23, 1964, Ser. No. 354,013
Claims priority, application France, Mar. 28, 1963, 929,669
4 Claims. (Cl. 60—39.14)

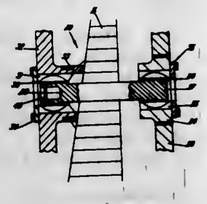


2. In an aviation jet engine having a combustion chamber, a device for effecting ignition or re-ignition therein, comprising ignition means in the chamber, a starting injection nozzle opening into the chamber, a fuel source for the supply of starting fuel at a pressure higher than all the optimum values of the pressure of said starting fuel which will permit the ignition of the engine under

the various working conditions of the latter, means connecting the source to the injection nozzle and including modulating means for opening and closing said connecting means alternately during constant open and closed periods and means for operating the ignition means during operation of the modulating means.

3,292,368
AIRCRAFT ENGINE ASSEMBLY
Maurice Ian Taylor, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Apr. 14, 1965, Ser. No. 448,158
Claims priority, application Great Britain, Nov. 5, 1964, 45,198
7 Claims. (Cl. 60—39.31)

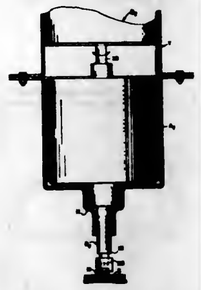




1. An aircraft engine assembly comprising an engine housing, an engine disposed therein, a first rotatable member mounted on the housing and having an axially extending bore, a plurality of axially extending splines provided internally of said bore, a second rotatable splined member mounted on the engine, and a shaft having a plurality of longitudinally extending splines at each end by which the shaft may be removably connected to the first and second rotatable members, the shaft having a size in relation to the bore of the first rotatable member such that said shaft is withdrawable from the assembly through said bore.

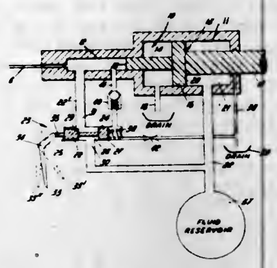
3,292,369
IMPULSE TOOL
Donald K. Skoog, Mountainside, N.J., and Christopher K. Brown, Sayre, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Original application Dec. 12, 1962, Ser. No. 244,151, now Patent No. 3,210,961, dated Oct. 12, 1965. Divided and this application Nov. 22, 1963, Ser. No. 346,055
6 Claims. (Cl. 60—54.5)

1. Apparatus connected to a tool and for driving said tool by fluid impulses, said apparatus comprising
(a) a stationary casing means,
(b) housing means rotatable within said casing means and adapted to contain a fluid,
(c) spindle means rotatably mounted in said housing means and in said fluid,
(d) through blade-type means carried by said spindle means and engageable with said housing means, one of said housing means and said through blade-type means being provided with gating means for controlling said application of the predetermined torque, one of said spindle means and housing means being secured to said casing means, said spindle means being provided with passage means in communication with said housing means, extending through said spindle means and connected to said tool,
(e) and drive means connected to the other of said housing means and said spindle means for causing rotation of said other with respect to said casing means,



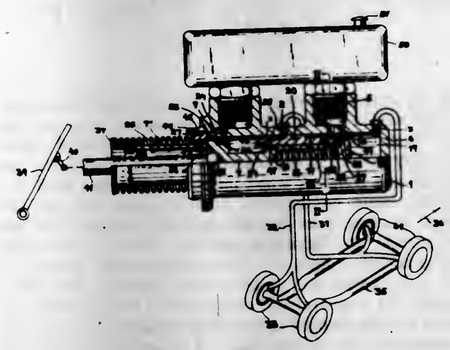
(f) said spindle means being operable during a portion of each revolution of the relative rotation to dynamically seal off a portion of said fluid so that the pressure in said portion of the fluid and on said spindle means increases thereby causing a pulse of fluid to flow through said passage means to said tool.

3,292,370
POWER TRANSMISSION APPARATUS
Keith Foster and Graham Alexander Parker, Birmingham, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Sept. 3, 1965, Ser. No. 484,851
Claims priority, application Great Britain, May 14, 1965, 20,561/65
8 Claims. (Cl. 60—54.5)



1. Power transmission apparatus comprising means defining a chamber having first and second portions for pressure fluid, a movable pressure responsive device having first and second opposed faces comprising respective movable walls of said first and second portions, supply conduit means for connecting said first portion of the chamber to a source of fluid pressure oscillations to cause oscillation of said pressure responsive device, a load driving member which is drivingly connected to the pressure responsive device, pressure balance conduit means connected between said first and second portions of the chamber for the transmission of fluid pressure oscillations from said first to said second portion, and valve means in said pressure balance conduit means for selectively permitting and restricting transmission of said fluid pressure oscillations through said pressure balance conduit means.

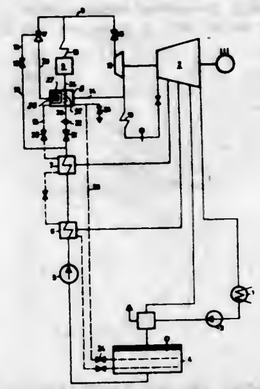
3,292,371
MASTER CYLINDER AND BRAKE SYSTEM INCORPORATING SAME
Juan Belart, Walldorf, Hesse, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik, KG., Frankfurt am Main, Germany, a corporation of Germany
Filed July 9, 1963, Ser. No. 293,817
Claims priority, application Germany, July 14, 1962, T 22,471
13 Claims. (Cl. 60—54.5)



1. A brake master cylinder, comprising housing means forming a generally cylindrical bore and provided with a pair of outlets axially spaced therealong for feeding fluid to respective brake means; a floating piston reciprocable within said bore intermediate said outlets, said floating piston having an axially extending chamber open at one end thereof; and an actuating piston reciprocable within said bore and having a portion axially extending into said chamber through the open end of said floating piston and slidably received therein, said floating piston being provided with means forming with the wall of said bore a passage communicating between the exterior thereof and said chamber, one of said outlets being disposed intermediate said pistons, said housing means including a fluid reservoir containing fluid at a low pressure, said passage communicating with said reservoir and including a port formed in a wall of said floating piston and interconnecting said bore and said chamber.

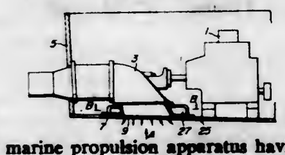
3,292,372
STEAM POWER GENERATING PLANT
Rupprecht Michel, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a German corporation
Filed Mar. 23, 1964, Ser. No. 354,166
Claims priority, application Germany, Mar. 23, 1963, S 84,328
8 Claims. (Cl. 60—73)

1. A steam power generating plant comprising a turbine having high and low pressure stages, a forced flow boiler connected by a high-pressure steam line with the high pressure stage of said turbine, an intermediate superheater connected between the high and low pressure stages of said turbine, a plurality of feed water regenerative preheating stages connected to the low pressure stage of said turbine, and a starting vessel comprising a water-steam separator encased in common with another regenerative preheating stage, said starting vessel being connected



through a high-pressure reducing valve with said high pressure steam line and said other regenerative preheating stage being connected to the inlet of said intermediate superheater.

3,292,373
MARINE PROPULSION APPARATUS
Hiroshi Tado, Suita-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 2, 1964, Ser. No. 415,422
Claims priority, application Japan, Dec. 10, 1963, 38/92,180
3 Claims. (Cl. 60—221)

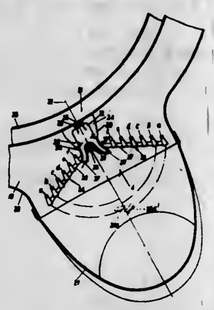


1. In a marine propulsion apparatus having an engine and a water jet pump to utilize the reaction produced by jets of water for the propulsion of ships, the improvement comprising a mounting block fixed on said ship's bottom plate for supporting thereon the water jet pump, said mounting block having a water suction port therethrough, a chamber provided in said mounting block between the outer wall of said mounting block and the peripheral wall of said water suction port, said chamber having an inlet for receiving lubricating oil from said engine and an outlet for discharging lubricating oil to said engine, said chamber defining a lubricating oil sump for the engine which serves as a lubricating oil cooler for the engine.

3,292,374
GAS TURBINE ENGINE AND AIRCRAFT PROVIDED THEREWITH
Geoffrey Light Wilde, Cowers Lane, Derby, and James Alexander Petrie, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Mar. 9, 1964, Ser. No. 350,304
Claims priority, application Great Britain, Mar. 29, 1963, 12,675/63
5 Claims. (Cl. 60—224)

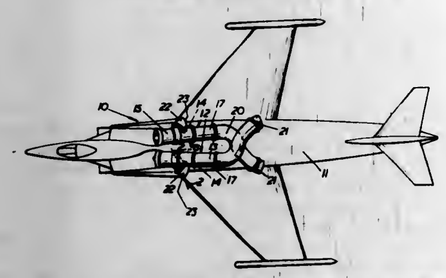
1. A gas turbine jet propulsion engine comprising compressor equipment, combustion means, turbine equipment and a jet pipe through which combustion gases are

exhausted to atmosphere, all arranged in flow series, said engine also being provided with an outlet duct supplied with compressed air direct from the compressor equipment of said engine to provide thrust, two sets of downstream facing concentric semi-circular gutters disposed within said outlet duct, a common axis about which said



sets are pivoted, the radii of curvature of the gutters all being different and the sets being movable between an operative position in which they present a relatively large impedance to air flow, and an inoperative position in which all the gutters are imbricated to present a relatively small impedance to air flow.

3,292,375
COMBUSTION EQUIPMENT, E.G. FOR A GAS TURBINE ENGINE
Geoffrey Light Wilde, Derby, and James Alexander Petrie, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Mar. 19, 1964, Ser. No. 353,081
Claims priority, application Great Britain, Mar. 29, 1963, 12,678/63
9 Claims. (Cl. 60—224)



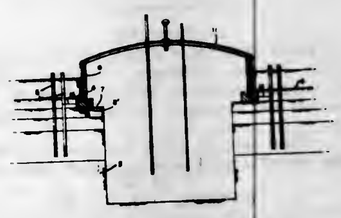
1. Combustion equipment comprising an air duct, a plurality of combustion stabilizing members arranged in the air duct, means supplying the combustion stabilizing members with fuel, a chamber mounted in the air duct, means for supplying the interior of the chamber with fuel and air, means effecting combustion of the fuel and air in the chamber, structure carrying said combustion stabilizing members and movable between an operative position in which the structure and the combustion stabilizing members extend across the air duct and an inoperative position in which the structure and the combustion stabilizing members present relatively little obstruction to the flow of air through the air duct, at least one inner tube communicating with the chamber for passing out of the chamber the hot gases arising from the said combustion and directing the said hot gases past the operative position of the said combustion stabilizing members so as to ignite fuel supplied thereto, and at least one outer tube, concentric with said at least one inner tube, and adapted to be supplied with cooling air.

3,292,376
ROCKET NOZZLE PROTECTION SYSTEM
Adolphe Otton Gentier Ernst, Bois-le-Roi, Roger Adrien Ferand, Bourg-la-Reine, and Francis Jean-Marie Guy Tremouilles, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed June 15, 1964, Ser. No. 374,961
Claims priority, application France, June 18, 1963, 938,496
2 Claims. (Cl. 60—253)



1. In a rocket having a longtiudinally extending casing formed with a generally annular transverse rear end portion which bounds a central passage, a main solid propellant body housed in said casing upstream of said rear end portion and adapted, when ignited, to produce high temperature main combustion gases to issue through said central passage, a jet propulsion nozzle fitted to said rear end portion and having a bare and smooth convergent-divergent inner surface of non-combustible material to lead and expand the gases issuing through said central passage, the improvement comprising a trough-shaped recessed seating formed in said transverse rear end portion around said central passage and upstream of said bare convergent-divergent surface, said trough-shaped seating being wide open forwardly toward the interior of said casing and having rearwardly a sunken bottom, and an auxiliary solid propellant body fitted in said seating and freely exposed in the path of said main combustion gases for producing, when ignited, auxiliary combustion gases at a temperature lower than said high temperature main gases thereby generating a peripheral layer of lower temperature gases around the high temperature gases to form a protective gaseous sheath flowing along and in contact with said bare convergent-divergent surface.

3,292,377
IN-GROUND STORAGE FACILITY WITH FOOTING SECTIONS AND METHOD OF INSTALLING THE SAME
Frederick J. Sanger, Hanover, N.H., assignor to Conch International Methane Limited, Nassau, Bahamas
Filed Apr. 9, 1964, Ser. No. 358,421
7 Claims. (Cl. 61—.5)



6. An in-ground storage facility for liquids having a boiling point below the freezing temperature of ground water comprising means for prefreezing an annulus of liquid-laden soil adjacent to the upper perimeter of a large, open excavation in the ground,

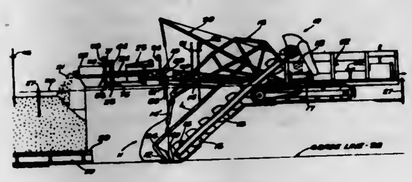
(a) a horizontal footing surface formed in the ground adjacent to the upper perimeter of said excavation,
(b) a plastic layer of low-temperature grease and a loose filler material laid in said footing surface,
(c) a series of massive preformed, solid footing sections laid end-to-end on said plastic layer with their upper surfaces in horizontal alignment,
(d) a closed wall resting on said footing sections and extending upwardly to above ground level, and
(e) a vapor-tight roof over said excavation and joined by liquid-and-vapor-tight sealing means to the wall of said excavation.

3,292,378
SUBSURFACE IRRIGATION CONDUIT
Yuval Rosenthal, West Covina, and Robley C. Brown, Pomona, Calif., assignors to Moisture Miser Systems-Pomona, Pomona, Calif., a corporation of California
Filed Apr. 10, 1964, Ser. No. 358,773
2 Claims. (Cl. 61—13)



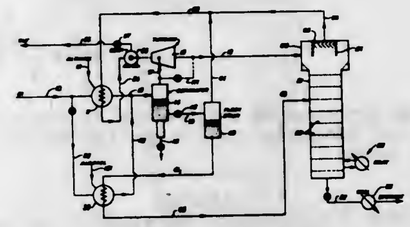
1. A subsurface irrigation conduit comprising an elongated flexible tubular member having spaced outlet nozzles inserted through the wall thereof, said conduit having an integral flap continuously connected at one edge along the length of the conduit, said flap having a free irregular terminal opposite edge portion overlying and yieldably contacting said nozzles and the conduit portions between the nozzles, said flap defining an arched passageway longitudinally of the conduit, and each nozzle having a port with an inlet in said conduit and an outlet into said arched passageway under said flap.

3,292,379
PIPE LAYING APPARATUS
James L. McElvany, P.O. Box 818, El Centro, Calif. 92243
Filed Mar. 5, 1962, Ser. No. 177,281
9 Claims. (Cl. 61—72.5)



5. In pipe laying apparatus, the combination comprising: a trench digging machine; a pipe laying crib pivoted to the rearward end of said machine; reciprocable means in said crib for engaging the end of a pipeline to maintain the same longitudinal compression; elevator means in said crib for adjusting the vertical position of said reciprocable means in said crib; means to adjust the angular position of said crib about said pivot; a plow blade mounted on said crib at the forward lower end thereof in a position such that the lower end of said plate projects exteriorly of said crib; and means for adjusting the vertical position of said blade to control the position of said crib in the trench within narrow vertical limits.

3,292,380
METHOD AND EQUIPMENT FOR TREATING HYDROCARBON GASES FOR PRESSURE REDUCTION AND CONDENSATE RECOVERY
Robert W. Buckles, Houston, Tex., assignor, by mesne assignments, to Coastal States Gas Producing Company, Corpus Christi, Tex., a corporation of Delaware
Filed Apr. 28, 1964, Ser. No. 363,154
10 Claims. (Cl. 62—20)

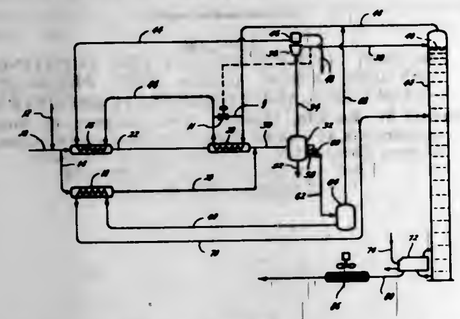


1. The method of treating relatively high pressure hydrocarbon feed gas containing methane and condensable components to produce output gas at relatively low pressure, that includes:
(a) cooling said high pressure gas to below 32° F.,
(b) expanding the cooled gas through a turbine to produce a gas-condensate mixture at a temperature below about —100° F.,
(c) delivering the gas-condensate mixture at a temperature below about —100° F. to a stripping column,
(d) stripping the condensate to remove a condensable component thereof at a pressure below the output gas pressure,
(e) flowing gas from the stripping column in heat exchange relationship with the feed gas, and
(f) recompressing gas from the stripping column, after it has been heat exchanged with the feed gas, by the energy output of said turbine to constitute said output gas.

3,292,381
SEPARATION OF NATURAL GAS BY LIQUEFACTION WITH AN INJECTED HYDRATE INHIBITOR
Joseph E. Bludworth, Corpus Christi, Tex., assignor to Coastal States Petrochemical Company, Corpus Christi, Tex., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,064
26 Claims. (Cl. 62—28)

1. The method of separating methane and ethane from propane and higher boiling point constituents in a natural gas stream under superatmospheric pressure, said process comprising:
(a) cooling the gas stream until a portion of the methane, ethane, and other gaseous hydrocarbons are changed to liquid hydrocarbons.
(b) passing the gas stream remaining after step (a) through a turbo expander to condense a portion of the gas stream to a liquid,
(c) passing the liquid from the turbo expander to the top of the fractionating zone of a fractionating tower,
(d) flashing a portion of the methane and ethane from the liquid hydrocarbons separated in step (a),
(e) passing the liquid hydrocarbons remaining from step (d) to the fractionating tower,

(f) distilling the liquid in the fractionating tower free of external reflux to form ethane and methane gas and a stabilized liquid product of propane and higher boiling point constituents, and



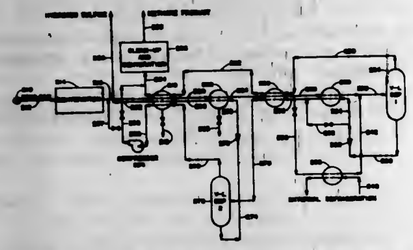
(g) performing the cooling of step (a) free of external refrigeration with the gas from the turbo expander.

3,292,382

LOW TEMPERATURE SEPARATION OF H_2S FROM HYDROCARBON GAS

Bruce G. Bray, Ponca City, Okla., and George W. Swift, Lawrence, Kans., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed Feb. 21, 1964, Ser. No. 346,504
2 Claims. (Cl. 62—23)



1. A low temperature process for separating hydrogen sulfide from a normally gaseous hydrocarbon which process comprises:

cooling a feed gas mixture of hydrogen sulfide and at least one normally gaseous hydrocrabon, said mixture containing 5-90 mole percent of hydrogen sulfide and methane gas as the major hydrocrabon constituent and being essentially free of water vapor, to a temperature in the range of about —80° F. and about —115° F., at an elevated pressure substantially the same as that of said feed gas to obtain only a gaseous phase and a liquid phase rich in hydrogen sulfide;

separating said liquid hydrogen sulfide rich phase containing dissolved hydrocarbon from said gaseous hydrocarbon phase, said gaseous hydrocarbon phase having a hydrogen sulfide content lower than that of said feed gas;

said liquid hydrogen sulfide rich phase is then brought to a temperature in the range of about —50° F. and about —120° F., at a pressure of at least about 200 p.s.i.a., where the pressure of said cooled liquid phase is lower than the pressure of said cooled feed gas;

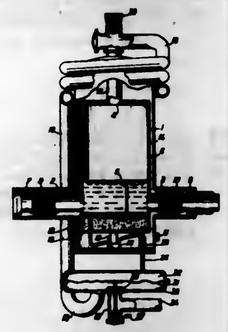
separating a second liquid hydrogen sulfide phase having a H_2S content greater than that of said liquid phase from a second gaseous hydrocarbon phase and said second gaseous hydrocarbon phase is cycled to feed the gas and the combined charge is then cooled for the first separation.

3,292,383

PHASE SEPARATOR

Pierre Charles, Sceaux, Camille Prevost, La Chesnay, and Olivier Testard, Clamart, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Jan. 12, 1965, Ser. No. 425,926
Claims priority, application France, Jan. 16, 1964, 960,467
2 Claims. (Cl. 62—50)



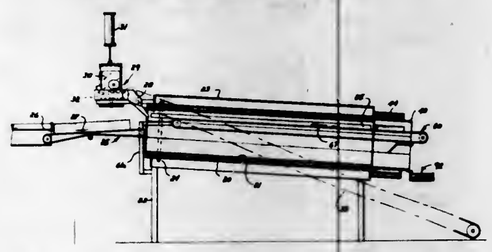
1. Phase separator for liquified gas circulation systems comprising a separating chamber, a conduit at the bottom portion of said separating chamber for the admission of liquid, a conduit for the discharge of liquid for said separating chamber, a manometric capsule, a first chamber for said capsule, a pipe in which the liquified gas vaporizes connecting said first chamber to the bottom portion of said separating chamber, a second chamber for said capsule, a gas removing conduit connecting said second chamber to the top portion of said separating chamber, a gas discharge conduit from said second chamber, a deformable diaphragm separating said two chambers and a valve for discharging gas from said second chamber cooperating with said discharge conduit and rigidly fixed to said deformable diaphragm.

3,292,384

METHOD AND APPARATUS FOR CHILLING ARTICLES, ESPECIALLY FOOD ITEMS, BY THE USE OF POWDERED REFRIGERANT

Julius Rubin, Franklin Square, Nassau, N.Y., assignor to Thermice Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1966, Ser. No. 530,737
9 Claims. (Cl. 62—63)



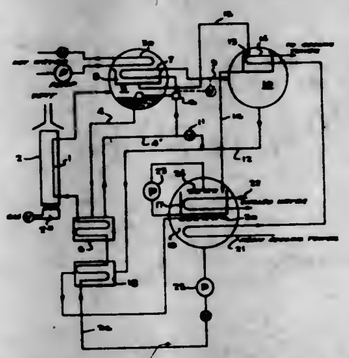
9. A method for separating and recycling powdered Dry Ice from a moving chilling bed consisting of an intimate mixture of powdered Dry Ice and chilled items comprising passing a portion of said bed over a perforate surface admitting passage of powdered Dry Ice downwardly therethrough but blocking such downward passage of chilled items, catching the powdered Dry Ice passing through said perforate surface in a compartment having said surface as the top wall thereof, removing said compartment from the vicinity of said bed, overturning said compartment to pass the powdered Dry Ice therein through said perforate surface, collecting Dry Ice spilled from said compartment, and conveying the collected Dry Ice to a point in said bed for reuse.

3,292,385

PROCESS AND APPARATUS FOR SIMULTANEOUS GENERATION OF HOT AND COLD FLUIDS IN AN ABSORPTION REFRIGERATION SYSTEM

Joseph G. Mussey, Harrisonburg, Va., assignor to Space Conditioning, Incorporated, Harrisonburg, Va., a corporation of Maryland

Filed Aug. 31, 1965, Ser. No. 483,973
9 Claims. (Cl. 62—101)



1. A process for simultaneously producing heating of a selected fluid to be heated and cooling of a selected fluid to be cooled in a multiple effect absorption refrigeration system comprising the steps of heating an aqueous salt solution to its vaporization point to produce a partially concentrated salt solution and water vapor at a first selected pressure, separating said water vapor from said partially concentrated salt solution in a separating zone, withdrawing and cooling said partially concentrated salt solution, condensing water vapor in a condensing zone in vapor communication with said separating zone by indirect heat exchange with said cooled, partially concentrated salt solution passing from said separating zone causing partial vaporization of said partially concentrated salt solution at said condensing zone producing further concentrated salt solution and additional water vapor at a lower pressure than in said separating zone, passing fluid to be heated in indirect heat exchange relation to said partially concentrated salt solution and condensing water vapor at said condensing zone to effect heating of said fluid to be heated, separating water vapor from said farther concentrated salt solution at a second separating zone, condensing said last named water vapor to form a condensate in a condensing zone at a lower pressure than said first-mentioned separating zone, and passing said condensate into an evaporating zone maintained at a lower pressure than said second separating zone and vaporizing said condensate in heat exchange relation with fluid to be cooled.

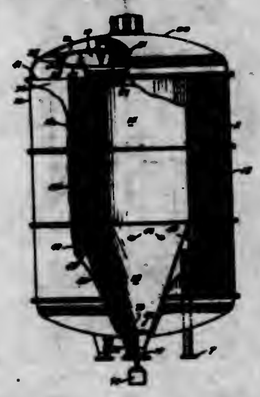
3,292,386

FREEZE CONCENTRATION APPARATUS WITH A TANGENTIAL FEED

Wallace E. Johnson, Paul A. Weiss, and John H. Davids, Beloit, Wis., assignors to Desalination Plants (Developers of Zarchin Process) Limited, Tel Aviv, Israel, a limited company of Israel

Filed June 4, 1963, Ser. No. 286,528
9 Claims. (Cl. 62—123)

1. Freezing apparatus for separating a solvent in substantially pure form from a solution comprising a vessel including an upper vapor flow section and a lower frusto-conical section which defines a vacuum flash freezing chamber, a vapor flow outlet for said vapor flow section, means for withdrawing vapor from said vapor flow section, a slurry outlet located in said frusto-conical section for removing a slurry of ice of the solvent and the remainder of the solution from the chamber, means for maintaining vacuum conditions in said chamber to produce an ice slurry of frozen solvent in the solution, and solution discharge means including a plurality of inlet



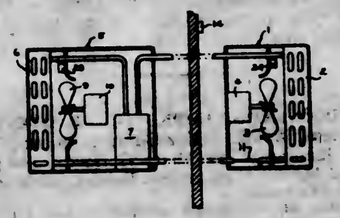
means distributed on the inside face of the frusto-conical section in the upper part thereof and directed tangentially for discharging solution into said vessel and for tangentially directing said solution onto the inner wall of said section defining said chamber in streams which overlap and combine whereby solution swirls downwardly along a spiral path on the inner wall of said chamber to expose the maximum solution surface to the vacuum conditions in the chamber to produce an ice slurry adjacent the slurry outlet forming a vortexing slurry of ice and solution which is dischargeable through said slurry outlet.

3,292,387

AIR CONDITIONING EQUIPMENT INCLUDING TIME DELAY CONTROL CIRCUITRY

Don J. Harbour, Tyler, Tex., assignor to General Electric Company, a corporation of New York

Filed Mar. 30, 1965, Ser. No. 443,994
8 Claims. (Cl. 62—158)

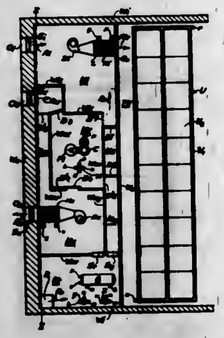


1. In an air conditioning system comprising means including a drive motor for conditioning air to be supplied to an enclosure and air circulating means operable upon energization thereof for delivering the conditioned air to the enclosure, a control circuit comprising:

means responsive to the condition of the air within the enclosure for energizing said air circulating means, and

means responsive to the operation of said air circulating means for energizing said drive motor.

3,292,388
RADIANT HEATING OR COOLING SYSTEMS
Horst Ernst Schuchardt, Zollikofen, near Bern, Switzerland, assignor to Freeger International Corporation, Bern, Switzerland, a corporation of Switzerland
Filed Feb. 25, 1965, Ser. No. 435,296
Claims priority, application Germany, Mar. 5, 1964, F 42,215
7 Claims. (Cl. 62—324)



1. A radiant heating or cooling system comprising a sub-ceiling including a plurality of fluid conducting pipes and a plurality of plate elements arranged in heat exchange relation with said pipes, means for circulating a secondary heat exchange fluid through said pipes, a heat pump system comprising a compressor circuit including a compressor, a primary air-to-fluid heat exchanger and a fluid-to-fluid heat exchanger, pipes interconnecting said compressor and heat exchangers for circulating a primary heat exchange fluid therethrough and means for evaporating said fluid in said compressor circuit and a reversing valve for reversing the direction of flow of primary heat exchange fluid through said compressor circuit, said fluid-to-fluid heat exchanger comprising a primary circuit included in said compressor circuit and a secondary circuit including pipe lines interconnecting said fluid-to-fluid heat exchanger and the pipes of the sub-ceiling for circulating the secondary heat exchange fluid therethrough in heat exchange relation with the primary heat exchange fluid flowing through the compressor circuit, wherein the secondary circuit of the fluid-to-fluid heat exchanger comprises two branches, one of which is connected with the pipes of the sub-ceiling, the other branch being connected with a secondary air-to-fluid heat exchanger, each of said branches including valve means for adjusting the flow of heat exchange fluid therethrough.

3,292,389
VIBRATION-DAMPED DRIVE SHAFT
Jakob August Adloff, Mainz-Gonsenheim, and Wilhelm Riehl, Raunheim am Main, Germany, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation of abandoned application Ser. No. 52,222, Aug. 26, 1960. This application Mar. 6, 1963, Ser. No. 264,474
Claims priority, application Germany, Sept. 2, 1959, O 6,956
5 Claims. (Cl. 64—1)

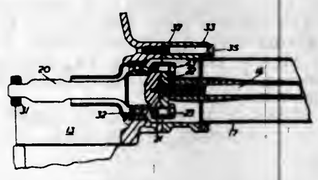
2. A torsionally resilient drive shaft assembly comprising

a torsionally resilient shaft having a driving end and a driven end and having a constant diameter throughout its length,

an end member embracing one of said ends of said shaft and rotatable therewith,

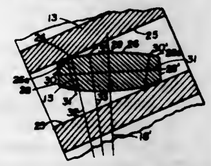
means securing said end member to said one end of said shaft for transmitting driving torque therebetween, said securing means reducing the strength in torsion of said shaft end,

a tube coaxial with said one end of said shaft and secured to said end member for rotation therewith and



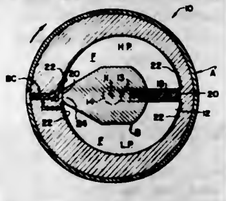
a sleeve of resilient material radially compressed between said tube and said one end of said shaft adjacent to and inwardly of said end member to transmit a portion of the driving torque transmitted between said shaft and said end member and to damp torsional vibrations in said assembly.

3,292,390
GEAR COUPLING
Ernest Wildhaber, Brighton, N.Y.
Filed Apr. 1, 1965, Ser. No. 444,736
7 Claims. (Cl. 64—9)



1. A gear coupling comprising a sleeve with straight teeth internally provided thereon and a hub having crowned teeth projecting outwardly from a body portion and engaging said straight teeth, the intersection lines of said crowned teeth with a mean cylindrical surface coaxial with the hub being convexly curved and having an abruptly changing radius of curvature adjacent both ends of the teeth, in the development of said cylindrical surface to a plane, said radius being less than half the minimum radius of curvature of the portion intermediate said abrupt changes.

3,292,391
BYPASS CONTROL DEVICE FOR AN IMPULSE TOOL
Leo Kramer, Chester, and Reginald W. Pauley, Somerville, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 1, 1965, Ser. No. 444,600
10 Claims. (Cl. 64—26)



1. For an impulse tool for applying a torque to an object, said impulse tool having housing means provided with a cavity for sealingly containing a fluid, spindle means in said housing means and in said fluid, drive means operatively associated with one of said housing means and

said spindle means for causing relatively rotary movement between said housing means and said spindle means, the other of said housing means and said spindle means being adapted to engage said object, sealing means on one of said housing means and said spindle means, a first sealing portion on said housing means, a second sealing portion on said spindle means, said first sealing portion and said second sealing portion being in sealing relation during a relatively small portion of each revolution of said relative rotative movement, said first sealing portion and said second sealing portion and said sealing means being operable during said relative small portion of each revolution of said relative rotary movement to dynamically seal off said cavity into a high pressure portion and a low pressure portion to produce a primary pressure pulse in said high pressure portion and on said other of said housing means and said spindle means thereby causing said other to rotate with respect to said one of said housing means and said spindle means and to apply a torque to said object; a bypass control device in one of said housing means and said spindle means, said bypass control device comprising:

(a) said one being provided with cavity means and seat means located circumferentially of said cavity means and in communication with said cavity means,

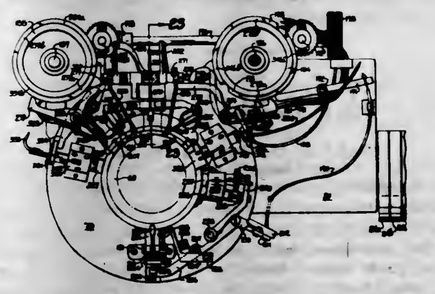
(b) said one also being provided with passage means for communicating said seat means and said cavity means with said high pressure portion and said low pressure portion,

(c) a centrifugal member in said cavity means and movable by centrifugal force during rotation of said one to a position adjacent said seat means in which position it prevents fluid flow through said seat means, said cavity means, and said passage means,

(d) said passage means communicating said cavity means with said high pressure portion to supply fluid from said high pressure portion to said cavity means for retaining said centrifugal member in said position adjacent said seat means, and

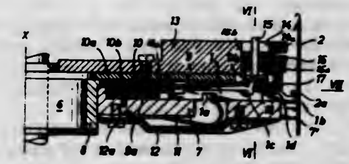
(e) means in said seat means for biasing said centrifugal member from said seat means to a position permitting fluid flow through said seat means, said cavity means, and said passage means.

3,292,392
CIRCULAR KNITTING MACHINE FOR KNITTING SEAMLESS PANTY GIRDLES AND THE LIKE
George F. Squillario, Valdese, N.C., and Ervin Ray Bridges, deceased, late of Connellys Springs, N.C., by Harley Bridges, executor, Palmetto, Ga., and Emma C. Bridges, executrix, Connellys Springs, N.C., assignors, by mesne assignments, to Pilot Research Corporation, Valdese, N.C., a corporation of North Carolina
Filed June 5, 1963, Ser. No. 285,841
15 Claims. (Cl. 66—48)



1. A circular knitting machine for knitting articles having a plurality of fashioned and reciprocatorily knit interconnected gussets, said knitting machine comprising

3,292,393
PATTERN CONTROL ARRANGEMENT FOR CIRCULAR KNITTING MACHINES
Erich Ribler, Kenzingen, Germany, assignor to Franz Morat K.G., Eisenbach, Black Forest, Germany
Filed Apr. 20, 1964, Ser. No. 361,310
Claims priority, application Germany, Apr. 20, 1963, M 56,550
20 Claims. (Cl. 66—50)



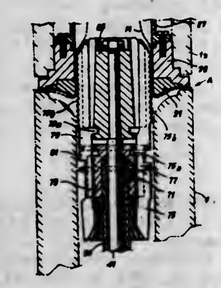
1. A pattern control arrangement for a knitting machine, comprising, in combination, carrier means mounted for rotation; a set of needle-influencing elements supported on said carrier means for rotation therewith past at least one selecting station and for movement thereon between an inoperative position and an operative position adapted to cause displacement of a correlated needle; biasing means for biasing said needle-influencing elements to move toward said operative position; means for moving said needle-influencing elements before said selecting station to said inoperative position; locking means mounted on said carrier means movable between a locking position for locking non-selected needle-influencing elements in said inoperative position, and a releasing position releasing selected needle-influencing elements for movement toward said operative position; and control means located at said selecting station for moving said locking means between said releasing and locking positions in accordance with a predetermined program.

3,292,394
DEVICE FOR TENSIONING TUBULAR FABRIC WHILST IT IS BEING KNITTED IN A CIRCULAR KNITTING MACHINE FOR MANUFACTURE OF SOCKS AND THE LIKE
Vinicio Lachi, Firenze, Italy, assignor to Sella Societa a Responsabilita Limitata, Firenze, Italy, a corporation of Italy
Filed Dec. 14, 1964, Ser. No. 418,180
Claims priority, application Italy, Dec. 16, 1963, 26,450/63
5 Claims. (Cl. 66—149)

1. In a circular knitting machine, having a needle cylinder, for the production of socks and like fabrics, a fabric tensioning device comprising

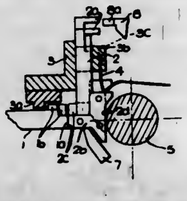
a first member mounted in said cylinder for reciprocal movement along the axis of the cylinder,

a set of first elements mounted on said first member for axial movement therewith and for radial movement,
teeth on said elements for engaging said fabric and for gripping the fabric during movement of said first member in one direction only,
means biassing said elements radially outwardly into contact with the fabric,
a second member mounted in said cylinder for reciprocal movement along the axis of the cylinder,



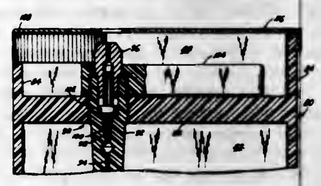
a set of second elements mounted on said second member for axial movement therewith and for radial movment,
teeth on said second elements for engaging said fabric and for gripping said fabric during movement of said second member in said one direction only,
means biassing said second elements radially outwardly into contact with the fabric, and
means for axially moving said sets of elements alternately thereby to retract each set of elements in turn whilst the other set of elements is maintaining tension on the fabric being generated.

3,292,395
STRAIGHT BAR KNITTING MACHINES
William Bentley, Barrington, Oadby, and Dennis A. Cozens, Leicester, England, assignors to William Cotton Limited
Filed Feb. 27, 1964, Ser. No. 347,864
Claims priority, application Great Britain, Feb. 28, 1963, 7,981/63
9 Claims. (Cl. 66—154)



1. In a knitting machine, a series of like elements adapted for individual repetitive movements, operating means for obtaining the repetitive movements of said like elements, and element selection means comprising a series of selectively operable electro mechanical devices having the same number as said like elements, and respectively substantially registering with the same, said series of electromechanical devices controlling the series of like elements for different selections of the like elements to have the repetitive movements obtained from the operating means while the remaining like elements do not have the repetitive movements obtained from the operating means.

3,292,396
FINGERPIECE CONTROLLED GAS LIGHTERS
Conrad Zellweger, Geneva, Switzerland, and William Retzler, Great Bookham, England, assignors to La Nationale S.A., Geneva, Switzerland, a corporation of Switzerland, and Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Original application July 23, 1963, Ser. No. 297,128, now Patent No. 3,288,243, dated Sept. 28, 1965. Divided and this application Sept. 15, 1965, Ser. No. 496,183
Claims priority, application Switzerland, July 27, 1962, 9,013
5 Claims. (Cl. 67—7.1)

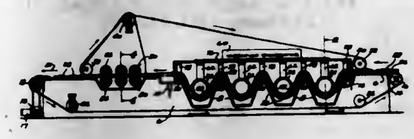


1. A hand held lighter of the gas fuel type comprising a reservoir for maintaining highly volatile fuel under pressure in its liquefied state, a sparking wheel having an abrading surface, a flint element biased against the abrading surface of said sparking wheel, a burner nozzle mounted near said sparking wheel and flint element, a valve element rotatably mounted in one wall of said reservoir about a predetermined axis of rotation and movable back and forth in a given direction perpendicular to said axis of rotation over a limited distance with respect to said one wall, said valve element having surfaces which extend at least partially transversely to said given direction and which face corresponding surfaces in said one wall to effect simultaneous movement of said valve element in said given direction during said rotation and to form therebetween a gas passageway flow control region which varies in cross sectional area from zero to a maximum as said valve element is rotated about said axis from a first position to a second position, respectively, said one wall containing a fluid conduit leading from the interior of said reservoir to one end of the flow control region of said gas passageway, and a further fluid conduit leading from the other end of the flow control region of said gas passageway to said burner nozzle, a single actuator lever connected at one end to said valve element for rotation therewith about said axis between said first and second positions to open said flow control region of said gas passageway upon initial rotation away from said first position and toward said second position and to thereafter vary the opening thereof to control the rate of flow of fuel through said passageway, and spring means engaging against said actuator lever and normally holding said actutor lever and valve element in said first position to close said passageway.

3,292,397
LAUNDRY APPARATUS
Carl E. Woolever, Rte. 4, Box 149, Franklin, N.C. 28734
Filed May 15, 1964, Ser. No. 367,885
10 Claims. (Cl. 68—19)

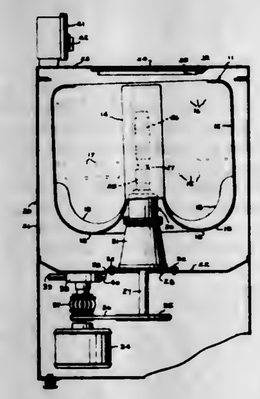
1. A washing machine comprising tub means in combination with means for conveying work into and through and from said tub means, said conveying means including first and second belts, at least one of which is foraminous, guide means about which the belts are trained and some of which are so disposed as to guide proximate portions of the belts into and through and from the tub means in work confining relation, other guide means being disposed to define return paths for the respective belts, a drying section having upper and lower rolls between

which said belt portions are trained and means for directing a drying gas through said belt portions in the drying section for the removal of solvent from work confined between said portions, the upper and lower rolls between which said belt portions are trained having housings par-



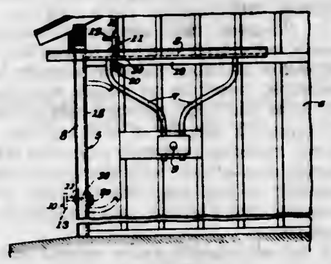
tially enclosing the rolls and open toward said belt portions, the means for directing drying gas including a circulatory system which receives gas from one of said housings, discharges some of said gas, replaces with additional gas the gas discharged, and returns gas to the other of said housings.

3,292,398
BASKET FOR A WASHING MACHINE
John Bochan, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 25, 1964, Ser. No. 399,133
1 Claim. (Cl. 68—152)



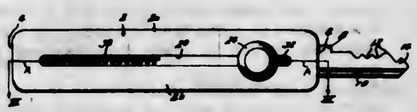
A washing machine comprising:
(a) a basket to receive liquid and fabrics to be washed in the liquid, said basket including a generally cylindrical outer wall, a cylindrical centerpost and a curved lower wall joining said outer wall and said centerpost;
(b) said centerpost extending upwardly within said basket at least to the level of liquid in said basket;
(c) said lower wall including vanes formed therein and extending at least to the juncture of said lower wall and said centerpost;
(d) drive means connected to said basket for moving said basket to effect washing of the fabrics in the liquid, movement of said basket causing the fabrics to move downwardly through the radially inward portion of said basket and to move outwardly through the lower portion of said basket past said vanes,
(e) said centerpost, by extending upwardly to said level preventing the movement of said basket from extending the fabrics completely across said basket and, by its cylindrical configuration, preventing the binding of fabrics onto said centerpost.

3,292,399
GARAGE DOOR LOCK
John Charles Dyer, 14301 Aztec St., Sylmar, Calif. 91342
Filed July 8, 1965, Ser. No. 470,391
2 Claims. (Cl. 70—100)



1. In a lock for securing in both open and closed positions a door mounted on horizontal pivots for movement from a vertical closed position to a horizontal upper position in which the inner face of the door is lowermost, comprising:
(a) a key-operated tumbler lock comprising a cylinder rotatably carried by the door and extending outwardly from the outer face of the door with a handle rigidly fixed on its outer end, and a key-releasable plug rotatable in said cylinder and including a key opening and tumblers for engaging said cylinder, an inwardly directed elongated axial extension fixed to said plug and extending through and beyond the inner face of the door structure;
(b) an inner actuator lever fixed between its ends to the said extension and spaced outwardly from the adjacent face of the door;
(c) a spacer tube over said extension between said actuator lever and door;
(d) a pair of bolts pivotally connected to the ends of said lever and extending in opposite directions;
(e) an inner handle fixed to the outer face of said lever to move the latter around the axis of the extension, plug and cylinder, to move the bolts between retracted and projected positions;
(f) said lever being similarly movable by rotation of said plug by manual rotation of the handle-provided cylinder when a key is fitted into the key opening in said plug and the tumblers are projected into said cylinder to lock the cylinder and plug and said handle-provided cylinder being freely rotatable when said tumblers are withdrawn by said key; and
(g) means cooperating with said pair of bolts for engagement with the latter in both door closed and door opened position.

3,292,400
AUTOMOBILE IGNITION KEY HOLDER
John B. Merlin, 900 Armour Blvd., Kansas City, Mo. 64109
Filed July 6, 1964, Ser. No. 380,512
1 Claim. (Cl. 70—414)



In combination:
(a) a key for a pin tumbler lock,
(b) a holder for said key including an elongated body member having an external end abutment surface adapted to engage the face of a pin tumbler lock,

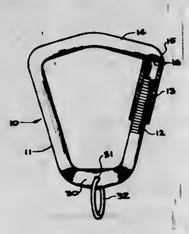
said body member being hollow and containing said key, said key being longitudinally movable in said body member from a retracted position entirely within said body member to an extended position projecting outwardly from said body member through an aperture of said body member formed in said abutment surface,

(c) an elongated rigid operating member engaged loosely and slidably in a hole formed therefor in said key within said body member, whereby to be easily removable therefrom to permit separation of said key from said body member, said operating member extending laterally of said key with both ends thereof extending outwardly from said body member through slots of said body member elongated longitudinally of said key, whereby said key may be manually moved between said retracted and extended positions,

(d) a pair of enlarged knobs secured respectively to the opposite extended ends of said operating member, whereby to secure said body member, key and operating member in assembly, at least one of said knobs being detachable from said operating member to permit disassembly of said parts, and

(e) a compression spring disposed in said body member in parallel relation to said key and lying in the path of said operating member as it moves said key from its retracted position to its extended position, said spring being retained between a pair of fixed stops of said body member when said operating member is in its key-retracting position, whereby said operating member is relieved of the pressure of said spring to permit easy insertion and removal of said operating member, but is engaged and compressed by said operating member as the latter initiates its key-extending movement, whereby said spring biases said key toward its retracted position.

3,292,401
ACCESSORY HOLDER
James A. Van Meter, 15357 Magnolia Blvd., Van Nuys, Calif. 91403
Filed Feb. 24, 1965, Ser. No. 434,797
8 Claims. (Cl. 70—459)



1. An accessory holder comprising:

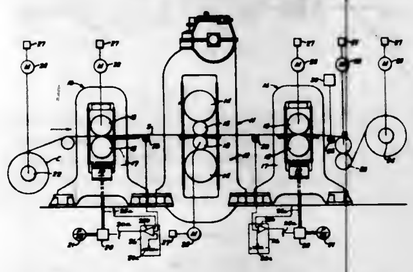
a body member having a resilient projection portion and a threaded portion arranged substantially at right angles to each other so as to define an opening between their opposing free ends;

a closure mechanism mounted on said threaded portion adapted to move towards and away from said projection portion to open and close said defined opening;

said closure mechanism having a notch in one end releasably engageable with said projection portion; and

said free end of said projection portion having a shape conforming to said closure mechanism notch so that forcible engagement of said closure mechanism with said projection portion causes said shaped free end to snap into said closure mechanism notch.

3,292,402
METHOD AND APPARATUS FOR ROLLING FLAT STRIP
Jeremiah W. O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 16, 1963, Ser. No. 279,375
Claims priority, application Great Britain, May 18, 1962, 19,225/62; Aug. 7, 1962, 30,149/62
13 Claims. (Cl. 72—17)



1. In a method of rolling metallic strip material wherein the strip is characterized by adjacent transverse portions elongated to different degrees longitudinally of the strip, which condition causes the portion subject to greater elongation to become non-flat, the steps comprising:

passing the strip between a first pair of rolls to roll the strip,

passing the rolled strip between a second pair of rolls wherein the strip is forceably contacted by said rolls,

controlling the contact pressure of said second pair of rolls in a manner that the reduction in thickness of the strip taken by said second pair of rolls is substantially zero,

controlling the respective speeds of said two pairs of rolls to impose upon the strip a tension that will contribute to the rolling of the strip by said first pair of rolls in a manner that the differences in elongation of said portions will be reduced and the non-flatness removed,

creating two different tension zones after the strip leaves the second pair of rolls, wherein the tension upon the strip in the first zone closest to the second pair of rolls is maintained of an order to militate against any reduction being taken by said second pair of rolls and the tension upon the strip in the second zone furthest away from the second pair of rolls is maintained of an order sufficient to cause the strip to be tightly formed into a coil, and

coiling said strip after it leaves said second tension zone.

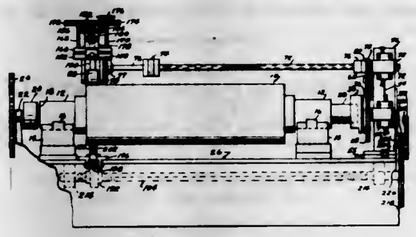
3,292,403
EMBOSSING MILL REGISTRATION LOCKING DEVICE
Harry M. Lewis, Springfield, N.J., assignor to Modern Engraving and Machine Company, Hillside, N.J., a corporation of New Jersey
Original application Oct. 22, 1962, Ser. No. 231,975. Divided and this application May 11, 1965, Ser. No. 458,820
5 Claims. (Cl. 72—81)

1. Apparatus for making a first cylinder into an embossing roll by engraving that cylinder with a second cylinder of axial pattern length an integral number of times less than the desired axial pattern length for the first cylinder, comprising:

means for rotatively supporting said first cylinder,

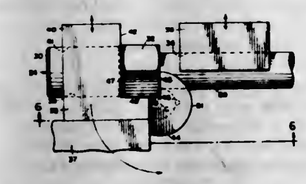
means for rotating said first cylinder, and

means coupled to the said first cylinder rotating means for drivingly rotating the said second cylinder in locked synchronism with rotation of the first cylinder with cylinder axes parallel,



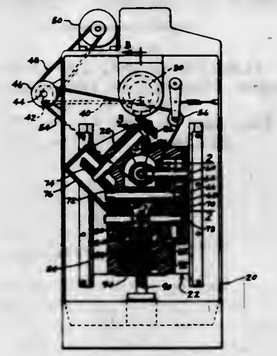
said second cylinder driving means including flexible shaft means for carrying said second cylinder and for allowing separation of the axes of said cylinders for disengaging the said cylinders and means for allowing during said separation relative movement between said cylinders in an axial direction while maintaining circumferential registration between said cylinders.

3,292,404
MANUFACTURE OF BENT TUBES WITH FLARE COUPLINGS
John R. Cepon, Wadsworth, Ill., assignor to Anchor Coupling Co. Inc., Libertyville, Ill., a corporation of Illinois
Filed Feb. 26, 1964, Ser. No. 347,417
9 Claims. (Cl. 72—150)



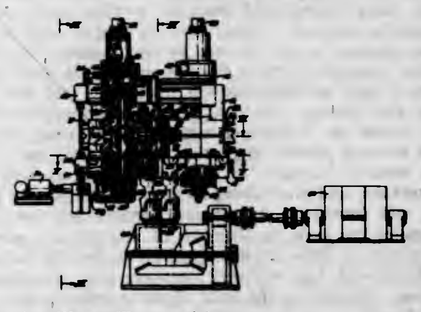
1. A process for forming an assembly of a tube nut on a bent tube with a minimum drop dimension which comprises flaring an end of a metal tube, fitting a metal sleeve about said end of said tube with its inner, axial end seated against the flared end of said tube, brazing said sleeve on said end of said tube, placing a tube nut with female threads over said end and said sleeve and seating an inner, annular shoulder of said tube nut on an outer annular shoulder of said sleeve with the outer, axial end of said sleeve substantially flush with the corresponding end of said nut, threading a bending plug with external threads into said tube nut until the inserted end of said plug is tightened against the flared end of said tube, seating a die against said plug on the side of the tube-sleeve-nut-plug assembly corresponding to the side in which the inner radius of bend in said tube is to be formed, matingly seating a radius block against about half of said tube on the side corresponding to said side at which said inner radius of bend is to be formed, said radius block having a circular groove of substantially semicircular cross-section, the radius of said cross-section corresponding to the radius of the outer side of said tube, an axial edge of said groove bearing against said tube in a plane substantially flush with the outer end of said tube nut, placing a pressure plate with a mating longitudinal groove against the said tube in the vicinity of said tube nut and on the side of said tube diametrically opposite to said side against which bears said groove of said radius block, and bending said tube around said radius block with the bend beginning at a point substantially even with the outer face of said tube nut to form a bend in said tube.

3,292,405
APPARATUS FOR PRODUCING GEAR TEETH OR THE LIKE
Albert F. Tremblay, Toledo, Ohio, assignor to Kent-Owens Machine Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 16, 1963, Ser. No. 309,121
13 Claims. (Cl. 72—216)



1. In a machine for contouring the surface of a workpiece to a predetermined depth, a frame, a tool supporting shaft carried by said frame for rotation about an axis, a work forming tool rotated by said shaft, said tool having a work forming surface for embedment into the workpiece, first means for supporting the workpiece so that said work forming surface of said tool projects into said workpiece to a predetermined depth, and second means to provide relative movement between said work forming surface of said tool and the surface of the workpiece in a direction perpendicular to the axis of rotation of said tool during rotation of said shaft so that said work forming surface of said tool produces a rolling, burnishing action at said predetermined depth in the workpiece.

3,292,406
TURRET MILL
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 2, 1963, Ser. No. 313,216
Claims priority, application Great Britain, Oct. 12, 1962, 38,680/62
11 Claims. (Cl. 72—238)

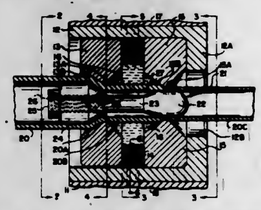


1. A rolling mill comprising:

a pair of rotatable spaced-apart members arranged on predetermined axes,

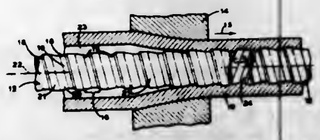
a pair of rolls rotatably carried by each member,
said members being so arranged with respect to each other and the rolls of one member with respect to the rolls of the other member that the rolls can be brought selectively into and out of a single cooperative operating position on the rotation of the members,
said members include means for supporting workpiece guides for each roll thereof,
the construction being such that a roll and guide can be preassembled on the members preparatory to being brought into a cooperative operating position while other rolls and guides are in said position.

3,292,407
TUBE DRAWING APPARATUS
John J. Poncar, Chagrin Falls, Ohio, assignor of one-half to Bruce B. Krost
Filed June 18, 1964, Ser. No. 376,036
20 Claims. (Cl. 72—283)



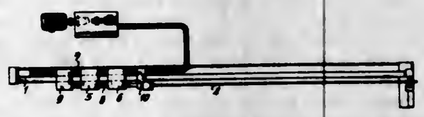
1. Apparatus for the drawing of a metal tube from an initial size to reduced size comprising the combination of a first die, the throat of said first die having an internal diameter size to reduce the external diameter of said tube of initial size as the tube is drawn therethrough, a second die, the throat of said second die having an internal diameter less than the internal diameter of said first die throat to further reduce the external diameter of said tube of initial size, a holder for holding said dies in alignment with said second die following said first die in the order of travel of the tube being drawn therethrough, the throats of said dies being spaced from each other to provide an outer annular space longitudinally of said tube and around the exterior of the tube between the die mouths, means for introducing fluid lubricant into said outer annular space to apply the same to the exterior of the tube for lubricating the same prior to entering the throat of the second die, and a drawing plug positoned in said dies and concentrically of said throats to be floatingly disposed in the tube being drawn forwardly along the common axis of said throats, said plug having a rearward portion having a maximum external diameter of a size so related to the internal diameter of the first die throat as to resist being pulled forwardly along said common axis through the first die with the tube being drawn, said rearward portion being unconnected to external or other restraint against axial movement relative to said dies and by said resistance to being pulled through said first die determining the axial location of said rearward portion relative to said first die, said plug having a forward portion positionable within the second die throat and within the tube being drawn, said forward portion supporting the tube wall and sizing the internal diameter of the tube drawn through the second die, said plug having an intermediate portion joining said forward and rearward portions and having a diameter less than the diameter of said forward portion to provide an inner annular space within the tube between said forward and rearward portions, said intermediate portion determining the axial distance between said forward portion and rearward portion of the plug to determine the location of the said forward portion of the plug relative to said second die in accordance with the location of the rearward portion of the plug as determined by the said resistance to being pulled forwardly through said first die, said rearward portion having a vent extending therealong for permitting material scraped from the inner wall of the tube by the plug and accumulating in said inner annular space to escape rearwardly of the plug.

3,292,408
METHOD OF FORMING INTERNALLY RIBBED TUBES
John R. Hill, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed June 22, 1964, Ser. No. 376,720
5 Claims. (Cl. 72—283)



1. The method of forming internal helical ribbing in an elongated tube including the steps of: forming an internal helical groove of asymmetrical profile in said tube, with one side of the surface of said groove making an angle in profile of in the range of between 5° and 10° to the longitudinal axis of the tube by placing the tube over a forming rod having on its surface the converse of the configuration to be imparted to the tube and then drawing the rod carrying the tube through a die to thereby cause the internal surface of the tube to assume the shape of the rod surface, rolling the wall of said tube against said rod to thereby increase the clearance between said rod and said tube, and rotating the rod relative to the tube to remove said rod from the tube.

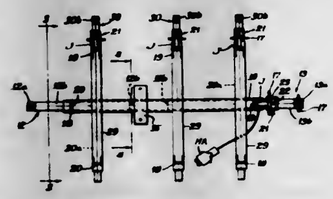
3,292,409
HYDRAULICALLY OPERATED DRAW BENCH
Hans Brauer, Solingen, Germany, assignor to Th. Kieserling & Albrecht, Solingen, Germany
Filed July 13, 1964, Ser. No. 382,991
Claims priority, application Germany, July 13, 1963, K 50,216
6 Claims. (Cl. 72—290)



1. In a drawing bench, in combination, elongated guide means; a pair of end carriages spaced from each other along said guide means and supported thereby for movement therealong, one of said end carriages being adapted to grip the work which is to be drawn; at least one elongated piston extending between and fixed at its ends to said end carriages; a pair of cylinder means spaced from each other along said guide means and also supported thereby for movement therealong, said pair of cylinder means being situated between said end carriages and said piston extending through both of said cylinder means; hydraulic clamping means carried by each of said cylinder means for clamping said guide means when said hydraulic clamping means is actuated to prevent movement of the cylinder means along said guide means; and hydraulic means operatively connected to said cylinder means and said pair of clamping means respectively connected thereto for actuating one of said clamping means to clamp the carriage to which it is connected to said guide means while displacing said piston means longitudinally through said one cylinder means in a drawing

direction advancing both of the end carriage means in said drawing direction while simultaneously advancing the other cylinder means with respect to said piston in said drawing direction, and then actuating the clamping means connected to said other cylinder means to clamp the latter to said guide means while releasing said clamping means of said one cylinder means for continuing the advance of said piston and said pair of end carriages in said drawing direction while advancing said one cylinder means in said drawing direction along said piston, whereby said cylinders alternately clamp said guide means to advance said piston and end carriages and move with respect to said guide means in said drawing direction along said piston for continuously advancing said piston and end carriages in said drawing direction.

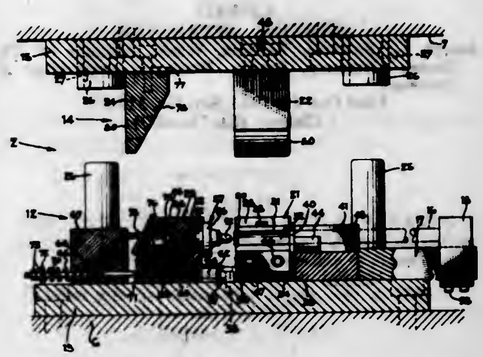
3,292,410
FRAME STRAIGHTENING DEVICE
Nicholas J. Baldassano, 33 S. Maple Ave., Fox Lake, Ill. 60020
Filed Oct. 28, 1963, Ser. No. 319,320
12 Claims. (Cl. 72—297)



1. A frame straightening device comprising drive means, an elongate structure including two members movable relative to each other, anchor means on a first of said two members including a bearing surface for said drive means, adjustable anchor plate means defining a second bearing surface for said drive means, means releasably mounting said adjustable anchor plate means on the second of said two members, an expansion link between said two members for permitting movement of said two bearing surfaces to any of a plurality of expansion span distances between said bearing surfaces, means independent of said drive means for retaining the span at a selected one of the plurality of span distances, said drive means being positionable for driving said two bearing surfaces away from each other, and means for positioning said drive means alternatively for exerting side forces from said structure.

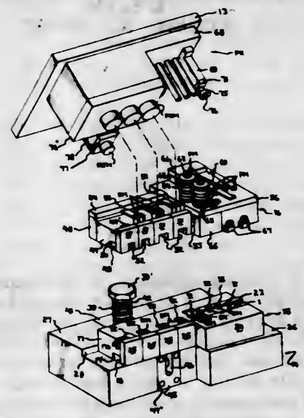
3,292,411
FORMING MECHANISM FOR COLD HEADING PIPE SECTIONS
Charles E. Thompson, Lebanon, Ohio, assignor to Gas Appliance Supply Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Aug. 24, 1964, Ser. No. 391,649
16 Claims. (Cl. 72—314)

1. A pipe heading mechanism adapted to be mounted between the first and second relatively shiftable elements of a press, said heading mechanism adapted to swage an external head on the end portion of a pipe section, said heading mechanism comprising:
a pipe clamping fixture shiftably mounted on the first element of the press and adapted to be shifted from an open pipe-receiving position to a pipe clamping position confining the end portion of the pipe section,
a flaring punch shiftably mounted upon said first press element adjacent the pipe clamping fixture, said flaring punch adapted to be shifted along a line corresponding to the central axis of the pipe section which is confined in said clamping fixture,
a clamp actuating member mounted on the second element of the press and engageable with said clamping fixture, thereby to shift the same from the open pipe-receiving position to the pipe-clamping position confining the end portion of the pipe section upon motion of said first and second elements of the press toward one another,



a flaring punch actuating member mounted upon said second element of the press, said actuating element adapted to engage the flaring punch and to shift the same axially toward the clamping fixture and into pressure engagement with the end portion of the pipe section after the pipe section is confined in the clamping fixture,
said flaring punch adapted to swage an external head on the end portion of the pipe section upon motion toward the pipe clamping fixture.

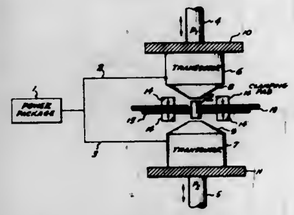
3,292,412
PROGRESSIVE DIE
Philip Anthony Costabile, Colonial Park, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 13, 1963, Ser. No. 330,428
18 Claims. (Cl. 72—335)



1. An apparatus for operating on material at successive stages comprising mounting means having a plurality of die means disposed therein at spaced intervals therealong, a plurality of punch means movably disposed in said mounting means at spaced intervals therealong, each punch means being opposite a corresponding die means, spring means connected to each of said punch means to maintain

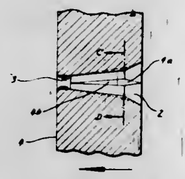
same in a normally inoperative position, means for engaging said punch means to reciprocably move same into engagement with said die means which die and punch means perform operations on the material as it is placed therebetween, and further spring means connected to some of said engaging means, said spring means providing parallelism throughout said apparatus.

3,292,413
RIVETING APPARATUS
Joseph G. Falcioni, Tacoma, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,539
1 Claim. (Cl. 72—377)



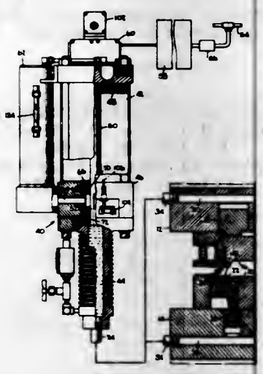
The method of ultrasonically setting rivets comprising the steps of clamping material to be riveted, positioning the rivet to be set with respect to the material, positioning opposed transducers against the rivet for continuous engagement therewith until termination of the setting operation, and supplying energy to the transducers so that the transducers vibrate at a frequency in excess of 20,000 cycles per second, thus setting the rivet.

3,292,414
APPARATUS FOR LOCALIZED SWAGING OF PIPES
Alfons Goeke, Solingen, Germany, assignor to Th. Kieserling & Albrecht, Solingen, Germany
Filed Oct. 21, 1964, Ser. No. 405,545
Claims priority, application Germany, Nov. 21, 1963, K 51,420
3 Claims. (Cl. 72—402)



1. In a swaging apparatus, in combination, a die for setting down the ends of ductile tubular blanks preparatory to a drawing operation, said die comprising at least three arcuate segments movable radially with reference to each other and together forming an annulus including a first portion defining a conical bore having a larger-diameter end and a smaller-diameter end, and a second portion defining a cylindrical bore coaxial to and communicating with the smaller-diameter end of said conical bore, and at least one axially extending projection provided on each of said segments and extending substantially radially inwardly into said conical bore; and means for reciprocating said segments radially toward and away from each other to corrugate the leading end of a tubular blank which is introduced into and through the larger-diameter end of said conical bore, the outer portion of the thus deformed length of the blank being thereupon compressed radially inwardly to form a substantially cylindrical body on introduction into said cylindrical bore.

3,292,415
PRESSURIZED FLUID SUPPLY SYSTEM
Bernard L. Hoffman, Trenton, N.J., assignor to Frederick A. Krause Associates, Inc., Frenchtown, N.J., a corporation of New Jersey
Filed Jan. 27, 1964, Ser. No. 340,439
13 Claims. (Cl. 72—453)

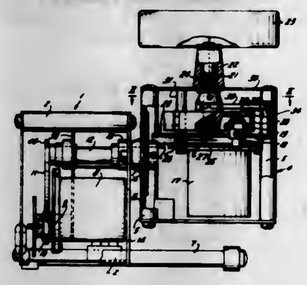


1. An automatically self replenishing system for maintaining a supply of fluid at a given pressure, said system comprising a hydraulic cylinder, piston means movable into said cylinder for developing fluid pressure therein, an hydraulic fluid reservoir, valve means between said reservoir and said hydraulic cylinder, said valve means being openable responsive to said piston attaining a given retracted position relative to said cylinder, reversible driving means arranged to drive steadily against said piston for urging same into said cylinder, means for controlling said driving means, said controlling means including means for sensing the attainment by said piston of a given protracted position relative to said cylinder, and means responsive to said sensing means for reversing the direction of said driving means to move said piston to said given retracted position.

3,292,416
MICROPHONE DEVICE
Erich Jucker, La Chaux-de-Fonds, Switzerland, assignor to Le Porte-Echappement Universal S.A., La Chaux-de-Fonds, Switzerland
Filed July 2, 1963, Ser. No. 292,421
4 Claims. (Cl. 73—6)

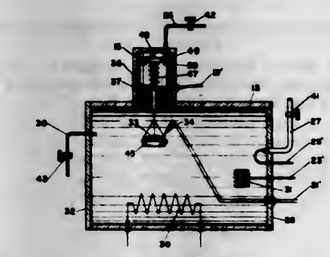
1. Apparatus for automatically moving the sound-receiving heads of microphones used in chrono-comparators into a plurality of positions which are pre-selected to permit the measurement of the operational characteristics of a time-piece when it is aligned in a number of different orientations, said apparatus comprising, in combination, a first housing adapted to form a base support for said apparatus, a first electric motor mounted in said housing, a drive shaft for said first motor, a friction wheel mounted on said first drive shaft, said friction wheel having a cushioning, friction-inducing exterior surface, a drive segment engaged with said friction wheel and secured to a first output shaft, said first motor being adapted to drive said output shaft either clockwise or counterclockwise, means including electrical contacts for reversing the direction of rotation of said first motor when it has rotated to a preselected position, a second housing secured to said first

output shaft, said second housing containing a second electric motor having a drive shaft, a second friction wheel attached to said second drive shaft, said second wheel having a cushioning, friction-inducing exterior surface, a drum driven by said second friction wheel, a second out-



put shaft secured to said drum, a microphone head secured to said second output shaft, and electrical means including contacts co-operating with indentations on said drum for stopping the rotation of said drum at pre-selected positions.

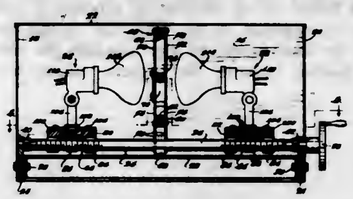
3,292,417
THERMOGRAVIMETRIC BALANCE
George J. Hayden, Hazleton, Pa., and Robert A. Simpson, Sacramento, Calif., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,702
3 Claims. (Cl. 73—15)



1. A thermogravimetric balance comprising
a furnace,
a weighing assembly positioned in the interior thereof,
said weighing assembly comprising a vertical arrangement of a sensing spring, a means to determine the elongation of the said sensing spring and a sample holder, a temperature sensing means positioned in the area contiguous to said sample holder,
a gas inlet positioned in one side of said furnace so that it is located below the level of said sample holder, and
a gas outlet positioned in the opposite side of said furnace so that it is located above the level of both said gas inlet and said sample holder.

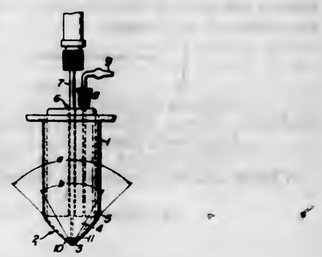
3,292,418
METHOD AND APPARATUS FOR TESTING PRINTING PAPER FOR BLISTERING
Frank F. Oehme and John B. Kobosa, Wisconsin Rapids, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed June 4, 1964, Ser. No. 372,528
12 Claims. (Cl. 73—15)

1. A method of testing printing paper for blistering characteristics which comprises applying a predetermined amount of ink at a predetermined pressure to an area of a sheet of paper, exposing the inked area to heat of predetermined intensity, continuing said exposure until blis-



tering occurs, and measuring a physical property which is determinative of said blistering characteristics.

3,292,419
MELTING POINT METHOD AND APPARATUS
Teruji Ishii, Tokyo, Japan, assignor to Cobble-Laboratory & Co., Tokyo, Japan, a corporation of Japan
Filed Apr. 2, 1964, Ser. No. 356,911
Claims priority, application Japan, Apr. 4, 1963, 38/16,429
4 Claims. (Cl. 73—17)



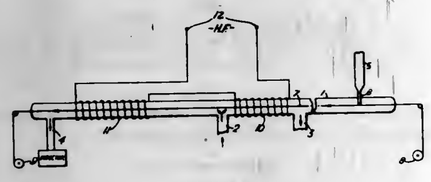
1. A method of measuring the melting point temperature of an organic micro-sample, comprising adding an amount of inorganic particles to said organic sample to increase the volume thereof and mixing said particles and sample, said inorganic particles being thermally stable, being unreactive to organic material, having good thermal conductivity, and being of non or poor adsorptive nature, heating the mixture of said particles and sample to cause melting of said sample, and measuring the temperature of said mixture.

2. An apparatus for measuring the melting point temperature of an organic micro-sample, comprising a glass vessel having a lower conical portion, the tip portion of said lower conical portion forming a sample chamber adapted to be heated from outside, the angle of spread of the inner wall of said conical portion being substantially 90°, the angle of spread of the inner wall of said sample chamber being substantially 60°, a thermistor probe, and a stopper having a first bore for receiving an inert gas, said stopper having a second bore so positioned that said thermistor is inserted into the sample chamber.

3,292,420
LIQUID CHROMATOGRAPHY
Raymond Peter William Scott, Watford, England, assignor to Pye Limited, Cambridge County, England
Filed Aug. 15, 1963, Ser. No. 302,272
Claims priority, application Great Britain, Aug. 15, 1962, 31,246/62
5 Claims. (Cl. 73—23.1)

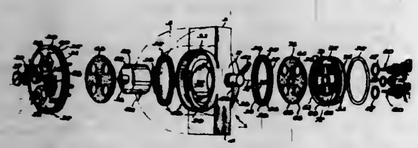
1. Mass detector apparatus for a liquid chromatographic column, comprising a conduit having a tubular passage adapted to communicate near one end with the egress opening of the column, a solid carrier member,

means for causing the carrier member to traverse the tubular passage and pass said opening, a first heater and a second heater spaced apart along the tubular passage, the second heater being adapted to produce a substantially higher temperature in the tube than is the first heater, means for introducing an inert gas into the passage at a point therein between the heaters, outlets for the gas



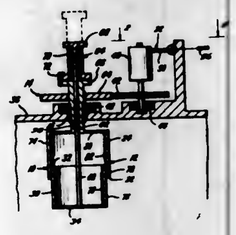
from the passage, one outlet being between the first heater and one end of the passage and the other outlet being between the second heater and the other end of the passage, the latter outlet being adapted to communicate with a chromatographic detector whereby said inert gas introduced into the passage at said point between said heaters sweeps over said carrier in opposite directions in the regions of said heaters.

3,292,421
PARAMAGNETIC GAS ANALYZER
Emilio G. Meyer, Milan, Italy, assignor to Mine Safety Appliances Italiana, S.p.A., Milan, Italy
Filed June 24, 1965, Ser. No. 468,673
Claims priority, application Canada, Apr. 23, 1965, 928,923
21 Claims. (Cl. 73—27)



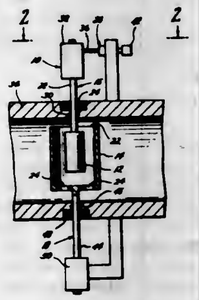
1. A device for measuring the concentration of a paramagnetic gas in a gaseous mixture, comprising a test chamber having a generally circular side wall, means for introducing the gaseous mixture into the chamber, means for providing a magnetic field with the lines of maximum magnetic force extending across the chamber, a pair of elongated temperature sensitive electrical resistance filaments disposed side by side in the chamber and spaced circumferentially thereof and extending in a direction substantially normal to the lines of maximum magnetic force therein, the first filament being disposed in a region of the magnetic field where the product of the field intensity and the circumferential field intensity gradient is a maximum, the second filament being disposed adjacent to the first filament but in a region of the magnetic field where the product of the field intensity and the circumferential field intensity gradient is a minimum, means for electrically heating both filaments to substantially the same temperature in the absence of a paramagnetic gas, thereby to create in the presence of such a gas a thermomagnetic gas flow circumferentially of the chamber in the direction of decreasing magnetic field intensity adjacent the first filament, and electrical means for measuring the cooling effect of such gas flow on one filament and its heating effect on the other filament.

3,292,422
METHOD OF AND APPARATUS FOR MEASURING VISCOSITY
William B. Banks, Houston, Tex., assignor to Automation Products, Inc., Houston, Tex., a corporation of Texas
Filed June 23, 1964, Ser. No. 377,320
9 Claims. (Cl. 73—59)



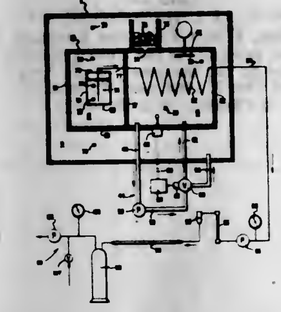
1. An apparatus for measuring viscosity comprising,
a first member,
means for rotating said first member in contact with the fluid to be measured,
a second member in contact, slidably telescoping, and rotating with said first member,
means for moving said members relative to each other to clean the contacting telescoping surfaces and present a clean surface in contact with the fluid to be measured, and
means measuring the fluid shear torque applied to said members.

3,292,423
METHOD OF AND APPARATUS FOR MEASURING VISCOSITY
William B. Banks, Houston, Tex., assignor to Automation Products, Inc., Houston, Tex., a corporation of Texas
Filed June 23, 1964, Ser. No. 377,362
5 Claims. (Cl. 73—60)



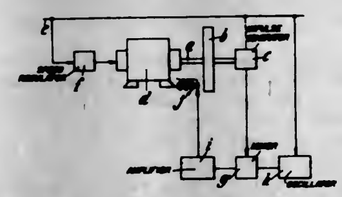
1. An apparatus for measuring viscosity of a fluid in a container through a seal comprising,
a pair of parallel surfaces positioned in the container,
a first constant speed rotatable drive means positioned outside the container and extending through a seal into the container and connected to one of the surfaces,
measuring means for measuring the rotative force applied to said one surface, and
a second constant speed rotatable drive means having the same speed as said first drive means and connected to the second of the surfaces and rotating the second surface in the same direction as the first surface.

3,292,424
METHOD AND APPARATUS FOR TESTING THE LOW TEMPERATURE PUMPABILITY OF HYDROCARBON OIL
Thomas J. Smallidt, Harvey, and Seymour H. Patinkin, Chicago, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 24, 1964, Ser. No. 354,226
12 Claims. (Cl. 73—61)



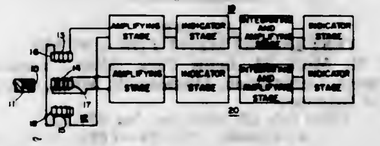
1. A method for testing the pumpability characteristics of a hydrocarbon oil containing material which solidifies at a low temperature, which method consists essentially of passing said oil from a first zone maintained at a first temperature through a second zone of substantially smaller cross-section than said first zone at a second temperature at least about 1° F. lower than said first temperature, and determining the pumping characteristics of said oil under these conditions, at least one of said first and second temperatures being sufficiently low to cause solidification in the hydrocarbon oil.

3,292,425
DYNAMIC WHEEL TEST APPARATUS
Robert B. Cann, London, England, assignor to Panstrada, Walkwood, England, a British company
Filed Sept. 30, 1963, Ser. No. 312,747
Claims priority, application Great Britain, Oct. 4, 1962, 37,618/62
6 Claims. (Cl. 73—67)



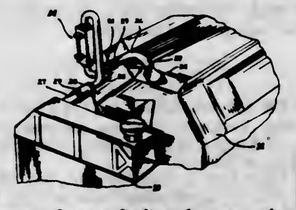
1. An apparatus for testing a wheel comprising a shaft adapted to carry the wheel, prime mover driving means adapted to rotate the shaft and wheel, means for selecting the speed of the shaft, impulse generator means driven in proportion to the speed of the wheel, means for selecting an integral number of impulses per revolution of the shaft, a stable oscillator, multiplicative mixing means having inputs from the impulse generator and from the stable oscillator and producing an output having frequency components equal to the sum of the input frequencies and the difference of the input frequencies, a power amplifier, an electromagnetic device located adjacent the wheel, means connecting a component of the output of the mixing means to the electromagnetic device via the amplifier to apply rhythmic forces to an annular part of the wheel.

3,292,426
VIBRATION DETECTION DEVICE
Joseph A. McCann, Scotia, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 26, 1963, Ser. No. 297,992
4 Claims. (Cl. 73—71.4)



4. An apparatus for measuring vibrations of a mechanical member comprising:
(a) magnetic means attached to said mechanical member for providing a magnetic field static with respect to said member;
(b) a pair of coils opposite said magnetic means in a plane passing through the magnetic axis of said magnetic means and having a coil on opposite sides of said magnetic axis, whereby each coil senses any movement of said magnetic field and generates an electrical signal representative of said movement;
(c) means for connecting said coils in electrical opposition so that the electrical signals generated in each coil in response to movement of said magnetic means in any direction other than from translational movement at right angles to the magnetic axis of said magnetic means and in said plane are canceled; and
(d) circuit means connected to said coils for analyzing the resulting signal to determine the frequency and magnitude of translational movement of said member in said plane.

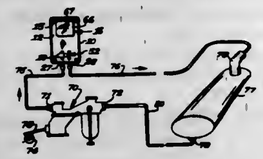
3,292,427
ANALYSIS APPARATUS
Walfred S. Mattson, 7302 E. Latham, Scottsdale, Ariz. 85257
Filed Oct. 12, 1964, Ser. No. 403,109
1 Claim. (Cl. 73—118)



An instrument for analyzing the operation of liquid cooling systems for internal combustion engines, said system including
an engine block having cooling liquid channels therein,
a liquid cooling radiator,
a liquid pump for circulating cooling liquid through said channels and thence through said radiator, and
conduit means connecting said channels, said radiator and said pump to form a closed liquid circuit,
said instrument comprising in combination in an integral instrument:
(1) a transparent body portion having a liquid passageway therethrough;
(2) conduit means for connecting said passageway in series between the engine block and the radiator in said closed liquid circuit;
(3) a temperature indicator carried by said body portion having its sensitive element disposed in said passageway;

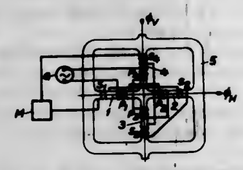
(4) a pressure indicator carried by said body portion having its sensitive element in communication with said passageway;
(5) a cooling liquid flow rate indicator carried by said body portion having its flow rate sensitive element disposed in said passageway.

3,292,428
TEST INSTRUMENT FOR A PUMP
Daniel M. Metl, St. Louis Park, Minn., assignor to Marquette Corporation, Minneapolis, Minn., a corporation of Delaware
Filed July 15, 1965, Ser. No. 477,872
13 Claims. (Cl. 73—118)



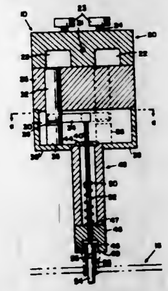
1. A test instrument for a fuel pump for an internal combustion engine, said instrument comprising:
a casing having a single pressure responsive gauge calibrated to indicate either fuel pump pressure or fuel flow,
said casing having a first inlet passage connected to said gauge and adapted to be connected to the outlet of a fuel pump to be tested,
and said casing having an outlet passage adapted to be connected to an area at substantially atmospheric pressure and connected to said first passage through a fixed restriction and a manually operable valve in series with each other, the size of the restriction being so related to the calibrations of fuel flow on said pressure gauge that when said manually operable valve is open, said gauge indicates the amount of fuel flow,
said instrument being effective when said manually operable valve is closed to prevent passage of fuel to said outlet passage to cause the pressure in said inlet passage and hence that applied to said gauge to assume pump outlet pressure to cause said gauge to indicate pump outlet pressure.

3,292,429
MEANS FOR MEASURING MECHANICAL FORCES
Orvar Dahle, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Feb. 4, 1964, Ser. No. 342,463
Claims priority, application Sweden, Feb. 13, 1963, 1,549/63
13 Claims. (Cl. 73—141)



1. Means for measuring mechanical forces comprising a measuring body of magnetostrictive material and windings on said body for generating and measuring magnetic fluxes in said measuring body, means to transmit the forces to be measured to said body, said measuring body constituting a magnetic bridge having a measuring zone constituted by at least four leg parts and magnetic flux path parts connecting the ends of said leg parts, the arrangement of said leg parts and said flux path parts causing at least two of said parts to be traversed by different fluxes when the mechanical forces to be measured act upon said body, windings surrounding each of at least two of said parts for generating or indicating magnetic fluxes in said parts.

3,292,430
TERMINAL CHECKING DEVICE
George S. Collier, Winter Park, and Raymond J. Puglia, Orlando, Fla., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 7, 1964, Ser. No. 402,370
8 Claims. (Cl. 73—141)

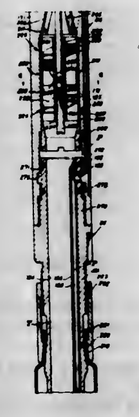


1. A checking device comprising:
(a) a pressure pin guiding housing,
(b) a plurality of spaced pressure pins having upper and lower ends disposed for reciprocating motion along their longitudinal axes within said housing,
(c) a cylinder block disposed in abutting relation with said housing, said cylinder block having a plurality of bores extending therethrough,
(d) a plurality of cylindrical pistons having first and second end portions disposed within the bores of said cylinder block for reciprocal motion along their longitudinal axes, said pistons having a fluid seal within said bores, said first end portion of said piston having a surface adapted to receive fluid under pressure,
(e) a push arm integrally connected to said second end portion of each of said pistons and disposed in abutting contact with said upper end of one of said spaced pins,
(f) a manifold disposed in abutting relation with said cylinder block, comprising a fluid compartment into which the fluid receiving surface of the pistons open and valve means for controlling the flow of pressurized fluid into and out of said compartment, and
(g) a source of fluid under pressure operatively connected to said valve means, whereby the admittance of said fluid into said compartment causes the pistons opening thereinto to move axially along their longitudinal axes from an uppermost position to a lowermost position, thereby, through the push arms, moving said pressure pins axially along their longitudinal axes from an uppermost position to a lowermost position.

3,292,431
FLOW MEASURING DEVICES
Marcus C. Young, Odessa, Tex., assignor to Cardinal Surveys Company, Odessa, Tex., a corporation of Texas
Filed May 15, 1964, Ser. No. 367,678
5 Claims. (Cl. 73—153)

1. A flow meter including: an elongate housing having a longitudinally extending turbine passage opening to the exterior of the housing at the lower end of said

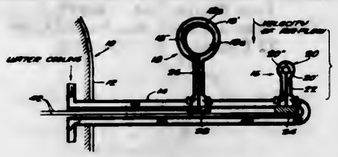
housing, said housing having a lateral port communicating said turbine passage to the exterior of said housing intermediate longitudinally spaced ends of said turbine passage; a turbine in said turbine passage below said lateral port and rotatable by fluids flowing through said turbine passage; rotor means mounted in said turbine passage above the inner end of said lateral port and out of the path of flow of fluids through said turbine passage, said rotor means being rotatable by said turbine and having a magnet movable about the axis of rotation of said rotor means; a pair of switches carried by said housing adjacent said rotor means and spaced from each other about the axis of rotation of said rotor means, the distances between the two switches about the axis of rotation of said rotor means being unequal, said switches being closable successively by the magnetic field of said magnet during each rotation of said rotor means for providing signals indicating the rate of flow of fluids



through said turbine passage; one of switch means being connected in a circuit of greater resistance than the other; a tubular expansible packer mounted on said housing below said turbine and about a lower end portion of said housing, said lower end portion of said housing and the portion thereof below said packer being of smaller external diameter than the portions thereof above said packer, said packer and said housing providing a cylindrical packer chamber; pump means mounted in said housing above said turbine passage; means for selectively transmitting fluid pumped by said pump means from the exterior of said housing above said packer to said packer chamber to expand said packer and permitting flow of fluids from said packer chamber; and magnetic shunt means carried by said housing between said switches for shunting the magnetic field of said magnet from said switches to cause them to open immediately upon movement of the magnet therepast.

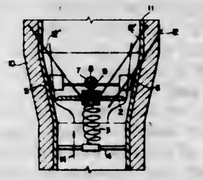
3,292,432
SPACE ENVIRONMENT SENSOR
Barry V. Rhodes, 22358 Baltar St., Canoga Park, Calif. 91304, and Daniel E. Blenkom, Jr., 523 S. Lucerne, Los Angeles, Calif. 90005
Filed Mar. 28, 1961, Ser. No. 98,920
6 Claims. (Cl. 73—180)

3. In a space environment sensor, first and second spherical probe devices of differing diameters, first and second triaxial strain gage devices supporting respective ones of said probe devices whereby drag forces exerted on said probe devices incident to passage thereof through very tenuous gaseous environments at high altitudes are sensed by the respective strain gage devices, and means including detector means and computer means, connected



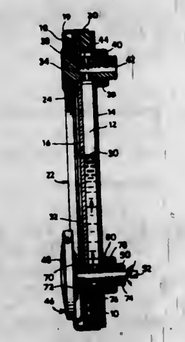
to said strain gage devices and effective to provide physical indications of mean velocity of said devices along a line of motion followed by the devices.

3,292,433
MEASURING DEVICE FOR THE MASS OR MASS FLOW OF GAS OR FLUID
Tatsuya Ichihara, Nerima-ku, Tokyo, Japan, assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 15, 1963, Ser. No. 324,115
Claims priority, application Japan, Nov. 19, 1962, 37/50,803
3 Claims. (Cl. 73—209)



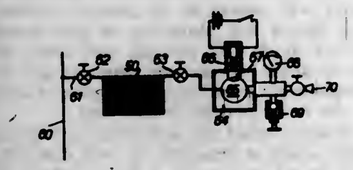
1. An areal type meter comprising
a vertical tapered passage through which a fluid is arranged to flow,
a shielding plate located in said passage to form an annular orifice between said plate and said passage,
means elastically fixing said plate within said passage against the flow of said fluid to cause the flow of said fluid to move said plate along the axis of said passage against the elastic force of said means,
a blade mounted for rotation on said plate within said passage,
means mounted on said blade to cause the latter to be rotated by the flow of said fluid through said orifice, and
means conjointly responsive to the rotation and the axial position of said blade to measure a time period required for a point on said blade to rotate through an angle which is dependent upon the axial distance between said point on said blade and a point on said passage, the last-mentioned means including
at least two elongated, belt-shaped detectors mounted along said passage in the general direction of the axis thereof and converging as they extend downwardly along said passage, said angle being the rotary angle between said detectors and decreasing progressively from the upper portion of said passage to the lower portion thereof, and
an element carried by said blade and providing an effect which is detectable by said detectors so that said time period required for said blade to rotate through said angle, from a position in which only one of said detectors responds to said effect of said element to a position in which only the other of said detectors responds to said effect, is dependent conjointly upon the speed of rotation of said blade and the axial position of said blade along said passage.

3,292,434
COMBINATION LIQUID LEVEL INDICATOR AND TEMPERATURE GAUGE
Paul H. McDaniel, 1706 Mayflower Road, Fort Wayne, Ind. 46807
Filed Mar. 26, 1965, Ser. No. 443,148
12 Claims. (Cl. 73—292)



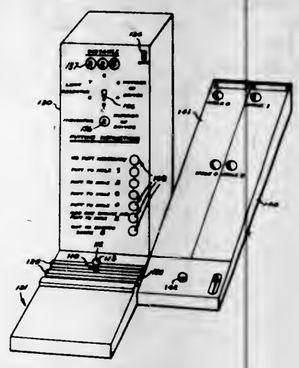
5. An instrument for measuring the level and temperature of a body of liquid comprising; a body having a chamber therein open on at least the side toward the front of the instrument, a transparent member sealingly mounted on said body and closing the open side of the chamber and providing for observation of the liquid level in the chamber, upper and lower bolt means having heads on the front side of the instrument and threaded shanks extending through said transparent member and chamber and out the back of the instrument, passage means leading into said shanks from the lead ends thereof and in fluid communication with said chamber for the movement of fluid to and from said chamber, and a temperature measuring instrument fixed to said lower bolt means and having an indicating head at the head end of the lower bolt means and a sensing element extending through the passage means of the shank of the lower bolt means and projecting from the back end of the said shank.

3,292,435
GAS PRESSURE REDUCING DEVICE, MORE ESPECIALLY FOR HYGROMETERS
John McIlroy, Redditch, England, assignor to Hymatic Engineering Company Limited, Redditch, England, a company of Great Britain
Filed May 4, 1964, Ser. No. 364,654
Claims priority, application Great Britain, May 3, 1963, 17,638/63
6 Claims. (Cl. 73—335)



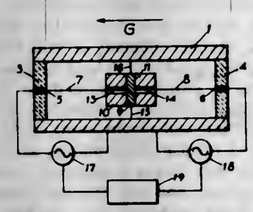
1. A hygrometer device comprising an observation chamber having exhausting means for allowing gas under pressure to escape from it substantially adiabatically, and means for illuminating it to enable mist thereby formed to be detected, and means for charging the chamber from a high pressure supply including a capillary tube having a length many times its transverse dimension and which is wound into a coil, for supplying heat to the gas as it expands when flowing from the supply to the chamber.

3,292,436
GOLF IMPACT RECORDER
Robert G. Bahnsen, Bellevue Heights, South Australia, Australia
Filed Mar. 31, 1964, Ser. No. 356,994
Claims priority, application Australia, Apr. 5, 1963, 29,266/63
2 Claims. (Cl. 73—379)



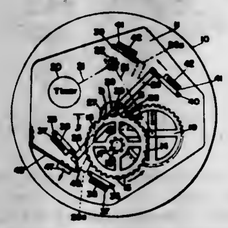
1. A golf impact recorder having a driven rubber ball and comprising:
a frame with two spaced longitudinal frame members,
a pair of aligned bearings one in each longitudinal frame member,
a transverse shaft journalled in the bearings and extending therebetween,
a socket in means on the transverse shaft,
a rubber bush in the socket,
a stem of resilient resin based plastics material having an inner head and an outer head,
the stem disposed between the bearings and retained at one end by a rubber bush fixed on said shaft by engagement thereof by said inner head, said stem extending outwardly from the shaft at right angles thereto,
a rubber ball on the other end of the said stem adapted to be driven by the impact of a golf club, the rubber ball being retained on the stem by said outer head,
a magnetic member fixedly attached to said shaft,
a magnetically responsive switch in the path of the magnetic field of said magnetic member,
magnetic field interrupting means fixed relative to the transverse shaft and operable to interrupt the magnetic field through the switch to thereby operate the switch once per revolution,
an electrical counter circuit electrically connected to the reed switch and responsive to the number of closures of the contacts thereof, said electrical counter circuit including a "units" section, a "tens" section and a "hundreds" section,
three decade counter tubes in the electrical circuit connected to read out the number of closures of the reed switch, the first decade counter being connected to the output of the "hundreds" section, the second to the output of the "tens" section, and the third to the output of the "units" section, and
a series of incandescent globes selectively illuminated by the counter circuit through its "tens" section, whereby the impact force imparted to said driven ball is recorded.

3,292,437
VIBRATING CORD ACCELEROMETERS
Raymond Mailloy and Jean Louis Vernet, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Oct. 2, 1963, Ser. No. 313,296
Claims priority, application France, Oct. 5, 1962, 911,423
4 Claims. (Cl. 73—517)



1. A vibrating cord accelerometer comprising in combination: a frame, a weight, two cord portions of conductive material, identical to each other, fixing said weight to said frame; said weight comprising two magnets, each having a pair of pole pieces forming a gap, one of the cord portions extending through one of the gaps, and the other cord portion extending through the other gap; means for connecting said cord portions to two electric alternating voltage sources having controllable frequencies, and means for tuning said frequencies, to the resonant frequencies of said cord portions respectively.

3,292,438
TIMING ESCAPEMENT MECHANISM
Abraham L. Kerr, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 2, 1965, Ser. No. 429,931
2 Claims. (Cl. 74—1.5)



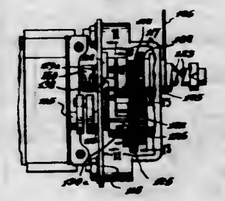
1. A timing escapement mechanism comprising in combination, a rotary escapement wheel, means providing a spring-loaded driving connection with said wheel, an oscillatory pivoted escapement lever with connected pallet blades operatively engaging said escapement wheel to control its rotational movement, said escapement lever being magnetically-polarized with opposite magnetic poles at the outer free ends thereof and being mounted to oscillate about a fixed pivot axis normal to the plane thereof, means providing spaced magnetic poles in said plane in spaced relation to the outer polar ends of said lever and of like polarity therewith for applying a magnetic repelling force thereto at each end with each oscillatory excursion thereof, said means including two permanent bar magnets mounted in opposed spaced end-to-end relation to each other at each outer polar end of the lever on opposite sides thereof, and releasable means for holding the lever in a locked position at the end of one oscillatory excursion with the magnetic repelling force acting upon the lever at substantially maximum magnitude, said releasable means being responsive to externally applied forces resulting from accelerated movement of said mechanism and acting in a predetermined direction with respect to the pivot axis thereof.

3,292,439
GYROSCOPE
Raphael O. Yavne, 1001 Haral Place, Cherry Hill, N.J. 08034
Filed July 21, 1964, Ser. No. 386,812
7 Claims. (Cl. 74—5.6)



3. A self-servoing gyroscope system comprising a gyroscope wheel, means to support said wheel, means to rotate said wheel, a cavity having at least a partly spherical surface and having said surface associated with said gyroscope wheel so as to rotate therewith, a fluid at least partially filling said cavity so as to act as a fluid gyro, pick-off means to identify the rotational axis of said fluid gyro, detect a difference in alignment of the axes of rotation of said gyroscope wheel and said fluid gyro and to provide a signal indicating the magnitude and direction of said difference in alignment, wherein said pick-off means comprises a light source within said cavity and a photoelectric cell within said cavity and positioned to receive light originating from said light source and means to interpret a change in the amount of light impinging upon said photoelectric cell, torquing means to alter the rotational axis of said gyroscope wheel, means to apply the said signal from said pick-off to the said torquing means whereby said gyroscope wheel is torqued so that its axis tends to remain aligned with said fluid gyro axis.

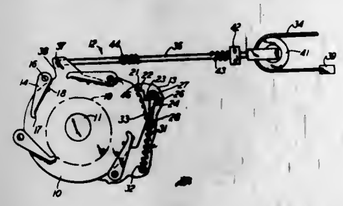
3,292,440
TWO-SPEED DRIVE
John W. Kerr, Mundelein, and John Y. Ma, Algonquin, Ill., assignors to Oak Electro/Netics Corp., a corporation of Delaware
Filed Jan. 21, 1964, Ser. No. 339,133
12 Claims. (Cl. 74—10.5)



1. A two-speed drive, comprising: a driven member having a first gear thereon; a first drive means, including a hollow shaft having a second gear thereon, said second gear meshing with said first gear, for driving said driven

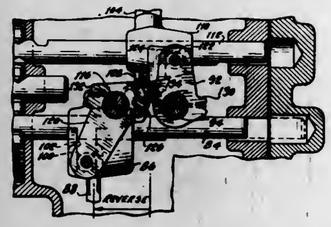
member at a first speed; a second drive means, including a second shaft coaxially aligned with and in said hollow shaft, a third gear having a hub frictionally held to said driven member, and a fourth gear driven by said second shaft and meshing with said third gear, for driving said driven member at a second speed.

3,292,441
INDEX MECHANISM
Aaron M. Schaible, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 29, 1965, Ser. No. 429,006
5 Claims. (Cl. 74—17.5)



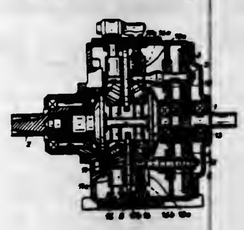
3. An indexing mechanism for securing a rotatable member in selected positions, comprising a series of notches arranged on said member and oriented in sequence along the circular path of rotation of said member, a locking dog pivotally mounted adjacent said member and having a projection separately engageable in said notches upon rotation of said member in one direction from an initial position for retaining said member against rotation in the opposite direction, a tension spring means connected to said locking dog to dispose the latter tangentially of the circular path of movement of said member to urge said projection into said notches to sequentially become engaged in said notches upon rotation of said member in said one direction and to become disengaged from said notches when said member is rotated in said one direction until said notches are beyond said projection, and means operatively associated with said member for rotating the latter in said opposite direction to said initial position after said notches are beyond said projection.

3,292,442
SHIFT LINKAGE FOR MANUALLY CONTROLLED POWER TRANSMISSION MECHANISM
Peter George Ivanshich, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 407,978
7 Claims. (Cl. 74—335)



1. In a power transmission mechanism adapted to deliver driving torque from a driving member to a driven member, a plurality of power output gears rotatably journaled for rotation about the axis of said power output shaft, a cluster gear assembly engageable with said gears, said cluster gear assembly being connected to driving portions of said mechanism, a reverse pinion assembly rotatably journaled for rotation about an axis that is spaced from and parallel to the axes of said cluster gear assembly and said power output shaft, a gear portion of said reverse pinion assembly being in continuous meshing engagement with one of said power output gears, synchronizer clutch means for selectively connecting a pair of said power output gears to said driven shaft and including a shiftable clutch sleeve movable in opposed axial directions, a reverse gear formed on said synchronizer clutch sleeve, another element of said reverse pinion assembly being engageable with said reverse gear when the latter assumes a position intermediate its two forward drive operating positions, a manually operable linkage system for shifting said synchronizer sleeve and said other portion of said reverse drive pinion, said linkage system including two shift levers respectively connected to said synchronizer sleeve and said reverse pinion portion, said shift levers being mounted for rotation about parallel axes and situated in adjacent relationship for oscillation in a substantially common plane, and spring means for exerting a spring force along a line of action that is adapted to shift from one side of the axis for one lever to the other as one lever is oscillated from one operating position to the other.

3,292,443
DEVICES FOR REGULATING TRANSMISSION GEARS
Felix Perruca, Saint-Etienne, France, assignor to Societe Des Fabrications Unicum, Saint-Etienne (Loire), France, a French company
Filed Nov. 24, 1964, Ser. No. 413,508
Claims priority, application France, Dec. 5, 1963, 8,815, Patent 1,376,401
4 Claims. (Cl. 74—200)



1. A device for regulating a friction transmission of variable velocity ratio, the device comprising a tube formed with a slot extending along the tube, a support slidably and circumferentially mounted on the exterior of the tube, a roller element carried on said support and whose movement changes the velocity ratio of the transmission, a rotatable screw disposed within the tube and extending along same, a nut threaded on the screw, and means connecting said nut and said support through said slot.

3,292,444
DRIVE MECHANISM FOR FILM STRIP
Albert D. Bendley, New Hartford, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 15, 1965, Ser. No. 432,574
4 Claims. (Cl. 74—396)

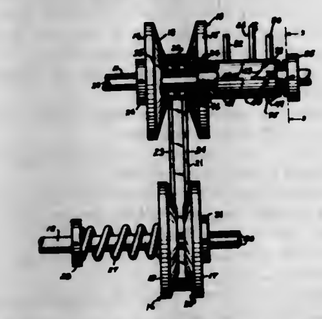
1. A drive mechanism for a film-strip holder carrying a film strip in an opening therein and provided with a recess from a surface thereof, comprising a drive shaft carrying at least one drive wheel adapted to engage said surface of the holder for moving the holder when the holder is placed in operative position, and an additional wheel provided on said drive shaft and having a diameter

sufficiently large so that said additional wheel rides on said surface of the film holder and relieves pressure of said drive wheel on the holder during insertion of said holder into operative position in said drive mechanism,



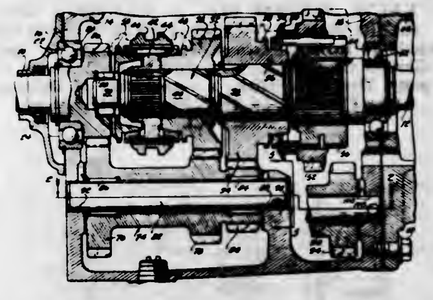
said additional wheel being adapted to project into said recess when the film holder is in operative position thereby permitting said drive wheel to engage in driving relation against said surface of the film holder.

3,292,445
VARIABLE V-BELT DRIVE
Arthur L. Welch, Box 731, Wasilla, Alaska 99687, and Joseph B. Lindecker, 8100 Keystone Ave., Skokie, Ill. 60076
Filed Apr. 14, 1964, Ser. No. 359,637
3 Claims. (Cl. 74—230.17)



1. In a machine of the type described, comprising a drive shaft and a driven shaft, each of said shafts having a V-pulley with a pair of separable associated members mounted in alignment with each other, an endless V-belt of constant length looped over both said pulleys with its V-shaped inner surface in the driving relation therewith, the constant length of said endless V-belt governing the effective diameter of said V-pulley on said driven pulley, each V-pulley having one of its members fixed to its supporting shaft and with the second members thereof movably mounted on said shafts permitting longitudinal movement thereof, a pair of rotatable sleeves, one sleeve having internal threads and the other external threads, said sleeves arranged on said drive shaft adjacent the movable member of said V-pulley on said drive shaft effecting longitudinal movement of said movable member on said drive shaft toward its associated fixed member and effecting increased diameter of said V-pulley on said drive shaft, a helical spring mounted on said driven shaft and compressed between the movable member of the V-pulley on said driven shaft and a fixed stop means mounted on said driven shaft and spaced a suitable distance from said V-pulley on said driven shaft effecting resilient pressure on the contacted movable member of said V-pulley on said driven shaft with the associated member through the intermediation of said belt spaced therebetween, and an anti-friction bearing mounted in direct contact with said drive shaft and arranged between the two members of said V-pulley on said drive shaft to provide an idler means on said drive shaft.

3,292,446
POWER TRANSMITTING GEARING WITH FULL FLOATING GEAR ELEMENTS
James M. Scofield, Farmington Township, Clayce D. Jones, Franklin, and Rhode M. Jessna, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,346
5 Claims. (Cl. 74—333)



2. In a power transmission mechanism adapted to deliver driving torque from a driving member to a driven member, a plurality of gear elements including a power input gear a power output gear and idler gear elements disposed in driving relationship with respect to said power input and power output gears, said power input gear being connected to said driven member, said power output gear being connected to said driven member, clutch means for connecting directly said driving member and said driven member thereby bypassing the torque delivery path made available in part by said idler gear elements, means for rotatably mounting said idler gear elements for floating movement in a direction transverse to the axes of said power input gear and said power output gear, a countershaft, relatively stationary supporting walls, and openings formed in said walls for receiving the end portions of said countershaft, said idler gear elements being rotatably journalled upon said countershaft, the openings in said walls being oversize with respect to the diameter of said countershaft whereby said idler gears are adapted for floating movement with respect to said power input gear and said power output gear, the countershaft end portion received within said wall openings and said wall openings being circular, the geometric centers of said end portions being offset with respect to the centerline of said idler gear elements.

3,292,447
MODIFIED GLOBOID GEARING
Pavel Samoilovich Zak, Moscow, U.S.S.R., assignor to Vsesoyuzny Nauchno-Issledovatelsky i Proektno-Tekhnologichesky Institute Ugolnogo Mashinostroyenija, Moscow, U.S.S.R.
Filed Apr. 24, 1964, Ser. No. 364,062
13 Claims. (Cl. 74—458)

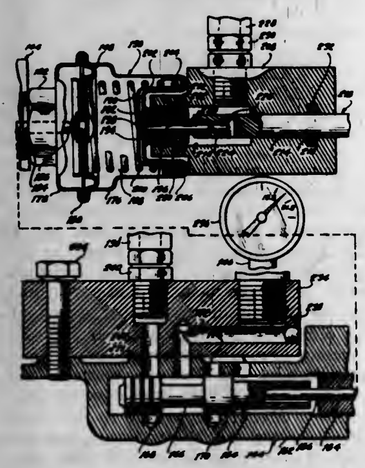
1. A modified globoid gearing comprising a globoid worm including a helical worm thread having a smooth changing circular pitch and a worm wheel with teeth em-

bracing the worm thread, said teeth being generated by a hobbing cutter with a generating surface coinciding with the surface of the thread of said worm; said teeth and worm thread being in contact with each other along the



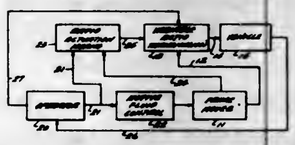
full length of the worm thread operating surface; said wheel teeth and worm thread having a contact line which undergoes dispalcement along the full length of the wheel tooth at a uniform average speed.

3,292,448
MANIFOLD PRESSURE OPERATED THROTTLE VALVE SYSTEM FOR A MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM
Donald L. Rostopf, Grosse Ile, and Richard A. Snyder, Garden City, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,904
3 Claims. (Cl. 74—472)



2. An automatic control for a multiple speed ratio power transmission mechanism having a gear system for connecting an engine to a driven member, said engine having a fuel-air intake manifold, a fluid pressure source, fluid pressure operated servos, clutch and brake means for controlling the relative motion of elements of said gear system and responding to operation of said servos, conduit structure including a control valve system for establishing a connection between said pressure source and said servos, a regulator valve mechanism in fluid communication with said source for maintaining a desired operating pressure level in said control system, a source of a governor speed signal that is proportional in magnitude to the driven speed of said driven member, a throttle pressure valve mechanism for establishing a pressure signal that is related in magnitude to the operating torque requirements of the transmission mechanism, means for distributing said pressure signals to said regulator valve mechanism and said control system for influencing the operation thereof, said throttle valve mechanism comprising a movable valve element, a manifold pressure operated servo comprising a servo body, a diaphragm disposed within said body and mechanically connected to said movable valve element, one portion of said body and said diaphragm cooperating to define a manifold pressure chamber, manifold pressure passage extending between said engine manifold and said manifold chamber, a diaphragm spring disposed between said diaphragm and said body, a spring seat member disposed within said body and engaging one end of said spring, a fluid fitting connected to said body and projecting therefrom, an adjusting element threadably connected to said fitting and movable in the direction of the line of action of said spring, said manifold pressure passage being adapted to be received over said fitting, said fitting having an internally threaded opening, said adjusting member being received within said opening and engageable with said spring seat, said adjusting element being adapted to be adjusted by a suitable hand tool to effect axial adjustment of said spring seat.

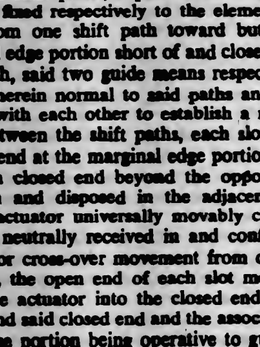
3,292,449
POWER SYSTEM CONTROL
Ernest Eber Lewis, Topsfield, and Charles Anthony Maher, Jr., Wakefield, Mass., assignors to General Electric Company, a corporation of New York
Filed Dec. 14, 1964, Ser. No. 424,872
8 Claims. (Cl. 74—472)



4. A power system for driving a load, said power system comprising:
(a) a prime mover powered by a motive fluid,
(b) a continuously variable drive ratio transmission interconnecting said prime mover and said load,
(c) said transmission having a variable positive displacement ball piston pump and motor,
(d) a variable race for controlling the stroke of said ball piston pump,
(e) means for adjusting the race stroke to vary the drive ratio of said transmission,
(f) a motive fluid control for controlling the motive fluid input to said prime mover,
(g) means to generate a signal indicating a speed and power output required of the prime mover and to control the motive fluid input such that the input rate is the minimum possible for the required speed and power output,
(h) means to generate a signal indicating the actual speed of the prime mover,
(i) means to compare the required prime mover speed signal and the actual prime mover speed signal and to generate a speed error signal,
(j) and means responsive to the speed error signal to adjust continuously the means for varying the drive ratio of the continuously variable drive ratio transmission until the actual prime mover speed is equal to the required prime mover speed,
(k) whereby the prime mover operates at a condition of optimum motive fluid consumption.

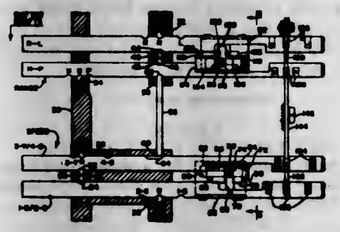
3,292,450
GEAR SHIFTING APPARATUS
George H. Hurst, 1918 Old Welsh Road, Abington, Pa. 19001, and William G. Campbell, M.R. 2, Upper State Road, Chalfont, Pa. 18914
Filed Nov. 6, 1963, Ser. No. 321,977
9 Claims. (Cl. 74—473)

1. A gear shift mechanism including
a gear shift stick
means defining a first operating position in which said shift stick is movable in up-shifting, in down-shifting and in reverse direction
means defining a second operating position in which said gear shift stick is movable in up shifting or down shifting direction only



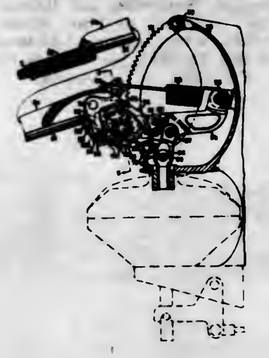
means mounting said gear shift stick for movement to one position or the other
and confining means for retaining said shift stick in said first operating position.

3,292,451
SHIFT MECHANISM FOR CHANGE-SPEED TRANSMISSION
Roger L. Jachlin, Waterloo, and Gordon L. Marquart, Jesup, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,305
13 Claims. (Cl. 74—477)



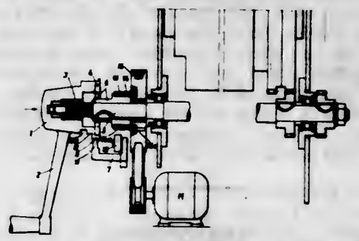
5. Shifter mechanism for a change-speed transmission, comprising: a support; a pair of support-carried shifter elements respectively selectively shiftable to and from shifted positions at opposite sides of neutral positions along parallel shift paths; a pair of laterally overlapped guide means fixed respectively to the elements and each extending from one shift path toward but terminating in a marginal edge portion short of and closely paralleling the other path, said two guide means respectively having slot means therein normal to said paths and in substantial register with each other to establish a neutral cross-over path between the shift paths, each slot means having an open end at the marginal edge portion of its guide means and a closed end beyond the opposite marginal edge portion and disposed in the adjacent shift path; and a shift actuator universally movably carried by the support and neutrally received in and confined by both slot means for cross-over movement from one shift path to the other, the open end of each slot means enabling escape of the actuator into the closed end of the other slot means and said closed end and the associated adjacent marginal edge portion being operative to guide the actuator along the respective shift path among the associated neutral and shifted positions.

3,292,452
COMBINED HAND BRAKE FOR VEHICLES
Carl Johan Nordström and John Fridolf Rönnholt, Södertälje, Sweden, assignors to Aktiebolaget Scania-Vabis, Södertälje, Sweden, a corporation of Sweden
Original application July 5, 1962, Ser. No. 207,614, now Patent No. 3,185,264, dated May 25, 1965. Divided and this application Mar. 1, 1965, Ser. No. 436,189
Claims priority, application Sweden, July 4, 1961, 6,986
13 Claims. (Cl. 74—620)



1. Braking mechanism for a vehicle having a frame, which comprises
a hand brake
a hand brake amplifier in the form of a pressure fluid-operated servo-device,
a manually operable multi-stroke device,
a lever mechanism
a locking device
said amplifier and said multi-stroke device being mounted together on said frame, and
a hand brake lever in direct association with said amplifier and with said multi-stroke device,
said hand brake lever cooperating both with said lever mechanism and said locking device for locking said amplifier and said multi-stroke device in desired position.

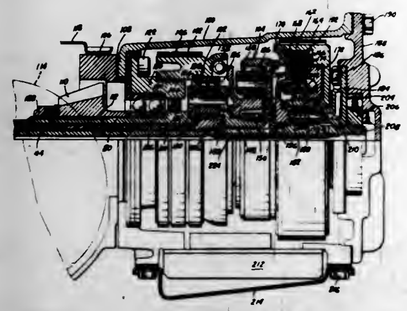
3,292,453
LITHO PRINTING MACHINE
Werner Reckmagel, Gottschedstrasse 36, Berlin, Germany
Filed Apr. 26, 1965, Ser. No. 450,756
Claims priority, application Germany, May 8, 1964, R 37,852
4 Claims. (Cl. 74—625)



1. In a litho printing machine having a driven member, manual drive means for said driven member and motor drive means for said driven member, clutch means for engaging and disengaging said motor drive means from said driven member comprising a clutch member drivingly secured to said driven member, a torsion clutch spring surrounding said clutch member and having a helix diameter which is sufficient to provide clearance between said spring and said clutch member in disengaged condition of said

clutch spring, means connecting said clutch spring for rotation by said motor, and actuating means movable into engagement with said clutch spring to brake rotation of said clutch spring and cause said clutch spring to tighten onto said clutch member to rotate said clutch member.

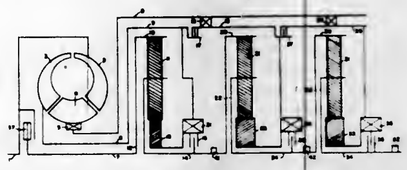
3,292,454
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM FOR MOTOR VEHICLES
Eugene W. Konrad, Northville, and Robert P. Zundel, Wayne, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,670
6 Claims. (Cl. 74—688)



1. In a power transmission mechanism capable of delivering driving torque from a driving member to a driven member, a hydrokinetic unit having an impeller and a turbine situated in toroidal fluid flow relationship, the impeller being connected to said driving member, a planetary gear assembly, overrunning coupling means for connecting said turbine to a first power input element of said gear assembly, first selectively engageable clutch means for connecting said driving member directly to another element of said gear assembly, reaction brake means for anchoring portions of said gear assembly to provide a driving torque reaction, and second selectively engageable clutch means for connecting said turbine to said first element of said gear system which, when both selectively engageable clutch means are engaged, is conditioned substantially for 1:1 speed ratio operation, said reaction brake means including a rotatable drum that is connected to separate reaction elements in each of said gear units, one reaction element accommodating torque reaction during low speed ratio operation and the other reaction element providing torque reaction during intermediate speed ratio operation, the connection between said brake drum and said one reaction element comprising a spring damper assembly including spring elements forming a yieldable cushioning connection between said one reaction element and said brake drum.

3,292,455
TRANSMISSION
Arthur L. Welch, Box 731, Wasilla, Alaska 99687
Filed Mar. 11, 1965, Ser. No. 439,050
7 Claims. (Cl. 74—688)

1. In a transmission; a drive shaft, a transmission output shaft, a hydraulic power train and a mechanical power train combined to form a variable speed transmission mechanism adapted to transmit an infinite range of ratios between said shafts, actuating means for said mechanism adapted to establish a sequence of part hydraulic part mechanical ratios and direct drive therein, and control means for said actuating means constructed and arranged to select an infinite range of speed reductions and direct drive by said mechanism; said hydraulic power train including a hydrodynamic mechanism having an impeller, a turbine, and reactor means, said impeller being driven by said drive shaft, said reactor being mounted to prevent reverse rotation and to provide torque multiplying fluid drive between said impeller and said turbine; said mechanical power train including a plurality of planetary gearsets each having an input member, an output member and a reaction member, said gearsets being arranged coaxially and connected together output member of the front gearset to input member of the following gearset, said gearsets being adapted to receive power from said drive shaft into the front gearset input member and to multiply and transmit said power from the front

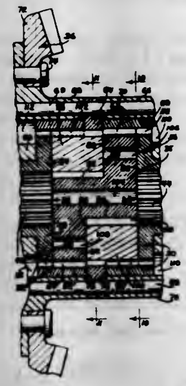


gearset output member to the following gearset input member, and to receive hydraulic power from said turbine into the front gearset reaction member, said hydraulic power effecting an infinite variation of ratios from maximum reduction to direct drive in the front gearset; said actuating means including holding means for said gearset reaction members, power transmitting means adapted to lock two members of each gearset, and power transmitting means adapted to transmit hydraulic power to said gearset reaction members; said control means sequentially controlling said actuating means from front gearset to rear gearset, effecting a scalar changing of said gearsets to direct drive in the front gearset and part hydraulic part mechanical drive in the following gearset.

3,292,456
SPIN LIMITING DIFFERENTIAL
Oliver E. Saari, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,934
17 Claims. (Cl. 74—711)

1. A spin limiting differential comprising:
first and second coaxial gear means spaced along their axis of rotation;
carrier means disposed intermediate said first and second coaxial gear means and having an identical axis of rotation, said carrier means comprising first and second end portions as measured axially along the axis of rotation thereof;
a plurality of spaced first bore means disposed in said first end portion of said carrier means, each of said first bore means being parallel to the axis of rotation of said carrier means;
a plurality of second bore means in said second end portion of said carrier means, each of said second bore means being parallel to the axis of rotation of said carrier means, each of said first bore means intersecting at least a portion of two of said second bore means in a region of said carrier means intermediate said end portions, and each of said second bore means intersecting at least a portion of two of said first bore means in said region of said carrier means intermediate said end portions;
first pinion means disposed in said first bore means with portions of the teeth thereon in meshing engagement with said first gear means;

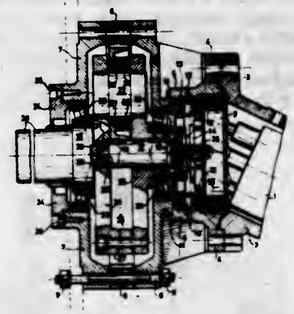
said first bore means having pinion supporting walls extending around at least 180° of said first pinion means in at least the areas thereof which are opposite to portions of said first pinion means engaged by said first gear means;
second pinion means disposed in said second bore means in meshing engagement with said second gear means and with at least two of said first pinion means, said second bore means having pinion supporting walls extending around at least 180° of said second pinion means in at least all of the areas thereof which are opposite to portions of said second pinion means engaged by said second gear means;



each of said first and second pinion means being identical in size and configuration;
said first and second bore means being substantially identical to each other to provide symmetrical support for said pinions to at least all the areas of said bores adjacent the area of engagement of the pinion means with the coaxial gear means;
whereby a fully circle mesh of identical sized pinions are provided, each pinion of said first and second pinion means meshing respectively with at least two other pinions and one gear means.

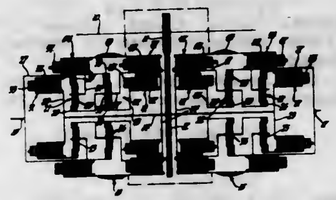
3,292,457
PLANETARY SYSTEM FOR USE WITH HYDRAULIC DEVICES
Alexandre Horowitz, Pollkazalaan 10, Eindhoven, Netherlands
Filed Mar. 11, 1964, Ser. No. 351,093
Claims priority, application Netherlands, Mar. 14, 1963, 290,198
6 Claims. (Cl. 74—730)

1. A self-aligning device to couple an hydraulic prime mover to a reduction gearing mechanism, which comprises:
(A) an hydraulic prime mover;
(B) a reduction gearing mechanism with an output shaft;
(C) a first coupling disc drivably connected to said prime mover, and having an outer toothing;
(D) a coupling axle, one end drivingly connected to a reduction gearing mechanism and said end being journalled in a pivotal bearing supported in said gear mechanism, said coupling axle comprising on the other end thereof a second coupling disc defining an interior toothing complementary to said outer toothing and engaged therewith, said first and second coupling discs correcting for angle deviation



between the hydraulic motor and the reduction gearing mechanism, and providing a direct self-aligning coupling therebetween.

3,292,458
TRANSMISSION
William G. Livezey, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Nov. 28, 1962, Ser. No. 240,599. Divided and this application Aug. 25, 1965, Ser. No. 482,358
2 Claims. (Cl. 74—763)

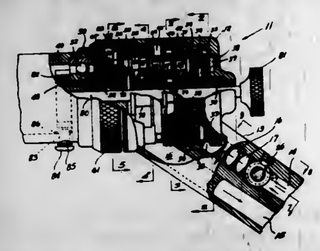


1. In a transmission, an input driven cross shaft, a pair of output shafts, a gear unit connecting said cross shaft to each of said output shafts, each gear unit including a forward drive and a reverse drive planetary gear set, each of said gear sets including a carrier having planetary pinions meshing with a sun and a ring gear, said forward drive planetary carrier and said reverse drive ring gear connected to an output shaft, a first clutch connecting said cross shaft to said forward drive ring gear, a second clutch connecting said cross shaft to said reverse drive sun gear, said reverse drive carrier connected to said forward drive sun gear, single brake means for retarding both said reverse drive carrier and said forward drive gun gear, and vehicle brake means for retarding said output shaft.

3,292,459
AIR DRIVER FOR DENTAL HAND PIECE
Edward Krzyszczak, Chicago, Ill., assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed June 19, 1964, Ser. No. 376,512
10 Claims. (Cl. 74—798)

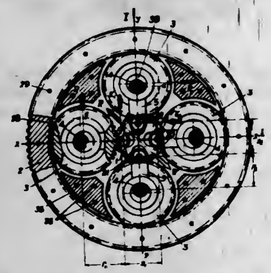
2. A dental hand piece comprising a housing, a driven shaft journaled in said housing, said housing being provided with a turbine chamber, a turbine wheel journaled in said chamber, said turbine wheel being provided with a first set of concave peripheral blades facing in one direction and a second set of concave peripheral blades facing in the opposite direction, said housing being provided

with a fluid pressure conduit, means to selectively supply fluid from said conduit either to said first set of blades or to said second set of blades, whereby to reversibly drive the turbine wheel, a driven clutch element on said driven shaft, an axially movable clutch sleeve surrounding said driven clutch element, means to move the sleeve axially, a pulley wheel rotatably mounted adjacent to and driven by said turbine wheel, means on said sleeve drivingly engageable with said driven clutch element when the sleeve



is moved axially in one direction, means to lock the sleeve against rotation when the sleeve is moved axially in the opposite direction, means to couple said sleeve directly to said pulley wheel responsive to the movement of the sleeve in said last-named one direction, speed reduction means, and means to drivingly couple said pulley wheel to said driven shaft through said speed reduction means when the sleeve is moved in said last-named opposite direction.

3,292,460
EPICYCLIC GEAR UNIT
Felix Fritsch, Vienna, Austria, assignor to Simering-Graz-Pauker Aktiengesellschaft fur Maschinen-Kessel- und Waggonbau, Vienna, Austria
Filed June 26, 1964, Ser. No. 378,350
Claims priority, application Austria, Oct. 31, 1963, A 8,725/63
8 Claims. (Cl. 74—801)



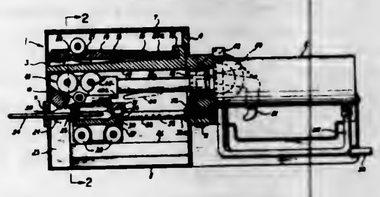
1. An epicyclic gear unit, comprising a sun wheel, four planet wheels arranged around said sun wheel and in mesh with it, a hollow wheel surrounding said planet wheels and in mesh with them, a planet wheel carrier, eccentric pins mounting the planet wheel and freely rotatably mounted in said planet wheel carrier, each of said eccentric pins being connected to one end of a lever, means operatively coupling the free ends of the levers, the axes of said eccentric pins being alternately inside and outside the axes of rotation of the respective planet wheels, said means operatively coupling the free ends of the levers being arranged to take up said reaction forces and having connecting parts, each of which connects at least two of said levers to each other, said connecting parts being subjected to equal and opposite forces through the gear unit axis, and a closing element, which is freely movable in a plane which is at right angles to the gear unit axis, said closing element interconnecting the connecting parts associated with said lever, said eccentric levers being substantially radially inwardly directed and the axes of rotation of the eccentric pins lying alternately inside and outside the axes of rotation of the planet wheels.

3,292,461
METHOD OF MAKING CUTTING DIES
Howard L. Bien, Forest Hills, N.Y., assignor to Production Technologies, Inc., Plainview, N.Y., a corporation of New York
Filed May 11, 1964, Ser. No. 366,491
6 Claims. (Cl. 76—107)



1. A method of making cutting dies comprising the steps of cutting out of a block a centerpiece having the contour of an article to be punched out of sheet material, fitting first tool steel sections around said centerpiece and reassembling said centerpiece in said block with said tool steel sections projecting from said block and clamped therebetween to form a female die member, pouring material in its liquid state into the space defined by the top face of said centerpiece to form a punch member of a contour complementary to said centerpiece, fitting second tool steel sections into said poured punch member prior to its solidification adjacent said first tool steel sections, and removing said punch member jointly with said second tool steel sections from said female die member.

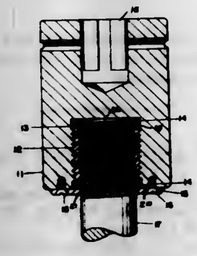
3,292,462
WIRE STRIPPING DEVICE
Kvetoslav Turecek and Brian Arthur Eyres, Brampton, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Mar. 17, 1965, Ser. No. 440,377
12 Claims. (Cl. 81—9.51)



1. A device for stripping a length of insulation from the end portion of an insulated wire, comprising: means to clamp the wire at a point spaced from its end, said clamping means having a fixed clamping jaw and a movable clamping jaw, said movable clamping jaw having a first cam surface associated therewith; means movable to strip length of insulation from the end of the wire, said movable stripping means having a pair of stripping jaws operable in a plane transverse to the axis of the wire when clamped and a pair of insulation-cutting blades mounted on said stripping jaws, said stripping jaws being mounted on a movable carriage, one of said stripping jaws being pivotal on the carriage and having a second cam surface associated therewith; and means to actuate the clamping means and the stripping means to close the clamping jaws to clamp the wire against movement, close the stripping jaws to cut the insulation of the wire, move the stripping jaws along the axis of the wire to strip the severed insulation therefrom, open the clamping jaws to release the end-stripped wire, open the stripping jaws, and return the stripping jaws to their original position of rest, said actuating means including a first cam followed adapted to travel

on the first cam surface and a second cam follower adapted to travel on the second cam surface, and means to move said two cam followers in unison.

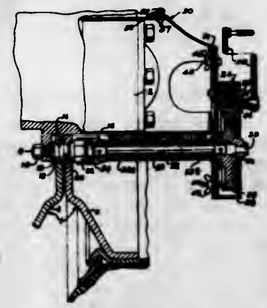
3,292,463
WRENCH ADAPTER
Boyd A. McKeen, Fairview, Pa., assignor to Titan Tool Company, Fairview, Pa., a corporation of Pennsylvania
Filed Jan. 10, 1966, Ser. No. 519,493
8 Claims. (Cl. 81—53)



1. A stud driver comprising a holder,
said holder having attaching means on a first end thereof adapted to be attached to a rotatable member having means on the first end of the holder to rotate said holder in a first forward direction and means to rotate said holder in a second reverse direction,
a threaded hole formed in the second end of said holder remote from said first end,
a hollow bushing,
said bushing having an external thread on its outside surface threadably received in said threaded hole,
means to limit the movement of a stud into said hole,
an internal thread on the inside of said bushing,
first resilient means limiting the movement of said bushing in said forward direction,
one of said external thread and said internal thread being of a lower pitch than the other,
and second resilient means limiting the movement of said bushing in said reverse direction.

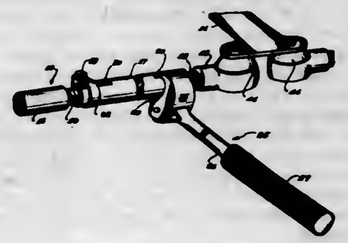
3,292,464
GEAR DRIVEN WHEEL RETAINER NUT WRENCH
Willie H. Grimes, P.O. Box 790, and Austin Dwayne Medford, 810 Wells St., both of Stamford, Tex. 79553
Filed Feb. 12, 1964, Ser. No. 344,267
2 Claims. (Cl. 81—57)

1. A gear operated wrench for removing retainer nuts from vehicle wheels, comprising:
(a) a cylindrical hub adapter having an end plate rigidly attached and perpendicularly disposed at one end thereof, and adapted to be placed about the hub of the wheel;
(b) a gear housing, including spaced apart, superimposed first and second plates, removably connected together by a wall member;
(c) means forming spaced apart, aligned apertures diametrically through said plates;
(1) a bushing received in each aperture in each plate;
(d) a first gear and a second larger gear suitably journaled in said spaced apart apertures in meshed relationship with each other, said first gear having an extended, centrally located portion thereon which extends through said second plate and is adapted to receive a handle thereon;
(e) said second larger gear having an extended portion forming a squared socket extending through said first and second plates and within one of said bushings;
(f) said first plate rigidly attached to said end plate;
(g) a tubular member rigidly secured adjacent to and parallel to said adapter, and rigidly secured to said end plate, and being in aligned relationship with the last aperture in said first plate to thereby be centrally aligned with one of said squared sockets and adapted to be placed in aligned relationship with a bolt circle having retainer nuts thereon; and



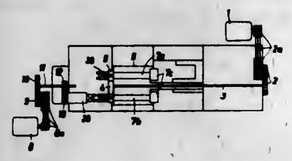
(h) a wrench drive shaft having a squared end at each extremity thereof, one end of said shaft adapted to receive a retainer nut socket and the other end thereof being affixed to said larger gear, whereby said hub adapter may be rotated on the vehicle wheel hub to thereby align said retainer nut socket with a retainer nut, and rotation of said handle will impart rotational movement to said retainer nut socket to thereby drive the retainer nut in a predetermined direction.

3,292,465
TIE ROD SPANNER
George E. Mulligan, Pico Rivera, Calif., assignor to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Dec. 4, 1964, Ser. No. 416,076
6 Claims. (Cl. 81—90)



1. A wrench of the character described comprising, in combination:
a rigid, elongated handle having at one end a fixed jaw with outwardly projecting teeth, said teeth being located at a substantially uniform distance from an axis transverse of said jaw;
and a movable jaw pivotally connected to said fixed jaw to swing about said transverse axis, said movable jaw being of generally arcuate shape and terminating at its outer end in an inwardly extending work-engaging projection.

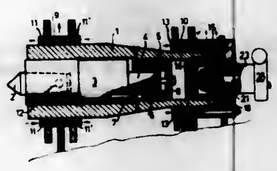
3,292,466
DRIVING ARRANGEMENT FOR MULTIPLE-SPINDLE MACHINE TOOLS
Hans Jacoby, Bielefeld, Germany, assignor to Gildemeister & Company, AG., Bielefeld, Germany
Filed July 21, 1964, Ser. No. 384,196
Claims priority, application Germany, July 24, 1963, W 34,946
12 Claims. (Cl. 82—29)



1. In a multiple-spindle machine tool, in combination, a frame; an indexible carrier mounted in said frame to rotate about a first axis; a spindle mounted in said carrier to rotate about a second axis parallel to said first axis; drive means for rotating said spindle about said second axis and comprising meshing gears mounted for rotation about said first and second axes; releasable first clutch means for normally coupling said spindle to said drive means; and a driving unit for rotating the spindle about said second axis independently of said drive means, said driving unit comprising an intermediate shaft parallel with said spindle, means for rotating said intermediate shaft at different speeds, a first driver gear on said intermediate shaft, an axially reciprocable output shaft arranged to rotate about a third axis which coincides with said second axis in a predetermined angular position of said carrier, a driven gear mounted on said output shaft and meshing with said driver gear, a pair of toothed clutch elements respectively provided on said spindle and on said output shaft and arranged to mesh in response to axial movement of said output shaft toward said spindle in said predetermined position of the carrier, shifting means for moving said output shaft axially toward and away from said spindle so as to respectively connect and disengage the output shaft from said spindle, disengaging means for releasing said first clutch means in said predetermined position of the carrier, a friction clutch including a first clutch element rotatable about said third axis and a second clutch element mounted for rotation on and reciprocable axially with reference to said spindle, a second driver gear rotatably mounted on said intermediate shaft, free-wheeling clutch means drivingly connecting said intermediate shaft with said second driver gear in such a manner that the second driver gear is free to rotate independently when its rotational speed exceeds the rotational speed of said intermediate shaft, a further gear provided on said first clutch element and meshing with said second driver gear to rotate said first clutch element, and means for reciprocating the second clutch element of said friction clutch axially of said spindle to move said second clutch element into and out of engagement with said first clutch element.

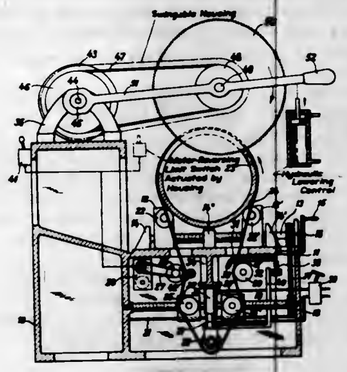
3,292,467
LATHE TAILSTOCK
Walter Heer, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Aug. 14, 1964, Ser. No. 389,669
Claims priority, application Switzerland, Oct. 14, 1963, 12,572
6 Claims. (Cl. 82—31)

1. A lathe tailstock comprising a support; a sleeve mounted for rotation and axial movement in said support; a center non-rotatably secured to said sleeve at one end thereof, said sleeve and center being coaxial; a pressure chamber at the other end of the sleeve, said chamber being defined by the support and a transverse wall of the



sleeve, pressure in said chamber reacting against said wall to provide a hydrostatic thrust bearing sustaining the sleeve in the axial direction.

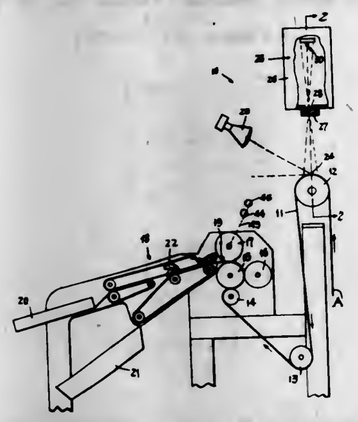
3,292,468
METHOD OF AND MACHINE FOR CUTTING TUBULAR STOCK
Hubert Orthey, Wetzlar (Lahn), Germany, assignor to Buderus'sche Eisenwerke Wetzlar, Wetzlar, Germany, a corporation of Germany
Filed Oct. 13, 1964, Ser. No. 403,493
Claims priority, appplication Germany, Oct. 16, 1963, B 73,897
12 Claims. (Cl. 82—101)



1. A machine for cutting tubular stock, comprising at least one pair of transversely spaced supporting rollers for a workpiece to be cut, a rotatable cutting blade above said rollers, movable mounting means for said blade enabling its displacement toward said rollers, an endless flexible member disposed adjacent said rollers for looping about said workpiece, adjustable guide means for said member below said rollers, tensioning means for tightening said member about the workpiece, and drive means for imparting motion to said member in its tightened state.

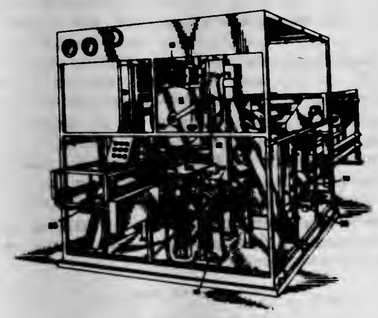
3,292,469
LIGHT-RESPONSIVE INSPECTING AND SEGREGATING APPARATUS FOR SHEETS
Angelo Vaccaro, Port Washington, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Glen Cove, N.Y., a corporation of New York
Filed July 23, 1964, Ser. No. 384,684
18 Claims. (Cl. 83—[illegible])

1. A photo-responsive inspecting apparatus for detecting defects in a continuously moving web of material comprising means for directing illumination onto an area that extends transversely to the moving web and a photo-responsive sensing means positioned to receive illumination from the portion of the web in the area, said means including a plurality of photo-responsive cells with each having photo-responsive and non-responsive portions, means mounting the cells in two rows transversely of the web with their photo-responsive portion being mounted



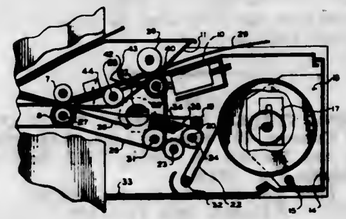
to receive illumination from the web, one of said rows being displaced longitudinally of the web from the other with the photo-responsive portions of the cells of one row being aligned in the direction of the moving web with the non-responsive portions of the cells in the other row.

3,292,470
ORBITAL SAW
Ernst Daniel Nystrand and John J. Bradley, Green Bay Wis., assignors to Paper Converting Machine Company, Inc., Green Bay, Wis., a corporation of Wisconsin
Filed Oct. 18, 1965, Ser. No. 497,420
2 Claims. (Cl. 83—174



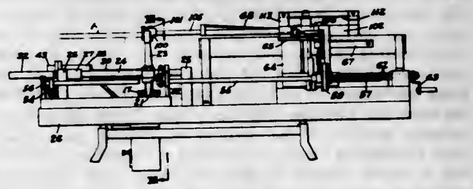
1. An orbital saw for radially cutting elongated paper rolls comprising a frame, conveying means on said frame for intermittently advancing said rolls along a path longitudinally thereof, a disc saw orbitally mounted on said frame adjacent said conveying means, means for rotating said disc saw, and means for orbiting said saw in a plane transverse of said path to pass said saw through a roll in said path in one portion of the saw orbit and for developing a faster orbital velocity of said saw in said one orbit portion than in the remainder of the orbit, said orbiting means including a motor and a gear-equipped shaft and a cam indexer interposed between said motor and shaft and coupled thereto for stopping the orbital motion of said saw once each orbit in addition to developing the above-mentioned different velocities whereby said saw is adapted to be sharpened during stoppage thereof.

3,292,471
ROLL FEED ATTACHMENT FOR DUPLICATING APPARATUS
Delbert W. Semes, Conklin, and Donald P. Kreage, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1964, Ser. No. 372,901
5 Claims. (Cl. 83—203)



1. Roll feeding attachment for copying apparatus utilizing sensitized continuous web material which, in contact with an original to be copied, is fed between infeed rollers into said apparatus for processing, comprising a storage roll of sail sensitized material, feed means over which said material is constrained to pass, guide means for directing said material toward engagement between said infeed rollers, cutting means in the path of said sensitized material, inlet feed means for conveying an original including a support therefor converging toward said infeed rollers, a pair of electrical sensing elements activated by the leading edge of the original upon insertion and deactivated by the trailing edge thereof, one of said sensing elements controlling the actuation of the feed means of said sensitized material and the other of said sensing elements controlling the operation of said cutting means, said inlet feed means and infeed rollers being interconnected to advance the original and sensitized material at the same rate whereby the length of the sensitized material cut from said roll entering said apparatus is substantially the same as that of the original.

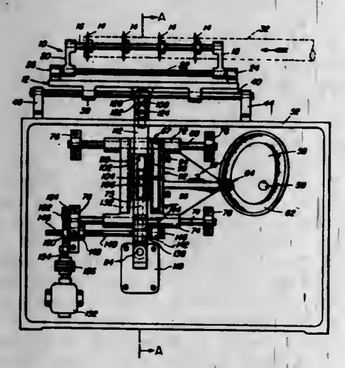
3,292,472
AUTOMOBILE TUBE CUTOFF APPARATUS
Edwin J. McKenica, Williamsville, N.Y., assignor to Joseph F. McKenica & Son, Inc., Buffalo, N.Y.
Filed July 22, 1964, Ser. No. 384,425
4 Claims. (Cl. 83—294)



1. In a machine for cutting off predetermined lengths of relatively rigid material from a moving strip, a knife carriage and fluid actuated means for moving the same in the direction of movement of said strip, means engageable by the leading end of the forwardly traveling strip to actuate said carriage moving means, an abutment fixed for longitudinal movement with said carriage and disposed beyond said engageable means whereby the leading end of said strip engages the abutment before the carriage reaches a speed approximating the speed of the moving strip, knife means reciprocably mounted in said

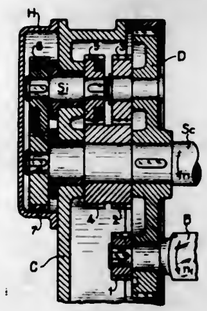
carriage, fluid operated means to independently actuate said knife means during continued forward movement of the carriage selectively adjustable means to actuate said latter fluid operated means after predetermined forward movement of the carriage whereby a fixed length of stock is cut off as determined by the adjusted longitudinal distance between said abutment and the transverse plane of said cutting means, and means carried by said abutment coacting with deflecting means adjacent said engageable means for moving said abutment laterally from engagement with said strip after the latter has been engaged by said knife means.

3,292,473
CUTTING STROKE ADJUSTING MECHANISM
Reginald Connens, 403 Palmers Lane, Wallingford, Pa. 19086, and Michael M. Young, 7412 Stenton Ave., Philadelphia, Pa. 19150
Filed Apr. 20, 1965, Ser. No. 449,567
3 Claims. (Cl. 83—318)



1. In a machine having means for cutting into lengths a continuously formed and continuously conveyed article, a cutter carriage, means for continuously reciprocating said carriage parallel to the direction of movement of the article in such a way that during a portion of its reciprocation the carriage moves in the same direction as the article and maintains a constant velocity, said carriage reciprocating means including a horizontal slidable assembly, a pivoted lever for driving said carriage according to the movement of the assembly, and means connecting said assembly with said lever intermediate its pivot point and carriage connection, means connecting to said reciprocating means and carriage, and means to adjust said connecting means for changing the velocity of carriage movement in order to eliminate relative movement between the carriage and the article during the constant velocity portion of the carriage movement, said adjustable connecting means comprising a rotatable shaft having a screw thread thereon engaging said connecting means, a gear mounted on said shaft for moving said connecting means along the length of the lever thereby to adjust the ratio of magnification of the assembly movement imparted to the carriage, said adjusting means operating without changing the reciprocation rate of the carriage and without stopping the machine, and fixedly positioned means to drive said gear and said threaded shaft, a movable connection between said gear and driving means continuously engaged during reciprocation of said slidable assembly, said movable connection including a splined shaft and a gear turning with said splined shaft, said splined shaft and gear being relatively movable axially.

3,292,474
DEVICE IN A CUTTER, PARTICULARLY IN A PAPER BAG TUBE MACHINE
Urpo Mantovaara, Pori, Finland, assignor to W. Rosenlew & Co., Oy, Pori, Finland, a corporation of Finland
Filed Nov. 24 1964, Ser. No. 413,470
Claims priority, application Finland, Nov. 29, 1963, 2,361/63
4 Claims. (Cl. 83—327)

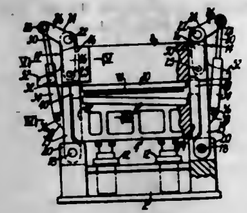


1. A device adapted for cutting paper, said device comprising a rotatable main shaft, frame means journalling the main shaft, a disc secured to the main shaft for rotation therewith, a rotatable beam parallel to the main shaft and journalled in the disc eccentrically of the main shaft, at least two cutting means on said beam, said two cutting means lying generally radially of the beam and at an angle with respect to each other for successive presentation to a cutting station as the main shaft rotates, and positively connected gear means connecting the central shaft and said beam to each other so that the beam turns smoothly about its axis between cutting operations but remains parallel with itself during each passage through the cutting station, said gear means comprising a first gear secured to the beam for rotation therewith, a second gear journalled coaxially of the main shaft for rotation with respect thereto, a third, planet gear journalled eccentrically of the main shaft for rotation as a whole thereabout, said third gear being in positive mesh with both the first and the second gears so as to keep the beam parallel to itself during each of its passages through the cutting station, and positive driving means including a train of positively meshing gears connected between the main shaft and the second gear for indexing the beam about its axis in the intervals between the presentation of the beam to the cutting station, said train of positively meshing gears including a pair of meshing gears of such configuration that their speeds of rotation relative to each other vary cyclically.

3,292,475
GUILLOTINE SHEAR OF THE UPCUT TYPE
Hugh Macdonald Ross, Poole, Dorset, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain
Filed Apr. 20, 1965, Ser. No. 449,438
Claims priority, application Great Britain, Apr. 21, 1964, 16,464/64
7 Claims. (Cl. 83—368)

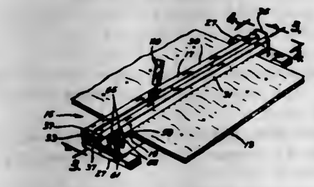
1. A guillotine shear of the upcut type, comprising a stationary base, a lower blade-carrier, an upper blade-carrier, means for moving said lower blade-carrier relative to said base for effecting a cut, and means operable independently from said moving means for lifting said upper blade-carrier away from said lower blade-carrier, said lifting means comprising toggles, each toggle having a first and a second link and a knee-joint between said two links, said first link being pivoted to said base

and said second link being pivoted to said upper blade-carrier, the first links of said toggles acting as struts for supporting said knee-joints, and said upper blade-carrier and said second links suspending said upper



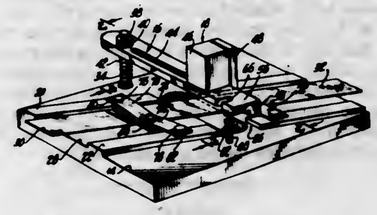
blade-carrier from said knee-joints, and means for moving said toggles from a stretched position into a collapsed position, whereby said upper blade-carrier is lifted away from said lower blade-carrier.

3,292,476
WADDING CUTTER
Gene S. McGuire, 6530 Del Matro, Des Moines, Iowa 50311
Filed Mar. 29, 1965, Ser. No. 443,443
3 Claims. (Cl. 83—456)



1. A cutter device for use in cutting a sheet of wadding material comprising:
- (a) a base member having a longitudinally extended opening,
- (b) a guide unit having a longitudinally extended opening,
- (c) means for connecting one end of said guide unit to one end of said base member for movement from a first superposed position in parallel and adjacent relation to said base member to a second position extended upwardly from said one end of the base member,
- (d) a cutting means including an elongated flexible member and an actuator operably connected therewith for longitudinal movement relative to said flexible member,
- (e) one end of said flexible member secured to the top surface of said guide unit at the one end of said guide unit, and the other end of said flexible member secured adjacent the bottom surface of said base member at the end thereof remote from said one end of the base member so that the portion of said flexible member between the connected ends thereof is extendible in said openings when the guide unit is in said first position therefor, and
- (f) said actuator movable horizontally and against the top surface of said guide unit when the guide unit is in said first position therefor to progressively displace said portion of the flexible member upwardly from a position within the opening of said base member to a position above said guide unit whereby to cut sheet material disposed between said base member and the guide unit when the guide unit is in said first position.

3,292,477
TAPE SPLICER
Howard S. Raftery, Massapequa, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Feb. 19, 1965, Ser. No. 434,083
3 Claims. (Cl. 83—464)



1. A mechanism for splicing tape ends comprising in combination:
- a base having an aupper surface,
- an elongated straight guide arranged to receive tape ends, the guide extending across said upper surface of the base and being interrupted at a point intermediate the ends thereof,
- means positioned on opposite sides of said intermediate point to clamp tape ends,
- an elongated cutting arm including means to support the arm pivotally on said base,
- a knife edge supported by said cutting arm arranged for movement along the cutting arm,
- means on said base positioning the cutting arm adjacent said intermediate point so that said knife edge follows a predetermined path at said intermediate point from one longitudinal edge of a tape to the other,
- a single piece of material embeded in said base along said predetermined path softer than said knife edge and into which said knife end extends, said cutting arm being positioned such that the knife edge extends into the embedded single piece of material during cutting of the tape.

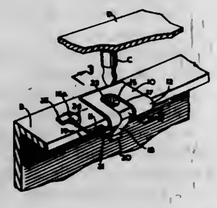
3,292,478
CUTTING DIE KNIFE FOR TEXTILES, LEATHER AND SIMILAR SHEET MATERIALS
Hilding Adolf Falk, Sandviken, and Bo Gunnar Carlsson, Nasbypark, Sweden, assignors to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Oct. 11, 1965, Ser. No. 494,591
4 Claims. (Cl. 83—679)



1. Cutting die knife for cutting packets of textiles, paper and similar materials, said knife consisting of a plate or a strip having a rear portion with subutantially parallel side surfaces (11, 12), a fore cutting edge por-

tion formed by two converging cutting edge surfaces and between said side surfaces and cutting edge surfaces two generally plane intermediate surfaces which converge towards the cutting edge portion with an angle which is smaller than the angle between the cutting edge surfaces, the intermediate surfaces having different angles of inclination in relation to the parallel side surfaces the cutting edge being situated closer to one of the side surfaces than to the other and the intermediate surface which adjoins that side surface which is closer to the cutting edge being inclined 1–5°, and the other intermediate surface being inclined 8–12°, in relation to the parallel side surfaces, the perpendicular distance of the cutting edge to the nearest side surface being 0.15–0.35 of the thickness of the knife between the parallel side surfaces.

3,292,479
SNAP SOCKET FASTENER
George A. Tinnerman, 17864 Beach Road, Lakewood, Ohio, and Henry C. Tinnerman, Fort Lauderdale, Fla.; said Henry C. Tinnerman assignor to George A. Tinnerman, Lakewood, Ohio
Filed Nov. 19, 1964, Ser. No. 412,518
2 Claims. (Cl. 85—7)



1. A fastener applicable to the edge of plate-like structural members and adapted to receive and secure an axially projected stud, comprising a body formed from a single strip of sheet metal bent upon itself to provide an inner base section and an outer top section underlying and overlying one another respectively in spaced apart relation joined along one side by an integral side wall, and each terminating at the opposite side thereof in a free edge, said spaced apart sections forming a channel therebetween accessible along the free edges of said sections and adapted to receive therebetween the edge of a plate-like structural mounting member, said top section having a strip struck therefrom to form an opening therein, said strip continuing through said side wall to said base section and being bent to project as a resilient finger outwardly beyond said base section, said base section having a second resilient finger integrally connected thereto adjacent its free edge and transversely aligned with said first finger, said second finger being bent to project outwardly beyond said base section complementary to said first finger, a snap socket unit to receive and secure a stud element of a part to be attached to said fastener, said base element being formed with an aperture between said fingers and aligned with said opening in said top section whereby when said fastener is caused to straddle an edge of an orificed plate-like structural member having said orifice aligned with the opening in said top section and the aperture in said base section, both said fingers being inclined toward each other in the direction away from said base section with the free ends of said fingers being bent outwardly in opposite directions, the minimum distance between said fingers being less than the maximum transverse dimension of said aperture, said stud element of said part to be attached may be axially projected into said snap socket unit securing said part to be attached to said plate-like structural element while retaining said fastener from dislodgement therefrom.

3,292,480
DEVICES FOR PREVENTION OF COTTER PINS FROM SLIPPING OUT OF POSITION
Iwao Uozumi, 607 7-chome, Ebara, Shinagawa-ku, Tokyo, Japan
Filed Dec. 16, 1964, Ser. No. 418,848
Claims priority, application Japan, Apr. 20, 1964, 39/23,621, Patent 12,172
1 Claim. (Cl. 85—8.1)



A device for prevention of a cotter pin from slipping out of position comprising in combination; a cylindrical shaft, a cotter pin being of general uniform diameter throughout is entire length, and a washer,

said washer having a flat annular base portion with a central opening, a circular peripheral outer edge, and a plurality of pairs of diametrically opposed, circumferentially, and equally spaced protruding pieces extending from one side of said peripheral edge at substantially 90° to said base portion,

said protruding pieces forming a substantially cylindrical opening having an inner diameter substantially equal to the length of said cotter pin, and a passage for said cotter pin formed by one of said protruding pieces being removed from the edge,

said washer being mounted on said shaft whereby said shaft has a transverse bore with said cotter pin being positioned in said bore,

said passage being initially aligned with the bore of the shaft whereby said cotter is then inserted through the aligned pin passage and bore until the fore end of the cotter pin comes into contact with the inner surface of the protruding piece which is diametrically opposed to said passage and thereafter the washer is rotated until the longitudinal axis of the cotter is aligned with a pair of diametrically opposed protruding pieces, and the protruding pieces adjacent each side of one of the protruding pieces of said pair are radially inwardly bent so as to abut against opposite sides of said cotter pin.

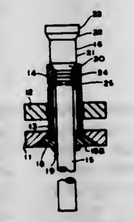
3,292,481
TRUSS PLATE-FASTENER
Claude R. Couch, 2414 Newland St., Edgewater, Colo. 80214
Filed Feb. 3, 1964, Ser. No. 342,187
4 Claims. (Cl. 85—13)



1. A combination truss plate and fastener for use in the fabrication of wood building trusses and framing comprising fasteners formed unitarily of flat metal stock to provide a flat back, separate shanks in normal relation to said back and slots dividing said shanks through a portion of their height into separate tines, inclined faces on the terminal ends of said tines, and a flat metal truss plate having a plurality of openings punched therein and

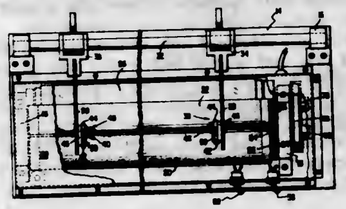
receiving the separate shanks of said fasteners, said openings further providing end surfaces for closely engaging the lateral outer edges of said shanks and tines whereby said tines are constrained by said end surfaces for directed penetration ofthe wood members when the plate and fasteners are applied.

3,292,482
SELF-PLUGGING BLIND FASTENING DEVICE
Bernard Albert Gerald Fry, Welwyn Garden City, Harvey Philip Jeal, Stevenage, John Stewart Sanders, St. Albans, and Frederick Arthur Summerlin, Harpenden, England, assignors to Avdel Limited, Welwyn Garden City, England, an English joint-stock company
Filed Aug. 27, 1964, Ser. No. 392,408
Claims priority, application Great Britain, Aug. 30, 1963, 34,402/63; Oct. 30, 1963, 42,776/63
5 Claims. (Cl. 85—76)



1. In a blind rivet fastening device, including
(a) a tubular rivet,
(b) a head at one end of the rivet,
(c) a mandrel extended through said rivet and said head to project beyond said head,
(d) a tail end on said rivet,
the improvement of
(e) a mandrel head,
(f) a tubular sleeve loosely mounted on said mandrel between said tail end and said mandrel head, said sleeve having substantially cylindrical inner and outer surfaces with the end thereof adjacent said tail end being exteriorly beveled,
(g) a first tapered shoulder on said mandrel head adjacent said sleeve,
(h) a second tapered shoulder on said mandrel head spaced from said first shoulder and from said sleeve,
(i) a first cylindrical portion between said shoulders,
(j) a second cylindrical portion extending from said second shoulder to the adjacent end of the mandrel head,
(k) said sleeve being of about the same outer diameter as the outer diameter of said tubular rivet, said first cylindrical portion of the head being of larger diameter than the inside diameter of said sleeve, and said second cylindrical portion being of larger diameter than said first cylindrical portion, whereby during the pulling of the mandrel through said rivet and through said head for fastening the rivet said sleeve is pulled into the rivet tail and expands the rivet tail against the adjacent work piece, and then during continuing pulling of said mandrel said first shoulder and said first cylindrical portion are pulled into and through said sleeve and into said rivet for expanding said rivet in said work piece, and then during further pulling of said mandrel said second shoulder and said second cylindrical portion are pulled into said sleeve for further expanding said sleeve and said rivet tail,
(l) and means to stop the movement of said mandrel at a predetermined penetration into said rivet.

3,292,483
ROLLER INSPECTION GAGE WITH TRANSPARENT ROD AS ONE OF SUPPORT MEMBERS
Bernard Brown, Prospect Heights, and Herman R. Brandt, Chicago, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1964, Ser. No. 351,597
7 Claims. (Cl. 88—14)



1. An inspection gage for locating and facilitating the identification of defects in an object having an arcuate surface comprising reference means for contacting the arcuate surface of said object to form an inspection zone extending in a plane tangent to said arcuate surface at the contact line between said arcuate surface and reference means, said reference means being formed to obstruct the passage of light through said inspection zone in the absence of a defect in said object, a light source mounted within said gage on one side of said inspection zone, and transparent light transmission means mounted within said gage adjacent said inspection zone and light source and extending substantially parallel to the line of contact between said arcuate surface and reference means, said light transmission means having an optical form whereby the surface thereof adjacent said inspection zone is operable to transmit a direct beam of light of maximum intensity in the plane of said inspection zone regardless of angular variations in such plane.

3,292,484
APPARATUS FOR MONITORING SPECTRAL CHARACTERISTICS OF SUBSTANCES
Burton R. Clay, Wayland, Mass., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 161,031
1 Claim. (Cl. 88—14)

In a system for monitoring a spectral characteristic of a material, the combination of

(a) means providing a plurality of light paths and including a light source common to all of said paths for providing a scanning light beam of the same initial intensity along two of said paths and a phase reference providing light beams along a third of said paths,

(b) means in a first of said pair of light paths for presenting to the scanning light beam therein a standard material adapted to modify the intensity of the scanning beam in said first path and thus provide a first, intensity reference beam of standard intensity,

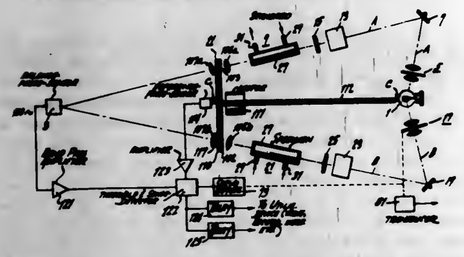
(c) means in the second of said pair of light paths for presenting to the scanning light beam therein a specimen of said material for modifying the intensity of the scanning beam in said second path to thereby provide a second beam having the intensity imparted thereto by said specimen,

(d) an adjustable light attenuator means for controlling the initial intensity of said light beam in said second of said pair of light paths,

(e) chopper means common to all three of said light paths for effecting modulation of said first and second intensity modified beams in sine wave fashion but in 180° phase displaced relation, and for effecting modulation of said phase reference providing

light beam to provide phase reference light pulses, said chopper means comprising an aperture plate having a plurality of discrete apertures, each for a separate one of said three light beams, and a rotatable chopper disk associated with said aperture plate and itself having a plurality of spaced apertures therein in position to successively intercept said aperture plate apertures sequentially as said chopper disk rotates to provide said modulations,

(f) first opto-electrical light sensor means common to said first and second light paths and responsive to both of said first and second modulated light beams for comparing the intensities of said first and second modulated light beams and providing an alternating electrical balance signal output indicative of the difference, if any, betwen the intensities of said first and second intensity modified beams,



(g) second opto-electrical light sensor means responsive to said light pulses for converting said phase reference light pulses into electrical phase reference pulses,

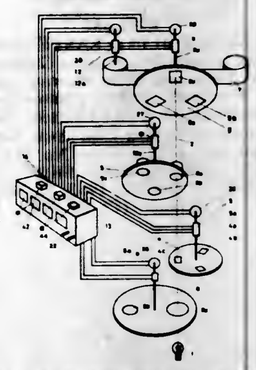
(h) detector means coupled to said first and second opto-electrical light sensor means and responsive concurrently to said electrical balance signal and to said electrical phase reference pulses for determining the sense of said balance signal in a given phase thereof and providing an output signal corresponding to the sense of said balance signal,

(i) a reversible motor coupled to said detector means and responsive to said last named output signal for rotation in one direction or the other according to the sense of said last named output signal, said motor being coupled to said light attenuator for correspondingly adjusting said attenuator, and

(j) means coupled to said attenuator to indicate the amount of light attenuation in said second of said pair of light paths.

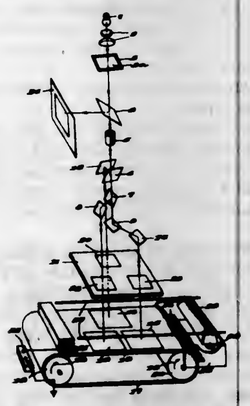
3,292,485
PHOTOGRAPHIC PRINTING MACHINE FOR AT LEAST TWO DIFFERENT SIZES OF NEGATIVE AND POSITIVE
Hansjoerg Mey, Oberengstringen, Switzerland, assignor to Gretag Aktiengesellschaft, Regensdorf, Switzerland
Filed Mar. 9, 1964, Ser. No. 350,365
Claims priority, application Switzerland, Mar. 13, 1963, 3,184/63
5 Claims. (Cl. 88—24)

1. In a photographic printing machine a light source, an optical condenser system, a multi-size negative masking means, an adjustable lens system, a multi-size positive masking means, a print material transport device, the multi-size positive masking means being arranged to define an image produced by the light source, the optical condenser system and the adjustable lens system from a negative held in the multi-size negative masking means, each component being selectable from a number of alternative elements in accordance with the size of positive and negative chosen, a control device for the reception of information regarding the actual components selected and information regarding the components desired to be selected, said control device having a parallel group of primary contacts each of which is responsive to information received from a particular actual component, and a parallel group of secondary contacts, each of which is responsive to information received for a particular desired component and is in series with an appropriate



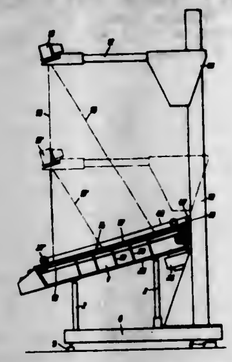
primary contact, the arrangement having means breaking one of the primary contacts only upon information received in respect of an actual component selected whilst the secondary contacts make a contact only upon information received in respect of a desired component, and means completing an electrical circuit only when an actual component is different from a desired component.

3,292,486
APPARATUS FOR REVERSING COLOUR IMAGES
Hansjoerg Mey, Oberengstringen, Switzerland, assignor to Gretag Aktiengesellschaft, Regensdorf, Switzerland
Filed Dec. 4, 1963, Ser. No. 327,939
Claims priority, application Switzerland, Dec. 7, 1962, 14,419/62
12 Claims. (Cl. 88—24)



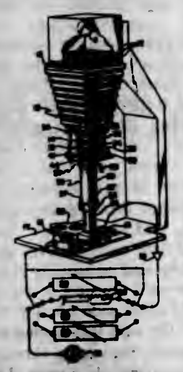
1. Apparatus for reversing a colour image, comprising a light source for illuminating the colour image, an optical system comprising a plurality of light splitters for separately projecting a respective colour separation of the colour image, an electrostatically chargeable photographic semiconductor layer constituting an image plane for each of said colour separations, means for electrostatically charging said layer, means for developing a reversed xerographic partial image on said layer and means for projecting into a second image plane said partial images of the individual colour separations superimposed on one another and in correct register.

3,292,487
MICROFILM CAMERA ARRANGEMENTS
Hans Jakobsen, Quickborn, Holstein, Germany, assignor to Lumoprint Zindler K.G., a corporation of Germany
Filed July 9, 1964, Ser. No. 381,311
Claims priority, application Germany, July 17, 1963, L 46,570
14 Claims. (Cl. 88—24)



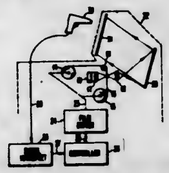
1. An arrangement for a microfilm camera, comprising, in combination, a desk-shaped pattern lay table, a lay plate having a front edge and a rear edge defined on said pattern lay table having an upper surface, an elongated camera column adjacent one edge of the table and extending thereabove, guided means mounted on said camera column above said lay table for longitudinal displacement thereon, camera supporting means mounted on said guided means, a camera mounted on said supporting means, said lay table and plate surface being inclined relative to the horizontal wherein said plate front edge is disposed lower than said rear edge, said camera being supported at the same angle of inclination as said lay plate surface in said supporting means.

3,292,488
PHOTOGRAPHIC PRINTING MEANS AND METHOD
Theodore G. Griffith, Downey, Calif., assignor to North American Aviation, Inc.
Filed May 6, 1964, Ser. No. 365,450
19 Claims. (Cl. 88—24)



1. A photographic accessory comprising:
a first tubular housing;
a shoulder portion at a first end of said first tubular housing including a plurality of undercut grooves on the interior of said housing adjacent one end thereof;
a translucent sheet in each of said undercut grooves extending across said first housing;
means at said first end of said first housing for temporarily attaching said first housing to a photographic enlarger so that said translucent sheets are a fixed distance from the projection lens on the easel side of the projection lens of the enlarger
a second tubular housing telescoping with said first tubular housing; and means for locking said first housing to said second housing to restrict telescoping.

3,292,489
HIERARCHICAL SEARCH SYSTEM
Reynold B. Johnson, Palo Alto, and Robert J. Wohl, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 9, 1964, Ser. No. 381,421
6 Claims. (Cl. 88—24)



1. A system for searching for and displaying selected information, comprising:
a viewing screen,
a plurality of information bearing records,
means for displaying the information content of a selected one of said information bearing records on said viewing screen,
means for scanning a portion of the information displayed on said viewing screen to produce a search control signal, and
means responsive to said search control signal to position another information bearing record in operable association with said displaying means.

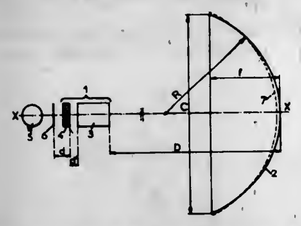
3,292,490
PHOTOGRAPHING EQUIPMENT
Kenneth M. Moore, Granada Hills, Calif., assignor to Gemological Institute of America, Los Angeles, Calif., a corporation of Ohio
Filed Sept. 4, 1964, Ser. No. 394,487
2 Claims. (Cl. 88—24)



1. A device for magnifying and photographing objects comprising a binocular microscope supporting and illuminating the object to be photographed having a pair of eyepieces, an adapter fitting one eyepiece of said microscope, a camera secured to said adapter having a lens

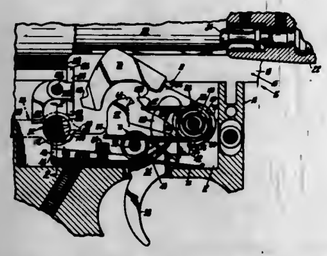
in light-communicating relationship with said adapter, said camera having a shutter and a photoelectric cell automatically operating said shutter, and a light-conducting conduit communicating said cell with the remaining eyepiece of said microscope.

3,292,491
PICTURE PROJECTION SYSTEMS
Jules Houdiaux, 96 Ave. de Versailles, Paris, France
Filed Nov. 27, 1964, Ser. No. 414,211
Claims priority, application France, Dec. 9, 1959, 812,558, Patent 1,252,668
1 Claim. (Cl. 88—24)



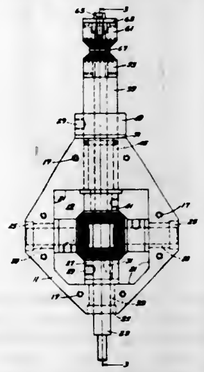
In a picture projection system comprising a light source and a flat picture to be projected, an optical system, plano-concave lens disposed between said flat picture and said optical system for forming a sharp curved image of said flat picture, a projection screen having a substantially cylindrical surface with vertical generatrices, said screen having a ratio of the maximum sagitta of any cross-section of said surface to the length of the chord of said cross-section which is greater than 1/10, said plano-concave lens and optical system being cooperative to provide a curved image which is in approximate concurrence with the curved screen, said projection screen consisting of a multiplicity of juxtaposed rods of quarter round cross-section extending parallel to said generatrices and having one flat face extending perpendicular to said cylindrical surface, said rods being arranged in two groups forming mirror images on said cylindrical surface with respect to the longitudinal plane of symmetry thereof.

3,292,492
TRIGGER MECHANISM
Foster E. Sturtevant, West Hartford, Conn., assignor to Colt's Inc., Hartford, Conn., a corporation of Arizona
Filed Sept. 28, 1964, Ser. No. 399,533
10 Claims. (Cl. 89—128)



1. A trigger mechanism comprising in combination a hammer mounted for movement between cocked and firing positions; a trigger connected with the hammer for retaining the hammer in a cocked position; burst control means including a cam having gullets of differing depth engageable by a pawl, said means selectively connecting said hammer and said trigger to provide a predetermined sequence of operation wherein said hammer repeatedly moves between the cocked position and the firing position a specific plurality of times; and a fire control selector for engaging said trigger and said burst control means to effect the predetermined sequence of operation.

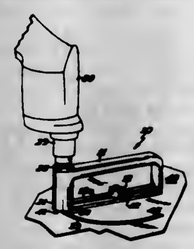
3,292,493
CHAMFERING TOOL
Robert T. Franklin, 1005 N. Market, Wichita, Kans. 67211
Filed July 6, 1965, Ser. No. 469,634
9 Claims. (Cl. 90—11)



1. A chamfering tool comprising, an elongated housing having a width substantially greater than its thickness, having a top cover and a bottom cover rigidly mounted together by screw means, and a hollow portion within said housing having flat vertical surfaces, a power input shaft turnably mounted in said housing and projecting therethrough, a seal mounted in the input end portion of said housing, said input shaft engageably and turnably projecting through said seal, and a bevel gear rigidly mounted by key means and set screw means on said input shaft, a flange bushing turnably mounted on said input shaft and in said input end portion of said housing, the flange portion of said bushing projecting into said hollow portion and engaging the end portion of the said bevel gear and a flat surface of said hollow portion, and the other end portion of said flange bushing engaging the said seal, a transverse shaft turnably mounted in one side portion of said housing, a seal mounted in an end portion of said side portion, an end portion of said transverse shaft engagingly and turnably projecting through said last-named seal, a second bevel gear rigidly mounted by set screw means on the other end portion of said transverse shaft, a like flange bushing turnably mounted on said transverse shaft and in said side portion of said housing, the flange portion of said bushing projecting into said hollow portion and engaging the end portion of said second gear and a side flat surface of said hollow portion of said housing, and the other end portion of said flange bushing engaging the said seal in said side portion, and said second bevel gear operably engaging the said first named bevel gear, another transverse shaft turnably and opposedly mounted in the other side portion of the said housing, a seal mounted in an end portion of the said other side portion of the said housing, an end portion of the said last-named transverse shaft engageably and turnably projecting through said last-named seal, a third bevel gear rigidly mounted by set screw means on the other end portion of said last-named transverse shaft, another like flange bushing turnably mounted on said last-named transverse shaft and in the other side portion of said housing, the flange portion of said bushing projecting into the said hollow portion and engaging the end portion of said third gear and the other side flat surface of the said hollow portion of said housing, and the other

end portion of the said flange bushing engaging the said seal in the other of said side portion, and said third bevel gear operably engaging the first named bevel gear, a hollow outside power shaft turnably mounted in the output end portion of said housing, said input shaft turnably projecting through said outside shaft, a fourth bevel gear rigidly mounted by set screw means on said outside shaft in opposed relation to said first-named bevel gear and operably engaging the said second and third bevel gears, an annular thrust washer mounted on said outside shaft and turnably engaging a flat surface of said hollow portion in the output end portion of said housing, a bushing mounted in said output end portion of said housing, said outside shaft turnably projecting through said bushing, an O-ring mounted inside of and in an end portion of said bushing and engaging the said outside shaft, a thrust collar rigidly mounted by set screw means on the projecting end portion of said outside shaft, an annular thrust bearing turnably and engageably mounted between said collar and the outside portion of the output end portion of said housing, a cutter head removably mounted on the projecting end portion of said input shaft, the projecting end portion of said outside shaft having a transverse feather along a diameter thereof, said feather engageable with a cooperating groove on said cutter head to drive same, a lubricating bushing mounted on the projecting end portion of said input shaft, said lubricating bushing turnably engaging said input shaft and said cutter head, another cutter head removably mounted on the said projecting end portion of the said input shaft in operably opposed relationship with said first-named cutter head, a circular driver having a transverse feather along a diameter thereof engaging a cooperating groove on said last-named cutter head, said driver drivingly engaging said last-named cutter head and rigidly mounted on the projecting end portion of said input shaft by screw means, said chamfering tool constructed and adapted to rotate said adjacent cutter heads in opposite directions by a power means rotating said input shaft, said input shaft rotating the said first-named gear and the last-named cutter head in one direction, the said first-named gear rotating the said second and third gears, said second and third gears rotating the said fourth gear, said fourth gear rotating the said outside shaft, and said outside shaft rotating the said first-named cutter head in a direction opposite from the direction of rotation of the said last-named cutter head.

3,292,494
PORTABLE SHEET METAL HOLE CUTTER
Leroy E. Anderson and Hilaire F. St. Marie, Detroit Lakes, Minn., assignors to Snappy, Inc., Detroit Lakes, Minn., a corporation of Minnesota
Filed May 4, 1965, Ser. No. 453,140
10 Claims. (Cl. 90—12)



1. A portable cutter for cutting out a section of a sheet completely therefrom by relative movement between the cutter and the sheet comprising:

(a) a U-shaped handle member having a pair of vertically spaced leg elements;

(b) a pivot post movably mounted on one of said leg elements and being adapted to be inserted into a hole in a piece of sheet metal to function as a pivot for said handle member about the hole;

(c) a pair of spaced journal members one each of which is mounted upon the outer end portion of each of said leg elements and having a common journal axis;

(d) a rigid sleeve member having a length substantially equal to the spacing between said journal members and extending between said journal members and aligned axially therewith;

(e) a milling cutter extending through said sleeve and said journal members and being slidable axially relative thereto and being rotatably mounted within said journal members for rotation about its longitudinal axis;

(f) said milling cutter having one end portion adapted to be connected in driven relation to a source of rotary power and having helical cutting edges carried by its opposite end portion extending outwardly beyond said journal members;

(g) positive engagement means positively engaging said milling cutter and said sleeve and holding said milling cutter against axial movement relative to said sleeve and said journal members;

(h) said enagement means being adjustable to permit said milling cutter to be shifted axially between fixed axial positions relative to said sleeve and said journal members;

(i) a generally U-shaped bracket carried by the lower of said journal members adjacent the helical cutting edges of said milling cutter intermediate the ends thereof and having a pair of legs extending on oppomainder of that leg and axially of said milling cutter and generally radially thereof;

(j) one of the legs of said bracket member terminating in a stabilizer element extending away from said journal members and generally normal to the resite sides thereof:

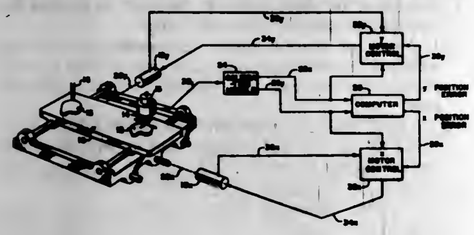
(k) the other leg of said bracket member terminating in a terminal portion offset axially of said milling cutter from the remainder of that leg in a direction away from said journal member and defining therewith a chip discharge area through which the chips will be discharged by the helical cutting edges of said milling cutter when a source of rotary power is applied to the latter and said cutting edges of said milling cutter are applied to such a sheet in cutting relation;

(l) said terminal portion having a cooperative cutting surface cooperating with the cutting edges of said milling cutter and being spaced axially of said milling cutter relative to said journal members and being disposed immediately adjacent to the helical cutting edges of said milling cutter intermediate the ends thereof and effecting therewith a positive cooperative cutting action in a single plane upon a sheet of sheet metal when the rotating cutting edges of said milling cutter are applied to such a sheet.

3,292,495
TRACER SYSTEM FOR MACHINE TOOLS
Roger Gettys Hill and George A. Hoffman, Racine, Wis., assignors to Gettys Manufacturing Company, Incorporated, Racine, Wis., a corporation of Wisconsin
Filed Oct. 14, 1965, Ser. No. 495,890
28 Claims. (Cl. 90—13.5)

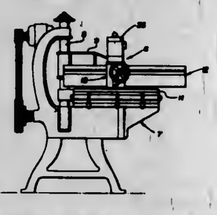
1. A tracing device, comprising a transducer for producing first and second signals representative of respective components of stylus deflection from a template with respect to first and second axes, first means for moving said stylus with respect to said template along said first axis in response to, and at a speed corresponding to, said

second signal, second means for moving said stylus with respect to said template along said second axis in response



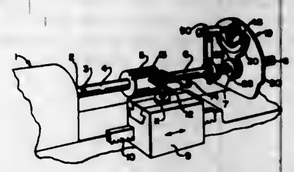
to, and at a speed corresponding to, said first signal, whereby said stylus is moved at a substantially constant velocity with respect to said template.

3,292,496
BLOCK LEVELER APPARATUS
Angelo Markoulis, 179 11th St., San Francisco, Calif. 94118
Filed Aug. 24, 1964, Ser. No. 391,462
3 Claims. (Cl. 90—15)



1. A block leveler apparatus for a machine having an upright, an arm pivotally mounted on said upright and a block positioned below said arm comprising:
- an elongated guide member adapted for connection to and substantially parallel with said machine arm and having vertically spaced longitudinally extending superposed bearing surfaces;
- slide means including a vertical slide member slidably mounted for reciprocating movement on said guide and having vertically spaced superposed bearing surfaces in registration with said guide bearing surfaces and a horizontal member connected to the upper part of said vertical member adapted for receiving a motor means, said horizontal member and said motor means overlapping said arm of said block leveler apparatus;
- motor means mounted on said horizontal member above said bearing surfaces including a substantially vertical rotatable shaft connected to said motor means;
- said slide means being formed with a substantially vertical bore for journaling said shaft contiguous said vertical member and slide bearing surfaces and said bore being substantially at the center of said horizontal member;
- clamping means mounted on said guide member including upper and lower flanges projecting therefrom and adapted for receiving said arm and adjustable means threadably mounted on said flange for adjusting gripping said arm;
- a cutter head mounted on said shaft for rotation therewith; and
- a cutter blade mounted on said cutter head adapted for planing the surface of said block to a smooth even plane;
- said shaft being mounted on said slide member to position said cutter blade so that the entire area of said block can be planed by said cutter blade.

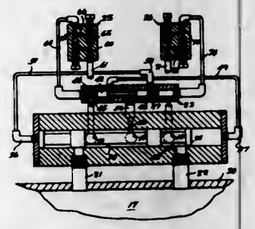
3,292,497
INDEXING FIXTURE
Claude R. Jolly, 948 E. Maple St., Jeffersonville, Ind. 47130
Filed Oct. 13, 1964, Ser. No. 403,619
5 Claims. (Cl. 90—56)



1. For use with a machine tool containing diametrically opposed spindles in which each spindle contains a center, an indexing fixture for making suitable divisions of a work piece rotatably supported by the centers, which comprises
- (1) a holding fixture assembly directly mounted on an extension of said work piece which includes:
  - (a) mounting means containing a keeper member for mounting said assembly,
  - (b) an arm connected to said mounting means, and
  - (c) an indexing finger mounted on said arm so that its axis is perpendicular to that of said arm,
  - (d) said mounting means comprising:
    - (1) a first disc and hub assembly for mounting said assembly to said extension of said work piece in which
      - (a) said disc contains indicia for direct indexing of said work piece,
    - (2) a second disc rotatable independently of said first disc and connected to said arm,
    - (3) locking means for locking said first and second discs into non-rotatable engagement, and
- (2) a plate assembly directly mounted on one of said spindles which includes
  - (a) mounting means containing a keeper member for mounting said plate assembly on said spindle,
  - (b) a surface for engagmeent with the indexing finger of said holding fixture assembly,

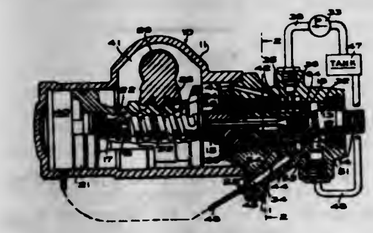
whereby said work piece is locked into position through engagement of the holding fixture assembly with said plate assembly.

3,292,498
FLUID MOTOR INCLUDING RECIPROCATING FLUID RESPONSIVE VALVES
Raymond S. Zimmerman, R.D. 1, Denver, Pa. 17517
Filed Jan. 8, 1965, Ser. No. 424,396
4 Claims. (Cl. 91—368)



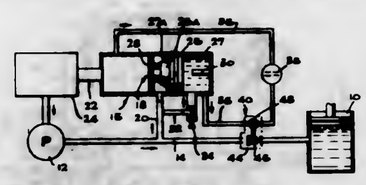
1. In combination, a hydraulic cylinder having a piston rod, a source of hydraulic fluid, a drain means, a main distributing valve having an inlet connected to the source and having a first set of outlets connected respectively to the opposite ends of the cylinder and a second set of outlets connected to said drain means, said main distributing valve having a slidable core movable between two positions, means on the core to simultaneously connect the valve inlet to one of the first set of outlets and to connect the other of said first set of outlets to one of the second set of outlets when the core is in one of said positions, and to simultaneously connect the valve inlet to the other of said first set of outlets and to connect said one of the first set of outlets to the other of the second set of outlets when the core is in its other position, whereby to reciprocate said piston rod, a further two-position distributing valve having a slidable core movable between two positions, respective pressure-responsive impulse valves connected between the first set of outlets and the opposite ends of the second-named distributing valve each including a pressure-responsive movable valve element, respectively, pressure-responsive relief valve means connecting said pressure-responsive valves to said second set of outlets, said relief valve means each including another pressure-responsive movable valve element movable independently of the movable valve element of the associated impulse valve, whereby to reciprocate said last-named core responsive to alternate build up of fluid pressure in said pressure-responsive impulse valves, and means to reciprocate said first-named core responsive to the reciprocation of the last-named core.

3,292,499
POWER STEERING GEAR
James J. Duffy, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,196
11 Claims. (Cl. 91—368)



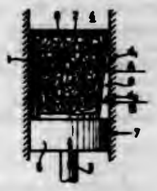
1. In a power steering gear, a cylinder, a power piston mounted in said cylinder, a housing, a valve mounted in said housing including a valve spool, a source of fluid under pressure, said valve interconnecting said source of fluid and said cylinder for selectively directing fluid from said source to opposite ends of said cylinder to actuate said power piston upon axial movement of said valve spool, a manually rotatable input member rotatably mounted in said housing, a rotatable output member rotatably mounted in said housing, means connecting said manually rotatable input member and said rotatable output member for permitting relative rotation of said manually rotatable input member and said rotatable output member upon the application of a predetermined torque to said manually rotatable input member, an axially extending slot positioned in one of said members, a slot skewed with respect to said axially extending slot positioned in the other of said members, a ball positioned in said slots, said valve spool positioned coaxially between said input member and said output member, and having an aperture substantially the same size as said ball for receiving said ball whereby relative rotation of said input member with respect to said output member causes axial movement of said valve spool.

3,292,500
HYDRAULIC ELEVATOR
Daniel W. Risk, Los Angeles, Calif., assignor to Coast Elevator Company, Los Angeles, Calif., a corporation of California
Filed Sept. 17, 1965, Ser. No. 488,064
6 Claims. (Cl. 91—449)



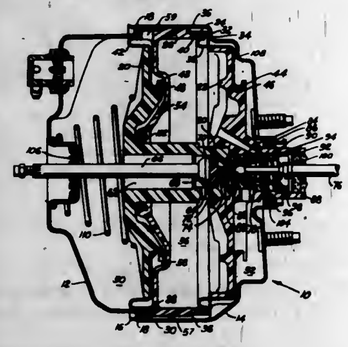
1. In a hydraulic system having supply means for supplying fluid under pressure,
- utilizing means for utilizing said fluid under pressure,
- transport conduit means for transporting said fluid under pressure from said supply means to said utilizing means,
- bypass conduit means for depriving said utilizing means of a variable proportion of said fluid supplied from said supply means,
- bypass valve means in said bypass conduit means for variably controlling the deprivation of said fluid from said utilizing means,
- pressure responsive means for controlling said bypass valve means, and
- pressure supply means for supplying pressure to said pressure responsive means, the combination comprising:
- pressure relief means independent of pressure in said transport conduit means for relieving pressure applied to said pressure responsive means, and
- flow means responsive to flow in said transport conduit means for controlling said pressure relief means, thereby to control said bypass valve means and thus control the amount of fluid bypassed by said bypass conduit means.

3,292,501
DEVICE INCLUDING AT LEAST ONE CYLINDER WITH A PISTON-SHAPED BODY WHICH IS MOVABLE THEREIN
Hendrik Jozef Verbeek, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 4, 1964, Ser. No. 415,980
Claims priority, application Netherlands, Dec. 24, 1963, 302,577
5 Claims. (Cl. 92—144)



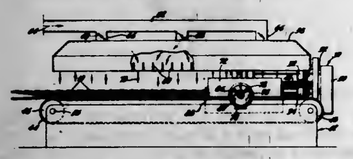
1. A device including a cylinder having a piston reciprocating therein to vary the volume of a medium in the working space in said cylinder comprising a seal between said piston and cylinder, and a gap located between said piston and cylinder which communicates at one side with said working space and is bounded at an opposite side by said seal, said gap being substantially conical in shape with the wider part of said gap being adjacent to said seal.

3,292,502
FLUID PRESSURE SERVOMOTOR
Lawrence Robert Myers and Richard H. Rosback, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,495
8 Claims. (Cl. 92—48)



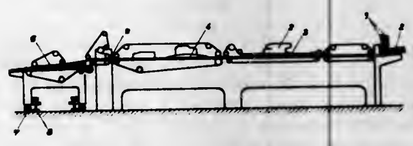
1. A servomotor comprising:
a housing having two portions adapted to be joined together;
a spacer arranged between the two portions of said housing, said spacer having a serrated bearing surface on one edge and a narrow lip projecting from a stepped shoulder on another edge of said spacer;
a first flexible means having a peripheral bead placed between the serrated edge of said spacer and one of said portions of the housing;
a second flexible means having an annular groove in a peripherally thickened portion thereof arranged to receive the lip portion of said spacer, said peripherally thickened portion having a radially projecting bulbous portion at an end thereof which is arranged to abut the stepped shoulder of said spacer;
an annular diaphragm retainer surrounding said peripherally thickened portion of said second flexible means to compress said bulbous portion thereof and hold said second means to said spacer, said diaphragm retainer having an edge abutting said stepped shoulder of said spacer and another edge having angularly disposed spring finger projections affixed thereto with openings therebetween which projections bear on the other portion of said housing opposite that on which the peripheral bead of said first flexible means bears.

3,292,503
GLUED FLAP BOX BLANK AIR HOLD DOWN MECHANISM
William Grobman, Philadelphia, Pa., Albert Buttle, Erindale, Ontario, Canada, and Charles B. Tobias, Cherry Hill, N.J., assignors, by direct and mesne assignments, to Samuel M. Langston Company, Camden, N.J., a corporation of New Jersey
Filed Oct. 14, 1963, Ser. No. 316,494
8 Claims. (Cl. 93—36)



1. In a box blank folder gluer machine having a gluer folder section, a folded blank conveyor positioned at the discharge end of the gluer folder section to receive glued and folded blanks therefrom, and means positioned above said conveyor in the region where blanks are deposited thereon operable to direct a blast of air downwardly onto the upper surfaces of folded and glued blanks thereon as they are positioned on the conveyor to prevent the glued joint from springing open until the glue has been at least partially set.

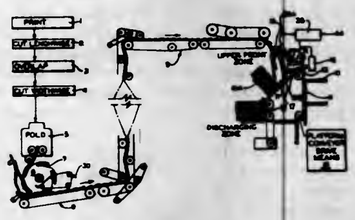
3,292,504
APPARATUS FOR PRODUCING FOLDED BOXES OR CONTAINERS HAVING ADHERED SEAMS
Willi Hans Gres, Strump Post Osterath, Germany, assignor to Jagenberg Werke Akt.-Ges., Duesseldorf, Germany
Filed Feb. 24, 1964, Ser. No. 346,701
Claims priority, application Germany, Mar. 6, 1963, J 23,295
8 Claims. (Cl. 93—49)



1. The combination with a machine for producing boxes from substantially flat lying blanks including means for conveying such blanks sequentially past folding, seam adhering and discharge mechanisms, and drive means for said machine, of a collecting and pressing means for the tubular folded and adhered blank leaving said discharge mechanism located behind said discharge mechanism, said collecting and pressing means being movable relative to the discharge mechanism to extend the path of movement of said blanks in any desired direction, and drive means for the collecting and pressing means operably synchronized with the drive means for said machine.

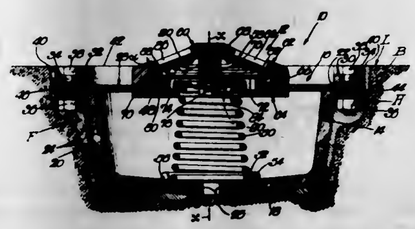
ERRATUM
For Class 93—58 see:
Patent No. 3,292,513

3,292,505
ART OF INTERCEPTING SPACED GROUPS OF FLAT OVERLAPPING BOOKS
Raymond L. Wiseman, 724 Waterford Road, Louisville, Ky. 40207
Filed Feb. 21, 1964, Ser. No. 346,493
5 Claims. (Cl. 93—93)



1. A method for controlling the actuation of a device for intercepting and separating one group of relatively-flat, rectangular paper products (of uniform length, width and thickness, such as newspapers, magazines and cardboard blanks), from a succeeding group in a traveling stream of said products in spaced overlapping relationship wherein the "between-group" spacing of their advancing edges is substantially greater than the "in-group" spacing of their advancing edges, comprising:
(A) operating a counting device of the reset type to count at a controlled rate;
(B) resetting that counter in accordance with the size of successive advancing edge spacings so as to restrict said count to small values for said small in-group edge spacings, and to large values for said large between-group edge spacings; and
(C) intercepting the first paper of each group in response to counts of a value between said large and small values.

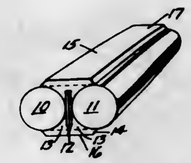
3,292,506
ROAD MARKER
Elliott H. Kone, New Haven, Conn., assignor to Traffic Standard Incorporated, New Haven, Conn., a corporation of Connecticut
Filed Jan. 27, 1964, Ser. No. 340,430
3 Claims. (Cl. 94—1.5)



1. A light-reflective road marker, comprising a light-reflecting lens; a protective shield enclosing said lens and having a body with a flared top end provided with angularly spaced windows through which to pass light to and from said lens; a cup-shaped mounting base having a center axis, a closed bottom, an open top and a peripheral rim about said axis of an inner diameter comparable to the average width of passenger automobile tires; a resiliently stretchable diaphragm having mounted thereon said shield body; a ring clamping an outer peripheral margin of said diaphragm to said base top so that said shield is centered on said axis and said shield top end faces away from said base, with said diaphragm being of a thickness to be normally self-deformable but being sufficiently taut to be normally substantially planar and the mean cross-sectional dimension of said shield body being only several times larger than the exposed width of said diaphragm between said base top end and shield body, said ring being of a thickness to receive therein an axial part of said shield top end nearest said shield body, so that the remaining part of said shield top end normally projects outwardly beyond said ring, said cup-shaped base being of greater depth than the dimension of said shield in the direction of said axis, and said diaphragm being free to be flexed and stretched in any direction to an extent limited only by engagement of said shield with said base; and a normally substantially non-loaded compression spring in said base on which said shield is seated.

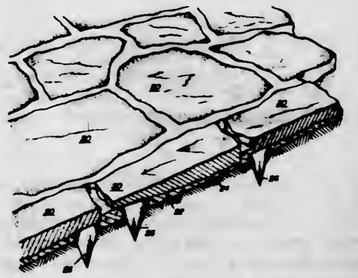
3,292,507
MARKERS
Robert C. Vanstrum, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 444,934
12 Claims. (Cl. 94—1.5)

1. Small discrete horizontally-reflex-reflecting markers having an essentially flat base surface and being no greater in height than approximately one inch above said base surface, with area dimensions perpendicular to said height dimension all being at least 1.2 times greater than said height dimension and no greater than 80 times said height dimension, each of said markers comprising at least one layer of reflex-reflecting material oriented essentially perpendicular to the flat base surface thereof, said reflex-reflecting material consisting essentially of a monolayer of glass spheroids having a refractive index of at least 1.7 and underlying specular-reflecting means, and at least one solid transparent mass of scratch-resistant lens material firmly fixed by transparent cured resinous bonding material in front of said layer of reflex-reflecting material within the dimensional limits aforedefined, said solid mass of lens material having an exposed convex curved surface



opposite the side thereof fixed in front of said reflex-reflecting material, the average radius of curvature of said lens material being at least 10 times greater than the average radius of the glass spheroids in said markers, said markers being such that, when subjected to wear as by vehicular tires passing thereover in use, the solid mass of lens material serves as an obstruction to wear damage of the reflex-reflecting material firmly fixed thereto.

3,292,508
WEDGE DEVICE
Henry R. Anderson, 2023 Old Frederick Road, Baltimore, Md. 21228
Filed Oct. 17, 1963, Ser. No. 316,903
4 Claims. (Cl. 94—6)



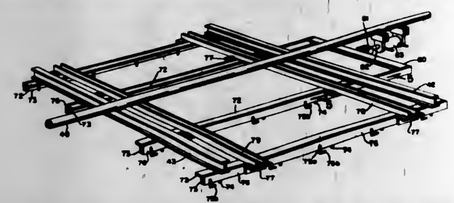
1. In combination, a bed of hardenable plastic type cement positioned along the ground, a plurality of flagstones, patio blocks, or the like positioned along the surface of said cement to form a walking surface, and wedge-shaped planar thin sheets extending through said cement and into said ground, with each said thin wedge-shaped sheet having an upper edge surface providing line-of-contact with flagstones, patio blocks, or the like, with said wedge-shaped sheets supporting said flagstones, patio blocks, or the like, in a predetermined level position until said plastic cement sets.

3,292,509
PICKING DEVICE FOR MESH PLACING MACHINE
Carl J. Holtzel, 523 Country Club Drive, Warren, Ohio 44484
Filed Mar. 27, 1964, Ser. No. 355,195
7 Claims. (Cl. 94—39)

1. For use with a mesh placing machine a pick-up device comprising
(a) relatively substantially horizontally movable frames,
(b) means adapted to support said frames from the machine,

(c) means operatively connected to at least one of said frames for effecting relatively substantially horizontal movement of the frames,

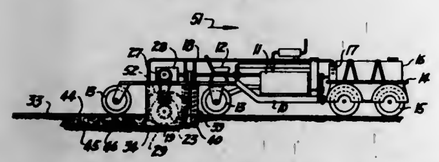
(d) cooperating pairs of stop and pusher members on said frames and projecting down from the frames for entry into the interstices of a top mesh sheet for subsequent relative horizontal movement when a frame



is horizontally shifted to cause closing of the pairs of members against opposite sides of an included bar of the mesh sheet to ensure orientation of the sheet, and

(e) one member of each pair having horizontally a projecting part for underlying the bars to support the bars and the mesh when the frames are subsequently lifted by machine action.

3,292,510
ROAD SURFACE STABILIZING DEVICE
Donald A. Chennells, 13 Iroquois Bay, Winnipeg, Manitoba, Canada
Filed Nov. 9, 1964, Ser. No. 410,023
2 Claims. (Cl. 94—40)



1. In a road surface stabilizing machine, the combination of a wheeled frame adapted to travel over a road surface to be stabilized, a plurality of transversely spaced ground penetrating plate-like shoes secured to and depending from said frame, a driven shaft extending transversely through said shoes, a plurality of reels fixed to said shaft between adjacent pairs of shoes, said reels having transverse mixing blades, a conduit extending downwardly through each of said shoes from a source of stabilizer supply, the conduit in each shoe being disposed rearwardly of said reels and terminating at its lower end in a discharge nozzle directed forwardly toward the lower portion of the reels, a set of seconday ground penetrating shoes secured to and depending from said frame forwardly of and between the first mentioned shoes and in advance of said reels, a conduit extending downwardly through each of said secondary shoes from a source of stabilizer supply and terminating in a discharge nozzle directed rearwardly toward said reels, and means for rotating said shaft and reels.

3,292,511
VEHICLE SUPPORTED CONCRETE MOULDING MACHINE
Alwyn H. Cheney, 23 Vancouver Ave., Springbank, South Australia, Australia
Filed Nov. 13, 1963, Ser. No. 323,339
13 Claims. (Cl. 94—46)

1. A vehicle supported concrete moulding machine comprising:

a land vehicle supported on two front wheels and two rear wheels,

a frame arranged to be carried by the land vehicle,

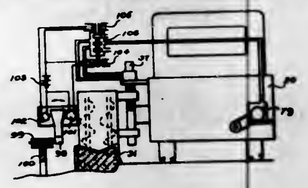
a travelling concrete mould supported by the frame,

guide means on the mould guiding the mould for movement relative to the frame,

height correction means operatively coupling the concrete mould and the frame to vary the height of the mould relative to the frame,

a datum line member, height responsive sensing means fixed relative to but overhanging the concrete mould and enagageable against the upper surface of the datum line member when the datum line member is positioned alongside the path of travel of the vehicle,

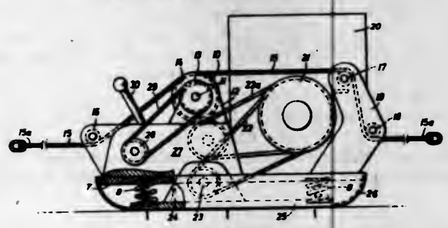
power steering means on the vehicle operable between the chassis of the vehicle and its front wheels,



steering sensing means on the concrete mould engageable against the side surfaces of the datum line member, and

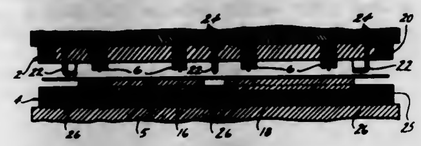
power means on the vehicle connected to the height correction means and power steering means and coupling means between the height correction means and the height responsive sensing means, and between the power steering means and the steering sensing means, the height correction means and power steering means thereby being controlled by the height responsive sensing means and steering sensing means respectively to limit height and direction variation respectively between the mould and the datum line member.

3,292,512
VIBRATING EARTH DENSIFYING MACHINE
Hans Gert Schüpercleus, Leverkusen-Schlebusch, Hans Freudenthal, Germany
Filed Oct. 15, 1963, Ser. No. 316,416
6 Claims. (Cl. 94—48)



1. An earth-compacting machine comprising: a base plate, rotary out-of-balance vibrator means mounted on said base plate, a frame resiliently supported on said base plate, reversible motive means mounted on said frame, rotary engaging means carried by said frame and driven through said motive means for driving engagement with an elongate flexible haulage element having its opposite ends adapted to be anchored at spaced locations forwardly and rearwardly of said compacter, so that operation of said rotary engaging means in opposite directions effects movement of the compacter in opposite directions along the haulage element, guide members at opposite ends of said frame for guiding said haulage element and located at substantially the same level on said frame, and operating means for reversing said motive means to reverse said rotary engaging means, and, flexible drive means between said motive means and said vibrator means to rotate said vibrator means.

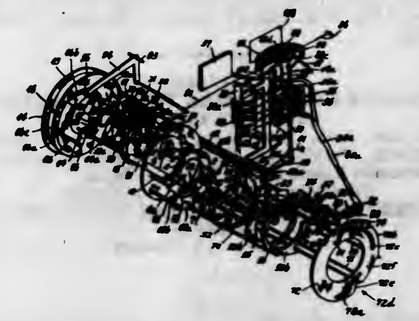
3,292,513
APPARATUS AND METHOD FOR SCORING SYNTHETIC PLASTIC SHEET MATERIAL
Charles E. Palmer, Somers, Conn., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,564
50 Claims. (Cl. 93—58)



1. In apparatus for scoring synthetic plastic sheet material, the combination comprising a die assembly having a scoring blade portion and a shoulder portion laterally of said scoring blade portion; a platen assembly spaced from said die assembly and having a scoring platen member of rigid material opposing said die assembly, said scoring platen member having a substantially unbroken scoring surface aligned with said scoring blade portion and a depth control surface aligned with said shoulder portion, the spacing between said scoring blade portion and said unbroken surface of said platen member being less than the spacing between said shoulder portion and said depth control surface by an amount substantially equal to the desired depth of score, said platen assembly including means resiliently supporting said scoring platen member for limited movement generally perpendicular to the opposing surface of said die assembly; and means for pressing one of said assemblies towards the other of said assemblies, said resiliently supported scoring platen member biasing said platen member toward said die assembly and an associated workpiece of synthetic plastic sheet material received therebetween during operation of the apparatus against said scoring blade portion during said pressing of said one assembly with sufficient pressure to cause said scoring blade portion to penetrate the adjacent surface of the associated workpiece and form a score line therein, said shoulder portion bearing upon said depth control surface through the thickness of the workpiece and said resilient supporting means yielding under said bearing pressure to permit perpendicular deflection of said platen member to limit the depth of score made in the associated workpiece of plastic sheet material.

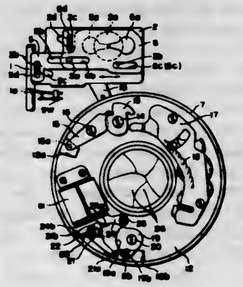
3,292,514
PHOTOGRAPHIC CAMERA
Franz W. R. Stary, Calmbach (Enz), Germany, assignor to Alfred Gauthier G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Jan. 9, 1964, Ser. No. 336,726
Claims priority, application Germany, Jan. 12, 1963, G 36,822
11 Claims. (Cl. 95—10)

1. A photographic camera comprising an exposure meter; a shutter; a first setting device to set the operating speed of said shutter in accordance with one exposure factor; a diaphragm having an aperture; a second setting device to set the aperture in accordance with a second exposure factor; a setting member connected to one of said devices to pre-select one of said exposure factors; first means connected to and controlled by said meter and connected to the other of said devices to set said other of said devices in accordance with the other of said exposure factors; second means connected to said first means and to said one of said devices to be controlled by said first means and said one of said devices to correct the preselection of said one of said exposure factors automatically in accordance with the operation of said exposure meter; and an indicating device connected to said meter



to be partially controlled thereby and connected to said setting member to be partially controlled thereby, whereby said indicating device gives information as to the exposure time and diaphragm values actually set in making an exposure.

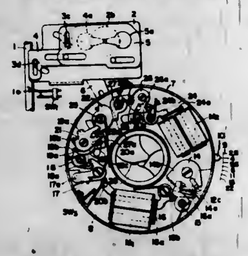
3,292,515
PHOTOGRAPHIC CAMERA WITH AUTOMATIC DIAPHRAGM DEVICE
Takayoshi Sato, Itabashi-ku, Tokyo-to, and Tomio Kikuchi, Toshima-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Copal, Tokyo-to, Japan, a joint-stock company of Japan
Filed May 12, 1964, Ser. No. 366,806
Claims priority, application Japan, May 13, 1963, 38/25,044
4 Claims. (Cl. 95—10)



1. A photographic camera apparatus having an automatic diaphragm device which comprises in combination: a mechanical delaying means which can be adjusted manually by means of an exposure time setting member so as to obtain a desired exposure time beforehand; a means for controlling the amount of light to be received by a photoconductive element with release of a camera release control; a diaphragm means which adjusts the diaphragm aperture of a photographic lens being coupled with controlling motion of said last mentioned means for controlling the amount of light to be received; a locking means which locks the adjusting motion of said diaphragm means, when the optimum diaphragm aperture is obtained with respect to the preset exposure time in the course of the adjusting motion of the said lens diaphragm; an electromagnet for operating said locking means; an electronic means containing therein variable resistors which vary the resistance values in accordance with adjustment of the said exposure time setting member, and a plurality of transistors means which performs conduction, shutoff

and change of polarity of said transistors based on relations between the resistance values of said variable resistors and those of said photoconductive element, and thereby operate said electromagnet; and a means for opening and shutting the shutter blades which is motivated at the final stage of releasing the camera release control.

3,292,516
PHOTOGRAPHIC CAMERA WITH AUTOMATIC EXPOSURE CONTROL
Takayoshi Sato, Itabashi-ku, Tokyo-to, and Tomio Kikuchi, Toshima-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Copal, Tokyo-to, Japan
Filed May 12, 1964, Ser. No. 366,807
Claims priority, application Japan, May 17, 1963, 38/25,945
3 Claims. (Cl. 95—10)

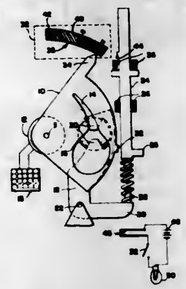


1. In a photographic automatic camera of the type capable of automatically controlling the exposure time by the presetting of the diaphragm, an improved combination including: a control device for controlling incident light quantity radiated into a photo-conductor in response to camera release; a diaphragm adjusting mechanism for controlling the diaphragm aperture of the photographing lens from its minimum value to its maximum value in relation to the operation of said control device; a diaphragm presetting member capable of being manually operated to set the diaphragm aperture to a desired value prior to camera release and stopping movement of said diaphragm adjusting mechanism at the set position; an exposure time delaying circuit consisting of electronic device comprising a photo-conductor and a capacitor adapted to obtain an exposure time corresponding to delay time determined by the capacitance value of said capacitor and the resistance value of said photo-conductor, the resistance value corresponding to the brightness of the object to be photographed; an exposure time controlling electromagnet operated by said electronic device in response to the incident light quantity of the photo-conductor to release the shutter for its closing movement; a diaphragm controlling electromagnet operable, when exposure becomes excessive in spite of photographing with the exposure time of maximum speed, by said electronic device at the time when the diaphragm adjusting mechanism is brought, during its movement, to an appropriate diaphragm aperture adjusting position corresponding to the exposure time of maximum speed; and a lock device for locking the movement of the diaphragm adjusting mechanism through the operation of said diaphragm control electromagnet.

3,292,517
EXPOSURE CONTROL SYSTEMS FOR CAMERAS
John H. Eagle and Donald M. Harvey, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 13, 1966, Ser. No. 542,373
10 Claims. (Cl. 95—64)

1. In a camera having a manually operable shutter actuating member, a taking lens, and a photoelectric exposure control system including a photocell illuminatable by scene light, an electric measuring instrument energizable as a function of illumination of said photocell, a diaphragm vane with an elongated, tapered aperture, said vane being movable by said instrument in accordance with energization of the latter to variably position said vane aperture relative to and in alignment with said lens, and a mask having a normal position in alignment with said taking lens and cooperating with said vane aperture to form an exposure aperture, the improvement comprising:

a movable support member carrying said mask and having a first position wherein said mask is maintained in its normal position in alignment with said

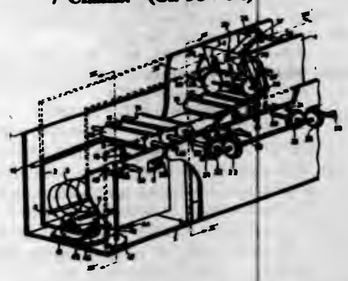


lens, said suport member also having a second position wherein said mask is out of alignment with said lens;

yieldable means interrelating said actuating member and said support member and yieldably urging the latter toward its second position in response to operation of said actuating member; and

means coupled to said vane for maintaining said support member in its first position when said vane occupies a position corresponding to a scene brightness of more than a predetermined value and permitting said support member to be moved to its second position, upon operation of said actuating member, when said vane occupies a position corresponding to scene brightness of less than said predetermined value.

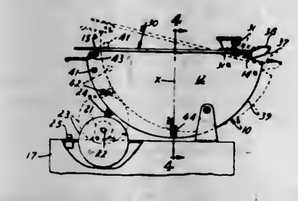
3,292,518
DEVICE FOR PROCESSING PHOTOGRAPHIC SHEET MATERIAL
Rudolf Zoglmann, Delft, and Cornelis Van Egmond, Leiderdorp, Netherlands, assignors to N.V. Optische Industrie "De Oude Delft," Delft, Netherlands
Filed Jan. 7, 1964, Ser. No. 336,252
Claims priority, application Netherlands, Jan. 10, 1963, 287,657/63
7 Claims. (Cl. 95—94)



1. A device for processing of photographic sheet material comprising a tank, means for automatically conveying the photographic sheets in horizontal direction

through said tank, said means comprising a helical conveyor wound of a thin strand and adapted to receive photographic sheets between its turns, means rotatably supporting said helical conveyor at at least one of its ends, guiding means near the lower side of the conveyor on which the photographic sheet will slide during conveying, further guiding means substantially parallel to the conveyor axis, positioned on either lateral side of the conveyor separated by a distance slightly longer than the width of the photographic sheets and effective to guide the photographic sheets laterally during conveying, and means to provide a liquid flow in said tank in the direction of advance of the conveyer and the photographic sheet carried thereby to cause said sheets to lean against the turn of the helical conveyer that is behind the sheet when viewed in the direction of flow whereby one surface of the sheet will be engaged by the helical turn.

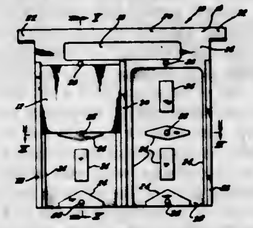
3,292,519
PHOTOGRAPHIC PRINT PROCESSOR
Cletus J. Hallquist, R.R. 3, Red Wing, Minn. 55066
Filed July 20, 1964, Ser. No. 383,855
8 Claims. (Cl. 95—99)



1. A photographic film-developing device comprising:
(a) an open-top chamber for reception of a predetermined amount of developing fluid,
(b) said chamber having generally upright end walls, a bottom wall, and opposed side walls,
(c) means mounting said housing for pivotal rocking movements about a horizontal axis offset in the direction of one of said side walls from a vertical line bisecting said end walls,
(d) power-operated means engageable with said housing in offset relation toward the other of said side walls from said vertical line, whereby to impart an oscillatory flow to the fluid within said chamber,
(e) cover means for said open-top chamber and positively excluding light therefrom,
(f) means within said chamber and associated with said end walls defining a plurality of opposed concentrically arranged arcuate film-receiving grooves, the axes of which are intermediate said pivot axis and the point of engagement of said power means with said housing and parallel to the former.

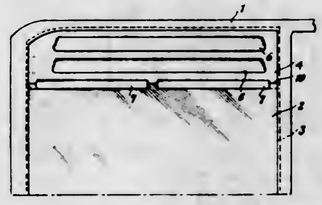
3,292,520
PHOTOGRAPHIC FILM HANGER
William C. Tucker, Sr., Lathrup Village, Mich., assignor to Photo Plastics Inc., Detroit, Mich., a corporation of Michigan
Filed June 10, 1964, Ser. No. 374,095
6 Claims. (Cl. 95—100)

1. A film hanger for holding film during processing operations comprising a translucent panel having a lower unapertured portion on which film is adapted to be supported and an upper portion having a transverse slot providing a handle thereabove and arms extending outwardly beyond the lateral edges of the lower portion for supporting the hanger in a rack, said lower portion having one surface recessed so as to define a plurality of lands thereon, film supporting pins projecting outwardly from certain of said lands, and vertically extending channel



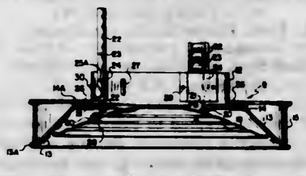
members open at their ends mounted on opposite edges of said one surface for receiving lateral edges of film supported on said pins.

3,292,521
VENTILATORS FOR AUTOMOBILE WINDOWS
Reginald C. Roque, 700 N. Riverside Drive, Pompano Beach, Fla.
Filed Dec. 30, 1964, Ser. No. 422,269
1 Claim. (Cl. 98—2)



A ventilating device for an automobile window frame comprising, a panel composed of a transparent plastic material and shaped to fit in the groove of the window frame of a car and close any space between the top of a partially raised window pane in the frame and the top of the frame, the panel being composed of a material which permits its slight flexure if necessary to fit the curvature of the frame, the panel being of single piece construction and being unreinforced at its edges, the panel being provided with a plurality of longitudinally-extending louvered slots extending for the length of the panel, vertical partitions located within the louvers for stiffening the same, the panel being bifurcated at its lower end to provide two flanges between which the upper edge of the window pane fits, one of the flanges being in the plane of the body of the panel and the other flange being off-set therefrom.

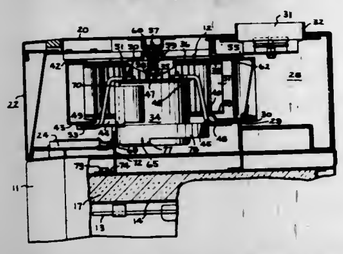
3,292,522
DIFFUSER
Sol Shur, 18404 Van Aken Blvd., Shaker Heights, Ohio 44120
Filed Jan. 25, 1965, Ser. No. 427,823
10 Claims. (Cl. 98—40)



8. An adjustable air diffusing device for an outlet member communicating with an air duct, said outlet member having outwardly and forwardly sloping walls between which the air from the air duct forwardly flows, comprising the combination of, a plate disposed between said

sloping walls to baffle the air flow and cause the air to flow between the peripheral edges of the plate and said sloping walls, first means for supporting said plate between said sloping walls, second means for adjustably varying the position of the plate carried by the support means along the axis of the outlet member for changing the spacing of the plate from said sloping walls in accordance with the position of the plate along said axis, third means for adjustably varying the angle of the plate relative to said axis for varying the relative spacing of the peripheral edges of the plate on opposite sides of said axis from said sloping walls in accordance with said angle, and fourth means for resiliently locking the plate in adjusted position along said axis and at an adjusted angle to said axis, said fourth means resiliently yielding to manual force moving the plate along said axis and simultaneously to manual force moving the plate to varying angles to said axis.

3,292,523
COOLING MEANS FOR BLOWER MOTOR
Donald L. Cole, Finchville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 13, 1965, Ser. No. 486,928
3 Claims. (Cl. 98—115)



3. A kitchen ventilating hood comprising a hood shell with a front-mounted shutter that is movable between an open and a closed position, a blower unit mounted within the hood shell and comprising a vertically arranged motor and blower wheel assembly as well as a scroll-shaped housing surrounding the blower wheel, the bottom wall of the housing having a large air inlet opening, the motor being positioned within the air inlet opening and partially within the blower wheel, a metal shield positioned closely adjacent the front side of the motor for substantially the height thereof so as to deflect hot air away from the motor as the air is drawn into the blower wheel, a narrow cooling ring supported from the metal shield and encircling the lower portion of the three remaining sides of the motor in the area just outside of the air inlet opening, the hood shell including a source of relatively cool air adjacent the sides and rear of the shell, said cool air being adapted to pass both under and around the cooling ring for dissipating some of the heat created by the operation of the motor.

3,292,524
EXHAUST DUCT CONNECTION FOR VENTILATING HOOD
Donald L. Cole, Finchville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 13, 1965, Ser. No. 486,929
6 Claims. (Cl. 98—115)

3. A kitchen ventilating hood comprising walls forming a hood shell that is adapted to exhaust either through the top wall or through a rear wall, the top wall of the shell having a first rectangular opening, and a rear wall of the shell having a second rectangular opening, said first and second openings communicating with each other to form a single notched aperture in the top rear edge of the shell, an angular cover plate for closing the notched aperture, one face of the cover plate having an air exhaust opening, and a duct-connecting collar loosely positioned within the said air exhaust opening, and a snap-acting fastening means for supporting the collar from the cover plate, one portion of the said fastening means being of elongated shape in a direction perpendicular to the longitudinal axis of the cover plate so that the position of the collar may be adjusted with respect to the cover plate, fixed walls within the hood shell forming an angular base plate arranged in opposition to the angular cover plate, one wall of the base

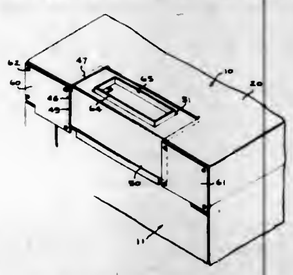
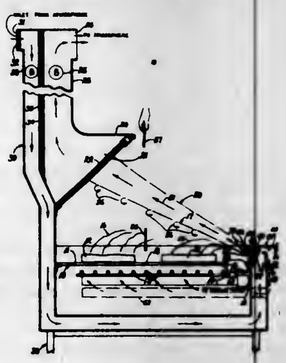


plate being a vertical wall having an air inlet opening formed therein, and a pair of spaced end caps formed on the inner side of the cover plate, one cap being at each side of the said air exhaust opening to close the space between the cover plate and base plate and form a box-like plenum chamber, and a motor driven air handling device supported within the hood shell for collecting and discharging air through the said air inlet opening of the plenum chamber.

3,292,525
PROTECTIVE AIR CURTAIN FOR COOKING AREA
Donald D. Jensen, 3604 E. Butler, Fresno, Calif. 93702
Filed Sept. 13, 1965, Ser. No. 489,800
7 Claims. (Cl. 98—115)



1. A system for removing air-borne contaminants including the products of combustion and volatilization incident to cooking from a cooking area located in an air-conditioned room with a minimum of disturbance or displacement of the conditioned air by such removal comprising

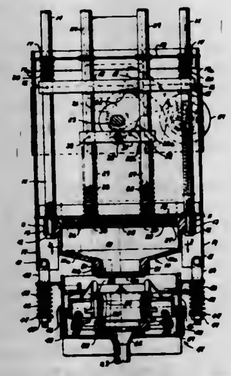
(a) air supply means including a first blower means having an intake externally of said room for directing a confined air stream to the cooking area,

(b) an air discharge connected to the supply means at the cooking area for discharging the air stream into the room adjacent to the cooking area in a curtain projected over the cooking area to pick up said contaminants and to shield the conditioned air of the room therefrom, and

(c) air exhaust means, separate from said supply means and including a second blower means having an air receiving inlet disposed adjacent to the cooking area in alignment with the discharge to receive the curtain of air and contaminants picked up thereby and an exhaust outlet externally of the room and separate from said intake for release of the air stream and said contaminants,

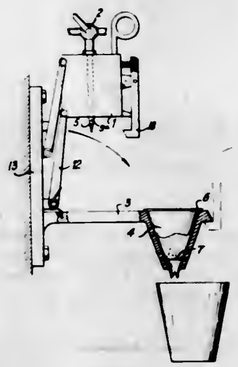
(1) the air supply means and the air exhaust means being substantially volumetrically balanced so that the volume of air supplied in said air stream to the room substantially equals the volume of air and contaminants removed in said air stream from the room.

3,292,526
BREWING APPARATUS
William Holer, Warminster, Pa., assignor to Rudd-Melikian, Inc., Warminster, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1965, Ser. No. 496,545
7 Claims. (Cl. 99—289)



1. A brewer for sequentially brewing beverage portions by passing a brewing liquid through a series of charges of particulate beverage material, comprising a beverage material holder having a beverage material cavity, a brewing liquid cylinder moveably mounted above said holder for motion toward and away from said beverage material holder, said cylinder having an opening in the end wall thereof which is adjacent said cavity, said holder and cylinder having opposed annular surfaces for forming a seal around the periphery of said cavity and said opening respectively, which annular surfaces are brought into liquid sealing interengagement when said cylinder is moved toward the holder, a piston fitting within said cylinder and mounted for reciprocation from a retracted position to a position adjacent said end wall opening, means for moving said cylinder toward the holder to bring said annular surfaces into interengagement, and means for thereafter driving said piston within the cylinder and toward said opening to progressively force said brewing liquid under pressure through the beverage material in said cavity, said piston having a pressure area appreciably greater than the cross sectional area of the space lying within the seal, the differences in said areas being sufficiently great so that the force applied by said piston to the seal provides that said seal is a liquid-tight seal around said cavity and maintains said seal throughout the movement of said piston within the cylinder and toward said opening.

3,292,527
APPARATUS FOR PREPARING AND DISPENSING BEVERAGES FROM PREFABRICATED CARTRIDGES AND A LIQUID
Roland Stasse, 23 Ter Av. du Chateau, Bourg-la-Reine (Seine), France
Filed Mar. 2, 1964, Ser. No. 348,706
Claims priority, application France, Mar. 4, 1963, 926,660
5 Claims. (Cl. 99—295)



1. A beverage-producing and dispensing apparatus, comprising:

a pair of relatively movable bodies having respective faces juxtaposable in a closed position of said bodies, one of said bodies being formed with a cartridge holder for a beverage cartridge having a closed wide end and a closed narrow end axially spaced from said wide end and containing a beverage substance to be treated with a liquid, said cartridge holder being provided with a relatively wide orifice open in the direction of the other of said bodies at the respective face, with a relatively narrow orifice axially spaced from said wide orifice and axially aligned therewith for receiving said narrow end of said cartridge with a portion thereof protruding through said narrow orifice, and with an annular support wall between said orifices and peripherally hugging said cartridge between said ends for limiting outward expansion thereof upon injection of liquid into said cartridge; and

piercing means on the other of said bodies engageable with said closed wide end of said cartridge for penetrating same and admitting said liquid into said cartridge and into contact with said substance therein, said faces being in sealed relationship around said piercing means in said closed position of said bodies whereby the opening of said protruding portion of said closed narrow end of said cartridge permits discharge of the beverage prepared therein.

3,292,528
BROILER GRID AND PAN
George W. Myler, Emmaus, Pa., assignor to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Jan. 13, 1965, Ser. No. 425,235
2 Claims. (Cl. 99—446)

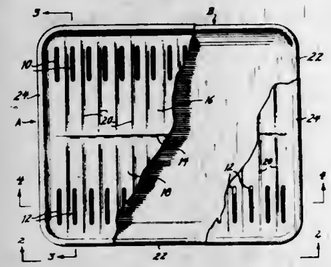
1. In combination:

a pan having a bottom and side walls,

a grid coextensive with and adapted to overlie said pan, said grid having two groups of transversely extending slots, one group near each of two opposite edges thereof,

said slots being disposed with their longitudinal axes substantially normal to said edges,

the remaining surface of said grid being imperforate and being dihedral in a cross section taken on a plane parallel to said longitudinal axes whereby the body of said grid comprises two, oppositely sloping, portions, one portion sloping toward one group of



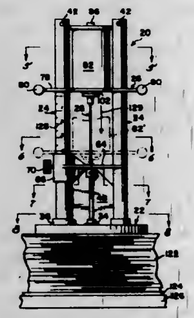
slots and the other portion sloping toward the other group of slots, and raised ridges between and parallel to each pair of adjacent slots, and providing oppositely sloping surfaces leading to the slot therebetween.

3,292,529

DEVICE FOR MARKING A PLURALITY OF PLIES OF MATERIAL

Solomon Musican, Philadelphia, Pa., assignor to Hol-Mark Machine Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 20, 1965, Ser. No. 498,605
10 Claims. (Cl. 101—26)



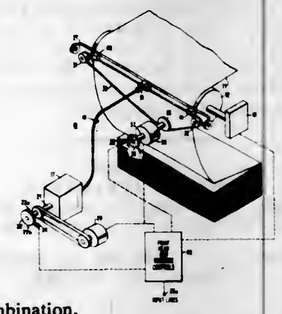
1. A device for marking a plurality of plies of material comprising a support, means releasably securing and supporting an aerosol can containing marking material associated with said support, said aerosol can being supported in a vertical inverted position and having a discharge valve therein which is lowermost when said can is in said vertical position, said aerosol can supporting means and said aerosol can associated therewith being vertically movable with respect to said support, a needle associated with the discharge valve of said aerosol can and positioned vertically below said valve, said needle having a central bore and an elongated slot extending along a substantial length of its outer surface, said slot being in communication with said bore, and means for automatically opening said discharge valve when said aerosol can is moved vertically downward, said means for opening said discharge valve comprising a plate, whereby pressure of said valve against said plate opens said valve.

3,292,530

PRINT HEAD CONTROLS CAUSING OVER-TRAVEL OF HEAD AT LEFT END

Van C. Martin, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 5, 1964, Ser. No. 409,884
7 Claims. (Cl. 101—93)



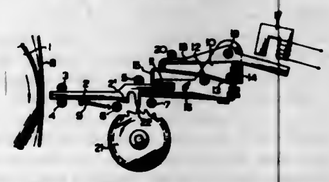
1. In combination,
a character register,
a print head having drive means including a motor reversibly operable to move the head forward toward the right margin or in reverse toward the left margin of a record form and having a plurality of print wires arranged in a matrix,
cyclic drive means for the print wires including control means individual to each of the print wires selectively operable to effect movement of its wire to print on the form,
means selecting predetermined ones of the control means in accordance with a character in the register,
means operated by the cyclic drive means to produce timed signals to effect operation of the selected control means and an incremental forward operation of the print head drive means to advance the print head in a plurality of steps to a selected print position,
means responsive to incremental advance of the print head to the right margin to effect continuous reverse operation of the print head motor to return the head to the left margin,
and means responsive to return of print head to a position beyond the left margin to effect incremental forward operation of the print head motor to return the print head to the left margin in a plurality in incremental steps.

3,292,531

PRINTING HAMMER ARRANGEMENT

Gerhard Mutz, Villingen, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany

Filed Nov. 29, 1965, Ser. No. 510,409
Claims priority, application Germany, Nov. 28, 1964, K 54,658
8 Claims. (Cl. 101—93)



1. Printing hammer arrangement for a line printer comprising, in combination, type carrier means movable for placing types successively in a printing area; a printing hammer cooperating with said type carrier means; supporting means including a pair of guide members located on opposite sides of said printing hammer for

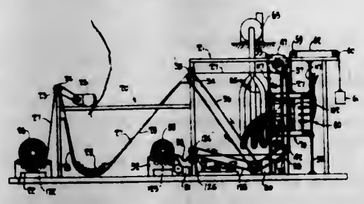
supporting the same for forward movement between an inoperative position and a printing position in which a part thereof is located in said printing area, and also for turning movement in said inoperative position between a position of rest and an actuated position; first and second stop means for stopping said turning movement of said printing hammer in said position of rest and said actuated position, respectively; actuating means for turning said printing hammer from said position of rest to said actuated position; drive means engaging said printing hammer in said actuated position for moving the same forward to said printing position; and restoring means for returning said printing hammer from said printing position to said position of rest.

3,292,532

APPARATUS AND METHOD FOR PRINTING DESIGNS ON WEB MATERIALS

Irving Berk, University Heights, Ohio, and Charles M. Bearden, Dalton, Ga., assignors, by mesne assignments, to J & C Carpet Company, Inc., Ellijay, Ga., a corporation of Georgia

Filed May 1, 1964, Ser. No. 364,336
9 Claims. (Cl. 101—115)



1. In a web printing machine,
a dye-guide having a plurality of design openings cut therethrough,
means for continuously moving the web from a roll thereof, at constant speed and tension, between unwinding and rewinding stations, past said dye-guide,
a spray gun at each dye-guide opening, operational to spray dye therethrough onto the web,
means for supplying differently colored liquid dyes to the spray guns,
means for intermittently moving said dye-guide and spray guns with the web,
means for maintaining the web, dye-guide and spray guns against relative movement while the spray guns are operational,
and means for operating groups of spray guns, according to a predetermined plan, so as to provide repeated variation in the design laid down.

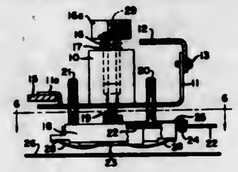
3,292,533

INK-TRANSFER TYPE PRINT HEAD ADJUSTER

Robert E. Sterling, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Apr. 21, 1965, Ser. No. 449,700
3 Claims. (Cl. 101—316)

1. A print head adjuster for use with a business machine having a platen member and an associated printer unit supporting framework, comprising a print head mounting plate; means for adjusting rockably and fixing said mounting plate with respect to said supporting framework; a print head supported shiftably by said mounting plate for movement toward and away from said platen member; a solenoid member carried by said mounting plate; a shaft element extending from said print head and received within said solenoid member; an armature for said solenoid member screw-threadedly receiving said shaft element and effective for actuating said element that extent to move the print head toward and into printing engagement with respect to said platen member; and spring means urging said armature to a normal position relative to the solenoid member, whereby each setting of said armature screw-threadedly along the shaft ele-



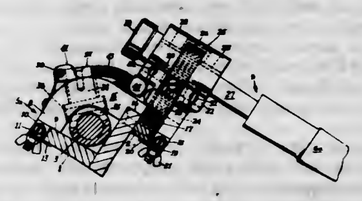
ment is effective to change the spacing between said print head and the associated platen member so as to permit print head alignment with the platen member through mounting plate adjustment as visually determined by the printed record completed upon the printing engagement being first reached.

3,292,534

INK AGITATOR

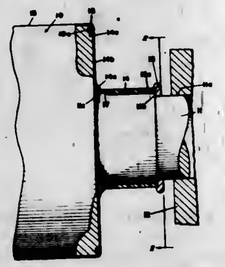
Howard R. Maschinot, Erlanger, Ky., assignor to The Printing Machinery Company, Cincinnati, Ohio, a corporation of Ohio

Filed May 3, 1965, Ser. No. 452,608
10 Claims. (Cl. 101—364)



1. An agitator mechanism comprising a rail, a double-threaded shaft mounted for rotation with respect to said rail, a carriage slidably mounted on said rail and detachable therefrom, a rocking shaft journaled in said carriage with its axis radially disposed to said double-threaded shaft, said rocking shaft having on one end a means for engaging selectively one of the threads of said double-threaded shaft, said rocking shaft having on its other end a member for rocking said shaft, a bar slidably mounted on said carriage in parallelism to said rail, resiliently mounted plungers at the ends of said bar, a resilient connection between said bar and the means for rocking said rocking shaft, trip means adjustably mountable with respect to said rail and located to be contacted by said plungers, and a resilient interconnection between said bar and the means for rocking said rocking shaft, the said resilient interconnection being located to pass dead center when the bar is moved longitudinally in either direction, whereby to urge said means for rocking said rocking shaft in a direction tending to cause said means for engaging one of the threads of said double-threaded shaft to engage the other thread thereof, the resilience of said plungers and the said interconnection being such as to permit continued travel of the carriage in the same direction until the thread engaging means encounters a point at which the threads of said double-threaded shaft merge, whereupon said rocking shaft will rock causing the thread engaging means thereon to engage the other thread of said double-threaded shaft whereby to move said carriage in the opposite direction, and an agitating means attached to said carriage and movable therewith.

3,292,535
PROTECTIVE SLEEVE
David A. Cutler, Philadelphia, Pa., assignor to Triangle Publications, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,124
7 Claims. (Cl. 101—375)



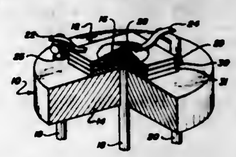
1. The combination comprising a printing cylinder having:
a cylindrical printing surface and an end face,
a shaft extending from said end face of said cylinder for rotatably supporting said cylinder, and
a peripheral recess in said end face having two opposed walls,
a protective sleeve of a material inert to electroplating baths, printing inks, and etching solutions, said sleeve having:
a cylindrical portion disposed in close fitting relationship on said shaft and extending from said end face along an exposed portion of said shaft,
a flange portion covering said end face, and
a cylindrical extension extending from the periphery of said flange portion, said cylindrical extension being disposed against one opposed wall in said peripheral recess,
a locking ring disposed in tight-fitting relationship against said cylindrical extension and against the other opposed wall in said peripheral recess to secure said cylindrical extension within said recess to form a leakproof seal, and
a slinger ring having an overhanging lip clamping said cylindrical portion tightly to said shaft to form a leakproof seal.

3,292,536
SHAPED EXPLOSIVE CHARGES
Joseph H. Church, Austin, Minn., and Gregory J. Kesenich, Madison, Wis., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 25, 1950, Ser. No. 158,050
1 Claim. (Cl. 102—24)



In a shaped explosive charge, a frusto-conical container tapering from its rear end forwardly and having a longitudinal axis of symmetry, a solid block of explosive filling said container and having first and second discrete generally conical cavities therein opening through the forward and rearward faces of said explosive block, respectively, both said cavities being symmetrical about said axis and having their apices spaced along said axis, a liner fitting said first cavity and united about its periphery with the forward periphery of said container, detonator means associated with said block at and about the outer periphery of the base of said second cavity, an inert deflector filling said second cavity, a circular cover plate fitting over and covering said second cavity, said detonator means being annular and surrounding the base of said second cavity, and means securing the rearward periphery of said container with the periphery of said plate.

3,292,537
MULTI-SIGNAL EXPLOSIVE DETONATOR
Frank A. Goss, Jr., Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed June 15, 1965, Ser. No. 464,251
4 Claims. (Cl. 102—28)



1. A multi-signal explosive detonator comprising an initiator including a plurality of interconnected portions of semiconducting material incorporating N-type and P-type impurities in adjacent portions to define PN junctions therebetween, an electrode electrically coupled to one of said portions, other electrodes electrically coupled to other said portions spaced apart from each other by at least said one portion for providing current flow in said semiconducting material to heat the latter in response to an electrical signal through at least one of said other electrodes and only during the application of another coexisting electrical signal through the first mentioned electrode, and an explosive charge disposed in an abutting relationship with at least one of said portions.

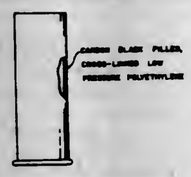
3,292,538
PRACTICE AMMUNITION
Hans Umbach, Stadeln, and Dieter Mentzel, Koblenz, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Apr. 19, 1965, Ser. No. 449,176
Claims priority, application Germany, April 18, 1964, D 44,202
17 Claims. (Cl. 102—41)



1. A blank or practice cartridge, comprising:
a cartridge case means including a neck portion, a stem portion and a shoulder portion between said neck portion and said stem portion,
bullet means adjoining said neck portion,
said neck portion being of substantially rib-like construction and being provided with a plurality of groove means distributed over the circumference thereof and extending substantially in the longitudinal direction of the cartridge,

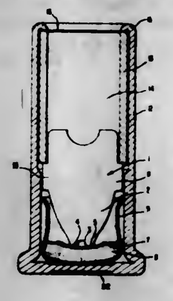
a step-like offset forming a forwardly facing annular surface means disposed at least approximately perpendicularly to the cartridge axis at the transition from said neck portion to said shoulder portion, said groove means conducting the high pressure propellant gases during firing from said neck portion opening along the outside of said neck portion to said annular surface means, and said annular surface means producing a substantially rearward ejecting force on said cartridge case because of the pressure of the conducted propellant gases on said annular surface means.

3,292,539
SMALL SHOT CARTRIDGE CASE
Erich Behr, Troisdorf, and Thomas Schlumerer, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed July 6, 1964, Ser. No. 380,614
Claims priority, application Germany, July 9, 1963, D 41,939
3 Claims. (Cl. 102—43)



1. A shot cartridge comprising a case shaft and a base of a carbon black filled cross-linked low pressure polyethylene both formed as one homogeneous part consisting essentially of:
55–75 percent by weight of low pressure polyethylene with a n_{red} between 2 and 3 and i_5-value of 1–2,
45–25 percent by weight of carbon black and
2–5 percent by weight relative to the total mixture of an organic peroxide cross linking agent.

3,292,540
PRIMER
Hans Stadler, Nuremberg, and Heinz Gawlick, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Dec. 4, 1964, Ser. No. 416,029
Claims priority, application Germany, Dec. 6, 1963, D 43,101
17 Claims. (Cl. 102—45)



6. A percussion primer, comprising a primer explosive charge; a primer anvil mounted closely adjacent to said charge; said anvil including a substantially flat plate of rigid material having a predetermined thickness; said plate having generally parallel flat opposite faces and side edges extending generally at right angles to said faces; said plate having impact edge means abutting said charge for receiving the impact delivered to said charge by a firing pin; said edge means having one and only one channel extending from one of said faces to the other of said faces and at substantially right angles to said faces, and defining a single impact edge on each side of said channel extending from one of said faces to the other of said faces and at substantially right angles to said faces; the dimensions from one of said faces to the other of said faces of said ledges being substantially equal to the thickness from one of said faces to the other of said faces of said plate; and said edge means being substantially square in plane form.

3,292,541
CARTRIDGE
Hans Stadler, Nurnberg, and Heinz Gawlick and Rudolf Stahlmann, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Dec. 11, 1964, Ser. No. 417,698
Claims priority, application Germany, Dec. 13, 1963, D 43,163
15 Claims. (Cl. 102—46)



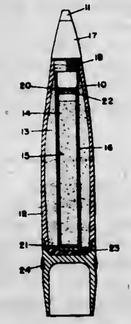
1. In a cartridge for commercial or military purposes containing propellant charges with large energy contents (between 0.5 and 5.0 m.t.) having a plastic cartridge case with a reinforced plastic bottom piece and a primer means inserted in a central bore of the bottom piece, and a metallic cap reinforcing the bottom piece, the improvement comprising mutually interengaging means on the bottom piece and the cap for form-locking engagement operable to produce a clamping positive connection between the cap and the bottom piece, and the end face of the cap being provided with a central aperture having an inside dimension smaller than the adjacent surface of the primer to form an abutment and prevent the removal of the primer.

3,292,542
ZONING OF A SOLID PROPELLANT MISSILE
Richard W. White, Madison, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 6, 1964, Ser. No. 402,038
10 Claims. (Cl. 102—49)



1. A system for transporting a payload between a preselected position and a target comprising: a missile; a motor in said missile; a nozzle; said nozzle being made in sections and secured in serial relation to said motor; explosive means mounted relative to said motor and said nozzle for separating said nozzle sections and for separating said nozzle from said motor; and an accelerometer control device mounted in said missile and connected to said explosive means for causing explosion thereof at two different accelerations of said missile to first separate said nozzle sections and then separate the remaining nozzle section from said motor.

3,292,543
PROJECTILE
Henry A. Tisch, Sussex, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 26, 1965, Ser. No. 428,263
3 Claims. (Cl. 102—66)



1. In an artillery projectile having a removable nose portion threadedly secured in a threaded forward opening of a hollow main projectile body portion,

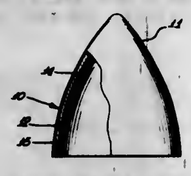
an inert layer of material seated in and extending across a rearward closed base portion of said body portion, a cylindrical hollow liner having a closed rearward portion seated upon said inert layer,

a jacket of high explosive material surrounded by an inner lateral wall of said main body portion, said liner, and said inert layer, and

a cylindrical hollow canister having a shock absorbing pad seated in the base of said liner, having therein a quantity of white phosphorus, hermetically sealing means extending across said canister forwardly of said white phosphorus, and a second shock absorbing pad forwardly overlying said hermetically sealing means,

the outer lateral dimensions of said canister being less than the innermost dimensions of said threaded forward opening.

3,292,544
HYPER-ENVIRONMENTAL RADOME AND THE LIKE
Orval G. Caldwell, Los Angeles, and Leon J. Le Clercq, Glendale, Calif., assignors, by mesne assignments, to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of Delaware
Filed May 5, 1964, Ser. No. 364,949
16 Claims. (Cl. 102—92.5)



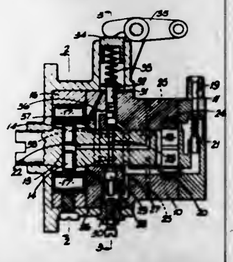
1. A strong, unitary radome, nose cone and similar formed object adapted to effectively transmit high frequency energy and having the ability to withstand thermal shock comprising: a rigid contoured object including a wall having a generally convex outer surface and a generally concave inner surface, said wall being composed essentially and virtually homogeneously of particles of refractory oxide bonded together by a small quantity of fritted minerals including clay of the montmorillonite group; the particles of refractory oxide being in compact, closely adjacent relation at said inner and outer surfaces to form thin dense layers of predetermined and virtually uniform thickness at said surfaces, said surface layers having a dielectric constant of 9 and higher and a low loss tangent; the particles of refractory oxide in the wall portion between said surface layers being arranged and bonded together to form a uniformly porous structure of low apparent density having a predetermined dielectric constant of less than 9; the overall thickness of said wall being between about 0.3 and 0.7 of the full wave length of the energy to be transmitted through the wall of the object, said low density wall portion constituting between 70% and 90% of said overall wall thickness.

3,292,545
PROPELLANT GRAIN
Hideo Matsubara, Tokyo, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Sept. 28, 1964, Ser. No. 399,634
Claims priority, application Japan, Oct. 1, 1963, 38/53,089; Apr. 13, 1964, 39/20,689
9 Claims. (Cl. 102—98)



1. A propellant grain of composite material comprising a propellant mixture consisting of an organic chemical fuel and an inorganic oxidant, and a multiplicity of high-burning-rate explosive sticks of relatively short length and small volume in precise predetermined spaced relation with each other in the direction of burning within said propellant mixture along the longitudinal axis thereof, said high-burning-rate explosive being constituted by a mixture of charcoal, sulfur and saltpeter, said high-burning-rate explosive having a burning rate exceeding 1000 mm./sec. and more than 50 times as great as that of said surrounding propellant mixture, said propellant grain being adapted for being covered by a restrictor which is open at one end, at which burning starts, the propellant grain forming a burning surface of progressively lengthening U-shape that is a combination of a cylindrical surface and an approximate partial spherical surface when the grain achieves a steady burning state, the burning rate undergoing intermittent increases upon the burning of said sticks as the burning surface reaches the same.

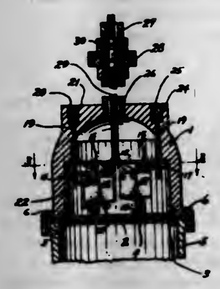
3,292,546
APPARATUS FOR SUPPLYING FUEL TO INTERNAL COMBUSTION ENGINES
Fraser Mackie Evans, Uxbridge, England, assignor to C.A.V. Limited, London, England
Filed Feb. 8, 1965, Ser. No. 431,140
Claims priority, application Great Britain, Feb. 11, 1964, 40,149/64
4 Claims. (Cl. 103—2)



1. A pumping apparatus for supplying fuel to an internal combustion engine and comprising a body part, a distributor member rotatably mounted therein and arranged to be driven in timed relationship with the engine,

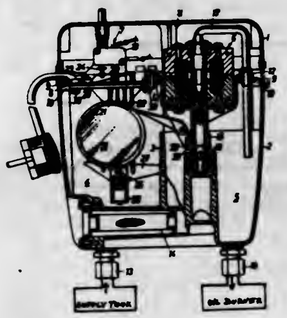
a bore defined in the distributor member, a plunger mounted in the bore, a cam mounted in the body part for imparting inward movements to the plunger as the distributor is rotated, an outlet port formed in the body part, a delivery passage formed in the distributor and in communication with said bore, said delivery passage being arranged to register with the outlet port as the distributor member rotates and during the time when the plunger is being moved inwardly, an inlet port formed in the body part, an inlet passage formed in the distributor and in communication with said bore, said inlet passage being arranged to register with the inlet port during part of the time when the plunger is not being moved inwardly by the cam, a cylinder defined in the body part, a stepped shuttle moveable in said cylinder, the wider end of the shuttle together with the wall of the cylinder defining a chamber which is in communication with said inlet port, conduit means through which the narrower end of the shuttle is exposed to the pressure of fuel delivered by a source of fuel under pressure, and passage means defined by the distributor, said passage means being arranged to register with the inlet port during part of the time when the inlet passage is not in register therewith, said passage means being in communication with said source of fuel, and throttle means for controlling the rate of which fuel can flow from said source through said passage means to said chamber, the arrangement being such that when fuel is fed to said chamber from said source the shuttle will be moved in one direction by an amount dependent upon the setting of said throttle means and when the inlet passage is in register with said inlet port the fuel pressure acting on the narrower end of the shuttle will move the shuttle so as to displace the fuel previously fed to the chamber to the bore so as to cause the plunger to be moved outwardly.

3,292,547
PRESSURE-ACTUATED PUMP CONTROL MECHANISMS
Ernest A. Ward, 4851 S. Raymond, Seattle, Wash. 98118
Filed Nov. 2, 1965, Ser. No. 506,065
4 Claims. (Cl. 103—11)



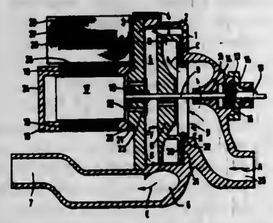
1. Pressure-actuated control mechanism for a pump adapted to pump liquid relative to a sump, comprising an upper housing corresponding to a high liquid level in the sump, a lower housing corresponding to a lower liquid level in the sump, two pump-driving motor means for driving two pumps, respectively, a first pressure-actuated switch means received in said upper housing, subjected to the pressure of liquid in the sump at a first predetermined level of the liquid relative to said upper housing operatively connected to one of said pump-driving motor means and operated automatically in response to increase in the level of liquid in the sump to such first predetermined level to energize said one pump-driving motor means, a second pressure-actuated switch means in said upper housing, subjected to the pressure of liquid in the sump at a second predetermined level of the liquid relative to said upper housing higher than said first predetermined level, operatively connected to the other of said pump-driving motor means and operated automatically in response to increase in the level of liquid in the sump from such first predetermined level to such second predetermined level to energize said other pump-driving motor means, a third pressure-actuated switch means received in said lower housing subjected to the pressure of liquid in the sump at a first predetermined level of the liquid relative to said lower housing, operatively connected to one of said pump-driving motor means and operated automatically in response to decrease in the level of liquid in the sump to such first predetermined level to deenergize said one pump-driving motor means, and a fourth pressure-actuated switch means in said lower housing subjected to the pressure of liquid in the sump at a second predetermined level of the liquid relative to said lower housing, different from such first predetermined level relative to said lower housing, operatively connected to the other of said pump-driving motor means and operated automatically in response to reduction in the level of liquid in the sump to such second predetermined level relative to said lower housing to effect deenergization of said other motor means.

3,292,548
SUCTION PUMP UNIT FOR OIL SUPPLY INSTALLATIONS
Otto Eckerle, Am Bergwald 3, Malsch, Germany; Ernst Putschky and Helmut Weinzierl, Rastatt, Germany; said Putschky and Weinzierl assignors to said Eckerle
Filed Jan. 21, 1965, Ser. No. 426,887
19 Claims. (Cl. 103—39)



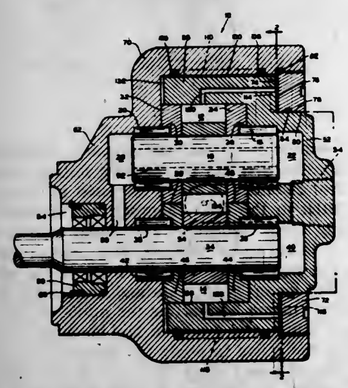
1. A suction pump unit comprising a housing, a dam in the housing dividing the housing into a supply sump and a float chamber, a pump mounted in the housing; a liquid outlet in the float chamber; and a liquid inlet in the supply sump connecting said sump with a source of supply of liquid to be pumped, first conduit means connecting the liquid inlet with the inlet of the pump, said first conduit means passing through the supply sump, second conduit means connecting the outlet of the pump to the supply sump, and means in said housing for rendering the pump ineffective to pump the liquid from said source to said supply sump when the level of the liquid in the float chamber has reached a predetermined level comprising an orifice in the first conduit means connecting the first conduit means to the sump and located below the level of the top of the dam, and means responsive to the liquid level in the float chamber for opening and closing the orifice, whereby the opening of the orifice will result in the pump withdrawing and returning liquid to the sump only.

3,292,549
MOTOR DRIVEN PUMPS
Walter G. L. Nicell, London, England, assignor to Renwick, Wilton & Dobson, Limited, Devonshire, England, a corporation of Great Britain
Filed Feb. 3, 1965, Ser. No. 430,946
Claims priority, application Great Britain, Feb. 11, 1964, 5,686/64
6 Claims. (Cl. 103—87)



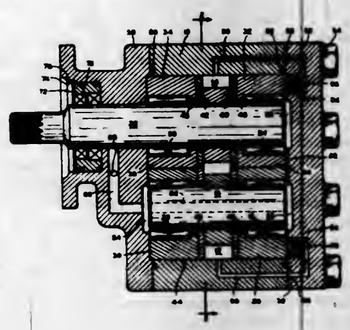
1. In a circulating pump unit of the centrifugal type comprising in combination, an electric motor having a rotor and a stator, a floating shaft to which the rotor of said motor is secured, a pump assembly secured to one end of said electric motor so that said shaft also extends into said pump assembly, said pump assembly including a housing having an inlet means and an outlet means, the improvement which comprises securing a single entry impeller for the pump assembly on said fully floating shaft with its entry facing away from said motor and providing a single thrust bearing for said shaft at the end of said shaft remote from said motor, and an operating member for adjusting the position of said thrust bearing externally of the pump housing, said single entry impeller being axially movable within the pump housing and having a skirt constituting its single entry which skirt is axially shorter than the axial movement available to the impeller upon operation of said operating member so as to permit variation of the output of the pump whilst the latter is operating.

3,292,550
GEAR PUMP OR MOTOR
Richard O. Gordon, Mequon, Wis., assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 26, 1965, Ser. No. 450,842
16 Claims. (Cl. 103—126)



1. In a gear pump or motor, a generally cup-shaped pump body housing forming a pump chamber internally thereof, shaft supported intermeshing gears in said chamber, a generally cup-shaped pump cover housing telescoped over the body housing and closing the open end thereof, the base end of said body housing extending through the open end of said cover housing and forming a portion of the outer shell of the pump, and means connecting said cover and body housings for limited relative axial movement during operation of the pump.

3,292,551
GEAR PUMP OR MOTOR
Richard O. Gordon, Mequon, Wis., assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 26, 1965, Ser. No. 450,989
2 Claims. (Cl. 103—126)



1. In a gear pump or motor, a gear body housing containing a pair of intermeshing gears, axially movable thrust plate means mounted on at least one side of the gears and having a remote abutment surface and a sealing surface for sealing the adjacent side faces of the gears, an inlet leading to and outlet leading from said body housing, a cover housing secured to said body housing at one end thereof, a plurality of piston chambers in the cover housing located in predetermined spaced relation, a plurality of corresponding piston elements in said chambers movable axially of the pump into abutment with said remote surface of the thrust plate means, the parting planar surface between said cover and body housings being substantially coincident with the one ends of said piston chambers, passage means connecting the other ends of said piston chambers to a plurality of peripheral gear chamber areas which include gear chamber areas intermediate the inlet and discharge conduits, said passage means extending directly through the thrust plate means and through each piston element in the cover housing to vent the said other ends of the piston chambers to the respective gear areas, said plurality of piston elements being adapted to act in concert to impose upon the thrust plate means variably axially directed forces for sealing the adjacent side faces of the gears as a function of variations in fluid pressure existent between the plurality of connections of the piston chambers to the gear chambers, the area of said remote surface of said thrust plate means which is not engaged by said piston elements being vented to a gear chamber pressure less than discharge pressure.

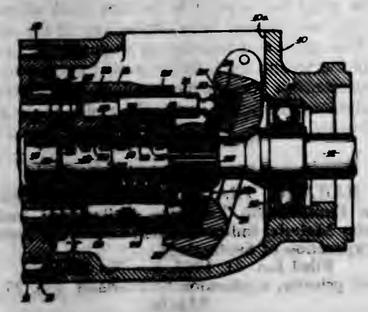
3,292,552
PUMPING APPARATUS
Forrest E. Chancellor and Robert O. Chancellor, both of 2917 Pierce Road, Bakersfield, Calif. 93304
Filed June 8, 1964, Ser. No. 373,299
8 Claims. (Cl. 103—155)

1. A well pumping apparatus, for a well having a fluid therein, an elongated string of tubing extended into such fluid in the well, and a sucker rod string disposed in the tubing for reciprocation therein, comprising a pump barrel connected to said tubing string and immersed within the fluid in the well, said pump barrel and tubing string providing a fluid discharge passage from the well; a plunger mounted in said barrel and connected to said sucker rod string for reciprocation therewith in alternate fluid pumping and return suction strokes with the plunger substantially sealing the barrel to passage of well fluid therepast; first valve means disposed within said barrel in upwardly spaced relation to the plunger alternately to open permitting flow of well fluid therethrough into the discharge passage during said return suction stroke of the plunger and to close blocking



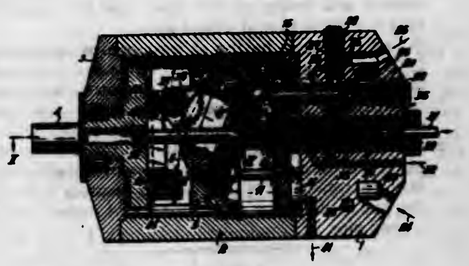
reverse flow of well fluid therethrough under fluid pressure in the discharge passage during the pumping stroke; second valve means disposed within said fluid discharge passage in upwardly spaced relation to said first valve means alternately to open said discharge passage under fluid pressure therebelow during said pumping stroke and to close blocking reverse flow therethrough under weight of fluid in the discharge passage during said return stroke, and force transmitting means disposed within said barrel between the plunger and said first valve means so as substantially to isolate the plunger from said well fluid in the discharge passage.

3,292,553
PISTON RETURN MECHANISM
Melvin M. Haas, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Dec. 30, 1963, Ser. No. 334,160
5 Claims. (Cl. 103—162)



1. An axial piston hydraulic pump or motor device comprising a housing, a rotatable cylinder block mounted in said housing, an annular series of axially disposed cylinders within said block, a series of pistons having inner ends reciprocating within said cylinders, a drive shaft rotatably mounted in said housing extending through said cylinder block, a torque tube in said housing between said shaft and cylinder block, a first spline connection between the cylinder block and torque tube, a second spline connection between said shaft and torque tube, bearing means in said housing restricting said drive shaft against axial movement, a cam plate mounted in said housing at one end of said cylinder block and having a bearing face inclined to one end of the cylinder block, said pistons having spherical outer ends, a series of shoes universally mounted on the spherical outer ends of the pistons and having a bearing face engaging the bearing face on said cam plate, ports communicating the cylinders with the opposite end of said cylinder block, a port plate in the housing having inlet and outlet passages adjacent the opposite end of the cylinder block communicating successively with said cylinder ports upon rotation of the cylinder block, a hold-down ring carrying said bearing shoes, a spherical surface on said torque tube engaging the hold-down ring, an axially expandable chamber grounded on said shaft at one end and biasing said torque tube at the other end, means for supplying fluid for expanding said chamber, and resilient means grounded on said shaft at one end and bearing against said cylinder block at the other end to urge the block toward the port plate.

3,292,554
AXIAL PISTON DEVICE
Erwin Hessler, Berlin-Reinickendorf, Germany, assignor to Hydromatik G.m.b.H., Duisburg, Germany
Filed Jan. 12, 1965, Ser. No. 424,977
Claims priority, application Germany, Feb. 15, 1964
H 51,702
10 Claims. (Cl. 103—173)



1. A high pressure axial piston pump comprising a pump housing including a cylinder block having a plurality of concentrically arranged axially extending pump cylinders therein, a piston axially slidable in each of said pump cylinders, a swash plate pivotally mounted within said pump housing for tilting away from a plane normal to the pump axis, said swash plate including a rotatable member articulated to said pistons for displacing said pistons during rotation thereof in accordance with the amount of tilt of said swash plate, inlet and discharge valve means connected to said piston cylinders in said cylinder block for the drawing in and discharging of a delivery fluid, a partition dividing said pump housing and separating the operating fluid for said swash plate from the delivery fluid in said cylinder block, counterweight means within said housing mounted for displacement, and control piston means slidable in said housing and connected to said counterweight means and said swash plate for shifting said counterweight and said swash plate.

3,292,555
APPARATUS FOR RELEASING A WATER WELL PIPE AND PUMP SYSTEM
John P. Watson, P.O. Box 711, Luling, Tex. 78648
Filed Jan. 11, 1965, Ser. No. 424,762
3 Claims. (Cl. 103—221)



1. In a water well pipe and pump system which can be lifted from the well manually without entrapping water in said system and thus reducing the weight to be lifted,
first and second flexible plastic pipes,
pump means insertable within a well to pump water therefrom,
means for securely connecting the first pipe to the pump, and
coupling means connecting the second pipe to the pump means for permitting disconnection of said pipe from said pump means by manual turning and lifting action, said coupling means including,
a first receptacle having at least one L-slot on one end thereof and means on the other end for attaching said receptacle to said second pipe,
a second receptacle having at least one projecting lug for interaction within the L-slot of the first receptacle and further having an annular recess on the outer surface near said end and means at the outer end attaching the second receptacle to the pump, and
means at the surface connected to and rotatively securing said second pipe whereby the second flexible pipe may be rotated in a direction to securely lock the lug and L-slot prior to securing said means to the second pipe.

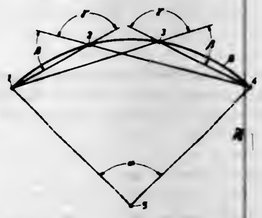
3,292,556
GAS JET PUMP
Hans Joachim Schroeder, Munich, and Ernst Heinrich Seller, Garatshausen, Germany, assignors to BMW-Triebwerkbau G.m.b.H., Munich-Allach, Germany
Filed Dec. 13, 1963, Ser. No. 330,491
Claims priority, application Germany, Dec. 14, 1962, B 70,843
22 Claims. (Cl. 103—258)

1. A gas jet pump for the delivery or for the feed and atomization of a pulverulent, liquid or gaseous substance by means of a gaseous propellant stream, comprising:
Laval nozzle means having nozzle outlet means forming an end cross section,
means forming a mixing zone disposed downstream of the nozzle means in the direction of flow of the propellant stream,
and supply line means for the substance to be delivered and terminating with suction aperture means thereof in said mixing zone downstream of the end cross section of said nozzle means,
the propellant stream leaving said nozzle means with supersonic velocities,
and said supply line means being so dimensioned that a critical mass ratio of propellant stream to substance to be delivered is periodically exceeded at which the velocity of the propellant stream at the outlet means of said nozzle means changes from supersonic to subsonic velocity so that a suction phase periodically



alternates with an exhaust phase within the jet pump, said Laval nozzle being constituted by an essentially circular disk-shaped space with the propellant stream flowing through said space radially from the inside toward the outside, and said aperture means being constructed of circular ring-shape.

3,292,557
METHOD FOR LINING CURVES
Adolf Warnick, Nuremberg, Germany, assignor to Franz Plasser Bahnbaumaschinen, Vienna, Austria
Filed Apr. 5, 1965, Ser. No. 445,667
Claims priority, application Germany, April 8, 1964, W 36,529; Austria, Feb. 10, 1965, A 1,165/65
4 Claims. (Cl. 104—8)

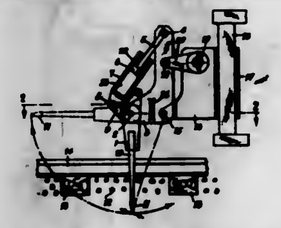


1. A method of lining a track curve to produce a track curve section constituting a substantially circular arc extending between two end points, a first portion of the track curve section extending between a first one of said end points and a first intermediate point of the track curve section having been lined to form a first portion of said circular arc, and a second portion of the track curve section extending between said first intermediate point and the second end point, the steps of establishing a first straight line between a second intermediate point in the second track curve section portion and the second end point, establishing a second straight line between the second intermediate point and a point in the first track curve section point, the two straight lines intersecting in the second intermediate point and forming an angle therebetween, and moving the second track curve section portion at the second intermediate point perpendicularly to the direction of elongation of the track until said angle has a predetermined value.

3,292,558
RAILWAY TRACK BALLAST TAMPER
Eugène Emile Oville, Lausanne, Switzerland, assignor to Matisa Materiel Industriel S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed Jan. 21, 1965, Ser. No. 427,045
Claims priority, application Switzerland, Jan. 27, 1964, 933/64
6 Claims. (Cl. 104—10)

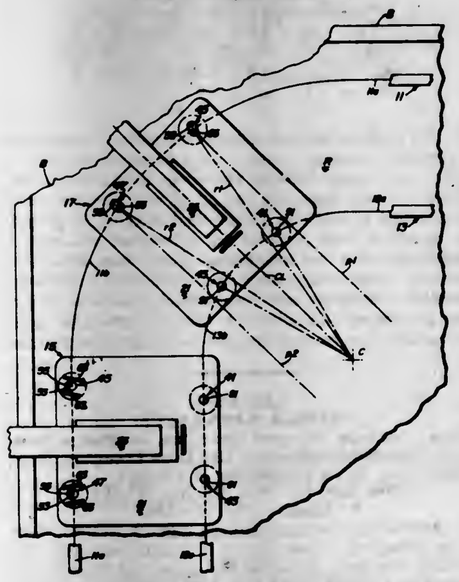
1. A ballast tamper for a railway track, including at least one vertically movable frame and on which are mounted tools vibrating under the action of a vibrator

and controlled to effect a work stroke corresponding to their approach towards and their movement away from a sleeper, and also controlled to be raised to a withdrawn position within the gauge of the railway, wherein each tool is integral with a first rigid member hinged at two different points, respectively on a second rigid member and on one of the elements of a jack with individual control, this jack being itself also hinged, by its other



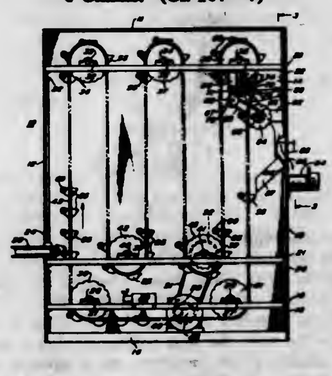
element, to the second rigid member, the three hinge points forming a triangle solely deformable under the action of the jack, to ensure the work stroke of the tools and the raising of the latter to a withdrawn position, and inversely, this triangle being mechanically connected to the vibrator to be vibrated, and being moveover connected to the movable frame by a connection authorizing this vibration.

3,292,559
RAIL MOUNTED MOBILE JIB CRANE APPARATUS
Richard C. Cousins, and Percy L. Symons, Portland, Oreg., assignors to Albina Engine and Machine Works, Inc., Portland, Oreg., a corporation of Oregon
Filed Feb. 5, 1964, Ser. No. 342,701
6 Claims. (Cl. 104—246)



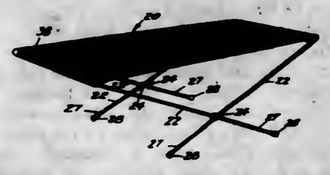
1. A mobile jib crane for travel along a pair of tracks having straight track portions and arcuately curved track portions, said crane comprising,
a base structure,
means for supporting said base structure on said tracks including a first pair of wheel means for one track and a second pair of wheel means for the other track,
mounting means for each wheel means,
each mounting means swivelly connecting its wheel means to said base structure,
said base structure having portions providing a horizontally extending slot in association with each of said first wheel means,
said slots extending in a direction generally toward the other track,
a mounting means for each first wheel means including a vertical unit slidably received in the associated slot for movement lengthwise of such slot to permit variations in the spacing between the first wheel means and the second wheel means as demanded by said tracks as the crane moves therealong.

3,292,560
DOUGH PROOFER
Anthony P. Merabito, % Topos Mondial Corp., 755 Kehn St., Norristown, Pa. 19401
Filed Dec. 20, 1963, Ser. No. 332,097
6 Claims. (Cl. 107—7)



1. A dough proofer for separated pieces of dough comprising a housing having an entrance portion and a delivery portion, members providing a continuous circuitous path between said entrance portion and said delivery portion, a plurality of trays moved by said members, members for controlling the delivery of dough pieces, said last members including members for positioning said trays in discharging condition, and dough transfer members for delivering dough pieces to a tray for a subsequent circuit of said path, said transfer members including a selectively positioned transfer door and a chute communicating with one of said trays controlled by the positioning of said door.

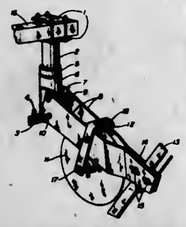
3,292,561
COLLAPSIBLE SWEATER AND CLOTHES DRYER
Marvin Hoodis, 223 Lenox Road, Brooklyn, N.Y. 11226
Filed Dec. 21, 1965, Ser. No. 515,414
1 Claim. (Cl. 108—118)



A collapsible clothes dryer particularly adapted for positioning in a bath tub, and comprising a pair of inverted U-shaped leg members with each leg member having a top portion and leg portions extending downwardly therefrom, means pivotally connecting the lower

portions of corresponding of said leg portions of said leg members, a pair of flexible parallel longitudinal plait strips interconnecting the top portions of said leg members near the ends thereof, a pair of transverse plait strips connected between said longitudinal plait strips near the ends thereof but inwardly of said leg member top portions, flexible netting material secured to said leg member top portions and to said longitudinal and transverse plait strips, said leg portions being inclined inwardly such that the ends of each leg portion are positioned inwardly of said longitudinal plait strips whereby the leg portion ends may be positioned in a confined space.

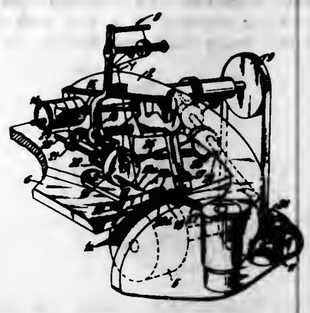
3,292,562
COULTER-KNIFE BLADE ASSEMBLY
David A. Clark, 1228 Forest Drive, Sand Springs, Okla. 74063
Filed July 9, 1965, Ser. No. 470,775
7 Claims. (Cl. 111—7)



7. A coulter-knife blade assembly for applying liquid or gaseous fertilizer into soil surface comprising a coulter, an adjustable knife blade directly behind the coulter and located between substantially parallel plates of a plate frame, means attached to the said knife blade to feed fertilizer into the soil, the said coulter having a means for laterally adjusting the position on a spindle rotatably mounted under a U-shaped member attached to the supporting plate frame, the said supporting plate frame being suspended by a hinged pin and a shearing bolt passing through a pair of substantially parallel plates attached to a tubular swivel mounted on a load bearing plate, the complete assembly being attached to a tool bar by two bolted plates one of which is welded to the top of the tubular swivel.

3,292,563
LINKING MACHINES
Denis Matthews, Sutton-in-Ashfield, England, assignor to Matthews & Birkhamshaw Limited, Sutton-in-Ashfield, England
Filed Feb. 11, 1963, Ser. No. 257,719
Claims priority, application Great Britain, Feb. 10, 1962, 5,194/62
2 Claims. (Cl. 112—25)

1. A single chain stitch linking machine comprising, in combination, a rotating dial carrying a circle of points projecting in the same direction radially therefrom for suspension of fabric loops thereon; a longitudinally curved needle having a relatively long solid point and a rearwardly facing hook inwardly of said point; first mounting means mounting said needle adjacent one side of said dial for oscillation radially of said dial through respective fabric loops on said points and along a needle path extending to both sides of said dial; a yarn guide having an eyelet through which yarn is threaded; crank means mounting said yarn guide adjacent the opposite side of said dial for oscillation across the needle path in a plane substantially perpendicular to the vertical plane including the needle path; first eccentric means connected to said needle to oscillate the latter; second eccentric means connected to said crank means to oscillate said yarn guide; and common driving means operating said first and second eccentric means in coordinated relation to oscillate said yarn guide to draw yarn transversely across said needle path as said needle is advanced through fabric



loops for the needle to catch the drawn yarn in its hook and draw a new yarn loop through said fabric loops as the needle is retracted, with the previously drawn yarn loop being cast off the needle as the latter is retracted.

3,292,564
EXPLORATION AND SALVAGE SUBMARINE
Guenther W. Lehmann, 425 Bernardo Ave. Sunnyvale, Calif. 94086
Filed Mar. 26, 1964, Ser. No. 355,957
16 Claims. (Cl. 114—16)

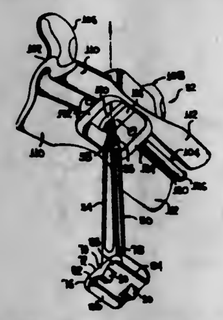


1. An exploration and salvage submarine, comprising a cylindrical pressure vessel with half-spherical ends in vertical positioning between two longitudinal boxgirders, inflatable salvage bags fore and aft of said pressure vessel and attached to said two longitudinal boxgirders, propulsion means at both ends of the submarine attached to and between said two longitudinal boxgirders, transverse bulkheads connecting said two longitudinal boxgirders, structural transverse and longitudinal members at the lower portion of said bulkheads fore and aft of the pressure vessel and salvage ropes and hooks attached thereto.

3,292,565
ANCHOR APPARATUS
Ollie K. Goodwin, Newport News, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed Sept. 18, 1964, Ser. No. 397,381
9 Claims. (Cl. 114—206)

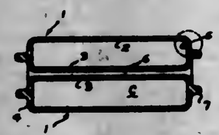
1. Anchor apparatus comprising support means including an elongated shank having a longitudinal axis and including attaching means at the upper end thereof, the opposite end of said shank including a support portion at the lower end of the shank, said lower support portion defining spaced portions, body means including a socket portion having a transverse slot receiving said shank, means supporting said body means on said spaced support portions of the shank so as to pivotally interconnect the body means with the shank, said spaced support portions including two spaced curved surfaces having spaced predetermined axes extending transversely of said slot, so

that the body means may pivot in opposite directions relative to the shank, such pivotal movement in opposite directions occurring about said two separate spaced pivot axes, said pivot axes being substantially parallel with one another and extending in a direction which is substantially perpendicular to the direction of the longitudinal axis of the shank, said pivot axes being displaced on opposite sides of the longitudinal axis of the shank, the under-



surface of said lower support portion of said shank having a transversely extending recess adjacent each said curved surface, a pin traversing said socket portion and engaging in one of said recesses to limit the relative pivotal movement between said body means and said shank, said body means having fluke means formed thereon and also having tripping means for engaging the sea bottom and moving said fluke means into operative anchoring position.

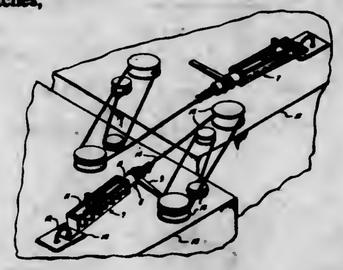
3,292,566
BUMPER ELEMENT
Lloyd E. Russell, Springfield Ohio, assignor to Peters & Russell, Inc., Springfield, Ohio, a corporation of Ohio
Filed Sept. 14, 1962, Ser. No. 226,765
12 Claims. (Cl. 114—219)



1. A bumper including, a tubular relatively flexible outer wall section of elastic material, a tubular inner wall section of elastic material, said inner wall section being per se relatively inflexible in comparison to said outer wall section and arranged concentric thereto and substantially coextensive therewith, means connecting said wall sections at opposite ends thereof formed integral therewith and defining a hollow seamless annular body thereby having a passage therethrough defined by said inner wall section which lends strength thereto, and diametrically positioned stowing cleats formed integral with the respectively opposite ends of said hollow annular body and projected oppositely therefrom.

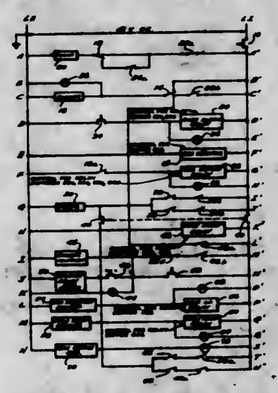
3,292,567
RATCHET CONNECTOR
Walter L. Blackburn, 6901 England St., Houston, Tex. 77021
Filed Mar. 22, 1965, Ser. No. 441,683
6 Claims. (Cl. 114—235)

1. A ratchet device for interconnecting a barge train including:
an elongate U-shaped channel member, said member having a series of communicating spaced notches symmetrically positioned along both sides thereof,
a screw connector having two ends, the first end of said connector slidable within said channel member,
means to prevent screwable disengagement of said ends from the screw connector,
a transverse stud extending from said first end of the screw connector and selectively engaging said notches,



the second end of said connector attachable to a cable,
a plate connecting the sides of said channel to prevent slidable removal of the screw connector from said channel member,
and means for pivotally interconnecting one end of said channel to a barge.

3,292,568
PROTECTIVE CIRCUIT FOR BOATS
Robert C. Merrell, 154 Little Neck Road, Centerport, Long Island, N.Y. 11106
Filed Apr. 8, 1965, Ser. No. 446,658
2 Claims. (Cl. 115—5)



1. A protective circuit for use with power boats of the type having a bilge compartment and an engine which comprises: a starting circuit which includes an electrical source of energy and a starter switch for starting the engine of the power boat, said starter switch connected to said source in series relationship by electrical circuit means, an ignition circuit for said engine including an ignition switch, a time delay relay having a predetermined time delay cycle, said time delay relay connected in series with said ignition switch so that upon closing the ignition switch the relay will become energized and commence the delay cycle for maintaining the starting circuit in an open condition so as to delay the operation of the engine until the termination of said cycle, and a blower for clearing the bilge of any accumulated fuel vapor concentration, said blower having a first circuit controlled by said time delay relay so that the blower will operate during the delay cycle, a detection circuit including a gas detector for sensing gaseous fuel vapor concentration, a pump, and means responsive to said gas detector during

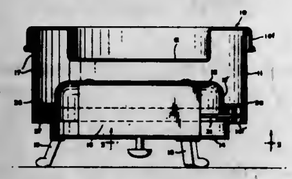
a period when the detector is sensing a dangerous fuel vapor concentration for causing the blower to operate through a second blower circuit, maintaining said starting circuit in an open condition and preventing the pump from operating, and said electrical circuit means connecting said detection and ignition circuits to said source.

3,292,569
WARNING DEVICE FOR DISABLED HIGHWAY VEHICLES
Gaetano T. Triglio, 2936 E. 117 St., Cleveland, Ohio 44120
Filed Dec. 18, 1964, Ser. No. 419,539
7 Claims. (Cl. 116—63)



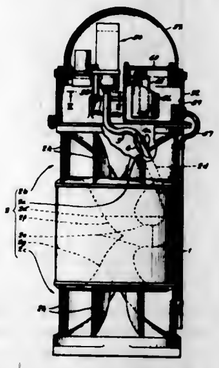
1. A warning device comprising a support stand and a reflector assembly rotatably mounted on said support stand, said reflector assembly including a wind vane symmetrically disposed about the axis of rotation of said reflector assembly, a pair of reflectors mounted on opposite sides of said vane and laterally spaced in opposite directions from said axis of rotation, and at least one other reflector vertically spaced from said pair of reflectors, said other reflector being supported by said vane for rotational movement therewith, the spacing between said other reflector and said axis of rotation being different than the spacing between said pair of reflectors and said axis of rotation, whereby upon rotation of said reflector assembly, light is reflected by said reflectors in such a manner as to give two distinctly different light flash patterns.

3,292,570
FIRE ALARM MECHANISM
Hannibal P. Huffman, 8011 S. 128th St., Seattle, Wash. 98178
Filed Mar. 10, 1965, Ser. No. 438,506
2 Claims. (Cl. 116—102)



1. A fire alarm device comprising an enclosing housing, an alarm bell contained in said housing, a spring powered bell striking hammer operatively mounted in said housing, a bi-metallic heat sensitive element of circular formation supported from said housing for free-floating action normally restraining the hammer against alarm actuation and operable when subjected to a predetermined degree of heat to release the spring powered hammer for actuation to energize the alarm, and a plurality of pins extending from said housing freely through said bi-metallic heat sensitive element to provide such free-floating support permitting unrestrained contraction and expansion of said bi-metallic heat sensitive element.

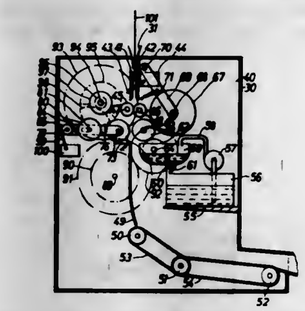
3,292,571
AUDIBLE SIGNAL APPARATUS
Bill Gene Watters, Nahant, Mass., assignor to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware
Original application Aug. 7, 1959, Ser. No. 832,284, now Patent No. 3,138,795, dated June 23, 1964. Divided and this application May 8, 1964, Ser. No. 366,059
10 Claims. (Cl. 116—137)



1. Audible signal apparatus operable at a predetermined acoustical frequency comprising a generally cylindrical housing having its cylinder axis vertical, a double horn within the housing and having two vertically spaced upper and lower mouths with equal vertical dimensions, said mouths opening horizontally and extending around the periphery of the housing, said horn including a single throat, a fork, and a first tapered horn portion between the throat and the fork, and second and third tapered horn portions between the fork and the respective upper and lower mouths, said fork being located midway between the mouths and substantially along the axis of the housing, said second and third portions extending respectively upwardly and downwardly from the fork and curving to horizontal directions at the respective mouths, said first portion extending horizontally from the fork and curving to the throat, an acoustic coupling device extending from the throat, a driver for said horn located within said housing and including a movable wall in a chamber constituting a portion of said acoustic coupling device, said acoustic coupling device being dimensioned to provide an acoustic reactance between said throat and said driver which balances the reactance of the horn mouths so that the mechanical load on the movable wall is effectively non-reactive at the acoustical frequency of operation.

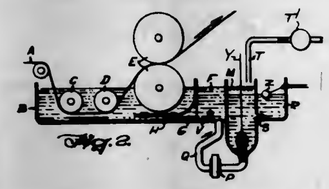
3,292,572
DEVELOPING DEVICE
Udo Brennecken, Leverkusen, Gerhard Heyl, Cologne-Stammheim, and Heinrich Marnaczyk, Leichlingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 14, 1964, Ser. No. 337,555
Claims priority, application Germany, Jan. 16, 1963, F 38,773
6 Claims. (Cl. 118—1)

1. Developing device for applying liquid developer to copying material running through it in sheets, for electrophotographic apparatus, comprising a switch influenced by the copying material, said switch being arranged in the path of conveyance of said copying material in front of the developer station and being connected into the circuit of a magnetic clutch, cam plates being connected to a drive motor through said magnetic clutch, said cam plates controlling slides which are provided with a contact pressure roller arranged opposite a developer roller, said contact pressure roller being mounted so as to be displaceable transversely of the path of conveyance of the



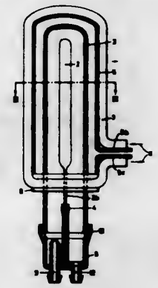
copying material by means of said slides, said developing device being returned to the inoperative condition by means controlled by said copying material in dependance upon the length of the format of said copying material.

3,292,573
METHOD AND MEANS FOR THE AUTOMATIC REGULATION OF THE CONTINUOUS APPLICATION OF SPECIFIED AMOUNTS OF SOLIDS OR LIQUIDS TO A MOVING SHEET OF MATERIAL
Eric Harding Jones, Bramhall, England, assignor to The Cotton Silk and Man-Made Fibres Research Association, Northern Ireland and the Isle of Man, an association of Great Britain
Filed Feb. 19, 1964, Ser. No. 345,938
Claims priority, application Great Britain, Feb. 20, 1963, 6,907/63
13 Claims. (Cl. 118—7)



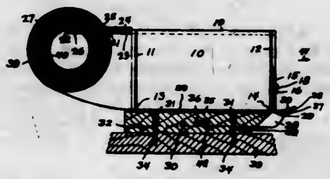
1. Apparatus for the continuous application of specified amounts of a substance to a moving sheet of material comprising in combination a main container for liquid, means for continuously progressing sheet material therethrough, a mixing trough extending along one end of said container and in free communication only at its ends with the side regions of said main container, a smaller container for liquids, the cross-sectional area of said smaller container being a small fraction only of the cross-sectional area of said main container, means for continuously and positively circulating liquid around the system which comprises said mixing trough and said smaller container, at a rate greater than the rate of take-up of liquid by the material and so that an appropriate part of the circulating liquid is available for travel along said mixing trough from the central portion thereof to the ends thereof as required, flow control means in said system whereby changes in the rate of take-up of liquid from said main container by the material are reflected in changes in the amount of liquid in the smaller container, means for continuously supplying liquor containing or consisting of said substance to said smaller container at a rate corresponding with the specified rate of take-up of said substance by the material, and means for supplying diluent to said smaller container at a rate so dependent on the amount of liquid therein that the diluent feed is varied to maintain a substantially constant total amount of liquid in the apparatus.

3,292,574
APPARATUS FOR PYROLYTIC PRECIPITATION OF SEMI-CONDUCTOR MATERIAL FROM A GASEOUS COMPOUND THEREOF
Wolfgang Keller and Günther Berger, Pretzfeld, and Otto Schmidt, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Jan. 24, 1964, Ser. No. 340,044
Claims priority, application Germany, Jan. 26, 1963, S 83,437
9 Claims. (Cl. 118—49.5)



1. Apparatus for pyrolytic precipitation of semiconductor material upon an elongated, electrically heated core from gas containing a pyrolytically dissociable compound of the semiconductor material, comprising a reaction vessel having duct means for supplying the gas and having holder means for fastening the elongated core in the vessel, said holder means defining a core axis during precipitating operation, an induction heater winding for heating the core, said winding having an elongated loop shape and having the two elongated and mutually opposite loop portions extend substantially parallel to said core axis along diametrically opposite sides thereof.

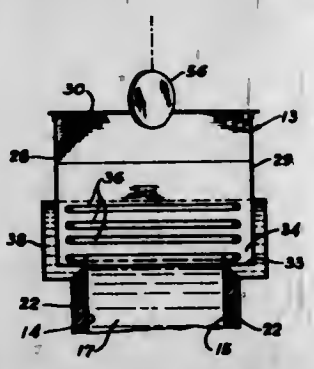
3,292,575
SHEET ROCK TAPE DISPENSER DEVICE
Raymond H. Letterly, Castana, Iowa 51010
Filed Apr. 15, 1963, Ser. No. 273,139
2 Claims. (Cl. 118—405)



1. A sheet rock tape dispenser device comprising a container for containing an adhesive material, said container including side walls, a forward wall and a rear wall, and a bottom wall, said rear wall and said forward wall having lower openings for receiving tape therethrough, said rear wall including a vertically adjustable gate member positioned adjacent to the rear wall opening,

said gate member having a lower toothed edge to permit a uniform flow of material to said tape, a block, means for attaching said block to a supporting surface, means for attaching said device to said block including bayonet slots formed in said device, screws attached to said block received in said bayonet slots, a tape support attachable to said device including a pair of laterally spaced male rods, said device including female sockets for receiving said male rods, said male rods including a transverse rod portion extending integrally therefrom, said transverse portion adapted to be received within a tape spool.

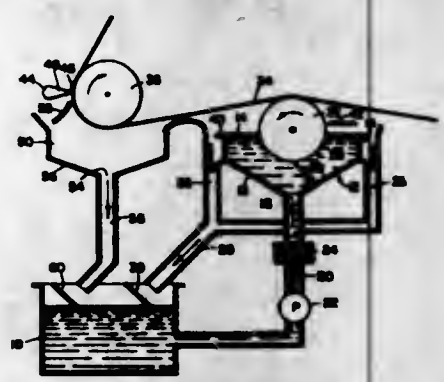
3,292,576
APPARATUS FOR DIP COATING
Otto H. Lindemann, Buffalo, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Aug. 6, 1963, Ser. No. 300,321
5 Claims. (Cl. 118—429)



1. In dip coating apparatus of the type described, the combination of a tank member, said tank member being adapted to contain a hot, liquid, dip coating composition which includes a major proportion of a halogenated solvent, highly volatile at the temperature of said composition, an enclosure carried by said tank member and surrounding the top thereof, said enclosure including a drain trough member on the interior thereof, adjacent the top of the tank member, said drain trough member being formed on the lower portion of the enclosure and having a bottom member and inner and outer wall members, said bottom member extending outwardly from said tank member, above the level of said coating composition therein, so that the outer wall of the trough member falls in a plane exterior of the tank member and substantially all of said bottom member is exterior of said tank member, a solvent cooling coil disposed around the interior of said enclosure above said trough, whereby solvent condensed on said coil will drip into said trough, and a cooling jacket, exterior of said enclosure, surrounding the lower portion thereof and positioned so as to surround the bottom and outer wall members of said trough memebr and the peripheral area adjacent said condensing coil.

3,292,577
APPARATUS FOR COATING PAPER
Philo B. Cressey, Jr., Gorham, and Eben W. Freeman, Portland, Maine, assignors to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts
Filed Feb. 5, 1964, Ser. No. 342,652
8 Claims. (Cl. 118—603)

1. Apparatus for coating paper comprising:
(a) a coating pan;
(b) means for continuously delivering liquid coating into said pan at a rate producing a substantially uniform liquid coating level in said pan and a continuous overflow of liquid coating from said pan;
(c) a coating roll disposed above said pan and mounted for rotation about a horizontal axis, said roll carrying a paper web on its upper periphery and moving through the pan-contained coating pool at its lower periphery to apply liquid coating to the underside of the paper web, said roll producing a roll periphery-following current in the coating pool as a result of relative motion therebetween, said roll periphery-following current containing entrapped gas bubbles; and
(d) means mounted within said coating pan including a doctor blade pressed against said roll below the

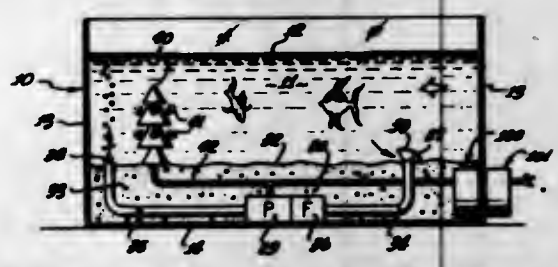


substantially uniform liquid coating level and remaining against said roll during rotation of said roll toward said blade for wiping clinging gas bubbles from the lower periphery of said roll and for directing the bubbles away from the exit side of the roll into the continuous overflow of liquid coating from said pan.

3,292,578
ANIMAL CONTROL
Daniel M. Stout, St. Louis, Mo., assignor to Whitmire Research Laboratories, Inc., St. Louis, Mo., a corporation of Missouri
Filed Feb. 24, 1965, Ser. No. 435,946
3 Claims. (Cl. 119—1)

1. In the art of parrying the attack of an animal the process comprising: forcibly projecting harmless foam into the face of the attacking animal.

3,292,579
AQUARIUM POWER SUPPLY
Beverly J. Buchanan, 3915 Bonita Drive, Lakewood, Calif. 90712
Filed June 24, 1965, Ser. No. 466,731
19 Claims. (Cl. 119—5)



1. In combination, an aquarium tank having an electrically non-conducting water retaining wall, and means to transmit electrical power from a power supply source at the exterior to a power utilization device at the interior of the tank, said means including electromagnets at the outside and inside of the tank and having opposed pole faces at opposite sides of said wall.

3,292,580
VACUUM POSITIONED MILK TRANSFER SYSTEM
Thomas W. Merritt, Sr., St. Charles, and Chester A. Thomas, Lake Forest, Ill., and Robert J. Shallick, Newtown, Pa., assignors to Babcon Bros. Co., a corporation of Illinois
Filed May 28, 1965, Ser. No. 459,724
13 Claims. (Cl. 119—14.46)

1. A system for transferring milk from a bucket to an evacuated pipeline, comprising: a milk evacuation dip tube extending into a bucket and connected with said

evacuated pipeline, through which milk is drawn from the bucket into the pipeline; a tiltable support means for

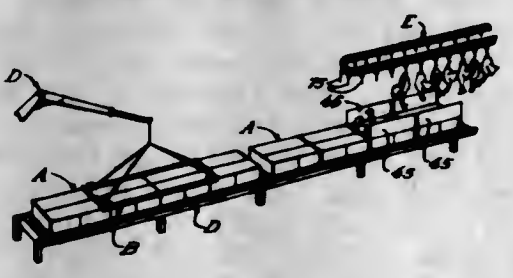


said bucket; and means for tilting said support in response to evacuation of said bucket, to position the bucket to drain milk into a sump adjacent the end of said dip tube.

3,292,581
METHOD AND APPARATUS FOR TRANSPORTING TURKEY

William B. Van Nest, Box 2752, Rte. 2, Excelsior, Minn. 55331

Filed Oct. 7, 1964, Ser. No. 402,107
7 Claims. (Cl. 119—17)



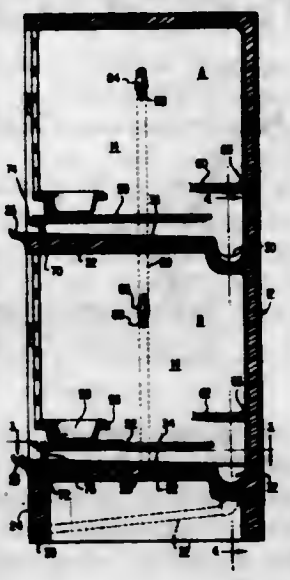
1. A live turkey rack comprising:
an elongated frame defining an elongated bottom wall and a pair of parallel foraminous side walls extending upwardly from opposite side edges thereof,
a series of pairs of opposed guides on the inner surfaces of said side walls and substantially equally spaced throughout the length thereof,
partition walls detachably supported by said guides of each pair, the end partition walls forming end closures,
a pair of opposed cover panels hingedly connected in opposed relation to the side walls and foldable from end abutting relation to upright position between each partition wall and the next adjoining partition wall,
a pair of hooks projecting upwardly from the side wall frames,
the under surface of said side wall frames including sockets into which the hooks of a similar rack may extend, and
means in said sockets engageable with said hooks to permit a plurality of superimposed racks to be lifted simultaneously.

3,292,582
SMALL ANIMAL CAGE

Jeanette L. Rubricius, 85—35 Midland Parkway, Jamaica, N.Y. 11432

Filed June 21, 1965, Ser. No. 465,485
2 Claims. (Cl. 119—17)

1. A small animal housing unit comprising top, side and back walls, a lower floor member formed with said back and side walls and spaced from the lower extremities thereof, a generally transverse partition member formed with the side and back walls and spaced intermediate the top and lower floor member to form upper and lower cages, said top, side and back walls and said floor and partition members being formed from an expanded foam plastic composition with the interior and exterior surfaces thereof coated with an impervious sheet material, a trough integrally formed in the floor member and in the partition member, said troughs extending across the back wall of the housing and sloping toward opposite side walls, pipe means having one end connected to the lower end of each of said troughs, a common drain pipe extending across the front of the lower cage of the housing unit, means connecting the other end of each of said pipe means to said common drain pipe, said pipe means and said common drain pipe being formed within the ex-

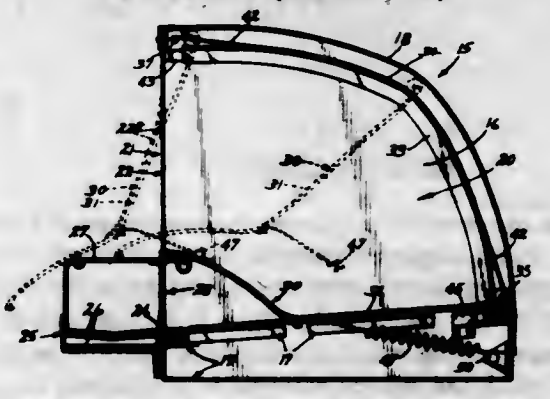


panded foam plastic composition during formation of said top, side and back walls and said floor and partition members, an opening through one of the side walls communicating with at least the lower end of the common drain pipe, the upper surface of the floor member and the partition members sloping downwardly from the front edge thereof to the respective troughs, and separate grille means extending between the top and side walls and the partition member and between the partition and floor members and the side walls, each of said grille means including an openable section permitting access into the housing unit.

3,292,583
AUTOMATIC POULTRY NEST

Seymour Peterson, Dassel, Minn., assignor to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota

Filed Mar. 31, 1965, Ser. No. 444,260
18 Claims. (Cl. 119—45)

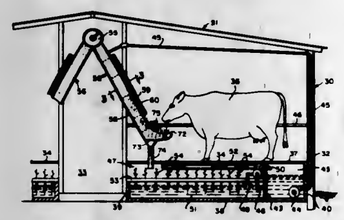


15. A poultry nest comprising:
(a) opposite side, rear, and nest-forming bottom walls which cooperate to define a nesting chamber having an open front;
(b) a sweep-barrier element extending between the side walls of said chamber and generally overlying the nest-forming bottom wall;

(c) said sweep-barrier element defining apertures for the passage of eggs therethrough but which prevent the passage of poultry therethrough; and

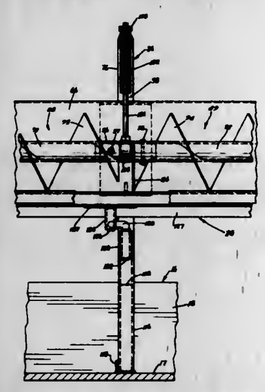
(d) means connected to impart an upward and forward translational motion to said sweep-barrier element, said upward motion being at a greater rate than said forward motion.

3,292,584
METHOD AND MEANS FOR FEEDING ANIMALS
Merrill S. Brodrick, Mansfield, Pa. 16933
Filed Dec. 16, 1964, Ser. No. 418,661
5 Claims. (Cl. 119—51)



5. A method of animal feeding comprising the steps of collecting animal waste material, diluting the waste material with liquid, combining said diluted animal waste material with nutrient ingredients and presenting to the animal to eat the resulting intermixed food.

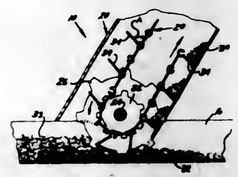
3,292,585
AUGER TYPE DUMPING BUNK FEEDER
Floyd E. Buschbom, Long Lake, and Glen D. Hansen, Maple Plain, Minn., assignors to VanDale Corporation, Wayzata, Minn., a corporation of Minnesota
Filed Dec. 3, 1964, Ser. No. 415,671
22 Claims. (Cl. 119—52)



12. A support for an auger having an axial shaft comprising, stand means having a section located above said auger, upright sleeve means secured to said section, rod means slidably positioned with a loose upright fit in said sleeve means, stop means for limiting the downward movement of said rod means relative to the sleeve means, and bearing means secured to said rod means and rotatably connected to said axial shaft whereby said auger is carried by said stand means.

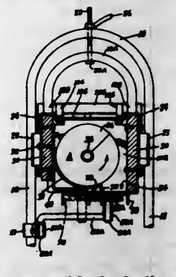
19. In a conveyor assembly, a first auger having a helical flight, a second auger having a helical flight, coupling means connecting the first auger with the second auger in an end-to-end relative relationship with the flights of said augers following a substantially helical path, suspension means positioned between the adjacent ends of the augers and rotatably connected to said augers and transverse plate means located adjacent the suspension means and secured to the leading portion of the helical flight of the second auger to prevent build up of bulk material in the area adjacent the suspension means.

3,292,586
FEED-RETURN APPARATUS FOR AUTOMATIC FEEDING CONVEYORS
Preston D. Rigterink, Holland, Mich., assignor to Big Dutchman, Inc., Zeeland, Mich., a corporation of Michigan
Filed May 17, 1965, Ser. No. 456,427
21 Claims. (Cl. 119—52)



1. Animal feed return apparatus for transferring feed from the return trough into the supply hopper of automated animal feeding apparatus including a conveyor chain for moving feed through the trough, comprising in combination: a conveying means inclined upwardly from said trough to the upper extremity of said hopper; said conveying means having an endless movable member and a series of flight means secured to said member for movement therewith; said flight means extending outwardly from said member and aligned over said trough, and having a portion extending into said trough to be moved therewithin; said conveying means including a chain engaging sprocket assembly at the lower portion of said endless movable member and comprising a central drive sprocket and at least one adjacent chain drive sprocket, said central drive sprocket constituting a means for receiving motion from the conveyor chain and transferring it to the endless movable member through said adjacent chain drive sprocket, said flight means when moved within said trough gathering feed therefrom; and said conveying means then carrying the gathered feed upward to deposit same into the said hopper.

3,292,587
SELF-DUMPING BUNK FEEDER CONVEYOR
Floyd E. Buschbom, Long Lake, and Glen D. Hansen, Maple Plain, Minn., assignors to Van Dale Corporation, Wayzata, Minn., a corporation of Minnesota
Filed July 13, 1964, Ser. No. 382,223
18 Claims. (Cl. 119—56)



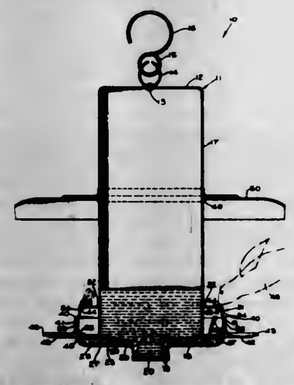
4. A bunk feeder assembly including means for conveying feed longitudinally therethrough and supporting feed in extended linear position above a feed bunk, said conveying and supporting means including two movable portions closing openings in said conveying and supporting means, one of said movable portions closing an opening and moving away from its opening in response to conveyed feed, means for driving the other of said movable portions, and actuating means interconnecting said one movable portion and said driving means, whereby the other of said movable portions is moved in response to the movement of the first movable portion.

3,292,588
POULTRY WATERER
Benjamin B. Patrick, 204 Candle Ave., Springdale, Ark. 72764
Filed Sept. 21, 1965, Ser. No. 488,868
1 Claim. (Cl. 119—74)



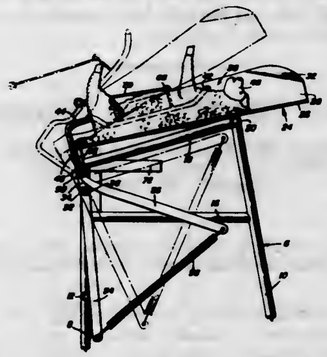
A device of the character described, comprising a water container, at least one drinking tube connected at its inner end in communication with the container, said tube being formed in its top with drinking opening means, said tube having an open outer end, and a closure and clean-out assembly for the drinking tube, said assembly comprising an elongated relatively stiff non-corrosive wire having permanently attached to its inner end a clean-out brush and having a handle eye projecting from its outer end, and a resilient and compressible plug circumposed about said wire inwardly of and contiguous to said handle eye and secured to said handle eye, said assembly being disposed within said tube so that the clean-out brush is adjacent to the inner end of said tube and the plug is exteriorly of and is removably engaged in the open outer end of said tube with the handle eye exteriorly of the tube, the inner end of said tube being close to the container to thereby enable said brush to act as a filter and prevent any trash from being admitted to the container.

3,292,589
HUMMING BIRD FEEDER
Robert H. Williams, Rte. 2, Bandera, Tex. 78003
Filed June 17, 1965, Ser. No. 464,617
4 Claims. (Cl. 119—77)



1. In a humming bird feeder, the combination of: vacuum trapped sugar solution reservoir means having an escape passage near the lower end thereof; a feed bowl disposed to receive solution discharged outwardly from said reservoir means through said escape passage, said feed bowl extending above the level of said passage so as to exclude air from access to the latter except when solution is removed from said bowl, as by feeding therefrom; a cover for said bowl having at least one hole which is large enough to receive the bill of a humming bird but too small to admit the body of a sugar feeding flying insect, said cover being spaced above the normal lever of solution maintained in said bowl by the vacuum action of said reservoir means, a sufficient distance to prevent said flying insects reaching said solution through said hole, said distance being short enough however to permit a humming bird to readily feed from said solution, by extending his bill through said hole, said bowl having a bowl bottom which underlies said reservoir means and has a hole underlying said reservoir means; a threaded neck which is smaller in diameter than said reservoir means and is integrally formed thereon to extend downwardly therefrom, said neck neatly fitting and extending through said hole; screw cap means adapted to be screwed onto said neck to unite said bowl with said reservoir means; and seal means, effective when said cap means is tightened on said neck, to produce a liquid-tight seal between said cap means and said bowl, said cap means when loosened, with said feeder inverted, affording a means for introducing a supply of liquid bird feeding material into said reservoir means.

3,292,590
SHEEP HOLDING DEVICE
James L. Powell, Eldorado, Tex. (Box 7, Fort McKavett, Tex. 76841)
Filed Dec. 22, 1964, Ser. No. 420,298
2 Claims. (Cl. 119—103)

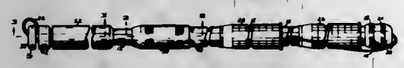


1. A sheep holding device comprising a support stand embodying a pair of front vertical legs, a pair of complemental relatively long rear vertical legs, horizontal brace members securing said paired legs together and defining and providing said support stand, a horizontal shaft extending between and joined at its respective ends to upper portions of said front legs, a cradle for reception of the animal which is to be held and operated on, branded or otherwise treated, said cradle comprising an elongated trough wihch is unobstructedly open at its forward and rearward ends, said trough being provided at its forward end with a pair of opposed spaced parallel arms secured at their upper ends to coacting component portions of said trough and depending below the bottom of said trough, said arms being provided at lower ends with a sleeve fixed to and spanning the space between the arms, said sleeve providing a bearing and said bearing being journaled for rotation on a cooperating portion of the aforementioned shaft, and means associatively cooperable with the receptacle portion of said trough and component portions of said stand for clamping and retaining a sheep within the confines of said trough when the latter is in an operating position and during which

the rearward open end portion of the trough resides atop and is supported in part by an underlying brace embodied in said stand, said positioning and clamping means comprising an elongated substantially U-shaped frame which when in use has its bight portion and companion limb portions confined within the limits of the upstanding flanges of said trough, the limbs of said frame having downbent portions confined to a normal position between the aforementioned depending arms and rigily connected to a sleeve, said sleeve constituting a bearing, an assembling and journaling shaft fixed between said arms, said bearing sleeve being journaled for free rotation on said journaling shaft, an arcuately shaped yoke bridging the limbs of said U-shaped clamp in a position adjacent to the bight portion thereof and adapted to conformingly arch over and beaf down upon the portion of the sheep forwardly of the forward legs of the sheep, an elongated push-pull rod having an eye at one end pivotally connected to a median portion of said yoke and for swinging said clamping frame upwardly, a rigid linearly straight lever having an upper end joined to the bearing sleeve carried by the limbs of the aforementioned clamping frame, and normally depending into the stand in the space between the front and rear legs, an arm complemental to said lever and in a plane common with said lever, said arm being joined rigidly at its upper end to the first named bearing sleeve and depending therefrom and also into the space between said front legs, a horizontal limit stop brace spanning the space between said front legs, the lower portion of said arm bridging and resting against said brace, and a coil spring interposed between and having one end connected with the lower end of said arm and the other end operatively connected with the lower end of said lever.

3,292,591
ANIMAL CAPTURING AND RESTRAINING DEVICE

Fred A. Wood, 2916 Broadway, San Diego, Calif. 92102
Filed Apr. 7, 1965, Ser. No. 446,287
7 Claims. (Cl. 119—153)



1. An animal capturing and restraining device having an elongated tubular member with one end of a flexible loop forming member being secured adjacent the restraining end of said tubular member and with the other end of said loop forming member being adapted to pass through and extend from said tubular member, the improvement comprising,

said restraining end of said tubular member having a circumferential groove slidably retaining said one end of said loop forming member for sliding movement in said groove around said tubular member.

3,292,592
WRITING INSTRUMENT

Morvil D. Chapman, 1403 Dersch Road, South Euclid, Ohio 44121, and John J. Orris, 1504 Jaeger Drive, Lyndhurst, Ohio 44124
Filed Feb. 19, 1963, Ser. No. 259,570
31 Claims. (Cl. 120—42.03)

1. A writing instrument, comprising

(a) a cap member,

(b) a barrel member connected to said cap member,

(c) coupling means for detachably connecting said members with the members movable between uncoupled and coupled positions, and

(d) drive mechanism operatively secured in at least one of said members,

(e) said drive mechanism including a bore for drivingly receiving a scribe element through the uncoupled end of said one member,

(f) said drive mechanism including a driver part responsive to relative rotational movement of said one member in said coupled position relative to the other of said members for moving said scribe element between an advanced and a retracted position,

(g) said drive mechanism including with said driver part a driven part having cooperating coacting helical surfaces rotated by said barrel and cap members for causing said advancing or retracting movement of said driven part,



(h) said driver part being rigidly carried by said one member by a press fit,

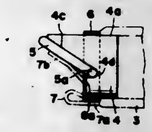
(i) a coupler operatively carried by said other member in said coupled position,

(j) said driven parts being axially slidable in said coupler,

(k) whereby advancing and retracting movement of said scribe element by relative rotational movement of said members is a positive drive not relying on frictional slippage.

3,292,593
RETRACTABLE NIB FOUNTAIN-PEN

Tetsuo Furuya, Hiratsuka-shi, Japan, assignor to Pilot Man-Nen-Hitsu Kabushiki Kaisha, Tokyo-to, Japan
Filed June 29, 1964, Ser. No. 378,516
Claims priority, application Japan, Nov. 27, 1963, 38/88,958
2 Claims. (Cl. 120—42.03)



1. A cover assembly adapted to be fitted within the forward end opening of a retractable nib fountain-pen, comprising a generally cylindrical cover plate holder including a longitudinal bore therethrough and an end face at the forward end of the holder and further including a pair of pivot pin support recesses on the two sides of said end face, said pivot pin support recesses facing longitudinally forwardly, a cover plate having on opposite sides of the edge thereof a pair of pivot pins and pivotally supported on said end face of said holder with said pivot pins received in said pivot pin support recesses, so as to be capable of opening or closing the forward end of said longitudinal bore in the holder, a collar rigidly fitted on the outer surfaces of said holder and including at the forward end thereof a pair of transversely extending end plates which cover said recesses to prevent said pivot pins in the recesses from moving out of the latter, and a spring means continuously biasing said cover plate toward said canted end face so as to tightly close said bore of the holder.

3,292,594
WRITING IMPLEMENTS

Luigi Ghidoni, Settimo Torinese, Italy, assignor to Leandro Sebellino, Settimo Torinese, Italy
Filed Dec. 6, 1965, Ser. No. 511,808
Claims priority, application Italy, Dec. 11, 1964, 27,357/64
2 Claims. (Cl. 120—42.13)

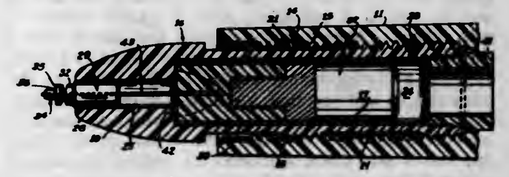


1. In a multicolor ball-point pen, an ink-cartridge selecting and propulsion mechanism which comprises in combination: a spring-loaded, flanged and retractable pushbutton protruding from one terminus of said ball-point pen; a cylinder having an upper portion tapered and connected to said push-button and a lower portion of larger diameter and terminating with a toothed, flared ridge, said cylinder being slidable within the barrel of said pen; a bell-shaped element enclosing with its upper terminal said toothed flared ridge of said cylinder and having a plurality of longitudinal grooves on the inner surface thereof for guiding and retaining purposes; a cylindrical catch positioned inside said lower portion of said cylinder and having at its lower extremity a flared apron in contact with said toothed flared ridge and slidably retainable within said grooves of said bell-shaped element; a collar frictionally positioned with said catch and containing therethrough a pendulum, said pendulum having an upper substantially spherical terminus, a central rod-like section and a lower rod-like section of larger diameter than said central section; a rotatable boss positioned as integral part at the upper extremity of said catch and spaced from said upper terminus of said pendulum, said boss being connected to said tapered upper portion of said cylinder by means of a spring; an inner barrel for supporting the ink-cartridges, located beneath said bell-shaped element and having a cylindrical lower portion with apertures therethrough for said cartridges and a multi-pointed star-shaped upper portion with guiding, longitudinal rib-like separators for said cartridges, each of said cartridges having an upper platelet terminal for engaging said pendulum and being spring-loaded about its longitudinal axis from said platelet to said lower portion of said inner barrel.

3,292,595
DRAFTING PEN

Marshall B. Young, Danbury, Conn., assignor to Eagle Pencil Company, Danbury, Conn., a corporation of Delaware
Filed May 1, 1964, Ser. No. 364,282
2 Claims. (Cl. 120—44)

1. A drafting pen comprising an ink barrel, a capillary writing point mounted on the end of the barrel in communication with the interior thereof, said writing point comprising a tubular support having an axial recess in one end, a tubular tip having one end positioned in said recess and protruding therefrom by an amount slightly less than the depth of said recess, said tip being formed of tungsten carbide, the end of said tubular support being bonded to the adjacent portion of said tubular tip,



the bores of said tubular support and tubular tip being longitudinally aligned and of substantially the same diameter to form an elongated substantially continuous capillary channel.

3,292,596
NIB UNIT FIXING DEVICE FOR WRITING PENS

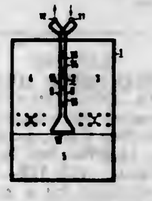
Hajime Ishida, Hiratsuka-shi, Japan, assignor to Pilot Man-Nen-Hitsu Kabushiki Kaisha, Tokyo-to, Japan
Filed Apr. 13, 1964, Ser. No. 359,087
Claims priority, application Japan, Apr. 19, 1963, 38/28,646
9 Claims. (Cl. 120—50)



1. A nib unit fixing device for writing pens, comprising a nib unit composed of a cylindrical nib base part and a semicylindrical pen nib extending forwardly from said nib base part and having inwardly bent flanges at both edges thereof, a feed bar extending through said nib unit and having a forwardly projecting portion have a semicylindrical cross section, said nib unit being placed against the outer surface of said feed bar with said flanges against the surfaces of said forwardly extending projecting portion of said feed bar for fixing said nib unit to said feed bar, and a nib unit mounting cylinder around said nib unit, one of said cylinder and unit having at least one projection thereon and the other having at least one recess therein in which said projection is engaged for fixing said nib unit with respect to said mounting cylinder.

3,292,597
PARTITION FOR BOILER FIRING CHAMBER

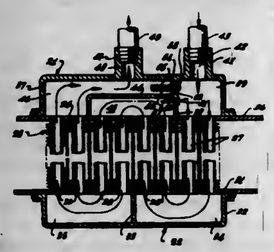
Walter Brodtschneider, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, and Erlangen, Germany, a corporation of Germany
Filed Mar. 10, 1965, Ser. No. 439,523
Claims priority, application Germany, Mar. 13, 1964
S 89,994
7 Claims. (Cl. 122—240)



1. An arrangement for effecting the partitioning of the firing chamber of a boiler having burners at the bottom of the firing chamber into a plurality of combustion chambers comprising an array of a plurality of registered closely spaced U-shaped working medium heating tubes, said

tubes being vertically suspended within the firing chamber with their bases forming the base of said array and extending to the vicinity of the burners, the corresponding legs of said tubes respectively forming two spaced planar arrays defining a space therebetween, the legs of each of said U-shaped tubes being staggered relative to each other on opposite sides of said partition so that a leg of one tube on one side of said partition is located opposite a corresponding leg of another tube on the other side of said partition, a plurality of spaced substantially horizontally disposed support members substantially coextensive in length with the width of said planar arrays disposed in said space, structures for connecting some of said legs from each of said arrays to respective ones of said support members, and means connected to the respective upper ends of said tubes for supplying said working medium to and collecting said working medium from said tubes, said supplying and collecting means being connected with said tubes for passing working medium in the same flow direction through the legs of the tubes located at corresponding opposite sides of said partition and for passing working medium in opposite flow direction through adjacent legs of the tubes on the same side of said partition.

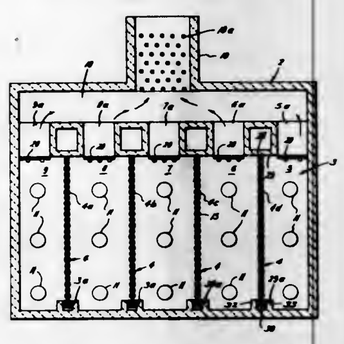
3,292,598
WATER HEATER
Avy L. Miller, 13246 Saticoy St., North Hollywood Calif. 91605, and Robert M. Ramey, North Hollywood, Calif.; said Ramey assignor to said Miller
Filed Sept. 28, 1964, Ser. No. 399,622
9 Claims. (Cl. 122—406)



1. A water heater comprising: an inlet for cold water; an outlet for heated water; heat-exchange means extending between said inlet and outlet for the passage therethrough of water to be heated; means for burning fuel and directing the products of combustion over said heat-exchange means; and by-pass means for diverting a portion of the water entering said heater around a portion only of said heat-exchange means adjacent the inlet thereto whereby the total flow of water passing through the heat-exchange means occurs only in the hotter portion thereof whereby to create a difference in the rate of flow of water through the hot and cold portions of the heat-exchange means.

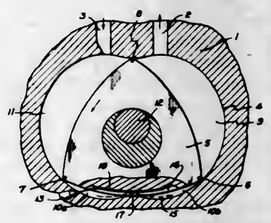
3,292,599
MULTICHAMBERED FIRED HEATER AND TUBE WALL CONSTRUCTION
Merle A. Zimmerman, Shreveport, La., assignor to Waste Heat Engineering Corp., a corporation of Texas
Filed Dec. 14, 1964, Ser. No. 418,225
4 Claims. (Cl. 122—510)

1. A tube wall partition for a multichambered fired heater comprising:
(a) a plurality of hollow tubes having their axes lying substantially in a common plane;
(b) unitary metallic fins extending outwardly from said tubes;
(c) means interconnecting adjacent tubes together by said fins to form a substantially vertical wall;
(d) refractory material secured on each side of said fins between said tubes to inhibit overheating of said tubes where joined with said fins;



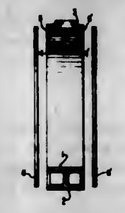
(e) means for supporting the uppermost tube from inside of the heater;
(f) said fins between said tubes supporting and suspending said tubes below the uppermost tube.

3,292,600
ROTARY PISTON ENGINE
Julius Liebel, Nurnberg, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg A.G., Nurnberg, Germany
Filed Apr. 20, 1961, Ser. No. 104,290
Claims priority, application Germany, Apr. 27, 1960, M 45,129
6 Claims. (Cl. 123—8)



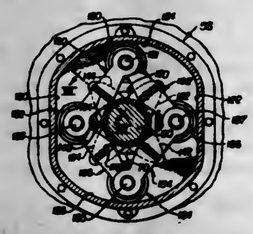
1. In a rotary piston internal combustion engine having a stationary housing enclosing a trochoidal shaped piston space with curved walls forming saddle points, a piston mounted for eccentric rotation in said piston space, said piston having a plurality of corners which constantly bear on said walls for forming working chambers between each adjacent pair of corners, the volume of each working chamber being constantly changed as said piston rotates, and inlet and exhaust ports in said housing for effecting a change of gas in the working chambers, the improvement comprising a combustion chamber in the working face of said piston between each pair of adjacent corners, respectively, and nozzle means mounted in said housing for injecting liquid fuel as a jet of fuel into each combustion chamber in the general direction of the air flow in the chamber as the chamber is rotated by said piston across a saddle point located at the compressed air end of the intake combustion air compression working chamber.

3,292,601
ROTARY PISTON INTERNAL COMBUSTION ENGINE
Wolf-Dieter Bensinger, Stuttgart-Riedenberg, and Hans-Otto Dennlinger, Stuttgart-Wangen, Germany, assignors to Daimler-Benz, Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Oct. 1, 1964, Ser. No. 400,764
Claims priority, application Germany, Oct. 4, 1963, D 42,631
3 Claims. (Cl. 123—8)



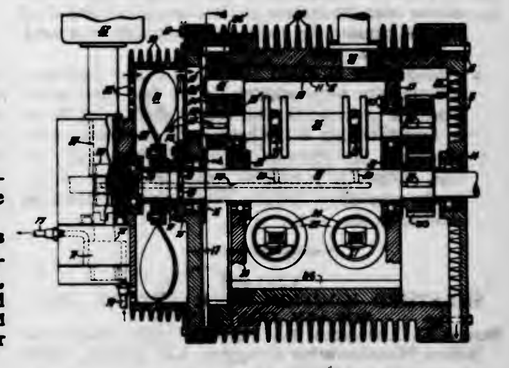
1. A housing casing for a rotary piston internal combustion engine, especially an internal combustion engine of trochoidal construction, comprising:
housing casing means provided with water space means extending around the housing casing means and essentially consisting of a light-metal pressure casting,
said housing casing means including radially inner and outer walls and central wall means connecting said inner and outer walls and subdividing said water space means,
said water space means being provided in the axial direction toward each side with aperture means extending around said housing casing means,
said housing means being bounded on each side by a plane surface portion,
and cover means for closing said aperture means,
said cover means comprising a pair of ring members received in said aperture means and having outer surfaces coplanar with a respective said surface portion.

3,292,602
ROTARY ENGINE
George R. Stewart, 10949 Sideview Drive, Downey, Calif. 90240
Filed Nov. 2, 1964, Ser. No. 408,054
9 Claims. (Cl. 123—11)



1. A rotary engine comprising:
a housing having an annular cylinder formed therein;
a drive shaft mounted for rotation about an axis centrally of said annular cylinder;
a countershaft mounted for rotation coaxially with said drive shaft;
a pair of spaced drive pistons slidably carried in the cylinder and connecting means fixedly mounting said pistons to the drive shaft;
a pair of spaced compression pistons slidably carried in the cylinder in alternating relation with the drive pistons, and connecting means fixedly mounting the compression pistons to the countershaft;
and piston control means for oscillatorily moving the compression pistons relative to the drive pistons during shaft rotation, including means for selectively adjusting the magnitude of the oscillatory movement.

3,292,603
ROTARY ENGINE
Stephen Wayte, 300 Wayte Road, Rotterdam, N.Y. 12303
Filed Dec. 16, 1964, Ser. No. 418,847
16 Claims. (Cl. 123—43)



1. A rotary engine comprising a stator with a cylindrical bore and cylindrical rotor rotatably mounted in said bore, a main shaft, a plurality of circumferentially evenly spaced cylinders in said rotor arranged in a bank in planar alignment transversely of said rotor, a piston operatively mounted in each of said cylinders, means for transmitting power between said pistons and said main shaft, a plurality of fuel intakes and exhausts in said stator each corresponding in number to said cylinders and circumferentially spaced to provide for simultaneous intake and simultaneous exhaust by all rotor cylinders in said bank, means for simultaneously igniting fuel in all cylinders in said bank, timing means for rotating said rotor in predetermined timed operative relation to said pistons and main shaft whereby said rotor cylinders and pistons are progressively positioned relative to said stator for the related intake, ignition, and exhaust sequences of combustion cycle operations.

3,292,604
ROCKER ARM OPERATING AND TIMING APPARATUS FOR INTERNAL COMBUSTION ENGINE
William Joseph Rille, 217 Bickley Road, Glenside, Pa. 19038
Filed Oct. 28, 1964, Ser. No. 405,197
6 Claims. (Cl. 123—90)



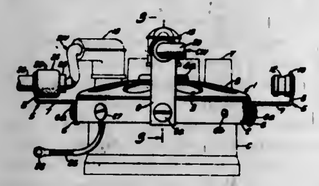
1. In an internal combustion engine having a crankshaft and a cylinder valve controlled by a rocker arm, rocker arm operating apparatus comprising

a first shaft mounted for rotation having a cam surface positioned proximate one end and extending about the axis of said shaft, said cam surface extending generally along a plane disposed at an acute angle relative to the axis of said shaft, said shaft having external gear means positioned proximate the opposite end thereof,

a member extending upwardly through the center of said cam surface and mounted for shifting movement vertically relative to said cam surface, said member being urged downwardly by said rocker arm, roller means on said member in rolling contact with the cam surface whereby said roller means moves over the surface of the cam as said first shaft rotates, causing the rocker to reciprocate in a vertical direction, and

a geared shaft mounted for rotation and positioned substantially perpendicular to the first shaft proximate the gear means, said geared shaft being driven in timed relation to the crankshaft and having gears to engage the gears on the first shaft whereby the cam surface is caused to rotate in timed relation to the crankshaft thereby imparting a reciprocating motion to the rocker arm.

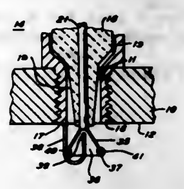
3,292,605
SHEATHED IGNITION WIRE SUPPORT AND SHEATH CONNECTOR
Russell G. Livingston, Los Angeles, Calif., assignor to Hallett Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Apr. 24, 1964, Ser. No. 362,484
4 Claims. (Cl. 123—148)



1. In a wire support and sheath connector for an automotive ignition system: the combination of a distributor cap having a central coil wire tower and a plurality of circumferentially spaced spark plug wire towers; a coil wire connected to said cap at said coil wire tower; a plurality of spark plug wires also connected to said cap at the respective spark plug wire towers; each of said coil wire and spark plug wires having electrically conductive sheaths thereon; said member having a central opening receiving said coil wire tower and a plurality of circumferentially spaced openings receiving said spark plug wire towers; spark plug wire support means and coil wire support means; means on said member and said respective support means for securing said support means in selected angularly related positions on said laterally offset portions of said member; and each of said support means having means electroconductively connected to the sheath of said spark plug and coil wires.

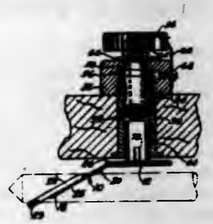
3,292,606
SPARK PLUGS
Clarence P. Ervin, 6218 Greene St., Philadelphia, Pa. 19144
Filed Oct. 19, 1964, Ser. No. 404,877
9 Claims. (Cl. 123—169)

1. A spark plug having a body with threaded end for mounting the same in the wall of a combustion chamber and an internally disposed insulator, a combustion cup extending beyond the end of said body for interior exposure within the combustion chamber, said cup retaining a portion of the heat released in said combustion chamber, said cup having an outer terminal rim with an end opening and an interior space, closed inwardly of



said rim for receiving and retaining for ignition a portion of the combustible gas in the combustion chamber, and said cup having spaced spark gap terminals disposed within said space inwardly of said rim and at an inner portion of said cup.

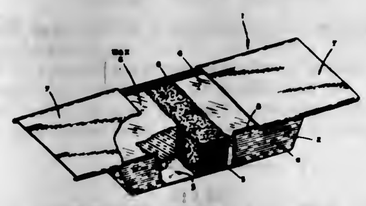
3,292,607
ARROW REST FOR AN ARCHERY BOW
Earl H. Hoyt, Jr., 11510 Natural Bridge Road, Bridgeton, Mo. 63042
Filed May 6, 1963, Ser. No. 278,151
5 Claims. (Cl. 124—41)



1. An arrow rest for an archery bow comprising a flat attaching portion having a rear surface adapted to lie flat against a vertical supporting surface, a horizontally flexible arrow spacing element and an arrow support leg, both being connected to and extending outwardly from the front surface of said attaching portion and said arrow support leg being arranged below said arrow spacing element and extending outwardly from the front surface of said attaching portion beyond the end of said arrow spacing element, said arrow spacing element consisting of a strip of thin flexible material arranged in a vertical plane, the arrangement being such that an arrow resting on said arrow support leg is resiliently spaced horizontally outward from the front surface of said attaching portion by said flexible arrow spacing element which cushions any inward lateral thrust of the arrow under shooting conditions.

2. In an adjustable arrow rest for an archery bow, a retaining sleeve adapted to be mounted in fixed position in a bore extending through a bow from its arrow side to its opposite side, said retaining sleeve having a closing wall with a noncircular perforation therein at the arrow side end thereof, an internally threaded drive sleeve mounted for rotation in said retaining sleeve and projecting therefrom at its opposite end, a knob fixed on the projecting end of said drive sleeve, means preventing axial movement of said drive sleeve in said retaining sleeve, a transmission screw threadedly engaged in said drive sleeve and having a non-circular end portion thereof slidably fitting and passing through said noncircular end wall perforation of said retaining sleeve and projecting outwardly from said arrow side end of said retaining sleeve whereby said transmission screw is caused to move axially as said knob and drive sleeve are turned, and an arrow rest mounted on said projecting end of said transmission screw.

3,292,608
HEATER
Mathis T. Waddell, John M. Powers, and Rhoderick K. Saunders, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Continuation of application Ser. No. 412,720, Nov. 20, 1964. This application Feb. 25, 1966, Ser. No. 536,526
9 Claims. (Cl. 126—59.5)



1. A heater which comprises:

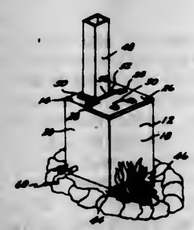
a pan having a bottom and sides, said sides being between 1 and 4 inches high;

a non-combustible, wax-impregnated wicking material extending between two of said sides and resting on said bottom; said wicking material being not less than one-fifth of the length of said sides between which said material is extended and substantially as high as the sides of said pan;

a wax having a melting point above 135° F. and a fire point of about 425° to 650° F. placed on both sides of said wicking material to fill said pan; and

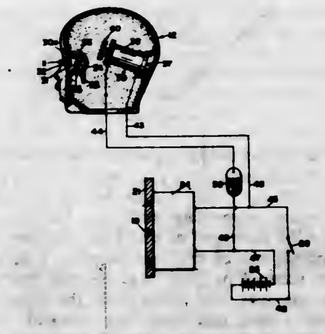
a divided movable cover on said pan.

3,292,609
PORTABLE HEATING DEVICES
Tom C. Powell, 2351 N. Park, Santa Ana, Calif. 92706
Filed Aug. 14, 1964, Ser. No. 389,657
2 Claims. (Cl. 126—369)



1. A portable heating device comprising in combination, a container formed of sheet metal and having top, bottom and four side walls affording a substantially square cross-section for said container, a cover in said top to be opened for adding liquid to said container, support means for positioning said container a predetermined distance above ground, an elongated combustion chamber within said container comprising four sheet metal wall members extending the height of said container and individually spaced from a separate one of said side walls of said container, said side walls affording a substantially square cross-section for said combustion chamber for optimum heat conductivity to the liquid in said container, a grate in said combustion chamber to retain combustible material therewithin adjacent the liquid in said container, a pair of mounting flanges on the top of said container in opposed relation on opposite sides of the upper end of said combustion chamber, an exhaust conduit formed of sheet metal and having a substantially square cross-section of such size as to loosely fit within said combustion chamber for compactness during storage, a pair of mounting arms on opposite sides of said conduit at one end thereof for engagement individually with said flanges on said container to position said conduit in contiguous relation with the upper end of said combustion chamber, and at least one flange at said one end of said conduit in coplanar relation with said mounting arms to cooperate therewith to effectively cover the upper end of the combustion chamber about the contiguous end of said conduit, whereby said combustion chamber and exhaust conduit are continuous notwithstanding the difference in cross-section thereof.

3,292,610
ANIMATED DOLL OR DISPLAY DEVICE
Michael Newman, 514–16 W. 147th St., New York, N.Y. 10031
Filed Feb. 8, 1963, Ser. No. 257,183
6 Claims. (Cl. 128—1)

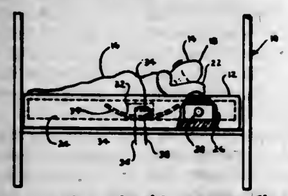


1. A doll comprising, in combination, a hollow body provided with an opening, transducer means mounted in said body, electromagnetic means provided with a core carrying a pusher, mechanically operable means arranged for rotational movement below said opening in said body and provided with surface sections for exposure thereof below said opening of said body, electric circuit means, including a hand-operated switch, position sensitive electric switch means, said transducer means, and said electromagnetic means, whereby upon closing said hand switch and placing said body in a predetermined position said transducer means and said electromagnetic means are energized so that said pusher entrains said operable means for further rotational movement of the latter to expose another surface section in said body opening, said transducer means being a sound reproducing apparatus, said hollow body being made of elastic material facilitating adjustment of one of said body dimensions in relation to the quality of sound emanating from said sound reproducing apparatus.

3,292,611
INFANT MATTRESS WITH HEATING AND TICKING MECHANISMS
Leonard Belkin, Smithtown, N.Y., assignor of one-fourth to Arnold Belkin and one-fourth to Stanley Belkin, both of New York, N.Y.
Filed Nov. 19, 1963, Ser. No. 324,648
1 Claim. (Cl. 128—1)

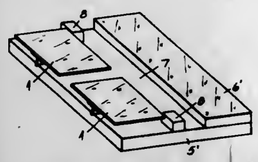
Apparatus for tranquilizing an infant reposing on a mattress comprising a mattress and means within said mattress emitting ticking sounds simulating a heart beat

and means adjacent to the aforesaid means for generating heat, the latter said means including a reflector to direct



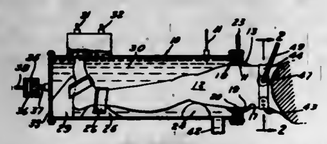
said heat to a portion of said mattress directly beneath the area upon which the infant normally reposes.

3,292,612
FOOT EXERCISING APPARATUS
Arne Foss, Etterstadsletta 29 c, Oslo, Norway
Filed Dec. 10, 1963, Ser. No. 329,546
Claims priority, application Norway, Dec. 19, 1962, 146,870
5 Claims. (Cl. 128—25)



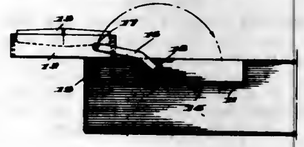
1. In a foot exercising apparatus, the combination of a plane, normally horizontal plate member adapted to support the forefoot, a flat, longitudinally extending base member, means supporting said plate member laterally rockable on the front end of said base member and about the longitudinal axis of said base member, a heel supporting surface secured on said base member rearwardly of said plate member and level with the upper surface thereof, and a firm pad projecting upwardly from said base member at the rear edge of the plate member, adapted to support the outer rim portion of the middle portion of the foot.

3,292,613
MEANS AND METHOD FOR CONTROLLED PULSATORY FLOW OF BLOOD TO IMPROVE CIRCULATION
Norman A. MacLeod, La Habra, Calif., assignor of sixty-six percent to R. Welton Whaun, Los Angeles, Calif., eighteen percent to Wilbur A. Sollo, Los Angeles, Calif., and ten percent to Frank F. Reed, Pasadena, Calif.
Filed June 21, 1963, Ser. No. 289,653
16 Claims. (Cl. 128—40)



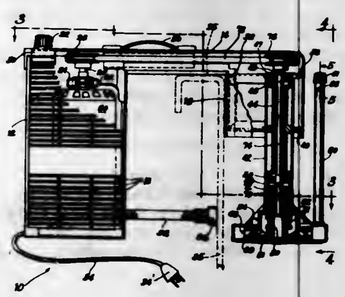
1. A method of improving the blood circulation in a part of the body of a human being or an animal, comprising:
(a) applying a pressure pulse to a part of a body to affect the flow in an artery in said part; and
(b) applying localized pressure to said artery between a portion of said part and the heart to inhibit reverse arterial flow toward the heart during said pressure pulse.

3,292,614
ROLLER MASSAGING DEVICE WITH MEANS FOR SPRAYING WATER BETWEEN THE ROLLERS
Richard P. Fleming, 12400 Flack St., Wheaton, Md. 20902
Filed Mar. 30, 1964, Ser. No. 355,732
5 Claims. (Cl. 128—57)



1. A massage unit comprising a hollow vessel having means defining a fluid inlet, at least one recessed portion an innermost surface of which defines a plurality of fluid outlets, a movable frame fitting within said recessed portion, and a plurality of spaced message rollers rotatably mounted on said frame at a level higher than said outlets.

3,292,615
DEVICE FOR AGITATING, SWIRLING AND AERATING THE WATER IN A VESSEL, SUCH AS A BATH TUB OR THE LIKE
Frank C. Bascomb and Erna Mayer, Chicago, Ill., assignors to Boulevard Electronics, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 26, 1963, Ser. No. 333,525
6 Claims. (Cl. 128—66)



1. A device for agitating and swirling the water in a bathtub, said device comprising a housing having a central portion and oppositely extending housing portions with one of said oppositely extending housing portions being the exterior housing portion and the other the interior housing portion, said central housing portion having an undersurface whereby the undersurface of the central portion is adapted to be positioned to rest on the top ledge surface of one of the bathtub walls so that said device is thereby adapted to be wholly and entirely supported on said bathtub wall without resting on any floor for support, with the exterior housing portion adapted to be positioned outside of the bathtub and adjacent the exterior side of the bathtub wall and the interior housing portion adapted to be positioned inside the bathtub and adjacent the interior side of the bathtub wall, said exterior housing portion and said interior housing portion extending parallel to each other and in the same direction away from the central housing portion and rigidly connected thereto and each being perpendicular to said central housing portion, said central housing portion being of a width so that it can be accommodated on a bathtub wall of any thickness, an electrically operated motor positioned in said exterior housing portion and isolated from the water in the bathtub, said exterior housing portion shrouding said motor, a pump supported by said device in alinement with said interior housing and adapted to extend into the bathtub, means connecting said electrically operated motor and said pump to operate said pump for agitating the water within the bathtub, said last mentioned means including a member extending through the central housing portion, said device having means adapted to engage the exterior and interior sides of the bathtub wall so that said device when resting on the top ledge surface of the bathtub wall engages the bathtub wall along the top ledge surface and exterior and interior sides of the bathtub wall to firmly support said device while in operation.

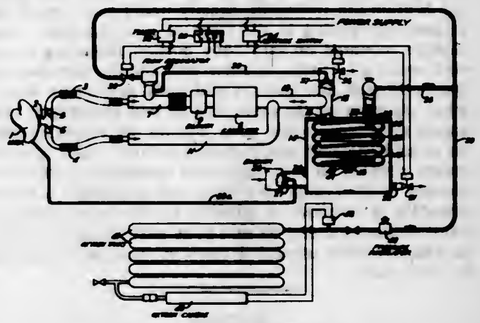
3,292,616
POSTURE BRACE GARMENT
George F. Freeman, Sturgis, Mich., assignor to Freeman Manufacturing Company, Sturgis, Mich., a corporation of Michigan
Filed June 24, 1963, Ser. No. 289,813
4 Claims. (Cl. 128—78)



1. A posture brace garment to support the shoulders and dorsal-lumbar region of a wearer, comprising a main body-encircling garment member having means to adjust the same for snug fitting engagement with the wearer's torso, said member including a rear portion and portions adapted to pass from said rear portion about side and forward hip and groin zones of the wearer, a pair of non-elastic shoulder engaging bands each having means providing a releasable connection of one end of the same to one of said last named portions of the garment member adjacent a side and forward hip and groin zone, said bands each being of a length and being arranged relative to said garment member to extend from its said side and forward connection rearwardly and upwardly about the rear portion of said garment member, beneath the armpit and upwardly about the shoulder of the wearer, and means flexibly and resiliently anchoring said non-elastic bands to said rear portion, comprising elastic connector means secured to ends of said bands opposite the first named ends thereof, means secured to said rear portion of said garment member to anchor the last named ends of said bands in that zone, and means providing a releasable connection of said elastic connector means to said last named anchoring means, said forward and rear releasable connections enabling the complete detachment of said bands and connector means from said garment member.

3,292,617
CLOSED CIRCUIT BREATHING APPARATUS
John B. McDonough, McCandless Township, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1963, Ser. No. 317,467
5 Claims. (Cl. 128—142)

1. In closed circuit breathing apparatus, a breathing mask, a breathing bag, a housing containing the bag and having an inlet and outlet communicating with the inside of the bag, conduit means connecting the mask with said inlet and outlet to permit breathing into and out of the bag, a spring inside the bag normally maintaining it expanded, the housing having a second inlet isolated from the inside of the bag, means connected with the second inlet for periodically pressurizing the housing to collapse the bag during periods of inhalation from the bag, the housing having a second outlet for escape of air pressure therefrom between said inhalation periods to permit the spring to expand the collapsed bag, said bag having a portion provided with an opening movable toward and away from a wall of said housing, a valve normally closing said bag



opening and having a member projecting therefrom engaging said housing wall when the bag approaches full expansion to open the valve, a normally open valve for said second outlet, a normally closed valve having an outlet in communication with said first-mentioned inlet, an oxygen supply line connected to the inlet of said last-mentioned valve, and means for opening the last-mentioned valve and closing said normally open valve.

3,292,618
UNDER-WATER DIVING EQUIPMENT
John E. Davis and Olympio F. Pinto, Sherman Oaks, Calif., assignors to J. Brisbin, Inc., Sherman Oaks, Calif., a corporation of California
Filed Nov. 18, 1963, Ser. No. 324,352
2 Claims. (Cl. 128—142)



1. A mask for use in conjunction with under-water breathing equipment, said mask being formed of waterproof material and having a solid body portion configured to define a chamber around the mouth of the wearer; said mask having a soft resilient compliant inner wall integral with said body portion and extending upwardly from the bottom portion thereof and across said chamber from one side of the body portion to the other and outwardly of the bottom edge, said inner wall enclosing the lower portion of said chamber and being configured together with the bottom portion to conform with the contour of the chin of the wearer, and being positioned to bear against the chin of the wearer in watertight sealing engagement therewith and to move with movements of the chin while maintaining such water-tight sealing engagement; said mask further having soft resilient, compliant sides formed integral with said body portion and configured to extend rearwardly and up each cheek of the wearer over a substantial portion of each cheek and to the bony region thereof, said resilient compliant sides being positioned to bear against the cheeks of the wearer in a water-tight sealing engagement therewith, and to maintain such water-tight sealing

engagement in the presence of jaw movements of the wearer; and said mask further having a thin soft resilient compliant upper edge formed integral with said body portion and extending upwardly from the top surface of said body portion, said upper edge being configured to extend over the upper lip of the wearer with the inner surface thereof engaging such upper lip over essentially the entire surface thereof, and said upper edge being configured to bear against the upper lip of the wearer in water-tight sealing relationship therewith directly under the nose of the wearer; an opening in the front of said chamber a diaphragm mounted on said body portion extending across said opening to form an outer wall for the chamber; an apertured wall mounted on said body portion to form a water chamber on the outer side of said diaphragm; inlet means mounted on said body portion for supplying inlet air to said chamber and including a valve; valve actuator means coupled to said valve and extending to said diaphragm to open said valve when said diaphragm is drawn inwardly in response to inhaling by the wearer; and exhaust means mounted on said body portion and including an exhaust valve adapted to open in response to exhaling by the wearer.

3,292,619
ABSORBENT DRESSING
Vernon C. Egler, Palatine, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Dec. 6, 1963, Ser. No. 328,553
3 Claims. (Cl. 128—156)



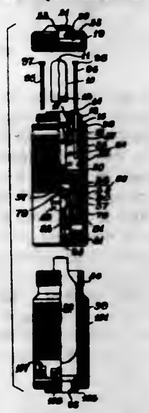
1. An absorbent dressing comprising a pad of absorbent material having a surface thereof covered with a film of thermoplastic material to provide a front surface of said dressing for application to a wound, said front surface having depressions therein whereby said surface comprises depressed portions and raised portions bordering the depressed portions, said depressions having walls which slope inwardly into the body of said pad from the raised portions bordering said depressions, said film conforming to and lining the walls of said depressions, the portions of the film lining the walls of the depressions having a plurality of openings therein exposing absorbent material therethrough, said film being adhered to absorbent material at least at the peripheral edges of said openings.

3,292,620
ELECTRIC DESENSITIZER
Hugo Mahler, La Mesa, Calif., assignor to Instro-Dynamics Corporation, San Diego, Calif., a corporation of California
Filed July 30, 1963, Ser. No. 298,720
1 Claim. (Cl. 128—172.1)



An electric desensitizer comprising a nickel plated tubular aluminum casing, a dry cell battery source of electrical energy disposed inside said casing, a centrally apertured nylon adaptor threadedly secured to one end of said casing, a liquid medicament brush applicator formed of camel hair, a unitary tapered nickel plated brass ferrule, one end portion of said brush applicator mounted within the small diameter end portion of the ferrule, a nickel plated brass pin having a tapered end portion disposed within the large diameter end portion of said tapered ferrule and brazed thereto, the remaining portion of said pin being disposed within the central aperture of said adaptor and having the opposite end thereof disposed in electrical engagement with the negative terminal of said energy source, said tapered end portion of the pin having an axial opening therein, a silver plated copper wire having a first end portion disposed within said axial opening in the pin and having an opposite end portion disposed centrally within said ferrule mounted end portion of said brush applicator thereby to produce a good contact between the applicator and the wire when medicament is applied thereto, said first end portion of the wire being soldered to said pin, a nickel plated aluminum closure plug threadedly secured to the opposite end of said casing, and a U-shaped beryllium copper spring having one leg secured to said plug and the other leg disposed in flexed engagement with the positive terminal of said battery source when said plug is threadedly secured to the casing.

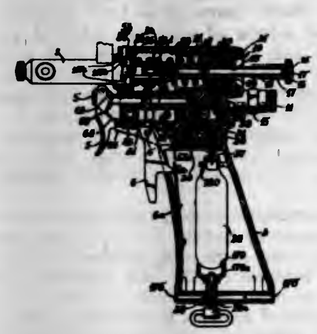
3,292,621
JET TYPE PORTABLE INOCULATOR
Oscar H. Banker, P.O. Box 9732, Bay Village, Ohio 44140
Filed July 19, 1963, Ser. No. 296,192
15 Claims. (Cl. 128—173)



14. An inoculator comprising a housing, a receptacle secured to the housing, said receptacle having an orifice at one end and a piston at its other end, ram means for engaging and moving said piston into the receptacle to eject inoculant through said orifice, a source of gas under pressure, said housing having a passage for conducting said gas under pressure from said source to said ram means, valve means on the housing for admitting gas under pressure behind said ram means to effect the engagement and movement of the piston by the ram means, and check valve means in the housing adapted to prevent admission of gas under pressure to the ram until the pressure of said gas exceeds a predetermined value.

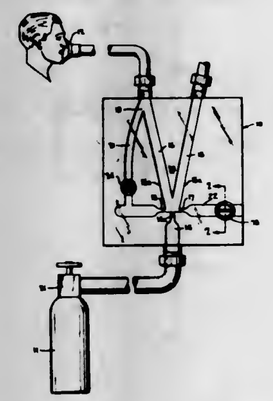
3,292,622
POWER OPERATED INOCULATOR
Oscar H. Banker, P.O. Box 9732, Bay Village, Ohio 44140
Filed Sept. 21, 1964, Ser. No. 397,788
21 Claims. (Cl. 128—173)

1. A jet-type inoculator comprising a power unit and a medicament ejecting discharge head adapted to be operated by the power unit, said discharge head comprising a container for medicament, apertured means on the container through which the medicament is ejected, a ram in the container, cooperating means on the ram and container preventing withdrawal of the ram from the container, quick-release means on the discharge head and



power unit releasably securing the discharge head to the power unit, reciprocable means in the power unit adapted to engage the ram to urge the ram into the container to pressurize medicament therein, and means for energizing the reciprocable means.

3,292,623
RESPIRATOR
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 24, 1964, Ser. No. 347,092
1 Claim. (Cl. 128—203)



A respirator comprising: a source of pressurized air; a respirator control device connected to said source of pressurized air and including a bistable fluid amplifier having an air jet nozzle, a respirating channel and expirating channel, said channels meeting and diverging from in front of said air jet nozzle, a control nozzle adjacent said jet nozzle, a closed feed-back path including a port communicating with said respirating channel and said control nozzle, said feed-back path having a variable valve therein, a biasing nozzle adjacent said air jet nozzle and opposite said control nozzle, said biasing means being in continuous communication with atmosphere and having means to modulate the communication of said biasing nozzle and said atmosphere; and a mask attached to said respirator channel.

3,292,624
HYPODERMIC SYRINGE AND NEEDLE COMBINATION WITH A SECONDARY, DETACHABLE NEEDLE ASSEMBLY
Daniel Gabriel and Susan M. Gabriel, both of Bonny Blue, Va.
Filed Dec. 16, 1963, Ser. No. 330,750
2 Claims. (Cl. 128—221)



1. In a hypodermic needle assemblage of the character defined, a syringe cylinder including a plunger operating in said cylinder, a discharge end of the cylinder having an integral projecting tapered shank, a reduced diameter needle integral with and projecting from said shank and terminating in a sharpened point, said shank and needle having a one-diameter bore extending therethrough, a supplemental needle unit detachably mounted on said tapered shank, said unit having a bore, said unit including a projecting hypodermic needle communicating with the bore in the unit, said bore of the unit snugly engaging a substantial longitudinal portion of the first named needle, a protective casing enveloping substantially the entire unit and detachable with said unit in forming a complete unitary assemblage of the cylinder, unit and said casing, and said casing having a downwardly contracted tubular end.

3,292,625
POST-SURGICAL IRRIGATION APPLIANCE
Arthur E. Marsan, Chicago, Ill., assignor to Hollister, Incorporated, a corporation of Illinois
Filed May 15, 1964, Ser. No. 367,644
9 Claims. (Cl. 128—283)



1. A post-surgical irrigating appliance, comprising: a sheet-like bag of waterproof material having an inner and outer wall, the bag being open at the bottom; a stoma opening on the inner wall of the bag for telescoping over the stoma of a patient; means for holding the bag in

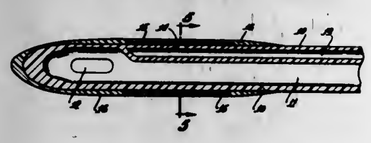
position on a patient; a catheter opening in the outer wall in registration with the stoma opening in the inner wall, said outer wall opening being of sufficient size for receiving a catheter tube to be inserted through the outer wall and into a stoma of a patient for irrigation purposes; and sealing means in the path of catheter insertion, said sealing means including a material which expands greatly when subjected to moisture so that when said catheter is inserted into said opening and through said sealing means, irrigation fluid coming into contact with said sealing means will cause said sealing means to expand greatly into sealing engagement with the catheter and after said catheter is removed, said sealing means will expand further to close the opening through which the catheter was inserted to provide a continuous seal against drainage and fecal discharge.

3,292,626
URINE COLLECTOR
John D. Schneider, Chicago, Ill., assignor to Hollister Incorporated, a corporation of Illinois
Filed May 25, 1965, Ser. No. 472,379
7 Claims. (Cl. 128—295)



1. A urine collector comprising a bag of flexible waterproof material having an opening therein near but spaced from the top thereof, a piece of adhesive material secured to the exterior surface of the bag and surrounding the opening, said material having a hole therein coinciding with the opening in the bag and said material having a pair of integral ears extending therefrom below and on either side of the hole, said ears being free of attachment to the bag, a flexible partition sealed to an interior surface of the bag to divide the same into a receiving compartment communicating with the opening and a storage compartment, and a passage formed by said partition establishing communication between said receiving and said storage compartments, said partition being adapted to be flexed by urine in said storage compartment to close said passage.

3,292,627
CATHETER
Andrew Haraatunelan, Gardena, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Mar. 25, 1963, Ser. No. 267,724
4 Claims. (Cl. 128—349)



1. A medical catheter for insertion into a body passage, said catheter comprising:
(A) an elongated flexible thermoplastic tube having an open end, a partially closed opposite end and a first longitudinal passage;
(B) said tube having an opening adjacent the partially closed end to allow drainage of body fluids through said passage to said open end;
(C) said tube defining a second inflation passage smaller than and independent of said first passage and extending longitudinally of said tube, said second smaller passage having an open end adjacent the open end of the tube and a closed end adjacent the partially closed end of said tube;
(D) an elastic thermoplastic layer encircling a longitudinal section of said tube adjacent its partially closed end, said layer being bonded at two longitudinally spaced areas to said tube but being free of attachment to the tube between said spaced areas to provide an inflatable balloon section;
(E) said catheter having a small restricted opening connecting said second passage with a space between the tube and the inflatable balloon section; and
(F) a partitioning coating encircling the entire portion of the exterior surface of the tube within the balloon section, said partitioning coating being constructed of a material readily and completely soluble in water at room temperature, whereby said partitioning material prevents the balloon section from adhering to the underlying exterior surface of the tube prior to inflation of said balloon, and whereby the partitioning coating when dissolved in water at room temperature provides a solution which can be easily removed through the small restricted opening and the inflation passage to deflate the catheter balloon.

3,292,628
ELECTRIC THERAPEUTIC GLOVE
Janey Pearl Maxwell and Russell Mead Maxwell, both of 107 E. Jackson St., O'Fallon, Ill. 62269
Filed Dec. 3, 1963, Ser. No. 327,669
5 Claims. (Cl. 128—402)



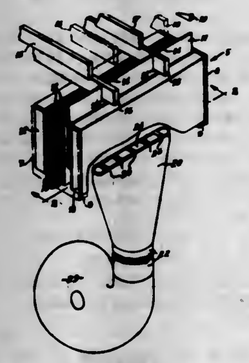
1. An electrically heated thermostatically controlled glove for therapeutic treatment of hands comprising a lining shaped to conform to the hand of the user including a portion separately conforming to the thumb, an inner electrically insulating heat diffusing structural screen conforming to the user's hand surrounding the lining, first and second serially connected electrical resistance heating elements conforming to the shape of the user's hand attached to the outer surface of the inner diffusing structural screen for providing uniform heating to the palm and the back of the user's hand, an outer diffusing structural screen conforming to the shape of the user's hand and surrounding the electrical heating elements, and an outer flexible nonconductive covering conforming to the shape of the user's hand and surrounding the outer diffusing structural screen.

3,292,629
COMBINATION BRASSIERE AND DETACHABLE LOWER GARMENT
Dora Steinberger, 2157 Broadway, New York, N.Y. 10023
Filed Dec. 31, 1964, Ser. No. 422,706
1 Claim. (Cl. 128—439)



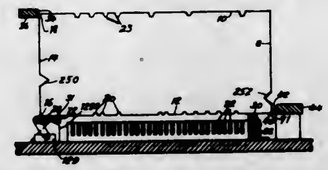
A foundation garment comprising in combination a brassiere and a nether garment, the front bottom portion of the brassiere being free of the front top portion of the nether garment, the rear bottom portion of the brassiere being connected to the rear top portion of the nether garment, the means of connection including a tape along the rear top edge of the nether garment on the outer surface thereof, teeth projecting upwardly from the top edge of the tape, a tape along the rear bottom edge of the brassiere on the inner surface thereof, teeth projecting downwardly from the bottom edge of the latter tape, meshing with the teeth on the first-named tape, a slide device ridable over the meshing teeth for opening and closing said teeth, a pull tab for actuating said slide device, the ends of said brassiere being releasably fastened to each other at the front of the garment.

3,292,630
CARD SELECTION APPARATUS
James E. Paulus, Hamilton, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Sept. 6, 1962, Ser. No. 221,844
7 Claims. (Cl. 129—16.1)



2. Apparatus for ejecting a preselected card from a pack of cards to a position in which the preselected card is physically differentiated from the remainder of the cards in the pack, comprising,
means for restraining all of said cards except said preselected card against movement relative to the remainder of the pack,
means including a nozzle for directing a stream of gaseous fluid against the edges of the cards in the pack whereby said gaseous fluid penetrates said pack and causes the preselected card to move relative to said pack while the other cards of said pack are retained in their relative positions and,
relatively static air pocket creating means bridging the outlet of said nozzle operable to interrupt the laminar flow of gaseous fluid from said nozzle and retard the rate of flutter of a card suspended in the gaseous stream.

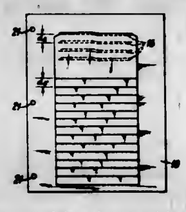
3,292,631
DATA PROCESSING EQUIPMENT
L Allen Crane, Jr., Lambertville, N.J., assignor, by mesne assignments, to Randomatic Data Systems, Inc., Trenton, N.J., a corporation of New Jersey
Filed Apr. 11, 1963, Ser. No. 272,485
9 Claims. (Cl. 129—16.1)



1. Information storage and retrieval equipment comprising:
(a) a file of cards disposed in substantially vertical planes and having normally registering front, rear, and bottom edges, said bottom edges being coded;
(b) selector means operable from retracted to operating positions adjacent said bottom edges in response to a coded impulse for allowing wanted cards to drop below unwanted cards, said selector means, when in the operating positions thereof, displacing correspondingly coded wanted cards from the remaining cards of said file;
(c) ejector means movable from a retracted to an operating position along a path across which the displaced, wanted cards extend to shift the same to an access position; and
(d) card position control means including
(1) a card support extending below the several cards adjacent the front edges of the cards and movable vertically upwardly from a retracted to an operating position into supporting relation thereto,
(2) an upper control member extending along the upper portions of the rear edges of the cards, said upper control member extending below the top edges of the undisplaced cards a distance less than the wanted cards are displaced so that the upper edges of the displaced cards are below said upper control member, said upper control member limiting the unwanted cards against movement upon said support into the path of the ejector means, and
(3) a lower control member extending along the lower portions of the front edges of the cards and limiting the unwanted cards against movement away from the upper control member, said selector means, ejector means, and card support being mounted to operate in a predetermined sequence in which, with the ejector means and the card support in their operating positions, the selector means first responds to said coded impulse, the ejector means and card support are retracted to free the wanted cards for displacement from the unwanted cards, the card

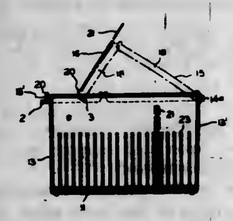
support is moved to operating position with the selector means retracted to tilt the wanted cards into said path of the ejector means, and the ejector means is moved from retracted to operating position to shift the wanted cards to the access position thereof, said wanted cards when in their tilted positions being disposed with their upper rear corners below and fully disengaged from the upper control bar to free the wanted cards for movement to said access positions thereof.

3,292,632
CARD FILE
Harold M. Hopan, 302 E. Broadway, Long Beach, N.Y. 11203
Filed Sept. 10, 1964, Ser. No. 395,512
4 Claims. (Cl. 129—20)



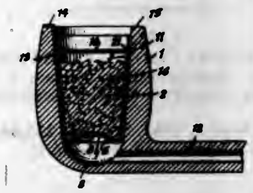
1. A card file comprising in combination: a mounting member consisting essentially of a substantially rigid sheet having a plurality of parallel tandem slots therein, each of said slots including a pair of parallel offset lengths communicating via another length at the approximate slot center, the adjacent edges of said pair of offset lengths being separated by a distance approximately equal to the thickness of the card to be mounted therein to provide a common rectilinear slot portion having a width approximately equal to the thickness of said card whereby the adjacent edges of said offset lengths of each slot act as bearing edges about which said card is adapted to rotate; and a plurality of cards, mounted in said slots, each of said cards having a pair of inwardly disposed notches at opposite ends thereof embracing the respective ends of the associated slot.

3,292,633
RECIPE FILING CABINETS
Helen Pannel, 208 E. Wisconsin Ave., Milwaukee, Wis. 53202
Filed Nov. 24, 1965, Ser. No. 509,561
1 Claim. (Cl. 129—43)



A recipe card indexing assembly including a rectangular body defined by side panels, front and rear panels and a bottom panel, the inner faces of said side panels having a plurality of evenly spaced projections thereon to define a plurality of evenly spaced and upwardly open slots adapted to receive a plurality of cards to be positioned within said body whereby opposite ends of each card being positioned is disposed within opposed seats on opposite side panels; a sectional cover hinged to the rear panel and movable over the upper portion of said body, said cover being comprised of hinged sections, one of said section being adapted to overlie the rear portion of said body in the closed position of said cover and the other section being adapted to overlie the forward portion of said body in the closed position of said cover, said sections being hinged together to enable an upstanding inverted generally V-shaped disposition of said sections with the forward edge of the forward section resting in notches hereinafter defined in said side panels intermediate the ends thereof; each cover section having downwardly extending lateral flanges at the sides thereof and overlying the sides of the body in the closed position, said lateral flanges having beveled surfaces adjacent the hinge axis of said sections, said beveled surfaces abutting against one another and limiting movement of said section to said V-shaped disposition thereof when said cover is moved to said disposition while thereby exposing a substantial area of said body; said front cover section resting on the upper portion of said front panel and having a downwardly extending front flange overlying said front panel, said front flange having a projection thereon exending above the plane of said cover section to thereby form a ledge adapted to receive at least one card to be confined within said body, said front flange also having a tab thereon whereby said cover sections may have exerted thereto a push-pull force, said front flange and the uppermost edge of said front panel each having a configuration to engage each other in snap-action relationship; said side panels having notches in the upper edges thereof so as to receive and hold the front flange of the front cover section with the portions of the lateral flanges outside the side panels of the box.

3,292,634
TOBACCO HOLDING CARTRIDGE
Oris W. Boucler, Anaheim, Calif., assignor of fifty percent to Stephen Nester, Keyport, N.J.
Filed Mar. 20, 1964, Ser. No. 353,331
3 Claims. (Cl. 131—3)



1. A tobacco-holding cartridge for placement within a smoking pipe bowl comprising, a tobacco-filled metallic cup closely fitting within the interior of a pipe bowl and having a slotted side wall, said cup being composed of non-combustible, deformable metal, the cup having an apertured bottom wall, the cup being provided at the top with an apertured closure disk, said disk having laterally-extending tabs extending through the slots in the side wall to thereby attach the closure disk to the cup, one of the tabs having a part disposed along the outside of the side wall and constituting a finger piece by which the cup can be lifted out of the pipe bowl when its tobacco contents have been consumed, the cup being of substantially frusto-conical formation.

3,292,635
INTEGRAL CIGARETTE-CIGARETTE HOLDER
Maxwell H. Koloday, 1220 Park Ave., New York, N.Y. 10017
Filed Oct. 22, 1964, Ser. No. 405,671
6 Claims. (Cl. 131—10.5)

1. An integral, completely expendable, cigarette-cigarette holder, comprising: a cylindrical cigarette holder; a cylindrical filter secured within said holder at one end thereof; a cigarette; a major portion of said cigarette being slidably received in said holder forwardly of said filter in its position of storage; longitudinally extensible, accordion-type, baffle means disposed within said holder between the inner end of said cigarette and said filter, said baffle means comprising a series of interconnected baffle discs, each of said baffle discs having a diameter approximating the inner diameter of said holder; one end of said series of discs being attached to the inner end of said



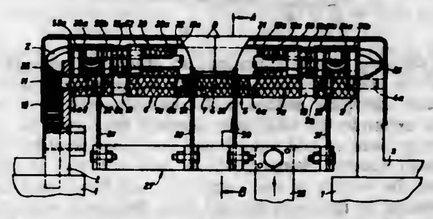
cigarette and the other end being attached to said filter; the outer circumferential surface at the inner end of said cigarette and the inner circumferential surface at the outer end of said holder being coated with coacting adhesive films; whereby upon extension of said cigarette within said holder to a point at which the adhesive films are in registry, the accordion-type baffle means is extended so as to provide a circuitous path for the smoke between the lateral limits thereof and the inner wall of said holder.

3,292,636
SMOKING TOBACCO PREPARATION
Rolland L. Mayo, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 4, 1964, Ser. No. 364,801
13 Claims. (Cl. 131—17)

1. A smoking preparation comprising tobacco and a catalyst composition consisting essentially of a crystalline zeolitic molecular sieve adsorbent having pores sufficiently large to receive benzene, and a catalytically active metal having vapor pressure below 1 atmosphere at 1000° C. and contained in finely divided form in the inner adsorption region of said molecular sieve in quantity sufficient to constitute between about 0.05% and 15% by weight of said catalyst composition, the latter being uniformly dispersed in the tobacco as particles smaller than about 350 mesh and in quantity such that said catalyst composition comprises from about 0.5% to about 25% by weight of said smoking preparation.

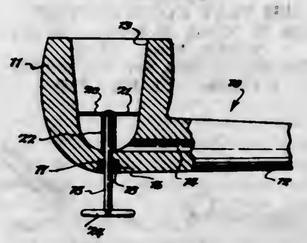
3,292,637
MECHANISM FOR WRAPPING CIGAR FILLERS
Walter Pallach, Hamburg-Bergedorf, Germany, assignor to Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Oct. 28, 1964, Ser. No. 405,894
Claims priority, application Germany, Nov. 9, 1963, H 50,792
6 Claims. (Cl. 131—56)

1. A mechanism for applying wrappers to cigar fillers, comprising a rolling mold including fixed support means, a pair of parallel lower rolls journalled in said support means, a pair of carrier means each mounted for rotation about the axis of one of said lower rolls, an upper roll journalled in each of said carrier means, said upper rolls being parallel with said lower rolls, means for rocking said carrier means between two angularly spaced positions in one of which said upper rolls are nearer to each other to define with said lower rolls a filler-receiving nest and in the other of which said upper rolls are more distant from each other to permit insertion or removal of a filler from said mold; first drive means for rotating said lower rolls in the same direction and at the same peripheral speed; and second drive means for rotating said upper rolls in the same direction and at the same



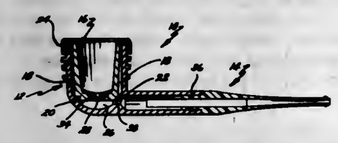
peripheral speed as said lower rolls, said second drive means comprising at least one holder provided on each of said carrier means and comprising a first portion secured to the corresponding carrier means and a second portion, at least one friction wheel rotatably mounted on the second portion of each holder, and resilient means operating between the first and second portions of each holder to maintain said friction wheels in simultaneous frictional engagement with the corresponding upper and lower rolls so that said upper rolls are driven in response to rotation of said lower rolls.

3,292,638
SMOKING PIPE
Claude Lerquet, 370 Sunset Drive, Hamburg, N.Y. 10115
Filed June 8, 1964, Ser. No. 373,334
3 Claims. (Cl. 131—183)



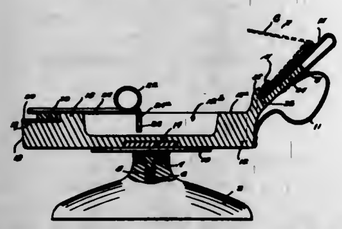
1. In a smoking pipe comprising a bowl having a tobacco receiving chamber having upwardly and outwardly tapering wall portions and a stem having a passage communicating with the lower portion of said chamber, said bowl having a vertical central bore through its bottom and a rod slidable vertically therein, a perforated disc fixed to the upper end of said rod within said chamber above said passage, and an operating button fixed to the lower end of said rod, said vertical bore having an internally threaded counterbore in its lower end and having a downwardly facing annular shoulder, a compressible annular seal in said counterbore and an annular screw disposed about said rod and threaded into said counterbore to compress said seal against the shoulder and urge the same radially inwardly against said rod sufficiently to seal the same against leakage and to permit said rod to be slid with respect to the seal and screw to move said disc from a lower tobacco supporting to an upper discharging position.

3,292,639
SMOKING PIPE
Joseph W. Zarikta, Grand Haven, Mich., assignor to Al Cobb Corporation, Grand Haven, Mich., a corporation of Michigan
Filed June 15, 1964, Ser. No. 375,052
1 Claim. (Cl. 131—204)



A smoking pipe, comprising: an outer bowl having a concavity therein; a generally cylindrical inner bowl of corncob insertable within said concavity such that the lower extremity of said inner bowl is supported by interior portions of said outer bowl; said inner bowl having inwardly-directed flange portions near the end thereof closest the bottom of said concavity; said flange portions decreasing in thickness toward their innermost extremities to define generally conical flange surfaces located at an angle to the longitudinal axis of said inner bowl; said flange surfaces having a series of alternating ridges and grooves formed thereupon; a circular hardened ceramic liner having a central aperture therethrough and supported upon said flange surfaces; said liner having a series of alternating grooves and ridges formed on its lower surfaces to be received by said flange surface ridges and grooves in mating relationship; said liner further having a smooth concave dish-like upper surface adapted to support a charge of tobacco thereupon; said inner and outer bowls defining a space located between the bottom of said outer bowl concavity and the bottom of said inner bowl and in communication with said liner aperture, such that smoke may pass through the said aperture and into the said space; and stem means in communication with said space, for drawing smoke therefrom.

3,292,640
ASH TRAY CONSTRUCTION
John W. Royal, 35 Washington St., Malden, Mass. 02148
Filed May 5, 1964, Ser. No. 365,070
2 Claims. (Cl. 131—235)



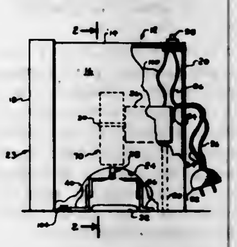
1. An improved ash tray construction comprising an ash tray body formed with an outer annular section and an inner section recessed to define an ash containing space, said outer annular section being formed with vertical slots at two opposite sides thereof, said outer annular section at a point intermediate the slots being recessed to form a shoulder and a relieved surface projecting outwardly, a ferrous metal plate secured on said relieved surface, a removable cigarette holding and snuffing device detachably supported on the ash tray body and consisting of a snuffing coil and a coil-supporting tray, said coil having resilient helical turns spaced apart a distance less than the diameter of a cigarette to provide snuffing surfaces for a burning cigarette held therebetween, said coil supporting tray being formed along one side with a bent-over edge portion for resiliently engaging in the said slots of the ash tray body and supporting the coil in a raised position above the ash-containing space and said coil supporting tray further including at an undersurface thereof a magnet element arranged to engage with the said ferrous metal plate on the relieved surface of the ash tray body.

3,292,641
HAIR STYLING METHOD FOR PRODUCING A SMOOTH HIGH HAIRDO
Manuel Quintanar, 16516 Monthrook, La Puente, Calif. 93309
Filed Mar. 27, 1964, Ser. No. 355,908
2 Claims. (Cl. 132—7)



1. A method of handling hair in achieving a high hairdo on a person, comprising inserting the relatively long tines of an appliance through a relatively wide swatch of a person's hair, lifting and holding said swatch by means of the appliance in an elevated position spaced a substantial distance from the scalp of the person and spaced from other portions of hair closer to the scalp, while brushing said swatch of hair along the strands thereof in a direction substantially transversely of said tines, and withdrawing the tines from the hair, whereby the hair swatch is smoothed and elevated a substantial distance from the scalp.

3,292,642
MECHANICAL NAIL POLISH APPLIER
Robert J. Del Vecchio, 75 Balsam Lane, Levittown, N.Y. 11756
Filed Jan. 21, 1964, Ser. No. 339,143
8 Claims. (Cl. 132—73.6)



1. A power operated nail polish applicator for use in manicuring one's nails comprising, a support frame comprising a platform, power means embodying a rotary drive shaft suitably mounted on said frame and spaced above said platform, a reservoir wheel having a central hub and a fluid supply reservoir mounted on said drive shaft, a template means mounted on said platform and spaced below said drive shaft being located in a horizontal plane extending substantially parallel to said drive shaft and having a generally U-shaped cutout portion with the center of said cutout portion substantially transverse to the longitudinal axis of rotation of said drive shaft, said reservoir wheel comprising a peripheral outlet opening communicating with said fluid reservoir extending along only a portion of the circumference of said wheel, a polish applicator having a hollow handle with polish applying means located at one end fitted into said outlet opening with said polish applying means projecting outwardly therefrom, said hollow handle forming a conduit from the supply reservoir to the polish applying means to permit fluid to flow to said polish applying means, and said polish applicator having its polish applying means spaced at a proper distance from the drive shaft to enable said polish applicator to intersect the U-shaped cutout of the template means at least once during each revolution of said reservoir wheel.

3,292,643
SAFETY RAZOR AND SHAVING KIT
Jack B. Pryde, 7531 N. Damen Ave., Chicago, Ill. 60626
Filed Feb. 4, 1964, Ser. No. 342,414
5 Claims. (Cl. 132—90)



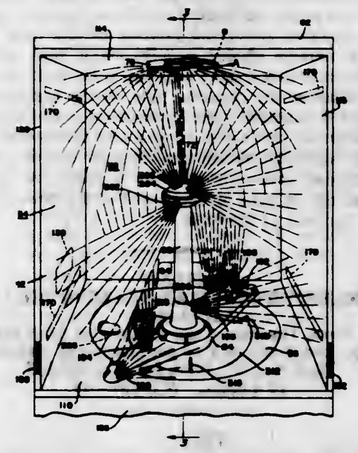
2. A safety razor comprising, in combination, a substantially flat handle having a stop on one end, said handle containing a slot adjacent to the end having the stop, a blade plate slideably mounted on the handle in engagement with the stop, a razor blade slideably mounted on the handle in engagement with the blade plate, means for bowing said blade in engagement with the blade, a blade guard slideably mounted on the handle in engagement with said means, and a wedge positioned in the slot to hold the blade guard in engagement with the means for bowing the blade.

3,292,644
ORAL HYGIENIC DEVICE
Richard E. Ericson, Barrington, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed July 27, 1964, Ser. No. 385,279
7 Claims. (Cl. 132—84)



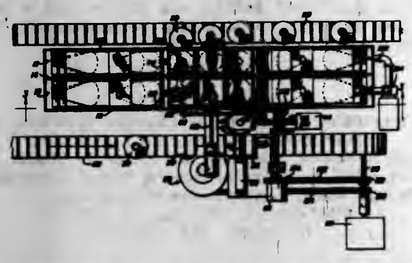
1. A one-piece oral hygienic device having a bristled end portion and integral therewith a handle for manipulating said device in use, comprising: a tube of flexible, resilient plastic material slit at one end to provide a bristled end, said tube being bent in a U-fold wherein the base of said U-fold is spaced from but closer to the base of the bristles at the slit end than the opposite end of said tube, one leg of the U-bent tube being bent away from the other along a line located at a distance from the outer fold line at the base of said U-fold not less than the distance of the inner fold line at the base of said U-fold from said outer fold line to thereby provide a cup-shaped bristled end portion and a handle portion extending substantially perpendicularly therefrom and terminating at said opposite end.

3,292,645
REACTION SPRAY DISHWASHER HAVING AN IMPROVED WATER FILL SYSTEM
Ralph S. Braden, Bellbrook, and Robert L. Mercer, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 403,479
9 Claims. (Cl. 134—57)



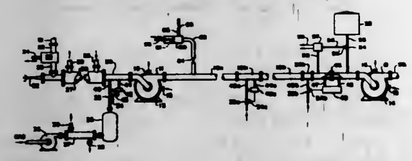
1. In combination, casing means defining a dishwashing chamber having a sump, means for supplying water to said sump including a pressure sensitive means in said sump for controlling the supply of said water, means for concealing the water in said sump, and means for distributing said water in said chamber for washing dishes or the like, said distributing means including rotatable horizontal spray arm means having an inlet opening overlying said water concealing means and a spray port facing upwardly in said chamber, a vertical spray tube attached to said spray arm for rotation therewith and extending upwardly to a central part of said chamber, said spray tube including a hollow column connected to said spray arm and in communication with the inlet thereof, said column having a spray port in a lower portion of the side thereof facing sidewardly and having a bulbous hollow spray header on the top thereof having a spray port in the bottom thereof facing downwardly and three ports in the top thereof facing upwardly and outwardly, one of said ports comprising a nozzle having an axis at an angle to the axis of said hollow column, deflector means on the top of said chamber having a plurality of downwardly facing pockets at least one of which is in alignment with the axis of said nozzle and configured reactingly to rotate said deflector means in response to the impingement thereon of a jet of water from said nozzle, and means for rotatably and universally supporting said deflector means whereby said deflector means wobbles as it rotates in response to said jet.

3,292,646
BOTTLE CLEANING DEVICE
David W. Pollock, Box 4155, Fort Lauderdale, Fla. 33304
Filed Mar. 26, 1965, Ser. No. 442,864
10 Claims. (Cl. 134—67)



7. A cleaning device for portable articles comprising at least one elongated tank, an endless conveyor mounted in and movable about the interior of the tank, article receiving stations spaced equally about said conveyor, said tank including a near wall and a far wall positioned closely adjacent the opposite sides of the conveyor, and means for periodically and automatically introducing an article laterally past the near wall and into a first predetermined conveyor station and laterally out of a second predetermined conveyor station, rearward of the first station along the path of movement of the conveyor, and past the far wall of the tank.

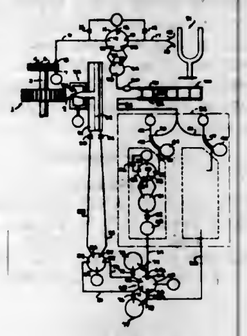
3,292,647
TRANSPORTING WAX-BEARING OIL IN PIPELINES
Paul R. Scott, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,113
10 Claims. (Cl. 137—1)



1. The method of treating a crude oil containing undissolved wax at operating temperatures for convenient handling which comprises the steps of:
(a) subjecting a stream of the oil at a temperature at or below that at which solid wax occurs to shearing forces which breaks down the wax structure and forms a dispersion of smaller wax particles in the oil;
(b) injecting into said oil a gas in amount at least sufficient to saturate the oil at the operating temperature and at least atmospheric pressure to inhibit formation of a wax structure in the oil; and
(c) flowing the resulting composition to a point for subsequent handling.

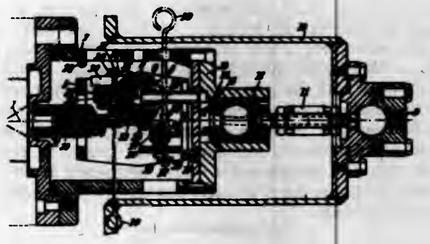
3,292,648
TURBINE SPEED CONTROL
John R. Colston, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed July 5, 1963, Ser. No. 293,108
20 Claims. (Cl. 137—36)

1. A fluidic speed of rotation sensing device comprising an amplifier having a power nozzle, at least one control passage and a pair of output passages, said control passage being connected to a further fluid passage, one end of said further passage remote from said control passage being disposed adjacent a member whose speed of rotation is to be sensed, means for supplying fluid under



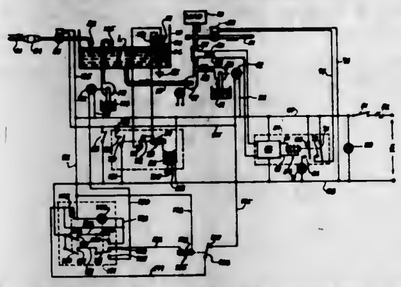
pressure to said further passage, means for directing a stream of fluid across said member toward said one end of said further passage, the member having means for reducing the flow of said stream toward said one end at least once each revolution of the member.

3,292,649
OVERSPEED GOVERNOR
Herbert E. C. Hinz, Wallsend, England, assignor to Parsetrade, Wallsend, England, a British body corporate
Filed Dec. 26, 1963, Ser. No. 333,504
Claims priority, application Great Britain, Feb. 8, 1963, 5,277/63
5 Claims. (Cl. 137—56)



1. An overspeed governor for limiting the maximum speed of a rotary member, comprising spring means, a rocking member pivoted to the rotary member on an axis in a plane at right angles to the axis of rotation of the rotary member, the rocking member being dynamically out-of-balance about the axis of rotation so that when the rotary member is rotated, centrifugal forces acting on the rocking member produce a couple about the pivot axis against the action of the said spring means, whereby when the rotary member is rotated at a speed above a predetermined value the rocking member rocks against the action of the spring means, and indicating means responsive to the rocking action to indicate when the predetermined speed is exceeded, the rocking member being statically balanced with respect to inertia force components normal to the pivot axis, and means for adjusting the dynamic imbalance to vary the said predetermined speed, the said rocking means comprising at least two masses mounted on the rocking member for adjustment towards and away from the axis of rotation.

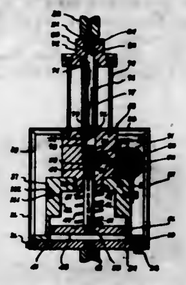
3,292,650
WATER TREATMENT AND MAKE-UP CONTROL SYSTEM
Paul G. Bird, Wheaton, and Barry A. Metz, Skokie, Ill., assignors to Wright Chemical Corporation, Chicago, Ill.
Filed Oct. 1, 1963, Ser. No. 313,090
5 Claims. (Cl. 137—93)



1. In a water-treating system which comprises a basin containing a supply of water of variable level, a pipe connected to a main adapted to replenish the supply, a pump, conduit means connecting the supply to the suction side of the pump, a load to which water is to be transferred from the basin, second conduit means connecting the load to the discharge side of the pump, the combination comprising: a supply of treating chemicals, electric-motor-driven pressuring means to deliver chemicals from the chemical supply into said second conduit means, means responsive to the level of the water supply, said level-responsive means comprising a switch to detect maximum level and a switch to detect minimum level, a relay having a winding to be energized through the medium of said level-responsive means when the maximum level obtains and to be de-energized when said level departs from the maximum, a holding circuit including a current source, said minimum level switch, a set of holding contacts forming part of the relay and one end of the relay winding to maintain the relay energized notwithstanding departure of the level from said maximum, said minimum level detecting switch, when opened by the level reaching its minimum, breaking said holding circuit, a second set of contacts controlled by said relay adapted to open and close a circuit from one side of the current source, a solenoid-operated valve in the replenishing pipe, one side of the valve being connected to the other side of the current source, one side of the electric motor being connected to said one side of the current source, the other side of the electric motor and solenoid valve being connected through said second set of contacts to the other side of the current source whereby replenishment of water and feed of chemicals occurs concurrently.

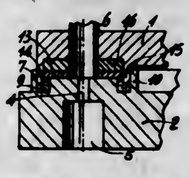
3,292,651
GAS FLOW CONTROLLING DEVICE
Boris Innocenti, 4115 N. 42nd Place, Phoenix, Ariz. 85008
Filed Sept. 18, 1963, Ser. No. 309,769
6 Claims. (Cl. 137—111)

1. In a gas flow control device for controlling introduction of chlorine gas into water in process of circulation under pressure, said gas flow control device including
(a) a source of gas under pressure,
(b) visual means indicating rate of gas flow,
(c) a gas flow regulating valve between said source and said visual flow indicating means,
(d) a shut-off valve between said regulating valve and said indicating means comprising
(1) a shut-off valve body with a vertical cylindrically shaped opening therein, said opening including a portion of relatively small diameter and a portion of relatively large diameter,
(2) a shut-off valve stem vertically reciprocable in said opening in said valve body, said shut-off valve stem having a portion of reduced diameter with a head portion at one end of the reduced diameter portion,
(3) said shut-off valve body having a gas passing orifice communicating with said cylindrical opening in the area of said valve stem reduced diameter portion,



(4) said valve stem proportioned to have its said head projecting into the relatively large diameter portion when in raised position and in said relatively small diameter portion when in a lower position to prevent gas flow around said head in said raised position,
(5) and means for lowering the position of said valve stem to shut off said gas when water circulation ceases,
(e) said shut-off valve body and shut-off valve stem being formed of plastic material which is not deleteriously affected by the said gas,
(f) and a reinforcing metal rod extending axially substantially through said shut-off valve stem.

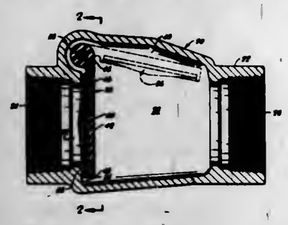
3,292,652
HIGH VACUUM TIGHT ROTARY VALVE
Cesare Galliano, Via Pellico 25, Settimo Milanese (Milan), Italy
Filed Dec. 30, 1963, Ser. No. 334,490
Claims priority, application Italy, Dec. 31, 1962, Patent 680,784
3 Claims. (Cl. 137—246)



1. A high-vacuum-tight valve for an automatic machine that produces electric lamps by forming and evacuating and gas filling the lamps, comprising a stationary plate having a plurality of apertures therein, a rotatable plate having a plurality of conduits and communicating chambers therein, a sealing valve between the stationary plate and the rotatable plate including a groove-shaped annular track in said stationary plate, two annular packing rings received in the groove-shaped annular track without radial clearance, one said ring being against the bottom of said track and being made of soft rubber or the like and the other said ring being disposed toward the outside of the track and being at least semi-rigid and having anti-friction and self-lubricating properties, a plurality of small rigid pipes in said apertures of said stationary plate, said pipes forcing said rings peripherally

tight in the track and keeping them stationary, said pipes extending into the track and passing perpendicularly through the two packing rings, said pipes and the walls of the track serving to keep said rings in place and to prevent radial expansion of the rings during heavy pressure applied between said plates and insuring a gas-tight seal between said stationary plate and said conduits and said chambers of said rotatable plate.

3,292,653
FOLDABLE CHECK VALVE
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73001
Filed Feb. 10, 1964, Ser. No. 343,531
5 Claims. (Cl. 137—315)



1. A check valve comprising:
a valve body having an inlet and an outlet communicating with a chamber formed in said body;
an annular seat in said chamber extending along a substantially vertical plane and having an aperture extending therethrough;
said aperture having a flow area at least equal to the area of said outlet;
a hinge pin secured in the valve body to extend across the chamber above said seat;
a valve member pivotally mounted on said hinge pin and adapted to engage said seat to close said aperture, said valve member being constructed from a mass of resilient material and having a sealing portion and a hinge portion extending radially outwardly from said sealing portion; and
a re-inforcing sleeve molded in said hinge portion forming a bearing around said hinge pin, said re-inforcing sleeve having a length substantially less than the diameter of said outlet;
said sealing portion including a pair of rigid segmental reinforcing members sized to extend across said aperture and engage opposed portions of said seat, said reinforcing members being arranged whereby the chords thereof are adjacent;
said reinforcing members being retained in a common plane when engaged with said seat and said sealing portion being foldable along a line defined by the adjacent chords of said reinforcing members whereby said valve member can be inserted into said chamber through the outlet thereof.

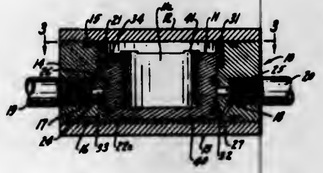
3,292,654
WELDED SLIDE CASE WITH SEALING SURFACE SUPPORT
Hermann Rappold, deceased, late of Duren-Birkesdorf, Germany, by Armin Rappold, administrator, and Johannes Uerlichs and Rudolf Müller, Duren-Birkesdorf, Germany, assignors to Hermann Rappold & Co. G.m.b.H., Duren-Birkesdorf, Germany
Filed June 21, 1965, Ser. No. 465,797
Claims priority, application Germany, June 9, 1961, R 30,493, R 30,494
7 Claims. (Cl. 137—340)

1. A slide valve casing, particularly for a hot-blast slide valve wherein the sealing surfaces of the casing which cooperate with the sealing surfaces of the slide tongue are cooled, comprising a pair of U-shaped profile rings spaced from one another to receive the slide tongue, sealing surfaces upon said rings to cooperate with said tongue, said rings having a blast passage opening, double plane side walls forming cooling chambers welded to said profile rings at a point removed from said blast opening,



said plane side walls of said casing being ring-shaped below said opening and of box-like shape above said opening, a double walled circumferential jacket connecting said cooling chambers to one another and a flange fixed to the upper edges of said plane side walls.

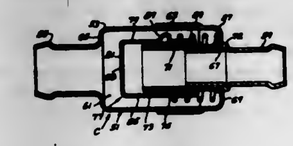
3,292,655
FLOW SENSING SHUTOFF VALVE
Charles Horowitz, Chicago, Ill., assignor, by mesne assignments, to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed June 16, 1964, Ser. No. 375,609
10 Claims. (Cl. 137—456)



1. A pressure responsive fluid flow shutoff device, said shutoff device including, in combination, a housing, said housing having an inlet and outlet, said inlet and outlet being adaptable for connection into a fluid pressure line, a chamber in the housing, a valve member in the chamber movable between a closed position, in which it blocks fluid flow from the inlet to the outlet, to an open position in which the inlet and outlet are in communication through a fluid flow path, said valve member having a first surface responsive to fluid pressure within said housing for moving the valve member from the closed position to the open position upon the initial application of line pressure at the inlet, said valve member having a second surface responsive to downstream pressure in said pressure line and cooperative with said first surface to maintain the valve member in the open position, said valve member having a third surface responsive to said line pressure at said inlet to automatically return the valve

member to the closed position upon a predetermined drop in downstream pressure, said first and second surfaces together being substantially equal in effective pressure area to said third surface.

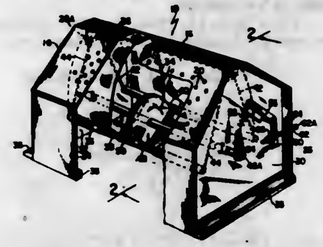
3,292,656
CRANKCASE VENTILATOR VALVE
James F. Armstrong, Kirkwood, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 212,515, July 26, 1962. This application Oct. 19, 1965, Ser. No. 505,581
11 Claims. (Cl. 137—480)



1. A crankcase ventilator valve comprising a body defining a chamber and having an inlet for connection to the crankcase of an engine and an outlet for connection to the intake manifold thereof, a tubular sleeve valve member fixed in relation to said body within said chamber in communication at one end with said outlet and having its other end free, a cup-shaped sleeve valve member telescoped on said fixed valve member over its free end and slidable back and forth on said fixed valve member between an idle position closing the outlet and a backfire position closing the inlet in which it prevents backflow therethrough and having a range of intermediate positions, and means biasing said slidable valve member to slide in the direction away from idle position, said biasing means being constructed and arranged to effect only partial movement of the said slidable valve member toward the backfire position, the valve member moving to a full backfire position relative to the biasing means upon an increase in pressure in the outlet for preventing backflow into a crankcase, said slidable valve member being slidable in the direction toward idle position against the bias in response to decrease in pressure in the outlet to close the outlet and slidable in the direction toward backfire position in response to a predetermined increase in pressure in the outlet to close the inlet, said slidable valve member having a port therein for establishing communication from the inlet to the outlet in said intermediate positions of said slidable valve member, said port being blocked by said fixed valve member when said slidable valve member is in idle position.

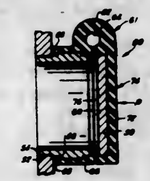
3,292,657
CURTAIN CONTROL VALVE
John P. Reynolds, Long Island City, N.Y., assignor to Bemrod-Stacey Corporation, New York, N.Y., a corporation of Ohio
Filed Mar. 30, 1964, Ser. No. 355,830
5 Claims. (Cl. 137—512.15)

1. In a fluid flow regulator having a housing with oppositely inclined perforated wall means extending to a crown section and flexible curtain means with edge means fixed adjacent to said crown section, said curtain means being pivotable relative to said edge means to cover and uncover said perforated wall means, the combination including rod means extending along and fixed adjacent the free end of said curtain means opposite said fixed edge means, a freely rotatable shaft arranged parallel to the plane of said inclined wall means and centrally mounted in said housing, a fly wheel inertia means on said shaft, actuating arm means having end means thereof attached to said rod means and inner end means attached to said fly wheel means adjacent its peripheral portion, radius rod means with end means pivotably attached adjacent said crown section and having opposite end means attached



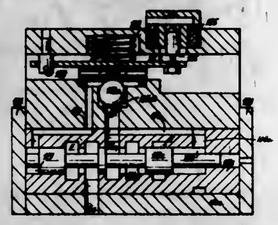
to said curtain rod means, and biasing means attached to said shaft to resiliently urge said shaft to a rotated position where said curtain means is fully rotated away from said perforated walls.

3,292,658
CHECK VALVE AND RESILIENT HINGE STRUCTURE AND METHOD FOR MANUFACTURING SAME
Domer Scaramucci, P.O. Box 9125, Oklahoma City, Okla. 73102
Filed July 15, 1963, Ser. No. 294,875
12 Claims. (Cl. 137—525.3)



1. An improved swinging check valve comprising:
a tubular housing having a substantially rigid tubular seat portion disposed therein and extending downstream, the downstream end of the seat portion forming an annular face having an inside and an outside diameter;
a valve member for closing the seat portion having a substantially rigid disc portion of greater diameter than the inside diameter of the annular face; and
resilient hinge means interconnecting the valve member and the seat portion, the hinge means comprising a body of resilient material having a valve portion bonded to the rigid disc portion and a ring portion disposed around and connected to the seat portion, the body of resilient material being separated generally along a severance plane extending between the valve member and the ring portion, the severance plane forming the downstream end of the ring portion and being disposed downstream of the annular face of the rigid seat portion such that the valve member will first contact the resilient ring portion upon closing,
whereby the valve member will swing away from the seat portion responsive to forward fluid flow and will first contact the ring portion upon swinging back to the seat portion responsive to reverse fluid flow to form a fluid seal; and wherein
the resilient material of the ring portion extends over the downstream end of the seat portion and between the annular face of the seat portion and the disc portion to form a compressive type fluid seal.

3,292,659
TRANSMISSION INSTALLATIONS
Victor Rosher and Maurice Benjour, Vevey, Vaud, Switzerland, assignors to Ateliers de Constructions Mecaniques de Vevey S.A., Vevey, Vaud, Switzerland, a corporation of Switzerland
Filed Nov. 13, 1962, Ser. No. 236,824
Claims priority, application Switzerland, Nov. 17, 1961, 13,382/61
1 Claim. (Cl. 137—596.16)



In an automatic transmission including a plurality of servo-motors operatively connected with related drive mechanisms,

a fluid pressure distributor for controlling the flow of fluid from a source of fluid under pressure to selected servo-motors,

said distributor comprising,

a body (110*a*),

a pair of sockets (111*a*, 111*b*) within said body,

a first valve member (112*a*) slidably disposed in one of said sockets (111*a*) and a second valve member (112*b*) slidably disposed in the other of said sockets (111*b*),

means (113, 114*a*, 114*b*, 111*c*) supplying fluid under pressure to each of said valve members,

conduit means (123) providing a fluid connection between said valve members,

exhaust openings (E) in said body and communicating with each of said valve members,

a chamber (135) communicating with each of said sockets,

a ball valve (118*a*, 118*b*) in each of said chambers,

spring means (130) normaly urging said ball valves into a seated position thereby preventing the flow of fluid through said slide valves,

electromagnetic means (125*a*, 125*b*) associated with each of said ball valves to control the unseating thereof to permit the flow of fluid through said slide valves,

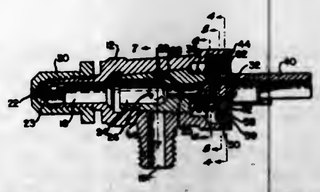
conduit means connecting said first slide valve (112*a*) to one of said servo-motors (6),

additional conduit means connecting said second slide valve (112*b*) to another two of said servo-motors (3, 5),

whereby energising of a selected one of said electromagnetic means (125*a*, 125*b*) activates a related servo-motor by permitting the flow of fluid thereto and inactivates the other two servo-motors which are simultaneously set to exhaust through operation of said slide valves (112*a*, 112*b*).

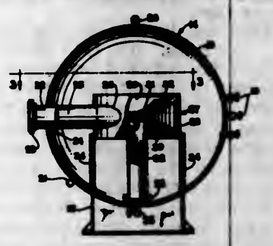
3,292,660
GAS VALVE
Edward J. Zaryhaicky, Broadview Heights, Ohio, assignor to W. J. Schoenberger Co., Cleveland, Ohio
Filed Oct. 14, 1963, Ser. No. 315,864
4 Claims. (Cl. 137—599.2)

1. In a stem-adjustable type multiple position valve including a valve body, a valve plug mounted within said body for rotational movements between "off" and different gas volume flow "on" positions, a stem member rotationally geared to said plug but axially slidable in relation thereto, and spring means biasing said plug and stem member to move relatively in their longitudinal direction, the improvement comprising in combination therewith, an outstanding rim portion formed on said stem member and extending peripherally thereof and formed with a cut-out at one position peripherally thereof, a collar loosely fitting about said stem member behind said rim portion and rotationally geared to said stem member while being axially slidable thereon and having a finger portion extending therefrom freely around said rim portion and forwardly thereof, said finger including a straight walled "locking" portion and a wedge-shaped terminal end portion, a locking cap fixedly mounted on said valve body and having a central bore accommodating free-sliding extension therethrough of said stem member, said cap having first and second spaced-apart rearwardly extending abutments aligned with the path of rotation of said finger when said stem member is turned thereby defining therebetween the range of permissive rotation of said stem member, said cap being also formed with a valve locking aperture adjacent one of said abutments to accommodate projection thereinto of said finger when the valve is in "off" position,



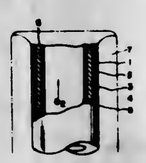
said cap being formed with valve position indicating apertures therethrough in line with the path of movement of said finger at positions corresponding to various "on" positions of the valve, one of said indicating apertures being adjacent the other of said abutments, said cap being formed with a third abutment extending rearwardly thereof for engagement in the cut-out of the rim portion of said stem member when the latter is in valve "off" position, said third abutment being shorter in length than said finger, whereby manual depression of said stem member against the action of said spring means causes complete withdrawal of said rim cut-out portion from engagement with said third abutment while causing only the straight-walled locking portion of said finger to be retracted from said locking aperture, and whereby said valve stem may then be rotated to its various "on" positions while said third abutment rides against the forward face of said stem rim portion and said finger wedge-shaped end portion cams in and out of said valve position indicating apertures thereby providing a "click-stop" valve position indicating means.

3,292,661
FLUID SURGE DAMPENER
Wilhelm S. Everett, 126 W. Santa Barbara St., Santa Paula, Calif. 93060
Filed Apr. 1, 1964, Ser. No. 356,419
7 Claims. (Cl. 138—26)



1. A fluid surge dampener for connection in a conduit subject to surges, said fluid surge dampener comprising: a closed vessel; swirl means supported within said vessel, said swirl means defining a circular chamber of hour-glass cross-section and including a neck portion; a first passage means communicating between said neck portion and the interior of said vessel; a second passage means communicating between said conduit and said chamber, said second passage means extending sealably through said vessel; and, said vessel being designed to have said fluid therein to a fluid level such as to at least close off the free end of said first passage means.

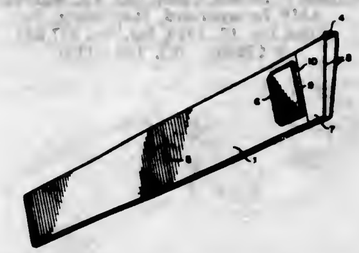
3,292,662
LANCE PIPE FOR THE INJECTED OXYGEN IN STEEL MAKING
Sunao Nishi, 454 Isao Machi, Nagasaki-shi, Japan
Filed July 8, 1965, Ser. No. 293,393
Claims priority, application Japan, Feb. 4, 1963, 38/4,434
2 Claims. (Cl. 138—141)



1. An oxygen injection lance pipe for steel making, comprising a calorized steel pipe consisting of an unimpregnated base metal and aluminum diffused in the interior and exterior wall parts of the pipe, the average concentration of the aluminum within the thickness of the interior and exterior wall parts of the pipe to a depth of 0.1 mm. being from 28–33% and from 18–26% respectively, a film consisting of a composition comprising at least one kind of refractory material and a ceramic material having a property capable of being transformed into a vitrified and fluid state at a low temperature on the aluminum diffusion into the interior wall part and having a thickness of 0.1 mm., a film consisting of a composition comprising at least one kind of refractory material having a high melting point and a small quantity of a carbonic acid gas generating material of carbonate type on the aluminum diffused into the exterior wall part for promoting and maintaining the porosity of the film and having a thickness of from 0.9–1.2 mm., said films including water glass of a density of 25–35° Bé. and said base metal being between one-half and two-thirds of the total thickness of the pipe wall.

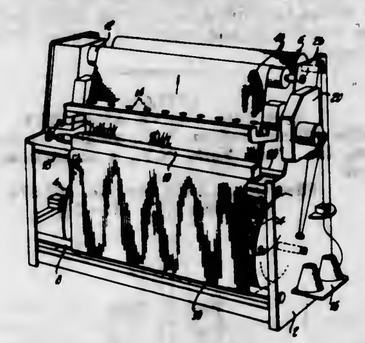
3,292,663
LOOMS FOR WEAVING CARPETS, ESPECIALLY AXMINSTER CARPETS
Hans Bud, London, England, assignor to English Numbering Machines Limited, Enfield, England, a British company
Filed Feb. 26, 1965, Ser. No. 436,615
Claims priority, application Great Britain, Mar. 3, 1964, 8,842/64
4 Claims. (Cl. 139—10)

1. A plastic tube for use in carpet looms, comprising two generally flat side walls and four abutments projecting from said side walls, two of said abutments being provided on one of said flat walls and the other two of said abutments being provided on the other one of said flat walls, the said two abutments of each wall being spaced apart from each other in the axial direction of the tube by a distance substantially corresponding in width to a bridge member of a tube carrier so that said bridge member can enter the space between said two abutments of each of said side walls, said tube being wider at one end than at the other end, the wider end of said tube being



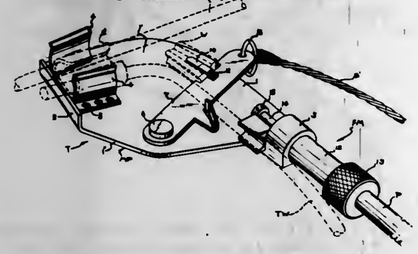
sloped relative to the axial direction of said tube, the said abutments being provided at the wider end of said tube.

3,292,664
LOOM ARRANGEMENT
Rudolf H. Rossmann, Gauting, near Munich, Germany, assignor to U.T.I., Incorporated, Scranton, Pa.
Filed Oct. 29, 1964, Ser. No. 407,583
Claims priority, application Germany, Oct. 30, 1963, Sch 34,982
1 Claim. (Cl. 139—18)



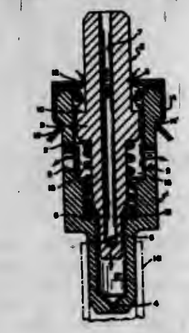
A loom comprising, in combination, a machine frame including a lower and an upper frame portion, a warp beam journaled approximately in the gravitational center of said lower frame portion, a cloth beam journaled in said upper frame portion, means for guiding warp threads from said warp beam toward said cloth beam, said guiding means including a first guide roller located at the front and bottom of said lower frame portion for directing said threads away from said warp beam toward an extreme front portion of the loom, a second guide roller vertically spaced from said first guide roller, said first and said second guide rollers imparting to said threads a substantially vertical direction of travel toward said second guide roller, said threads in said vertical direction being exposed to free access at said extreme front portion of said loom while said threads move in an upward direction, said guide means including a third guide roller transversely spaced from said second guide roller, said second and said third guide rollers acting to change the direction of said threads from said vertical direction to a relatively short horizontal section in which the warp threads move in a rearward direction, weaving means located above the region of said horizontal section, said third guide roller further acting in combination with a sand roller to guide said threads into a further substantially vertical plane through said weaving means, the warp threads on said horizontal and on said further vertical section being freely accessible.

3,292,665
EXPLOSIVE TOOL
William F. Brooks, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 16, 1964, Ser. No. 337,955
9 Claims. (Cl. 140—113)



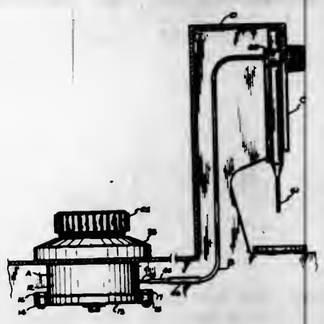
1. A tool for interconnecting a line member with an existing line member comprising a mounting plate means, means on said mounting plate means for holding a connector member which is adapted to engage said existing line member and in which said line member is disposed, driving means pivotally mounted on said mounting plate means, means on said driving means for holding a wedge member thereon, and explosive means on said mounting plate means for driving said driving means to drive said wedge member in said connector member between said line members.

3,292,666
AEROSOL VALVE ASSEMBLY
Vasilios Milcos, Suffern, N.Y., assignor to Avon Products, Inc., New York, N.Y., a corporation of New York
Filed Oct. 8, 1964, Ser. No. 402,576
5 Claims. (Cl. 141—20)



1. An aerosol valve assembly comprising:
(a) a valve housing;
(b) a valve stem positioned for axial movement in spaced relationship within said housing with one end thereof extending outwardly of said housing;
(c) first selectively openable sealing means normally closing the space between said housing and the one end of said valve stem;
(d) a bore extending through said valve stem from said one end to a point spaced from the other end thereof;
(e) second sealing means axially spaced from said first sealing means and extending between said valve stem and the interior wall of said housing intermediate said ends of the valve stem for dividing the housing into a first chamber surrounding said other end of the valve stem and a second chamber surrounding an intermediate portion thereof, said second chamber extending between said first and second sealing means;
(f) a housing inlet orifice extending through the wall of said housing and into said first chamber;
(g) a housing filling orifice extending through the wall of said housing and into said second chamber; and
(h) a selectively openable valve stem inlet orifice extending through the wall of said valve stem and into said bore for selectively placing said first chamber in fluid communication with the bore of said valve stem.

3,292,667
PRECISION FLUID METERING DEVICE
Donald L. Bittner, 2200 Hayes St., San Francisco, Calif. 94117, and Colin D. Murdoch, San Leandro, Calif.; said Murdoch assignor to said Bittner
Filed Dec. 12, 1963, Ser. No. 330,041
1 Claim. (Cl. 141—25)



A device for metering precise quantities of fluid comprising: a hollow body having a fluid orifice and an air inlet port of reduced diameters communicating with a main fluid storing of relatively large diameter; a cylindrical member having a smooth inner bore; end plates covering each end of said cylindrical member; a resilient hose mounted within said cylindrical member and extending most of the way around the bore circumference; a shielded conduit extending through an aperture in the cylindrical wall and connecting with said resilient hose at one end and with the air inlet port of said hollow body at the other end to provide a passageway for air communication therebetween, the conduit passageway being no greater than 1/10 the size of the resilient hose diameter; a shaft rotatably mounted to extend coaxial within the cylindrical member; arm means secured to extend radially from said shaft; cylindrical roller means rotatably mounted on the end of said arm having an axis of rotation paralleling the plane of said cylindrical bore with the roller face being spaced from the bore surface a distance slightly less than twice the hose wall thickness, said roller being adapted to travel along said resilient hose to progressively flatten short lengths thereof whereby air contained within said hose is forced through said conduit to create a force on the fluid for relative displacement of a precise quantity of fluid through the fluid orifice; and stop means connected to limit shaft rotation to an arc less than the arc subtended by said resilient hose to stop said roller before it overruns either end thereof.

3,292,668
FUEL CARTRIDGE AND SUPPORT THEREFOR
Ellwood E. Little, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Oct. 18, 1963, Ser. No. 317,374
8 Claims. (Cl. 141—330)

1. A fuel cartridge and support combination, said cartridge comprising a carrier and a pressurized fuel container, said carrier having a cap and an end plate spaced

axially from each other and connected by a pair of arms extending along opposite sides of said container, said sup-



port providing a pair of spring elements engaging said arms for releasably holding said container in operative relation with respect to a fuel discharge needle.

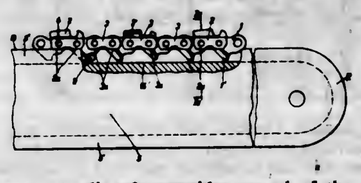
3,292,669
MITER GAUGE FOR PORTABLE ELECTRIC SAW
Lawrence Cott, Gilliam, Mo. 65301
Filed Aug. 3, 1964, Ser. No. 387,032
4 Claims. (Cl. 143—6)



1. Miter apparatus for use with a portable electric saw for sawing a workpiece disposed on a stationary support, said apparatus comprising:
a spindle; an upright tube adapted to be secured to said support and telescopically receiving said spindle, the latter being shiftable relative to said tube; means releasably maintaining said spindle in any one of a number of operative positions within said tube;
a pair of stops rigidly coupled to and extending outwardly from said spindle above said mounting means thereof with said stops being circumferentially spaced from each other with respect to the longitudinal axis of the spindle;
a saw-supporting platform;
means mounting said platform on said spindle above said stops for rotation relative thereto;
a projection coupled with and extending outwardly from said platform for rotation therewith, said stops being across the path of travel of said projection to limit the rotation of said platform; and
means releasably securing the platform to said spindle.

3,292,670
SAW CHAIN FOR MOTOR CHAIN SAWS
Adolf Ritz, Korb im Remstal, and Andreas Stihl, Rohrbronn, Kreis Waiblingen, Germany, assignors to Andreas Stihl, Waiblingen, Germany
Filed Feb. 12, 1964, Ser. No. 344,760
Claims priority, application Germany, Mar. 29, 1963, St 20,456
9 Claims. (Cl. 143—32)

1. In a chain saw; a supporting and guiding rail having a groove in the edge, first members having flat tooth-like extensions thereon extending slidably into said groove of said guiding rail, connecting links pivotally interconnecting alternate pairs of said first members and cutting tooth links pivotally interconnecting the other pairs of said first members to form a chain, said connecting links and said cutting tooth links having bottom edge portions slidably engaging the shoulders of the guiding rail at the opposite sides of the mouth of the groove therein, oil guiding passage means formed in said extensions of said first members extending parallel to the plane of the extensions and extending therealong from that one end of the respective extension which faces in the direction of movement of the chain, each said oil guiding pas-



sage means extending from said one end of the respective extension in the direction opposite to the direction of movement of the chain and each said passage means being inclined relative to the direction of movement of the chain so that the leading one end of each passage means at the said one end of the pertaining extension is nearest to the bottom of said groove in the guiding rail.

3,292,671
CHAIN SAW GUARD
Roy R. Stromberg, Ovando, Mont. 59854
Filed May 22, 1964, Ser. No. 369,485
7 Claims. (Cl. 143—32)

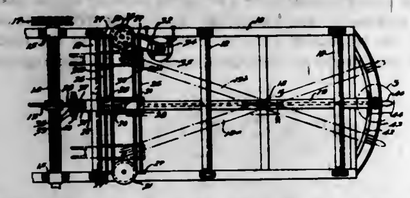


1. A readily attachable and detachable guard for a chain saw comprising a pair of elongated members defining generally parallel opposing channels and adapted to sheathe and protectively shield the saw teeth which are housed therein, yieldable means joining and assembling like ends of said members in coplanar relationship, the other ends of said members being free and adapted to be pivoted into position over said saw teeth, adjustable spring-biased means interconnecting median portions of said members and serving to orient and clampingly retain the same in place on said chain saw, and third means connected to said elongated members remote from said like ends and operable to selectively spread the other ends of said members apart to assume saw-releasing relationship and to releasably retain said other ends in spread apart positions against the biasing force of said spring-biased means.

3,292,672
SAW ADJUSTING DEVICE
Francis W. Cleereman, Newald, Wis. 54551
Filed Sept. 4, 1964, Ser. No. 394,448
5 Claims. (Cl. 143—37)

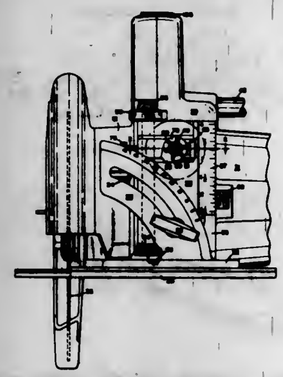
3. In a device of the class described, a frame, a saw adjusting lever pivotally mounted intermediate its ends on said frame, a rotary saw mounted on a drive shaft for longitudinal movement thereon, means operatively connecting one end of said lever to said saw to move said saw longitudinally on its drive shaft, a control handle on the other end of said lever, a driving belt having two flights moving in opposite directions transversely of said frame, means including an adjustable shoe member and fixed

abutments carried by said lever for establishing a driving connection between either one of said flights and said lever, and means connecting said shoe member to said



control handle whereby said shoe member may be adjusted and said lever connected to said driving belt to move said lever and saw to selected positions of adjustment.

3,292,673
POWER OPERATED PORTABLE HAND SAW
Edward G. Gregory, North Syracuse, N.Y., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa.
Filed Aug. 27, 1963, Ser. No. 304,890
9 Claims. (Cl. 143—43)



1. A power operated portable hand saw comprising a base plate, a support member extending upwardly from said base plate, a motor housing having a surface slidably engaging said support for vertical movement of the housing relative to said support, a clamping structure carried by said support and including an actuating hand knob located exteriorly of said support, said clamping structure being operable upon rotation of said knob in one direction to clamp said housing to said support and upon reverse rotation of said knob to unclamp said housing from said support, an adjusting screw carried by said housing and being journalled for rotation about a vertical axis, a half nut mounted in said support for movement in a direction transversely of said screw into and out of threaded engagement therewith, said screw being operable upon rotational engagement with said half nut to effect vertical movement of said housing relative to said support when the same are in unclamped relation, and means operable exteriorly of said support for moving said half nut out of engagement with said screw.

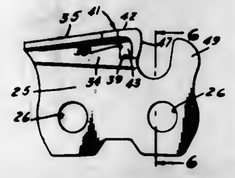
3,292,674
SAWS
Arthur Turner, Northfield, Birmingham, England, assignor to High Duty Saws Limited, Birmingham, England, a British company
Filed Jan. 20, 1964, Ser. No. 338,778
2 Claims. (Cl. 143—133)

1. A saw blade comprising a blade having teeth extending along an edge thereof, said teeth being arranged in immediately following groups of at least three teeth per group and said groups each having leading and trailing ends, all the teeth in each group being set to the same side of the blade, the teeth in adjacent groups



being set to different sides of the blade and the degree of set of the teeth in each group increasing from a minimum at the leading end of the group to a maximum at the trailing end of the group.

3,292,675
CUTTER ELEMENTS FOR CHAIN SAWS
Martin B. Ballard, Los Angeles, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Sept. 18, 1964, Ser. No. 397,586
7 Claims. (Cl. 143—135)



1. A cutter link for saws chains of chain saws, said link comprising:
(a) a flat, vertical body portion forming a link plate and having a forward and rearward end;
(b) a web extending vertically and laterally outwardly from a portion of the upper end of said body portion;
(c) a top plate extending from the outer part of said web and extending laterally inwardly and transversely over and beyond said body portion, terminating in a free end;
(d) a notch in the forward portion of said web and top plate;
(e) an L-shaped carbide tip having a top leg and a side leg conforming to said top plate and web, respectively, at said notch,
(f) said tip disposed and secured in said notch,
(g) said tip being fully backed by said top plate and web; and
(h) a forward edge on the outer portion of said top leg and on the laterally outer portion of said side leg of said tip forming a continuous forward cutting edge.

3,292,676
APPARATUS FOR CASE HARDENING WOOD
Carroll H. Van Hartesveldt and Buddy D. Wahl, Toledo, Ohio, assignors to Hoover Ball and Bearing Company, Ann Arbor, Mich., a corporation of Michigan
Original application Feb. 2, 1960, Ser. No. 6,189, now Patent No. 3,171,167. Divided and this application Sept. 17, 1962, Ser. No. 224,158
7 Claims. (Cl. 144—2)

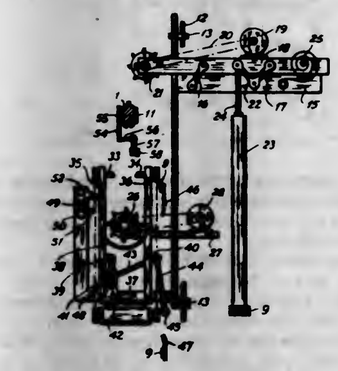
1. A mechanism for compressing and hardening a surface layer of wood comprising means for uniformly applying a pressure overcoming the compressive strength of the surface of a limited area of a wood workpiece, a heater positioned in advance of said pressure applying means for preheating the surface of the wood to reduce

the compressive strength, and means for relatively moving the wood workpiece past said pressure applying means so that the surface of the wood will be progressively



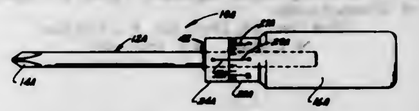
compressed beyond its elastic limit and an outer layer of the wood will be uniformly permanently compressed to form a hardened surface.

3,292,677
APPARATUS FOR CUTTING RECESSES IN A TIMBER
Kristian Viktor Jeppesen, Gladsaxevej 36–44, Soborg, Denmark
Original application Sept. 5, 1962, Ser. No. 221,526. Divided and this application Dec. 3, 1963, Ser. No. 327,638
8 Claims. (Cl. 144—133)



1. An apparatus for producing circumscribing upper and lower recessed areas in a timber to define a connecting portion of reduced cross-section to permit interlocking use of several of the timbers to form wall sections comprising, a frame, means on the frame for clamping and positioning the timber, a slide mounted on the frame for vertical movement thereupon from an inoperative rest position and carrying a first rotary cutter, means for operating the cutter to effect an obliquely upwardly and downwardly directed movement and subsequently an obliquely downwardly and forwardly directed movement during downward vertical positioning of the slide to form the upper region of the recessed area and to define downwardly sloping upper walls of the connecting portion whose planar surfaces lie longitudiinaly of the timber, a second rotary cutter mounted on the frame below the first rotary cutter, means for operating the first rotary cutter to form the lower region of the recessed area and to define downardly sloping upper walls in the lower area of the connecting portion whose planar surfaces are transverse to the longitudinal length of the timber, the lower region of the recessed area being formed during upward vertical positioning of the slide, a pair of horizontal, axially opposed rotary cutters mounted on the frame, means causing the axially opposed rotary cutters to cut a pair of lower lateral recesses in the timber during vertical downward movement of the slide, means for moving the axially opposed rotary cutters apart and subsequently towards each other for cutting a pair of upper lateral recesses in the timber, the first cutter for forming the upper region of the recessed area further being mounted at the end of a table projecting downwardly from the slide, the table having an operative positon and an inoperative position, two pairs of arms being mounted for swinging movement at the rear end of the table and being pivotally connected with a supporting member secured to the slide in such a manner that the pairs of arms in the inoperative position of the table extend upwardly and rearwardly, one pair of said arms being provided with a substantially laterally projecting arm connected with a vertically operating hydraulic means, and a spiral spring having one end connected with the supporting member and the other end connected with the table, whereby upon downward movement of the hydraulic means and the slide is moved downward and the spring causes the table to rotatably move about the pairs of arms to position the first cutter in operative relation with the timber.

3,292,678
CALIBRATED SCREW DRIVER
John Edward Nagy, 14249 Darcey St., Detroit, Mich. 48233
Filed Oct. 12, 1965, Ser. No. 499,483
7 Claims. (Cl. 145—69)

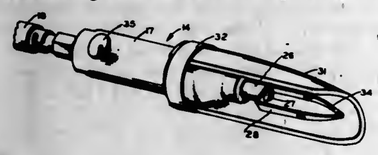


1. In a portable hand tool in the form of a calibrated screw driver to measure relative displacement of a threaded member with respect to a fixed member, the combination of,
a driving member with means on one end thereof to engage a threaded member;
a handle grip member secured on the end of said driving member;
a cylindrical member rotatably positioned on said driving member intermediate the ends thereof;
said cylindrical member coaxial with said handle grip member;
a plurality of radial serrations on the cooperating ends of said cylindrical member and said handle grip member;
said cylindrical member secured to said coupling member for rotation thereon;
a washer disposed on said driving member intermediate a snap ring and said cylindrical member;
a compression spring positioned between said washer and said cylindrical member;
a pin depending from said cylindrical member and through said washer for engagement with a fixed member into which a threaded member is installed with said driving means, said threaded member and pin being in parallel relationship;
a plurality of calibrations on the outside of said cylindrical member and said handle grip member, displacement of the respective parts providing an audible sound when said tool is used in the dark.

3,292,679
MANUALLY OPERABLE POWER TRIMMER FOR FRUIT AND VEGETABLE ARTICLES
Elwood A. Roth, Campbell, Calif., assignor of one-half to Genevieve I. Magnuson, Saratoga, Calif., and one-half to Genevieve I. Magnuson, Robert Magnuson, and Lois J. Fox, trustees of the estate of Roy M. Magnuson, deceased
Filed Jan. 28, 1964, Ser. No. 340,757
3 Claims. (Cl. 146—204)

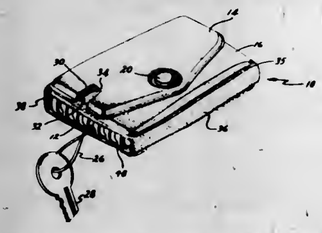
1. In a manually operable, power-operated trimmer of food articles, a motor comprising a handle, a knife pro-

jecting from one side of the motor and driven thereby, a flexible guard partially disposed about the knife and providing an open side by means of which the knife may be engaged with a food article, and a flexible power connection extending from the motor for operating the motor



and the knife, said knife having opposite sides substantially parallel to each other with similar edges thereof sharpened, said sides converging at their junction in a sharpened apex, whereby the knife can be used to cut with the apex or with the sides thereof.

3,292,680
BUOYANT KEY CASE
Douglas J. Broughton, Springfield, Mass., assignor to Buxton, Incorporated, Agawam, Mass., a corporation of Massachusetts
Filed Dec. 15, 1965, Ser. No. 514,064
6 Claims. (Cl. 150—40)



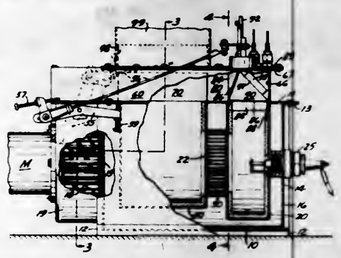
1. A buoyant key case comprising a pair of unitary moisture impervious sheets, a unitary sheet of unicellular buoyant material disposed between said moisture impervious sheets and having cut-outs therein, key retaining means disposed in said key case, said moisture impervious sheets being sealed together about their periphery forming at least one water-tight compartment and also being sealed together through said cut-outs in said sheet of buoyant material forming hinged closure flaps.

3,292,681
PNEUMATIC TIRES
Georges Louis Travers, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France
Filed Jan. 21, 1964, Ser. No. 339,276
Claims priority, application France, Feb. 1, 1963, 1,783; Nov. 7, 1963, 1,793
13 Claims. (Cl. 152—354)



1. A pneumatic tire casing comprising a tire body having spaced-apart sidewalls and a crown portion between said sidewalls and consisting of an elastomeric material having reinforcing means embedded therein, a tread overlying said crown portion, and beads at the inner ends of said sidewalls, said sidewalls consisting of a first portion adjacent said bead, a second portion adjacent said first portion, and a third portion between said second portion and said crown portion, said first portion and third portion having additional reinforcing means therein, said additional reinforcing means and body reinforcing means being in direct mutual contact with each other and constituting a unitary reinforcement structure rendering said first and third portions substantially more rigid than said second portion.

3,292,682
VAPORIZING OIL BURNER
Gordon R. Smith, Stillwater, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,126
4 Claims. (Cl. 158—4.5)



1. In a burner adapted for the combustion under forced draft of combustible mixtures of vaporized fluid fuel and air and provided with ignition means and a fire box, the combination of

(I) a cross-flow heat-exchanger adapted to pass at least a part of flue gases from said fire box in one direction and to pass intake air under forced draft in another direction at substantially right angles,

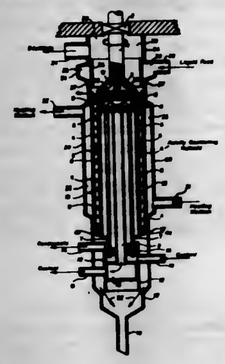
(II) connection means connecting said cross-flow heat-exchanger at the face of egress of intake air to said fire box,

(III) at least one prismatic fuel volatilizer consisting essentially of an assemblage of superimposed corrugated ceramic sheets of triangular shape having the axes of corrugation in adjacent sheets nonparallel and mutually at angles of from about 90° to about 120°, said sheets being ceramically adhered at points of contact of ridges of consecutive sheets, said fuel volatilizer having one face of lesser area than either other face and being positioned in said connection means with said axes of corrugation in perpendicular planes in directions other than horizontal and with said face of lesser area adapted to receive air after passage through said heat-exchanger and one other face adapted to discharge air into said connection means nearer said fire box and

(IV) means distributing fluid fuel substantially uniformly along an upper edge of said prismatic fuel volatilizer.

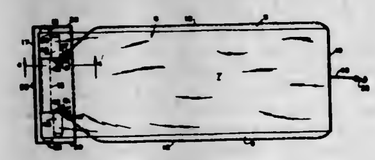
3,292,683
WIPED FALLING FILM EVAPORATOR
Walter Bächi, In den Lohren, Flawil, St. Gallen, Switzerland, and Paul Jamoulle, Al Saloggi 4100, Bellinzona, Ticsin, Switzerland
Filed Nov. 12, 1963, Ser. No. 323,770
3 Claims. (Cl. 159—6)

1. An evaporator for evaporating liquids, comprising a vertical heated surface in the form of a cylinder of revolution, means for continuously applying liquid to the top of said heated surface to form a thin liquid layer moving downwards on said surface, a member contiguous to the thin liquid layer and extending over the entire height and breadth of the heated surface, said member being in the form of a helix coextensive with and having an axis which is coincident with the axis of said cylinder, said helix having windings which are capable to oscillate in the axial direction of the helix to excite interference waves inside said thin liquid layer



along and over the entire height and breadth of the vertical surface, said vertical heated surface being constituted by the jacket innermost surface of a vertical cylinder, said helix being mounted for rotation about its axis, and means provided for rotating said helix, said helix being constituted by a helical band anchored at and suspended from its top end.

3,292,684
ROLL UP PROTECTIVE COVERING FOR VEHICLE TOPS INCLUDING THE WINDOWS
Chester G. Jines, P.O. Box 26, Forest Grove, Oreg. 91116
Filed Dec. 23, 1964, Ser. No. 420,671
2 Claims. (Cl. 160—23)



1. Protective covering apparatus for vehicle bodies having a windshield, rear and side windows,

an elongated hollow housing having front, rear and end walls and an elongated opening in one of said walls,

means removably securing said housing transversely to the vehicle body adjacent the rear window thereof,

a self-winding roller energized by rotation in one direction,

means rotatably mounting the roller within said housing,

a pair of horizontally disposed rollers spaced apart in the direction of the length of said winding roller,

two pairs of cooperating diagonally disposed rollers within the housing spaced inwardly from the ends thereof and disposed diagonally relative to the spaced apart ends of said pair of horizontally disposed rollers,
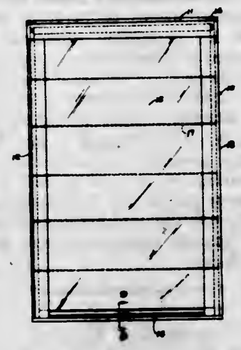
an elongated sheet of flexible material having side marginal portions extending downwardly through the length thereof and secured at one of its ends to said self-winding roller,

a beading extending substantially throughout the length of the bottom edge of each of said side marginal portions,

said sheet material guided in retraction by said horizontal rollers onto said winding roller when in rotation in an opposite direction,

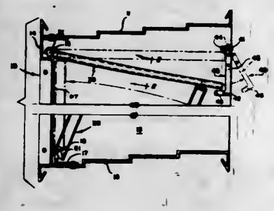
the beading of said marginal portions of the sheet material confined to passage through said pairs of diagonally disposed cooperating rollers onto said wind-up roller along with said sheet material in an inwardly folded condition about said wind-up roller.

3,292,685
WEATHERPROOF RETRACTABLE WALL
Morton L. Clark, Anna Maria Island, Fla., assignor to Guaranteed Weather, Inc., Bradenton, Fla., a corporation of Florida
Filed Sept. 9, 1963, Ser. No. 309,589
14 Claims. (Cl. 160—26)



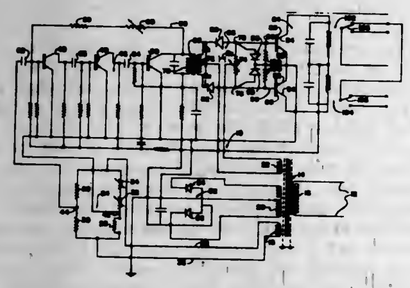
1. In a retractable wall structure, the combination comprising a roller, means for rotatably supporting said roller, a panel of imperforate flexible material having one end thereof fastened to said roller and being adapted to be wound on said roller, a plurality of transverse reinforcing members positioned at longitudinally spaced points on said flexible panel with the ends of said reinforcing members extending beyond the longitudinal edges of said panel, means defining longitudinally extending guide surfaces along the path of said members and adapted to contact and abut the ends of said members throughout their entire path of movement to guide said members and said panel, each reinforcing member being formed with an enlarged portion on the end thereof and a portion of reduced cross section adjacent and spaced from the end of said member outwardly from the longitudinal edges of said panel, and means comprising longitudinally extending guide walls at each end of said reinforcing members between which the ends of said members freely extend said guide walls being spaced from said guide surfaces such as to define enlarged spaces adjacent the ends of said reinforcing members into which the ends of said reinforcing members freely extend, said enlarged spaces being substantially greater in width than the enlarged portions of said reinforcing members, said guide walls adapted to engage the enlarged portions of said reinforcing members to prevent the members from being pulled out under the action of wind on the flexible wall, said guide surfaces extending along the entire path of the ends of the reinforcing members both during their movement of said reinforcing members between said guide walls and during winding and unwinding of said panel and said reinforcing members on and off said roller.

3,292,686
WINDOW
Henry Leiser, % 3-D Windows, Inc., 3285 S. Dayton St., Denver, Colo. 80222
Filed Dec. 29, 1964, Ser. No. 421,832
14 Claims. (Cl. 160—92)



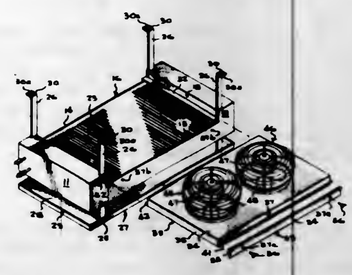
12. A window comprising spaced upper and lower generally parallel bearing means, a glazed sash having at the lower edge thereof means cooperating with said lower bearing means for permitting rotational movement of said sash thereon, a screened frame having at one edge thereof means cooperating with said upper bearing means for permitting rotational movement of said screened frame thereon, said screened frame extending generally over said glazed sash, said screened frame comprising slot means extending generally perpendicularly to the axis of said upper bearing means, said glazed sash comprising connecting means engageable in the slot means of said screened frame, whereby said glazed sash may be rotated on said lower bearing means to expose more or less of said screened frame.

3,292,687
CONTROL MEANS
James D. Evans, 320 Spring Valley Court, Huntsville, Ala. 35802
Filed June 15, 1964, Ser. No. 375,229
5 Claims. (Cl. 165—26)



5. A switching means for selectively energizing two associated electrical circuits in response to an electrical signal when the magnitude of said signal is outside of specified limits comprising, first and second input terminals, first and second transistors, each transistor having a base, an emitter, and a collector, first conductor means connecting said first input terminal to the base of said first transistor, second conductor means connecting the second input terminal and the base of said second transistor, a third conductor connecting the emitters of said first and second transistors, first and second diodes, said first diode connected across said first input terminal and said third conductor, said second diode connected across said second input terminal and said third conductor, said diodes connected to provide a return to the input terminal for the base current of the opposite transistor while such transistor is in conduction in operation, first and second relay switches, said first relay switch operative when activated to energize a first associated electrical circuit, said second relay switch operative when activated to energize an associated second electrical circuit, said first and second relay switches having input and output control terminals, a source of unilateral voltage connected across said third conductor and the output control terminals of said relay switches, fourth conductor means connecting the collector of said first transistor and the input control terminal of said first relay switch, fifth conductor means connecting the collector of said second transistor and the input control terminal of said second relay switch, said switch means adapted to selectively activate either said first associated circuit means or said second associated circuit means in response to a control signal to said first and second input terminals of said switching means when the magnitude of said signal is outside of specified limits.

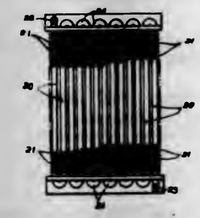
3,292,688
UNIT COOLER
Raymond M. Shrader, Decatur, Ga., assignor to Larkin Coils, Inc., Atlanta, Ga., a corporation of Georgia
Filed Jan. 7, 1965, Ser. No. 423,986
5 Claims. (Cl. 165—122)



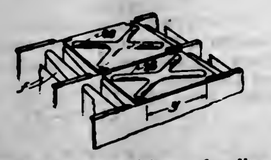
1. A cooling apparatus comprising, a housing having a pair of endwalls and a pair of sidewalls, the sidewalls having a relieved portion in the upper most edge thereof defining a through recess in the housing, support walls located inwardly of the endwalls and bridging the space between the sidewalls, the support walls further being located adjacent the relieved portions in the sidewalls, an elongated fin-and-tube refrigerating unit mounted within the housing and supported by the support walls, a removable service tray assembly comprising a platform having apertures therein, a fan assembly mounted on the platform in conjunction with at least one of the apertures. the platform having endwalls and sidewalls, an upwardly projecting tray lock member projecting from each of the platform sidewalls, the service tray adapted to slide into and out of cooperative engagement with the housing through recess, means to secure the service tray within the housing.

3,292,689
PLATEFIN-TYPE HEAT EXCHANGER AND METHOD OF MAKING SAME
Keiichi Kimura, Yao-shi, Osaka-fu, Japan, assignor to Kimurakoki Co., Ltd., Osaka, Japan
Filed July 7, 1964, Ser. No. 380,776
5 Claims. (Cl. 165—151)

1. A plate-fin heat exchanger comprising, in combination, a plurality of spaced, substantially parallel, heat exchanging plate-fins mounted on plural substantially parallel fluid conduit tubes; each tube extending through a respective opening in each plate-fin and being tightly embraced by a one-piece cylindrical flange which encircles the tube and extends from the surface of each plate concentric with the respective opening; each cylindrial flange extending from a circular depression in at least one surface of the associated plate, the circular depression being concentric with the associated opening and having a diameter substantially equal to the outer diameter of the tube extending through the associated opening.

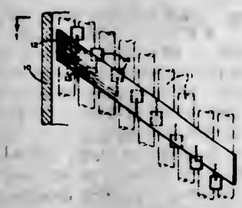


3,292,690
HEAT EXCHANGER
Desmond M. Donaldson, Oakville, Ontario, Canada, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Dec. 20, 1962, Ser. No. 246,068, now Patent No. 3,211,118, dated Oct. 12, 1965. Divided and this application Mar. 22, 1965, Ser. No. 452,960
6 Claims. (Cl. 165—152)



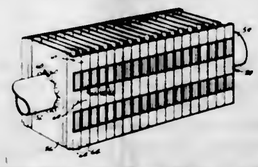
1. A heat exchanger comprising a plurality of elongated elements having end portions and side portions arranged face to face in pairs to form at least one header portion and at least one tube portion in fluid communication with and extending from said header portion with elements of adjacent pairs arranged back to back to form a continuous passage from the header portion of one pair to the header portion of the adjacent pair, tie means integral with and extending between each of said elongated elements in said pairs and tie means integral with said elongated elements and extending between adjacent pairs.

3,292,691
TUBE SPACING MEANS
Josef Welter and Josef Metzger, Oberhausen, Rhineland, Germany, assignors to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain
Filed Jan. 5, 1965, Ser. No. 423,625
Claims priority, application Germany, Jan. 24, 1964, D 43,432
8 Claims. (Cl. 165—162)



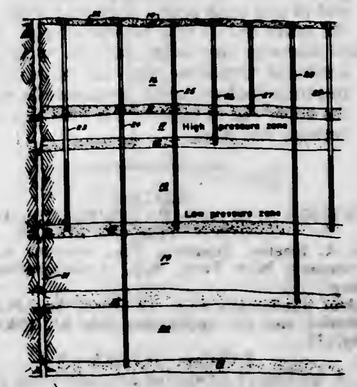
1. A tube spacer arrangement for positively spacing a plurality of tubes arranged as a tube bundle, said tubes being arranged in a plurality of rows parallel to the axis of said tube bundle, said spacer comprising an outer member embracing at least a portion of the outer periphery of said tube bundle and inclined to the axis of said tube bundle, and a plurality of spacing means extending between opposite portions of said member through said tube bundle between adjacent rows of tubes therein and arranged to position and space adjacent tubes in said tube bundle, adjacent spacing means between adjacent rows of said tubes being displaced from each other at an angle to the axis of said tube bundle at least as great as the angle of inclination of said outer member.

3,292,692
FINNED TUBE HEAT EXCHANGER
Ernest H. Person, New Britain, and John T. Collins, Farmington, Conn., assignors to Allied Thermal Corporation, New Britain, Conn., a corporation of Connecticut
Original application Aug. 17, 1961, Ser. No. 132,212, now Patent No. 3,250,318, dated May 10, 1966. Divided and this application Oct. 18, 1965, Ser. No. 496,781
3 Claims. (Cl. 165—182)



2. A heat transfer unit comprising a tubular conduit and a plurality of sheet metal fins having generally flat fin portions with opposed transversely spaced substantially parallel edges and with circular openings therein receiving the tubular conduit and flange portions at the opposed edges providing air stacks between adjacent fin portions, said flange portions extending at right angles to the generally flat fin portions and providing air slots to increase the air flow through the air stacks and thereby increase the efficiency of the heat transfer unit.

3,292,693
METHOD OF STORING TOXIC FLUIDS AND THE LIKE
Gilman A. Hill, Englewood, and William A. Colburn, Denver, Colo., assignor, by mesne assignments, to Atomic Storage Corporation, Denver, Colo., a corporation of Colorado
Filed June 18, 1962, Ser. No. 203,092
20 Claims. (Cl. 166—2)



6. The method for storing fluids and for preventing leakage of the stored fluids, which comprises utilizing a geologic section having a zone in which all natural pres-

sure induced fluid flow is converging by means of only the naturally existing fluid flow characteristics of the geologic section toward one part of the geologic section, providing a well bore extending into said zone, and injecting fluid to be stored through said bore into said zone.

3,292,694

WELL DRILLING METHOD AND APPARATUS

John E. Lacy, Metairie, La., and Finas F. Martin, Westport, Conn., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Original application Sept. 13, 1962, Ser. No. 223,368, now Patent No. 3,215,201, dated Nov. 2, 1965. Divided and this application May 27, 1965, Ser. No. 459,371
5 Claims. (Cl. 166—5)



1. Apparatus for setting a well foundation pipe in an unconsolidated formation underlying a body of water, said apparatus comprising

a well foundation pipe to be installed in the unconsolidated formation,

a wash pipe smaller in diameter than said foundation pipe and adapted to be positioned substantially concentrically therein forming an annular fluid flow passageway between said wash pipe and said foundation pipe,

releasable pipe connector and foundation pipe supporting means having a first portion thereof carried by said foundation pipe and having a second portion engageable with said first portion and by said wash pipe,

said portions of said pipe connector and foundation pipe supporting means being positioned on said wash pipe and said foundation pipe whereby the discharge end of said wash pipe is positioned within and above the lower end of said foundation pipe, and

fluid discharge port means near the upper end of said combined foundation pipe and wash pipe assembly to permit fluid and earth particles to be washed from the upper end of said annular fluid flow passageway between said pipes.

3,292,695

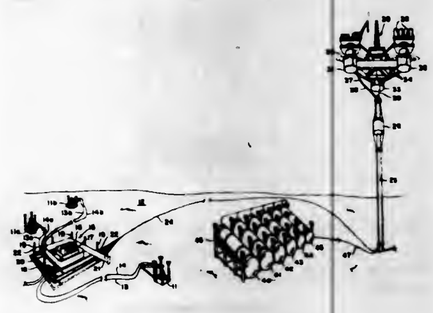
METHOD AND APPARATUS FOR PRODUCING UNDERWATER OIL FIELDS

John A. Hoeber, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Original application Sept. 12, 1963, Ser. No. 308,531. Divided and this application July 21, 1965, Ser. No. 484,153
2 Claims. (Cl. 166—5)

1. A method of producing an underwater oil and gas field in which a plurality of wells have been drilled, said method comprising the steps of:

installing a large diameter vertical cylinder in the ocean floor and partially buoyantly supporting the upper end of said vertical cylinder below the surface of the ocean, producing well fluid from said wells into a lower portion of said cylinder,



providing a vessel on the surface of the ocean in the vicinity of the cylinder,

connecting the interior of the cylinder in fluid communication with the vessel, and

pumping well fluid from said lower portion of cylinder to said vessel.

3,292,696

WATER FLOODING

Burton B. Sandiford, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed May 31, 1960, Ser. No. 32,550
2 Claims. (Cl. 166—9)

1. In the method of recovering oil from a subterranean oil-bearing reservoir wherein relatively non-viscous aqueous liquid is injected into said reservoir and, at a spaced distance therefrom, displaced oil is withdrawn from said reservoir to the earth's surface, the improvement comprising: initially injecting a first aqueous solution of hydroxyethyl cellulose having a viscosity between about 10 and 1000 centipoises at 75° F., continuing said injection until between about 0.00´ to 0.03 times the pore volume of said reservoir to be flooded is injected and then injecting a second solution of hydroxyethyl cellulose into said reservoir, said second solution having a viscosity intermediate the viscosities of said first solution and said relatively non-viscous aqueous liquid and thereafter injecting into said reservoir said relatively non-viscous aqueous liquid.

3,292,697

STABLE POSITIVE NONSIMPLE LIQUID FOR WATER-FLOODING SUBTERRANEAN FORMATIONS

Milton K. Abdo, Dallas, Tex., and Paul E. Klatz, Laramie, Wyo., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 19, 1964, Ser. No. 376,588
9 Claims. (Cl. 166—9)

1. A method of alleviating the loss of activity of a positive nonsimple aqueous ammonium oleate solution which comprises incorporating therein an ammonium halide in an amount of at least 0.05 percent by weight and sufficient to preserve the activity of said positive nonsimple aqueous ammonium oleate solution.

4. In a method for recovery of oil from a subterranean formation by injecting a positive nonsimple aqueous ammonium oleate solution through an injection well and into said formation, and producing oil from said formation through a production well, the improvement which comprises incorporating into at least a portion of said ammonium oleate solution an ammonium halide in an amount sufficient to preserve the activity of said positive nonsimple aqueous ammonium oleate solution.

3,292,696

TREATING PERMEABLE FORMATIONS WITH AQUEOUS POSITIVE NONSIMPLE FLOODING LIQUIDS

Joseph G. Savins, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 26, 1964, Ser. No. 378,442
16 Claims. (Cl. 166—9)

1. In a method of treating a subterranean formation, the step comprising passing into said formation water having incorporated therein quantities sufficient to provide a solution which is viscoelastic and is also a shear hardening, positive nonsimple liquid of an additive system selected from the class consisting of (1) undecane-3-sodium sulfate and cyclohexylammonium chloride, and (2) sodium elaidate, sodium chloride and caustic.

3,292,699

PROCESS FOR IN SITU RETORTING OF OIL SHALE

Marion L. Shuster, Arlington, and Dean P. Nichols, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Aug. 10, 1964, Ser. No. 388,384
10 Claims. (Cl. 166—11)

1. A process for recovering hydrocarbons from a deposit of oil shale penetrated by boreholes, comprising the steps of:

(a) passing a combustion front through the deposit from a first borehole to a second borehole by the inverse injection of a combustion-supporting gas through the deposit between the boreholes,

(b) passing a combustion front for a suitable number of traverses through the deposit from the first to the second borehole by the direct injection of a combustion-supporting gas through the deposit residing between boreholes until there is produced a mass of burned deposit at temperatures suitable for retorting oil shale,

(c) passing the last of such combustion fronts by direct combustion on to a third borehole disposed in an unburned portion of the deposit beyond the second borehole by the direct injection of a combustion-supporting gas through the deposit residing between the boreholes, and

(d) producing fluids from the third borehole and recovering hydrocarbons from such fluids.

3,292,700

METHOD AND APPARATUS FOR SEALING PERFORATIONS IN A WELL CASING

William B. Berry, P.O. Box 1951, Clarksburg, W. Va. 26401

Filed Mar. 2, 1964, Ser. No. 348,493
20 Claims. (Cl. 166—21)

3. Apparatus for temporarily sealing the perforations in the casing of a well comprising a carrying member positioned within the casing in the vicinity of the perforations, a plurality of sealant members detachably connected to said carrying member by breakable elements, means connected to said carrying member for raising said carrying member in the casing and moving said sealant members through the perforated portion of the casing, said sealant members being drawn into engagement with said perforations by the flow of fluid from the casing through the perforations contemporaneous with the raising of said carrying member in said casing, the pressure of the fluid flowing from the casing through the perforations being of sufficient magnitude to overcome said breakable elements and the movement and force imparted to said sealant members by the raising of the carrying member to effect a separation of said sealant members from said carrying member.



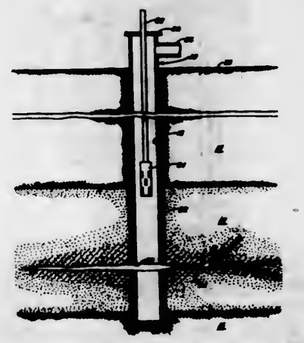
18. The method of temporarily sealing the perforations in the casing of a well which comprises lowering under positive control to a point below the perforations a member having a plurality of sealant members detachably connected thereto and depending therefrom, elevating the carrying member and moving the sealant members through the perforated area of the casing while flowing a fluid from the casing through the perforations to move the sealant members into engagement with the perforations for closing same while separating the sealant members from the carrying member.

3,292,701

METHOD FOR CONSOLIDATING INCOMPETENT SUBSURFACE FORMATIONS

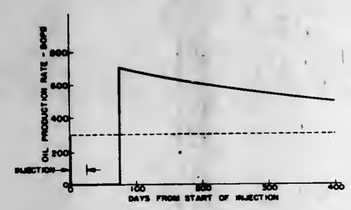
Robert J. Goodwin and Paul L. Terwilliger, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 12, 1963, Ser. No. 322,856
12 Claims. (Cl. 166—25)



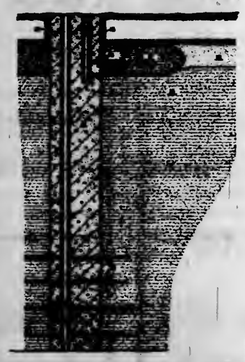
8. A method of consolidating an incompetent underground oil-bearing formation penetrated by the borehole of a well comprising injecting a gas down the well and into the formation at a rate creating a fracture in said formation, injecting an inert gas at a temperature in the range of 400° to 1300° F. down the well and into the formation at a rate maintaining the fracture open to convert oil in said formation adjacent the fracture to coke to consolidate the formation.

3,292,702
THERMAL WELL STIMULATION METHOD
Thomas C. Boberg, Houston, Tex., assignor to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Continuation of application Ser. No. 178,399, Mar. 8, 1962. This application June 7, 1966, Ser. No. 562,415
13 Claims. (Cl. 166—40)



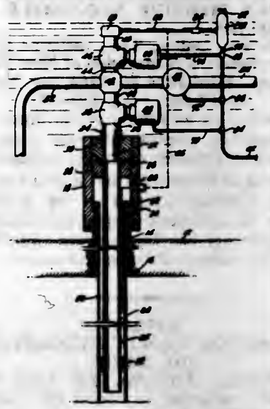
3. A process for thermal stimulation of a well which is producing oil from an oil-bearing formation due to an existing pressure drive mechanism which comprises interrupting said production, then injecting steam into the oil-producing formation penetrated by said well, thereafter backflowing and producing steam condensate from said well while maintaining sufficient back-pressure on the well to prevent substantial re-vaporization of said condensate, then resuming production of oil from said well for a period of at least one month, gradually reducing said back pressure and then repeating the above sequence of steps.

3,292,703
METHOD FOR OIL PRODUCTION AND GAS INJECTION
Alvin G. Weber, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,534
10 Claims. (Cl. 166—42)



1. A method of recovering oil from a subterranean reservoir penetrated by a wellbore, which comprises pressuring the upper level of said reservoir by injecting a gas through said wellbore selectively into the upper part of the reservoir, thereafter blocking the injected gas from backflow or coning by injecting a liquid through said wellbore selectively into the upper part of the reservoir thereby displacing the injected gas from the vicinity of the wellbore, and producing oil through said wellbore from a lower part of the reservoir.

3,292,704
REMOTE TREATMENT OF WELLS
William F. Miller, Ventura, Calif., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,254
4 Claims. (Cl. 166—91)



1. In a well head assembly associated with a subsurface well and comprising well head equipment including at least one flow line extending from the well and hydraulically actuated control means for controlling the flow of fluid from the well, a pressure line for controlling said hydraulically actuated control means in response to application of control pressures to said pressure line and means for introducing a well treatment fluid into said flow line, said last mentioned means comprising means for supplying a well treatment fluid under pressure to said pressure line, a branch conduit extending from said pressure line into said flow line, and means normally closing said last mentioned branch conduit but operable at pressures above said control pressures to open said conduit to the passage of fluid.

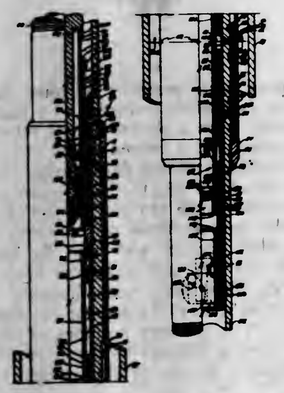
3,292,705
TURBO-CENTRALIZER
Jesse E. Hall, Sr., Weatherford, Tex., assignor to Trojan, Inc., Panama, Panama, a corporation of Panama
Filed May 14, 1964, Ser. No. 367,389
1 Claim. (Cl. 166—173)



A turbo-centralizer for mounting on a well casing to function in the annular space between the casing and well bore comprising
a pair of axially spaced collars slidably fixed to the exterior of the casing,

a plurality of outwardly bowed spring members spanning the space between the collars and equally spaced circumferentially of said collars, one of the ends of said members attached to the upper collar, the opposite ends to the lower collar,
fluid deflector vanes disposed in the space between the spring members and casing and positioned adjacent the bowed portion of the spring members.

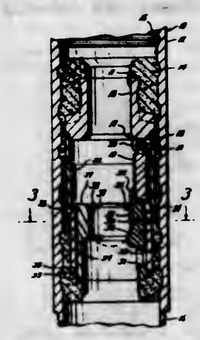
3,292,706
FLUID PRESSURE RESPONSIVE VALVE
George G. Grimmer and Leonard McCasland, Dallas, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed July 26, 1963, Ser. No. 297,933
27 Claims. (Cl. 166—224)



1. A well tool including: a tubular member connectable in a flow conductor to constitute a section thereof, said tubular member having a flow passage therethrough and a port intermediate the ends thereof communicating the exterior of the tubular member and said flow passage; an auxiliary valve movably carried by said tubular member and movable relative thereto between a first position wherein said port is open and a second position wherein said auxiliary valve closes said port; and a valve for closing said flow passage of said tubular member including a mandrel having a flow passage therethrough, valve means for closing said flow passage of said mandrel and operator means for moving said valve means between open and closed positions, said mandrel and said tubular member having co-engageable means for releasably holding said mandrel in a predetermined position in said tubular member, said operator means being exposed to the pressure from the exterior of said tubular member when said mandrel is in said predetermined position in said tubular member and said auxiliary valve means of said tubular member is in said open position and is responsive to said pressure for moving the valve means to closed position.

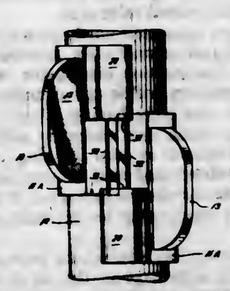
3,292,707
WELL FLOW CONTROL DEVICE
Wayne F. Nelson and Gil R. Boyd, Waxahachie, Tex., assignors to Kockring Company, Waxahachie, Tex., a corporation of Wisconsin
Filed May 15, 1964, Ser. No. 367,662
4 Claims. (Cl. 166—224)

1. A well flow control device adapted to be installed in a well string, comprising
a body having a flow-way therethrough and adapted to be connected to a well string,
said body defining an annular valve seat surrounding said flow-way,
a flapper valve adapted to engage said annular valve seat and close flow upwardly through said flow-way,
means urging said flapper valve toward engagement with said annular valve seat,
an annular element positioned within said body below said flapper valve and having an upper bore and a larger lower bore defining a passageway through said annular element,
a segment member movable only vertically within said annular element from an upper position to a lower position, and



means releasably securing said segment member in its upper position to said body,
said segment member having a projection extending inwardly to define a closure seat in said upper bore when said segment member is in its upper position,
said projection on said segment member being positioned within said larger lower bore in said annular element when said segment member is in its lower position to eliminate said closure seat.

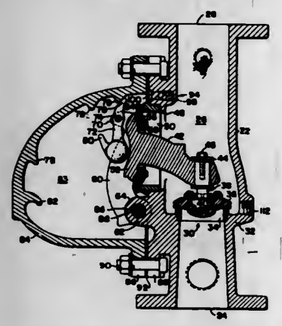
3,292,708
TUBING CENTRALIZER
Louis C. Mundt, P.O. Box 15356, Houston, Tex. 77020
Filed July 29, 1963, Ser. No. 296,168
11 Claims. (Cl. 166—241)



1. A tubing centralizer, comprising a pair of clamp portions adapted to be disposed about opposite sides of the tubing, each clamp portion having openings therein, a wing receivable through each said opening for extension outwardly from the clamp portion, shoulder means on each wing and the clamp portion engageable with one another to so locate the wing within said opening when the clamp portions are disposed about the tubing, means forming a part of said clamp portions longitudinally interfitting and supporting one clamp portion from the other clamp portion, merely upon said other clamp portion being held against its side of the tubing and said one clamp portion being moved longitudinally along the other side of the tubing toward said other clamp portion, and

means for urging the inner ends of the wings against the tubing so as to hold the shoulder means thereon in engagement with the shoulder means on the clamp portion.

3,292,709
AUTOMATIC DELUGE VALVE FOR DRY PIPE SPRINKLER SYSTEM
Willis K. Hodgman, Jr., Taunton, Mass., assignor to Hodgman Manufacturing Company, Inc., Taunton, Mass., a corporation of Massachusetts
Filed May 22, 1964, Ser. No. 369,425
3 Claims. (Cl. 169—21)



2. In an automatic deluge sprinkler system, a valve including, in combination,

a valve body having a side wall defining a substantially straight fluid passage between an inlet and an outlet, a first valve seat and a first valve member cooperable therewith against inlet pressure to close the passage, an opening in the side wall on the outlet side of the first valve seat, and a second valve seat and a second valve member cooperable therewith to close the opening without closing the passage,

means to connect a source of fluid under pressure to the inlet,

means to connect normally open discharge means to the outlet,

a cover attachable to the valve body to define a chamber external to the passage and communicating with it through the second valve seat,

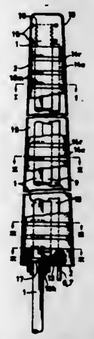
an arcuate arm supported on the valve body, attached to the first and second valve members and pivotal between a first position closing the valve seats and a second position within the chamber opening the valve seats, said body having a bushing formed on its exterior within said chamber with a hinge pin rotatably received in said bushing and extending axially therefrom and said arcuate arm having an integral yoke member with a pair of diverging legs each having an opening for pivotally receiving said hinge pin,

a first fluid connection between the inlet and the chamber including a passage in the valve body between surfaces thereof respectively inside and outside the chamber, said connection being external to the passage, and

a second fluid connection having a control operable to discharge fluid from the chamber, the first fluid connection providing a substantially greater restriction to flow than the second,

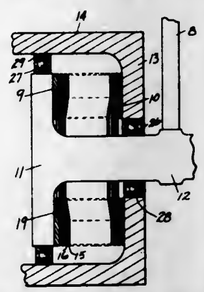
the valve members being so related as to position and area that fluid pressure thereon restrains the arm in the first position when the chamber and inlet pressures are substantially equal, but forces the arm to the second position upon operation of said control and consequent reduction of pressure within the chamber.

3,292,710
VARIABLE PITCH PROPELLER OR ROTOR
Hugo T. Grut, Grevgatan 12, Stockholm, Sweden
Filed Nov. 23, 1964, Ser. No. 412,939
21 Claims. (Cl. 170—160.1)



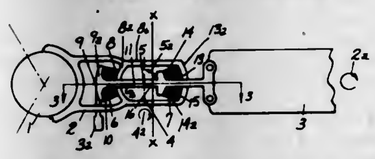
10. A variable pitch propeller or rotor having two or more blades, each blade consisting of a rigid rod (1) extending radially from a central hub of rotation and a mantle (2) shaped like a twisted airfoil enveloping the rod (1) and mounted thereon fixed against longitudinal displacement, means by which a fluid under pressure is made to act on the mantle (2) and the rod (1) whereby torque is applied between those two members (1, 2) in order to angularly displace and twist the mantle (2) relative to the rod (1) and rotate the blade about a longitudinal axis, there being means disposed along the mantle (2) and the rod (1) for limiting the displacement of the mantle (2) in different positions of angular adjustment and allowing different transverse sections of the mantle (2) different degrees of displacement relative to the rod (1).

3,292,711
BLADE PITCH CHANGE BEARING
Robert R. Peterson, Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1965, Ser. No. 443,993
15 Claims. (Cl. 170—160.53)



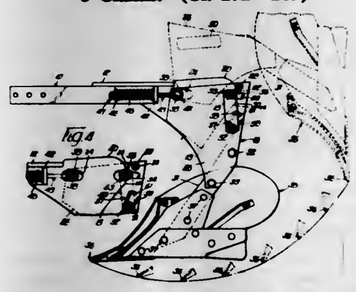
1. A rotor having a plurality of blade drive arms each associated with a blade, a first joint member fixed to the inner end of the blade and having a surface normal to the longitudinal axis of the blade and facing the outer end of the blade, a second member fixed to the arm and having a surface normal to said axis and spaced radially outward of the surface on said first member, a body of elastomer in load carrying relation between and having its ends respectively fixed to said surfaces, said body having a height to width ratio such that in the absence of other structure instability of the kind found in tall thin columns is present, a plurality of shims spaced from each other and from said surfaces embedded in and bonded to the elastomer and normal to said axis, each shim having a plane section at its periphery and a domed section at its center intersecting the plane section at an angle of substantially 10°, said shims and said surfaces of the joint members being rigid so as to maintain their shape under load and coacting with the elastomer to overcome said instability, pitch control means for twisting the first joint member relative to the second joint member, and bearing means for preventing tilting of the first joint member about an axis transverse to said longitudinal axis.

3,292,712
ROTOR HEAD
Warren E. Schmidt, Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1965, Ser. No. 451,814
4 Claims. (Cl. 170—160.53)



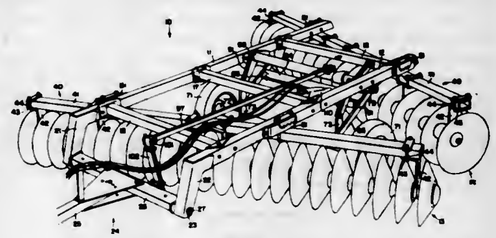
1. A rotor for helicopters and the like having a hub with a plurality of radially extending arms, each arm being associated with a radially extending blade, a pair of joints adjacent the hub spaced from each other along the axis of the blade, each joint comprising a first member having a surface transverse to said axis and presented toward the hub, a second member having a surface transverse to said axis and presented toward the first surface and the blade, and a body of elastomer sandwiched between and fixed to said surfaces, first load carrying members spaced radially outward of said axis and angularly from each other about said axis and fixed to said first members of the joints and to said arm, second load carrying members spaced radially outward of said axis and angularly from each other about said axis and from the first load carrying members and fixed to said second members of the joints and to said blade whereby the bodies of elastomer sustain the centrifugal blade load in compression and the blade pitch change load in shear.

3,292,713
SPRING CUSHION AND RELEASE MECHANISM FOR GROUND-WORKING TOOL
Guenther Mannheim, South Bend, Earl D. Zeltwanger, Mishawaka, and Donald E. Kuska, South Bend, Ind., assignors to Oliver Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,216
8 Claims. (Cl. 172—269)



1. In a ground working implement, in combination, a fore and aft support beam, a tool-carrying frame having a ground-working tool attached thereto and depending therefrom, said beam having a non-vertical elongated slot formed therein, a guide roller operable in said slot between forwardmost and rearwardmost positions therein, means mounting an upper front corner of said tool-carrying frame on said guide roller whereby said tool-carrying frame is mounted on said support beam for both pivoting movement about a horizontal transverse axis and fore and aft shifting movement with respect thereto, a rearwardly opening notch of substantial depth formed in the rear edge of said support beam, a latching roller, means for supporting said latching roller on the upper rear corner of said tool-carrying frame for engagement in said notch when said tool-carrying frame is disposed forwardly of its rearwardmost position relative to said support frame whereby to latch said tool-carrying frame against pivoting movement relative to said support beam, said latching roller being disengageable from said notch upon rearward shifting movement of said tool-carrying frame into its rearwardmost operating position relative to said support beam whereby to permit rearward and upward pivoting movement of said tool-carrying frame relative to said support beam, and yieldable means interconnecting said support beam and said tool carrying frame for yieldably retaining said frame in its forwardmost position relative to said support beam.

3,292,714
WHEEL TYPE OFFSET DISK HARROW
William S. Tsuchiya and Edwin F. Wadelton, Los Angeles, and David W. Cayton, Whittier, Calif., assignors to Deere & Company, Moline, Ill., a corporation of Illinois
Original application July 1, 1963, Ser. No. 291,828. Divided and this application Nov. 27, 1964, Ser. No. 422,877
2 Claims. (Cl. 172—583)



1. An offset disk harrow comprising: a generally fore-and-aft extending main frame means, said frame means including laterally spaced apart fore-and-aft extending frame bars overlying a pair of disk gangs arranged in laterally diverging relation, said pair of disk gangs each including gang frame means, and means adjustably fixing each of said gang frame means to said first-mentioned frame means comprising a longitudinally extending generally U-shaped clamp plate having front and rear outturned leg portions fixed to said frame bars, the bight portion of each plate being spaced from the associated frame bar to provide a U-bolt receiving space, transversely projecting lug means carried by said first-mentioned frame means, a U-bolt encircling each end portion of each gang frame means from below and having end portions extending upwardly between the bight of the associated clamp plate and the adjacent side of the associated frame bar to points above the frame bar, a U-bolt cap apertured to receive the ends of each U-bolt and overlying the associated clamp plate and frame bar, and fasteners on said U-bolts acting against each U-bolt cap for clamping the gang frame means to said frame bars, each of said U-bolt caps being provided with a downwardly depending portion having a plurality of notches cooperable with said transversely projecting lug means to hold said gang frames in selected positions of fore-and-aft adjustment, the parts being so arranged and constructed that

when the fasteners are loosened the gang frame means may be moved to new positions of lateral and/or fore-and-aft adjustment relative to said main frame means.

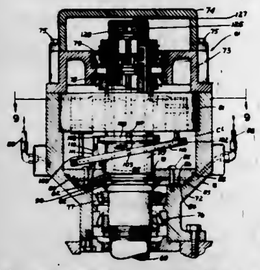
ERRATUM

For Class 172—595 see:
Patent No. 3,292,716

3,292,715
EARTH DRILLING MACHINERY

Roy O. Balogh, Ladue, Mo., assignor to McCabe-Powers Body Company, St. Louis, Mo., a corporation of Missouri

Filed May 11, 1964, Ser. No. 366,338
19 Claims. (Cl. 173—12)

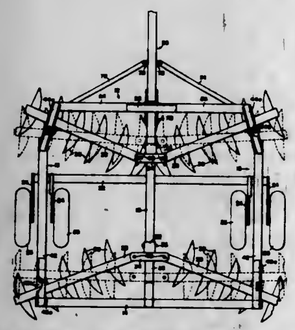


1. A portable earth auger comprising a main shaft, a boring tool on one end of the shaft, a motor connected to the opposite end of the shaft, said motor being adapted to supply substantially constant power to the main shaft at varying torques and angular velocities, control means operatively associated with the motor for sensing the resistance encountered by the boring tool and for automatically changing the torque and velocity of the shaft in response to such changes in resistance so that the boring tool rotates at substantially optimum velocity and torque, a constant flow pump, and conduits interconnecting said motor and pump.

3,292,716
DISK HARROW

Charles H. Youngberg, Moline, and Willard E. Peterson, Colona, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Illinois

Filed Apr. 6, 1964, Ser. No. 357,427
1 Claim. (Cl. 172—595)

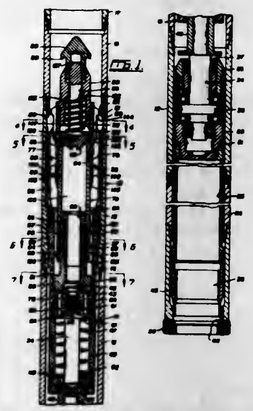


A double-action tandem disk harrow comprising: a rigid longitudinally extending main frame member; front and rear transversely extending spaced apart frame structures rigidly secured at their midportions to front and rear ends of said main frame member, respectively; right-hand and left-hand outer frame structures rigidly secured at their ends to the ends of said transverse frame structures; front and rear pairs of disk gangs movable between an angled working position and a transport position, each of said pairs including right and left disk gangs; the length between the outer ends of each pair of gangs being greater than the length of the main frame member, means on said outer frame structures to hold an outer end portion of each of said gangs in one of two selected positions of inward and outward fore-and-aft adjustment; means on the main frame member to longitudinally adjust the inner ends of said gangs between inward and outward positions independently of said means on said outer frame structures, and releasable forwardly extending draft frame means secured to said rigid elongated main frame member, the parts being so arranged and constructed that when the gangs are in their transport position in which the inner ends of said gangs are in their outward position and the outer ends of the gangs are in their inward position the outer ends of the front and rear pairs of disk gangs are disposed between the front and rear transversely extending frame members, and when the gangs are in their angled working position in which the outer ends of said gangs are in their outward position and when the inner ends are in their inward position the outer ends of the front and rear gangs will project forwardly and rearwardly of the front and rear transverse frame members, respectively.

3,292,717
WIRE LINE CORE BARREL AND BY-PASS ASSEMBLY

Perry B. Hall, Vancouver, British Columbia, and James W. Smyth, West Vancouver, British Columbia, Canada, assignors to Boyles Bros. Drilling Company Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia

Filed June 15, 1964, Ser. No. 375,218
18 Claims. (Cl. 175—46)



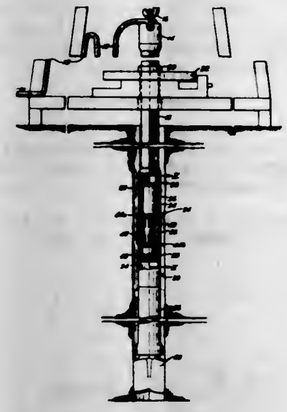
1. In a core barrel, a spearhead assembly for movement in an outer tubular arrangement comprising a sleeve adapted to move within and axially of an outer tubular arrangement, a spearhead projecting from an end of said sleeve and having a rod slidably extending longitudinally of the sleeve, a tubular spring latch completely surrounding the sleeve, said sleeve being axially movable relative to the spring latch, said latch having spring fingers around the sleeve extending towards the spearhead end of said sleeve, and means on the sleeve engaging the spring fingers to move said fingers outwardly against the resiliency

thereof into locking position upon movement of the sleeve inwardly relative to the latch, said engaging means permitting the fingers to spring inwardly when the sleeve moves in the opposite direction.

3,292,718
AUTOMATIC KELLY VALVE

Virgil D. Stone, Morgan City, La., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 29, 1963, Ser. No. 254,008
12 Claims. (Cl. 175—318)



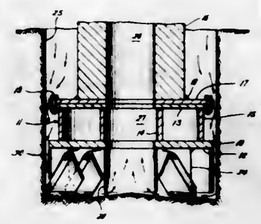
12. A self-acting valve for connection between a kelly and drill pipe of rotary drilling apparatus, said valve adapted to respond automatically to changes in fluid pressure of a drilling fluid contained in the valve and comprising a tubular outer casing forming a smooth even surface between the kelly and the drill pipe, said casing being threaded at each end for connection to the kelly and the drill pipe, a tube extending longitudinally within the casing and communicating with the kelly and the drill pipe and having a flexible center portion, the outer diameter of the tube being smaller than the inner diameter of the casing to form a chamber totally enclosed between the tube and the casing, and a gas sealed within the chamber, at a pressure adapted to constrict the flexible portion of the tube when circulation of the drilling fluid therethrough is stopped.

3,292,719
DRILL BIT

Percy W. Schumacher, Jr., Houston, Tex., assignor to Reed Roller Bit Company, Houston, Tex., a corporation of Texas

Filed Jan. 15, 1964, Ser. No. 337,871
5 Claims. (Cl. 175—339)

1. In an earth boring roller drill, a head adapted to be connected to the lower end of a hollow drill stem, said head having a central drilling fluid passageway therethrough in communication with the drill stem and the lower portion of said head, a plurality of central roller cutter assemblies secured to the lower portion of said head, and arranged to drill the formation at and proximate the axis of the drill, a plurality of outer roller cutter assemblies secured to the lower portion of said head, and arranged to drill an annular path at and near the wall of the bore hole, intermediate roller cutter assemblies secured to the lower portion of said head and arranged to cut annular paths on the formation between said central and outer cutter assemblies whereby the entire bottom of the hole is drilled, a central skirt means attached to said head, and extending downwardly in close proximity to the bottom of the hole and forming a continuation of said central passageway to conduct drilling fluid toward or from the bottom of the hole, the said skirt being arranged to substantially span the space between the said

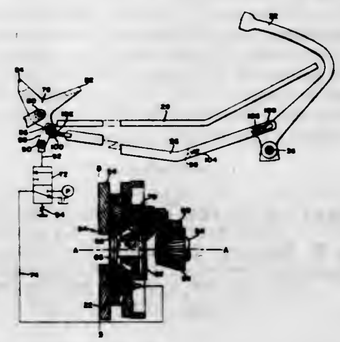


central cutter assemblies, outer skirt means extending downwardly from said head in close proximity to the bottom of the hole and disposed to substantially span the space between said outer cutter assemblies whereby circulating drilling fluid is constrained to move radially near the bottom of the bore hole, under said skirts, and around some of the cutters to clean the same.

3,292,720
CONTROL MEANS FOR LOCKING DIFFERENTIAL

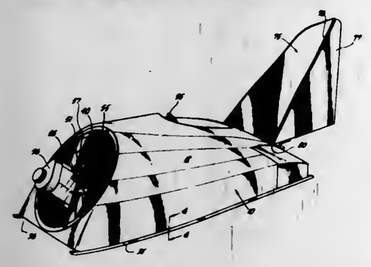
James R. Harvey, Cedar Falls, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed May 28, 1964, Ser. No. 371,021
8 Claims. (Cl. 180—6.2)



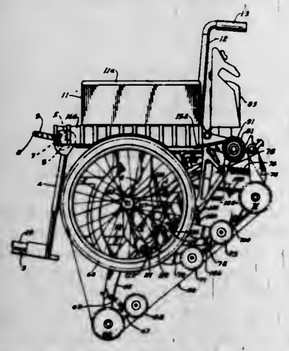
1. In a vehicle having a power train including a driven differential having first and second output shafts and brake means including first and second selectively individually and jointly operative brakes respectively for said shafts, the improvement comprising means for selectively locking and unlocking the differential; control means connected to said locking and unlocking means and movable between locking and unlocking positions; means biasing the control means to its unlocking position and yielding to manual force applied to said control means when moved to its locking position; releasable retaining means operative automatically upon movement of the control means to its locking position to releasably hold said control means against biased return to its unlocking position; and means operative in response to application of either brake for releasing the retaining means and causing automatic return of the control means to its unlocking position.

3,292,721
TOY AIR CAR
Franklin A. Dobson, 4518 Roxbury Road, Corona del Mar, Calif. 92625
Filed Oct. 2, 1963, Ser. No. 313,388
16 Claims. (Cl. 180—7)



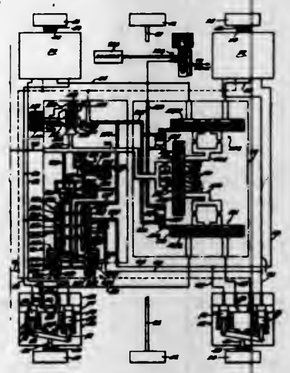
2. An air cushion vehicle comprising
lightweight body means having a hollow, downwardly generally open underside for providing an air pressure plenum chamber;
air intake means including an air intake and fan in the forward end of said plenum chamber for (i) vertically lifting said vehicle, (ii) providing a horizontal thrust substantially parallel to the longitudinal axis of said vehicle, and (iii) providing a side force component at the front of the vehicle when said vehicle is flying at an angle of yaw;
central cockpit means extending longitudinally within said air pressure plenum chamber for splitting the air flow produced by said fan and dividing said chamber into two pressurized side-by-side cavities;
vertical stabilizer means mounted at the rear end of said body means for developing a side force at the rear of said vehicle;
said air intake means and said vertical stabilizer means developing a pair of side forces acting in substantially the same direction on opposite sides of the center of gravity of the vehicle when the vehicle is turned at an angle of yaw for maneuvering the vehicle in a short turning radius while inhibiting spin of the vehicle about its center of gravity.

3,292,722
WHEEL CHAIR FOR OPERATION ON GROUND AND STAIRS SELECTIVELY
James B. Bamberg, Clearwater, Fla., assignor to Ibex Corporation, Clearwater, Fla., a corporation of Florida
Filed Mar. 17, 1965, Ser. No. 440,418
21 Claims. (Cl. 180—9.24)



20. A chair comprising a rigid main frame, side frames connected thereto for movement laterally of the main frame relative to the main frame and to each other to extended and retracted positions;
rotatable supporting means connected to the side frames, respectively, in load bearing relation to the side frames and for rotation about axes extending transversely of the frames;
means operable for rotating the rotatable supporting means, respectively;
means to move the side frames to said positions selectively, said last mentioned means including reversible toggle means drivingly connected to the side frames and operable to move the side frames toward extended and retracted positions when the toggle means are driven in opposite directions, respectively;
a dead center spring drivingly connected to the toggle means, and manual means to shift the spring from one side of dead center position to the opposite side of dead center position, selectively, and thereby to yeildably drive the toggle means by the spring in said opposite directions, respectively.

3,292,723
HYDROSTATIC TRANSMISSION
John W. Pinkerton and Edward L. Stout, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Filed Mar. 4, 1965, Ser. No. 437,149
34 Claims. (Cl. 180—44)

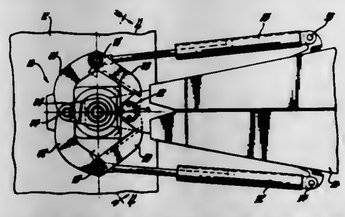


1. In a hydrostatic transmission for use with an engine, in combination, a hydraulic pump adapted to be connected for drive by the engine and having an inlet and an outlet, a hydraulic motor having an output shaft, an inlet and an outlet, first conduit means connecting the pump outlet and the motor inlet, second conduit means connecting the motor outlet and the pump inlet, means for varying the displacement of the pump, means for establishing the pressure in said first conduit means in either an upper range or a lower range, fluid operable means responsive to pump outlet pressure in said upper range for controlling the displacement varying means for the pump to maintain substantially constant pump outlet pressure, and means responsive to pump outlet pressure in said lower range for holding the displacement varying means for the pump in a minimum displacement position.

3,292,724
STEERING AND COUPLING MECHANISM FOR ARTICULATED VEHICLES
Edward R. Fryer, Euclid, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,668
3 Claims. (Cl. 180—79.2)

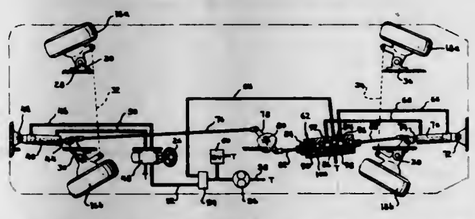
1. A steering mechanism for an articulated vehicle comprising first and second frame sections, means pivotally interconnecting said frame sections about a vertical

steering axis for relative steering articulation therebetween to either side of straight-ahead steering alignment of said frame sections, a lever rigidly connected to said first frame section, a V-shaped drive link having one end connected to said lever for pivotal movement about a first pivot axis that is laterally spaced from said vertical steering axis, a V-shaped idler link having one end connected to the second frame section for pivotal movement about a second pivot axis that is laterally spaced from the steering axis a distance equal to the spacing between the steering axis and said first pivot axis, the free ends of said drive link and said idler link being interconnected for pivotal movement about a third pivot axis, a fluid pressure-operated steering jack including relatively



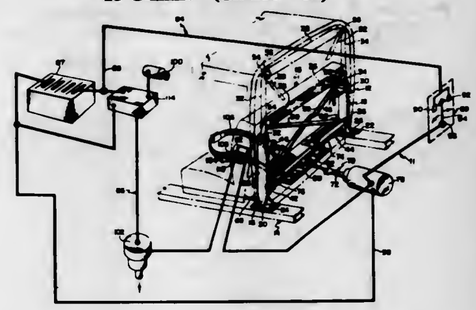
reciprocable piston and cylinder members, means mounting one of said members on said second frame section, means connecting the other of said members to said drive and idler links for pivotal movement about said third pivot axis, said pivot axes being so located that when said frame sections are aligned for straight-ahead movement of the vehicle a first straight line connecting said first and second pivot axes passes through the vertical steering axis and a second straight line connecting the third pivot axis with said steering axis is located in a position normal to said first straight line, the arrangement being such that a steering range of more than 180° from full left turn to full right turn of the first frame section relative to the second frame section is attainable.

3,292,725
SYNCHRONIZING SYSTEM FOR TANDEM WHEEL STEERING SYSTEMS
Emil J. Hlinsky, La Grange Park, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1965, Ser. No. 442,866
15 Claims. (Cl. 180—79.2)



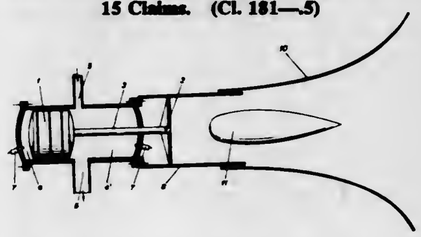
1. In a power steering apparatus, means for moving a second wheel in synchronism with a first wheel including a valve having relatively movable elements, a mechanical connection between said first wheel and one of said valve elements, a mechanical connection between said second wheel and another of said valve elements, turning movement of said first wheel causing relative movement between said valve elements,
fluid means for moving said second wheel connected to said valve, with said valve being intermediate a source of fluid pressure and said fluid means, relative movement between said valve elements in response to turning movement of said first wheel opening said valve to place said source in communication with said fluid means to move said second wheel, movement of said second wheel causing relative movement between said valve elements, with said valve elements being returned to their original positions when said second wheel has turned an amount generally equal to that of said first wheel.

3,292,726
AUTOMOBILE SAFETY DEVICE HAVING ROOF REINFORCING BAR
Emile Jette, Jr., 1829 NW. 92nd St., Miami, Fla. 33147
Filed Dec. 21, 1964, Ser. No. 419,851
15 Claims. (Cl. 180—82)



1. An automobile safety device to reinforce the roof of an automobile comprising, a roof reinforcing roll bar having spaced extensible support legs, each of said legs being adapted to be anchored to the frame of an automobile in spaced apart relation in a common transverse plane behind the seat in the automobile cab, first means energizable to drive the roll bar from a first lowered position, upwardly into a second raised position in companulate relation with the roof line of the cab to reinforce it, second means responsive to impact on the auto to energize said first means, and third means to normally hold the roll bar in said lowered position and released in response to energization of said second means.

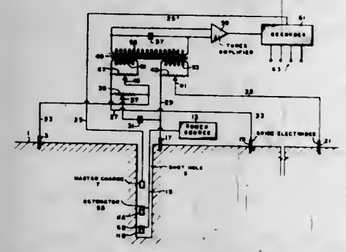
3,292,727
HIGH POWER SOUND GENERATOR FOR SONIC FATIQUE TESTING
Oskar Bschorr, Munich, Germany, assignor to Messerschmitt AG., Augsburg, Germany
Filed Mar. 4, 1964, Ser. No. 349,381
Claims priority, application Germany, May 6, 1963, M 56,717
15 Claims. (Cl. 181—.5)



1. A high power sound generator for sonic fatigue testing, comprising, in combination, a trumpet-shaped sound tube means flared in forward direction and including an axially adjustable streamlined regulator body for varying the impedance characteristic of said sound tube means; said streamlined regulator body having a smoothly curved convex end facing away from the open forward end and facing toward the rear end of said trumpet-shaped

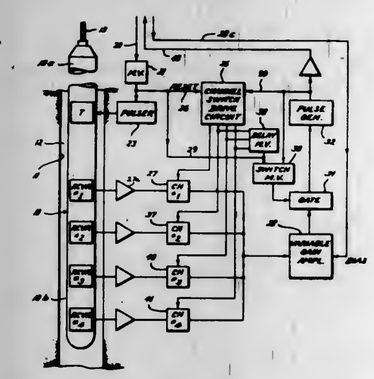
sound tube; sound producing cylinder means communicating with the rear end of said sound tube means; sound producing piston means movable in axial direction in said cylinder means; free piston motor means operatively connected with said sound producing piston means for imparting to the latter a reciprocating motion at a predeterminable frequency resulting in corresponding sound production; and means cooperating with said free piston motor means for regulating the amplitude and frequency of the latter.

3,292,728
DETECTION OF INSTANTS OF DETONATION OF EXPLOSIVE CHARGES
Benjamin F. Ehrlich, Houston, Tex., assignor to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,907
7 Claims. (Cl. 181—.5)



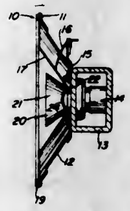
1. The method of transmitting time information from one location to another comprising detonating an explosive charge at one location, and, at said other location, detecting and recording as a time record trace radio frequency waves produced by said explosive charge upon detonation thereof at said other location.

3,292,729
VELOCITY LOGGING APPARATUS
Robert B. Blizard, Littleton, Colo., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Dec. 23, 1959, Ser. No. 861,502
13 Claims. (Cl. 181—.5)



1. Acoustic well logging apparatus comprising: a support for lowering in a well bore, more than two acoustic receivers spaced along said support, means coupled to said receivers for producing electrical pulse signals at times corresponding to the successive incidence of a pulse of acoustic energy with said receivers, means responsive to each of said pulse signals for developing coded signals uniquely identifying said respective pulse signals with the corresponding receivers, and means responsive to a selected pair of coded signals for developing a signal representative of the time interval between the occurrence of said pulse signals which correspond to said selected pair of coded signals.

3,292,730
SPEAKER CONE UNIT
Harry J. Moskow, Skokie, Ill., assignor to McGregor Electronics, Inc., McGregor, Iowa, a corporation of Delaware
Filed Jan. 21, 1966, Ser. No. 522,166
1 Claim. (Cl. 181—32)

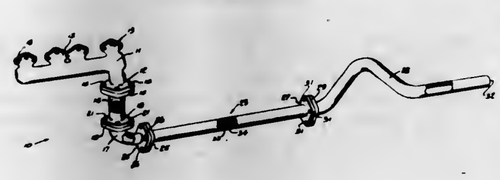


A speaker cone unit for radio and television apparatus comprising
(a) a frame unit having a rearwardly extending generally frusto-conical shaped portion;
(b) a primary and outer frusto-conical shaped flexible speaker cone member arranged within said generally frusto-conical shaped frame portion and having a cylindrical rear end portion, and a front end terminating in a planar flange the marginal edges of which are attached to the frame unit;
(c) said primary outer frusto-conical speaker cone member being composed of fiber material impregnated with water-resistant material;
(d) an auxiliary and inner frusto-conical shaped flexible speaker cone member arranged within the said primary and outer frusto-conical shaped flexible speaker cone member and including a cylindrical rear end flange portion fitting within and adhesively attached to the said cylindrical rear end portion of the said primary outer flexible speaker cone member;
(e) said auxiliary and inner frusto-conical shaped flexible cone member being composed of synthetic plastic resinous material and a wall thickness in the order between substantially five thousandths (0.005") and twenty-five thousandths (0.025") of an inch;
(f) said auxiliary cone member having at its inner end an integral convexly forwardly curved rear wall; and
(g) which cone unit is highly resistant to the action of moisture under conditions of high humidity and which exhibits no substantial loss of sensitivity in the upper range of high frequencies in the order of from 10,000 to 20,000 cycles per second.

3,292,731
EXHAUST MUFFLER PIPE ASSEMBLY
James L. Ballard, 287 North Ave., Battle Creek, Mich. 49017
Filed Apr. 12, 1965, Ser. No. 447,451
9 Claims. (Cl. 181—36)

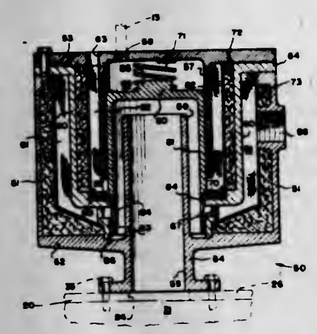
1. An exhaust system for an internal combustion engine, with said exhaust system connected to said engine's exhaust manifold having,
(a) a muffler pipe assembly,
(b) a connecting means joining said exhaust manifold with said muffler pipe assembly,
(c) an end area connected with said muffler pipe assembly to discharge the exhaust gases formed by said engine from the exhaust system,

(d) an outer casing member as the outside unit of said muffler pipe assembly,
(e) a tubular perforated inner liner member secured within said outer casing member,
(f) said inner liner member having at least one compressed area section along its axial length forming



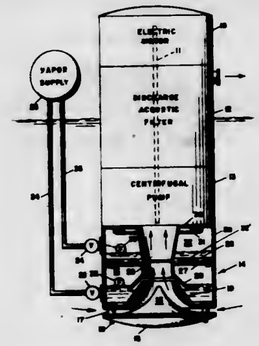
at least two separate and independent channel passages within the inner liner member, and
(g) a second compressed area section along the axial length of said tubular inner liner forming at least two separate and independent channel passages and radially positioned from the first compressed area section.

3,292,732
PRESSURE FLUID CONTROL AND UNLOADER THEREFOR
Paul D. Webb, Tioga, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 30, 1964, Ser. No. 355,878
4 Claims. (Cl. 181—37)



1. An unloader comprising:
(a) a housing having an inlet adapted to receive pressure fluid, an outlet for discharging pressure fluid received by the inlet, and an exhaust port for pressure exhausting fluid when the pressure thereof exceeds a predetermined maximum;
(b) a valve seat disposed in the housing between the inlet and the exhaust port;
(c) a valve member slidably disposed in the housing engaging the seat to block flow of pressure fluid from the inlet to the exhaust port which urges the valve member away from the seat;
(d) the housing defining a pressure chamber on the side of the valve member opposite from the inlet having a port adapted to receive controlled pressure fluid which biases the valve member onto the seat until the pressure of fluid received at the inlet exceeds a predetermined maximum;
(e) the valve member having passage means providing communication from the inlet to the outlet when the valve member engages the seat;
(f) the passage means progressively restricting the communication from the inlet to the outlet and providing progressively increasing communication from the inlet to the exhaust port as the valve member progressively moves away from the seat; and
(g) muffler means connected to said housing for abating the noise caused by flow of pressure fluid;
(h) said muffler means comprising a pair of concentric ring members disposed in said housing on the side of said valve member opposite from the inlet;
(i) one of said ring members being along a path of flow of exhausting pressure fluid and the other of said ring members being along the path of flow to the outlet.

3,292,733
FLUID SILENCING IMPROVEMENTS FOR PUMPS
Wilhelm S. Everett, 126 W. Santa Barbara St., Santa Paula, Calif. 93060, and John F. Richards, Santa Paula, Calif.; said Richards assignor to said Everett
Filed July 8, 1964, Ser. No. 381,058
4 Claims. (Cl. 181—57)

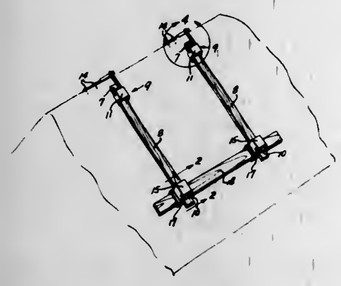


1. An acoustic filter comprising: a cylindrical casing; means defining a circumferential inlet opening proximate one end of said casing; first tubular wall means within said casing defining a passage extending axially from the other end of said casing towards a point near said one end; second wall means within said casing defining an annular passage of gradually decreasing radius communicating from said circumferential opening to said point; and, an annular chamber within said casing defined in part by said first wall means and positioned radially exteriorly of said first wall means, said annular chamber communicating with said first wall means near said point, said first wall means forming a venturi section with respect to said chamber at said point, whereby fluid is drawn from said chamber into said first wall means, and wherein said chamber functions to absorb pulsations that may characterize said fluid.

3,292,734
ROOF SCAFFOLD
Franz F. Swanberg, 413 W. Broadway, Monticello, Minn. 55103
Filed Oct. 12, 1964, Ser. No. 403,026
5 Claims. (Cl. 182—45)

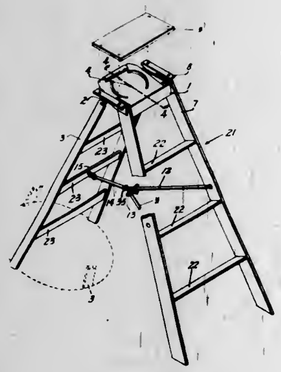
1. A roof scaffold comprising, two substantially parallel wooden bars, a hollow metal fitting for each bar, each fitting including, a metal sleeve, said sleeves fitting

over corresponding ends of said bars, means to secure said ends in said sleeves, an arm swingably secured to each sleeve by a pivot which is transverse to said bars, means to secure said arms to a roof, a second hollow metal fitting



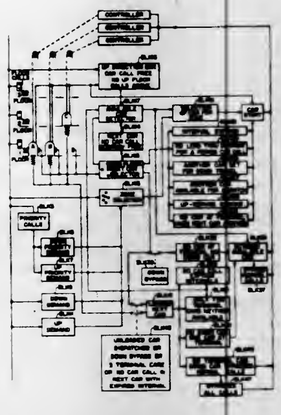
for each bar, each second fitting including a second metal sleeve fitting over the corresponding bar to slide thereon, means to secure each second metal sleeve in any adjusted position on the corresponding bar, and a cross bar interconnecting said second metal sleeves.

3,292,735
STEPLADDER
Robert R. Utley, 3320 N. Fair Oaks, Altadena, Calif.
Filed Aug. 12, 1964, Ser. No. 389,099
1 Claim. (Cl. 182—176)



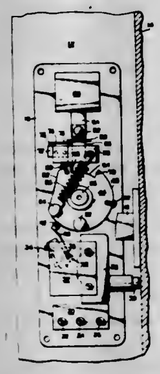
An adjustable stepladder comprising: a pair of step legs having a plurality of steps fixed therebetween; a plate fixed to said step legs at their upper ends; a pair of brace legs movably mounted on said plate, said plate being inclined upwardly toward said brace legs when said ladder is in a symmetrical, horizontal set up position, said brace legs being pivotally mounted on said plate to rotate about an axis in the plane thereof midway therebetween; a top step fixed relative to said step legs, said plate having a scroll shaped rearward end to support a rearward portion of said top step; a cross brace fixed to said brace legs at a position intermediate the ends thereof; first and second linkages pivoted from corresponding ones of said step legs; a third linkage; a mounting ring fixed to the center of said cross brace; a ring at the rearward end of said third linkage linked with said mounting ring; means pivoting the rearward ends of said first and second linkages to said third linkage at a predetermined point therealong, said third linkage having a forward portion extending forwardly of said predetermined point; and a cross bar fixed to the forward portion of said third linkage in a position to rest on top of said first and second linkages.

3,292,736
ELEVATOR SYSTEM WITH SEQUENCE FOR SELECTING AN AVAILABLE CAR AND EXPEDITED SERVICE FOR MAIN FLOOR
Henry C. Savino, Hackensack, and John Spozzo, Paramus, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 16, 1961, Ser. No. 110,464
20 Claims. (Cl. 187—29)



1. In an elevator system for a structure having a plurality of vertically-spaced floors including a main floor, a plurality of elevator cars for transporting load, means mounting the elevator cars for movement relative to the structure to serve the floors, down floor call registering means operable for registering a call for elevator service in the down direction from each of a plurality of said floors, up floor call registering means operable for registering a call for the elevator service in the up direction from each of a plurality of said floors, car call registering means for each of the elevator cars operable for registering a call for each of a plurality of said floors which may be desired by load in the associated elevator car, selecting means for selecting an elevator car located at the main floor as the next car to leave the main floor in a predetermined one of said directions and for normally holding the selected car at the main floor for a substantial time, and scanning means for scanning the elevator cars to select the first available elevator car having no registered car call for responding to a call registered by the floor call registering means in the following sequence:
(a) an elevator car located at a floor other than said main floor set for travel in said predetermined direction, provided that no floor call for service in said predetermined direction is registered for any floor displaced from the last-named car in said predetermined direction;
(b) an elevator car located at said main floor and which is not selected by said selecting means;
(c) an elevator car located at said main floor and which is selected by said selecting means, provided that no load has entered or left such car within a predetermined interval of time which is less than said substantial time.

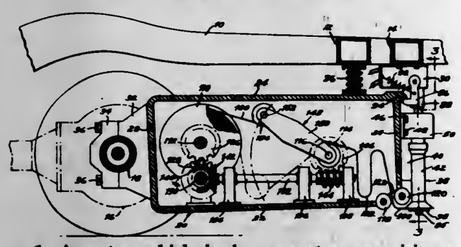
3,292,737
ELECTRO-MECHANICAL INTERLOCK
Hibberd R. Crispen and Charles N. Fendrich, Harrisburg, Pa., assignors to Inclinator Company of America, Harrisburg, Pa., a company of Pennsylvania
Filed Dec. 7, 1964, Ser. No. 416,334
12 Claims. (Cl. 187—31)



1. An electro-mechanical interlock mechanism for elevator hoistway doors comprising:
(a) a generally rectangular base plate attached to the door jamb of the hoistway opening in a vertical manner;
(b) a generally disc-shaped cam member rotatably mounted on said base plate near the center thereof;
(c) support block means rigidly attached to said base plate above said cam and in the immediate vicinity thereof;
(d) two stops radially protruding from the edge of said cam and adapted to cooperatively engage said block, a first of said stops engaging said block at a first rotational position of said cam and the second of said stops engaging said block at a second rotational position of said cam about 80° of rotation from said first position;
(e) a first cylindrical pin means mounted on said cam and having its axis perpendicular to the face of said cam and its circumferential edge coinciding with the circumferential edge of said cam and positioned on said cam such that it will be on one side of a vertical plane passing through the axis of rotation of said cam when said cam is in its said first rotational position and on the other side of said plane when said cam is in its second rotational position;
(f) second cylindrical pin means mounted on said cam and having its axis perpendicular to the face of said cam and its circumferential edge coinciding with the circumferential edge of said cam and positioned on said cam such that its axis coincides with said vertical plane when said cam is in its rotational position and more than about 30° of rotation from said vertical plane and on the same side of said vertical plane as said first pin, when said cam is in its second position of rotation;
(g) helical spring means having one end attached to said first pin and its other end connected to said block on the side of said vertical plane to which said first pin rotates when said cam is in its second rotational position;
(h) said cam having a sector-shaped slot formed in its edge beginning at a point adjacent said first stop and extending slightly more than about 30° of rotation toward said second stop;
(i) third pin means having its central axis in alignment with said vertical plane and slideably passing through said block for limited vertical movement into contact with the upper edge of said cam in a manner such that said third pin will limit the rotation of said cam to about 30° of rotation, when it is in its downward position and in said sector-shaped slot, and will contact the outermost peripheral edge of said cam when it is in its uppermost position and said cam is approaching said second rotational position;
(j) a solenoid mounted on said base plate adjacent its upper end and having a movable cylindrical core whose central axis is in alignment with the axis of said third pin;
(k) manually operable lift means holding said core and said third pin rigidly together and adapted to move said third pin between its lowermost and its uppermost position;
(l) first switch means, normally biased in its open position, mounted on said support block;
(m) collar means rigidly mounted about said third pin means above said support block;
(n) arm means pivotally mounted on said first switch and having its free end in contact with the lower edge of said collar, said arm being held outwardly by the biasing force of said switch when said third pin is in its most uppermost position and being forced inwardly to overcome the biasing force of said switch and close said switch when said third pin is in its lowermost position;
(o) said cam also having a flat chord formed on its edge between said first stop and said first pin;
(p) second switch means, normally biased in its open position, mounted below said cam;
(q) follower means pivotally mounted on said second switch and having its free end in contact with the edge of said cam, said follower being held outwardly by the biasing force of said switch when said cam is in its second position of rotation and said follower is in contact with the straight chord section of said cam and being forced inwardly to overcome the biasing force of said switch and close said switch when said cam is in its second rotational position and said follower is in contact with the circular section of said cam;
(r) third switch means mounted on said base plate below said cam and normally biased toward a first set of contacts to close said first contacts and normally biased away from a second set of contacts to hold said second contacts open until said biasing force is overcome;
(s) push button means connected to the biasing means of said third switch and extending beyond the edge of said base plate a distance such that completely closing said hoistway door will overcome the biasing force of said third switch and close said second contacts and opening said door will release the biasing force and close said first contacts;
(t) lock bar means mounted on said door and having a rectangular slot formed in its upper edge such that said slot will receive and hold said second pin when said door is completely closed and said cam is in its first rotational position and will free said second pin just prior to the point at which said cam is in its second rotational position;
(u) a source of electrical energy;
(v) fourth switch means which is closed by the elevator car when said car reaches the floor at which the interlock mechanism is located;
(w) a first electrical circuit serially connecting said source of energy to said fourth switch, said coil of said solenoid, said second switch, and said first contacts of third switch; and

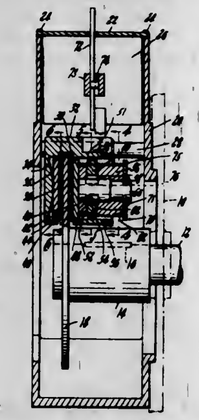
(x) a second electrical circuit serially connecting said source of energy to said second contacts of said third swtich, said first switch and an interlock mechanism located on another floor.

3,292,738
VEHICLE EMERGENCY BRAKE
Bogdan W. Bernert 8829 Britland Way, Fair Oaks, Calif. 95628, and James E. Halle, Fairfield, Calif. (1716 Doone Road, Columbus, Ohio 43221)
Filed Dec. 11, 1964, Ser. No. 417,596
6 Claims. (Cl. 188—6)



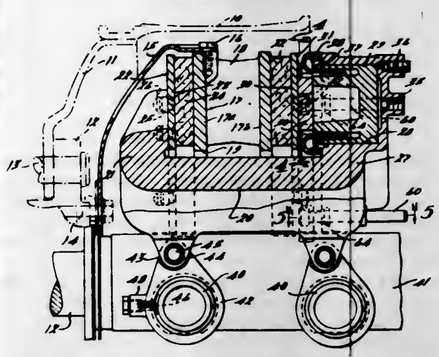
1. A motor vehicle brake apparatus comprising a supporting member to be mounted on a vehicle for downward movement to a roadbed, releasable means normally holding said supporting member in a raised position, a brake member, an anchor member carried by said supporting member to be projected into roadbed and operatively connected to said brake member, means activatable to propel said anchor member into a roadbed, a trigger member carried by said supporting member and operatively connected to and for activating said activatable means, said trigger member being operated by its impact with a roadbed following release of said supporting member by said releasable means and manually operated control means operatively connected to and for releasing said releasable means.

3,292,739
SPOT BRAKE ACTUATOR AND POSITIONING MEANS
Otmar M. Uhing, R.F.D. 1, Berkshire, N.Y. 13031
Filed Sept. 24, 1964, Ser. No. 398,986
6 Claims. (Cl. 188—73)



1. A disc brake comprising a disc mounted for rotation about a predetermined axis,
a caliper structure having a recess for receiving a portion of said disc,
means to support a first friction pad on one side of said recess,
means defining a bore extending from the opposite side of said recess parallel to said predetermined axis, said bore having an internally threaded portion and a seat for a second friction pad at the end of said bore adjacent said recess so that said second friction pad is disposed on the opposite side of said disc from said first friction pad,
an externally threaded member secured in said internally threaded portion of said bore,
a tapered camming shoe having two opposed actuator surfaces which mate with surfaces of said second friction pad and said threaded member respectively, at least one of said shoe actuator surfaces being a segment of a conical surface,
a control device for moving said shoe in a radial direction with respect to the axis of said conical surface to increase the spacing between said second pad and said threaded member to cause said first and second friction pads to move towards one another, and
means coupled to said control means for rotating said threaded member in a compensation operation in response to rotation of said control means in excess of a predetermined amount.

3,292,740
AUTOMATIC BRAKE ADJUSTING MECHANISM
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,284
3 Claims. (Cl. 188—73)



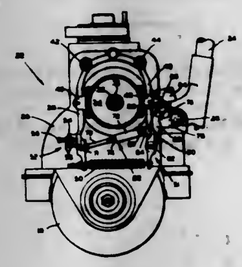
1. A disk brake for a vehicle having a wheel, a disk which is rotatable with the wheel and is provided with braking surfaces on opposite sides thereof and a stationary member adjacent the disk, said brake comprising a housing member having first and second portions on opposite sides of the disk, a first brake shoe carried by said first housing member portion adjacent one braking surface of the disk, a second brake shoe disposed adjacent the other braking surface of the disk, a piston carried by said second housing member portion operable to press said second brake shoe against its adjacent disk braking surface and through reactive movement of said housing member to press said first brake shoe against its adjacent disk braking surface, a pair of links spaced apart in the direction of the axis of rotation of the disk, said links being pivotally mounted on said stationary member and being pivotally connected to said housing member to support said housing member for movement generally normal to the braking surfaces of the disk and an automatic adjuster mechanism arranged between at least one of said links and one of said members, said mechanism being operable to assume new positions as said brake shoes wear to maintain a predetermined maximum clearance distance between said first brake shoe and its adjacent disk braking surface, said mechanism having stop means positively limiting movement of said first housing portion away from said disk without limiting movement of said first housing portion toward said disk.

3,292,741
PARKING MECHANISM FOR DUAL BRAKE
Edward K. Dornbock, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Original application Oct. 27, 1964, Ser. No. 406,929. Divided and this application Oct. 1, 1965, Ser. No. 492,124
7 Claims. (Cl. 188—79)



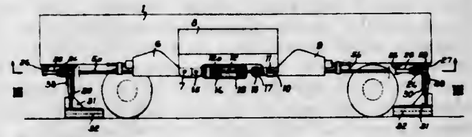
1. A drum brake comprising: a support, a first set of brake shoes arranged in end-to-end relationship and slidably mounted on said support, a second set of brake shoes axially spaced from said first set of brake shoes and arranged in end-to-end relationship and slidably mounted on said support a lever extending through said support and operatively connected to said brake shoes for spreading the same, retaining means fixedly secured to said lever, resilient means operatively connected to said retaining means and slidably engaged with said support to provide a resilient movable support for relative movement between said lever and said support.

3,292,742
BRAKE
Henry J. Thomas, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Nov. 3, 1964, Ser. No. 408,502
1 Claim. (Cl. 188—119)



In a hand lift truck having a drive motor assembly with a rotatable shaft and journaled for steering movement about a vertical axis, the combination of a steering handle connected to the assembly for pivotal movement about a horizontal axis, a brake drum connected to the rotatable shaft for rotation therewith, first and second brake shoe levers pivotally connected to the assembly and disposed so that the said drum is intermediate them, first and second brake shoes connected to the said first and second levers, respectively, and engageable with the said drum, a spring connected to the said levers so that the said shoes are biased into engagement with the said drum, a stop connected to the assembly, the said first lever being actuatable away from the said drum into abutment with the said stop, a bell crank connected to the said second lever for pivotal movement, the said bell crank including first and second arms extending generally toward the pivotal connection of the said second lever to the assembly, a pin extending from the said second arm, a rigid link connected to the said first lever for pivotal movement and connected to the said first arm for pivotal movement, and a cam connected to the said handle for pivotal movement about the said horizontal axis, the said cam being pivotal to engage the said pin and cause the said second arm to pivot toward the said drum so that the said shoes are moved sequentially away from engagement with the said drum.

3,292,743
SAFETY BRAKE
Georges Glace, Le Creusot, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France, a company of France
Filed Sept. 28, 1964, Ser. No. 399,471
Claims priority, application France, Oct. 4, 1963, 949,619
3 Claims. (Cl. 188—127)



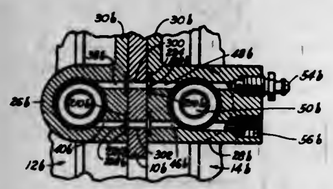
1. Safety brake for cable-hauled rail vehicles for stopping the vehicle when a haulage cable breaks comprising at least one haulage cable, a stationary coupling member connecting an end of said cable to the vehicle, a moving coupling member connecting the other end of said cable to the vehicle, an abutment on the vehicle, said moving coupling member being moved into engagement with said abutment by cable tension, a resilient restoring force opposing movement of said moving coupling member, at least one movable bolt disposed on the vehicle axis, mechanical means connecting said moving coupling member to said bolt, a cross-member normally supported by said bolt and brake shoes on said cross-member engaging the rails upon free fall of said cross-member when said bolt is moved by said resilient restoring force upon breakage of said cable.

3,292,744
RESTRAINT APPARATUS
Edward H. Replogle, 7174 Transit Road, Buffalo, N.Y. 14221
Filed Apr. 3, 1963, Ser. No. 270,250
20 Claims. (Cl. 188—135)



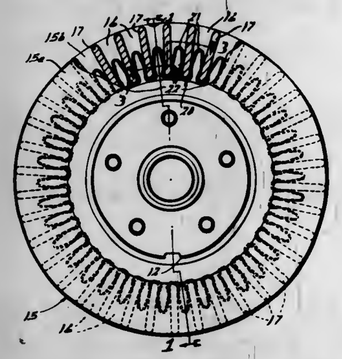
1. In restraint apparatus, the combination comprising means providing a series of stationary lock stations, a lock member opposing said stations and movable therealong, a movable restraining element, and means arranged to apply a couple to said member responsive to payout of said element effective to tip said member into a locked up condition at any one of said stations.

3,292,745
DUAL CYLINDER BRAKE
Edward K. Dombeck, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Continuation of application Ser. No. 406,929, Oct. 27, 1964. This application Feb. 25, 1966, Ser. No. 536,521
5 Claims. (Cl. 188—152)



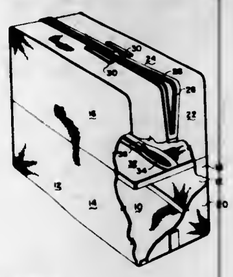
1. In a drum brake comprising: a support member having a pair of opposed surfaces thereon, a pair of wheel cylinders each having a boss thereon, each of said bosses having a generally flat end face, means securing said wheel cylinders to said support member in such a manner that the flat end face of the boss of one of said wheel cylinders engages one of said opposed surfaces and the flat end face of the boss of the other of said wheel cylinders engages the other of said opposed surfaces, one of said wheel cylinders having a hose inlet opening and a bleeder opening communicating with its respective wheel cylinder fluid chamber, each boss having an inlet port and an outlet port communicating with its respective wheel cylinder fluid chamber, a pair of spaced openings in said support member, said wheel cylinders being arranged on said support member so that one of said openings of said support member is aligned with the inlet port of one of said bosses and the outlet port of the other of said bosses and the other of said openings of said support member is aligned with the outlet port of said one boss and the inlet port of said other boss, an annular spacer member in each of said openings of said support member, a plurality of resilient members surrounding a respective one of said ports and being compressed between its respective end face and its respective end of said spacer member to provide a fluid tight connection between each set of opposing inlet and outlet ports.

3,292,746
VIBRATION DAMPENER FOR DISK BRAKES
Richard T. Robinette, St. Clair Shores, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Nov. 5, 1965, Ser. No. 506,518
5 Claims. (Cl. 188—218)



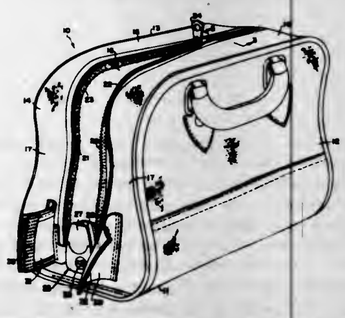
1. A brake comprising a brake disk having a pair of axially spaced walls connected by circumferentially spaced, radially extending walls, and a circular vibration dampening member having loop portions extending into the space between said radial walls in frictional engagement therewith.

3,292,747
ALL-SPORTS BAG
Theodore R. Dawson, Odessa, Tex., assignor to Tote & Co., a co-partnership of Texas
Filed Feb. 23, 1965, Ser. No. 434,471
7 Claims. (Cl. 190—43)



1. A bag comprising:
(a) a lower compartment having
(i) a bottom,
(ii) two sides and
(iii) two ends attached to the bottom, and
(iv) a top attached to the two sides and two ends,
(v) the top having an opening therein;
(vi) a closure in the top for the opening; and
(b) an upper compartment constructed
(c) of pliable sheet material having
(i) two sides of the approximate dimensions of the lower compartment sides, and
(ii) two ends of the approximate dimensions of the lower compartment ends attached to the lower compartment, and
(iii) a top of the approximate dimensions of the lower compartment bottom,
(iv) the top having an opening therein
(v) a closure in the top for the opening;
so arranged and constructed that the upper compartment may be folded over the lower compartment which will then be within the upper compartment.

3,292,748
FIRE-RESISTANT ENCLOSURE
Arnold S. Rifkin, 200 Riverside Drive, Wilkes-Barre, Pa. 18702
Filed June 1, 1964, Ser. No. 371,557
4 Claims. (Cl. 190—53)



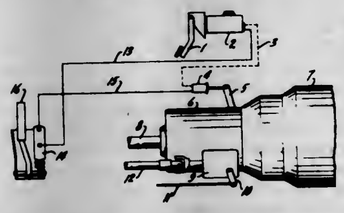
1. In a fire-resistant enclosure, the combination comprising a pair of fire-resistant walls movable into and out of edge-to-edge relation, slide-fastener means on said walls and closable to move the walls into and releasably retain the walls in said relation, and complementary fastener fabrics on the edges of said walls and movable therewith into secured relation upon closing of said slide-fastener means, said fastener fabrics each being bound about the edge of a respective wall for facing engagement of said fastener fabrics with said walls in edge-to-edge relation and upon flexure of said walls.

3,292,749
PLASTIC CASES
Robert J. Reading, 325 Sunnybank Ave., Stratford, Conn. 06497
Original application Oct. 24, 1963, Ser. No. 318,586. Divided and this application June 9, 1965, Ser. No. 470,661
3 Claims. (Cl. 190—56)



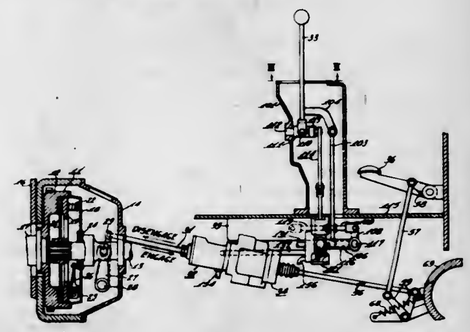
1. A plastic luggage case comprising: a body section and a lid section defining spaced first and second side walls and abuttable first and second edge walls, each of said edge walls being integral with a different one of said side walls and defining a recessed portion therein; a first dependent flange integral with the edge of said first edge wall and laterally displaced therefrom; a second dependent flange integral with the edge of said second edge wall and laterally displaced therefrom, said first and second flanges being disposed to lie in side by side relationship when said case is closed; hinge means interconnecting said body and lid sections; a metal facing plate on the outer surface of each of said edge walls and within said recessed portion; a metal back-up plate on the inner surface of each of said edge walls; and latch means positioned to selectively secure said body and lid sections to each other, a portion of said latch means being secured to each of said edge walls by fastening means passing through said wall and both of said plates.

3,292,750
HYDRAULIC CLUTCH DUAL CONTROL
Henry E. Branson, Sam Salem, and Ralph O. Stromberg, Chicago, Ill., assignors to Stromberg Hydraulic Brake & Coupling Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 5, 1964, Ser. No. 409,100
2 Claims. (Cl. 192—3.5)



1. In an automotive vehicle, a power source, a propulsion transmission, a clutch interposed between them, a drivers station on the vehicle, means at the station subject to the control of the driver for manipulating the transmission and means at the station subject to the control of the driver for hydraulically actuating the clutch, a power take-off and means for selectively connecting and disconnecting the power take off and the transmission,
a plurality of hydraulically actuated means at points removed from the drivers station for actuating the clutch,
the hydraulic means including a hydraulic duct and manually controlled pressure cylinders all associated with said duct, each cylinder being adapted to exert pressure on the clutch independent of any one of the other cylinders.

3,292,751
OPERATING MECHANISM FOR FLUID PRESSURE MASTER CLUTCH AND TRANSMISSION CLUTCHES
Ferris L. McRay and Frederick W. McBride, Jr., Springfield, Ill., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 1, 1964, Ser. No. 414,951
9 Claims. (Cl. 192—3.5)



1. A control for a vehicle power train of the type including a master clutch and a change speed transmission having fluid actuated clutches, said control comprising:
means for selectively actuating said fluid actuated clutches including
a control valve having a flow control component shiftable between clutch actuating positions, and
a manually operated control linkage mechanically connected to said component for shifting the latter,
fluid power means for operating said master clutch, and
means automatically disengaging said master clutch during engagement and disengagement of said fluid actuated clutches including
a master clutch valve for controlling said fluid power means having relatively shiftable members and
means connecting one of said shiftable members to an intermediate portion of said linkage.

3,292,752
INCHING CONTROL FOR LIFT TRUCKS
Frank C. Schuster, Chicago, and Neil J. Ryskamp, Markham, Ill., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Feb. 17, 1965, Ser. No. 433,268
6 Claims. (Cl. 192—13)

1. An inching control for a motor vehicle, comprising.
vehicle braking means including a brake pedal movable between brake engaged and brake disengaged positions,
means for propelling said vehicle including a power train with a hydraulically actuated clutch,
valve means for controlling said clutch including a flow control member having clutch engaging and clutch disengaging positions,

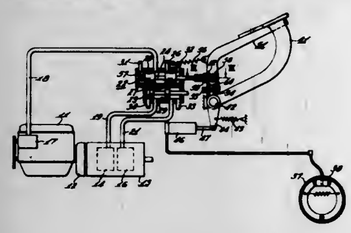
a clutch pedal movable between clutch engaged and clutch disengaged positions and having a lost motion connection with said brake pedal permitting independent braking with said brake pedal and combined declutching and braking with said clutch pedal,

first biasing means resiliently urging said clutch pedal toward its clutch engaged position,

second biasing means urging said flow control member toward its clutch disengaging position, and

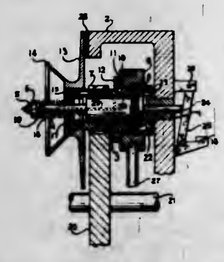
motion transmitting means between said clutch pedal and said flow control member including

a motion transmitting element in thrust transmitting relation with said flow control member and mounted on said clutch pedal for predetermined movement relative thereto in its direction of movement, and



spring means urging said element in relation to said clutch pedal in the direction of clutch engagement, said first biasing means being operative to overcome said second biasing means and said spring means, and said spring means being operative to overcome said second biasing means whereby the latter maintains said flow control member in its clutch engaged position during initial movement of said clutch pedal from its clutch engaged position toward its clutch disengaged position.

3,292,753
GEAR OPERATED CLUTCH AND BRAKE FOR A LOOM
Vladimir Svaty, 366 Kralov Haj; Miloslav Otta, 10 Kasperova; and Jan Bilek, 8 Udolni, all of Liberec, Czechoslovakia
Filed Feb. 9, 1965, Ser. No. 432,940
8 Claims. (Cl. 192—18)



1. A starting and stopping device for a machine having a frame and brake means supported by said frame, said device comprising, in combination,

driving means supported by the frame of said machine;

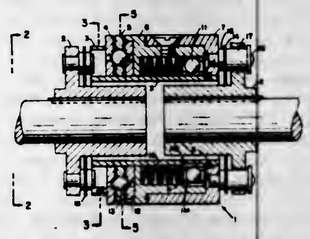
pinion means rotatably and movably supported by the frame of said machine, said pinion means having substantially helical teeth formed thereon, clutch means affixed thereto and brake means affixed thereto and adapted to cooperate with the brake means of said frame;

gear means having substantially helical teeth formed thereon in coupling engagement with said pinion means for driving said machine;

spring means supported by said frame for moving said pinion means in a direction in which said brake means of said pinion means and said frame engage and in which said driving means is disengaged from said clutch means so that said gear means is disengaged from said driving means and is braked; and

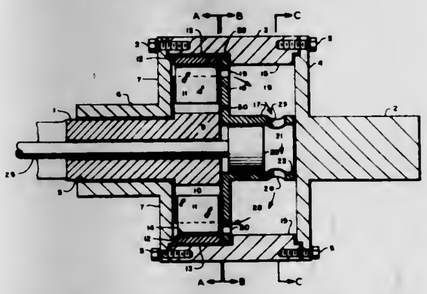
moving means for moving said driving means into engagement with said clutch means and for moving said pinion means against the force of said spring means in a direction in which said brake means of said pinion means and said frame are disengaged so that said driving means drives said gear means, the helical teeth of said pinion and of said gear means producing an axially directed force component and a radially directed force component which during the driving of said gear means decreases the starting moment of said machine and which during the braking of said gear means increases the braking moment of said machine, said starting and braking moments being basically due to the action of said spring means.

3,292,754
OVERLOAD CLUTCH
Robert H. Peterson, Woodbury Heights, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 3, 1964, Ser. No. 394,368
3 Claims. (Cl. 192—56)



1. An overload clutch comprising a driving hub, a driven hub, an annular flexible disc, means connecting radially opposite portions of said disc to said driving hub, an inner sleeve, means connecting radially opposite portions of said disc to said inner sleeve, said means connecting the disc to the inner sleeve being located radially 90° from said hub connecting means, spacer means for maintaining a clearance between said disc and said hub, second spacer means for maintaining a clearance between said disc and said inner sleeve, relieved portions within said inner sleeve for reception of said hub connecting means, relieved portions within said hub for reception of said inner sleeve connecting means whereby said inner sleeve and said hub are axially movable relative to one another, a thrust plate rigidly attached to said inner sleeve, said thrust plate having a plurality of detents formed in one surface thereof, a housing surrounding a portion of said inner sleeve, a second thrust plate attached to said housing, said second thrust plate having a plurality of detents in one face thereof, the detents in each of said thrust plates being radially aligned and oppositely located, a plurality of balls located between said thrust plates intermediate said detents, a ball retaining ring intermediate said thrust plates and surrounding said inner sleeve, said retaining ring having a plurality of apertures, said apertures receving and maintaining said balls intermediate said thrust plates, a ball bearing having an inner and an outer race, said bearing surrounding said inner sleeve, the inner race of said ball bearing being nonrotatably attached to the outer surface of said inner sleeve the outer race of said ball bearing being non-rotatably attached to the inner surface of said housing, means for limiting the lateral movement of said inner race on said inner sleeve, spring means acting between said housing and the inner race of said bearing, said spring means maintaining said inner sleeve against said limiting means, a flexible disc surrounding said driven hub, means connecting radially opposite portions of said flexible disc to said hub, means for connecting said flexible disc to said housing, said last mentioned connecting means being radially spaced 90° relative to said hub connection means and spacer means for maintaining a clearance between said housing and said hub whereby said housing may be axially moved relative to said driven hub upon movement of said balls from their respective detents.

3,292,755
VARIABLE FLUID SPEED TRANSMISSION AND REVERSING ATTACHMENT
Patrick H. Rogers, 1923 Boecher St., Orlando, Fla. 32806
Filed July 6, 1964, Ser. No. 380,401
3 Claims. (Cl. 192—58)



1. A variable speed transmission comprising a driven shaft fixed to one end of a hollow cylindrical housing, the other end of said housing having fixed thereto a flanged driving shaft housing, a driving shaft supported by and adapted for rotation in said shaft housing, said driving shaft having an impeller portion extending in said cylindrical housing, said impeller portion comprising a plurality of radially extending recesses, each one of said plurality of recesses having a pump blade therein, an eccentric body inside said cylindrical housing, said blades adapted to engage the inner wall surface of said eccentric body, a control valve in said housing and adjacent said impeller, said control valve having a plate thereon, said plate providing a discharge port and a suction port, said control valve having a hollow cylindrical surface, said surface comprising a first control valve port and a second control valve port, a fluid control valve plunger in said hollow of said control valve to engage said control valve ports, means extending through said driving shaft for reciprocating said fluid control valve plunger, a first transmission chamber adjacent said first control valve port and a second transmission chamber adjacent said second control valve port and means for separating said chambers.

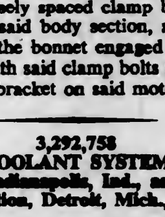
3,292,756
MAGNETIC CLUTCH
Harry T. Stevinson, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Jan. 25, 1965, Ser. No. 427,629
6 Claims. (Cl. 192—84)

1. A magnetic clutch comprising

(a) a fixed structure including an annular assembly of magnetic material,

(b) a pair of rotary elements of magnetic material having respective clutch faces for mutual engagement,

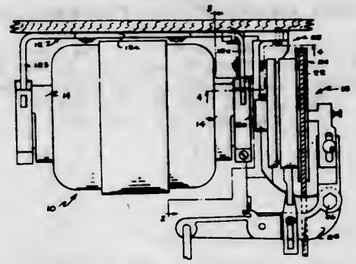
(c) means mounting said rotary elements for coaxial rotation within said annular assembly with said assembly closely surrounding said elements to form a toroidal magnetic circuit extending from the annular assembly and successively through said rotary elements back to said annular assembly,



(d) and a permanently magnetizable element including an annular portion extending across the entire width of said magnetic circuit,

(e) said annular assembly including electric winding means for pulsing said magnetic circuit selectively to energize said permanently magnetizable element to hold said faces together for the transmission of torque therebetween and to de-energize said permanently magnetizable element to release said faces.

3,292,757
SUPPORT BRACKET FOR MOTOR-CLUTCH ASSEMBLY
Samuel Smith, 555 8th Ave., Flushing, N.Y. 11018
Original application July 2, 1963, Ser. No. 295,867, now Patent No. 3,240,301, dated Mar. 15, 1966. Divided and this application Jan. 13, 1966, Ser. No. 520,473
3 Claims. (Cl. 192—112)

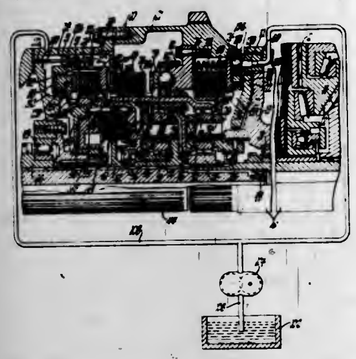


1. In combination with a motor base having a leg engaging an end bonnet of the motor and a friction clutch operably associated with the motor shaft extending from the end bonnet, a support bracket for securing the clutch in operable relationship to the motor shaft comprising, an elongated body section, a perpendicular foot on one end of said body section pivotally supporting the clutch, transversely spaced clamp bolts supported by the second end of said body section, and a clamp plate engageable behind the bonnet engaged leg of said motor base cooperating with said clamp bolts to adjustably position and lock said bracket on said motor base.

3,292,758
COOLANT SYSTEM
James C. Polak, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,946
22 Claims. (Cl. 192—113)

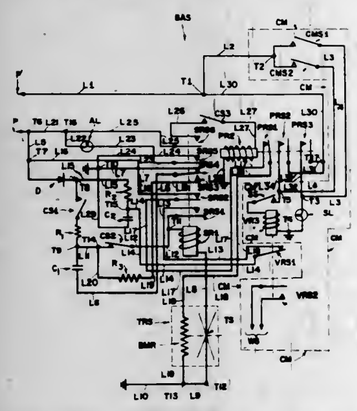
1. In a coolant system for cooling the friction devices of a transmission,

(a) a transmission having a plurality of friction devices,
(b) a source of coolant and a pump receiving coolant from said source and delivering the coolant under pressure to a supply passage,
(c) regulator valve means connected to said supply passage and directly to one of said plurality of friction devices operable to maintain the coolant in said supply passage at a predetermined pressure by exhausting overage coolant directly to said one friction device,



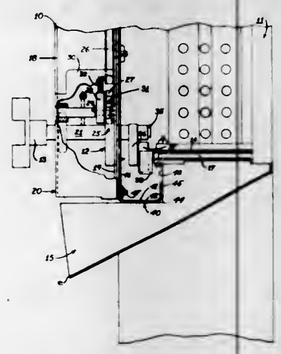
(d) and coolant supply valve means connecting said supply passage to another of said plurality of friction devices normally closed when said another friction device is released to prevent coolant flow to said another friction device and opened when said another friction device is engaged to deliver a portion of the coolant in said supply passage to said another friction device.

3,292,759
BONUS AWARD SYSTEM FOR VENDING MACHINES
Edwin J. Meixner, Mount Prospect, and Carl J. Anderson, La Grange Park, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,143
18 Claims. (Cl. 194—15)



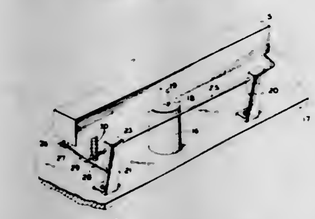
1. A bonus award system adapted for use in a vending installation wherein at least one vendible selection is available comprising:
first system conditioning means adapted, in response to the completion of a regular purchase of a vendible selection, to condition the system for an award purchase of a vendible selection;
credit responsive means adapted for activation upon the establishment of award credit;
second system conditioning means adapted, in response to activation of the credit responsive means while the system is conditioned for an award sale, to condition the system for customer designation of an award selection;
designation means adapted for activation upon customer designation of an award selection; and
vend means adapted to cause the designated selection to be vended as an award upon activation of the designation means while the system is conditioned for award selection designation.

3,292,760
TAMPER PROOF PROTECTOR FOR COIN CONTROL APPARATUS
Shirley Jean Rudin, 746 Woodhams Ave., Santa Clara, Calif.
Filed May 7, 1965, Ser. No. 453,906
1 Claim. (Cl. 194—63)



In combination with a coin control apparatus confined within a cabinet including a rotatable shaft extending into such cabinet and having an operating control handle attached to the end of such shaft external to the cabinet, a crank arm attached to the other end of said shaft disposed inside the cabinet above the front portion of a discharge chute which has an open upper region substantially along the length thereof for exposing the inner surfaces of the chute and which has a discharge opening on the forward side of the cabinet, the crank arm being exposed through the discharge opening and open upper region of the discharge chute and being coupled to a shuffle panel disposed above the rear portion of the discharge chute for reciprocatingly shifting such shuffle panel into dispensing position above said discharge chute in response to the rotation of said shaft, a coin carrier in the forward portion of the cabinet fixedly attached to said shaft for rotation therewith and having a coin-receiving slot in the periphery thereof, and a latch on the forward side of such coin carrier near the periphery thereof for normally restraining the coin carrier against rotational movement, said latch being disposed to move in a plane parallel to the plane of rotation of the coin carrier between two positions, a normally latching position which prevents shaft rotation in the absence of a coin in said slot in the coin carrier and a non-latching position in the presence of a coin in said slot in the coin carrier which releases said coin carrier and shaft and crank arm for rotation sufficient to shift the shuffle panel into dispensing position above the rear portion of the discharge chute; a tamper protection member secured within said cabinet in a position intermediate the crank arm coupled to said shuffle panel and the open upper region of said forward portion of the discharge chute to obstruct admittance of objects inserted through the discharge opening and open upper region of the discharge chute toward the crank arm coupled to the shuffle panel, thereby preventing the forward prying of the shaft and coin carrier fixedly attached thereto to a position of engagement of the periphery of the coin carrier with said latch which binds the same in said non-latching position relative to said carrier during rotation of said shaft and coin carrier following removal of the coin therefrom.

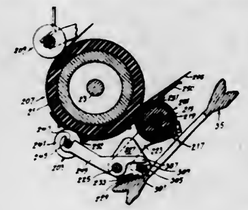
3,292,761
TYPEWRITER KEY LEVER AND MOUNT THEREFOR
Adolph C. Erpel, Warrington, Pa., assignor to Navigation Computer Corporation, Norristown, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1965, Ser. No. 506,345
1 Claim. (Cl. 197—82)



In a typewriter keyboard, a space-bar mounting arrangement comprising in combination, an elongated key bar, an electronic switch assembly restrained for movement along the shaft axis positioned along the key bar with a single reciprocating actuation shaft by said key bar and the switch assembly for direct linear vertical movement thereby, a pair of support members fixedly mounted alongside said key bar on either side of said switch near the ends of the key bar in a plane substantially parallel with the plane of reciprocation of said key bar, a lever member pivotably supported in each of said support members and pivotably engaging said key bar near each end to move through an arc about its pivotal supports in said support members as vertical force on said key bar reciprocates it with said actuation shaft, a single guide plate affixed to only one of said support members and extending into the plane of reciprocation of said key bar to define an aperture underneath said key bar, and a guide pin in said key bar spaced from said vertically movable actuation shaft and registering in said aperture for free vertical reciprocating movement of the key bar while restricting tilting of said key bar relative to the plane of reciprocation, whereby the downward component of force at any position on said key bar is transmitted substantially completely as reciprocating force to said actuation shaft.

3,292,762
SHEET FEED MECHANISM
George W. Erickson, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 1, 1962, Ser. No. 199,520
4 Claims. (Cl. 197—114)

1. In a typewriter or the like machine including means for marking such as by printing on a work sheet, a mechanism for work sheet injecting and positioning with respect to a marking station, comprising:
(a) a support,
(b) a cylindrical platen rotatably journalled on said support,
(c) a first feed roller,
(d) first mounting means carried on said support for first feed roller support and rotation,
(e) first biasing means coacting with said first mounting means to urge said first roller and said platen together for engagement with a first predetermined pressure for gripping and advancing said work sheet,
(f) a second feed roller,
(g) second mounting means carried on said support for second feed roller support and rotation,
(h) second biasing means coacting with said second mounting means to urge said second roller and said platen together for engagement with a second predetermined pressure different from said first predetermined pressure for gripping and advancing said work sheet,
(i) a guide roller,
(j) bail means carried by said support and mounting said guide roller for rotation,
(k) guide roller biasing means mounted on said support and said bail means to urge said guide roller and platen together for engagement guiding said sheet beyond said station,
(l) detent means carried by said support and said platen to operatively connect with said platen yieldably stopping it after uniform increments of movement to locate said work sheet with respect to said station,



(m) actuating means carried by said support and coacting with said rollers and said platen to advance said work sheet through said marking station in selected successive increments of advance movement and hold said sheet against said platen at the termination of said movement,
(n) control means interconnecting said actuating means, said roller mounting means and said bail means, said control means being operable by said actuating means just prior to engagement of said sheet by said guide roller to reduce said first predetermined pressure to a lesser pressure and to simultaneously separate said second feed roller and said guide roller from engagement with said platen and sheet, and
(o) return means operable upon termination of said movement to reset said actuating means, said rollers and said control means wherein said rollers are in said engagement and said predetermined pressures are reapplied on a fully injected work sheet.

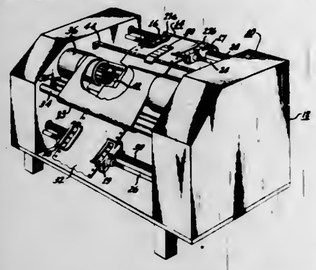
3,292,763
VERTICAL MEASURING SCALE FOR HIGH SPEED PRINTERS
Francis F. Whitehead, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,243
2 Claims. (Cl. 197—187)

1. In a high speed printer for printing on documents, one at a time, in a web of documents of any one of a variety of predetermined sizes, the combination comprising,
means for printing a print line of a plurality of characters at a time on said documents,
said print line being printed on a document in said web that is hidden from the view of an operator of said printer,

a measuring scale for locating on a document visible to said operator a line that is spaced from said print line a vertical distance that is a multiple of the vertical size of said documents in said web so that the position of said print line on said hidden document is ascertained,

said measuring scale having a base member portion and a frame member portion,

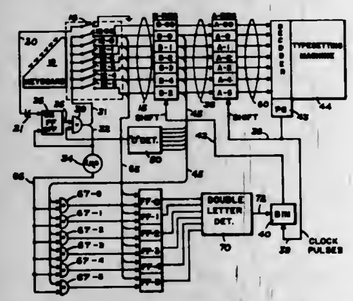
means for mounting said base member portion on said printer at a fixed vertical distance, greater than zero, from said print line,



said frame member portion of said measuring scale having a plurality of measuring indicia formed thereon at different prescribed vertical distances from said base member portion so that the sum of said fixed vertical distance and each of said prescribed vertical distances is a multiple greater than one of the vertical size of documents in said variety of sizes, and

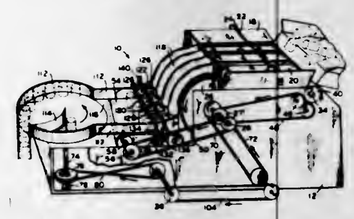
means for adjusting the positioning of said web of documents with respect to said measuring scale to determine the location of the print line to be printed on said documents.

3,292,764
TYPESETTING SYSTEMS
Ernst L. Midgette, Brooklyn, Richard C. O'Brien, Huntington, and Neil Schleifman, Kew Gardens, N.Y., assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,199
6 Claims. (Cl. 199—18)



1. In a typesetting system, the combination of a keyboard for selection of a sequence of characters and spaces to make up lines of composition, an encoding device operated by said keyboard to produce a distinctive code for each operation of said keyboard identifying the character or function selected, shift register means for receiving the output of said encoding device and operating to retain each code therein, circuit connections extending directly from said encoding device to said shift register means to transfer a code from the encoding device into the shift register means directly as a result of a key operation, a typesetting machine operative to produce justified lines of type by assembling the individually selected characters and spaces in the order determined by operation of said keyboard, a decoding device controlling said typesetting machine and adapted to receive codes from said shift register means for decoding the codes stored therein into control signals for said typesetting machine, further circuit connections between said shift register means and said decoding device for direct transfer of codes into said decoding device, and control means operative on said decoding device and said shift register means to read codes from said shift register means on demand from said decoding device according to the rate at which said typesetting machine can perform the operations directed by said decoding device whereby said typesetting machine is controlled directly by key operations on said keyboard and said shift register means provides a buffer between the encoding device and the decoding device.

3,292,765
DESCRAMBLER
Marion W. Loveless, 419 S. Allegheny, Tulsa, Okla. 74112
Filed Jan. 14, 1965, Ser. No. 425,408
3 Claims. (Cl. 198—30)



1. A can descrambler comprising, in combination

a first system of movable belts upon which sealed cans are deposited, said system having a first set of movable belts consisting of a series of continuous paralleled flat belts which travel during the upper period of their cycle in a substantially horizontal plane in the same direction, and in which each of said belts encircles a vertically positioned sheave tangentially adjacent one end of the horizontally moving portion of said belts,

a second set of movable belts consisting of a series of paralleled continuous V-belts narrower than said first set of flat belts, moving during the upper period of their cycle in a substantially horizontal plane and in a direction opposite said flat belts, said V-belts being slightly higher than said flat belts, said first and second set of belts cooperating to separate and arrange cans deposited thereon in corresponding longitudinal position,

a plurality of tunnel members each of which is positionable above one of said first set of belts and concentrically adjacent to the vertically positioned sheave which said belt encircles, which tunnel members maintain said cans in their respective longitudinal positions as said cans are moved over said sheaves, and

a second movable belt system adjacent the lower portion of said vertical sheaves wherein said second system defines a substantially horizontal upper belt surface lower than said first belt system and in which said upper belt surface of said second system moves in a direction parallel to said first set of belts and wherein said cans are received and transported thereon in an upright position by cooperation of said first system of belts with said vertically positioned sheaves and said tunnels.

3,292,766
AUTOMATIC BALE ALIGNER
John C. Leibelt, 4020 Lake Ave., Wisconsin Rapids, Wis. 54494
Filed Dec. 8, 1964, Ser. No. 416,690
15 Claims. (Cl. 198—33)



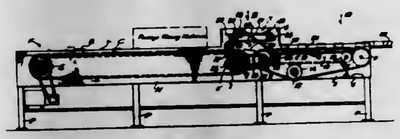
1. An aligning device comprising

an aligning section having outwardly flared side walls for receiving randomly arranged rectangular objects, and a righting section having side walls forming a continuation of the side walls of the aligning section to right the bales so that the sides of the bales are substantially parallel to the side walls of the righting section as the bales pass through the section,

conveyor means mounted to travel through the aligning and righting sections to carry said objects through said sections, and

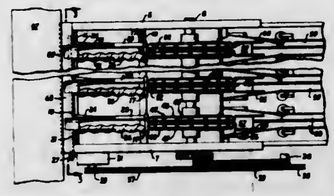
secondary conveyor means in said side walls for turning transversely suspended objects toward a longitudinally aligned position.

3,292,767
PROCESSING MACHINE FEEDING MEANS
Harry R. Lobdell, Los Angeles, and Clarence E. Werner, Hermosa Beach, Calif., assignors to Cal Crown Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 17, 1964, Ser. No. 390,131
6 Claims. (Cl. 198—34)



1. A feeding means for a processing machine including a transfer mechanism of the type adapted to carry units to be processed through the machine on a conveyor means holding the units to be processed in a predetermined spaced relation to each other incident to the passage thereof through the machine; said feeding means including a supporting frame means, a unidirectionally moving feeding conveyor means having spaced horizontal upper and lower flights carried by the frame structure extending from a point of reception of units to be processed to a point of delivery of received units to the processing machine conveyor means, power means operative to cause said feeding conveyor means to move in synchronism with the processing machine conveyor means, a chute for delivering units to the reception point of said feeding conveyor means in random quantities and at random time intervals, and unit sepacing means associated with the respective spaced horizontal flights of said feeding conveyor means including drivable means thereon spaced apart at substantially equal distances from each other in the direction of travel of said conveyor means and coplanar power means to constantly drive in a reverse direction said drivable means to exert a force on any unit contacted by said drivable means tending to move the contacted unit in a direction opposite the direction of travel of said feeding conveyor means so that only one unit is positioned between adjacent drivable means prior to the passage of the units through the transfer mechanism.

3,292,768
APRICOT FEEDER
Rudolph Matthews, Oakland, Calif., assignor to Atlas Pacific Engineering Company, a corporation of California
Filed Mar. 10, 1965, Ser. No. 438,516
8 Claims. (Cl. 198—34)



1. A feeder for fruit or similar articles comprising in combination:

(a) an inclined feed belt having a discharge edge,

(b) a pair of spaced parallel feed rollers having a feed end and a discharge end, the feed end being adjacent to said edge of said belt and the rollers being inclined downwardly therefrom,

(c) at least one of said rollers having a spiral surface,

(d) aligned bearing support means for and supporting said rollers at the ends thereof for rotation on axes parallel throughout the length of the rollers,

(e) means in operative adjacency to said discharge end of the rollers for receiving articles therefrom comprising a peripherally pocketed circular body mounted for rotation on an axis perpendicular to the axes of said rollers, the said peripheral pockets moving in a circular path in a vertical plane passing between the pair of rollers, and

(f) means for rotating said rollers in the same direction.

3,292,769
VARYING SPEED CHAIN MECHANISM
Paul Zuppiger, Carouge, Switzerland, assignor to The Battelle Development Corporation
Filed May 19, 1964, Ser. No. 368,551
Claims priority, application Switzerland, June 13, 1963, 7,344/63
35 Claims. (Cl. 198—110)



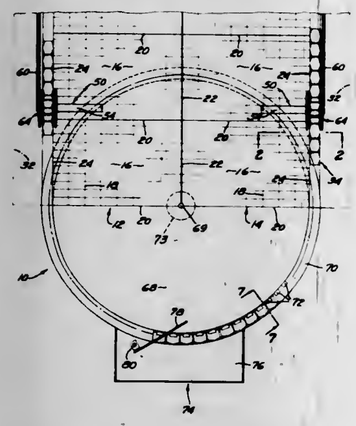
1. Varying speed mechanism comprising, a chain having a succession of links and hinge members in first and

second series pivotally interconnecting respectively and alternately first adjacent ends of said links and second adjacent ends of said links, a pair of longitudinally spaced wheels mounted to turn about their axes and having portions engaging said chain at said first adjacent ends of said links for said chain to move with said wheels and movably interconnect said wheels through said links and their corresponding said hinge members, and circuitous guide means having opposed guide surfaces engaging said chain respectively at said first adjacent ends and said adjacent ends of said links and disposed at least along a portion of said guide means intermediate said wheels, at varying distance apart to constrain said links to a zig-zig folded relation to each other and constrain said corresponding hinge members thereof to vary in distance apart and thus travel at varying speed along said intermediate portion.

3,292,770
CONVEYOR SYSTEM FOR COLLECTING EGGS

David E. Hartmann, 3355 Columbia Ave., Riverside, Calif. 92501

Filed Dec. 28, 1964, Ser. No. 421,374
11 Claims. (Cl. 198—131)
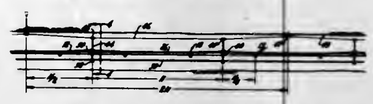


1. A conveyor for transporting delicate articles which must be prevented from rolling around or bumping against one another, comprising:
an endless chain consisting of a plurality of links arranged end-to-end and joined together to provide flexibility in one plane, and relative rigidity in another plane normal to said one plane;
each of said links having an open, box-like configuration, said links being formed of elongated, thin members which are joined together to define the edges of said box-like configuration;
certain of said members on the top side of said link being shaped to conform generally to one of said articles, whereby said one article is supported solely by said certain members at a plurality of points of contact, and is prevented thereby from rolling around or bumping against other articles carried by said conveyor;
others of said members at adjacent ends of adjoining links being joined together by hinge barrels, whereby said adjoining links are free to swing with respect to one another about the pivot axis of said hinge barrels, said adjoining links being relatively rigid with respect to one another in the plane of said pivot axis; and
means for driving said chain.

3,292,771
MULTIPLE ROPE SUPPORTED CONVEYOR

Donald C. Reilly, Downers Grove, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 11, 1964, Ser. No. 344,130
6 Claims. (Cl. 198—192)

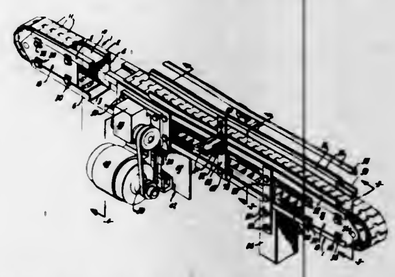


1. In a conveyor, the combination comprising
a first rope frame means including at least one longitudinally extending rope,
troughing idler assembly means carried by the first rope frame means,
said troughing idler assembly means being connected to the first rope frame means at points of connection which are vertically movable,
said troughing idler assembly means being arranged to support conveyor belt means,
a second rope frame means including at least one longitudinally extending rope,
means supporting the first rope frame means from the second rope frame means at points of connection which are vertically movable, and
means connecting the second rope frame means to ground support points,
the distance between adjacent ground support points being substantially 2N,
the distance between adjacent suspension points of the first rope frame means being substantially N.

3,292,772
CONVEYOR STRUCTURE

Harold B. Rice, Walnut Creek, Calif., assignor to John Burton Machine Corporation, Concord, Calif.

Filed Jan. 26, 1965, Ser. No. 428,082
8 Claims. (Cl. 198—204)



1. Conveyor structure comprising:
an elongated article supporting element,
an elongated frame member of substantially uniform cross section receiving said element thereon for movement of the latter longitudinally of said member,
said member comprising a top wall, a bottom wall, and a side wall connecting said top wall and bottom wall along corresponding edges of said top wall and bottom wall, whereby the side of said member opposite said side wall opens outwardly of one side of said element,
a wheel disposed adjacent one end of said member for receiving said article supporting element thereabout,
a supoprt for rotatably supporting said wheel,
said support being received telescopically within said one end of said member,

means for releasably securing said support to said member in one of a plurality of different positions relative to said member to permit varying the tension in said element.

3,292,773
SUPPORT FOR CONVEYOR BELT

Melvin C. Keehart, Miami, and Robert L. Hubner, Marshall, Mo., assignors to Kee Conveyers, Inc., Miami, Mo., a corporation of Missouri

Filed Mar. 12, 1965, Ser. No. 439,260
9 Claims. (Cl. 198—204)

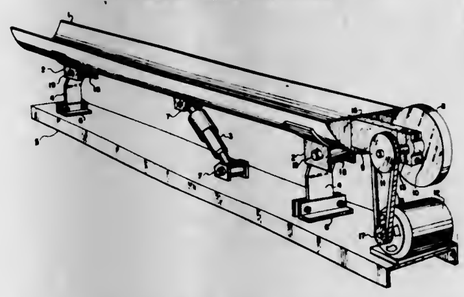


1. A support for a conveyor belt comprising:
an elongated member having a substantially U-shaped, transverse, cross-sectional configuration whereby to present a bight and a pair of legs, the bight being arcuate and adapted for receiving a stretch of a conveyor belt thereon, the legs extending upwardly from said bight to form opposed sidewalls adajcent said stretch of conveyor belt;
means supporting said member; and
a flange on each of said legs extending downwardly and outwardly therefrom, each of said flanges being substantially coextensive in height with its corresponding leg and having its outer free edge secured to said supporting means.

3,292,774
MATERIALS HANDLING DEVICE

Henry J. Korab, 1600 Dual Highway, Hagerstown, Md. 21740

Filed Oct. 5, 1964, Ser. No. 401,608
4 Claims. (Cl. 198—220)

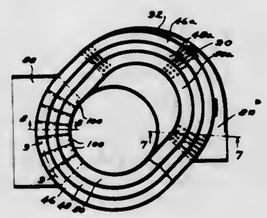


1. A materials handling device comprising
a trough mounted on flexible spring support strips for axially oscillating movement at differential speeds in the opposite directions,
a motor-driven eccentric weight rotatably mounted on a horizontal axis at one end of said trough perpendicular to its axis and
a shock absorber having a chamber and piston with a check valve controlled large passage in its head, said shock absorber being attached at one end to said trough for damping the oscillations in one direction of said oscillating movement when said check valve is closed and providing little resistance to said movement in the other direction when said check valve is opened,
said flexible support strips having a base to which the other end of said shock absorber is attached,
a motor mounted at one end of said base below said eccentric weight for driving it,
said eccentric weight having a drive shaft and a resilient member attaching it to the shaft and providing a bias on the weight toward the shaft to a normally small eccentricity when the shaft is stationary, the eccentricity being increased upon rotation of the shaft in accordance with the speed of rotation, and
a casing mounted on said shaft forming a protective enclosure in which the weight moves to different eccentricities, and
said resilient member is a spiral coil spring around said shaft mounted so as to decrease the eccentricity upon acceleration of the shaft, as in starting, to make starting easier.

3,292,775
TRACK FOR VIBRATORY CONVEYORS

Robert C. White, Detroit, Mich., assignor to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan

Filed Apr. 19, 1965, Ser. No. 449,058
5 Claims. (Cl. 198—220)



2. In a vibratory conveyor for conveying of parts of the type including:
(a) a support,
(b) a spiral track on said support, and
(c) means to impart an incremental motion to said track transverse of the radii thereof to effect conveyance of articles placed thereon, that improvement which comprises:
(d) a bottom portion in said spiral track having perforate portions to facilitate localized drainage at said portions, said perforate portions being formed by a plurality of segmental plates in juxtaposition to leave radial drain slots therebetween while forming a continuous spiral path for the support and travel of parts along said track.

ERRATUM

For Class 199—18 see:
Patent No. 3,292,764

3,292,776
HYPODERMIC STORAGE KIT

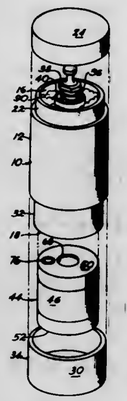
Thomas R. Penn, De Kalb County, Ga. (P.O. Box 1036, Decatur, Ga. 30033)

Filed Nov. 12, 1964, Ser. No. 410,366
12 Claims. (Cl. 206—43)

1. In a container kit for holding the hypodermic syringe and needles separately from each other, there being both sterile and unsterile needles stored in the container:
(a) a container body of generally three-dimensional construction having a three-dimensional compartment in each end thereof normally closed by a removable closure member thereon,

(b) a tubular syringe storage compartment formed in one of said compartments in said container body and having a space therein adapted to contain a syringe without needle,

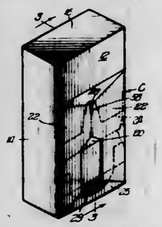
(c) one of said compartments being generally three-dimensional and having a three-dimensional needle holder therein,



(d) said needle holder having a plurality of inwardly extending and circumferentially spaced needle compartments therein extending from opposite ends thereof inwardly substantially longitudinally into the body to receive both used and unused needles,

(e) closure means for said needle compartments normally permanently attached thereon and being moveable to expose selectively said compartments to insert or remove a needle therefrom.

3,292,777
DISPLAY CARTON
John D. Desmond, Philadelphia, Pa., assignor to Container Corporation of America, a corporation of Delaware
Filed June 15, 1965, Ser. No. 463,997
9 Claims. (Cl. 206—45.14)



1. A display carton, formed of foldable sheet material such as paperboard, for holding and displaying an article such as a bottle or tube, comprising the combination of:

(a) front, back and side walls hingedly interconnected at their opposite side edges along substantially parallel, longitudinal hinge lines to define a tubular structure open at the ends;

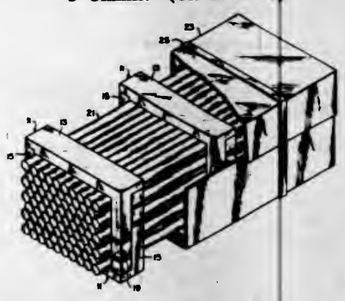
(b) end closure walls hingedly connected to end edges of the front, back and side walls on transverse hinge lines and extended across the open ends of the tubular structure for closing the same;

(c) the front wall including an outer front wall panel extending the full length of the front wall and an inner front wall panel extending only partially the length of the front wall and overlapping in face-to-face relation the outer front wall panel adjacent one end of the tubular structure;

(d) the outer front wall panel, spaced toward the other end of the tubular structure from the inner front wall panel, having a weakened line formed therein spaced from and extended parallel to the adjacent longitudinal hinge lines of the front wall that can be broken to separate the outer front wall panel into two side panels hinged, respectively, at the adjacent longitudinal hinge lines and adapted to be folded inwardly into the tubular structure toward the back wall to provide a window opening in the front wall into which the article can be positioned, which when so positioned confines the side panels inwardly;

(e) article holding structures hinged, respectively, adjacent the window opening to the end closure panel at the opposite end of the tubular structure and to the inner front wall panel, and each including a transverse panel extended across the tubular structure between the front and back walls and a base panel hinged to the free edge of the transverse panel and disposed in face-to-face relation to the back wall, and the transverse panels having intermediate openings therein for receiving and confining therein the opposite ends of the article.

3,292,778
FOAM PACKAGING MEMBER
Robert H. Enderle, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 22, 1965, Ser. No. 441,483
3 Claims. (Cl. 206—65)



1. A packaging unit including a pair of U-shaped packaging modules each having a body of shock absorbing material and each comprising, a base portion, a pair of solid leg portions extending from said base portion, said leg portions being substantially parallel to each other and substantially perpendicular to said base portion, one each of said pair of legs being situated at an opposite diagonal corner of said base portion, and each module having a leg-receiving portion formed in diagonally opposed corners of said base portion adjacent each one of the pair of said leg portions and operatively receiving a leg portion of the other module to form an interlocking packaging unit.

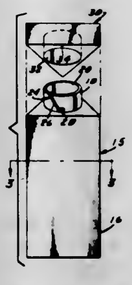
3,292,779
COIN CONTAINER
Alfred S. Colella, 1310 S. Glendora Ave., West Covina, Calif. 91790
Filed May 1, 1964, Ser. No. 364,145
3 Claims. (Cl. 206—82)

1. In a coin holder:

(A) a body having a plurality of flat sides, there being a coin receiving passage extending longitudinally in said body from one end, said passage being closed at the other end by an end wall;

(B) a neck of reduced diameter at said one end defining a part of said passage;

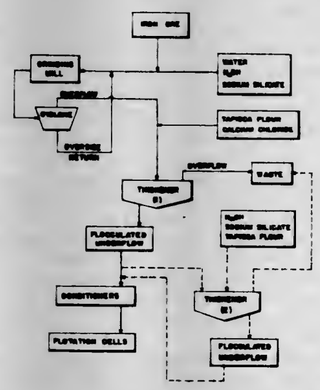
(C) said neck having an external bayonet groove therein extending from the free end of said neck, said groove including a downwardly and circumferentially inclined portion and a peripheral portion with one end of which the lower end of the inclined portion connects, the other end of said peripheral portion being closed; and



(D) a cover fitting onto said neck and having an internal recess with a projection therein slidably receivable in the bayonet groove, said cover having the same external shape as the shape of the body, and the projection being so oriented that when at the closed end of the peripheral portion of the groove the sides of the cover lie in an extension of the planes of the sides of the body.

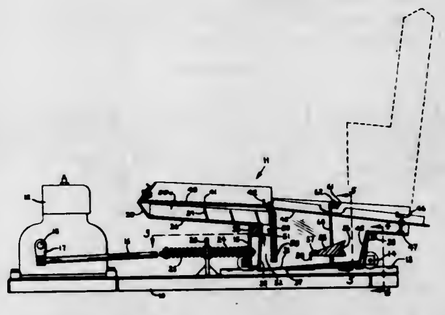
(E) said body having at least one longitudinally extending pocket therein, said pocket being spaced outwardly from the coin receiving passage in said body.

3,292,780
PROCESS FOR IMPROVED FLOTATION TREATMENT OF IRON ORES BY SELECTIVE FLOCCULATION
Donald W. Frommer and Arthur F. Colombo, both of Bloomington, Minn., assignors to the United States of America as represented by the Secretary of the Interior
Filed May 4, 1964, Ser. No. 364,861
10 Claims. (Cl. 209—5)



1. A process for concentration of iron ores comprising the following sequence of steps (1) initially forming a relatively stable aqueous dispersion of the ore, (2) treating the dispersion of ore with a flocculating agent capable of causing selective flocculation of the iron oxides in the ore in preference to silica materials, and selected from the group consisting of starches, flours, and polyacrylamides (3) allowing the flocculated iron oxides to settle, (4) separating and removing the suspended silica materials from the flocculated iron oxides and (5) subsequently subjecting an aqueous pulp of the flocculated iron oxides to a froth flotation operation in the presence of a collecor to further separate iron oxides from siliceous materials.

3,292,781
DEVICE FOR SIFTING AND STRATIFYING ORES
Gunnar Svenson Kjarval, 1013 NE. 91st Ave., Portland, Oreg. 97220; Gunnar C. Kjarval, executor of the estate of Gunnar S. Kjarval, deceased
Filed Feb. 6, 1964, Ser. No. 343,079
15 Claims. (Cl. 209—44)



12. An ore concentrating machine comprising an upper pan and a lower pan arranged end to end and adapted to be oscillated in a longitudinal direction, a riffled bottom in said upper pan sloping toward said lower pan for discharge therein, a screen above said riffled bottom sloping toward said lower pan, a discharge apron extending from the lower end of said screen lengthwise across said lower pan, an overflow discharge lip on one end of said lower pan beneath said apron, a bottom in said lower pan sloping downwardly from said discharge lip and in a direction toward said upper pan, an end wall in the opposite end of said lower pan connected at its top with the lower end of the bottom of said upper pan at an elevation above the level of said discharge lip, and a free swinging pendulous agitator in said lower pan.

3,292,782
APPARATUS FOR HANDLING MAGNETIC CORES
Eugene A. Vosika, New Brighton, Minn., assignor to Ramsey Engineering Company, St. Paul, Minn., a corporation of Minnesota
Filed Sept. 8, 1964, Ser. No. 394,965
15 Claims. (Cl. 209—72)

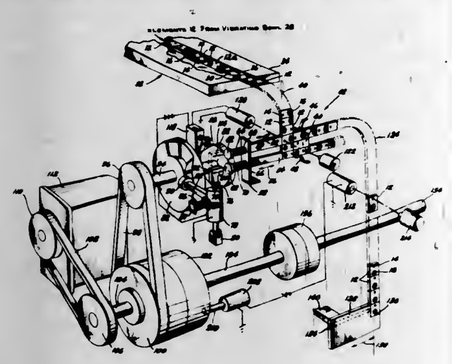
15. Handling apparatus for elongated magnetic cores each having an aperture nonsymmetrically located with respect to its ends comprising:

(a) a test station having a probe means movable from a retracted position to an advanced position;

(b) means for guiding and orienting at least some of said cores into single file with their longer axes parallel;

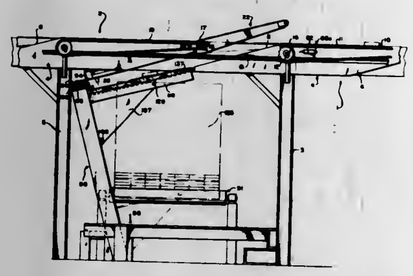
(c) means for selecting from said oriented cores only those having their respective apertures located at corresponding predetermined positions, and

(d) means for transferring the selected cores to said test station, said transferring means including means



for presenting said cores to said test station so that their apertures are each in proper position to be penetrated by said probe means.

3,292,783
LUMBER SORTER AND STACKER APPARATUS
Wilton W. Quist and Kenneth W. Bullock, Seattle, Wash., assignors to Stetson-Ross Machine Company, Inc., Seattle, Wash., a corporation of Washington
Filed Jan. 28, 1964, Ser. No. 340,663
22 Claims. (Cl. 209—90)

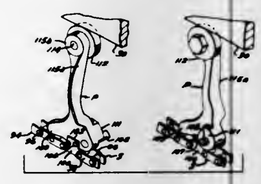


7. A lumber sorter and stacker device comprising in combination; a conveyor for moving individual boards, means operating in conjunction with said conveyor for diverting selected boards to a discharge position, stocker means to receive boards discharged from said conveyor and to accumulate said boards in individual generally planar layers forming a stack, a glide device for facilitating the formation of layers, said glide device including at least one reciprocable glide strap, and means for extending said strap across the stack on top of the last complete layer formed and beneath the layer being accumulated, said strap being supported by said last complete layer and extending in a plane substantially parallel therewith.

3,292,784
ROLLER SUPPORT FOR A POTATO GRADING DEVICE
Earl A. Ernst, 2121 S. Union, Bakersfield, Calif. 93307
Filed July 30, 1965, Ser. No. 475,950
5 Claims. (Cl. 209—106)

1. A roller spacing control member for use on a machine for grading articles by size which includes two parallel, power-driven, endless chain link belts having a plurality of transversely positioned, longitudinally spaced shafts extending therebetween, on which elongate sizing rollers are mounted, which control member comprises:

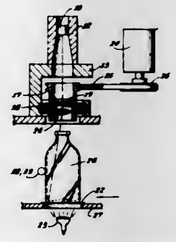
(a) a cast metallic body that is partially defined by two laterally spaced parallel side walls, a boss projecting from the inner one of said side walls, and serving to support an end portion of one of said shafts, an angularly offset portion extending away from said boss, a curved leg which projects away from the extremity of said offset portion most remote from said boss, and a flange on said leg positioned in a direction normal to the longitudinal axis thereof;



(b) a stub shaft that projects from said leg in the same direction as that of said boss; and

(c) a roller rotatably supported on said stub shaft.

3,292,785
BOTTLE INSPECTION SYSTEM
Frederick L. Calhoun, Torrance, Calif., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Filed Aug. 27, 1964, Ser. No. 392,499
12 Claims. (Cl. 209—111.7)



11. In a system for inspecting a container for particles of foreign matter,

a source for providing radiant energy through the container to form a beam of radiation modulated by any particles in the container;

a plurality of radiation-responsive means,

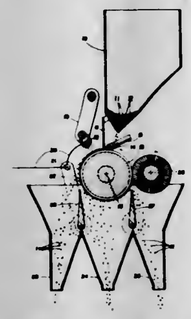
a rotatable member for cyclically and sequentially coupling different portions of the modulated beam to different ones of said responsive means,

means operatively coupled to the rotatable member for obtaining a rotation of the rotatable member,

a plurality of first circuit means each electrically coupled to a different one of the radiation-responsive means in the plurality for individually and sequentially producing signals in accordance with the characteristics of the radiant energy passing to the associated radiation-responsive means at each instant of time; and

second circuit means electrically coupled to said plurality of first circuit means for providing an output indication representing the occurrence of a foreign particle in the container upon the production of signals with particular characteristics by at least one of the first circuit means in the plurality.

3,292,786
ELECTROSTATIC SEPARATOR WITH COATED DISCHARGE ELECTRODE
Tadeusz Mieczyslaw Korzekwa, Toronto, Ontario, Canada, assignor to Ontario Research Foundation, Toronto, Ontario, Canada
Filed Sept. 5, 1963, Ser. No. 306,898
7 Claims. (Cl. 209—129)



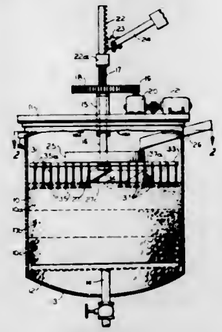
1. An electrostatic separator apparatus for separation of comminuted materials and comprising: rotary electrode means carrying said comminuted materials about an arcuate path; feed means oriented to direct said comminuted materials onto said rotary electrode means; collector means located adjacent said rotary electrode to receive said comminuted materials therefrom; a discharge electrode wire located in spaced relation to said rotary electrode for establishing an electrostatic discharge therebetween; and an insulating material around said wire defining a coating characterized by a series of fine cracks.

3,292,787
PHOSPHATE FLOTATION PROCESS
Maurice C. Fuerstenau, Golden, Colo., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Jan. 9, 1964, Ser. No. 336,639
9 Claims. (Cl. 209—166)

1. A process for the beneficiation of phosphate ores comprising the steps of conditioning for at least about 2.5 minutes an aqueous slurry of the phosphate ore having a solids content of from about 71 to 76 percent solids and having a pH in the range of about from 6 to 10 with flotation agents comprising an alkali metal salt of a hydrocarbon aromatic sulfonic acid having a molecular weight above 380 and below about 600 in an amount equivalent to the addition of 0.025 to 0.80 lb. of $NaSO_3$ per ton of ore and a hydrocarbon oil having a viscosity of from 200 to 10,000 sec. Saybolt measured at 100° F. in an amount of from about 0.1 to 5.0 lb. per ton of ore, and separating the slurry by froth flotation.

3,292,788
PROCESS AND APPARATUS FOR FILTERING LIQUIDS CONTAINING GUMMY OR SLIMY SUSPENDED MATTER
Theodore A. Schwarz, 1465 Saratoga Ave., San Jose, Calif. 95129
Filed Dec. 6,,1963, Ser. No. 328,749
4 Claims. (Cl. 210—80)

1. A method of purifying liquids containing slimy gummy suspended matter without pretreating such solutions and without the use of filteraids, enzymes, and the like, comprising supplying the liquid to be filtered to the top surface of a granular filter medium, collecting said suspended matter on said filter medium, subjecting a portion of the filter medium to a plowing action, said plowing action causing the entrapping of the collected suspended matter in the filter medium and subjecting it to compressive forces by the filter medium which alter the physical nature of the collected matter in such manner that it is no longer capable of forming continuous films which prevent the passage of the liquid to be filtered, and progressively subjecting larger portions of the filter medium to the plowing action to agitate it so as to maintain its permeability to said liquid to be filtered.



3. An apparatus for filtering liquids containing slimy, gummy suspended matter without pretreating such solutions and without the use of filter aids, enzymes and the like, comprising a tank having a porous granular filtering medium in several layers therein, the top layer being of sand-like consistency and the lower layers being of coarser material, a shaft extending into said tank, means to rotate said shaft, a pluraliy of radially extending arms attached to said shaft, an annular trough supported by said shaft, distributor troughs attached to said annular trough and extending between selected ones of said arms, means for feeding liquid to be filtered to said annular trough, said distributor troughs receiving said liquid from said annular trough and distributing it over the top of said filtering medium as said shaft and said distributor trough are rotated above said filtering medium, a plurality of plows attached to each of said radially extending arms, and means for gradually lowering said plows into said top layer of said filtering medium as liquid to be filtered is supplied thereto and during the rotation of said plows.

3,292,789
AUTOMATIC WATER SOFTENING SYSTEM
Bernard E. O'Connor, 8904 Ridge Ave., Playa Del Rey, Calif. 90291
Filed Feb. 23, 1965, Ser. No. 434,564
10 Claims. (Cl. 210—105)

1. In an automatic water softening system, apparatus comprising:

a container for containing water softening materials;

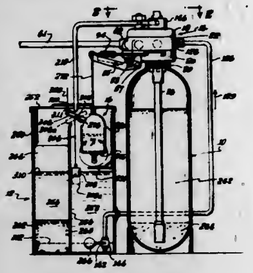
means for directing the flow of water to be softened through said container for contact with water softening material therein;

means responsive to such flow of water for simultaneously accumulating a quantity of regenerating liquid at a rate which is a predetermined function of the rate of flow of such water through said container;

means actuatable by the thus accumulating quantity of regenerating liquid, when the quantity thereof reaches a predetermined amount, for interrupting such flow of water through said container and for flowing a first portion of the thus accumulated regenerating liquid through said container;

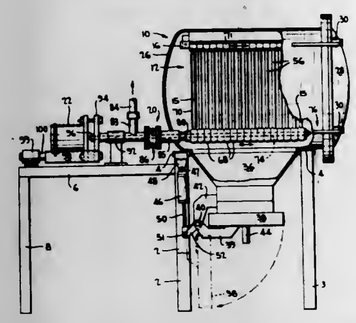
means responsive to the completion of flow of said predetermined first portion of such accumulated regenerating liquid through said container for discontinuing

such flow of regenerating liquid through said container and simultaneously initiating flow of fresh wash water through said container which is relatively free of regenerating liquid;



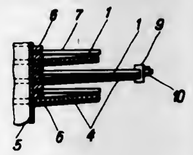
and means actuated by completion of flow of a second predetermined portion of said accumulated liquid for interrupting such initiated flow of fresh wash water through said container.

3,292,790
VIBRATING FILTERING APPARATUS
John Tait, Oakland, and George Zebora, Gladstone, N.J., assignors to Komline-Sanderson Engineering Corporation, Peapack, N.J., a corporation of New Jersey
Filed Feb. 17, 1964, Ser. No. 345,291
5 Claims. (Cl. 210—236)



1. A pressure leaf filter unit comprising an enclosed filter tank, a filter leaf assembly within said tank comprising a plurality of hollow filter leaves, a tie rod extending between and rigidly interconnecting said filter leaves for vibratory movement as a unit in a given direction, a trackway fixed within the tank and extending in said given direction, hangers carried by said assembly and supporting same for vibratory movement along said trackway, said leaves respectively being provided with relatively axially aligned discharge sleeves, each communicating with the hollow interior of its respective leaf, a rigid filtrate manifold fixedly connected to said filter leaf assembly in axial alignment and in communicating relation with said sleeves, a further tie rod extending coaxially through said discharge sleeves and said manifold to interconnect all of same in fluid tight communication with each other and with the hollow interior of each of the leaves thereof, said manifold extending from the assembly outwardly through the wall of said tank in fluid tight manner for free vibratory movement with said filter leaf assembly.

3,292,791
ROTARY DISC FILTER DEVICE
Hans Müller, Erlenbach, Zurich, Switzerland
Filed Dec. 14, 1964, Ser. No. 415,406
Claims priority, application Germany, Dec. 21, 1963, M 46,888
2 Claims. (Cl. 210—330)

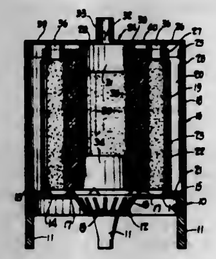


1. A filter device comprising a shaft; filter elements mounted on said shaft, each of said filter elements comprising a filter cloth, a base sheet and an intermediate layer; a plurality of radially extending tie members located over the filter cloth of each filter element, said tie members being inclined with respect to said shaft; a spacing ring mounted on said shaft above each filter element, wherein one end of each tie member is secured to an associated spacing ring and the other end of each tie member is provided with a screw-thread; clamping means fitted on to each of said tie members at the screw-threaded end thereof, said clamping means engaging an edge of the filter element and serving to clamp said filter cloth, base sheet and intermediate layer of said element together; and a nut provided for engagement with said screw-thread on each of said tie members for securing said clamping means to said tie members.

3,292,792
FILTER CARTRIDGE
Douglass R. Falkenberg, 28997 Westlake Road, Rocky River, Ohio 44116, and Edward L. Sharpe, Elyria, Ohio; said Sharpe assignor to said Falkenberg
Filed Apr. 10, 1963, Ser. No. 272,002
4 Claims. (Cl. 210—450)

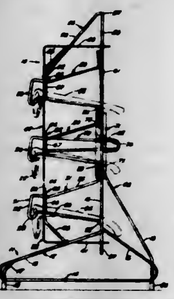
1. A device for filtering aqueous medium in aquariums containing aquatic animal life, comprising in combination:
(a) a circular base;
(b) a porous physically solid filter medium having an axially disposed recess with one end open, positioned on the base such that the longitudinal axis of the recess is substantially normal to the plane of the base, and the open recess end is farthest from the base;
(c) a hollow cylindrical body extending from the base and surrounding the filter medium, including:
(1) an inner cylindrical wall coacting with the base to form a fluid chamber for receiving the filter medium, the end of the fluid chamber farthest from the base being open;
(2) a concentrically disposed outer cylindrical wall coacting with the inner cylindrical wall, to form a chamber for holding ballast, the end of the ballast chamber farthest from the base being open;
(d) a circular cover removably mounted on the hollow body for sealing the open ends of the fluid and ballast chambers and the recess in the filter medium positioned on the base;
(e) means coacting with the base for allowing fluid to flow into the fluid chamber for contact with the filter medium, said means including at least one slit disposed in the base, the width of the slit being narrow relative to the length of the slit such that smaller species of aquatic animal life will not be drawn into the fluid chamber;

(f) means coacting with the filter medium for positioning the filter medium on the base and in the fluid chamber;



(g) means coacting with the cover for allowing fluid to flow from the recess in the filter medium; and
(h) means coacting with the base for holding the filter medium in spaced relation from the slit.

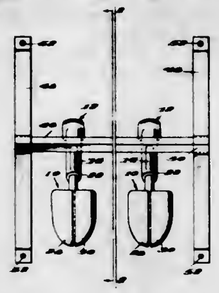
3,292,793
DISPLAY DEVICE
Charles D. Ashcroft, 1219 Oak Circle Drive, Glendale, Calif. 91208
Filed Feb. 8, 1965, Ser. No. 431,123
15 Claims. (Cl. 211—4)



3. A pilfer proof spectacle display device, said device comprising: a first frame; a generally U-shaped wire-like member fixed to said frame, said member having a base portion extending approximately vertically and a pair of spaced legs extending approximately horizontally, said member being adapted to carry the nose piece of a pair of spectacles at a position adjacent the base portion thereof; means fixed to said frame to support the ear pieces of a pair of spectacles in an approximately horizontal position as the nose piece thereof is carried by said U-shaped member; a second frame, said second frame being slidably mounted on said first frame; and a body fixed to said second frame, said body being movable rearwardly and upwardly in relation to said first frame, said body having legs which are adjacent the front of said U-shaped member, said second frame being movable from one position with said body extending between said member legs to prevent a pair of spectacles from being removed from said first frame, to another position to permit removal of spectacles from said first frame.

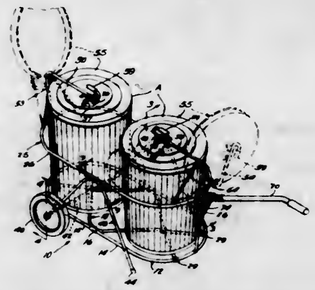
3,292,794
SHOE RACKS
Claude K. Lowe, Box 832, Midland, Tex. 79701
Filed Feb. 9, 1966, Ser. No. 526,260
7 Claims. (Cl. 211—34)

1. A shoe rack comprising a supporting structure, a plurality of shoe trees, each having a heel portion and a toe portion yieldably movable longitudinally toward and from the heel portion, a leg fixed rigidly to the heel portion of each shoe tree, and a support member fixed



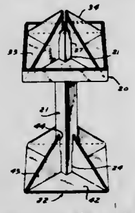
rigidly to the supporting structure and having the legs of both shoe trees rigidly fixed thereto supporting the shoe trees thereby.

3,292,795
TRASH CAN HOLDER
John W. Chappell, 915 MacDonald Road, Virginia Beach, Va. 23462
Filed Mar. 22, 1966, Ser. No. 536,468
6 Claims. (Cl. 211—71)



1. A trash can holder comprising a lower horizontally-disposed rigid endless member, an open-work platform disposed within and fixedly-secured to said member and adapted to support the bottoms of trash cans, an upper horizontally-disposed rigid endless member of larger internal area than said lower member, said upper member being positioned in vertical spaced relation above said lower member, a pair of upwardly and outwardly-sloping posts arranged in opposed relation positioned so that the lower ends are contiguous and fixed to opposed points of said lower member and the intermediate portions are contiguous and fixed to complemental points of said upper member with the parts adjacent the upper ends projecting above the upper member, means supporting said lower member in spaced relation above a ground surface, an arm arranged in an upright outwardly-sloping direction positioned above each post and having the lower end connected to the projecting part of the adjacent post for pivotal movement of said arm about a horizontal axis, and a can cover disposed in a tilted rearwardly direction positioned inwardly of each of said arms and fixedly secured to the adjacent arm inwardly of and spaced from the upper end thereof, each of said arms being shiftable from the position in which the can cover is in the tilted rearwardly direction to a position in which the can cover is in a horizontal position and adapted to engage over the top of a trash can when the bottom of said can is supported on the platform of said lower member.

3,292,796
FLOOR STAND OF KNOCKDOWN CHARACTER
Richard E. Paige, New York, N.Y., assignor to Paper Products Development Corporation, New York, N.Y., a corporation of New Jersey
Filed Feb. 11, 1965, Ser. No. 431,845
6 Claims. (Cl. 211—133)



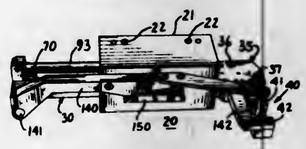
1. In a knock-down cardboard structure defining a floor stand: separably interconnected parts comprising a base, a column, and a bin having an upstanding peripheral wall for holding merchandise, the column being a tube provided at its opposite ends with longitudinal slots, the base and bin each comprising an element of initially flat foldable stock provided with fold lines defining a series of adjacent sections, said sections including pairs of triangular sections foldable to define two-ply pleats extending at right angles to the remaining sections, the latter lying in a plane and defining a horizontal floor, said pleats being provided with slots located to interengage with those in said column said pleats on the bin extending upwardly from the floor to form separate merchandise compartments, said floor being provided with an opening through which the upper end of said column extends.

3,292,797
SELF-SERVICE FOOTWEAR MERCHANDISING DEVICE
Milton Berk, % Simons, Simons & Simons, 1655 NW. 10th Ave., Miami, Fla. 33136
Filed May 21, 1965, Ser. No. 457,591
7 Claims. (Cl. 211—163)



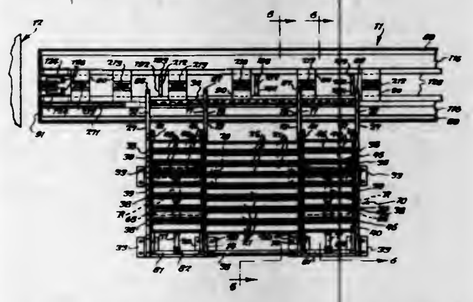
1. In a self-service footwear mechandising device, the combination comprising, a support structure, an elongated display rack member, means for rotatably supporting said display rack member is spaced relation with respect to and above said support structure for rotation about its longitudinal axis, a circular try-on base member, means for rotatably supporting said try-on base member between said support structure and said display rack member for rotation about a central axis common with the rotational axis of said display rack member, a plurality of shoes of various sizes fixed in circularly-spaced relation upon said try-on base member for customer try-on to determine size, said display rack member comprising a plurality of side panels, and means adapted to support pairs of shoes of the type and sizes of said plurality of shoes against each of said side panels, said support structure compriing a pedestal member, said try-on base member being of conical shape and disposed in enclosing relation on said support structure pedestal member, the peripheral edge of said try-on base member including antifriction means for free movement over a fixed flat surface.

3,292,798
LINEAR TRANSPORT AND PLACEMENT DEVICE FOR A WORKPIECE
Leonard L. Harper and Hart J. Boyajian, both of 7338 N. Lawndale, Chicago, Ill. 60600
Filed Nov. 10, 1964, Ser. No. 410,061
12 Claims. (Cl. 214—1)



1. In a transport and placement device for moving a small workpiece from a first position to a second position, the combination comprising a slide body, a slide assembly having a longitudinal slide mounted in the body and having a head at one end, jaw slides transversely mounted side by side in the head and carrying opposed jaws, a rocking lever centrally pivoted in the head coupled at its ends to the jaw slides for movement of the jaws toward and away from one another, a jaw actuator carried by the longitudinal slide and coupled at one end to the rocking lever, said slide body having a fluid actuator parallel to the longitudinal slide, said fluid actuator having a plunger coupled to the jaw actuator, and means for inhibiting the movement of the longitudinal slide in the body so that when the plunger of the fluid actuator is extended movement of the jaw actuator rocks the rocking lever to close the jaws on a workpiece at the first station followed in sequence by bodily movement of the longitudinal slide for transport of the workpiece to a second station.

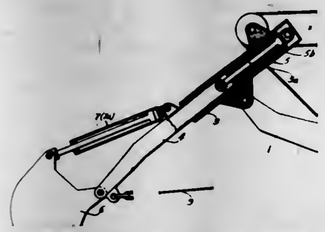
3,292,799
COMBINED UNSCRAMBLER AND FEED TABLE FOR SHEARING MACHINE
William H. Eggleston, West Seneca, James A. Hitt, Lakeview, and Heinrich N. Moelbert, Buffalo, N.Y., assignors to Buffalo Forge Company, Buffalo, N.Y., a corporation of New York
Filed Feb. 19, 1963, Ser. No. 259,622
15 Claims. (Cl. 214—1.5)



1. A feed table for advancing a rigid member to an intermittently operating machine comprising a frame, feeding means mounted on said frame, motor means for driving said feeding means, means associated with said feeding means for engaging the end of said rigid member

remote from said machine in abutting relationship, control means for intermittently causing said motor means to advance said feeding means toward said machine by alternately moving and stopping and thereby causing said rigid member in abutting engagement with said feeding means to be intermittently advanced toward said machine, and pressure block means operatively associated with said feeding means for frictionally engaging a portion of said rigid member remote from the end thereof in engagement with said feeding means with a frictional force which is in excess of the force produced as a result of the momentum of said member experienced during the movement thereof to thereby cause said end of said member remote from said machine to remain in abutting engagement with said feeding means after said feeding means have come to a stop after movement thereof.

3,292,800
EXCAVATOR
Tore Jeremiasen, Malmo, Sweden, assignor to Aktiebolaget Schakta, Malmo, Sweden, a corporation of Sweden
Filed Mar. 18, 1965, Ser. No. 440,742
Claims priority, application Sweden, Mar. 23, 1964, 3,567/64
1 Claim. (Cl. 214—138)



In an excavator comprising: a chassis; a boom swingably mounted on said chassis; a shovel shaft mounted on said boom and having an upper and a lower part longitudinally telescopically slidable with respect to each other; and a shovel on said lower shaft part, the improvement in which: the upper part of said shaft comprises a rigid totally closed sleeve within which the lower shaft part is reciprocated through sealing guide means; axially reciprocating power means within said upper shaft part connecting and driving said upper and lower shaft parts axially with respect to each other; means defining the pivotal position of said shovel, on said lower shaft part, arranged between said shovel and said lower shaft part; and a connection between said defining means and said lower shaft part located below and outside the upper part of said shaft when said lower shaft part is fully retracted, said connection being of diameter larger than said shaft and thereby precluded from telescoping within said shaft.

3,292,801
DEVICE FOR STACKING AND TRANSPORTING CASES
David K. Walz, Decatur, Ga., and Rawlings L. Burnette, Lynchburg, Va., assignors to The Coca-Cola Company, Atlanta, Ga., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 431,137
3 Claims. (Cl. 214—390)

1. Device for storing and transporting cases, comprising a structural framework defining a space of dimensions suitable for the reception of at least one stack of cases in horizontal position, anti-friction means supporting said framework for rolling movements over a floor, movable means for supporting said cases in said space, said last means comprising movable support members carried on said framework at the lower end thereof and on opposite sides of said space, linkage means connecting said support members for substantially equal and simultaneous movements into and out of said space, resilient means connected to said linkage means and urging the latter toward movement of said support members into said space, releasable means for locking said linkage means against movement of said support members out of said space, and releasable means for locking said linkage means against movement of said support members into said space.



3,292,802
RETRACTABLE SUPPORT FOR SEMITRAILER
Archibald D. L. Hutchinson, Seattle, Wash., assignor to Kneeling Nellie, Inc., Seattle, Wash., a corporation of Washington
Filed June 7, 1963, Ser. No. 286,356
7 Claims. (Cl. 214—506)

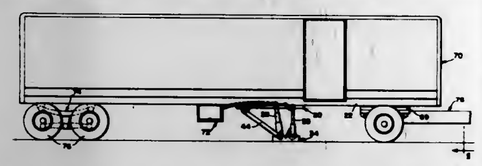


1. A trailer of the type described comprising a trailer body; an axle assembly mounted adjacent one end of said trailer body; and a landing gear mounted on said trailer body, said landing gear including first and second multiple stage power cylinders and a ground-engaging shoe, each of said cylinders having one end connected to said trailer body and the other end connected to said shoe whereby actuation of said cylinders causes relative movement between said shoe and said trailer body, a pair of angular braces each pivotally connected at one end to the trailer at a point spaced in one longitudinal direction of the trailer body from said one end of a respective cylinder and pivotally connected at the other end to one of said shoes, respectively, and a pair of safety legs each pivotally connected at one end to the trailer at a point spaced in the opposite longitudinal direction of the trailer body from said one end of a respective cylinder and each having a free end adapted to engage one of said shoes, respectively, when said trailer is in elevated position.

3,292,803
SEMI-TRAILER
Lyle D. Keller and Robert M. Barnhart, Seattle, Wash., assignors to Kneeling Nellie, Inc., Seattle, Wash., a corporation of Washington
Filed Aug. 26, 1963, Ser. No. 304,352
9 Claims. (Cl. 214—506)

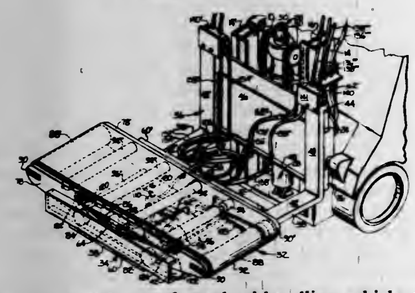
7. A semi-trailer comprising a bed having front and rear ends, a bottom, and a floor surface above said bottom; a rear wheel carriage disposed beneath a rear por-

tion of said bed and mounting the same for swinging movement between a first position in which said bed extends generally horizontally and the front end is spaced above the ground and a second position in which said bed inclines downwardly and forwardly from the rear end and said bottom at the front end is disposed adjacent the ground; a jack mechanism disposed beneath said bed between said ends, said jack mechanism being extensible downwardly from the bed for supporting the same in said first position and being retractable upwardly for lowering said bed to said second position; a kingpin disposed beneath said bed between the front end thereof and said



jack mechanism; a van on said bed, said van having front and rear ends corresponding to the front and rear ends of said bed, said van also having sides, door means movably mounted across the front of said van for opening and closing the same, a generally flat ramp substantially co-extensive in width with the interior of said van at the front end thereof, said ramp being disposable across the front of said van immediately rearwardly of said door means and means for releasably connecting the sides of said ramp with the panel sides of said van, whereby to protect said door means against shifting cargo within said van when said bed is lowered from said first position to the second position.

3,292,804
PIVOTAL AND LONGITUDINALLY MOVABLE ATTACHMENT FOR A LIFT TRUCK
Charles Clarke Veneman, 5658 Wedgewood Drive, Charlotte, N.C. 28210
Filed Oct. 29, 1963, Ser. No. 319,803
11 Claims. (Cl. 214—512)



11. An attachment for a load-handling vehicle of the lift-truck type having a substantially vertical mast, means guided by and movable vertically along said mast, and mechanical means operable from said vehicle for imparting said movement to said vertically movable means, said attachment comprising:

(a) bed means detachably connected to said vertically movable means for movement therewith, said bed means extending forwardly of said vehicle and being at all times approximately centered relative to the longitudinal center line of said vehicle;

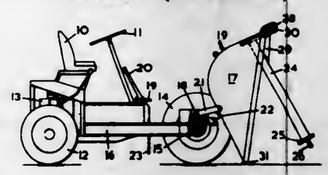
(b) carriage means mounted upon said bed means in spaced relationship to said vehicle for pivotal movement in a substantially horizontal plane through an arc of at least 90° about a substantially vertical axis extending at all times through approximately the longitudinal center line of said vehicle;

(c) elongate frame means mounted upon said carriage means in a normal central position relative thereto for pivotal movement therewith and for longitudinal movement relative to said carriage means in both alternative directions from said normal central position thereof and to offset positions wherein said frame means projects outwardly beyond said carriage means;

(d) an endless conveyor belt carried by said elongate frame means for movement therewith and for rotative movement in both directions relative thereto, said belt having upper and lower flights extending over the entire length and over substantially the entire width of said elongate frame means, the upper flight of said belt extending substantially horizontally adjacent the uppermost surface of said frame means and being adapted to engage a load and upon rotation of said belt to move the load longitudinally of said elongate frame means; and

(e) power means operable from said vehicle for imparting said pivotal movement to said carriage means and said longitudinal movement to said elongate frame means and said rotary movement to said conveyor belt.

3,292,805
METHOD AND APPARATUS FOR TRANSFERRING A DUMPER SKIP FROM A VEHICLE
Leslie Basil Thwaites, % Welch Road Works, Cubbington, near Leamington Spa, England
Filed Nov. 30, 1964, Ser. No. 414,542
Claims priority, application Great Britain, Dec. 2, 1963, 47,389/63
4 Claims. (Cl. 214—515)



1. The method of transferring a dumper skip from the dumper to the ground, including attaching a stand to the skip whilst the latter is still supported by the dumper, tilting the skip until its lowermost edge engages the ground, disconnecting the skip from the dumper, and subsequently tipping the skip away from the dumper about its said lowermost edge for the stand to engage the ground, whereby the skip is stably supported from the ground by its said lowermost edge and by the stand after the dumper is driven away in a position convenient for re-connection to the dumper.

3,292,806
HARVESTER
Robert V. Maag, P.O. Box 668, Mecca, Calif. 92254
Filed Mar. 25, 1965, Ser. No. 442,630
6 Claims. (Cl. 214—519)

1. A harvester for pulpy fruit comprising:

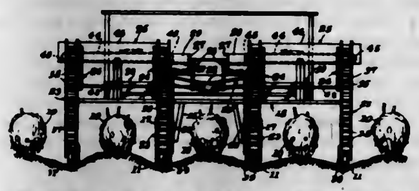
(a) a wheel-borne chassis with a platform elevated above the ground on which the wheels of the chassis travel, and mounting a power plant to drive said wheels and having a power take-off shaft,

(b) a plurality of elevator conveyors extending rearwardly from the rear of said chassis and trailing on the ground between rows of plants bearing such fruit, said elevators being receptive of fruit removed from the plants by pickers trailing the conveyors,

(c) a pair of transverse conveyors on the chassis above the platform, moving oppositely to each other, and receptive of fruit discharged from the upper end of the elevator conveyors,

(d) a pair of parallel shear conveyors on said chassis positioned to receive fruit from the transverse conveyors and to transport the same in a direction toward the front of the chassis,

(e) adjustable means to divert fruit from the shear conveyors laterally toward both sides of the chassis,



(f) two rows of bulk bins along the outer sides of the shear conveyors to receive fruit diverted from the latter conveyors, and

(g) drive means connecting all the conveyors to the take-off shaft of the power plant to drive said conveyors.

3,292,807
TAMPER-PROOF CLOSURE
Erich Golde, 4 Tattenhofener Strasse, 8192 Geretsried, Upper Bavaria, Germany
Filed Mar. 18, 1965, Ser. No. 440,768
Claims priority, application Germany, Apr. 16, 1964, G 40,371
5 Claims. (Cl. 215—7)



1. A resilient cap adapted for closing a bottle having an outwardly projecting bead at the lip thereof, said cap comprising a skirt adapted to extend over and to reach under said bead, an outwardly projecting tab member in the form of a downwardly open pocket attached to said skirt, said tab member having a front wall and a side wall which is substantially thinner than said front wall.

3,292,808
VALVE MEANS FOR BOTTLE
Edward J. Greene, 170 Fordham St., Bronx, N.Y. 10460
Filed Mar. 19, 1965, Ser. No. 441,258
4 Claims. (Cl. 215—11)



3. A baby nursing bottle having a valve arrangement for allowing air to replace expended liquid comprising a bottle having a passage means in its bottom face communicating with the inside of said bottle, a seat disposed in said passage means, an air chamber formed in said passage means in communication with the inside of said bottle, said bottom face of said bottle being provided with a plurality of first air passages in communication with said air chamber, and a valve element inserted in said passage means for controlling the flow of air into the inside of said bottle from said air chamber.

3,292,809
NURSING UNIT
Joseph J. Shomock and Frank E. Boston, Ravenna, and Cyril R. Porthouse, Kent, Ohio, assignors to Dunhill International, Inc., Ravenna, Ohio, a corporation of Delaware
Continuation of application Ser. No. 160,501, Dec. 19, 1961, which is a continuation of application Ser. No. 796,465, Apr. 2, 1959. This application May 24, 1965, Ser. No. 458,170
19 Claims. (Cl. 215—11)



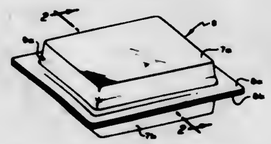
1. In a nursing unit, the combination of:

an elongated bottle, said bottle having an opening at one end thereof, a threaded portion on the outside of said end, a lip surrounding said opening, and a depression formed at the outer peripheral edge of said lip;

a nipple having a tubular barrel, a radial flange extending outwardly from said barrel, an annular upstanding ridge around the extreme outer periphery of said flange, said ridge overlying said depression of said bottle lip when said nipple is placed in a nursing position on said bottle, and vent holes in said flange disposed so as to be just inside and tangent to the inner periphery of said bottle lip when said bottle and nipple are in a nursing position; and

a cap having a top portion and a depending skirt portion, an opening in said top adapted to receive said barrel of said nipple, a threaded portion on the interior of said skirt designed to mate with said bottle threads allowing said cap to be screwed on said bottle, and means on the underside of said top of said cap for causing rubber from the underside of said nipple flange to flow into said bottle lip depression when said cap is screwed onto said bottle.

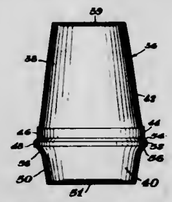
3,292,810
MULTIPACKS FOR PERISHABLE MERCHANDISE
Alfred Schechter, New Rochelle, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,152
15 Claims. (Cl. 220—4)



11. A multipack comprising at least two formed containers, each of said containers disposed so that the open end of one container is abutting the open end of the

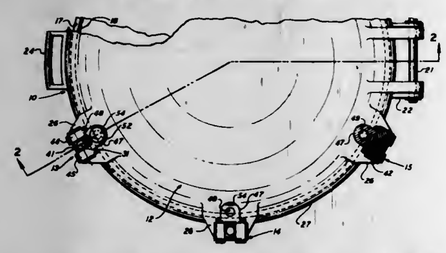
other container; an outwardly projecting peripheral recess disposed within the generally vertical sides of each of said containers spaced near but below said open ends; a removable inner lid positioned in said recesses in each of said containers, said lids being capable of snapping in and out of said recesses with a manually exertable force; and a union member disposed about said containers overlapping the abutment of said open ends and secured thereto for joining said containers, but said union member being capable of manual separation to expose the inner lids of the previously joined containers.

3,292,811
DISPENSING CONTAINER
John R. Lynch, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Dec. 17, 1962, Ser. No. 245,256, now Patent No. 3,215,300. Divided and this application Mar. 2, 1965, Ser. No. 441,401
2 Claims. (Cl. 220—4)



1. A container comprising the combination of an upper component and a lower component, said upper component including a side wall, an inclined portion extending generally downwardly and upwardly from the lower periphery of said upper component's side wall, a flange extending downwardly from the lower periphery of said upper component's inclined portion, said lower component including a side wall having an upwardly extending and concavely outwardly veering peripheral portion, a flange extending upwardly from the periphery of said outwardly veering portion, an inclined portion extending generally upwardly and inwardly from the upper periphery of said lower component's flange, the inclined portion and flange of said upper component having generally the same extent and angularity as the inclined portion and flange of said lower component, at least one of said inclined portion and flange being sealingly engaged with the other of said inclined portion and flange whereby the jointure between said components is not readily apparent.

3,292,812
ADJUSTABLE CLAMP
Bert N. Svenson, 10747 Spry St., Norwalk, Calif. 90650
Filed July 27, 1964, Ser. No. 385,391
16 Claims. (Cl. 220—55)



1. A cam clamp for clamping a workpiece to a work rest and comprising a threaded member, means securing the threaded member to the work rest, a cam lobe secured to the threaded member, a first and a second cam surface on the lobe at diametrically opposed locations adapted to urge the workpiece into clamping relationship with the work rest, handle means adapted to turn the lobe about an axis extending transversely to the long axis of the threaded member, means for limiting the turning of the lobe; the cam lobe being displaceable with respect to the work rest along the member axis such that the cam lobe may be moved to and from the workpiece, and rotatable with respect to the long axis of the threaded member such that the cam lobe may be displaced to the opposite side of the threaded member, the lobe being further rotatable about the axis transverse to the long axis of the threaded member such that the first and the second cam surfaces of the cam lobe may be brought alternatively into clamping relationship with the workpiece.

3,292,813
TRANSPORTATION CONTAINERS AND METHOD
Robert N. Roegner, Blue Island, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,188
1 Claim. (Cl. 220—63)



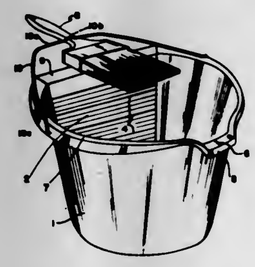
A shipping container structure including a flexible bag means and rigid exterior case, said bag means having four sides, a bottom and top portion, said top portion being open and having extensions of two opposite sides forming parallel lifting sleeves across said sides, said exterior case in substantially conforming shape to said bag to support said bag, and to support said sleeves in a parallel position to allow the entry of the members of a lifting means into said sleeves for removing said flexible container from said case for transporting a group of articles contained therein.

3,292,814
FUSIBLE PRESSURE RELIEF FOR TANKS AND THE LIKE
Howard C. Krone, Overland Park, Kans., assignor to William A. Knapp Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 15, 1965, Ser. No. 439,545
12 Claims. (Cl. 220—89)



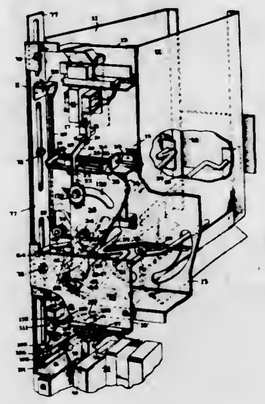
4. A fused tank vent comprising:
(a) a tank having a wall defining an aperture with a peripheral portion therearound,
(b) a closure member overlying said peripheral portion and seating thereon,
(c) lugs on opposite sides of said aperture,
(d) means carrying said closure member and having one end hinged on said lugs at one side of said aperture,
(e) a lock lever having one end hinged on the lugs on the other side of the aperture and extending therefrom in overlying relation to said closure member,
(f) said latch lever having cooperating engagement with said closure member carrying means when in closed position to retain the closure member seated on said wall,
(g) a fusible bushing in each of said lugs,
(h) and bearing members in said lugs and movable in a direction outwardly of the tank wall, said bearing members having bores therein for receiving the hinge of the respective closure member carrying means and lock lever, said fusible bushings engaging the respective lugs and bearing members for retaining the respective bearing members against outward movement whereby fusing of the bushings permits outward movement of the respective hinges and closure member in response to pressure in the tank to unseat the closure member and vent the tank interior.

3,292,815
PAIL
French Eugene Smith, Akron, Ohio, and Laurance F. Plaskan, Mountain View, Calif., assignors to The Wooster Brush Company, Wooster, Ohio, a corporation of Ohio
Continuation of application Ser. No. 319,322, Oct. 28, 1963. This application Aug. 5, 1965, Ser. No. 480,244
4 Claims. (Cl. 220—94)



4. A pail comprising a body having side walls and a bottom, the upper edge of said side walls being formed on opposite sides with outwardly and downwardly extending flanges, the downwardly extending portions of said flanges being provided with oppositely located apertures, and a bail having inwardly directed end portions which extend into said oppositely located apertures for pivotally mounting said bail to said flange portions, said bail comprising a pair of side portions and a midportion connecting said side portions together, said midportion having a substantially straight portion parallel to a plane through said oppositely located apertures, said side portions extending from said end portions in a direction substantially parallel to the downwardly extending flange portions for a distance slightly greater than the distance between said apertures in said flanges and the outer edge of said outwardly extending flange portions, said side portions beyond said parallel portions being bent in an inward direction overlying said upper edge of said pail and also slightly bent out of the plane of said parallel portions in one direction to permit said side portions to engage and rest upon said upper edge of said pail body when said bail is lowered in said one direction, said side portions being of such a length that said midportion of said bail is substantially horizontally outwardly spaced from the upper edge of said pail when said bail is lowered as aforesaid by a distance sufficient to provide a rest spaced from said upper edge for supporting a brush by said midportion and said upper edge.

3,292,816
REVERSIBLE REGULATOR FOR DISPENSING MECHANISM FOR ARTICLES IN STAGGERED STACKS
Harry R. Payne, Chattanooga, Tenn., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 17, 1965, Ser. No. 440,467
5 Claims. (Cl. 221—9)

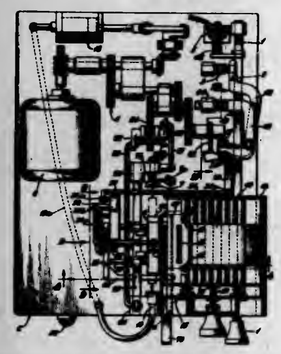


1. A mechanism for dispensing a single bottle at a time from a stack of bottles in a bin, comprising supports for said bottles adjacent the lower end of the bin mounted for downward rotary movement for releasing the bottle to be dispensed, a regulator for control of releasing of the bottle to be dispensed disposed beneath said supports in stand-by position for engagement by said supports, motor means for driving said regulator during movement of one of said supports maintaining engagement between said one of said supports and said regulator, means for reversing said motor means, means displaced by engagement of said regulator with said one of said supports jammed in a downward position, means associated with said means displaced for actuating said means for reversing said motor means whereby said regulator is moved from engagement with said jammed support and means actuated thereafter by said motor means for returning said means for reversing said motor means to normal position.

3,292,817
AUTOMATIC CIGARETTE LIGHTER
Francesco Monasterio, 47—22 39th Place, Long Island City, N.Y. 11101
Filed Sept. 2, 1964, Ser. No. 394,085
7 Claims. (Cl. 221—145)

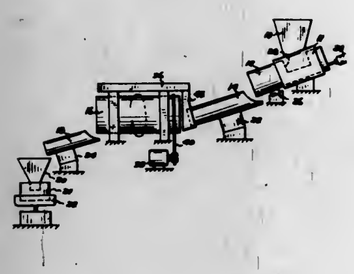
1. An automatic cigarette lighter comprising an air puffing means and an igniter means, both said means being spaced from each other and arranged so as to accommodate a cigarette between them, both said means being axially aligned and alternately movable relative to each other towards and away from each other, and wherein said puffing means comprises a puffing cylinder connected to an air pump, and both said means are operatively connected to a gear means which effects

the aforementioned movement of said puffing and igniter means, and further comprising a driving means, an actuator rod biased to an outward position, a first latch



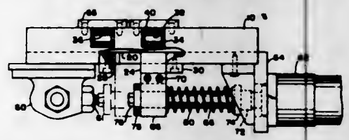
means adapted to hold said rod in an inward position, said driving means being started by said rod in said inward position, said driving means being operatively connected to said gear means and to said pump.

3,292,818
MATERIAL FEEDING SYSTEM
Henry Jaworski, 8650 Mount Elliott, Detroit, Mich. 48211
Filed Oct. 18, 1965, Ser. No. 497,194
4 Claims. (Cl. 221—201)



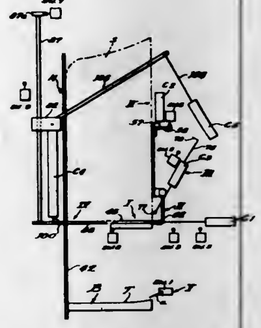
4. A dribble feed system comprising:
a hopper containing parts to be fed and having an outlet at its lowermost portion;
an inclined tube positioned directly beneath the outlet of said hopper;
means for causing said inclined tube to oscillate about its longitudinal axis;
said inclined tube having a plurality of inwardly projecting ridges along its inner length, said ridges being non-parallel to the axis of said tube;
said inclined tube further having a port therein extending partially around the circumference of the tube, said port being positioned directly beneath the outlet of said hopper and cooperating therewith to act as a valve to open and close the flow path therebetween as said inclined tube is oscillated.

3,292,819
NUT TRANSFER APPARATUS HAVING TWO DISCHARGE ASSISTANTS IN SERIES
Arnold B. Ford, Livonia, Mich., assignor to Feedmatic-Detroit, Inc., Southfield, Mich., a corporation of Michigan
Filed June 7, 1965, Ser. No. 461,886
4 Claims. (Cl. 221—236)



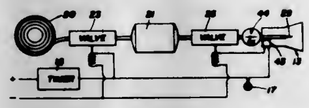
2. Transfer apparatus including a carrier movable into alignment with a delivery passage, air supply means connected to deliver air under pressure to the side of said carrier remote from said delivery passage, a valve controlling said air supply means, a valve actuator, and means connecting said valve actuator to said carrier for moving said carrier, stop means for limiting movement of said carrier, and lost motion means between said carrier and actuator to provide for continued movement of said actuator to actuate said valve only after movement of said carrier has been stopped.

3,292,820
APPARATUS FOR FEEDING PACKS OF SHEETS
Karl A. Klingler, Frankenthal, Germany, and Kermit E. Swanson, Naperville, Ill., assignors to R. R. Donnelley & Sons Company, a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,182
20 Claims. (Cl. 221—293)



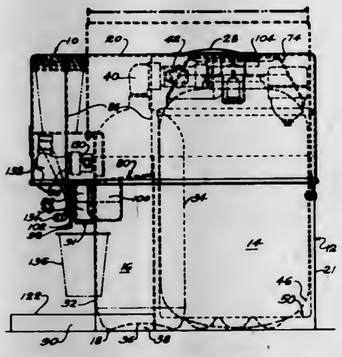
1. Apparatus for feeding packs of sheets periodically onto a supply of sheets therebelow, said apparatus comprising, in combination: a frame; a sheet stack magazine in said frame; movable stack supporting means on the frame beneath the magazine; movable pack carrying means on the frame beneath the magazine, said stack supporting and said pack carrying means cooperating to support a stack of sheets in the magazine; means for moving said stack supporting means from beneath the magazine to leave the stack supported only on the pack carrying means; means for forming a gap between a pack of sheets at the lower end of the stack and the remaining stack; means for inserting the stack supporting means in said gap to support the remaining stack while leaving the pack on the pack carrying means; means for moving the pack carrying means downwardly to permit the pack thereon to be deposited on said supply of sheets; and means for returning said pack carrying means to a position cooperating with the stack supporting means to support the stack.

3,292,821
COIN OPERATED OXYGEN DISPENSER
John James Cowley, 238 Carmichael Ave., Toronto, Ontario, Canada
Filed July 15, 1965, Ser. No. 472,088
10 Claims. (Cl. 222—2)



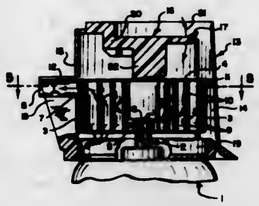
1. Coin operated apparatus for dispensing gaseous oxygen and the like in predetermined unit volume and comprising: a pressure vessel for storing said gas; metering means connected thereto for regulating flow of gas volume therefrom; coin responsive control means for operation of said metering means; a dispensing head connected to said vessel and oriented to direct gas dispensed therefrom towards a purchaser; a dispensing needle having a gas passageway therein, in said dispensing head; and, a grill member movably mounted to conceal said needle and slidable to permit the same to pass therethrough.

3,292,822
SELF-CONTAINED DRINK DISPENSING DEVICE
Thomas E. Crowder, 1343 La Vista Road, De Kalb County, Ga. 30324, and Tryon S. Lindabury, Tuxedo Road, Marietta, Ga. 30060
Filed Sept. 11, 1964, Ser. No. 395,757
14 Claims. (Cl. 222—129.1)



1. In a drink dispensing device, in combination:
(a) a portable cabinet,
(b) means for supporting cup containers and the like thereon to receive a liquid dispensed from said dispensing device,
(c) a removable CO_2 bottle positioned within said cabinet and normally being charged with CO_2 gas under pressure,
(d) a removable water container mounted in said cabinet adjacent to said CO_2 bottle and being connected removably to said CO_2 bottle by fluid conduit means,
(e) a cooling container mounted within said cabinet adjacent to said CO_2 bottle and said water tank and having cooling means therein,
(f) said cooling container being connected by fluid conduit means with said CO_2 tank and with said water tank and receiving fresh water under pressure and CO_2 gas respectfully therefrom, and there being an entrance and a exit in said cooling container for circulating the water,
(g) a water outlet on said cabinet leading from said cooling container and said outlet having a valve means thereon for dispensing water,
(h) a syrup support on said cabinet positioned above said support shelf for cups and said syrup support shelf having a plurality of syrup dispensing positions thereon,
(i) individual and removable syrup containers each having a syrup dispensing outlet,
(j) and syrup control means for each of said syrup containers comprising a valve means operable to release syrup to dispense a measured quantity of syrup in response to a manual actuation.

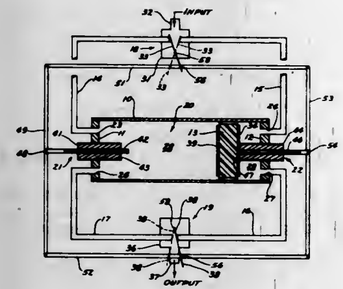
3,292,823
DISPENSER WITH HEAT EXCHANGER AT ITS DISCHARGE OUTLET
Charles R. Weidman, Stratford, and Jan Dawidowicz and Edward A. Beddall, Fairfield, Conn., assignors to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,566
3 Claims. (Cl. 222—146)



1. A heat exchange device in combination with a dispensing container for flowable substance, said container having control means having an outlet for controlling the flow of substance from within said container to a region external thereto, which heat exchange device comprises
(a) a cup-shaped member having a bottom wall and peripheral side walls defining a cavity therein and being formed of material having substantial thermal capacity and good heat transfer properties, the external surfaces of said cup-shaped member being exposed,
(b) a closure member forming the top wall of said cavity,
(c) a channel member consisting of a spirally formed plate, with its upper and lower edges in good thermal contact, respectively, with said closure and bottom wall, and its terminal portion in good thermal contact with said peripheral side walls, said channel member, together with said cup-shaped member and said closure member forming a single elongated conduit,
(d) an inlet to said conduit and an outlet from said conduit spaced from said inlet and located at the terminal end of said conduit and in juxtaposition with a portion of said peripheral side walls,
(e) means communicating between the outlet of the control means and the conduit inlet,
(f) whereby the temperature of a quantity of the substance dispensed from the container may be altered during delivery from the container to a utilization site by flowing over the external surfaces of the cup-shaped member a heatable fluid having a temperature different from that of the body and then opening the

control means of the container to discharge substance into and through the conduit to a utilization site.

3,292,824
FLUID METERING AND DELIVERING DEVICE
Leon J. Arp, 1221 Marston, and James M. Varnum, 428 Ash, both of Ames, Iowa 50300
Filed Mar. 19, 1965, Ser. No. 441,107
5 Claims. (Cl. 222—250)



1. A device for precisely metering and delivering a predetermined volume of fluid comprising:

a tubular container including opposite ends and having a chamber formed between said ends for holding a fluid, said container having at least one port formed therein at each end for the entry of fluid therethrough into said chamber, and having further at least one passage formed therein at each end for the discharge of fluid from said chamber;

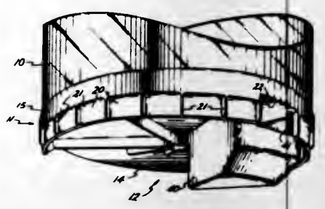
first means operably connected to said container and including a rod adjustably inserted into said chamber at one end thereof for movement axially of said container, said first means operable to open one of said ports and simultaneously to close one of said passages;

second means operably connected to said container and including a rod adjustably inserted into said chamber at the opposite end thereof for movement axially of said container, said second means operable to open the other one of said ports and simultaneously to close the other one of said passages; and

a piston freely mounted in said chamber and having a sliding, fluid tight fit within said container, said piston forming on each side thereof a pair of expansible subchambers the area of which is determined by the position of the said first or second means extended therein, said piston movable in either direction within said chamber in response to the pressure of a fluid through either port and into one subchamber whereby to force a fluid in the other subchamber out through the passage therefor;

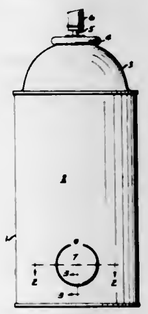
said piston engageable at said one end of said chamber with said first means rod to effect operation of said first means prior to continued movement of said piston toward said chamber one end, and engageable at said opposite end of said chamber with said second means rod to effect operation of said second means prior to continued movement of said piston toward said chamber opposite end, respective operation of either said first means and said second means being proportional to the respective position of said piston and said rod engaged thereby, whereby the entry of fluid into one sub-chamber and the discharge of fluid from the opposite sub-chamber is progressively decreased as said piston continues to move into engagement with a respective container end and after engagement of said piston with a respective rod.

3,292,825
MEASURING DISPENSER
Donald C. Krebs, 6925 W. Villard Ave., Milwaukee, Wis. 53218, and Clarence R. Weisflog, Lisbon, Wis. (W226 N6034 Avon Court, Sussex, Wis. 53089)
Filed Feb. 8, 1965, Ser. No. 431,017
7 Claims. (Cl. 222—362)



1. In an apparatus for dispensing material from a container having an opening; a cap attachable to the container over said opening, said cap having an opening to admit the flow of material out of the container; a control member movable relative to said cap and normally closing the opening in said cap for retaining the material in the container; and a cup secured to said control member for movement therewith so that said cup may be moved into registration with the opening in said cap for receiving and by itself retaining a quantity of the material from the container.

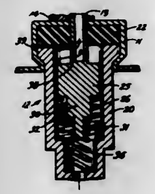
3,292,826
AEROSOL CAN PROTECTED AGAINST EXPLOSION
Robert Henry Abplanalp, 10 Hewitt Ave., Bronxville, N.Y. 10460
Filed Jan. 18, 1965, Ser. No. 426,044
6 Claims. (Cl. 222—397)



1. An aerosol dispenser can comprising a bottom wall, a side wall connected to the bottom wall, a top wall connected to the side wall, said top wall having a filling opening, a mounting cup sealing said filling opening, a valve mounted through the mounting cup, one of said walls containing a relatively large section at least partially circumscribed by a selected line of weakness in the structural material, said line of weakness being designed to rupture at a lower dispenser pressure than the rupture pressure of the remainder of the dispenser.

3,292,827
AEROSOL DISPENSING APPARATUS
John Frangos, Brooklyn, N.Y., assignor to Revlon, Inc., New York, N.Y.
Filed Dec. 24, 1963, Ser. No. 333,123
9 Claims. (Cl. 222—402.24)

1. In dispensing valve apparatus of the character described for controlling the dispensing of a fluid from a pressure container therefor under the action of a propellant in said container and selectively at a plurality of different dispensing flow-rates, the combination which comprises means for mounting said valve apparatus at the top of said container, a valve stem extending from inside said container to the outside thereof, said valve stem being axially movable from an open dispensing position in which stem is partially depressed within said container to a closed position in which said valve stem extends out of said container, an axial flow passage in said valve stem having an outer end forming a discharge opening for fluid dispensed from said container and an inner end adjacent the end of said valve stem which is disposed within said container, a plurality of spaced outlet ports in said valve stem and disposed adjacent said inner end



thereof in flow communication with said axial passage, said ports being disposed and spaced on said valve stem to be sequentially brought into flow communication between the interior of said container and said axial passage as said valve stem is depressed into said open dispensing position and sequentially closed as said valve stem is moved axially outwardly into closed position, and a plurality of biasing means for increasing tangibly in stepwise manner the force necessary to depress said valve stem before said valve stem is sufficiently depressed within said container to open each successive said outlet port for flow therethrough of fluid from within said container through said port and out said passage in said valve stem.

3,292,828
EASY OPENING CAN END
Robert Stuart, Chicago, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,117
2 Claims. (Cl. 222—485)



1. An easy opening can adapted to hold carbonated beverages therein under pressure when a second end is permanently attached thereto in pressure-tight relation, comprising, in combination,

(a) a cylindrical metal body portion, and

(b) an easy opening first end fixedly attached to said body portion, said easy opening end comprising,

(1) a substantially flat end portion including outer peripheral edge portions thereof, said peripheral edge portions being fixedly attached to an end of said metal body portion by a permanent seam,

(2) at least one air vent opening with at least a portion thereof disposed generally centrally of said can end,

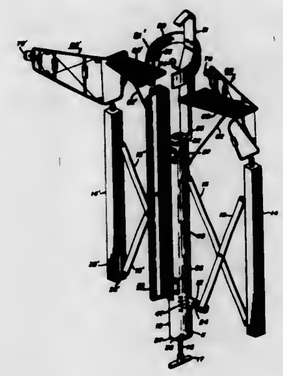
(3) a plurality of pour openings disposed closely adjacent one another and with at least portions thereof disposed adjacent said outer edge portions, all of said pour openings being located within a sector of said end portion which is subtended by an angle of not substantially greater than 90°,

(4) a gas-impermeable exterior tape portion, including a finger-tab-containing end portion therein, said tape portion comprising a flexible metal tape of a thickness less than 0.006" and made from a material of the class consisting of steel and aluminum, said tape portion covering all of said openings and being removably attached to the exterior surface of said can end,

(5) an organic adhesive composition attaching said tape to said end portion,

(6) inner seal means of an organic plastic material covering all of said openings, said seal means covering an area of less than half of the interior surface of said can end portion.

3,292,829
GARMENT SUPPORTING DEVICE
Harry A. Tompkins, North Bergen, N.J., and Michael R. Krupsky, 20 Corsi Road, Bloomfield, N.J. 07003; said Tompkins assignor to said Krupsky
Filed Apr. 28, 1964, Ser. No. 363,119
19 Claims. (Cl. 223—57)



1. A garment supporting device comprising,

(a) a central support,

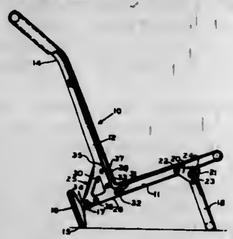
(b) a pair of elongated members supported from said support, said members being disposed on opposite sides of the support and substantially coplanar therewith, each of the said members being supported by a pair of pivotally-connected cross links having inner ends pivotally-coupled to said support and outer ends pivotally-coupled to an associated elongated member,

(c) a pair of sleeve members, each sleeve member being pivotally carried by an associated elongated member and rotatable in a plane normal to that of the elongated member,

(d) an arcuate neck band of resilient material carried by said support and spaced from one end thereof, and

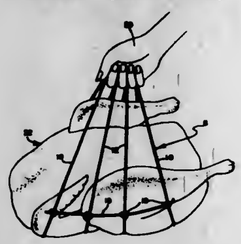
(e) actuating means for simultaneously effecting a pivotal movement of the cross links to adjust the lateral spacing between each of the said elongated members and the support.

3,292,830
HINGE FOR FOLDING BACKPACKS
Richard G. Mack, 807 Carney Row, Monterey, Calif. 93940
Filed Oct. 22, 1965, Ser. No. 501,774
6 Claims. (Cl. 224—9)



1. A support hinge for folding members comprising in combination, a transverse support member having legs projecting forwardly and a vertical member having depending legs, said depending legs abutting the transverse legs at right angles thereto in the operative position, and a hinge formed of an integral piece of material bent in an arc and forming spaced right angled triangles with a base and an altitude, the arcuate bend being the hypotenuse thereof, said base having rearwardly projecting ears pivotally secured to the transverse legs, and the altitude pivotally connected to the depending leg members, said arcuate hypotenuse being a support brace between said transverse legs and said depending legs in the operative position.

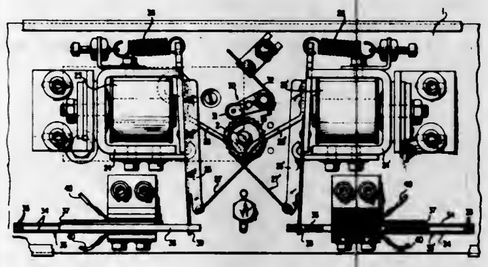
3,292,831
SLING FOR USE IN ROASTING TURKEYS AND THE LIKE
Morris W. Moen, 628 9th Ave., Two Harbors, Minn. 55616
Filed Feb. 8, 1965, Ser. No. 430,869
2 Claims. (Cl. 224—49)



1. A sling for use in roasting turkeys and the like comprising at least four spaced longitudinally extending flexible cords, two of which cords are of the same length and two of which cords are of a shorter length, a knot joining said cords together at each end to form finger holds, at least three additional flexible cords of the same length extending transversely of the longitudinally extending cords, and a knot joining each of said additional cords to each of said longitudinal cords at their point of intersection, said last-mentioned knots each being spaced from each other.

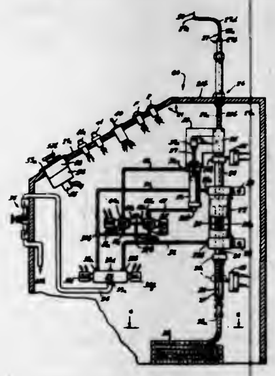
3,292,832
BI-DIRECTIONAL STEPPING MECHANISM
Jacob H. Drillick, South Hackensack, N.J., assignor to Oar-Tronics, Inc., New York, N.Y., a corporation of New York
Filed July 14, 1964, Ser. No. 382,564
5 Claims. (Cl. 226—49)

1. In a bi-directional stepping mechanism comprising a mainshaft to which is attached a ratchet wheel having two sets of teeth facing in opposite directions and having a pawl for engagement with each set of teeth and a pawl disengaging means operable for one pawl when the other pawl is driving the wheel, the improvement comprising:
(a) a pair of pawl carrying members to each of which a pawl is rigidly attached;
(b) said pawl disengaging means comprising a pawl depressor rigidly attached to the carrying member of the opposite pawl;
(c) actuation means for each carrying member to cock its pawl on one set of teeth;



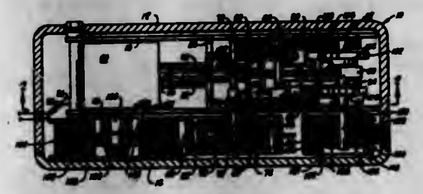
(d) said carrying members, pawls and pawl depressors so geometrically arranged that said actuation of the carrying member engages the depressor with the opposite pawl moving it out of engagement with the opposite set of teeth; and
(e) means for restoring said pawl carrying member, thereby rotating said ratchet wheel by means of its pawl, and also re-engaging the opposite pawl into an opposing set of teeth.

3,292,833
ELECTRIC WIRE THREADING APPARATUS WITH SEMI-AUTOMATIC CONTROL
Jerome Warshawsky, 3285 Bertha Drive, Baldwin, N.Y. 11510
Filed Sept. 1, 1964, Ser. No. 393,597
25 Claims. (Cl. 226—91)



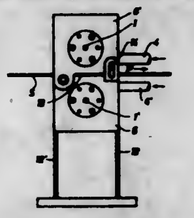
22. An apparatus of the character described for threading wire through a conduit having a bend spaced from one end thereof, comprising a passageway through which said wire is propelled, means associated with said passageway for propelling said wire therethrough in an advancing direction, a nozzle having an elongated delivery end portion for inserting into said conduit end to reach said conduit bend, a mouth terminating said delivery end portion, means mounting said nozzle at the delivery end of said passageway to receive said propelled wire from said passageway for delivery into said conduit bend through said mouth, the latter being constructed and arranged to direct a leading end of said wire at an angle to the advancing direction of the wire passing through said elongated delivery end portion to clear said conduit bend.

3,292,834
STAMP DISPENSING APPARATUS
Earl A. Beck, Duncan, Okla., assignor of forty-five percent to Wiley W. Lowrey, Oklahoma City, Okla.
Filed Mar. 11, 1965, Ser. No. 439,812
8 Claims. (Cl. 226—134)



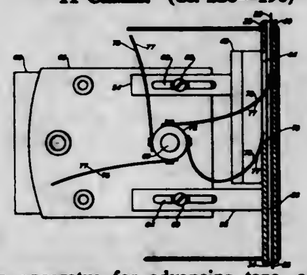
1. A stamp dispenser adapted to operate in response to an electrical pulse, said dispenser comprising:
a housing;
a solenoid mounted on said housing and having an armature member therein, said armature member being movable in response to the electrical pulse;
energy storing means journaled in said housing;
connecting means operably connecting said energy storing means and said armature member, whereby the movement of said armature rotates said energy storing means;
stamp holding means mounted in said housing;
a feed mechanism journaled in said housing and operably connected with said energy storing means whereby rotation of said energy storing means rotates said feed mechanism to dispense stamps from said stamp holding means; and,
stamp feed means journaled in said housing in engagement with the stamps;
a drive disc journaled in said housing and having a least one drive pin thereon engageable with said feed means to cause said feed wheel to rotate and having at least one stop pin located thereon;
a lock arm pivotally mounted in said housing and connected with said armature member for movement into and out of engagement with said lock pin to prevent and to permit, respectively, rotation of said drive disc;
gear means operably connecting said energy storing means with said drive disc, whereby said drive disc rotates in response to rotation of said energy storing means;
a feed mechanism lock including
a shaft journaled in said housing,
a lock pawl mounted on said shaft and engageable with said feed mechanism to prevent rotation thereon,
a cam arm mounted on said shaft and engageable with said feed mechanism to rotate said shaft and move said lock pawl out of engagement with said feed mechanism when said feed mechanism is being rotated by said energy storing means, and
spring means biasing said lock pawl toward said feed mechanism.

3,292,835
VIBRATORY DRIVE FOR INTERMITTENT TAPE TRANSPORT
Gunter Wolf, Hamburg, Stellingen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,245
Claims priority, application Germany, Mar. 28, 1964, P 33,933
4 Claims. (Cl. 226—162)



1. A drive for intermittent tape transport comprising a housing, means for supporting said housing for oscillatory movement, drive means coupled with said housing including a pair of eccentric masses and means for rotating said masses synchronously in parallel planes and in opposite directions whereby said housing is oscillated, and means connected with said housing for intermittently clamping said tape to said housing for transporting said tape during part of the movement of said housing.

3,292,836
TAPE ADVANCING APPARATUS
Jules L. Koch, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 19, 1964, Ser. No. 404,744
11 Claims. (Cl. 226—190)

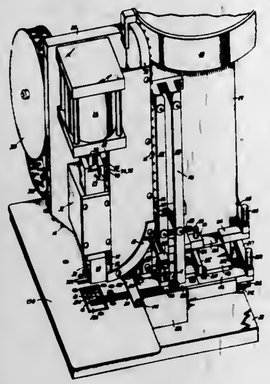


1. An apparatus for advancing tape, comprising enclosed chute means defining a travel path for the tape between two points, said chute means having an elongated opening between the points, said opening exposing a portion of the travel path between the points, elongated bendable blade means having a frictional surface and an end portion, and rotating driver means mounted near said opening and moving said blade means circularly for periodically pressing the end portion of said blade means against said chute and moving the end portion along a predetermined length, said driver means being located so that the end portion enters the opening and thereafter presses against the unexposed part of said chute means.

3,292,837
STAPLING MACHINE
Edward K. Hall, Southington, Conn., and Robert J. Chlabrandy, Sanford, Maine, assignors to North and Judd Manufacturing Company, New Britain, Conn., a corporation of Connecticut
Filed Mar. 19, 1965, Ser. No. 441,083
26 Claims. (Cl. 227—16)

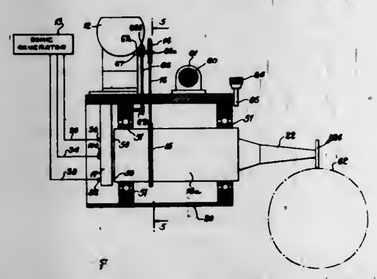
1. In a stapling machine adapted for applying a fastener part with projecting prongs with a fastener backing

plate to a fabric, having a lower anvil assembly with a die for receiving and locating a backing plate in cooperative association therewith, a ram operable for applying a fastener part with the backing plate in the die to the fabric, and means for feeding a reinforcing tape into overlying relationship with the die for reinforcing the fabric in the area of the applied fastener, the improvement wherein the tape feed means comprises means providing a tape guideway in alignment with the die adapted for receiving a reinforcing tape and for guiding the tape forwardly into overlying relationship with the die, a slide



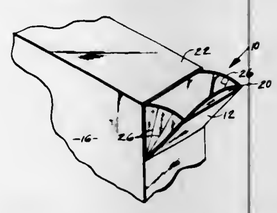
reciprocable between retracted and forward positions along a path adjacent the tape guideway, a rocker pivotally mounted on the slide having upstanding feed pins adapted for positive engagement with the tape by pivoting the rocker in one pivotal direction and withdrawable from the tape by pivoting the rocker in an opposite pivotal direction, and means for actuating the slide forwardly from its retracted position with the rocker positioned with the pins in positive engagement with the tape for feeding the tape forwardly across the die and for retracting the slide from its forward position with the rocker positioned with the pins withdrawn from the tape.

3,292,838
ROTATING SONIC WELDER
Vincent P. Farley, Nixon, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed Oct. 10, 1960, Ser. No. 61,497
1 Claim. (Cl. 228—1)



A rotating sonic welder comprising a linear support, an outer housing mounted for movement along the linear support, an inner housing rotatably mounted within said outer housing, a transducer mounted within said inner housing and fixed in position with respect thereto, a mechanical transformer affixed at one end to the transducer, a disk-shaped tool tip affixed to the outer end of said mechanical transformer, a sonic generator, means connecting said sonic generator to said transducer for vibrating said transducer, said mechanical transformer and said disk-shaped tool tip in longitudinal mode transversely to the linear support, means for supporting the material to be welded substantially parallel to the linear support and holding the same in contact with the edge of said disk-shaped tool tip so as to be welded by the transverse vibrations of said disk-shaped tool tip, an electric motor carried by the outer housing, a chain and sprocket connection between the electric motor and the inner housing for rotating the same whereby said transducer, said mechanical transformer and said disk-shaped tool tip are rotated to present progressively the edge of the disk-shaped tool tip to the material being welded, a chain substantially parallel to the linear support and stationarily anchored at its ends, and a sprocket operated by the electric motor and engaging the chain for moving the outer housing along the linear support for continously welding the material along its length.

3,292,839
BOX SPOUT
Sophia E. Pike, 3705 Northern Pike, Monroeville, Pa. 15146
Filed Nov. 25, 1964, Ser. No. 413,933
1 Claim. (Cl. 229—7)

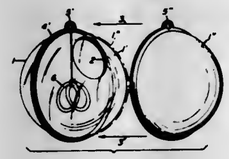


A box spout for container comprising, in combination, a rectangular panel, a L-shaped cross-sectional configurated tab member secured to the upper extremity of the inside portion of said panel, thereby providing lip means for grasping and opening said spout and closing when said spout is not in use, an area of lining secured beneath the top portion of said box, the outer most portion of said tab member adapted to abut the edge of said lining when said spout is in a closed position, the perpendicularly extending side of lining forming foldable web-like pleats, the side portions of said panel secured to said pleats for preventing the spilling of the contents of said box from the sides of said spout, the outside edges are perforated by a plurality of perforations to allow manual rupturing of the edges of said spout in order to pull out said panel, the lower extremity of said panel is provided with a bend line which is in parallel with the upper corner defining the opening from which the contents of said box are poured and the side perforations of said panel extend down to said bend line to prevent further rupturing and said pleats formed in such a manner as to allow to fold easily when said panel is pushed into the box for closing said spout.

3,292,840
PACKING HOLLOW BODIES OF PLASTIC
Max Schmidt, Brauhausstrasse 17, Ansbach, Middle Franconia, Germany
Filed May 9, 1963, Ser. No. 279,671
3 Claims. (Cl. 229—8)

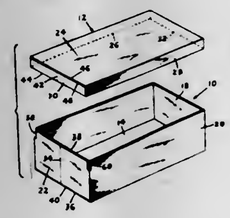
1. A hollow packing body of plastic material comprising two complemetary semi-spherical parts, a rim

projecting outwardly adjacent the open end of each semi-spherical part adapted to be joined together to provide a spherical hollow body, one of said semi-spherical parts having an opening therein for the insertion of and removal from the hollow body of gift articles, a third complementary semispherical part, a rim projecting outwardly adja-



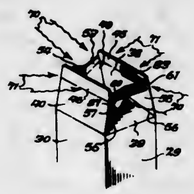
cent the open end of said third semi-spherical part, said third semi-spherical part being adapted to fit over the semi-spherical part provided with the opening and having its rim removably secured to the rim of the last mentioned semi-spherical part for closing the opening, and suspension means for said rims for permitting the hollow body to be suspended from a support.

3,292,841
CONTAINER USEFUL FOR MERCHANDISING AND STORAGE
Marion Donovan, 435 E. 52nd St., Southport, Conn. 10022
Filed Mar. 9, 1965, Ser. No. 438,221
10 Claims. (Cl. 229—16)



1. In a container comprising a box body and a telescoping cover, said box body having a pair of vertically disposed side walls, a pair of vertically disposed end walls, a bottom wall and an open top, and said cover having a top wall and a plurality of vertically disposed flanges adapted to telescope over the upper edge portions of the outer surfaces of the side and end walls of said box body to position the top wall of said cover over the open top of said box body, the improvement which comprises means provided in said box body for facilitating separation of one of said end walls of said box body into relatively movable portions comprising a pair of flaps separated from the bottom wall of said box body and hinged along vertical lines respectively to the side walls of said box body adjacent said end wall, said flaps being foldable respectively into face-to-face contact with said side walls whereby to form an access opening in said box body in the area formerly closed by said end wall, means provided in said box body for facilitating the formation of a slot extending downwardly from the open top of said box body along each of said hinge lines for a distance substantially equal to the vertical dimension of the flanges of said cover, and means provided in said cover for facilitating the separation along predefermined lines of portions of at least one flange thereof to form a pair of tabs hinged to said cover, and said tabs being foldable into positions in which they are insertible respectively into said slots and into frictional engagement between said separated and folded flaps and the side walls against which said flaps are folded to hold said cover in position upon said box body.

3,292,842
PLASTIC COATED CONTAINER
Denis K. Huang, Philadelphia, and Harold B. Moore, Richboro, Pa., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed May 3, 1961, Ser. No. 107,348
3 Claims. (Cl. 229—17)



1. A gable-top container formed from a blank of paperboard having a polyethylene coating covering each surface thereof and comprising a tubular body having a bottom closure thereon, a pair of opposed roof panels inclined toward each other and overlying said body, a pair of opposed triangular end panels in-folded between said roof panels from the opposite gable ends formed by the latter, two pairs of triangular fold-back panels each pair of which is integral with a respective one of said in-folded triangular end panels along fold lines which are substantially in contact with said roof panels, said fold-back panels being folded against the undersides of said roof panels, a pair of side rib panels each integral with and surmounting a respective roof panel, two pairs of end rib panels, each end rib panel being integral with and surmounting a respective fold-back panel, the end rib panels of each pair being folded to lie against each other and to lie against the inner surface of a respective side rib panel, the height of said end rib panels being less than the height of said side rib panels, said rib panels defining a central laminar top rib divided longitudinally into a fixed portion and a movable portion, a sanitarily protected extensible pouring spout housed in collapsed condition within said container and defined in part by one of said triangular end panels, an adjacent pair of said fold-back panels and an adjacent pair of said end rib panels, said spout also being defined by adjacent portions of said roof panels and side rib panels, said rib panels being adapted to be sealed together to form a liquid-tight seal by the application of heat and pressure thereto to bond together the contacting polyethylene coated surfaces thereof, and means to facilitate opening of said spout into said extended condition thereof comprising an abhesive coating covering substantially the entire inner and outer surface areas of said adjacent pair of end rib panels except for a narrow strip along the line of juncture between said adjacent pair of end rib panels and said respective side rib panels, and an abhesive coating covering a selected area on the inner surface of each of said side rib panels, said selected area on each of said side rib panels including substantially the entire area of contact of said side rib panels and said adjacent end rib panels and a strip of contact between said side rib panels located above said adjacent end rib panels but beneath the upper edges of said side rib panels.

3,292,843
CARRIER CARTON RETAINING MEMBER

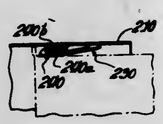
Francis A. Chidsey, Jr., Devon, and John V. Mahon, Lansdale, Pa., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Apr. 27, 1964, Ser. No. 362,623
5 Claims. (Cl. 229—40)

1. An open-end, sleeve-type, wrap-around carrier carton formed from a unitary blank of foldable paperboard for enclosing at least one row of cylindrical objects, such as chimed cans, having on corresponding ends thereof recessed end walls, comprising:

(a) opposed pairs of parallel walls hingedly interconnected to form a tubular structure for enclosing the ends and sides of the objects;

(b) one of the walls enclosing the ends of the objects having, adjacent each open end thereof, a retaining tab attached thereto, on a hinge line and adapted to be folded into the carton toward the inner surface of said one wall for disposition within an adjacent recessed end of a packaged object to prevent the object from accidentally moving out of the open end of the carton; and



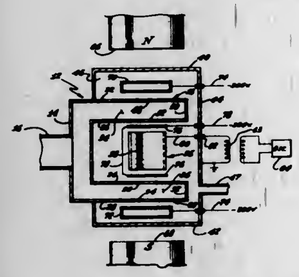
(c) a spacer member foldably connected to said tab and said one wall and operable to urge a portion of said tab into snug, abutting engagement with the recessed end wall of said packaged object;

(d) said spacer member comprising a pair of panels hinged to each other and to the retaining tab and one carton wall, respectively.

3,292,844
VACUUM PUMP

Kenneth R. MacKenzie, Pacific Palisades, Calif., assignor, by mesne assignments, to Robert A. Cornog, Woodland Hills, Calif.

Filed May 23, 1962, Ser. No. 197,074
24 Claims. (Cl. 230—69)

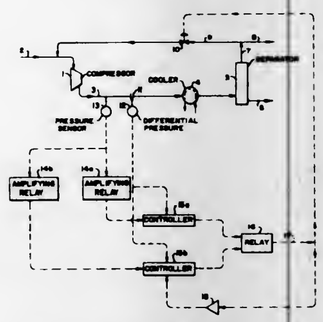


1. In a device for transferring a gas from a region of high vacuum to a region of low vacuum the combination of a passageway extending between said regions, electrode means adjacent said passageway, and means for energizing at least a portion of said electrode means with an alternating voltage to cause free electrons to oscillate axially of said passageway and through said regions, and a collector disposed in the region of low vacuum.

3,292,845
METHOD FOR PREVENTING SURGING OF COMPRESSORS

Antonius M. Hens, The Hague, Jelle A. Landstra, Amsterdam, Netherlands, and Nicolaas C. Maris, Curacao, Netherlands Antilles, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 3, 1964, Ser. No. 348,974
Claims priority, application Netherlands, Mar. 6, 1963, 289,829
2 Claims. (Cl. 230—115)



1. A method for protecting a centrifugal compressor from surging by using a by-pass line having a control valve disposed to control the flow through the by-pass line, the position of the control valve being controlled by a control system, said method comprising:

measuring both the gas flow through the compressor and a pressure level of the compressor flow;

comparing the measured gas flow with the measured pressure level times a first constant in a first controller having only a narrow proportional action to obtain a first signal;

comparing the measured gas flow with the measured pressure level times a second constant in a second controller having a broad proportional and integral action to obtain a second signal;

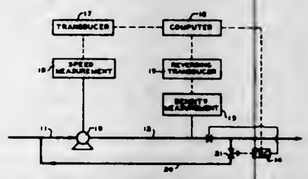
comparing said first and second signals to obtain the one of said first and second signals that will cause the largest opening of the control valve;

opening said control valve in response to the one signal.

3,292,846
CENTRIFUGAL COMPRESSOR OPERATION

Ernest A. Harper and Leland G. Kitchen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 30, 1964, Ser. No. 355,707
7 Claims. (Cl. 230—115)

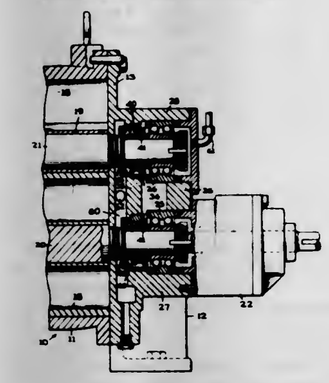


1. A method of operating a centrifugal compressor having a recycle line between the discharge and the intake which comprises measuring the density of said discharge gas, measuring the speed of said compressor, and then manipulating the rate of flow of recycle gas from the discharge of said compressor to the intake of said compressor responsive to said density and speed measurements to maintain a flow through said compressor sufficient to prevent surging of said compressor.

3,292,847
LUBRICANT SEALING MEANS FOR ROTARY POSITIVE DISPLACEMENT PUMP

David B. Herrick, Connersville, Ind., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Nov. 3, 1964, Ser. No. 408,583
10 Claims. (Cl. 230—141)



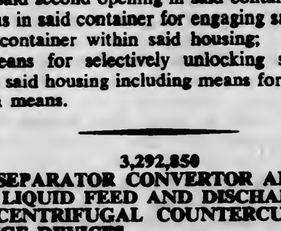
1. In a rotary positive displacement vacuum pump having a casing forming a pumping chamber, a fluid inlet and a fluid outlet in communication with said chamber, a pair of multilobed interfitting impellers mounted within said chamber on spaced parallel shafts geared together for rotation in opposite directions so as to displace fluid from said inlet to said outlet, bearing means supporting each of said shafts at the opposite ends thereof, and means for supplying lubricating oil to said bearing means, the improvement comprising sealing means for preventing oil from passing from said bearing means into said chamber, said sealing means being disposed between said bearing means and said chamber and including a rotatable member carried by each of said shafts, said member having a slinger element at the end thereof adjacent said bearing means, a fixed sleeve member disposed about and spaced from each of said rotatable members and having at least one annular groove in the inner surface thereof, said groove forming a pocket for trapping oil when the pump is shut down, a drainage passage in said fixed sleeve member leading from said groove to a position adjacent said slinger element, whereby trapped oil is pumped out of said pocket through said drainage passage upon rotation of said slinger element and means for preventing a differential pressure build up across said sealing means including a plurality of passages, each passage having one end disposed in common communication and the other disposed in communication with one side of said sealing means such that the pressure across said sealing means is equalized.

3,292,848
PISTON-TYPE COMPRESSOR WITH AUTOMATIC CHECK VALVES

Theodor Karl Kohler, Vienna, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria

Filed Mar. 1, 1965, Ser. No. 436,166
Claims priority, application Austria, Mar. 2, 1964, A 1,768
6 Claims. (Cl. 230—231)

1. A piston-type compressor comprising a cylinder and a cylinder head, automatic check-valves of which at least one is secured to the cylinder head in coaxial relation to the cylinder and protruding into the said cylinder and sealed off against the cylinder on its outer side, wherein the valve secured to the cylinder head comprising a seat body provided with a cylindrical threaded lug on a side



facing the cylinder head, and a tubular lug on the cylinder head onto which the seat body of the valve is tightly screwed by means of the cylindrical threaded lug.

3,292,849
RECEPTACLE FOR CURRENCY AND THE LIKE

John A. Ewing, 1618 Las Vegas Blvd. N., Las Vegas, Nev. 89105

Filed Mar. 19, 1965, Ser. No. 441,168
7 Claims. (Cl. 232—43.2)

1. A receptacle for currency and the like, comprising:

a support housing for attachment to the underside of a table or the like having a slot therein, said housing having an open front for receiving a closed container, a side for covering a side door in said container, a bottom for supporting said container as it slides into said housing, and a top opening for communicating with said slot in said table;

a closed container for sliding within said housing, said container having a first opening in its top for communicating with said opening in said housing, a second opening in its top, and a normally locked side door to be covered by said side of said housing;

cooperative means between said housing and said container for releasably locking said container within said housing including a pin extending downward from the top of said housing and adapted to extend into said second opening in said container, and catch means in said container for engaging said pin to lock said container within said housing;

and means for selectively unlocking said container from said housing including means for releasing said catch means.

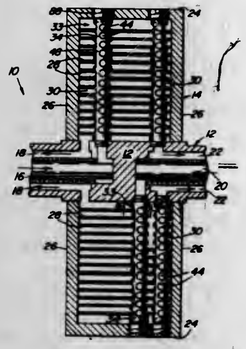
3,292,850
PHASE SEPARATOR CONVERTOR AND ADJUSTABLE LIQUID FEED AND DISCHARGE MEANS FOR CENTRIFUGAL COUNTERCURRENT EXCHANGE DEVICES

Collin M. Doyle, 21 W. Elm St., Chicago, Ill. 60610

Filed Apr. 25, 1966, Ser. No. 544,971
19 Claims. (Cl. 233—15)

1. Adjustable liquid feed and discharge means for centrifugal countercurrent exchange devices of the character described comprising a liquid feed tube having

a plurality of longitudinally spaced inlet openings formed therein, a plurality of sleeves slidably and rotatably fitted in end-to-end relationship within said tube, one of said sleeves having a selector opening formed therein, said



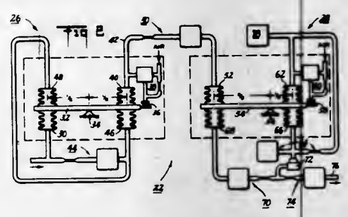
sleeves being arrangeable so that said selector opening may be selectively positioned in registry with any one of said inlet openings, and removable closure means operationally retaining said sleeves within said tube.

3,292,851
DECIMAL POINT COVERS
Billy B. Tippin, Orangeburg, S.C., and Walter Ruff, West Seneca, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Filed Jan. 18, 1965, Ser. No. 426,252
1 Claim. (Cl. 235—61)

In a calculating machine having a shiftable carriage, a faceplate for the carriage having viewing holes therein and decimal point indicators laterally aligned one each located between and below each adjacent pair of viewing holes:

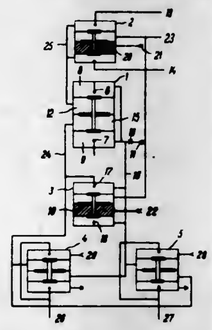
(a) A plurality of slots in said faceplate laterally aligned with said decimal point indicators;
(b) a plurality of molded plastic decimal point covers;
(c) a pair of tabs extending in a spaced relationship from the rear of each of said covers, each of said tabs having an enlarged outer end which is flexible inwardly upon insertion into one of said slots and then outwardly to bring the enlarged outer end into engagement with the underside of the faceplate;
(d) an arcuate lateral groove formed in the inward portion of each tab; and
(e) a flexible wire laterally positioned behind said faceplate to simultaneously engage the grooves of all of the tabs of all of said covers to hold said tabs outwardly wherein said tabs are held in frictional engagement with the sides of said slots thereby providing an efficient connection unaffected by shifting movement of said carriage.

3,292,852
DEAD-TIME SIMULATOR FOR INDUSTRIAL PROCESS CONTROL APPARATUS
Francis G. Shinskey, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass.
Filed Jan. 25, 1962, Ser. No. 168,639
8 Claims. (Cl. 235—200)



8. A dead-time simulator comprising, in combination, first and second signal-responsive means connected in series such that the output of said first signal-responsive means is applied to an input to said second signal-responsive means; one of said signal-responsive means comprising phase-shifting means having means to develop an output signal (1) in phase with its input signal at zero frequency, (2) shifted in phase 90° with respect to its input signal at some intermediate frequency, and (3) shifted in phase an amount approaching 180° at high frequencies relative to said intermediate frequency, whereby said phase-shifting means produces, in response to a step input signal, an output which initially is inverted with respect to the sense of the input step but which gradually and over a relatively long period of time changes to a signal having the same sense as the original step input; the other of said signal-responsive means comprising integrating means arranged to develop an output signal corresponding to the time integral of the signal applied to the input thereof.

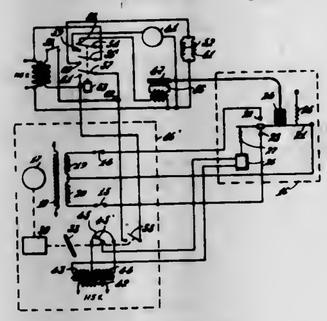
3,292,853
COMPARATORS OF PNEUMATIC ANALOG SIGNALS
Robert Jurjevich Fedoseev, Moscow, U.S.S.R., assignor to Nauchno-Issledovatelsky Institute Teploenergeticheskogo Priborostroenija, Moscow, U.S.S.R.
Filed Oct. 16, 1964, Ser. No. 404,380
1 Claim. (Cl. 235—200)



A device to compare pneumatic analog signals comprising a four-chamber three-diaphragm two nozzle comparison element with a rigid center portion connecting the diaphragms and thereby forming a diaphragm set, two

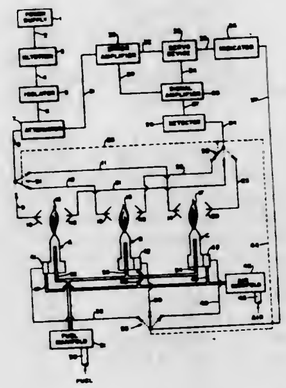
chambers of which are measuring chambers; an air pressure resistor; two four-chamber three-diaphragm two nozzle inlet air valves each consisting of two control chambers, one of which control chambers is connected with a control pressure line and the other with a back pressure supply source; the first of said inlet valves having jet chambers connected with each other and with respective inlet lines of pneumatic signals, said chambers being connected with one of said measuring chambers of said comparison element; the second of said inlet valves having jet chambers connected with the outlet of said comparison element and through the air pressure resistor with a supply line; two four-chamber three-diaphragm two nozzle outlet valves, each of the latter said valves consisting of two control chambers one of which chambers is connected with the outlet of the comparison element and the other one with the other measuring chamber of said comparison element, said other measuring chamber being also connected with the second inlet valve, the air lines of the jets of each said outlet valve being interconnected with one another thereby forming the outlets of the comparator.

3,292,854
HEAT-STORAGE SYSTEM
George Warren Webb, Revere, Mass., assignor to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 24, 1964, Ser. No. 391,562
2 Claims. (Cl. 236—9)



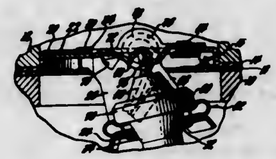
1. Heat-storage apparatus comprising a storage chamber having a passageway therethrough for fluid to be heated, the passageway having an inlet and an outlet, a conduit for delivering heated fluid from said outlet to a place to be heated, a duct for supplying fluid to be heated to said inlet, a duct to supply fluid to said conduit at a predetermined location, a blower for circulating fluid through said conduit, valve means for controlling the proportion of fluid flowing through said ducts, means for controlling said valve means including a first thermostat responsive to the temperature in said space, and means for causing said valve means to close said first duct when said first thermostat reaches a predetermined maximum temperature, said controlling means comprising a second thermostat responsive to the temperature of the fluid in said conduit, means for activating the second thermostat when the first thermostat reaches said predetermined maximum temperature, a motor controlled by said second thermostat, and a switch actuated by the motor to move into operative position when said first duct is closed, said switch causing said blower to start when said first thermostat reaches a predetermined minimum temperature.

3,292,855
MICROWAVE SENSING APPARATUS AND METHOD FOR BURNER CONTROL
Franklin J. Wright, Watchung, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 492,161
5 Claims. (Cl. 236—15)



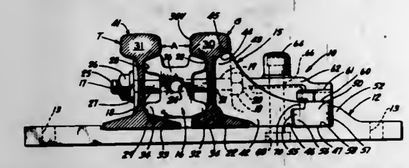
1. A microwave burner control system for a plurality of burners having a common fuel source and a common air source comprising means for determining the electrical conductivity of each burner flame, said means including means for propagating monochromatic microwaves transversely through the center region of each burner flame, means for detecting the propagated waves, means for indicating variations in fuel-air ratio as a function of variations in the propagated waves, air control means adapted to vary the air supply to each burner, and connector means adapted to transmit electrical signals between the propagating means, the detecting means, the indicating means, and the air control means.

3,292,856
SHAFTLESS UNBALANCED THERMOSTATIC VALVE
Paul K. Beatenbough, Medina, and Edward F. Lewis, Newfane, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,193
5 Claims. (Cl. 236—34)



1. A shaftless valve structure including a supporting frame defining a flow passage, a butterfly plate valve extending through said passage and mounted on said frame to rotate on an axis traversing said passage to control the latter, said plate valve extending further on one side of said axis than on the other to create an unbalance, means comprising a thermostatic motor and a coil torsion spring interposed between a portion of said frame and said plate valve for actuating the latter, and said coil spring being fixed to said plate valve so that the axis of said spring is adapted to move with said plate valve with respect to said frame.

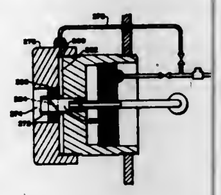
3,292,857
RAILROAD APPARATUS
Kenneth D. Hughes, New City, N.Y., assignor to Abex Corporation, a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,426
2 Claims. (Cl. 238—22)



1. In an assembly for bringing a guard rail into proper spacing from a traffic rail and for holding said spacing against the thrust of a railroad wheel having a flange disposed in a flangeway between said guard rail and traffic rail, said assembly comprising: block means adapted to be disposed between said guard rail and said traffic rail and having surfaces thereon for engagement with said guard rail and said traffic rail to limit relative movement of said guard rail toward said traffic rail, base means adapted to be secured to a railway tie, an adjustable brace means secured to said base means and adjustable to move said guard rail tight against said block means to bring said guard rail into the flangeway spacing with said traffic rail as defined by said block means, bolt means adapted to be extended through apertures in said traffic rail in said block means and in said guard rail to hold said guard rail against movement relative to said traffic rail thereby assisting said adjustable brace means in holding said guard rail against the thrust thereon by a railroad wheel, said block means having first and second sets of opposed side walls presenting first and second sets of vertical faces for selectively engaging the guard rail and traffic rail, the rail engaging faces presented by the first set of opposed side walls being separated by a first predetermined spacing for limiting the flangeway separation between said rails, and the rail engaging faces presented by the second of opposed side walls being separated by a second and different predetermined spacing, and said block means being formed on the upper side thereof with intersecting first and second flangeway grooves respectively joining said first and second sets of vertical rail engaging faces, and said block means having a pair of intersecting apertures therein extending between said sets of opposed side walls for selectively receiving said bolt means.

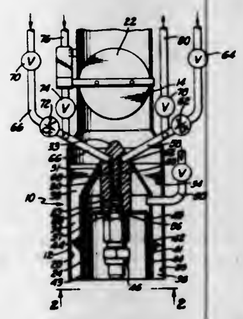
3,292,858
ASPIRATING PROCESS
Albert Biber, Verona, Orvis A. Davis, Sr., Gibsonia, and Bruce R. Walsh, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Original application Dec. 11, 1963, Ser. No. 329,810. Divided and this application Dec. 20, 1965, Ser. No. 514,992
7 Claims. (Cl. 239—8)

1. An aspirating process comprising directing at least one jet of pressurized gas along the interior surface of a uniform hollow cylinder which is enclosed at its rearward end and open at its forward end, said pressurized gas jet being charged directly at the surface of said cylinder and relatively close to the rearward end of said cylinder, said pressurized gas jet directed forwardly toward said open forward end along a path which is tangential with respect to the cylindrical surface so that said jet is both swirled and rapidly discharged through the forward end of said cylinder without substantial accumulation therein, the opening through which said jet enters said cylinder being restricted so that the quantity of gas in said jet is limited and said jet only being charged directly at the surface of said cylinder and relatively remote from the longitudinal axis of said cylinder so that said pressurized gas jet swirls along said cylindrical surface as a relatively thin film in close proximity to the cylindrical wall surface permitting the axial portion of said cylinder to remain relatively free of pressurized gas and thereby forming an evacuated vortex along the axis of said cylinder, exposing a fluid under substantially atmospheric pressure to said vortex through the terminal opening of an axial duct extending from the base of said cylinder to



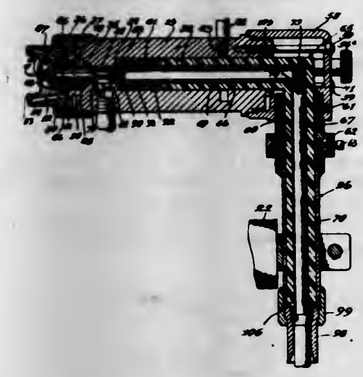
an intermediate axial position within said cylinder, the outer surface of said axial duct having a substantially cylindrical configuration so that the only axial component of movement of said pressurized gas in the vicinity of said axial duct terminal opening is parallel to the axis of the cylinder, said swirling pressurized gas jet aspirating fluid through said axial duct terminal opening, and discharging a swirling spray comprising a mixture of said pressurized gas and said fluid through the opening at the forward end of said cylinder.

3,292,859
PROCESS AND GUN FOR USE IN APPLICATION OF PARTICULATE MATERIALS
Frank L. Landon, Glendora, Calif., assignor to Polymer Engineering Corporation, Azusa, Calif., a corporation of California
Filed Aug. 13, 1965, Ser. No. 482,024
15 Claims. (Cl. 239—9)



1. A process for wetting particulate material with a liquid, said process comprising:
creating an air suspension of the liquid with the liquid being sprayed under pressure in an expanding pattern;
delivering the particulate material in an annular pattern to the liquid-air suspension; and
providing an annular curtain of air concentric of the annular particulate pattern between the sprayed liquid and the particulate material adjacent the base of the liquid-air suspension pattern, said annular air curtain serving to delay the contact of the particulate material with the liquid spray.

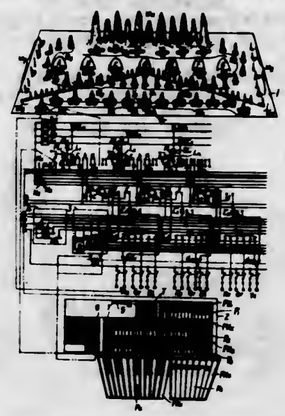
3,292,860
ELECTROSTATIC SPRAY COATING APPARATUS
Herschel A. Williams, Manchester, Tenn., and Edward W. Drum, Indianapolis, Ind., assignors to Ransburg Electro-Coating Corp., a corporation of Indiana
Filed Oct. 28, 1963, Ser. No. 319,142
4 Claims. (Cl. 239—15)



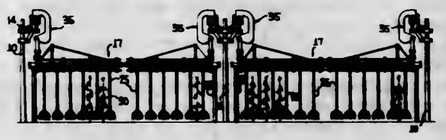
1. An electrostatic spray coating apparatus comprising, a barrel of nonconducting material having a bore therein, said bore defining a coating material chamber at the forward end of the barrel; a plug in said bore closing the rear of said coating material chamber, and sealed at its periphery with the wall of the bore, an electrical conductor passing through the foward wall of the plug, and a seal between the conductor and the plug, said plug having a recess in the rear thereof; a casing of insulating material forming a high voltage circuit housing carrying electroconductive means including a resistor and extending forwardly through said bore to said plug, said housing and resistor extending into the recess and being sealed with the plug wall, the resistor being connected with said conductor; means at the front of said barrel defining a coating material discharge orifice connected with said coating material chamber and an atomizing air orifice, a passage connecting said atomizing air orifice with a source of air and a spray charging electrode operably associated with said coating material discharge orifice and connected with the resistor by said conductor.

3,292,861
CONTROL DEVICE OF DYNAMIC OPERATION AND COLORED ILLUMINATION OF WATER FOUNTAINS IN SYNCHRONISM WITH MUSIC
Koreichi Kawamura, Yoshiko Kawamura, and Koichi Kawamura, all of 66 Jyonyoji, Kamakura, Japan
Filed Nov. 17, 1964, Ser. No. 411,858
5 Claims. (Cl. 239—17)

1. An automatic control device for water fountains comprising, in combination, an organ-type console including, as manually operable components, finger operated keys, foot operated pedals, and keyboard controls; a plurality of individual water fountain nozzle structures arranged in plural groups and operable to discharge water columns therefrom; individual electrically operable means controlling the supply of water to each respective group of nozzle structures; illumination means, variable as to brightness and color, adjacent each nozzle structure group and selectively operable to illuminate the water columns discharged therefrom at a selected brightness and with a selected color; respective first relay means controlling operation of said electrically operable means to supply water to the respective groups of nozzle structures for discharge of water columns from the latter; first control circuits connecting said console to said first relay means to activate said electrically operable means in accordance with selective manual operation of fountain controlling console components; second control circuits connecting said console to said illumination means to activate said illumination means, as to brightness and color, in accordance with selective manual operation or illumination brightness and color selecting console components; second relay means operated responsive to operation of said first relay means to energize said illumination means; and time delay circuit means connected between said first relay means and said second relay means and maintaniing said second relay means operated to energize said illumination means during a time delay corresponding to the decay time of water columns upon interruption of a water supply to a respective group of nozzle structures responsive to "stop" operation of the associated first relay means.



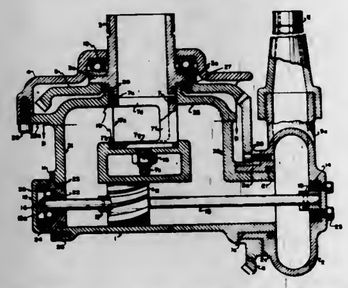
3,292,862
IRRIGATION SYSTEM
John Johnson, 4105 N. McDonald Road, Spokane, Wash. 99216
Filed July 31, 1964, Ser. No. 386,513
2 Claims. (Cl. 239—185)



1. An irrigation system comprising a pair of spaced track members, support means supporting said track members, a spray boom, hangers suspending opposite ends of said spray boom from said track members, drive means connected to said hangers for reciprocating said spray boom along said track members, and depending spray heads suspended from said spray boom for irrigating between adjacent rows of palnts, said support means including terminal supports and intermediate supports, said track members being terminally anchored at said terminal supports, and said intermediate supports having cross arms with track member anchors mounted thereon, said drive means including cables extending between said terminal supports on said cross arms having cable engageable rollers mounted thereon, there being four of said cables connected to said spray boom, and each running to one of four of said terminal supports, and a drive unit positioned between each transversely adjacent pair of said terminal supports and adapted to reel in and pay out associated ones of said cables, each drive unit in-

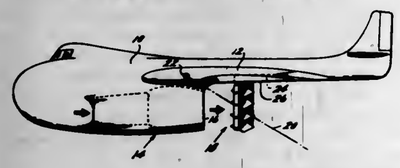
cluding a drive shaft, a drum carried by said drive shaft, a one way drive connection to said drive shaft, and a brake having a one way connection with said drive shaft for retarding the rotation of said drum.

3,292,863
TANK WASHER EMPLOYING AN IMPELLER BRAKING MEANS
William Lynn Nelson, Woodmansterne, England, assignor to Butterworth System, Incorporated, a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 324,157
Claims priority, application Great Britain, Sept. 28, 1962, 36,958/62
11 Claims. (Cl. 239—227)



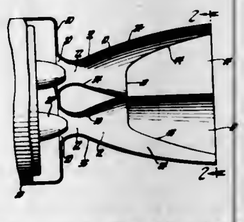
1. An apparatus for distributing jets of liquid in continuously changing direction, e.g. for use in washing the walls of a closed space, e.g. a tank, comprising a nozzle head provided with one or more nozzles for the ejection of said jets, said nozzle head and nozzles being adapted to rotate about one or more axes, means for supplying the nozzle head and nozzles with liquid under pressure and means operated by the said liquid under pressure to cause the said nozzle head and nozzles to rotate in a predetermined first rotational direction, braking means fixedly connected to said nozzle head operated by a portion of the liquid fed to the nozzle head and adapted to continuously apply a resisting torque to said nozzle head in a second, predetermined rotational direction in opposition to the first rotational direction of said nozzle head to retard its motion in accordance with the pressure and quantity of liquid supplied to operate it and means to divert a portion of the liquid under pressure fed to the nozzle head to operate the said braking means in accordance with the speed of rotation of the said nozzle head to maintain a desired speed thereof substantially independent of variations in the pressure of the liquid supply.

3,292,864
THRUST REVERSER AND DEFLECTOR
Denis Pierpoint Edkins, Lymfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Jan. 21, 1965, Ser. No. 426,794
8 Claims. (Cl. 239—265.19)



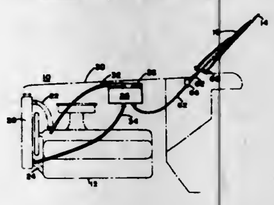
1. For use in an aircraft, a jet engine powerplant, thrust reverser and deflecting mechanism comprising,
a support structure for said entire powerplant,
a pair of frame members carried in said support structure external of said powerplant,
movable louvers in each frame member forming a cascade therewith,
means connected to move said frame members and louvers from said support structure into operative position to form an acute angle with the longitudinal axis of the jet engine and intersect the engine exhaust, and
means connected to actuate the cascade louvers from closed thrust reversing position to open thrust deflecting position.

3,292,865
THRUST VECTOR CONTROL WITH CLUSTERED NOZZLES
Frederick R. Short and James P. Kern, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,850
4 Claims. (Cl. 239—265.25)



1. An exhaust duct configuration for a rocket engine comprising a cluster of at least three convergent-divergent exhaust nozzles, each of said exhaust nozzles having its own converging portion and its own throat portion, each of said exhaust nozzles intersecting the adjacent exhaust nozzles in the diverging portion of the nozzles, each of said exhaust nozzles having a portion of its adjacent wall in the diverging portion of the nozzle removed such that each of said nozzles diverges into a common duct formed by the remote walls of each of said exhaust nozzles.

3,292,866
WINDSHIELD CLEANING SYSTEM
Donald E. Benner, 229 W. Irvin Ave., State College, Pa. 16801
Filed Apr. 5, 1965, Ser. No. 445,442
7 Claims. (Cl. 239—284)



1. A window cleaning system for a motor vehicle having an engine with a hot fluid flow, and a windshield, comprising in combination:
a reservoir; said reservoir containing window cleaning fluid;
an outer jacket surrounding said reservoir forming a jacket space between said reservoir and said outer jacket;
an intake duct in communication with said jacket space and said source of said hot fluid flow;
an outflow duct in communication with said source of said hot fluid flow;
a spray nozzle directed at said windshield and in communication with said reservoir;

means to deliver said window cleaning fluid through said spray nozzle onto said windshield;
whereby the hot fluid flow from said engine circulates through said jacket space to keep said window cleaning fluid hot.

3,292,867
FERTILIZER EJECTOR
Edwin James Hunter, Riverside, Calif., assignor to Moist O'Matic Inc., Riverside, Calif., a corporation of Minnesota
Filed Aug. 21, 1964, Ser. No. 391,239
3 Claims. (Cl. 239—322)



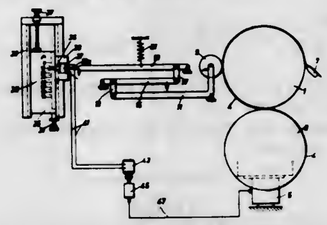
1. In an apparatus for cyclically ejecting into the flowing water of a sprinkling system at the beginning of each irrigation cycle a predetermined quantity of liquid fertilizer comprising in combination automatic programming control means for introducing water into a plurality of conduits leading to a double valve assembly, a conduit extending from the double valve assembly to an ejector, a receptacle, a solution in said receptacle, an ejector means provided with means defining plural flow openings therein associated with the solution in the receptacle, a valve means, second and third conduit means constituting flow openings in the ejector with communication therebetween controlled by said valve means, each of said latter conduits also being in communication with the solution in said receptacle and means within the ejector for dispensing a charge of the solution therefrom through the third conduit into the stream conveyed by the first conduit upon actuation of the ejector means by flow in the first conduit.

3,292,868
SPRAY NOZZLE
James S. McCartney, St. Paul, and Richard V. De Leo, Hopkins, Minn., assignors to Aero Spray, Inc., Minneapolis, Minn., a corporation of Minnesota
Original application Sept. 13, 1962, Ser. No. 223,428, now Patent No. 3,237,870, dated Mar. 1, 1966. Divided and this application Feb. 25, 1966, Ser. No. 530,206
4 Claims. (Cl. 239—422)



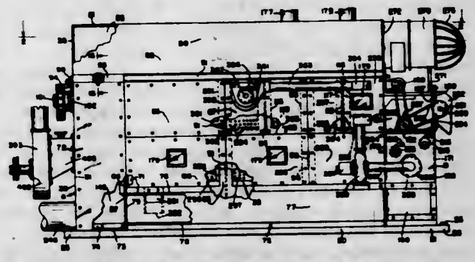
1. A spray nozzle comprising a longitudinally extending nozzle body having a main chamber and a first longitudinally extending passage placing the main chamber in fluid communication with the atmosphere, said nozzle body having a transverse slot formed in the outlet end to intersect said passage, a deflector plate mounted in said slot to extend forwardly of said nozzle body and a first discharge tube subassembly including a discharge tube mounting member having a main chamber and extendable into the nozzzle body main chamber and an elongated tube joined to said mounting member to open into the mounting member main chamber, extend into said passage and being elongated in the direction of elongation of said passage, said tube having a discharge end overlapping one surface of the deflector plate, said discharge tube and mounting member providing a first fluid passageway, and said subassesmbly and nozzle cooperatively providing a second fluid passageway that discharges to the atmosphere through said passage for transporting the fluid flowing through said first passageway.

3,292,869
GRINDING APPARATUS FOR PASTE-LIKE OR DOUGH-LIKE MATERIAL
Ernst Beyeler, Beutbener Str. 25, Aalen, Wurttemberg, Germany
Filed July 13, 1964, Ser. No. 382,327
Claims priority, application Germany, July 12, 1963, L 45,336
4 Claims. (Cl. 241—37)



1. A grinding apparatus for paste-like or dough-like material comprising
at least two grinding rollers adjustable realtive to each other and adapted to pass the material to be ground therebetween, said material to form a layer on said one of said rollers receiving said material,
a mechanical sensing member adjustably disposed radially to said one of said rollers for sensing the thickness of said layer of said material,
lever transmitting means operatively connected with said mechanical sensing member and enlarging the changes of thickness of said layer sensed by said sensing member,
a setting device supporting and adjusting the distance between the other of said rollers and said one of said rollers, and
means operatively connected with said lever transmitting means for operation of said setting means in the required direction in response to a surpassing of a predetermined given value of the change of the thickness of said layer of material.

3,292,870
VEGETATION PROCESSING MACHINE
Raymond M. Lang, Valley View Hills, Minneapolis, Minn. 55318
Filed Dec. 15, 1964, Ser. No. 418,492
17 Claims. (Cl. 241—65)



1. A vegetation processing machine comprising:
(a) enclosing means forming a processing chamber cylindrical in form, including
(b) a substantially arcuate sieve,
(c) a processing device within said chamber including
(d) a shaft coaxial with said sieve,

(e) a number of flexible flays longitudinally spaced and secured to said shaft,
(f) means for rotating said shaft and causing said flays to extend outwardly therefrom with portions thereof traveling in proximity to said sieve,
(g) a number of arms secured to the shaft and disposed between certain of said flays,
(h) means on said arms traveling in proximity to said sieves and adapted to progress the vegetation engaged thereby toward the path of movement of an adjoining flay,
(i) means for conducing air into said chamber to contact the vegetation therein and extract moisture therefrom,
(j) means for heating said air,
(k) means for feeding the vegetation into said chamber,
(l) means for removing the processed vegetation from said chamber and
(m) means for removing the moisture laden air from the chamber.

3,292,871
APPARATUS FOR FORMING AND COLLECTING FILAMENTS
Roy E. Smith and Jerome P. Klink, Anderson, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,281
3 Claims. (Cl. 242—18)



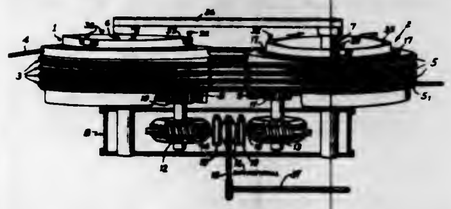
1. Apparatus of the character disclosed, in combination, a frame, an indexible head journaled on the frame, a plurality of winding collets mounted by said head, driving means individual to each collet for rotating the same, each of said collets being arranged to receive and support a collector upon which a strand of filaments is wound to form a package, said head being indexible to successively move a collet and collector to a winding station, motive means for indexing the head, means for distributing the strand on the collector at the winding station including a carrier reciprocable lengthwise of the collector at the winding station and a strand oscillator journally supported on said carrier, means for rotating said oscillator to distribute the strand lengthwise of the collector and effect crossing of the individual wraps of strand as they are collected, a strand engaging hold-off means for effecting transfer of the strand from a completed package onto an empty collector, said hold-off means including a strand engaging shaft disposed lengthwise of the collector, and a strand engaging bar spaced from said shaft and having a shoulder, said strand passing between shaft and said bar, said bar being pivotable to effect engagement of the bar with the strand to disengage the strand from the oscillator, the strand engaging bar being reciprocable to engage the strand with the shoulder on the strand engaging bar to move the strand to strand transfer position adjacent the end of the package during indexing movement of the head.

3,292,872
METHOD AND APPARATUS FOR TRAVERSING STRAND MATERIAL
Ralph L. Hayden, Vienna, W. Va., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed July 29, 1964, Ser. No. 385,985
9 Claims. (Cl. 242—43)



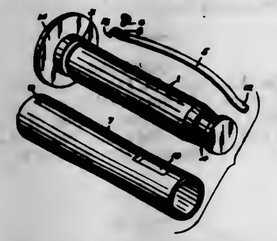
4. In winding mechanism, including rotatable support for receiving a continuous strand thereon, primary traversing means presenting a pattern of progressive and regressive motions, and having an axis of rotation, a first cam surface, and a second cam surface, each of said cam surfaces being inclined in respect to and in facial opposition to each other. the improvement which comprises:
means for moving at least one of said cam surfaces along said axis and in respect to the other of said cam surfaces to thereby vary the axial extent of the progressive and regressive motions imparted by said cam motions.

3,292,873
WINCHES FOR PAYING OUT CABLES
André Henri Antoine Tilloy, Versailles, France, assignor to Societe Generale d'Entreprises, Colombes, France, a corporation of France
Filed July 29, 1964, Ser. No. 386,989
Claims priority, application France, July 31, 1963, 943,392
7 Claims. (Cl. 242—47.09)



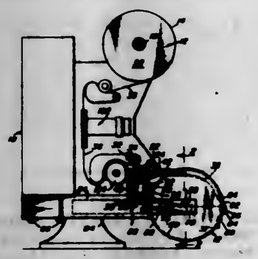
1. A cable paying out winch comprising two drums in the form of rings, means for coupling said rings together by the action of friction, the cable to be unwound being wound on said rings, a toothed wheel on each of said drums, two reducing gears, a pinion located at the output of each of said reducing gears, a driving shaft connected to each reducing gear, said toothed wheels and said pinions being in engagement, the assembly positively transmitting to the drums the speed of the rotation required in order to ensure the unwinding of the cable and its maintaining under tension and a differential mechanism between said driving shaft and said reducing gear of each drum to absorb the difference in speed of rotation of the two drums.

3,292,874
ROLL HOLDER
Winslow F. Thibbets, Medford, Mass., assignor of one-half to Herbert M. Thibbets, North Attleboro, Mass.
Filed July 30, 1964, Ser. No. 386,209
2 Claims. (Cl. 242—55.2)



1. A roll holder comprising a stationary cylindrical arbor with means at one end thereof to secure the same to a wall, two spaced annular recesses in said arbor, a cylindrical hollow roller in the form of a sleeve having at least one slot therein, and a spring having means at both ends thereof for securing the roller to said arbor through said slot in said roller, said roller and spring being adapted to rotate around said stationary arbor.

3,292,875
NON-REWIND FILM OR DATA TAPE APPARATUS
Raymond J. Rafic, 900 Spring Road, Elmhurst, Ill. 60126
Filed Apr. 1, 1964, Ser. No. 356,515
9 Claims. (Cl. 242—55.21)



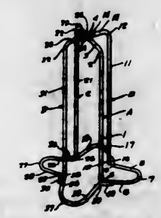
1. A non-rewind film or data tape apparatus comprising a pair of similar film or data tape coil receiving drums, each drum comprising a hub for mounting the drum on either the feed support or the takeup support of a reproducer, a single side wall mounted on each said hub, and a peripheral cylindrical wall having one free edge and having its other edge secured on said side wall, said cylindrical wall having a transverse slot through which the front end of the film or data tape extends and exits from the drum, means for retaining a coil of film or data tape within each said drum while on said feed and takeup supports, and a film or data tape guide tube receiving the film or data tape coming from the drum on the feed support through the reproducer and guiding it into the drum on the takeup support, said guide tube being a flattened hollow tube substantially horizontal at both its ends and twisted gradually to a vertically extending portion intermediate of its ends, said vertically extending intermediate portion being in a plane horizontally displaced to the outside of one side of the vertical projection of the adjacent edge of the substantially aligned ends of said guide tube to thereby bypass the free edge of the drum on the takeup support.

3,292,876
TAPERED AND GROOVED BOBBIN
Julio Limantour, Mexico City, Mexico, assignor, by mesne assignments, to Julio Limantour y Turbide, Reeser Scott Reeves III, Thomas Reeser Reeves, and Jack T. Schwartz, doing business as LRS Associates
Filed Feb. 16, 1965, Ser. No. 431,511
3 Claims. (Cl. 242—118.31)



1. A bobbin or quill comprising a body portion consisting of a first strong and fiberglas reinforced plastic material, said body portion comprising a longer narrower tapered truncated conical moiety and a shorter wider substantially cylindrical moiety continuous with and integral with said conical moiety, respective caps consisting of a second strong and comparatively resilient plastic material firmly bonded to the respective ends of said moieties, the cap on said conical moiety being tapered so as to provide a continuous smooth surface therewith, the cap on said cylindrical moiety being so configured as to provide a continuous smooth outer surface therewith, a plurality of parallel disposed spaced grooves substantially perpendicular to the axis of said bobbin around a portion of said conical portion and a plurality of parallel disposed rings substantially perpendicular to said axis around said cylindrical portion for adapting said bobbin to be inserted into a textile machine.

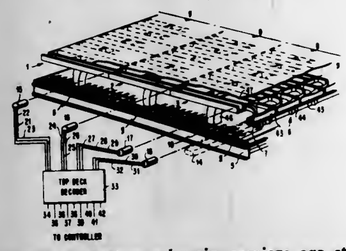
3,292,877
TUBULAR CARRIER FOR O-SHAPED OBJECTS AND STRAND MATERIAL
Robert A. McMasters, Birmingham, Ala., assignor to Southeastern Metals Company
Filed May 11, 1964, Ser. No. 366,357
1 Claim. (Cl. 242—129)



A carrier for annularly positioned material comprising a plurality of identical elongated rod-like elements each having a leg, a straight arm extending laterally from one end of its leg and a base portion, said element arms having ends with flattened tips with said tips welded together, said element arms extending radially of said welded tips, said base portions each having a pair of joined legs each

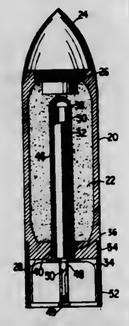
having an end fixedly connected to and extending laterally of one of said elongated element legs with said base portions being in the same plane providing a base for the carrier.

3,292,878
PNEUMATIC CARRIER ACCESSING SYSTEM
Bjarne Junge, Los Gatos, and Russell Albert Stauffer, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 24, 1965, Ser. No. 490,040
10 Claims. (Cl. 243—25)



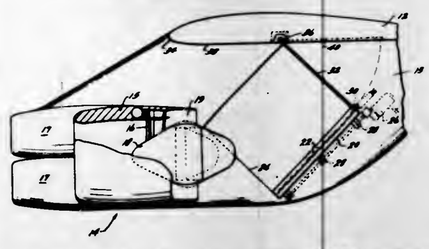
1. In a storage system wherein carriers are stored in a file including at least one column of delivery channels, means for establishing a mechanical path between one of said delivery channels and a file I/O tube, said means comprising:
- a column select means including at least one elbow selectively movable into mechanical association with each of said delivery channels; and
- row select means operable to mechanically connect the said elbow which is in mechanical association with a selected delivery channel to said file I/O tube.

3,292,879
PROJECTILE WITH STABILIZING SURFACES
Constantin Chillowsky, deceased, late of New York, N.Y., by Willard Saxton Seward, executor, Morris Township, N.J., assignor to Conrad Precision Industries, Inc., New York, N.Y., a corporation of Delaware
Filed June 25, 1965, Ser. No. 467,145
7 Claims. (Cl 244—3.3)



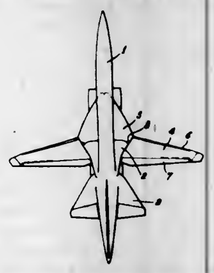
1. A projectile comprising a body having an axial tube therein, movable means housed at least partially in said axial tube, stabilizing surfaces carried by said movable means, operable means for extending said movable means from the rear of the projectile after the latter has been fired such that the stabilizing surfaces are supported rearwardly of the projectile for guiding the latter in flight, the radially outward edges of said stabilizing surfaces being contained within a circumference no greater than that of the projectile body, said movable means comprising a spindle slidable in said axial tube, said spindle having an enlarged portion operable to engage a bushing carried in said axial tube to stop the spindle in its extended position, said bushing having a longitudinal passage for releasing a braking fluid contained in the axial tube exteriorly of the spindle as the enlarged portion on the spindle acts on the braking fluid upon extension of the spindle rearwardly of the projectile.

3,292,880
THRUST DEFLECTING MECHANISM
John T. Kutney, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 1, 1964, Ser. No. 393,621
12 Claims. (Cl. 244—12)



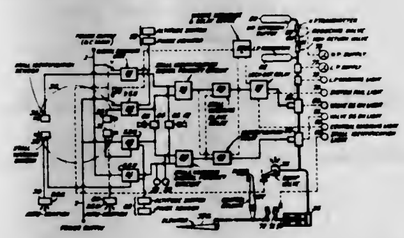
7. For use in a high by-pass ratio turbofan aircraft powerplant having a center plug therein, thrust deflecting mechanism comprising,
- a pylon member supported from a wing member and carrying said powerplant,
- a recess in one of said members,
- a frame carried in said recess external of said powerplant and downstream of said plug,
- movable parallel louvers in said frame forming a cascade,
- means to move said cascade from said member into the fan exhaust at substantially 45° to the vertical and to the flow path so said louvers are horizontally and transversely oriented across the flow to intercept the flow through said powerplant downstream of said plug and control deflection of the thrust downwardly for vertical lift.

3,292,881
AIRCRAFT WITH VARIABLE GEOMETRY
Armand G. Ricard, Viroflay, Seine-et-Oise, France, assignor to Societe Anonyme des Ateliers d'Aviation Louis Breguet, Paris, France, a company of France
Filed Dec. 11, 1964, Ser. No. 417,625
Claims priority, application France, Dec. 27, 1963, 958,702
10 Claims. (Cl. 244—46)



1. A variable geometry aircraft comprising in combination a fuselage provided with horizontally directed tail elements; main wing elements projecting laterally from said fuselage; vertical pivot means on said fuselage for mounting said main wing elements onto said fuselage for movement between a fore position wherein said main wing elements are extended and a rear position wherein the said main elements are retracted and connected with said tail elements; front wing elements respectively associated with said main wing elements and pivotably mounted on said fuselage on the same pivot means as the associated main wing element, for movement between a retracted position wherein the fore part of said front wing elements is retired within the fuselage and an extended position wherein said fore part is moved out of the fuselage; and actuating means for bringing said front wing elements into said retracted position when said main wing elements are brought into said extended position and conversely for bringing said front wing elements into said extended position when said main wing elemets are brought into said retracted position.

3,292,882
STALL-CORRECTING APPARATUS FOR AIRCRAFT
Alban J. Walsh, Weybridge, England, assignor to British Aircraft Corporation (Operating) Limited, London, England, a British company
Filed Mar. 4, 1965, Ser. No. 437,882
9 Claims. (Cl. 244—76)



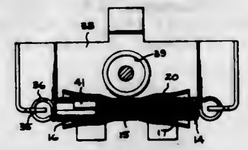
1. Stall warning and correcting apparatus for use in aircraft comprising, incidence sensing means for producing a first and a second signal at predetermined aircraft angles of incidence, stall warning means responsive to said signals, and elevator-operating means for operating the elevators of the aircraft, said elevator-operating means being responsive to said second signal, and said aircraft having a gas turbine jet propulsion engine and comprising igniting means responsive to said second signal.

3,292,883
KITE
William B. Curtis, 3576 Green Acres Terrace, Dallas, Tex. 75234, and Wilbur Carleton Scott, Bloomfield Township, Oakland County, Mich. (P.O. Box 149, Birmingham, Mich. 48012)
Filed Sept. 4, 1964, Ser. No. 394,453
10 Claims. (Cl. 244—153)



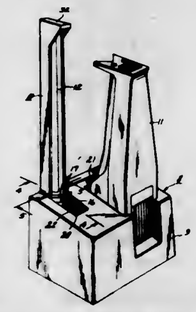
1. A kite, comprising;
- a one piece flat oval shaped and lightweight member having internal granular strength in one direction thereacross and relative bending flexibility in a direction normal thereto,
- a string and means of attachment to said member between designated top and bottom edges thereof,
- and said member being sufficiently thin and lightweight for being borne aloft in a breeze and for wind modulated flexure thereof in the direction of flexibility to maintain the proper flight attitude therefor under the control and restraint of said string.

3,292,884
HERMETIC COMPRESSOR MOUNTING SYSTEM
Owen H. Scheldorf, Fern Creek, Ky., assignor to General Electric Company, a corporation of New York
Filed May 27, 1965, Ser. No. 459,296
5 Claims. (Cl. 248—20)



1. A hermetic compressor comprising a casing, and a motor-compressor unit in said casing;
- vibration absorbing means for laterally supporting and limiting vibrational movement of said unit comprising;
- a horizontally disposed, tension spring including a center section separated from the end sections by opposed coned sections and having a higher spring rate than said end sections,
- means for connecting the ends of said spring to an upper portion of said casing and for applying thereto a tension force sufficient to deflect the end sections but not the center section of said spring,
- anchoring means for anchoring said spring to said unit comprising spaced shoulders engaging said coned sections for subjecting the said center section to a tension force greater than the force applied by said connecting means,
- said anchoring means including flared end portions for engagement by said spring end sections to snub horizontal movements of said unit.

3,292,885
STORAGE MEANS FOR ELECTRIC KNIFE
Carl J. Stephens, Batavia, N.Y., and John C. Shalvoy, Fairfield, Conn., assignors to General Electric Company, a corporation of New York
Filed Feb. 12, 1965, Ser. No. 432,331
12 Claims. (Cl. 248—37.3)

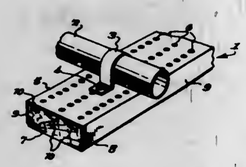


1. In a storage rack for an electric knife having a handle and a separable knife blade, said rack having a handle socket for supporting the knife handle in a generally vertical position, means for supporting the knife blade comprising:
- (a) a blade holder socket;
- (b) an elongated blade holder secured to said rack and extending upwardly from said blade holder socket

for supporting a knife blade in a generally vertical position, said holder including a top wall;

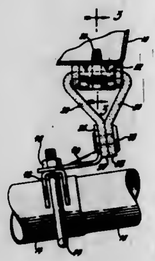
(c) and means positioned within said blade holder socket spaced vertically from said holder top wall approximately the length of a knife blade for supporting a blade between said last-named means and said top wall.

3,292,886
BRACKET
Robert S. Rovinsky, 1 Nimitz Court, Tonawanda, N.Y. 14150
Filed Feb. 18, 1966, Ser. No. 528,555
7 Claims. (Cl. 248—49)



1. A bracket for receiving fasteners securing tubing and the like thereto and adapted for connection to a fixed support comprising a backing block adapted to be secured to a fixed support, a cover member secured to said block, said cover member overlying one face of said block and having a plurality of fastener receiving apertures therethrough at predetermined spaced intervals therealong, at least those portions of said one face of said block in registry with said apertures being spaced from cover member, thereby providing a cavity behind each of said apertures to accommodate rivet and like fasteners, said block being adapted to receive and retain nail and screw type fasteners inserted through said apertures.

3,292,887
EXHAUST SYSTEM HANGER
Thomas R. Cassel, Birmingham, and Harry L. Redding, Pontiac, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 5, 1965, Ser. No. 493,067
4 Claims. (Cl. 248—60)



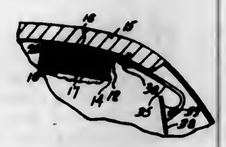
1. Hanger means for connecting a vehicle exhaust system to a vehicle body comprising, an insulating member of resilient material, means for mounting said member on a body, a loop member of flexible material having a portion thereof frictionally gripped by said insulating member, and means for securing an exhaust system to said loop member, said loop member being relatively movable with respect to said insulating member in response to exhaust system vibrations to thereby frictionally damp said vibrations.

3,292,888
I-BEAM CLAMP FOR SUPPORTING AN ELECTRICAL OUTLET BOX, MULTIPLE CONDUITS AND/OR PIPES
Harry G. Fischer, 1636 Park Road, Covington, Ky. 41011
Filed Sept. 21, 1965, Ser. No. 488,930
9 Claims. (Cl. 248—72)



1. A clamping assembly for a single beam to support objects running at right angles to the beam, including rods subjacent the base of the beam and detachably engaged with the base of the latter, the assembly also including a connector for the rods which is positioned longitudinally of the beam, means for engaging the ends of the connector with intermediate portions of the rods, and means adjustably mounted on the connector for supporting objects running at right angles to the beam.

3,292,889
DISPENSER HOLDER
Joseph Leon Roll, 602 Inverness Ave., Mount Royal, Quebec, Canada
Filed Dec. 2, 1964, Ser. No. 415,235
Claims priority, application Great Britain, Dec. 3, 1963, 47,502/63
1 Claim. (Cl. 248—311)



A tissue-dispensing assembly for permitting tissues to be dispensed from the inner surface of a ceiling, comprising in combination:

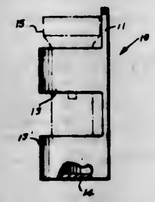
a bracket having an opening therethrough;

a fastener extending through said bracket opening and into said ceiling for securing said bracket in fixed relation on the inner surface of said ceiling;

an enlongated, flexible, flat strip element having an opening at one end, said flexible strip element being secured only at said one end in juxtaposed relation between said bracket and the inner surface of said ceiling with said fastener extending through the opening in said strip element, the remaining portion of said strip element normally being resiliently biased toward flat, juxtaposed and unobtrusive relation on the inner surface of said ceiling and comprising a cantilever support; and

a container for containing tissues, said container including a base wall, bordering walls, and a wall opposite said base wall, at least one of said walls having an opening for permitting tissues to be withdrawn therethrough, one of said bordering walls including a slot opening adjacent the inner surface of said base wall, the major portion of said flexible strip element extending through said slot in biased relation toward the inner surface of said base wall whereby said container is retained against the inner surface of the ceiling and tissues can be withdrawn from said container.

3,292,890
FLASH LIGHT HOLDER
Louis F. Bennett, 250 Norman St., West Springfield, Mass. 01104
Filed Aug. 4, 1965, Ser. No. 477,237
1 Claim. (Cl. 248—314)



An integrally molded substantially rigid thermoplastic holder for a flash light comprising:

(a) a flat generally rectangular upright wall engaging portion having key-slots therein for mounting the holder upon a supporting surface;

(b) a cup-like flash light supporting portion formed on the lower end of the wall engaging portion and comprising:

(1) a heel-shaped base wall extending outwardly from and normal to the lower end of said wall engaging portion and

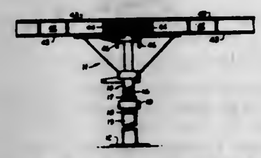
(2) a U-shaped rim formed on said base wall and extending upwardly therefrom,

(3) said U-shaped rim being joined at its ends to a respective side edge of said wall engaging portion; and

(c) a flash light stabilizing portion spaced vertically above said flash light supporting portion and comprising a flat band bent to U-shape and joined at its opposite ends to a respective side edge of said wall engaging portion so as to extend horizontally outwardly therefrom;

(d) said flash light stabilizing portion and said U-shaped rim of said flash light supporting portion being adapted to receive the barrel of a flash light therethrough in loosely-engaging manner and said base wall of said flash light supporting portion being adapted to support the butt end of the flash light.

3,292,891
SHORE HEAD
John R. Williams, 2345 Darwin St., Hayward, Calif. 94545
Filed Mar. 31, 1965, Ser. No. 444,251
8 Claims. (Cl. 248—354)



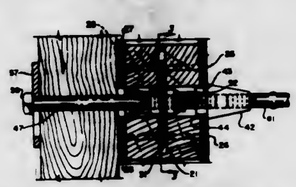
1. A shore head for shores comprising a shore load transmitting member, a support member on said load transmitting member adapted to shoringly abut an object to be supported, said support member having at least two abutment sections, one of said sections being rigidly secured to said load transmitting member and the other of said sections comprising a pair of diametrically opposed members each being selectively movable with respect to the other of such members and to said load transmitting member out of shoring abutment with said object to be supported.

3,292,892
ADJUSTABLE FORM SHORE
Oscar J. Abbott, 926 Sungle Drive, San Antonio, Tex. 78200
Filed Oct. 14, 1965, Ser. No. 495,970
8 Claims. (Cl. 248—354)



1. For use when called upon to shore a concrete form while concrete is being poured in the form, a shore comprising a base provided with an upstanding hollow upright, a standard having a portion thereof telescopingly and adjustably mounted in the hollow portion of said upright, said standard being provided at its upper end with a head and said head being angular in cross-section and providing seating and nailing flanges for a timber of a form, said upright being provided at its upper end with a fixed endless conical collar surrounding the standard, and insterable and removable jaws telescopingly fitted within the confines of said collar in a manner to embrace an adjacent coacting portion of said standard.

3,292,893
FORM SYSTEM AND HARDWARE FOR CONCRETE CONSTRUCTION
John R. Williams, 2345 Darwin St., Hayward, Calif. 94545
Filed Nov. 16, 1964, Ser. No. 411,535
4 Claims. (Cl. 249—42)



1. A device for maintaining opposed walls of a concrete form in spaced relation for reception of concrete therebetween and each having a transverse opening in alignment with the opening of the other wall, comprising a tie rod having threaded ends, spacer cones having a threaded socket at the smaller ends engaged by the threaded ends of the rod, said cones also having a threaded socket at the larger end, extension rods extending through said openings and having threaded ends received in the sockets at the larger ends of the spacers, means on the spacer cones operatively engageable with the wall for retaining the spacers against rotation relative thereto, a thrust receiving element arranged for positioning on each of said walls and against movement longitudinally of said openings, and means on said extension rods positioned to engage both sides of said thrust receiving means and operative to urge said thrust receiving means inwardly to urge the panel

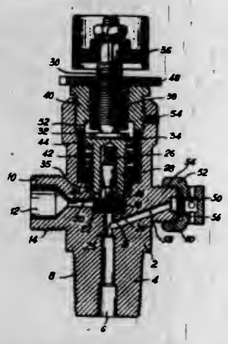
towards an associated panel with rotation of the extension rod in one direction and operative to move said walls away from each other on rotation of the extension rod in an opposite direction.

3,292,894
POROUS MOLD
Vernon A. Falkenau, Mishawaka, Ind., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 1, 1962, Ser. No. 227,240
3 Claims. (Cl. 249—134)



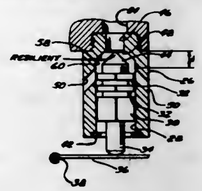
1. A porous mold for use in the molding of latex foam articles, wherein said mold is subjected to relatively high temperatures and moist conditions, comprising: an open mesh woven fabric having the contour of the articles to be molded, said fabric having strands impregnated with cured resinous material to maintain said fabric in a rigid condition and the interstices of said fabric being substantially free of said resinous material.

3,292,895
VALVE FOR PRESSURE GAS CONTAINER
André Leger, La Varenne-Saint-Hilaire, and Jack Bourgeaud, Champigny-sur-Marne, France, assignors to L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed June 18, 1964, Ser. No. 376,091
Claims priority, application France, July 2, 1963, 940,120, Patent 1,370,689
4 Claims. (Cl. 251—83)



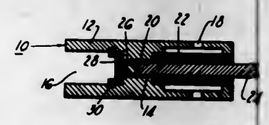
1. Valve means for a pressure gas container comprising a valve member, a valve seat opposite said valve member and a valve member support, said valve member support being subjected to the action of a spring which tends to close said valve member against said seat to prevent the escape of gas during normal service when the pressure of the gas is below a certain value, said valve member support being moved through a lost motion connection by a slide, said spring bearing at one end on said valve member support and at the other end on said slide, and said slide being capable of being positioned to bear on said valve member support in the sense of closing said valve member, the position of said slide during normal service being adjusted by a screw which is rotated by a control device and being limited in the sense of the opening of said valve member by abutment against a first internally and externally screwthreaded means into which the said screw is engaged, said first means being screwed into a second internally and externally screwthreaded means which is screwed into the valve body, said second means forming an abutment for the travel of said slide when, in order to permit of completely emptying the container, said first means has been sufficiently unscrewed.

3,292,896
CARBURETOR FUEL INLET VALVE
Frederick J. Marsee, Hazel Park, and Robert G. Lane, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Apr. 27, 1964, Ser. No. 362,643
2 Claims. (Cl. 251—122)



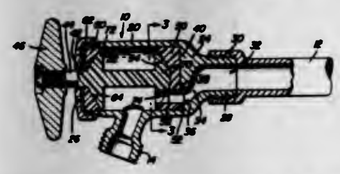
1. A carburetor fuel inlet valve assembly, comprising a valve seat member having a larger cylindrical valve cavity extending from one end thereof and a smaller axially aligned passage extending from the other end thereof, said smaller passage and said large cavity being joined by an intermediate frustro-conical passage having an angle on the order of 45° with respect to the axis of said cavity, the juncture of said smaller passage and said frustro-conical passage forming a valve seat having a diameter on the order of .110", at least one discharge opening formed through the wall of said valve seat member at an angle substantially parallel to the angle of said frustro-conical section, the side of said opening nearest said seat intersecting said cavity at an axial distance of .112"–.139" from said seat, and a valve positioned in said cavity, said valve having a resilient conical tip with a cone angle on the order of 70°.

3,292,897
HIGH PRESSURE RELEASE VALVE
Howard Lawrence McClelland, Mishawaka, Ind., assignor to The Bendix Corporation, Mishawaka, Ind., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,380
1 Claim. (Cl. 251—175)



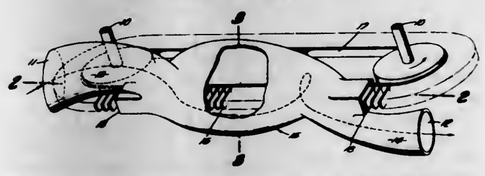
A high pressure pneumatic release valve comprising a housing having a constant diameter bore therein, said bore having an axially extending porous wall portion formed by a high density finely finished sintered porous sleeve-like member and a non-porous wall portion, high pressure passage means and low pressure passage means communicating with said bore, movable plunger means located in said bore, said plunger means having a first position wherein the end thereof is located in the non-porous wall portion of said bore to prevent communication between said high and low pressure passage means and a second position wherein the end thereof is located in the porous wall portion of said bore to permit communication therebetween via said porous wall portion, a porous disc type retaining element located in and extending across said bore, a resilient deformable spherical member located in said bore and confined between said porous retaining element and said plunger means when said plunger means is in said first position, said resilient member being forced into contact with and deformed against the end of said plunger means by the high pressure acting thereon to thereby seal the clearance between the plunger means and the non-porous wall portion of said bore as long as said plunger means remains in said first position, and means for causing movement of said plunger means to said second position, said resilient means being rendered inoperative as a seal after being forced by the high pressure acting thereagainst to follow said plunger means to said second position.

3,292,898
ROTARY VALVE WITH TAPERED SEAT
Arthur R. Willman, R.R., Fox River Gardens, Yorkville, Ill. 60560
Filed Dec. 18, 1963, Ser. No. 331,487
7 Claims. (Cl. 251—188)



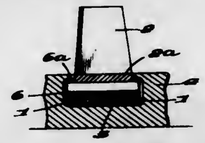
1. A rotary valve assembly comprising a valve housing having a chamber therein, a valve seat member at one end of said chamber and a valve seal member at the other end of said chamber, a valve inlet port through said valve seat member, an outlet port from said chamber between said members, a valve member rotatably disposed in said chamber and including an axial valve stem, a valve head on one end of said stem having a valve surface complementary to and rotatably engaging said valve seat member and having a valve port therethrough registrable with said valve inlet port, a sealing head on said valve stem complementary to and rotatably engaging said seal member, said stem having a handle thereon exterior of said housing, a packing gland on said housing engaging said seal member and adjustably pressing the latter against said sealing head and said valve head against said valve seat member, said housing having an end wall at one end, said end wall having a circular flat surface comprising one end of said chamber, said surface including a recess receiving a projection upon said valve seat member thereby preventing rotation of the latter, said valve inlet port comprising registering bores in said end wall and in said valve seat member, said registering bore extending through said projection.

3,292,899
ENERGY TRANSFER MACHINE
Hans Egli, Santa Monica, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 4, 1966, Ser. No. 539,947
16 Claims. (Cl. 253—20)



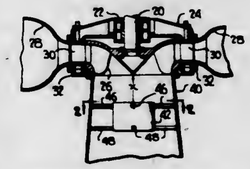
1. A machine for transferring energy comprising:
inlet means, said inlet means connected to a source of working fluid;
an inlet passage;
outlet means, said outlet means for discharging said working fluid;
an outlet passage;
vaneless housing means connecting said inlet means and said outlet means;
a plurality of active members, said active members mounted as a set on a moving means whereby said active members continuously traverse through said housing and past said inlet passage and said outlet passage, substantially all of said fluid forced to pass at least twice between said active members in its travel between said inlet and said outlet whereby energy is transferred between said fluid and said active members.

3,292,900
VIBRATION-DAMPING FIXING OF MOVING BLADES FOR AXIAL-FLOW TURBO-MACHINES
Johan Pettersen, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed July 31, 1963, Ser. No. 298,900
Claims priority, application Switzerland, Aug. 10, 1962, 9,511/62
4 Claims. (Cl. 253—77)



1. In combination, a rotor for an axial flow type turbomachine, said rotor including at least one peripherally extending undercut groove for receiving a row of blades which are individually mounted in said groove, each said blade including a bladed portion extending radially outward from said groove and a root portion located within said groove, said root portion including a single bore extending therethrough in a direction transverse to the plane of the rotor groove, a single pin extending through said bore and projecting from the ends thereof, and a packing piece secured to each projecting end portion of said pin, said packing pieces being located in the undercut portions of said rotor groove thereby to retain said blade in said rotor groove, and said bladed portion of said blade having a width not exceeding the width of said rotor groove at the surface of the rotor so as to enable said blade to pivot slightly about the pin axis in the direction of said groove to dampen blade vibration.

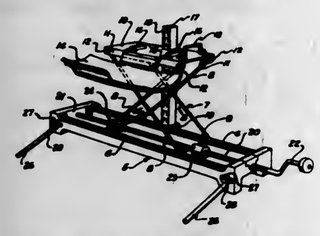
3,292,901
TURBINE APPARATUS
Robert M. Donaldson, Hampton, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed Mar. 4, 1965, Ser. No. 437,244
10 Claims. (Cl. 253—117)



1. Hydraulic turbine apparatus comprising a runner, a draft tube operatively associated with said runner and having a certain inner diameter at its upper portion, the

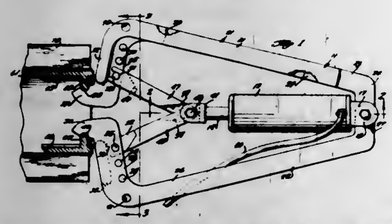
top of said draft tube being disposed below the under surface of said runner so that the runner does not extend into said draft tube, flow control means comprising a generally annular body means defining a central bore therethrough, said body means being fixed in the upper part of said draft tube and being spaced from the inner surface thereof and in concentric relationship therewith, the upper part of said body means being spaced below the top of said draft tube in a direction away from said runner a distance which is at least approximately 20% of said inner diameter of the top portion of the draft tube.

3,292,902
PORTABLE TIRE LIFT
Michael F. Lynch, 3 Amherst Ave., Albany, N.Y. 12208
Filed Mar. 23, 1965, Ser. No. 442,003
2 Claims. (Cl. 254—122)



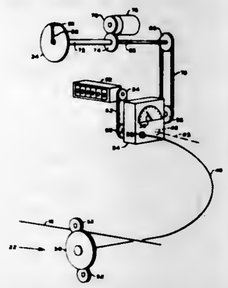
1. A portable tire lift of the character described, comprising a rectangular base; a lifting plate disposed above said base; a foldable X-shaped elevating means, the lower ends of said means being slidably supported by said base and the upper ends thereof being hingedly fastened to said plate; a tire supporting member having the configuration of part of a tire of an automotive vehicle, the said supporting member being secured to and projecting outward from the said lifting plate; a vertically disposed supporting post projecting upward from the said base and slidably received by said lifting plate; means on said lifting plate and said post for selectively supporting said lifting plate at predetermined heights; and means supported by said base and connected to the lower ends of said elevating means to raise and lower said lifting plate.

3,292,903
PAPER ROLL STRAIGHTENER
Luther W. Meyer, 929 E. 4th St., and James J. Van Gompel, Martin St., both of Menasha, Wis. 54952
Filed July 9, 1965, Ser. No. 470,882
10 Claims. (Cl. 254—124)



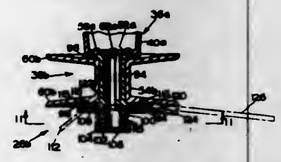
1. In a tool for use in re-shaping rolls of material, a fluid-pressure cylinder having a piston and a piston rod secured to the piston and extending from the forward end of the cylinder, a pair of working arms pivoted to the rear end of the cylinder and extending forwardly a substantial distance beyond the cylinder on opposite sides thereof, respective forwardly-projecting hook elements on the ends of the working arms, respective shoe members engageable against opposing inside wall portions of a roll of material, said shoe members having respective pivot lugs, means on the respective hook elements pivotally-engageable with said lugs, respective abutment elements on the working arms, respective strut bars pivotally-connected to said piston rod, and means to drivingly interconnect said strut bars with said abutment elements.

3,292,904
WIRE LINE LOGGING TIME-DEPTH CORRELATOR
Charles Willis Trubenback and Bruce F. Wiley, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,389
8 Claims. (Cl. 254—145)



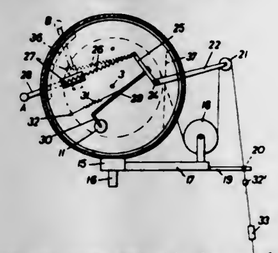
7. Apparatus comprising in combination:
(1) a fixed non-slip pulley;
(2) a reel carrying a supply of cable, the free end of which is threaded thru said pulley;
(3) a reducing gear box operatively connected with said pulley;
(4) a first shaft having a pointer thereon rotatable therewith and a driving means operatively connected with said gear box;
(5) a second tubular shaft concentric with said first shaft and having an indexed dial thereon rotatable therewith in a plane parallel and adjacent the plane of rotation of said pointer; and
(6) a clock motor operatively connected to rotate said second shaft.

3,292,905
VEHICLE REMOVAL MEANS
Jack L. McCain, 2160 River View St., Eugene, Oreg. 97403
Filed Oct. 22, 1965, Ser. No. 507,620
2 Claims. (Cl. 254—166)



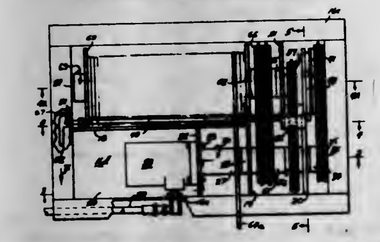
1. Vehicle removal means for use with a vehicle having at least one driving wheel secured to an axle supporting means by a plurality of wheel bolts, comprising a drum having end flanges for confining wrapped portions of a cable thereon, an attaching member having lateral flange means arranged for receiving the wheel bolts to mount said attaching member on the driving wheel, a spindle releasably mounted on said attaching member and rotatably supporting said drum, a latch member mounted non-rotatably on said spindle but having axial slidable movement thereon, drive pin means integrated with said latch member and projecting toward said drum, means in said drum defining a plurality of apertures arranged normally for engagement by said drive pin means for establishing a driving connection between said drum and said spindle, and rotatable cam means mounted on said spindle and engageable with said latch member, said cam means being arranged to slidably move said latch member on said spindle to a position to disengage said drive pin means from said apertures to provide free rolling of said drum on said spindle.

3,292,906
FISHING REEL ASSEMBLY
Jón Thordarson, Reykjalundur, Mosfellssveit, Iceland
Filed Jan. 14, 1965, Ser. No. 425,546
6 Claims. (Cl. 254—173)



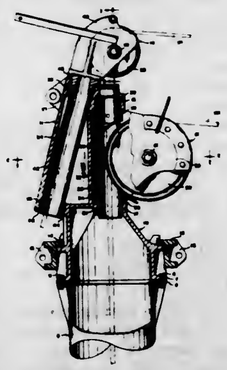
1. A fishing line hoist assembly for moving a fishing line a substantial distance in first and second directions, comprising a reel adapted to receive said line, a reversible motor means connected to said reel, switching means selectively movable between a first position and a second position to control said motor means, at least one spring connected to said switching means to urge the same toward one of said positions, a guide on said switching means for receiving said line so as to sense the pull on said line, the tension in said spring being so related to the normal pull on said line to cause the moving of said switching means to said first position whereby said line is moved in said first direction, stop means for changing the pull on said line near the end of the travel in said first direction to cause the moving of said switching means to said second position whereby to effect relatively small amplitude alternative driven movements of said line in said first and second directions, and control means to cause said line to move to the end of the travel in said second direction.

3,292,907
TRUCK BED WINCH APPARATUS
John E. Akins, Mound, and Jerry J. Jerabek, Lester Prairie, Minn., assignors to E. R. Schwartz Manufacturing Co., Lester Prairie, Minn., a corporation of Minnesota
Filed Mar. 18, 1965, Ser. No. 440,737
3 Claims. (Cl. 254—187)



1. Winch apparatus comprising a housing, a first shaft, a second shaft, means for rotatably mounting said first shaft in the housing and stationarily mounting said second shaft in the housing in parallel relationship to the first shaft, a motor, means for mounting said motor in the housing, said motor having a motor shaft, an annular coupling element keyed to said motor shaft and to said first shaft to form a rigid connection from the motor shaft to the first shaft, a winch drum rotatably mounted on the second shaft, a cable windably connected to said drum, a driven member mounted on the second shaft for rotation independent thereof, means drivenly connected to the first shaft for drivingly rotating said driven member when the first shaft is rotated, clutch means rotatably mounted on the second shaft for engaging the driven member to be drivenly rotated thereby and alternately being moved out of driven engagement therewith, means connected to the clutch means for selective operating said clutch means into and out of driven engagement with said driven member and intermediate means driven by the clutch means in driven engagement with the driven member for drivingly rotating said winch drum, said intermediate means including a drive member mounted on the second shaft for rotation independent thereof and drivenly connected to the clutch means to be rotated thereby, a second driven member mounted on the first shaft for rotation independent thereof, a drive connection between said drive member and the second driven member to rotate the second driven member in response to the rotation of the drive member, and means drivenly connected to the second driven member for drivingly rotating the winch drum in response to the rotation of the second driven member.

3,292,908
HEAD MOUNTING FOR MAIN AND HAULBACK SHEAVES OF A LOGGING SPAR
James R. Thompson, Seattle, Wash., assignor to Washington Iron Works, Seattle, Wash., a corporation of Washington
Filed Feb. 4, 1965, Ser. No. 430,406
8 Claims. (Cl. 254—190)



1. In a head mounting for the main and haulback sheaves of a logging spar, in combination with the sheaves: a spar having a hollow top part, a mounting bonnet fixedly secured in surmounting relation upon said top part of the spar and formed to provide an adapter section at the bottom and a mounting section at the top, the adapter section having a hollow center communicating with the hollow center of the spar, the mounting section having a furcate front part producing a pocket facing forwardly between upper and lower fork arms and providing an after part overhanging the adapter section, a bore in said after part biased rearwardly from the axial line of the spar in a degree sufficient to clear the back wall of the adapter section and the subjacent spar, bushings lining the bore at the upper and lower ends thereof, vertical bores in the upper and lower fork arms having their axes coinciding,

and each lined by a bushing, said bore in the lower fork arm communicating with the hollow center of the adapter section, a hollow spindle journaled by its ends for swivel movement in said bushings which line the bores of the fork arms and having the wall which lies between said journaled ends vertically slotted, a block having a hub portion secured to said spindle in the space between the fork arms and supporting the main sheave for rotation about a horizontal axis in a position placing the sheave's inner end within said slot tangent to the axial line of the spindle, a main line which passes over the sheave being adapted to run through the spindle and the adapter section into the spar, and a block supporting the haulback sheave for rotation about a horizontal axis in a position spaced above the main block and having a hollow depending stem journaled for swivel movement in said bushings of the biased bore and through which a haulback line passing over the sheave is adapted to run, the axial line of the stem lying tangent to the inner end of the haulback sheave, the length of the stem measured between the upper limit and the lower limit, respectively, of the concerned upper and lower bushings exceeding the length, lever arm considered, of the block from which said stem depends.

3,292,909
HIGHWAY GUARD FENCE
Ivan Bianchi, Riva Caccia 1, Lugano, Switzerland
Filed Aug. 4, 1964, Ser. No. 387,335
Claims priority, application Switzerland, Aug. 10, 1963, 9,967/63; Dec. 13, 1963, 15,336/63
9 Claims. (Cl. 256—13.1)



1. A protective barrier for road shoulders and medians to prevent motor vehicles from leaving the road and to guide them back into the original direction of travel, comprising a succession of adjacent barrier sections, each section including

(1) two vertical end supports delimiting each section afid being spaced apart by more than two motor vehicle lengths, the vertical axes of the end supports defining a plane of symmetry for said barrier, said plane of symmetry extending substantially parallel to the road;

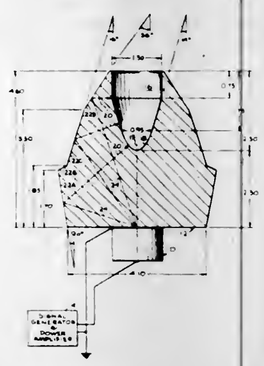
(2) a plurality of cables in the form of continuous loops mounted in tensioned condition between the end supports;

(3) a pair of sheaves having grooves holding and guiding each of said cables, the sheaves being mounted on the end supports and freely rotatable about the vertical axes thereof, each of the plurality of cables of one of said barrier sections being vertically displaced from a corresponding one of the cables of the adjacent barrier section, the corresponding cables of the succession of barrier sections forming a continuous line, a like plurality of pairs of vertically displaced ones of said sheaves being mounted on each end support, each pair of said vertically displaced sheaves holding and guiding the corresponding cables of adjacent ones of said barrier sections, one of said corresponding cables extending into one of the adjacent barrier sections and the other one of the corresponding cables extending into the other one of the adjacent barrier sections; and

(4) elastic means arranged to face the road and to protect the end supports and the sheaves from direct contact with an oncoming motor vehicle;

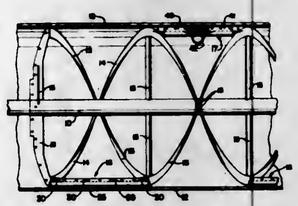
(5) the cable loops, the sheaves and the elastic means being arranged symmetrically in respect of said plane of symmetry.

3,292,910
ULTRASONIC CONCENTRATOR
John G. Martner, Atherton, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Nov. 10, 1964, Ser. No. 410,096
3 Claims. (Cl. 259—72)



1. A body for concentrating the output of an electromechanical transducer comprising a symmetrical metal body having walls defining a resonant cavity at one end of its axis of symmetry and a flat surface at the other end of the axis of symmetry to which surface the working face of said electrochemical transducer is bonded, said body and cavity having side walls which are spaced from the axis of symmetry a distance to provide a total travel distance for ultrasonic energy directed from said transducer to the side walls of the body and then reflected to the wall of said resonant cavity, equal to a multiple of a whole wavelength, and said side walls of the body being divided into a plurality of Fresnel segments.

3,292,911
MIXING DEVICE HAVING ADJUSTABLE WALL SCRAPERS
Alain G. Paul, Paris, France, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,455
Claims priority, application France, Mar. 23, 1964, 968,321, Patent 1,397,988
2 Claims. (Cl. 259—109)



1. A stirring device for a cylindrical mixing vessel wherein said vessel and said stirring device rotate relative to each other about an axis, the improvement comprising:

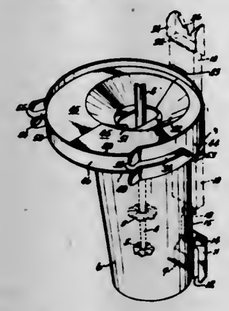
at least one cylindrical helical member mounted on a central shaft, said central shaft being disposed to rotate about the axis of said vessel;

at least one support member, said support member being secured to said cylindrical helical member, said support member in addition having a groove formed therein and extending substantially parallel to said axis;

a blade member, said blade member being disposed in said groove and adapted for sliding radial movement in and out of said groove; and

biasing means for forcing said blade member radially out into contact with the wall of said vessel.

3,292,912
DRINK MIXER ADAPTER
Earl W. Stubler, 4420 Meridian Ave., Seattle, Wash. 98103
Filed Sept. 3, 1965, Ser. No. 484,992
24 Claims. (Cl. 259—125)



1. An adapter for a drink mixer having a mixer-actuating member, comprising a body casing, supporting means engageable with the lower end of said body casing for supporting the same from the drink mixer and guiding said casing for elevational movement relative to the drink mixer, projection means on the upper portion of said casing engageable with the mixer-actuating member, a slide mounted on said casing guided for sliding movement therealong and including a slide-carried member projecting into said casing and cup-holding means engageable with the rim of a cup for holding the same, and resilient force-exerting means within said casing, engageable by said slide carried member and operable by upward movement of said slide to exert an upward force on said casing to move said projection into position effecting mixer-operating actuation of said mixer-actuating member.

3,292,913
QUENCH SYSTEM AND CHAMBER
Robert G. Craig, Wilmington, Del., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,921
5 Claims. (Cl. 261—149)

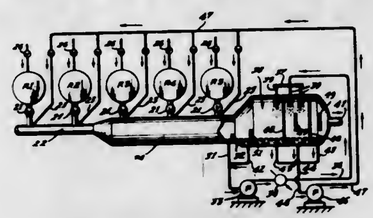
1. A quench system for the gaseous effluent of a grouped plurality of reactors having an in-line arrangement of valved downflow effluent outlets comprising:

(a) an elongated hollow vessel forming a chamber extending laterally below and beyond one end of the row of effluent outlets, said chamber having at one end a prequench section communicating along its upper side with said effluent outlets and at the other end a substantially enlarged quench section beyond the row of effluent outlets;

(b) means for introducing a spray of prequench liquid into said prequench section at locations adjacent and individual to the discharge ends of said effluent outlets in a manner to effect good heat exchange contact with the incoming effluent;

(c) first baffle means in the path of initial flow of the prequenched effluent through said quench section to disengage entrained prequench liquid from the flowing effluent stream;

(d) means for withdrawing prequench liquid from the bottom of said prequench section and from the initial portion of said quench section, cooling said liquid, and thereafter reintroducing the same as a spray of quench liquid into the enlarged quench section of said chamber in a manner to effect good heat exchange contact with the prequenched effluent;

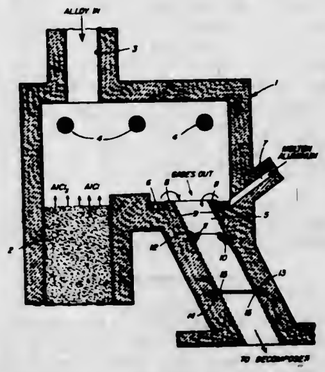


(e) second baffle means in said quench section down stream of said first baffle means to provide low velocity, tortuous flow of said effluent and mild mixing thereof with said spray of quench liquid;

(f) means for withdrawing said quench liquid from the bottom of said quench section and recycling the same as prequench liquid into said prequench section;

(g) and means for discharging the cooled effluent from the down stream end of said chamber.

3,292,914
PREVENTING BLOCKAGE IN APPARATUS FOR MONOHALIDE REFINING OF ALUMINUM
Frederick William Southam, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Jan. 8, 1964, Ser. No. 336,460
7 Claims. (Cl. 266—9)

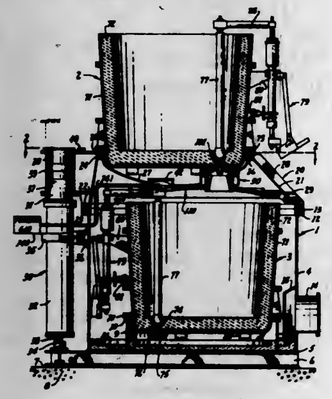


1. In a converter for relatively impure aluminum forming a part of the apparatus used in the monohalide aluminum refining process, and wherein relatively impure aluminum and aluminum trihalide gases are supplied to the converter, aluminum monohalide and aluminum trihalide gases pass therefrom toward a decomposer, and impurities and other metals introduced into the converter with the impure aluminum are left behind in the converter;

a converter, a decomposer, and a passage for gases leading from said converter toward said decomposer, and

means for preventing clogging of and blockages in said passage, comprising means for supplying a flowing film of molten aluminum about the inside walls of said passage to maintain said walls substantially free from deposits.

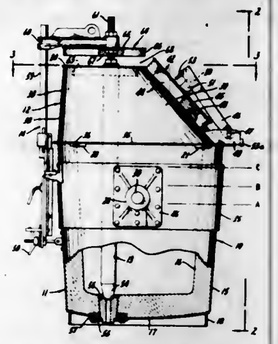
3,292,915
APPARATUS FOR DEGASSING MOLTEN METAL
Charles W. Finkl, Chicago, Ill., assignor to A. Finkl & Sons Company, Chicago, Ill., a corporation of Illinois
Original application Nov. 25, 1959, Ser. No. 855,442, now Patent No. 3,084,038, dated Apr. 2, 1963. Divided and this application Mar. 6, 1962, Ser. No. 186,569
9 Claims. (Cl. 266—34)



1. In combination in an apparatus for degassing molten metal,
a vacuum enclosure which includes means for supporting a container of undegassed molten metal,
means for exposing the interior of the vacuum enclosure to a source of vacuum,
molten metal receptacle means within the vacuum enclosure,
said container of undegassed molten metal having discharge outlet means in sealed, streaming communication with said vacuum enclosure,
said means for supporting the container of undegassed molten metal including means for positioning the discharge outlet means above the vacuum enclosure a vertical distance above the filled level in the receptacle means which is less than the distance required to degas the molten metal by streaming alone, and
means for inducing circulation of the molten metal in the receptacle means for agitating and further degasifying said molten metal.

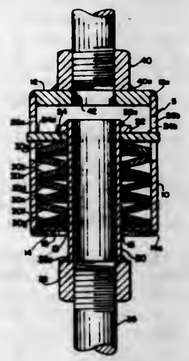
3,292,916
METAL DEGASSING APPARATUS
Charles W. Finkl, Chicago, Ill., assignor to A. Finkl & Sons Co., Chicago, Ill., a corporation of Illinois
Filed July 22, 1965, Ser. No. 477,083
8 Claims. (Cl. 266—39)

1. A degassing unit for lowering the included gas content in commercial sized baths of molten steel within the permissible temperature drop limitation of the steel, said degassing unit including a ladle and a radiation shield assembly carried by and overlapping the ladle to thereby form a substantially uninterrupted heat radiating surface over the ladle, the interior lining of the shield being composed of a refractory material, said radiation shield assembly having walls which converge upwardly, inwardly from the upper end of the ladle to thereby provide a radiation shield for conserving the heat of the steel in the ladle, said walls converging upwardly, inwardly non-uniformly to thereby provide a wall section of minimum slope as contrasted to the balance of the wall, said wall section of minimum slope having a tapping opening therein whereby molten steel may be admitted to the ladle, a cover for the tapping opening pivoted on the degassing unit, said cover, when in position covering the tapping opening, forming a portion of the substantially continuous heat



radiating surface, a stopper rod carried by radiation shield assembly, and a radiation plate carried by and removable with the stopper rod, said radiation plate overlying an opening in the radiation shield through which the stopper rod passes and being out of contact therewith at all times to thereby provide a gas escape passage for gases given off from the molten steel in the ladle, said radiation plate forming a portion of the substantially continuous heat radiating surface.

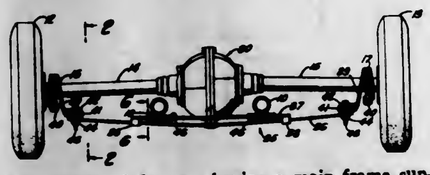
3,292,917
PIPE HANGER
Philip C. Sherburne, East Providence, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,552
3 Claims. (Cl. 267—1)



1. A spring hanger for supporting a variable load comprising:
(a) a hollow cylindrical casing shell having two ends,
(b) an end closure member joined to one end of said shell,
(i) means joined to said closure member for attachment to a support rod,
(c) spring abutment means joined to the other end of said shell and extending inwardly toward the axis of said shell, said abutment means containing,
(i) an opening therethrough at its central portion,

(d) a hollow cylindrical elongated coupling member extending through said opening of said abutment means with one end within the interior of said casing shell and the other end exteriorly of the shell,
(i) a retainer collar joined to the exterior of said coupling member at the said one end,
(ii) a threaded fastening nut joined to said other end of said coupling member coaxially therewith,
(e) an odd numbered plurality of disc springs of similar configuration contained within said shell between said abutment means and said retainer collar, each of said springs having,
(i) an axial opening therethrough through which said coupling member extends,
(A) the spring closest to said retainer collar bearing against said collar at the edge defining the axial opening through said spring,
(B) the spring closest to said abutment means bearing against said abutment means at the outer periphery of said spring,
(C) each of the intermediate springs being oriented to transmit load from the outer periphery of the spring closest to said retainer collar to the edge defining the axial opening through the spring closest to said abutment means.

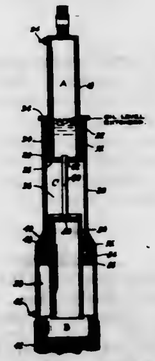
3,292,918
VARIABLE-RATE STABILIZING ASSEMBLY FOR MOTOR VEHICLES
Charles W. Hart, P.O. Box 735, Grass Valley, Calif. 95945
Filed Mar. 22, 1965, Ser. No. 441,790
10 Claims. (Cl. 267—11)



1. In a vehicle of the type having a main frame supported at its ends by spring-suspended wheels including means movably connecting each to said frame, that improvement which comprises stabilizing means for counteracting vehicle roll forces without materially altering the soft springing characteristics of the wheel springs, said stabilizing means comprising long leaf spring means extending crosswise of said main frame adjacent said wheels having means connecting the ends thereof to said means movably connecting said wheels to said main frame, and relatively stiff spring load distributing means located between said frame and the upper side of said leaf spring and having load bearing contact with the opposite end portions of said leaf spring at points spaced outwardly from the exterior side faces of said frame, whereby any tendency of said frame to roll sidewise is powerfully resisted by said stabilizer assembly.

3,292,919
AIRCRAFT SHOCK ABSORBER
Jay T. Lindley and Raymond P. Toller, both of South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,955
1 Claim. (Cl. 267—64)

A dynamic load limiting shock absorber comprising:
a first tubular member arranged to be fixed with respect to surrounding structure and provided with means for charging the interior thereof with a compressible fluid, said first tube also having a piston on one end thereof which piston is provided with radial openings and a central opening, said radial openings leading to an area exterior of said first tube and said central opening leading to the inner area of said tube, said first tubular member also being provided with a radial flange spaced from and immediately behind said piston;
a second tubular member whose inner diameter is sized to slidably receive said piston of said first tubular member through an open end in said second tubular member which open end is threaded to receive a gland nut which cooperates with the radial flange of said first tubular member to limit the extension of said first tubular member from said second tubular member and to hold said first tubular member within said second tubular member, said second tubular member being divided into two chambers with a partition therebetween with the lowermost chamber being closed by an end plug and being provided with a compressible fluid charging means;

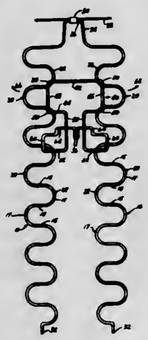


a third tubular member reciprocably mounted within said second tubular member through said partition, said second tubular member having mounted thereon a metering pin arranged to cooperate with the orifice in the piston of said first tubular member upon the compression of said second tubular member over said first tubular member, said third tubular member being provided with a movable wall operative in one of the chambers of said second tubular member and subjected to the compressive fluid therewithin so as to hold said metering pin immobile while permitting said second tubular member to compress as aforementioned over said first tubular member; and
a snubbing means operative with said radial passages in said piston exterior of said first tubular member to readily permit fluid flow in one direction and restrict fluid flow in a return direction to continuously dampen the extension of said second tubular member with respect to said first tubular member.

3,292,920
SPRING ASSEMBLY
Frank A. Bialek, Georgetown, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Oct. 11, 1965, Ser. No. 494,323
13 Claims. (Cl. 267—107)

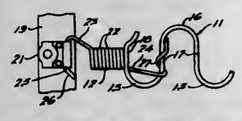
1. In a wire spring assembly for seat structures which includes a pair of elongated face springs, an independent V-shape support spring for said face springs including a

pair of angularly related legs, one of said legs including an angularly offset end portion engaged with said pair of face springs and coupled thereto between the ends thereof, the other one of said legs being extended from said one leg in a direction away from said pair of face springs in spaced relation therewith, said angularly offset end portion of said one leg effecting spacing of the apex of said V-shaped support spring from said pair of face



springs, the improvement comprising positioning said angularly offset end portion so that it has a first section clampingly engaged with one of said face springs at two points spaced longitudinally of said face spring, said offset end portion having a second section clampingly engaged with the other one of said face springs at two points spaced longitudinally of said face spring, said sections being an integral part of said support spring.

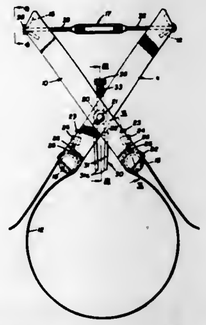
3,292,921
SUPPORTING COIL WITH S-SHAPED END
Edward J. Winkler, Dallas, Tex., and Erich H. Schutz, Detroit, Mich., assignors to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 28, 1964, Ser. No. 392,865
9 Claims. (Cl. 267—110)



1. In a cushion, a frame, at least one sinuous spring strip formed of wire bent back and forth to provide oppositely facing loops joined by straight portions, means for attaching a first end of said spring strip to said frame, a supporting coil spring disposed at the second end of said spring strip with the coils thereof extending about and along the longitudinal axis thereof, said longitudinal axis of said coil spring being parallel to the plane of said second end of said spring strip, said coil spring including integral arms extending from the respective ends thereof, one of said arms fixedly secured to said second end of said spring strip so that said coil spring is a rigid extension of said spring strip, and means attaching the other of said arms to said frame.

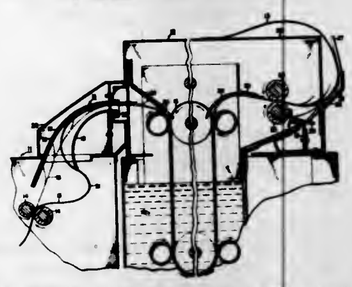
3,292,922
FLEXIBLE BAND CLAMPING DEVICE
Vasil C. Nastev, 1076 Geers Ave., Columbus, Ohio 43206
Filed Jan. 13, 1965, Ser. No. 425,244
9 Claims. (Cl. 269—131)

1. A flexible-band clamping device comprising a pair of elongated arms assembled in crossed relationship, pivot means connecting said arms intermediate their ends and supporting said arms in assembled relationship for relative swinging movement, connecting means extending between said arms at one end thereof and selectively operable to maintain said arms in relatively fixed relationship



and apply a tension force thereto, and an elongated, flexible band attachable to said arms at the opposite end thereof and adapted to form an article encircling loop which may be constricted by relative swinging movement of said arms toward a longitudinally aligned position.

3,292,923
PROJECTION OFFSET PROCESSOR AND THE LIKE
Henry N. Fairbanks and Daniel H. Robbins, Rochester, N.Y., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,801
10 Claims. (Cl. 271—3)



5. In a processor for transporting offset master sheets through processing solutions and having drive means for advancing said sheets, the improvement comprising: roller squeegee means positioned beyond said advancing means for removing excess fluid from said sheets; and guide means consisting of substantially stationary components arranged beyond said roller squeegee means for guiding said sheets along an output path having a direction which is gradually changing and extending from said squeegee means and tending upward and over said squeegee means for inverting said sheets relative to their orientation of said squeegee means, and for depositing said sheets on a sheet receiving platform located above said squeegee means.

3,292,924
SPRING SUPPORTED SEESAW TYPE APPARATUS
Robert S. Wormser and Thomas E. Hill, Hillsdale, Mich., assignors to Game-Time, Inc., Hillsdale, Mich., a corporation of Michigan
Filed Aug. 26, 1964, Ser. No. 392,892
6 Claims. (Cl. 272—54)

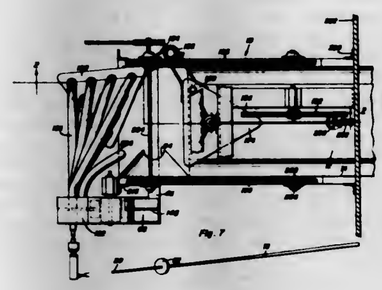
4. A playground apparatus solely supported on springs comprising, in combination,

(a) at least three arms radially extending from a common point in a substantially horizontal direction, each of said arms having a central portion and an end portion, said arms central portions being fixed relative to each other,
(b) an occupant-supporting seat defined on each end portion of said arms,



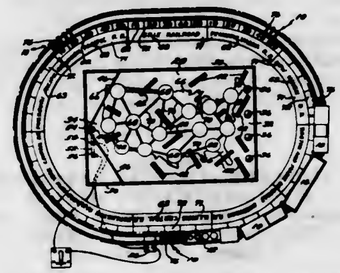
(c) a plurality of springs each having an upper portion and a lower portion,
(d) means fixing said springs upper portions relative to said arms central portions, said springs being equally spaced from said common point, and
(e) means fixedly supporting said lower portion of each spring.

3,292,925
BOWLING PIN HANDLING AND SETTING APPARATUS
George D. Barry, P.O. Box 728; Fabian F. Soukup, P.O. Box 322; and James E. Rankin, 104 University, all of Healdsburg, Calif. 95448
Filed Nov. 22, 1963, Ser. No. 325,561
10 Claims. (Cl. 273—43)



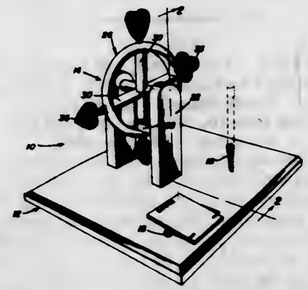
9. An apparatus for storing and setting a plurality of pins employed in a game apparatus comprising a vertically disposed casing, a plurality of substantially horizontal compartments oriented in vertical alignment, said casing having an inlet at the upper end thereof for receiving pins for filling each of the compartments, means for discharging all of the pins from the compartments simultaneously, and means receiving said pins from said compartments, said means receiving the pins from the compartments including individual tubes each extending downwardly to a discharge end, a plate underlying the discharge ends of the tubes, said plate having a plurality of sockets therein for receiving said pins from the tubes, a pin lowering and raising mechanism having means for lifting the pins from said plate, and means pivotally supporting said plate for swinging movement in a horizontal plane from a position underlying the discharge ends of the tubes to a position underlying said pin lowering and raising mechanism whereby the pins may be lifted from the plate and lowered to a playing surface.

3,292,926
GAME APPARATUS COMPRISING A TOY ELECTRIC RAILWAY AND CHANCE MEANS FOR CONTROLLING THE SAME
Bernard H. Goldbeck, West Haven, Conn., assignor to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed Aug. 29, 1963, Ser. No. 305,417
4 Claims. (Cl. 273—138)



1. A game apparatus comprising, in combination:
(a) a toy electric railway, including
(1) a track
(2) an engine
(3) a power supply lead connected to the track,
(b) a game of chance, including
(1) a movable playing piece comprising a small ball,
(2) a game board of cardboard adapted to be traversed by said playing piece from a starting location to a finish location,
(3) means on said game board providing by chance different paths of travel comprising obstacles at least some of which are formed by die-cut portions of the board having hinge connections whereby they may be folded to upward-protruding positions disposed on said board for deflecting the ball in its travel from said starting to said finish location thereby to cause different travel times for the playing piece in moving from the starting to the finish location, and
(c) circuit-control means connected to said power supply lead and responsive to the playing piece reaching the finish location for dropping the operating current supplied to the track to halt the engine.

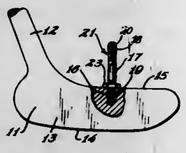
3,292,927
TRUMP INDICATOR COMPRISING ROTATABLE, LOCKABLE MEMBER WITH RADIALLY PROJECTING SYMBOLS
John B. Beach, 48 Squires Ave., Defiance, Ohio 43512
Filed July 29, 1963, Ser. No. 298,114
4 Claims. (Cl. 273—148)



1. A trump indicator consisting of a horizontal base, support standard means engaged therewith and project-

ing vertically therefrom, a vertically orientated relatively flat member rotatably mounted on the upper end of said standard means, said member including peripherally spaced portions formed so as to indicate various trump categories, said portions being selectively positionable in an uppermost position upon a rotation of said member, and means for releasably fixing said member against rotation for selectively maintaining each portion in said uppermost position, said member consisting of a ring-like rim, a pair of diametrical spokes extending there-across at right angles to each other, said portions consisting of four symbols corresponding to the four card suits, each of said symbols projecting radially from the rim at a different end of one of the spokes.

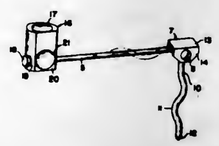
3,292,928
BALL AND CLUB ALIGNMENT ATTACHMENT FOR GOLF PUTTING DEVICE
Valentine Joseph Billen, Sandstone, Minn. 55072
Filed May 5, 1964, Ser. No. 364,947
2 Claims. (Cl. 273—163)



1. A balanced golf putter direction indicator attachment for attachment to a golf putter blade having an internally threaded vertically extending annular aperture, the attachment comprising:
a stem having a threaded end adapted to be threadably engaged in a said putter blade aperture and to extend generally vertically from said blade,
the other end of said stem including an arcuate groove,
a generally cylindrical cross bar arranged at right angles to the stem and having its axis intersecting the axis of the stem in said groove,
screw means extending through said cross bar and extending axially into said stem to selectively hold said cross bar from rotation,
said cross bar having arm portions extending substantially equal distances on each side of the stem and adapted to lie in a plane intersecting a putting face of a putter blade at right angles,
said arm portions adapted to be in substantially parallel relation to a putting surface at the time of putting,
means adjustably secured to said stem adapted to hold said stem in selectively fixed vertical adjustment to a said putter blade whereby the direction of indication of said arm portions and the vertical distance of said arm portions in relation to a said putter face are selectively fixed.

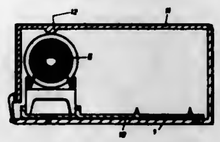
3,292,929
ROTATIVE AND SWINGABLE GOLF TEE
Theodore B. Russell, 2190 NE. 124th St., North Miami, Fla. 33132
Filed June 10, 1964, Ser. No. 373,960
4 Claims. (Cl. 273—203)

4. A golf tee comprising, a stake for insertion into the ground, a channel-shaped head in which said stake is pivoted at one end on an axis parallel to the ground when the stake is inserted in the ground, a rod pivoted at one end in the head and projecting laterally from the stake, a tee pivotal at one end of the rod on a pivot disposed at right angles to the pivot for the stake, said tee consisting of an elongated block with its pivot located adjacent to one of its ends, the block having a ball-receiving recess in its end remote from its pivot and also having a second ball-receiving recess in its side and adjacent to its pivot whereby a pivotal movement of the block can selectively position either ball-receiving recess uppermost



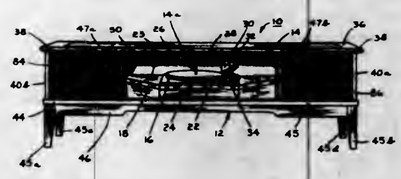
and by the disposition of the selected recess locate the ball supported thereby at different positions above the ground.

3,292,930
AUTOMATIC RECORD-CHANGING APPARATUS
Jean Foufounis, 17 Ave. Dapples, Lausanne, Switzerland
Filed Oct. 28, 1963, Ser. No. 319,348
Claims priority, application Switzerland, Oct. 26, 1962, 12,590/62
1 Claim. (Cl. 274—2)



Portable automatic record changing apparatus comprising means for selecting and playing records and record storing equipment contained within a housing having a lid in its upper part and abutment means in its base, said record storing equipment having abutment means in its lower portion and in its upper portion, spaced compartments in each of which a record can be held so that it projects substantially above the level of the store, said abutment means of said store being removably engaged with that of said housing so as to locate said record storing equipment in said housing, said lid having a downward projection on the inside thereof, closing of said lid causing said projection to be urged into downward pressing engagement with records in position in said record storing equipment.

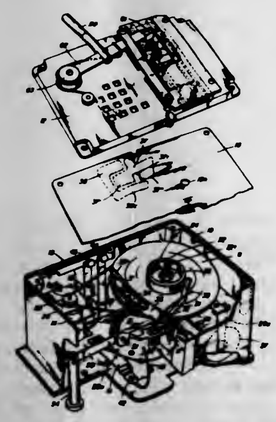
3,292,931
SOUND REPRODUCING DEVICE
Frank M. Grunwald, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 309,624, Sept. 18, 1963. This application June 7, 1966, Ser. No. 560,370
2 Claims. (Cl. 274—2)



1. A stereophonic sound reproducing device comprising a rectangularly configured coffee table-type housing having a horizontally disposed top connected to vertically arranged front and back walls and to vertically arranged

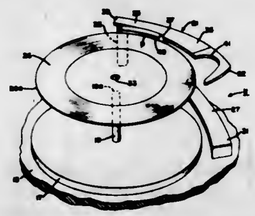
end walls, said top having a substantially uninterrupted outer surface for enabling it to serve as a table surface, a rectangularly configured recess located in said housing underneath said top in central disposition between said end walls and opening into said front wall, a left speaker enclosure located in said housing on one side of said recess between said recess and one of said end walls, a right speaker enclosure located in said housing on the other side of said recess between said recess and the other of said end walls, a substantially L-shaped support including first and second legs, an automatic record player including a turntable supported upon and carried by the first leg of said support, a record receiving spindle for sequencing and positioning a plurality of records on said turntable, and bearing means disposed underneath said top for rotatably mounting said support in said housing for movement about an axis disposed perpendicular to and underneath said top, said axis being perpendicular to said first leg of said support, means for limiting rotatable movement of said support between first and second positions spaced 180 degrees apart, said means including a single member arranged to contact said second leg during movements of said support both from its first position to its second position and from its second position to its first position, the second leg of said support being arranged for rotatable oscillation about said axis so that it closes said recess and forms part of said front wall when said support is in said first position, said record player being arranged on said first leg so that a substantial portion of said turntable including said spindle extends outwardly from said recess to afford ready access to said player when said support is in the second position, said automatic record player being further arranged to play a plurality of records, when said support is in either said first or second position.

3,292,932
MULTIPLE SOUND EFFECT MECHANISM FOR DOLLS
Tobin Wolf, Bloomfield, N.J., assignor to De Lux Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed June 7, 1963, Ser. No. 286,360
14 Claims. (Cl. 274—9)



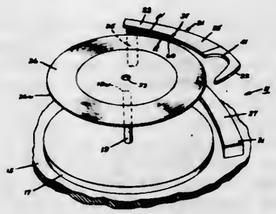
1. In combination with a toy, sound reproducing mechanism completely enclosed therein including a disc record having a plurality of discrete annular track areas at different distances from its center, mechanism including an electric motor and battery to rotate said record, switching means for making and breaking a circuit between said battery and motor, means operable by manual pressure from outside the toy to select at will any track area whose sound effect it is desired to reproduce regardless of the pre-existing position of said sound reproducing mechanism, and means controlled by said selecting means to close said switching means and initiate the playing of the sound effect from any selected track area.

3,292,933
STABILIZER ARM FOR PHONOGRAPHS
Yates Maxwell Heag, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 13, 1963, Ser. No. 279,968
6 Claims. (Cl. 274—10)



1. In a phonograph record playing apparatus including a turntable for receiving records, a spindle disposed on the turntable for positioning records upon said turntable, and a singular stabilizing arm located in proximity to said turntable and arranged to balance records into generally perpendicular relationship with said spindle, positioning means on said stabilizing arm for cooperation with a peripheral section of at least one record to locate said record into substantially aligned axial relationship with said spindle thereby to assure that said record will cooperate with said spindle in a precise manner.

3,292,934
STABILIZER ARM FOR PHONOGRAPHS
Jerry A. Meyer, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed May 13, 1963, Ser. No. 280,027
3 Claims. (Cl. 274—10)



1. In a phonograph record playing apparatus including a turntable for receiving records, a spindle disposed on the turntable for positioning records upon said turntable, and a stabilizing arm arranged in proximity to said turntable to balance records into generally perpendicular relationship with said spindle, means on said stabilizing arm for positioning at least one record into substantially aligned axial relationship with said spindle thereby to assure that said record will cooperate with said spindle in a precise manner, and resilient means on said positioning means for cushioning the periphery of a record positionable thereby, said resilient means serving to protect the periphery of said record, to allow for tolerance variations between said

positioning means, said record and said spindle, and to prevent undesirable slippage of the periphery of said record relative to said positioning means.

3,292,935
TONE ARM FOR GRAMOPHONE
Margaret Joan Cooper, Purley, England, assignor to Decca Limited, London, England, a British company
Filed July 29, 1963, Ser. No. 298,026
Claims priority, application Great Britain, July 30, 1962, 29,174/62
5 Claims. (Cl. 274—23)



1. A tone arm and mounting therefor for reproducing sound from disc records comprising a pivot for horizontal rotation of the tone arm over the surface of a record, a permanent magnet fixed to the tone arm symmetrically about said pivot and permanent magnet means fixed to the mounting for said tone arm symmetrically about said pivot, the magnetic force between the said permanent magnet and said permanent magnet means tending to rotate said tone arm about said pivot in a direction opposed to the direction of rotation of said tone arm when reproducing from a record.

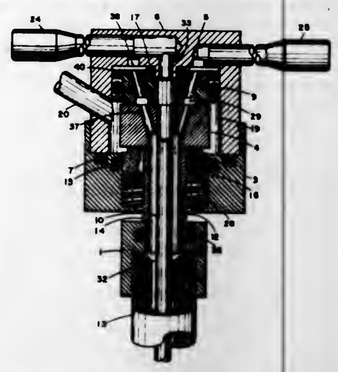
3,292,936
PHONOGRAPH STYLUS
Joseph F. Grado, 4614 7th Ave., Brooklyn, N.Y. 11220
Filed June 11, 1964, Ser. No. 374,525
6 Claims. (Cl. 274—38)



1. A phonograph stylus for use in combination with a transducer for transposing mechanical variations in the grooves of a phonograph record into electrical signals comprising a body, said body having a pair of spherical groove-contacting surfaces at the lower end thereof, said groove-contacting surfaces facing in opposite directions and being spaced from each other a distance greater than their radii, said body extending upwardly from said groove-contacting surfaces to a mounting portion by which said body is adapted to be mounted to said electrical transducer.

3,292,937
SHAFT SEAL FOR LIQUID CENTRIFUGES
Clifford E. Nunley, Kingston, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 3, 1964, Ser. No. 357,338
2 Claims. (Cl. 277—59)

1. A shaft seal for a liquid centrifuge comprising a housing defining an open-ended chamber, channels for leading fluid into and removing it from the chamber, a head rotatably disposed in the chamber in spaced relation to the walls and having ducts for communication with the channels in the head, a sealing element disposed between the head and the housing for bringing the channels and ducts into communication, a shaft including concentrically positioned tubes joined to the head and extending into



the open chamber, a closure for the chamber surrounding the shaft and resilient means engaged by the closure for yieldingly urging the head into tight engagement with the sealing element to provide a liquid-tight seal.

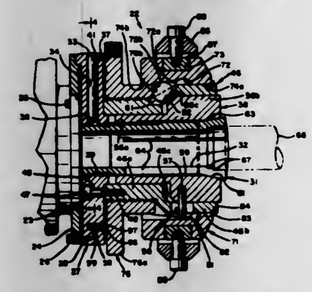
3,292,938
WELL PACKERS
Jack W. Tamplen, Celina, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,909
11 Claims. (Cl. 277—116.2)



1. A well packer including: a tubular mandrel; an annular seal element and a pair of radially outwardly expansible bridge assemblies carried by said mandrel; said seal element being disposed between said bridge assemblies; an expander for expanding said assemblies and said seal element disposed on said mandrel for limited longitudinal movement relative to said mandrel, said seal element and said bridge assemblies, one of said bridge assemblies being secured against movement relative to said mandrel; means for moving the other of said bridge assemblies in one direction toward said one of said bridge assemblies, said other of said bridge assemblies being movable in said one direction with respect to said expanding member to cause said other of said bridge assemblies to be moved radially outwardly to said expanded position; said other of said bridge assemblies and said expander having co-engageable means limiting movement

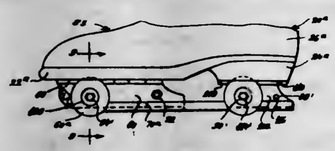
of said other of said bridge assemblies relative to said expander whereby further movement of said other of said bridge assemblies in said one direction of said mandrel causes said expander to move longitudinally of said mandrel and inwardly of said seal element to move the seal element radially outwardly to its expanded position and causes said expander to move into engagement with said one of said bridge assemblies to move it into its expanded position, said bridge assemblies including means providing continuous annular surfaces moved to positions engaging opposite annular end surfaces of said seal element when said seal element is in expanded position therebetween.

3,292,939
WORK HOLDING DEVICE
Karl H. Lorenz, 730 Barron Ave., Space 109, Redwood City, Calif. 94063
Filed Oct. 21, 1964, Ser. No. 405,452
5 Claims. (Cl. 279—50)



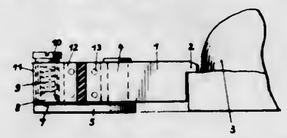
1. In a work holding chuck a retaining sleeve having small and large diameter sections interconnected by an intermediate wall section therebetween which is formed with a plurality of circumferentially spaced apertures therethrough, an actuating sleeve having two different outside diameter sections and a tapered wall section therebetween which actuating sleeve is slidably mounted in the large and small diameter sections of said retaining sleeve, an adjusting ring on said small diameter section of said retaining sleeve and adjustably positioned therealong, a plurality of force transmitting members in the apertures in said retaining sleeve and adapted to abut said adjusting ring and the tapered section of said actuating sleeve, and an axially slidable locking ring having a cam surface formed on the inner wall thereof adapted for engagement with said force transmitting members for urging the same into wedging engagement between said adjusting ring and tapered section of said actuating sleeve for slide actuation of said actuating sleeve within said retaining sleeve.

3,292,940
CONVERTIBLE ICE, HOCKEY AND ROLLER SKATES
Dorothea M. Weltzner, 8 E. 26th St., New York, N.Y. 10021
Filed Nov. 12, 1964, Ser. No. 410,367
8 Claims. (Cl. 280—7.13)



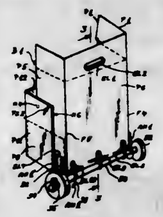
1. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, said sole and heel having threaded other holes registering with at least one hole in each of the blades, and short bolts removably engaged in the holes in the blades, sole and heel and holding the blades in the recesses.

3,292,941
SAFETY JAW FOR SAFETY BINDINGS
Ludwig Berchtold, Bergstrasse 85, Krailling, near Munich, Germany, and Albert Schuster, Munchener Str. 15, Planegg, near Munich, Germany
Filed May 8, 1964, Ser. No. 366,115
Claims priority, application Germany, May 17, 1963, B 71,948
9 Claims. (Cl. 280—11.35)



1. In a safety jaw for safety ski bindings including two jaw parts pivotally movable relative to each other and having disposed therebetween a detent device which is unlocked in response to a predetermined, preferably adjustable torque to release said jaw parts for pivotal movement, the improvement comprising at least one of the jaw parts being composed of two elements, one of which incorporates a portion of the detent device and a resilient articulated joint affording a limited freedom of movement coupling said elements, said articulated joint disposed outside the path for transmitting forces acting in the longitudinal direction of the ski.

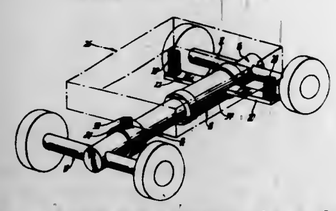
3,292,942
ONE-PIECE DROP FRONT DOUBLE SELF-HANDLE SHOPPING CART
Sol Mitty, Nell Mitty, and Jerald Mitty, all of 144—45 78th Ave., Flushing, N.Y. 11375
Filed Nov. 12, 1964, Ser. No. 410,369
12 Claims. (Cl. 280—47.26)



7. A shopping cart comprising a box-like body formed from a one-piece rectangular blank of sheet material, said body having a rectangular, vertical back panel, a first two rectangular side panels extending forwardly from opposite lateral edges respectively of the back panel, a bottom rectangular panel extending horizontally forwardly from the bottom edge of the back panel, a front panel folded upwardly from a forward edge of the bottom panel, a second two rectangular side panels folded rearwardly from lateral edges of the front panel and abutting the first two side panels on outer sides thereof, a third two side panels folded upwardly from lateral end edges of the bottom panel and abutting inner sides of the

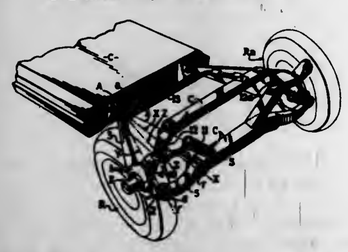
first two side panels, and three other panels folded downwardly from upper edges of the first two side panels and back panel to form a double layer handle structure, said back panel and one of the three other panels having registering slots to provide a hand grip, the first two side panels having keyhole slots formed near lower edges thereof with a transverse slot over each keyhole slot, and a pair of axle holders, each axle holder having a flat straight shank, a flat eye at one end of the shank to receive one end of an axle rod, a depending hook at the other end of the shank engaging in one of the transverse slots, and a head projecting from said shank engaging in a keyhole slot.

3,292,943
OFF-ROAD MOTOR VEHICLE
Clarence V. Crockett, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Apr. 2, 1963, Ser. No. 270,053. Divided and this application Apr. 25, 1966, Ser. No. 545,113
7 Claims. (Cl. 280—104)



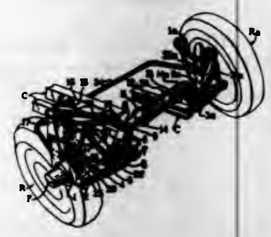
1. A vehicle comprising a body portion, a front and rear axle rotatably mounting wheels, first means rigid with the front axle and extending toward the rear axle, second means rigid with the rear axle and extending toward the front axle, third means connecting said first and second means and serving as a support for said body portion, and torsion bar means connecting said first, second and third means for positively positioning the latter about the longitudinal axis of said vehicle upon relative rotation of said axles about said axis.

3,292,944
SUSPENSION FOR THE REAR WHEELS OF VEHICLES
Marcel Dangauthier, Paris, France, assignor to La Publicite Francaise, Paris, France, a French body corporate
Filed Jan. 29, 1965, Ser. No. 429,042
Claims priority, application France, Dec. 10, 1964, 998,168
6 Claims. (Cl. 280—124)



1. A suspension for connecting the rear wheels of a vehicle to the suspended part of the vehicle, said suspension comprising, in respect of each wheel, a rigid member including a housing for the bearing of the wheel and three rigid arms which are rigid with said housing and have ends, a first of the arms having the end thereof directly pivoted to said suspended part, and two substantially parallel links respectively connecting the ends of the other two arms to said suspended part, each link having one end pivotally connected to said suspended part and the other end pivotally connected to the end of the corresponding arm.

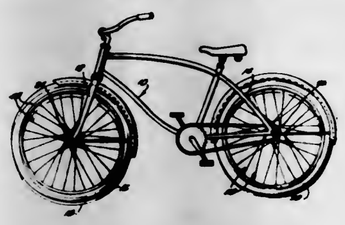
3,292,945
VEHICLE SUSPENSIONS
Marcel Dangauthier, Paris, France, assignor to La Publicite Francaise, Paris, France, a French body corporate
Filed Jan. 29, 1965, Ser. No. 429,043
Claims priority, application France, Dec. 10, 1964, 998,167
12 Claims. (Cl. 280—124)



1. In a suspension for connecting a set of wheels to the suspended part of an independent wheel vehicle, said suspension being adapted to disassociate the damping of the vertical or pumping oscillations from the damping of the roll oscillations, a symmetrical system connecting the wheels of the set of wheels together and to said suspended part, said system comprising, in respect of each wheel, a cranked pivotal lever having two arms, a first one of the arms being pivotally connected to the stub axle of the wheel to pivot about an axis which is substantially horizontal and extends substantially longitudinally of the vehicle, the cranked lever being pivotally connected substantially in the corner of the cranked portion of the lever to said suspended part by a pivot pin which is substantially horizontal and extends substantially longitudinally of the vehicle, the second arm of said arms having a free end connecting means having two end portions spaced apart transversley of said suspended part, as damper and pivotal connections connecting said two end portions of the connecting means respectively to said free ends of the second arms of the pivotal levers, the distance between said pivotal connections of the connecting means being variable and said damper being operatively connected to said pivotal connections of the connecting means to damp any movement of said pivotal connections towards and away from each other, whereby a symmetrical pumping oscillation of said suspended part relative to the set of wheels in the vertical plane of symmetry of the vehicle produces symmetrical pivotal movements of the two cranked levers in opposite directions relative to said suspended part the energy of which is absorbed by said damper of the connecting means, whereas roll of the vehicle produces oscillations of the two cranked levers in the same direction relative to said suspended part, the last-mentioned oscillations having substantially no action on the damper of the connecting means, which latter moves bodily relative to said suspended part substantially along an axis extending transversely of the vehicle.

3,292,946
BUCKING BRONCO BICYCLE
Charlie Dallas Melson, 122 S. Curry St., Hampton, Va. 23363
Filed Sept. 11, 1964, Ser. No. 395,883
3 Claims. (Cl. 280—229)

1. In a bicycle having a frame and a pivotal fork mounted in front thereof and a driving fork mounted in the rear thereof, a hub for cooperating with the front fork of the bicycle having openings along its periphery disposed in circular configuration to mount a wheel rim from spokes passing through said openings, in which the hub has an off-centered shaft opening for receiving a shaft for mounting on the hub, a chain driven hub having an eccentrically located opening for receiving means



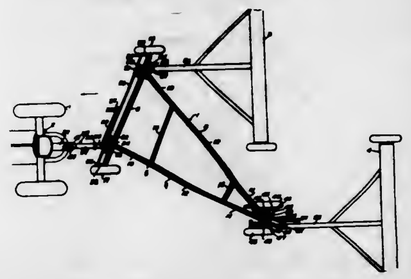
cooperating with the rear fork, said driven hub having openings along its periphery disposed in circular configuration for mounting a rear wheel rim from spokes passing through the said openings in the driven hub, said hubs having different dimensions for providing a modulated motion as the bicycle moves forwardly.

3,292,947
KNOCK-DOWN BICYCLE
Alexander B. Masichak, Parma, Ohio, assignor to The M. T. & D. Company, a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 437,042
15 Claims. (Cl. 280—287)



1. In a bicycle frame having a steering post and a seat post, the improvement of a separable reach bar extending between and joining said posts, said reach bar having a first portion carried by and connected to the steering post and a second portion carried by and connected to said seat post, one of said portions having a female part and the other of said portions having a male part, said parts being non-circular in cross-section and being interengageable to join said portions and to prevent rotation of one of said portions relative to the other on their respective axes, said female part having disposed along the bottom wall thereof a boss projecting inwardly thereof, said male part having a recess in the bottom wall thereof dimensioned for complementarily accommodating said boss, the height of said boss above said bottom wall of female part being so related to the vertical thickness of said male part above said boss that said male part may be inserted longitudinally to locate the said recess above said boss and the male part moved toward said bottom wall of the female part to position said boss in said recess for preventing longitudinal withdrawal of the male part from said female part, and a locking member carried by said female part and selectively movable inwardly of said female part downwardly against said male part to maintain the said boss in the said recess and thereby lock the male part in said female part.

3,292,948
MOBILE IMPLEMENT HITCH
Obert O. McMasters, Fernie H. Marshall, and Hubert O. Farrah, all of Braman, Okla. 74632
Filed June 28, 1965, Ser. No. 467,327
12 Claims. (Cl. 280—412)



1. A mobile hitch for connecting a plurality of field implements with a tractor vehicle to be towed thereby in tandem for highway travel and in laterally spaced, staggered relation for field operation, said mobile hitch including
a front axle,
wheels carrying ends of the front axle,
a generally triangular frame having the base thereof at the front and the apex at the rear,
said frame having an upward arch between the front and rear wheels,
means connected with one front corner of the frame for attaching the first of said implements,
means connected with the apex of the frame for attaching a second implement,
draft means for connection with the tractor vehicle,
means at said one front corner for attaching the draft means to shift position of the triangular frame so that the arch thereof moves over the leading implement and substantially in line of draft with the tractor vehicle to lead the second implement in tandem relation with the first implement under pull of the tractor vehicle, and
means on the opposite corner of the frame for connecting the draft means to shift the mobile hitch and bring said implements into field position upon pull of the tractor vehicle.

3,292,949
LOCKING MECHANISMS FOR HITCHES
George Restall, Sutton Coldfield, England, assignor to Rubery, Owen and Company Limited, Wednesbury, Staffordshire, England, a British company
Filed Dec. 30, 1964, Ser. No. 422,332
Claims priority, application Great Britain, Dec. 30, 1963, 44,104/63; Dec. 31, 1963, 51,296/63; Jan. 4, 1964, 474/64; Jan. 18, 1964, 2,321/64; Feb. 12, 1964, 5,834/64
22 Claims. (Cl. 280—479)

1. A hitch for coupling a tractor to an implement comprising a first hitch member adapted to be connected to the tractor and a second hitch member adapted to be connector to the implement, the hitch members having co-operating parts which are to be connected, aligned pins passing through and into the co-operating parts to be connected, an angularly movable lever having opposed

limbs in the free ends of which the aligned pins are carried, said lever being angularly movable about the pins as an axis, and relatively stationary cam means co-operat-



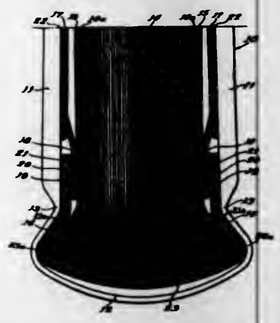
ing with the limbs of the lever to move the pins towards or away from each other upon angular movement of the lever.

3,292,950
HITCH POLE
Kenneth L. Kirkpatrick, Welland, Ontario, Canada, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 25, 1965, Ser. No. 442,628
3 Claims. (Cl. 280—482)



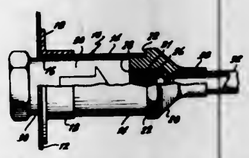
1. An adjustable hitch pole comprising: an inner pole having upper and lower longitudinally extending apertured members, a forwardly extending clevis rigidly secured to the front ends of the spaced apart members, a safety stop rigidly secured to the rear ends of the spaced apart members, the clevis and the safety stop holding the upper and lower members apart to form a longitudinally extending slot between them, an outer pole telescopically disposed about said inner pole, a transversely extending safety stop pin secured to opposite side walls of the outer pole and passing between the upper and lower members, outwardly extending latch pin means mounted on opposite side portions of said outer pole, an apertured latch collar slidably disposed about the inner pole, adjusting pin means disposed within the apertures of the latch collar and corresponding apertures in the inner hitch pole to hold said collar in selected positions of adjustment, outwardly extending pivot pin means mounted on opposed side portions of the latch collar, latch plate means swingably secured at their forward end about the pivot pin means, said latch plate means being provided with an upwardly and rearwardly extending cam surface to the rear of the forward end and hook means disposed between the cam surface and the forward end.

3,292,951
PATENT BOUND BOOK AND METHOD OF MAKING SUCH BOOKS
Robert L. Schoenberger, Glencoe, Ill., assignor to R. R. Donnelley & Sons Company, a corporation of Delaware
Filed May 25, 1966, Ser. No. 554,635
11 Claims. (Cl. 281—21)



11. A patent bound, rounded and backed book comprising a case and a plurality of sheets within said case, the rear margins of said sheets being spread apart, said book further comprising a single homogeneous coating of adhesive attaching the rear margins of said sheets to one another and to said case, said adhesive coating extending unbrokenly between the spread apart rear margins of all said sheets and all of said coating being free from deformation-induced stresses tending to cause loss of the rounded and backed shape of said book.

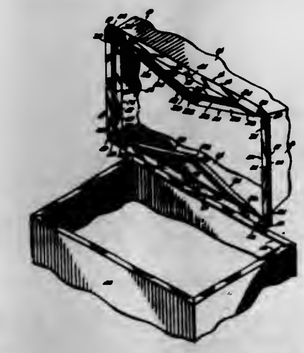
3,292,952
HYDRAULIC FITTINGS
Joseph Shapiro, 1110 Wisconsin St., Pomona, Calif. 91767
Filed June 15, 1965, Ser. No. 464,165
5 Claims. (Cl. 285—158)



1. A fitting assembly for supporting components in a manifold system in a position easily accessible for repair and replacement which comprises:
(a) a tubular component-receiving member having an annular peripheral shoulder on its outer surface which mates with a corresponding aperture in a wall of the manifold system, said component having a male threaded portion along the end which mates with a fitting;
(b) a flanged tubular member at least partially engaging said component-receiving member at the end which receives said component and which extends to and is attached to a wall of said manifold system, said wall being provided with an aperture which is concentric with said component-receiving member;
(c) a fitting having a large end and a small end, said fitting having a female threaded boss portion on the interior surface of its large end which receives the male threaded end of the component, said fitting being bonded at its large end to the mating end of said component-receiving member, a component extending through said aperture and attached to said fitting;

(d) an hydraulic seal disposed within said fitting adjacent the mating attachment end, sealingly engaging said component and said fitting; and
(e) conduit means connected to the other end of said fitting.

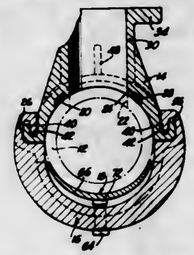
3,292,953
DUCT FITTINGS CONNECTING MEANS
Frank E. Grate, Cincinnati, Ohio, assignor to The Williamson Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 5, 1964, Ser. No. 365,064
3 Claims. (Cl. 285—189)



1. Means to connect the rectangular base of a take-off fitting to the wall of an air conduit or the like surrounding a rectangular opening in said wall, said base having base flanges at the sides and ends thereof that are channel-shaped and that open inwardly, said means comprising a fixed channel on the base flange at one end of said base that opens outwardly and embraces said conduit wall at a first side of said opening therein, a shiftable channel adjacent the base flange at the opposite end of said base that opens outwardly, toggle channels at each of the sides of said base that open outwardly, means pivotally connecting first ends of said toggle channels to said base adjacent the respective opposite ends of said fixed channel, means pivotally attaching the ends of said toggle channels opposite said first ends to the respective opposite ends of said shiftable channel, and each of said toggle channels being hinged adjacent their centers and movable between angulated positions in which their mid sections are spaced inwardly from said side base flanges and positions in which they are straight and coextensive with said side base flanges and embracing said conduit wall at the second and third sides of said opening therein that are opposite one another, the movement of said toggle channels between said positions shifting said shiftable channel from a position in which it is retracted inwardly away from said adjacent base flange and one in which it is coextensive with said adjacent base flange and embracing said conduit wall at the fourth side of said opening therein.

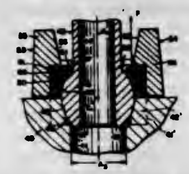
3,292,954
SERVICE CLAMP
William S. Corey, 10236 Mt. Gleason, Tujunga, Calif. 91042
Substituted for abandoned application Ser. No. 259,006, Feb. 18, 1963. This application Apr. 20, 1965, Ser. No. 450,268
2 Claims. (Cl. 285—198)

1. A service clamp for use with a cylindrical pipe which includes:
a connecting part, said connecting part including a semi-cylindrical center section having a substantially semi-cylindrical inner surface and a first axis adapted to fit over substantially its entire inner surface in engagement with a pipe, edge flanges at the side edges of said semi-cylindrically center section extending substantially diametrically and upward and extending axially the full length of said connecting part;
a holding part having a center section of U-shaped cross-sectional configuration having a substantially semi-cylindrical portion having a second axis parallel to and spaced from said first axis and edge flanges, each of which edge flanges extends outward substantially diametrically to said first axis, upward, inward and downward so that it interfits with an edge flange on said connecting part so as to prevent said holding and said connecting parts from moving away from one another;



a clamping part fitting within said center section of said holding part, said clamping part having a partially cylindrical internal surface having a third axis, said clamping part being capable of bearing against a pipe located between said connecting and said holding parts so that said third axis lies with said first axis, said clamping part having a width at right angles to said third axis almost equal to the diameter of said surface on said connecting part; and
bolt means threaded on said holding part and extending into engagement with said clamping part so as to be capable of applying pressure to said clamping part in order to force said clamping part into engagement with said pipe.

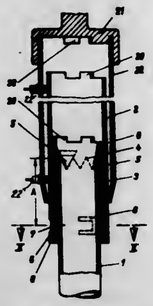
3,292,955
ADJUSTABLE PRESSURE LINE COUPLING
Roger R. Luther, Zion, Ill., assignor to Anchor Coupling Co. Inc., Libertyville, Ill., a corporation of Illinois
Filed Feb. 17, 1964, Ser. No. 345,371
3 Claims. (Cl. 285—261)



1. A coupling comprising components including a base member having a frusto-spherical seat and a fluid passage communicating with said seat, a tubular fitting formed with an axis passage and a head providing a spherical inner face portion matingly engaging said seat, a circumferentially continuous axial thrust transmitting ring embracing said fitting and having a flat top normal to its axis, on one side thereof, and a frusto-spherical portion, on its other side, facing toward said seat and matingly engaging a spherical outer face portion of said head, a pair of symmetrical split clamp sectors respectively engaging opposite sides of said thrust transmitting ring, each sector having a massive, rigid, semi-circular portion and a flange at each end thereof, each sector

having a semi-cylindrical inner face, sized and configurated to embrace and enclose one-half of the periphery of the thrust transmitting ring, and an arcuate lip overhanging said inner face in position to clampingly engage the flat top of the ring at and inwardly of its said periphery, said ring being adapted to function in hoop tension by absorbing radial components of thrust applied thereon by said head, thereby applying only axial thrust upon the lips of said clamp sectors, and a bolt extending through each of said flanges and secured to said base member to clamp the coupling components together.

3,292,956
CLAMPING ARRANGEMENT FOR PIPES
Siegfried Schlensky, Schillerseestrasse 71, Munich 9, Germany
Filed Feb. 1, 1965, Ser. No. 429,426
8 Claims. (Cl. 287—58)



1. An arrangement for clamping two mutually slidable and rotatable tubular elements especially for photographic apparatus, comprising

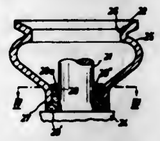
at least two tubular members arranged for telescopic movement relative to one another,

a clamping sleeve member rotatably disposed between said telescopic tubular members, said clamping sleeve member being also secured in the axial direction in position between said telescopic tubular members,

interengageable male and female locking means, one of said locking means being disposed on the first of said telescopic tubular members and the other of said locking means being disposed on said clamping sleeve member in such a position as to be engaged or released upon relative axial movement between said first telescopic tubular member and said clamping sleeve member, said male and female locking means being so shaped that when engaged they provide a torque transmitting connection between said clamping sleeve member and said first telescopic tubular member, and force locking connecting means including at least one cam surface disposed on the other telescoping tubular member and springy tongue means disposed on said clamping sleeve member adjacent to said cam surface, said cam surface and said springy tongue means upon rotation of said clamping sleeve member providing a force-locking connection between the two telescopic tubular members.

3,292,957
SEALED BALL-TYPE JOINTS AND THE LIKE
Jürgen Ulderup, Lemforde 207, Hannover, Germany
Filed Jan. 20, 1964, Ser. No. 339,573
3 Claims. (Cl. 287—87)

3. A seal for the junction of an elongated member and a body extending generally transversely thereto, comprising a generally conical boot sleeve of oil-resistant elastomeric noncellular synthetic-resin material surrounding said member and having a large end and a small end, said sleeve at said large end having an inwardly extending annular bead portion to bear annularly against said body and receivable in an annular recess of said body, and an annular L-sectioned cuff portion of resilient cellular foam synthetic resin material at said small end of said sleeve and on its inner periphery, said cuff resiliently hugging said member at a location axially spaced



from said body, said annular cuff portion having its axially extending annular flange between and separating the sleeve entirely from said member and with one end of said flange having an inner peripheral surface lying along said member and flared radially outwardly away from said member and in the direction of said wide end and with the other end of said flange having a portion extending radially outwardly therefrom and engaging the bottom of said boot sleeve.

3,292,958
TRANSMISSION LINKAGE ASSEMBLY
John R. Oishei, Buffalo, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed June 10, 1964, Ser. No. 374,123
5 Claims. (Cl. 287—87)



3. In a linkage construction for a windshield wiper system including a pair of linkage elements pivotally secured to each other by a ball joint; a ball joint assembly comprising a linkage element having a substantially spherical recess and a depression formed in the wall of said spherical recess, a resilient socket biasing member received in said depression, a pair of socket plates having complementary opposing socket halves formed therein, said socket plates secured together and to said linkage element, one of said socket plates being conformed so as to be more resilient than the other of said socket plates, said one of said socket plates having its socket half received in said spherical recess with at least a portion thereof being spaced from the walls of said spherical recess and a portion thereof in compressive engagement with said resilient socket biasing means and a ball stud disposed between said socket halves.

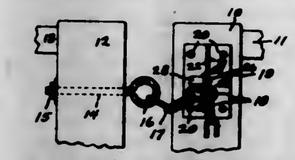
3,292,959
PLASTIC THREADED HUB WITH METAL INSERT
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Filed June 8, 1964, Ser. No. 373,429
3 Claims. (Cl. 292—1)

1. A hub of synthetic plastic resin material having walls at its inner end forming a retractor housing, and a cylindrical hub section extending outwardly from said walls, said cylindrical hub section having a central passage in communication with the interior of said retractor housing, said hub having a longitudinally extending opening in a part of said cylindrical hub section adjacent said retractor housing and in communication with the interior of said retractor housing, longitudinally extending side walls for said opening, said hub having bores extending through the cylindrical hub section at a location immedi-



ately adjacent each longitudinally extending side wall of the opening, a longitudinal slit between each bore and the respective side wall having a width less than the diameter of the bore, and a metal pin having a fit in each said bore, each said pin having a location extending partly into the respective longitudinal slit, and a metal blocking arm having an end thereof extending into said opening between an outer released position and an inner position in blocking relationship with said retractor means.

3,292,960
LATCH SET
Bert R. Gustafson, Cherokee, Iowa 51012
Filed Feb. 14, 1964, Ser. No. 344,864
2 Claims. (Cl. 292—264)



1. A latch comprising a latch member, said latch member including an outwardly projecting flange, said flange having slot portions, a bolt member including a chain attached thereto, any of the links of said chain being adapted to be received within one of said slot portions, whereby an adjacent link will lock said chain, a spring-urged locking bar pivotally attached to said flange, a further slot projecting at right angles from said slot portions and formed to permit removal of the link from said slot portions and adapted to receive said locking bar, outwardly bent lips extending integrally from said flange toward said locking bar and adjacent to said further slot, said lips having sloping edges.

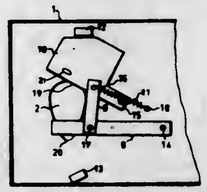
3,292,961
BAG SEAL
Sigurd M. Moberg, East Orange, N.J., assignor to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey
Filed Oct. 12, 1964, Ser. No. 403,291
7 Claims. (Cl. 292—311)



1. A bag seal comprising, in its condition prior to use, a length of tape, a deformable sealing element and a deformable tape-gripping element to a first portion of which

one end of said tape is fixedly connected, said tape-gripping element having a tubular second portion, oblong in cross-section, extending into said sealing element within a space in the latter and adapted, in use of the seal, to receive and grip a distal portion of said tape, said sealing element and said second portion together being deformable to clinch and hold said distal portion of the tape, and said second portion of the tape-gripping element having opposite flat walls one of which is uninterrupted and the other of which has a narrow, transverse saddle offset toward said one flat wall, providing a tape receiving space between the saddle and said other flat wall; side edges of said saddle, and edge portions of said other wall being adapted to grip a portion of the tape therebetween, when said sealing element and said second portion are clinchingly deformed upon the tape.

3,292,962
BUNDLE HOLDER
Kai A. Valli, Jakobsberg, Sweden, assignor to Aresco Aktiebolag, Vallingby, Sweden
Filed Jan. 25, 1965, Ser. No. 427,760
Claims priority, application Sweden, Feb. 1, 1964, 1,269/64
5 Claims. (Cl. 294—5.5)



1. A bundle holder in which a panel forms a stand, an aperture in said panel and an arm arranged in said aperture forming a holding member, said arm being pivoted to a pin mounted on said panel and rotatable between an open position and a closed position, a spring mounted between a point on said arm and a point on said panel, said points being so chosen that said arm with snap-action is forced into any of said positions, in addition to which an operating arm is connected with said arm of said holding member and protruding into said aperture, when said arm is in its open position.

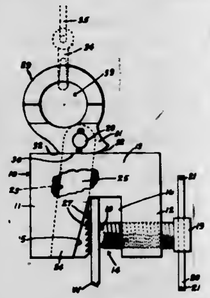
3,292,963
HOT CAN HANDLING IMPLEMENT
Jenny Materya, 2013 Mayburn Ave., Dearborn, Mich. 48128
Filed Aug. 21, 1962, Ser. No. 218,364
5 Claims. (Cl. 294—29)



1. In a hand tool for use in the manipulation of hot objects, the combination of, a pair of generally symmetrical scissor like arms; an opening of round configuration symmetrically located in each of said arms intermediate the ends thereof; an arcuate finger member having two generally flat end portions in substantially parallel relationship; an opening of round configuration in the first flat end of said arcuate finger member; a magnet secured to the second flat end portion of said arcuate finger member; said round openings in said arms positioned in alignment with the first round opening in

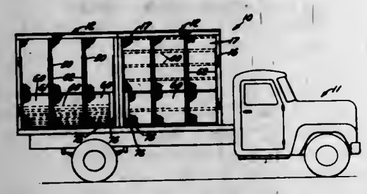
the first flat end of said arcuate finger member, said arms and said arcuate finger member pivotally joined with a cylindrical rivet disposed through said openings; a finger loop on one end of each of said arms and gripping means on the opposite ends thereof; movement of said finger loops in one direction causing said gripping means to engage an object, while movement thereof in the opposite direction releases said object.

3,292,964
CLAMPS
Herman Albert, 4 Manor Road, Paterson, N.J. 07514
Filed Apr. 13, 1966, Ser. No. 542,304
4 Claims. (Cl. 294—102)



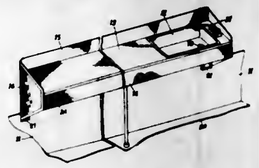
1. A clamp comprising a body provided with a work receiving opening, a pair of jaws carried by said body and extending into said opening for engaging work disposed in said opening between said jaws, one of said jaws being slidable in said body at an angle relative to the other jaw for coaction therewith to clamp the work between said jaws, said one jaw being effective to increase the clamping pressure on the work upon relative movement of said jaws, means pivotally connected to said one jaw for raising said clamp, said means engageable with and movable relative to said body to apply leverage to said one jaw upon raising of said clamp by said means.

3,292,965
CARGO STORING AND TRANSPORTING APPARATUS
Gilbert L. Powers, 1831 Monterey Road, South Pasadena, Calif. 91108
Filed July 9, 1964, Ser. No. 381,487
10 Claims. (Cl. 296—12)



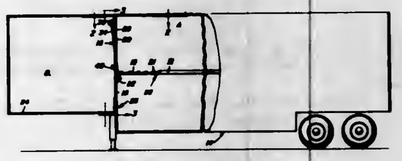
1. In a truck chassis for transporting a plurality of layers of cargo each containing a number of similar items of cargo separately chargeable onto and removable from said truck through openings located along the lower lateral side of the cargo carrying portion of the truck chassis; that improvement in said truck chassis which comprises a unitary self-contained cargo enclosing and storing means secured to said truck chassis, said cargo storing means including a plurality of upright cargo storage compartments arranged in side-by-side relation along the side of said chassis each having an outwardly facing cargo charging opening at their lower ends and along the side of said chassis, a plurality of cargo supporting platforms in each of said compartments having a free-running fit relative to the adjacent interior side walls of said compartments and collapsible compactly against one another at the bottom of the associated one of said compartments and in a convenient position for the loading of cargo items onto the uppermost unloaded one thereof through said charging openings, and means for shifting individual ones of said platforms from the collapsed positions thereof sequentially into predetermined spaced relation with respect to the next adjacent lower one of said platforms until a desired number of the platforms in a particular one of said compartments have been loaded and distributed vertically therealong.

3,292,966
TRAILER KITCHEN
James F. Mariol, Cincinnati, Ohio, assignor to Ward Manufacturing, Inc., Hamilton, Ohio, a corporation of Ohio
Filed Jan. 14, 1965, Ser. No. 425,429
4 Claims. (Cl. 296—23)



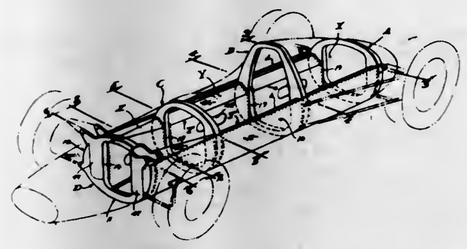
1. A kitchen facility and the like, adapted for use in a camping trailer having a floor and low side walls, which facility is provided with hinge means connecting said facility to a said side wall adjacent the top of said side wall, said facility normally occupying a position wherein it rests on the trailer floor with the normal working area of the facility disposed vertically to the floor, said facility being pivotable from the floor about said hinge means to a position wherein the said working area is substantially parallel to the floor and at a higher elevation than that of the tops of said side walls, and leg means to support said facility from said floor when said facility is in such position that its working area is substantially parallel to said floor.

3,292,967
GATE AND RAMP DEVICE FOR LIVESTOCK TRAILER
Chester L. Peek, Sioux City, Iowa, assignor to Wilson Trailer Company, a corporation of Iowa
Filed Jan. 28, 1965, Ser. No. 428,739
9 Claims. (Cl. 296—24)



1. In a compartment for retaining livestock, said compartment having side walls, a base floor, and a platform disposed between said side walls and at an elevated plane from said base floor the improvement comprising in combination, a ramp hingedly connected to said platform, a lower gate, a hinge means connected to said base floor, said lower gate being connected to said hinge means at one end and supporting said ramp at the other end thereof, a first bracket connected to said lower gate, an upper gate disposed at one end of said ramp and in the space above said ramp, a hinge arrangement connecting said upper gate to said side walls, a second bracket connected to said upper gate, a rod being hingedly connected to said first and second bracket.

3,292,968
RACE CAR CHASSIS
Henry T. Halibrand, 6469 Nancy St., Los Angeles, Calif. 90045, and Norman E. Timbs, 9652 Langdon Ave., Sepulveda, Calif. 91343
Filed June 1, 1964, Ser. No. 371,552
8 Claims. (Cl. 296—28)



2. A stressed skin car chassis comprising, an elongate cross sectionally contoured and substantially continuous outer skin, more than two rigid transversely disposed formers and at least one intermediate tubular cross sectioned former within and fastened to the outer skin, said intermediate former having an integral box-section at each opposite side of the chassis and extending longitudinally therethrough, and a sectional inner skin at each opposite side of the chassis and each of which is interrupted by an intermediate former and fastened to a box-section thereof and extending between the formers and with its opposite side margins fastened to the outer skin establishing a continuous box-section rail extending through said intermediate former at each opposite side of the chassis.

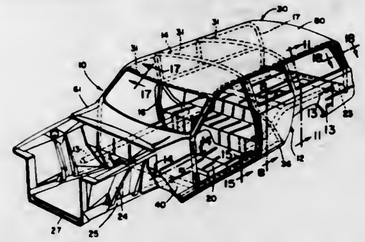
3,292,969
TUBULAR FRAME UNITIZED BODY STRUCTURE
Walter S. Eggert, Jr., Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 5, 1964, Ser. No. 373,013
1 Claim. (Cl. 296—28)

A tubular reinforced unitized integral automobile body comprising:

a cowl assembly having, a reinforcing frame comprising longitudinal tubular front sills interconnected with a transverse rear cross member, a front wheel housing panel includjng, a fire wall panel having a pair of opposed vertical side edges and a lower horizontal edge extending therebetween, said fire wall panel being connected to said front sills and said cross member, and a pair of cowl side panels, a cowl side panel being connected on each of said vertical side edge and to said lower horizontal edge of said fire wall panel,

a floor sub-assembly having, a front floor pan connected to said fire wall panel and said transverse rear cross member of said cowl sub-assembly, a rear floor pan, a rear seat and bulkhead panel positioned between and interconnecting said front floor pan and said rear floor pan, a reinforcing frame comprising longitudinal tubular rear sills connected to said rear floor pan along its longitudinal outside edges, and a rear cross member connected to said rear sills and to said rear floor pan along its transverse rear edge, and a torsion box connecting said rear seat and bulkhead panel to said rear sills,

a pair of side panel sub-assemblies connected to said cowl assembly, and said floor sub-assembly, each having a rear quarter panel, a rear wheel housing connected to said rear quarter panel, said rear floor pan and said rear seat and bulkhead panel, a gusset member connected to said rear seat and bulkhead panel, a reinforcing frame comprising a longitudinal tubular side-sill parallel to and spaced outwardly from said front sill and said rear sill, a roof rail member, a vertical tubular member forming a first lock pillar member connected to said side sill and said roof rail member, a rear pillar member connected to said roof rail member and said rear cross member, and a U-shaped tubular member forming a hinge pillar member and connected to said roof rail member and said side sill, a second lock pillar member connected to said first lock pillar member, to said roof rail and to said side sill and a belt rail member connected to said rear pillar member and said second lock pillar member, said reinforcing frame being connected to said rear quarter panel and said rear wheel housing, each of



said side sills being connected to said transverse rear cross member, said fire wall panel of said cowl sub-assembly and said front floor pan for forming a rigid box therewith for connecting said side panel sub-assemblies, said floor sub-assembly and said cowl sub-assembly, said reinforcing frame also being connected to said gusset plate forming a side of said torsion box of said floor sub-assembly for further connecting said floor sub-assembly to said side panel sub-assemblies, said cowl side panel on each side of said cowl sub-assembly being connected to one of said hinge pillars for further connecting said cowl sub-assembly and said side panel sub-assemblies,

and a roof sub-assembly comprising transverse roof beams interconnecting said side panel sub-assemblies and a roof panel supported on said roof beams and interconnected to said roof rails of said side panels for further connecting said roof sub-assembly and said side panel sub-assemblies, said interconnected sub-assemblies being connected to form a tubular reinforced unitized automobile body.

3,292,970
CONVERTIBLE SEAT ASSEMBLY
Thomas C. Wilson, Detroit, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Mar. 19, 1965, Ser. No. 441,283
9 Claims. (Cl. 296—66)

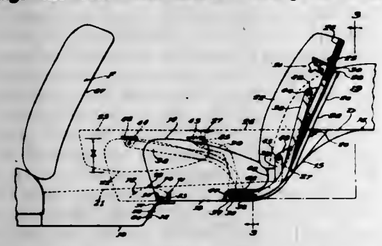
1. In combination with a vehicle body having a first floor section at one level; a seat assembly convertible into a second floor section at a higher level, said seat assembly including:

(a) a seat cushion having its underside overlying and supported on the first floor section;

(b) a back rest situated at one end of the seat cushion when in upright position;

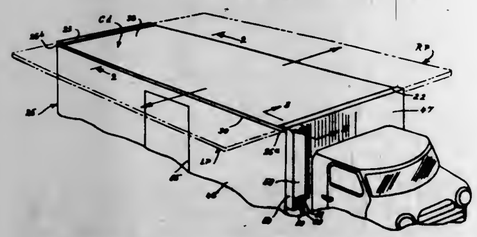
(c) links at opposite ends of the back rest and pivotally carrying the back rest relative to the vehicle body;

(d) said links being situated behind and within the lateral dimensions of the seat cushion, whereby to engage the rear wall thereof and push the seat



cushion forwardly when the back rest is swung forwardly into a substantially horizontal position to form the second floor section.

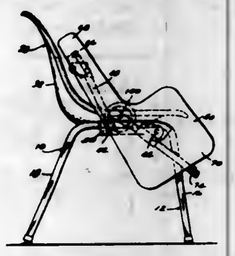
3,292,971
TRUCK UNLOADING ALL-WEATHER GUARD
Saul J. Zacker, 16790 NE. 14th Ave.,
Brooklyn, N.Y. 33162
Filed Mar. 17, 1965, Ser. No. 440,471
5 Claims. (Cl. 296—137)



1. A canopy assembly for a vehicle body having a horizontal roof and adjoining vertical side and end walls, comprising a pair of rails at opposite ends of said roof defining a pair of grooves extending transversely of said body, a rectangular panel slidably mounted on said roof with opposite ends of the panel slidably engaged under said rails in said grooves, said roof having slots formed therein under said rails and communicating with the grooves, and drive means in said body extending through said slots and engaged with ends of the panel for moving the same horizontally to extend a lateral portion of the panel outwardly of either side of said body, and to retract the panel on the roof.

3,292,972
CHAIR WITH A FOLDING TABLET ARM AND TO A TABLET ARM UNIT OF NOVEL STRUCTURE
Allison F. Kreeger, 226 Miramar Drive,
Green Bay, Wis. 54301
Filed May 28, 1965, Ser. No. 459,621
10 Claims. (Cl. 297—162)

1. In a tablet arm chair, the combination with a base including a frame and legs, and seat and back means mounted on the base, of a tablet arm, and means supporting the tablet arm from the base entirely independently of the seat and back means, said supporting means including a rear support and a forward support, means connecting the upper end of the rear support with the rear of the tablet arm and providing for relative pivotal movement between the tablet arm and the rear support upon a transverse axis and a longitudinal axis, the forward support having means connecting it with the frame and with the tablet arm and for accommodating pivotal movement of the tablet arm upon a longitudinal axis, the forward support having means providing vertically slidable and pivotal connection with the frame for accommodating relatively vertical movement of the tablet arm forward



end with respect to the frame in the course of its said pivotal movement with respect to the rear support.

3,292,973
AUTO SEAT HEADREST CONSTRUCTIONS
Edward A. Cegut, 83 Grace Ave.,
Great Neck, N.Y. 11020
Filed Nov. 22, 1965, Ser. No. 509,010
1 Claim. (Cl. 297—397)

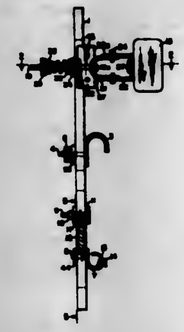


Auto seat headrest construction comprising: a casing element, a cushion element, and securing means; said casing element including a first planar flexible member adapted to overlie the forwardly disposed surface of an automobile seat back, a second cushion enclosing member interconnected to said first planar member at an upper edge thereof and adapted to overlie the upper surface of said automobile seat back; said securing means including strap members interconnecting said second cushion enclosing member and said first planar member, and adapted to overlie the rearwardly disposed surface of said seat back to maintain said cushion enclosing member upon an unwardly disposed surface of said seat back, said securing means including a resilient component, and passing over a rearwardly disposed surface of said seat back and interconnecting said first planar member and said second cushion enclosing member; said first planar member being of two ply construction and being subdivided into a series of horizontally disposed pockets, there being a corresponding number of relatively stiff elongated slat members disposed within each one of said pockets.

3,292,974
CHAIR HEAD REST
Nathan L. Gelbman, 17201 NE. 4th Ave.,
North Miami Beach, Fla. 33169
Filed Jan. 5, 1965, Ser. No. 423,440
1 Claim. (Cl. 297—400)

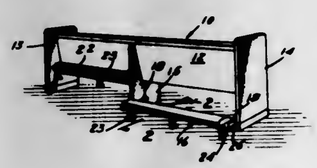
A main body member on which is mounted a self adjustable head rest, an upper movable hook-like receptacle, a slidable lower opposing hook-like receptacle,

limited in its travel by means of an extension spring attached thereto, the opposite end of which is anchored to the main body by means of a fastener which can be shifted vertically, to obtain the proper tension in order to keep the device taut when it is clamped on the back of a chair, especially the folding type where the distance between the top and bottom rail of the back varies due



to the folding of the linkage, with the folding and unfolding of the chair; a shuttle fastened to the lower hook-like receptacle by means of a thumb screw or bolt and nut, having twin finger-like projections on one edge spaced apart a little greater than the width of a flexible web, a single finger-like projection on the center line of the opposite edge, an elongated slot which allows for adjusting said shuttle to encircle the bottom rod or rail.

3,292,975
CHURCH KNEELER WITH FOLDING LEGS
William Hakalein, Glendale, Calif., assignor to Hamlin Manufacturing Co., Glendale, Calif., a corporation of California
Filed Oct. 19, 1965, Ser. No. 497,761
1 Claim. (Cl. 297—426)



In a kneeler for a church pew seat having spaced apart vertical supports:

(a) an elongate kneeling bench;

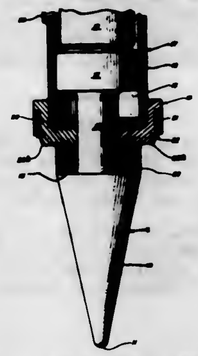
(b) laterally extending supporting arms respectively at the ends of the bench, said arms being fixedly attached to the bench and pivoted at their outer ends on the spaced vertical supports of the pew seats for swinging movements to selectively locate the bench in a lowered position of use and in a raised position of non-use;

(c) an elongate member extending axially along the underside of the bench, said member being supported for rotation;

(d) a plurality of support legs carried by said member and interconnected thereby for unitary swinging movement to a supporting position extending below the bench, and to a non-supporting position extending laterally of said bench; and

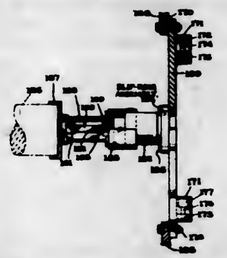
(e) means for swinging said legs to the support position in the use position of the bench, and to the non-supporting position in the non-use position, said means including a link member having one end pivoted to one of said vertical pew supports below the pivoted end of the adjacent supporting arm, and its other end pivotally connected to one of said legs at a point outwardly spaced from the elongate member for rotation thereof during raising and lowering movements of the bench.

3,292,976
WORK MEMBER FOR A PERCUSSIVE TOOL
Charles Leavell, 206 S. Fairfield Ave.,
Lombard, Ill. 60148
Filed July 9, 1962, Ser. No. 208,436
7 Claims. (Cl. 299—69)



4. A work member for use with a paving breaker having a reciprocable hammer-piston adapted to repetitively deliver relatively high-valued impact forces to said work member in the demolition of work material, comprising a shank equipped at one end thereof with an integral point and at its other end with an integral stem, said point having a generally hemispherical configuration defining the material-engaging surface thereof, said stem defining an impact-receiving element for transmission thereto of such impact forces from such hammer-piston, and said shank having a generally tapered configuration enlarging significantly in cross section toward said stem from its smallest cross section adjacent said point.

3,292,977
AIRPLANE BRAKE CONTROL
Allison R. Williams, 300 Newbury St.,
Danvers, Mass. 01104
Filed Sept. 27, 1963, Ser. No. 315,106
3 Claims. (Cl. 303—21)



1. In a braking system for a wheeled vehicle having a pressure-operated brake, the combination of pressure supply means, a normally closed bypass valve connected thereto, said valve having parts movable relatively to one

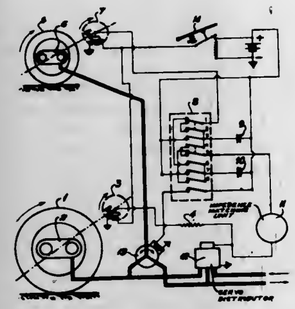
another to a relative position in which said valve opens to reduce the brake pressure, electrical valve actuating means for moving said valve parts relatively to one another to said position in response to a predetermined difference between linear and angular accelerations of a vehicle wheel, accelerometer means for producing electrical outputs proportional respectively to said linear and angular accelerations and comprising three accelerometers, one of said accelerometers being responsive to linear acceleration and producing said output proportional to linear acceleration, the other two accelerometers being responsive to both linear and angular accelerations and being connected to cancel linear acceleration effects and to produce said output proportional to angular acceleration, said valve actuating means being energized by said outputs to move said valve parts to said open position when the difference between said outputs reaches a predetermined value and increase of said difference above said predetermined value causing a corresponding increase in valve port opening and reduction of brake torque to limit slippage and return said valve parts toward closed position.

3,292,978

DEVICE FOR CONTROLLING THE HYDRAULIC BRAKING OF THE WHEELS OF A VEHICLE

René Lucien, Neuilly-sur-Seine, France, assignor to Société Recherches Etudes Production R.E.P. S.à.r.l., Paris, France

Filed Oct. 27, 1964, Ser. No. 408,461
Claims priority, application France, Oct. 30, 1963, 952,319, Patent 84,854
2 Claims. (Cl. 303—21)



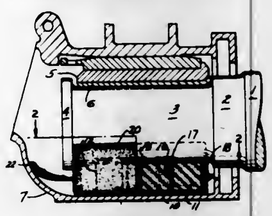
1. A system for controlling the hydraulic braking of the wheels of a vehicle, comprising a friction measuring wheel, means for periodically varying the braking and release of said friction measuring wheel in order to measure the acceleration of said friction measuring wheel during brake release and to control according to said measurement the value of the braking of the vehicle wheels said means comprising a switch unit constituted by a plurality of switches, an electro-distributor synchronized with said switch unit and adapted to vary the braking of said friction measuring wheel, an accelerometer on the friction measuring wheel, a decelerometer on each wheel of the vehicle, a servo-distributor for braking the wheels of the vehicle, and a group of two memories constituted by two resistance-capacity circuits, the resistance of which is part of the accelerometer of the friction measuring wheel, the capacitance of each memory being controlled by said switch unit and registering during the brake release of the friction measuring wheel the measurement supplied by the accelerometer on said friction measuring wheel and sending this measurement during the braking of said friction measuring wheel to the servo-distributor for braking the vehicle wheels, the decelerometer controlling said servo-distributor and reducing the braking effort in the event of skidding.

3,292,979

RAILWAY JOURNAL LUBRICATOR PAD

James J. Hennessy, Jr., Chambersburg, Pa., assignor to Hennessy Lubricator Company, Inc., Chambersburg, Pa., a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,082
4 Claims. (Cl. 308—87)



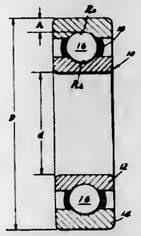
1. A lubricant distributor pad for a railway axle journal box comprising a block-like core member of elastic material provided with a plurality of slits extending vertically through the member and of narrow elongated cross section extending horizontally diagonally of the member across the longitudinal center line of the member and spaced apart lengthwise of the member, and flat strips of wick-like material of corresponding cross section inserted through said slits and projecting below the bottom of the member and above the top of the member and held assembled with the member by the elasticity of the member.

3,292,980

ROLLING BEARINGS

Olof G. Gustafsson, Feasterville, and Tibor E. Tallian, Paoli, Pa., assignors to SKF Industries, Inc., King of Prussia, Pa., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,414
2 Claims. (Cl. 308—193)



1. A rolling bearing assembly comprising an outer ring, having a raceway, an inner ring having a raceway spaced from the outer ring, a plurality of rolling elements in the annular space between the raceways of the rings, the respective relationship of the elements of the bearing assembly being in accordance with the following formulas;

$$\frac{A}{D-d} \geqq 0.15$$

$$Z\left[\frac{D-d}{D+d}\right] \geqq 5$$

where

A=the minimum thickness of the outer ring at the raceway,

D=the outer diameter of the outer ring

d=the bore diameter of the inner ring

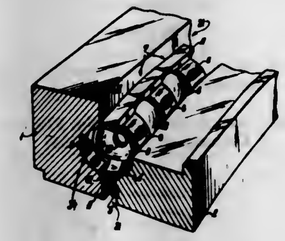
Z=the number of rolling elements.

3,292,981

CAGE FOR ANTIFRICTION BEARINGS

Werner Zaiss, Dürrenast-Thun, Switzerland, assignor to Eisenwerk Rothe Erde G.m.b.H., Dortmund, Germany

Filed Mar. 20, 1964, Ser. No. 353,412
Claims priority, application Switzerland, Mar. 28, 1963, 3,998/63
19 Claims. (Cl. 308—201)



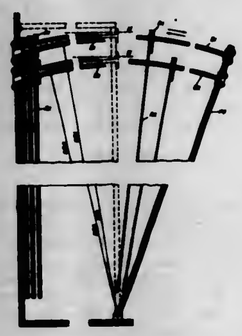
1. A composite cage for rolling elements of antifriction bearings, comprising a plurality of annularly disposed distinct retainers unsecured to each other so as to be independently adjustable with reference to such rolling elements, said retainers each including a partition arranged to extend between a pair of adjoining rolling elements and having cavities provided in the opposite sides thereof so that portions of adjoining rolling elements may extend into such cavities, and at least one guide integral with the respective partition, said guides together forming at least one circumferentially complete annulus which is concentric with the cage.

3,292,982

SHEET FILE, WHOSE SHEETS ARE VERTICALLY SUSPENDED

George A. Rubissow, 420 Riverside Drive, New York, N.Y. 10025

Filed Dec. 17, 1962, Ser. No. 246,301
6 Claims. (Cl. 312—184)



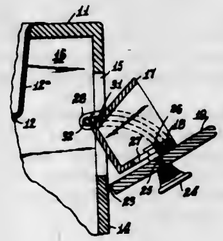
1. A vertical file for classification by vertical suspension of two different types of sheets, an upper sheet and a lower sheet, comprising a known movable front openable section and a stationary back section, the upper parts of said sections being provided with two mutually parallel series of telescopic supporting arms, and upper series and a lower series, each of said supporting arms having a male and a female member respectively attached by one of its ends to one of said upper parts, each of said lower sheets having attached on its upper portion a first supporting strip provided with a row of holes, corresponding to said lower series of supporting arms for engagement thereover, each of said upper sheets having attached on its upper portion another supporting strip provided with an upper row of holes corresponding to said upper series of supporting arms for engagement over them, the upper portion of said upper sheet which is adjacent to said other supporting strip having a lower row of holes corresponding to said lower series of supporting arms which thus pass freely through them, due to the non-overlapping of said supporting strips, a clearance having the form of a straight line is provided which extends between the upper edge of said lower supporting strip and the lower edge of said upper supporting strip.

3,292,983

SINK DRAWER

Clifford R. Service, P.O. Box 242, Wayne, Ill. 60184

Filed July 28, 1965, Ser. No. 475,425
2 Claims. (Cl. 312—228)



1. A cabinet having top and front walls and a sink basin seated in the top wall and extending downwardly into the cabinet, said sink basin being spaced from the front wall to provide a space between the sink basin and said front wall, said front wall having a drawer opening therein in the area opposed to the sink basin, a closure for said opening, hinge means connecting the closure to said wall along one edge of the opening, handles on said closure, means securing said handles to said closure including enlarged heads projecting from the back side of the closure, means to limit hinged movement of the closure into its open position, a container detachably secured to the enlarged heads for suspension from the closure, said container being movable with the closure into and out of the space between the front wall and said sink basin.

3,292,984

RACK SYSTEM FOR DISHWASHERS

Don E. Payton and Wesley S. Pattison, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed May 24, 1965, Ser. No. 458,145
6 Claims. (Cl. 312—229)

1. An automatic dishwasher comprising:

(a) a cabinet having four substantially vertical interconnected walls and an open top,

(b) a first closure member pivotally secured to one of said side walls adjacent the top thereof,

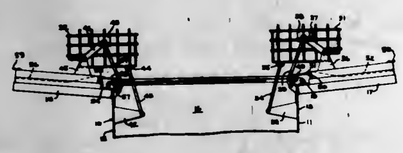
(c) a second closure member pivotally secured to, and adjacent the top of, the side wall opposite the side wall to which said first closure member is secured,

(d) said cabinet and said closure members defining a wash chamber to receive articles to be washed therein,

(e) a first rack adapted to support articles to be washed and pivotally supported for movement between a

first position wherein it is disposed within the upper portion of said wash chamber and a second position wherein it is disposed outside said wash chamber above said first closure member,

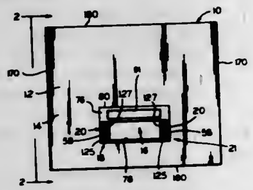
(f) a second rack adapted to support articles to be washed and pivotally supported for movement between a first position wherein it is disposed within the upper portion of said wash chamber and a second position wherein it is disposed outside said wash chamber above said second closure member, and



(g) means associated with each of said first and second closure members to catch and return to said wash chamber drippings from articles supported by said first and second racks when said racks are each in said second position and said closure members are opened,

(h) said means to return drippings to said wash chamber comprising two elongated platforms, each pivotally secured to separate ones of said closure members and each extending from its associated closure member to a point above the open top of said wash chamber.

3,292,985
RECESSED LATCH FOR FLUSH FILE DRAWER FACES
Bruce O. Bahrmaster, North Aurora, Ill., assignor to All-Steel Equipment Inc., a corporation of Illinois
Filed May 13, 1965, Ser. No. 455,515
10 Claims. (Cl. 312—320)



1. A front panel arrangement for file cabinet drawers, said arrangement comprising

a front panel having drawer inside and outside surfaces and formed to define a quadrilaterally shaped opening having upright spaced apart sides at either end of said opening,

a pair of post structures positioned on either side of said opening on the inside of said panel and journalled for pivotal movement about axes paralleling said opening sides,

means for coupling said post structures together for simultaneous pivotal movement in opposite directions about their respective pivotal axes,

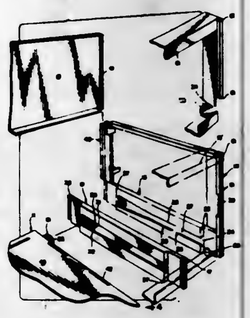
a latch arm coupled to one of said post structures and extending to a position along one edge of said panel for latching engagement with a cabinet,

said latch arm being shiftable between latching and unlatching positions,

spring means biasing said latch arm to said latching position,

and a push button carried by each of said post structures and engaging the respective opening sides under the action of said spring means to serve as stops defining said latching position of said latch arm.

3,292,986
RAIL SLIDE
Jay G. Fenwick, Mundelein, Ill., assignor to Morton Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed June 22, 1964, Ser. No. 376,985
3 Claims. (Cl. 312—333)

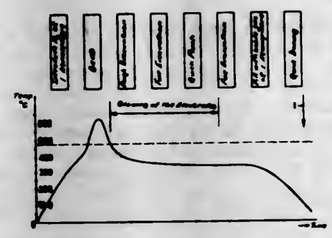


3. A mounting for slidably supporting a platform member, comprising a frame providing spaced-apart, confronting walls, an elongated, generally horizontally-extending slot in each wall, the lower edge of each slot constituting a guide rail, first grooved roller means outstanding from each wall adjacent one end of its associated slot, and a platform member having wall portions extending parallel to said confronting wall, second grooved roller means outstanding from each wall portion into one of said slots and slidably mounted on the guide rail of its associated slot, said platform member being equipped with spaced depending flanges constituting said wall portions, each of said flanges providing a second guide rail along its lower edge for coaction with said first grooved roller means, said first grooved roller means being positioned below said one end of its associated slot.

3,292,987
METHOD OF MANUFACTURING CURVED GAS DISCHARGE LAMPS
Louis Eugene Vrenken and Adrianus Josephus Theresia Mollet, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 30, 1963, Ser. No. 298,567
Claims priority, application Netherlands, Sept. 5, 1962, 282,921
5 Claims. (Cl. 316—21)

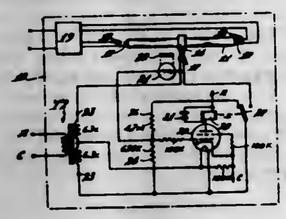
1. A method of manufacturing a curved gas discharge lamp comprising evacuating a tubular envelope hermetically sealed at both ends by members one of which is provided with a channel connecting the interior of the envelope to the exterior thereof, heating said tubular envelope to remove undesirable gases within the interior of the envelope through said channel, introducing a quantity of inert gas into the envelope through said channel to increase the pressure within said envelope to about

1 atmosphere while said envelope is heated, bending the envelope into a curved shape, evacuating the gas within



said envelope to reduce the pressure thereof to a desired value, introducing an ionizable medium into the envelope, and closing said channel to seal envelope.

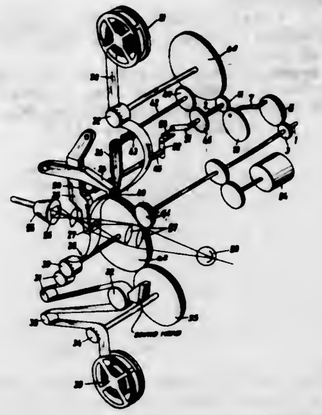
3,292,988
APPARATUS FOR SURVEILLANCE OF ARC DISCHARGE LAMPS
Lawrence W. Kimball, Bedford, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 7, 1964, Ser. No. 357,882
10 Claims. (Cl. 316—32)



1. Apparatus for surveillance of an arc discharge lamp normally emitting light energy predominantly at predetermined frequencies, said apparatus comprising means to support the lamp, means to apply excitation energy to the lamp, a photoelectric device adjacent the lamp selectively responsive to emission at frequencies differing from said predetermined frequencies and means actuated by said device for acting on the lamp in accordance with its emission condition.

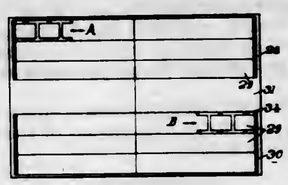
3,292,989
APPARATUS FOR INTERMITTENT FILM TRANSPORT
Heinrich Zahn, Rossdorf, near Darmstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Oct. 24, 1963, Ser. No. 318,763
Claims priority, application Germany, Oct. 24, 1962, F 38,118
9 Claims. (Cl. 352—29)

1. In an apparatus for the intermittent transport of kinematographic film, in combination, rotary drive means including a rotary drive member arranged for rotation about a first axis and including speed reducing means having a transmission ratio of u:1 ahead of said rotary drive member; rotary driven means including a rotary driven member arranged for rotation about a second axis parallel to said first axis and spaced a predetermined distance therefrom, said rotary driven means including speed increasing means having a transmission ratio of $1/u$:1 and driven by said driven member; and double crank means constituting a drive connection between said rotary drive means and said rotary driven means, said crank means including a first leg parallel to said first axis and rotatably connected to said rotary drive member at a location spaced from said first axis by a second predetermined distance, a second leg parallel to said first leg and rotatably connected to said rotary driven member at a location spaced from said second axis by a third predetermined distance,



and an intermediate portion connecting said first and second legs and maintaining the distance therebetween constant, all of said distances being chosen such that in response to rotation of said rotary drive member at a constant angular velocity said rotary driven member rotates with continuously varying angular velocity.

3,292,990
ARTICLE REMOVABLY MOUNTING A PLURALITY OF FILM STRIPS
Jean de Montrémy, 8 Ave. des Tilleuls, and Jean Véra Dejoux, 15 Rue de Castellane, both of Paris, France
Filed Nov. 30, 1964, Ser. No. 414,611
1 Claim. (Cl. 352—232)



In combination with an article having a sheet associated therewith, a first plurality of strips of film removably secured to said sheet, a second plurality of film strips removably secured to said sheet adjacent said first plurality of film strips, each of said film strips in said first plurality consisting of adjacent frames constituting the odd number frames of sequentially exposed motion picture film, each of said film strips of said second plurality consisting of adjacent frames constituting the even number frames of sequentially exposed motion picture film, each of said film strips in each of said first and second pluralities being provided with an adhesive segment at the terminal portions of said strip enabling joinder of the strips in said first plurality into a continuous film strip, and enabling the joinder of the strips in said second plurality into a second film strip.

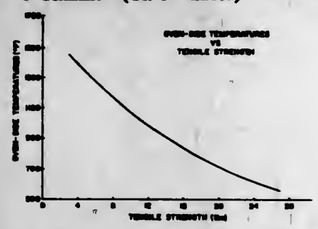
3,292,991

PROCESS OF FIRE-PROOFING A BLEND OF CERAMIC FIBERS AND ACRYLIC RESIN FIBERS BY HEATING IN AN OXIDIZING ATMOSPHERE

William P. Crawley, Gastonia, N.C., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Original application Oct. 24, 1957, Ser. No. 692,206, now Patent No. 3,125,404, dated Mar. 17, 1964. Divided and this application May 14, 1963, Ser. No. 280,261

5 Claims. (Cl. 8—115.7)



1. A heat treating process for rendering substantially fireproof a fibrous product comprising an intimate fiber blend consisting essentially of staple, inorganic, siliceous ceramic fibers, and staple, acrylic carrier fibers having a softening point above about 320° F., said process comprising subjecting said product to non-combustive heat treatment in an oxidizing atmosphere at a temperature above said softening point for a period of time sufficient to convert said carrier fibers to substantially non-flammable, heat-resistant form.

3,292,992

PROCESS FOR TREATING PAPERMAKERS' FELT AND PRODUCTS OBTAINED THEREFROM

Arthur E. Manocha, Newfane, N.Y., assignor to Huyck Corporation, Stamford, Conn., a corporation of New York

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,393

13 Claims. (Cl. 8—127.6)

1. A process for treating proteinaceous material comprising immersing proteinaceous material in an aqueous solution of 4-acetyl resorcinol and formaldehyde, and drying said proteinaceous material, whereby the chemical and physical properties of the proteinaceous material are improved.

9. A papermakers' felt comprising a woven wool fiber base modified with the reaction product of 4-acetyl resorcinol and formaldehyde.

3,292,993

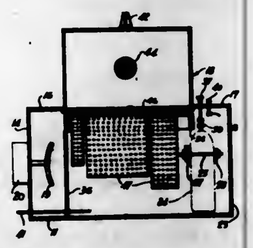
STERILIZER

Vincenzo Musso, 219 Amity St., Elizabeth, N.J. 07202

Filed Mar. 12, 1963, Ser. No. 264,565

7 Claims. (Cl. 21—83)

1. A sterilizer for sterilizing barber's instruments and the like, said sterilizer comprising an elongated base plate, a pair of end walls firmly connected with each end of said base plate, a front wall firmly connected with and extending between said end walls, a rear wall firmly connected with and extending between said end walls, said base plate, said end walls and said front and rear walls constituting a box-like enclosure having an open top, a cover swingably connected with an upper portion of said rear wall and being adapted in a closed position thereof to cover the top of said box-like enclosure, an antiseptic containing bottle disposed within said enclosure adjacent one end wall and having a depressible discharge nozzle positioned to spray antiseptic material in the direction of the opposite end wall, supporting means carried in said box-like enclosure for supporting said antiseptic containing bottle in an upright position within said box-like enclosure, actuator means slidably supported in said enclosure and having one end thereof protruding outwardly of said enclosure for manual operation and an opposite end within said enclosure operatively engagable with said discharge nozzle for depression thereof perforated tray means removably supported within said box-



like enclosure alongside said supporting means and below said cover when said cover is in said closed position, said tray means being adapted to hold barber's instruments for sterilizing, and fan means disposed within said enclosure adjacent said opposite end wall and having fan elements positioned to blow air across said tray means in the direction of said one end wall, said opposite end wall being provided with an air inlet opening for said fan means and said cover being provided with an outlet opening for the used air-antiseptic mixture.

3,292,994

CONTROLLED PARTICLE SIZE $BaTiO_3$

Klara Klar, University Heights, and Jules Magder, Cleveland, Ohio, assignors to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey

No Drawing. Filed May 7, 1963, Ser. No. 278,746

10 Claims. (Cl. 23—51)

1. In a process for producing particles of barium titanate finer than about 800 Angstrom units as a precipitate when an alcoholic solution of a titanium ester is added to an aqueous alkaline solution of a water soluble barium salt, the improvement which comprises adding an amount of a water-soluble oxygen-functional organic solvent selected from the group consisting of alcohols, ketones and cyclic ethers to the aqueous solution prior to the addition of the alcoholic solution of a titanium ester, said amount comprising between about 20% and 75% by volume of the initial solution of the water-soluble barium salt and recovering said precipitated particles from the remaining liquid present.

6. In a process for producing particles of barium titanate finer than about 800 Angstrom units as a precipitate in a reaction mixture formed by adding an alcoholic solution of a titanium ester to an aqueous alkaline solution of a water-soluble barium salt, the improvements which comprises (1) adding an amount of a water-soluble oxygen-functional organic solvent selected from the group consisting of alcohols, ketones and cyclic ethers to the aqueous solution prior to the addition of the alcoholic solution of a titanium ester whereby the particles which are precipitated possess the desired fineness, the amount being at least about 20% by volume of the aqueous alkaline solution; and (2) after said precipitation is complete, adding an additional amount of a water-soluble

oxygen-functional organic solvent selected from the group consisting of alcohols, ketones and cyclic ethers to the precipitate containing solution previously formed, whereby grain growth and peptization of the finely divided particles of barium titanate are essentially arrested, and thereafter separately recovering the fine particles of $BaTiO_3$.

3,292,995

DEFLUORINATED PHOSPHATE MANUFACTURE

Otis W. Allen, Lakeland, Fla., assignor to International Minerals & Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,594

4 Claims. (Cl. 23—108)

1. In the production of a calcium phosphate animal feed ingredient containing less than 0.1% by weight of fluorine by mixing comminuted, fluorine-containing phosphate rock with salts of alkali metals and with phosphoric acid continuing free SO_3 in an amount in excess of 1% by weight of the phosphoric acid, and calcining the mixture at a temperature in the range of about 2500° F. to 2800° F., while agitating the mixture in contact with a gaseous atmosphere containing between about 5 and 30 volume percent of water vapor, the improvement comprising admixing with said phosphoric acid before said acid is mixed with phosphate rock finely divided calcium carbonate in an amount just sufficient to reduce the free SO_3 in said acid to about 0 to about 1% by weight of said acid, whereby balling of said mixture is avoided.

3,292,996

METHOD OF RECOVERY OF SULFUR OXIDES AND AMMONIA

Herbert Furkert, Junkersdorf, near Cologne, and Hans Mühlenbein, Cologne-Lindenthal, Germany, assignors to Chemische Dr. A. Zieren G.m.b.H., Cologne-Braunsfeld, Germany, a corporation of Germany

Filed Oct. 27, 1964, Ser. No. 406,764

Claims priority, application Germany, Oct. 31, 1963, C 31,287

7 Claims. (Cl. 23—178)

1. A method of recovering sulfur dioxide and ammonia from source material selected from the group consisting of ammonium salts of sulfuric acid, solutions of ammonium salts of sulfuric acid in water, and solutions of ammonium salts of sulfuric acid in water containing excess sulfuric acid, comprising heating said source material in the presence of a reducing agent selected from the group consisting of hydrogen, hydrogen sulfide, carbon, sulfite liquor, carbon monoxide and organic reducing agents, at a temperature of between 250° C. and 500° C., to convert any free sulfuric acid in said source material and also a portion of the sulfuric acid combined in the form of said ammonium salt of sulfuric acid, into sulfur dioxide, whereby the remaining sulfur and ammonium salt materials are in the form of a mixture of ammonium sulfate and ammonium bisulfate, and recovering ammonia from said mixture.

3,292,997

APPARATUS AND METHOD OF CONTROLLING PRESSURE

Herbert M. Strong, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

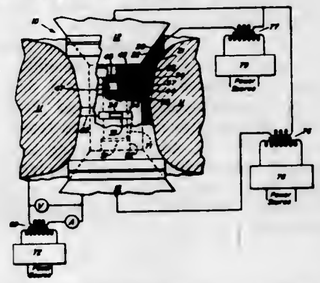
Filed Nov. 12, 1964, Ser. No. 410,636

8 Claims. (Cl. 23—289.2)

4. In the process of preparing a pressure absorbing, thermally insulating structure for enclosing a quantity of a first material therein to enable simultaneous application thereto of high pressure and heat, whereby after said pressure absorbing structure is introduced into the reaction volume of a high pressure, high temperature apparatus, some physical and/or chemical change is effected in such material, which change is usually accompanied by an increase in density, the improvement comprising:

(a) confining a quantity of a second material within said pressure absorbing structure in addition to the reaction material,

(1) said second material being expandable to at least about 105 percent of the initial volume thereof at operating pressure at some predetermined elevated temperature by subjecting said second material to a solid-liquid phase transformation, and said second material being present in sufficient quantity to exert a pressure of at least about one kilobar upon the occurence of such phase transformation,



(b) heating said pressure absorbing structure by means of the main heating means, whereby said second material is heated to a temperature approximating, but not equalling said predetermined temperature, and

(c) independently and selectively applying heat to said second material from auxiliary heating means in addition to the heat energy supplied by said main heating means to control the relative temperature of said second material, whereby phase transformation of said first material at said predetermined temperature can be effected on demand during operation.

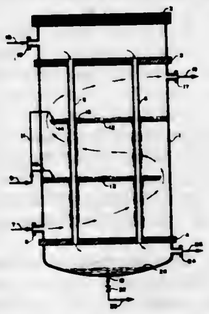
3,292,998

METHOD OF PRODUCING HYDROGEN FROM A CARBON MONOXIDE-CONTAINING GAS STREAM AND HEAT RECOVERY

George Russell James, Armonk, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Original application Jan. 11, 1960, Ser. No. 1,571. Divided and this application Mar. 22, 1963, Ser. No. 268,212

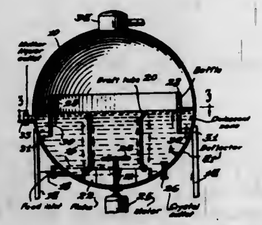
2 Claims. (Cl. 23—213)



1. In the process of catalytic reaction of carbon monoxide in a feed gas stream with water vapor at a temperature in the range of about 800° F. to 850° F. to produce a hot product gas stream principally containing hydrogen, carbon dioxide and excess unreacted water vapor,

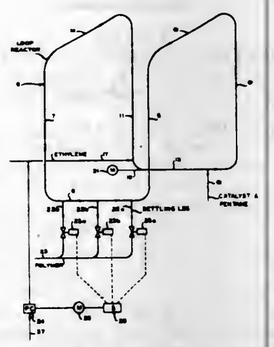
the method of heat recovery by transfer of latent heat derived from water vapor condensation which comprises passing said feed gas stream at a pressure of between about 15 p.s.i.g. to 500 p.s.i.g. in contact with a film of liquid water flowing downwards on the outer surface of a vertically oriented duct, said feed gas stream flowing generally upwards countercurrent to said liquid water film, and vaporizing said liquid water film by concurrently passing said hot product gas stream precooled to a temperature in the range of about 250° F. to 600° F. downwards through said duct, whereby said feed gas stream is heated to a temperature of between about 200° F. to 450° F. and water vapor is incorporated therein catalytically reacting carbon monoxide in said feed gas stream with water vapor, partially cooling the resulting hot product gas stream to a temperature in the range of about 250° F. to 600° F., and vaporizing said liquid water film as aforesaid by passing the partially cooled product gas stream downwards through said duct, and thereby further cooling said partially cooled product gas stream to a lower temperature in the range from about 200° F. to less than 270° F. and condensing water vapor from said product gas stream, whereby the latent heat of condensation from said condensing water vapor is transferred through said duct to said liquid water film being vaporized into said feed gas stream.

3,292,999
CRYSTALLIZER WITH BAFFLED RECIRCULATION FLOW
Anthony N. Chirico, Naperville, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Apr. 29, 1963, Ser. No. 276,474
4 Claims. (Cl. 23—273)



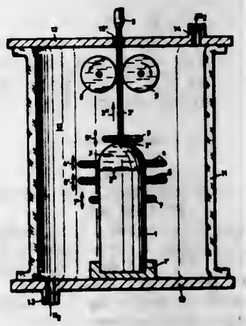
1. A crystallizer comprising:
(a) a vessel for containing a solution of a solute to be crystallized therefrom;
(b) an open-ended tubular member disposed vertically in said vessel;
(c) a plurality of vertical plate members disposed in the bottom portion of said vessel beneath the tubular member and extending outwardly beyond the edge of said tubular member, said vertical plate members having an obtuse bend along the horizontal plane and outer edges spaced from the vessel walls;
(d) means for inducing fluid flow of solution downwardly through said tubular member and outwardly against said bent vertical plates to cause swirling of solution in an upward direction around the tubular member;
(e) a feed inlet for said vessel positioned adjacent the bottom of said tubular member and nonradially oriented with respect to said vessel to direct a feed stream in the same rotating direction around the tubular member as solution directed outwardly by the bent vertical plates;
(f) a magma outlet in the bottom portion of said vessel; and
(g) a liquor outlet in a liquid zone of the vessel.

3,293,000
WITHDRAWAL OF SOLIDS FROM A FLOWING STREAM COMPRISING A SLURRY OF SAME
Stanley J. Marwil, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,614
3 Claims. (Cl. 23—285)



1. A tubular loop reactor comprising at least two vertical conduit means and a horizontal conduit means connecting together the lower ends of said vertical conduit means, depending conduit means connected to said horizontal conduit means, valve means adapted to allow solids to gravitationally settle in and be withdrawn from said horizontal conduit means in said depending conduit means, and a plurality of circumferentially spaced radial vanes affixed to a peripheral portion of and extending a portion of the distance from said peripheral portion to the center of said depending conduit means adjacent the inlet end thereof, said radial vanes adapted to aid in stratification of solids and liquids in said horizontal conduit means.

3,293,001
PROCESS AND APPARATUS FOR PRODUCING ELONGATED, PARTICULARLY TAPE-SHAPED SEMICONDUCTOR BODIES FROM A SEMICONDUCTOR MELT
Werner Spielmann, Munich, Günther Ziegler, Erlangen, and Walter Heywang, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Sept. 20, 1961, Ser. No. 139,400
Claims priority, application Germany, Sept. 20, 1960, S 70,427
12 Claims. (Cl. 23—301)



1. The process of producing a long, particularly tape-shaped, dendritic semiconductor body, which comprises the steps of holding a crucible-free melt of the semiconductor material adhering to the top of an upright

carrier consisting of the same material, heating the melt substantially to a temperature above the melting point of the material in a portion of the melt that is adjacent to the carrier by applying a heating effect from without the melt, simultaneously maintaining a less heated other portion of the melt at a temperature below said melting point, and continuously pulling with the aid of a crystal seed, a dendritically growing semiconductor body out of said other portion of the melt while continuously maintaining said other portion supercooled and said carrier-adjacent portion above said melting temperature.

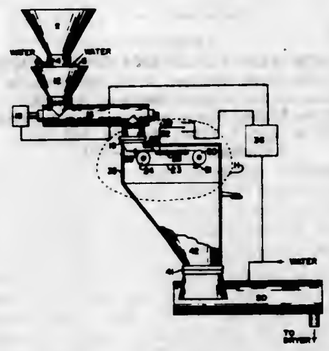
3,293,002
PROCESS FOR PRODUCING TAPE-SHAPED SEMICONDUCTOR BODIES
Werner Spielmann, Dachtel, and Walter Heywang, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany and Munich, Germany, a German corporation
Filed Oct. 19, 1965, Ser. No. 505,121
3 Claims. (Cl. 23—301)



1. The process of producing a long, particularly tape-shaped, dendritic semiconductor body, which comprises the steps of producing a crucible-free dome-shaped melt of semiconductor material on top of an upright carrier of the same material by heating the top of said carrier, maintaining a portion of the melt adjacent said carrier at a temperature above the melting point of the semiconductor material, inserting an elongated dendrite crystal seed into the belt, supercooling a region of the melt around said seed, pulling said seed from said melt with growing dendrite adhering thereto in the form of a tape having broad and narrow sides, providing and maintaining a cooling effect on the narrow sides of the dendrite tape in the region of the interface substantially greater than the cooling effect adjacent the broad sides of said tape.

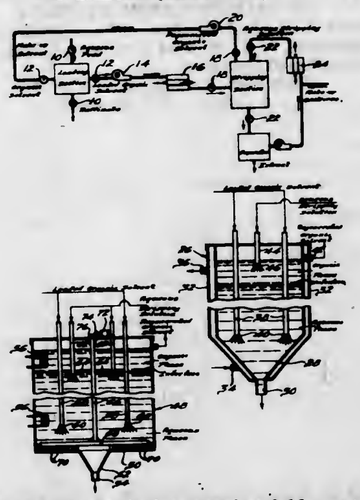
3,293,003
CONTROLLING WATER AND CARBON BLACK FEED RESPONSIVE TO WEIGHT OF FEED TO PELLETIZER
Louis C. Jones, Jr., Big Spring, and Dennis W. Stafford and James W. Lancaster, Pampa, Tex., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed June 3, 1963, Ser. No. 285,445
11 Claims. (Cl. 23—314)

1. A process for wet pelletizing carbon blacks wherein the ingredients comprising carbon black and a liquid are agitated in a pelletizer after being separately introduced thereto comprising the steps of:
(a) conveying finely divided carbon black at approximately the rate desired by means of a largely volumetrically controlled solids feeder to a continuous weight determining zone prior to introducing said black to said pelletizer,
(b) continuously determining the weight of the carbon black delivered to said zone,
(c) continuously translating the weight of the black determined to a signal, and
(d) continuously transmitting the said signal to a control device which responds to said signal to adjust the rate at which the black is conveyed to the weight determining zone and the rate at which the water is introduced to said pelletizer to counteract changes



in the ratio of black and liquid fed to said pelletizer from a predetermined ratio.

3,293,004
PROCESS FOR SOLVENT EXTRACTION STRIPPING
Ralph E. Musgrove and Edward E. Maurer, Grand Junction, Colo., assignors to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,491
3 Claims. (Cl. 23—327)



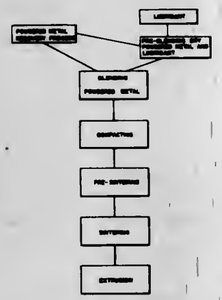
1. The method of stripping organic soluble quaternary ammonium complexes of vanadium compounds from an organic extract solvent which comprises the steps of maintaining a vertical column of an aqueous stripping solution containing about 200 grams per liter of ammonium chloride and sufficient free ammonia for maintaining the pH of the stripping solution within a range of from about 8.3 to about 8.5, spraying said solvent in the form of droplets into said aqueous column near the lower end thereof effecting a reaction between the quaternary ammonium vanadium complex and the ammonium chloride forming an aqueous insoluble vanadium salt precipitate and regenerating the quaternary ammonium complexing agent, maintaining a floating layer of said solvent on the top of said aqueous column, withdrawing said organic solvent

continuously from said layer, withdrawing said aqueous solution and said precipitate from the lower end of said aqueous column, and spraying make-up aqueous solution into the upper stratum of said organic layer.

3,293,005
PROCESS FOR CHLORINATING OXIDES
Andrew T. McCord, Snyder, N.Y., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 1, 1964, Ser. No. 356,618
3 Claims. (Cl. 23—351)

1. A thermally autogenic method for the production of refractory metal chlorides from refractory oxides selected from the group consisting of zirconium, hafnium and mixtures thereof which comprises forming a bed of pellets consisting essentially of a mixture of finely divided refractory oxide and carbon in substantially stoichiometric proportions, said pellets having diameters in the range of from about 1 mm. and 11 mm. and being substantially free of non-reactive, non-volatile impurities, maintaining a reaction zone in said pellet bed at a chlorinating temperature, passing a chlorinating gas into said bed, while maintaining said bed under static conditions, for contact with said pellets, said chlorinating gas reacting with said pellets in said reaction zone to form gaseous reaction products whereby said pellets and said chlorinating gas are substantially completely consumed in said reaction, withdrawing said gaseous reaction products from said reaction zone and removing said refractory metal chloride therefrom.

3,293,006
POWDERED COPPER METAL PART AND METHOD OF MANUFACTURE THEREOF
Theodore J. Bartz, Marcellus, N.Y., assignor, by mesne assignments, to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Mar. 9, 1961, Ser. No. 94,487
5 Claims. (Cl. 29—182)



1. As an article of manufacture, a structural member having a tubular configuration wherein the wall is composed of discrete particles of copper, a majority of which pass through a #325 sieve and have an average size of at least ten microns.

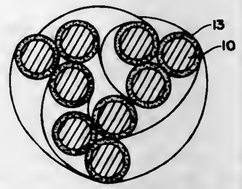
3. The method of making a copper tubular member of predetermined dimensions which consists in the steps of mixing a quantity of discrete copper particles, the largest percentage of which are of a size sufficient to pass an A.S.T.M. standard #325 sieve and have an average particle size of at least ten microns with a lubricating agent to promote bonding of the particles, compacting the mixture to a predetermined shape suitable for extrusion, presintering the compacted unit to purge the unit of the lubricant, sintering the unit to remove oxides therefrom, and extruding the compacted unit to the desired tubular shape.

3,293,007
STEAM CORROSION-RESISTANT IRON-CHROMIUM-ALUMINUM-YTTRIUM ALLOYS AND PROCESS FOR MAKING SAME
Carl S. Wukusick, Cincinnati, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Nov. 29, 1965, Ser. No. 510,476
3 Claims. (Cl. 29—182)

1. A dispersion-strengthened alloy of iron-chromium-aluminum and yttrium consisting of an iron-chromium-aluminum matrix and a finely dispersed phase iron and yttrium, the particles of said dispersed phase having a maximum diameter no greater than 5 microns.

2. A method of fabricating an alloy from an alloy system comprising 0–25 chromium, .5–12 aluminum, 0.01–4 yttrium, and the balance iron which comprises melting an alloy of a composition selected from said system and rapidly quenching the melted alloy in such a manner as to produce a precipitated yttrium-containing phase containing a predominant amount of particles having a maximum diameter of less than 5 microns.

3,293,008
SUPERCONDUCTIVE COIL
Lloyd R. Allen, Belmont, and Robert A. Stauffer, Weston, Mass., assignors, by mesne assignments, to National Research Corporation, a corporation of Massachusetts
Filed June 13, 1961, Ser. No. 116,842
1 Claim. (Cl. 29—183)



As an article of manufacture, a superconductive coil formed from a wound braid having a diameter of about .003 inch and of wires, the wires in the braid comprising continuous conducting paths of Nb_3Sn extending the length of the wire along the outer surface thereof, the braid being comprised solely of wires and void space throughout its cross section.

3,293,009
NIOBIUM STANNIDE SUPERCONDUCTOR PRODUCT
Lloyd R. Allen, Belmont, Dilip K. Das, Bedford, and Robert A. Stauffer, Weston, Mass., assignors, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed May 8, 1962, Ser. No. 193,281
2 Claims. (Cl. 29—193)



1. A superconductive wire comprising a plurality of component individual niobium wires jointly encased in a niobium sheath, continuous stannide layers being dispersed among the niobium wires in the form of diffusion coatings on the wire surfaces.

3,293,010
PASSIVATED ALLOY DIODE
Lloyd W. Hackley, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 2, 1964, Ser. No. 335,300
3 Claims. (Cl. 29—195)



1. In a semiconductor diode device, a semiconductor element of semiconductor material selected from the group consisting of germanium and silicon and having opposed first and second sides, the surfaces of said sides being substantially plane and parallel, said semiconductor element comprising first and second regions of semiconductor material of P conductivity type on said first side of said wafer, said first region of alloy regrowth semiconductor material, doped P type with an impurity selected from the group consisting of boron, aluminum, gallium, or indium, said second region of semiconductor material made P type by solid state diffusion of an impurity selected from the group consisting of boron, aluminum, gallium, and indium into said semiconductor material, said first region bounded by said second region at said first side, a third region of the opposite conductivity type forming an abrupt PN junction with said first region, said third region forming a graded PN junction with said second region, said graded PN junction extending to the surface of said first side of said semiconductor element, said graded junction coated at said surface of said first side with a film of metallic oxide dielectric material, said graded junction having a higher avalanche breakdown characteristic than said abrupt junction, and a metal coating on said first region on said first side, and a metal coating on said third region on said second side.

3,293,011
METHOD OF HANDLING NATURAL GAS
John D. Lewis, Forest Hills, Morgan Chuan-yuan Sze, Garden City, Carroll O. Bennett, Pelham Manor, and Maurice E. Brooks, Great Neck, N.Y., and Irvin H. Lutz, Westfield, and Howard B. Zasloff, Rockaway, N.J., assignors to Vehoc Corporation, a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,284
28 Claims. (Cl. 48—190)

1. In the containment of a natural gas hydrocarbon mixture maintained in a refrigerated and compressed single phase operating state, a method of handling the mixture in a plurality of pressure vessel means in series which comprises:

(I) loading said pressure vessel means by the steps of:

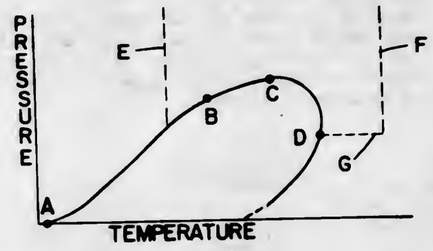
(A) forcing a cushion fluid into the first pressure vessel means at a regulated temperature until it is filled with said cushion fluid at substantially the operating pressure of the hydrocarbon mixture,

(B) forcing said hydrocarbon mixture into said first pressure vessel means while expelling said cushion fluid therefrom at a regulated flow rate so that said first pressure vessel means is filled with the hydrocarbon mixture, and

(C) thereafter directing the expelled cushion fluid into the next pressure vessel means in the series and filling it with the hydrocarbon mixture by the foregoing steps and repeating the process in succession until all of the series of pressure vessel means are filled with the hydrocarbon mixture in the operating state and the cushion fluid is expelled from the last pressure vessel means; and

(II) unloading said pressure vessel means by the steps of:

(A) forcing a displacement fluid at a pressure greater than the operating pressure of the hydrocarbon mixture into the first pressure vessel means while expelling said hydrocarbon mixture therefrom at a regulated flow rate so that said first pressure vessel means is emptied of hydrocarbon mixture and filled with displacement fluid,



(B) thereafter directing the displacement fluid into the next pressure vessel means in the series and emptying it of the hydrocarbon mixture by the foregoing step and repeating the process in succession until all of the series of pressure vessel means are emptied of the hydrocarbon mixture and filled with displacement fluid, and

(C) removing at least part of the displacement fluid from all the pressure vessel means in succession.

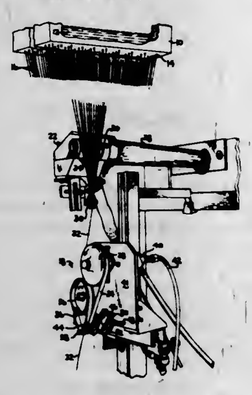
3,293,012
PROCESS OF INFILTRATING DIAMOND PARTICLES WITH METALLIC BINDERS
William D. Smiley, Los Altos Hills, and Arthur G. Wilder, Los Altos, Calif., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,420
13 Claims. (Cl. 51—293)

7. A process for the manufacture of a diamond-containing composite material which comprises preparing a compact of diamond powder containing powder granules of two distinct sizes, granules of one size occupying voids between granules of the other size, introducing a finely-divided reactive metal hydride selected from the group consisting of titanium hydride and zirconium hydride and a finely-divided binder metal having a melting point between about 1200° F. and about 2750° F. into the interstices in said compact in a volatile vehicle, evaporating said volatile vehicle, and thereafter infiltrating said compact with a molten infiltrant metal having a melting point between about 1200° F. and about 2750° F. at an infiltration temperature above the melting point of said binder metal and said infiltrant metal.

3,293,013
METHOD OF AND APPARATUS FOR FEEDING A SUBSTANTIALLY UNTWISTED MULTIFILAMENT STRAND
Warren W. Drummond, Allison Park, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1963, Ser. No. 326,697
9 Claims. (Cl. 65—2)

1. A method of producing glass fibers from a source of molten glass flowing through a plurality of orifices which comprises,

gathering said fibers into a strand,
introducing said strand between at least two opposing flexible surfaces, each moving in the same direction at substantially the same high rate of speed,
said flexible surfaces being engaged with one another during the movement thereof for a distance sufficient to impart a high velocity to said strand engaged with said flexible surfaces,
moving at least one of said opposing flexible surfaces away from the other of said surfaces to permit said strand to remain in contact with a moving flexible surface,
abruptly changing the direction of the movement of the flexible surface having the strand in contact therewith at a point on said flexible surface where said flexible surface and said strand are engaged until the direction of movement of said last named flexible surface is at a sharp angle to said direction of movement of said strand,



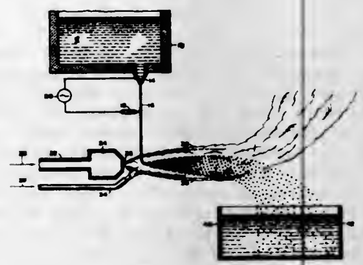
whereby said strand is projected into space at a high rate of speed.

2. In apparatus for producing fiber glass which includes
a source of molten glass,
a fiber forming bushing having a plurality of orifices through which molten glass from said source flows streams and which streams are attenuated into fibers, and
means to gather said fibers into a strand,
the improvement which comprises,
a pair of endless belts having surface portions which engage one another and between which the strand is fed to be engaged by said engaging surface portions,
means to rapidly move said belts along a predetermined path so as to move said engaged strand along the same path and to apply attenuating forces to said fibers,
and a smooth-surfaced bearing means to abruptly change the direction of movement of said belt with respect to said predetermined path thereof and permit the strand to continue to move generally along the said path.

3,293,014
METHOD AND APPARATUS FOR MANUFACTURING GLASS BEADS
Alexander H. Callander, Dundee, and Morey L. Lampson and Joseph E. Nitsche, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 18, 1963, Ser. No. 324,286
7 Claims. (Cl. 65—21)

1. A method of producing glass beads comprising the steps of
providing a first stream of molten glass,
providing a second stream of high velocity gas substantially transverse to the path of said first stream at a temperature sufficient to maintain said glass at a viscosity below about 500 poises, the high velocity gas stream forming a spheralizing zone,
flowing said first stream of molten glass into said second stream thereby dispersing said first stream and causing the dispersed glass to be carried along by said second stream, and
feeding raw gas fuel into substantially the beginning of said spheralizing zone for combustion therewithin, whereby said dispersed glass spheralizes and forms glass beads.

5. An apparatus for forming glass beads comprising
molten glass supply means for supplying a stream of molten glass,
an electrically conductive orifice through which said stream of molten glass passes,

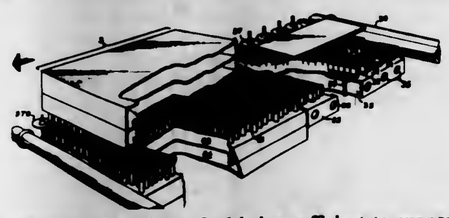


an electrode disposed below said orifice and spaced from said stream of molten glass to form an electric arc therebetween,
means for providing electrical energy connected to said orifice and said electrode, whereby an electric circuit is completed through said stream of molten glass by said arc thereby adding heat to said stream of molten glass,
means for providing a high velocity gas stream along a path substantially transverse to the path of the heated stream of molten glass whereby said stream of molten glass is dispersed and carried by said high velocity gas stream upon impingement thereof by said gas stream, said high velocity gas stream forming a spheralizing zone, and
means for feeding raw fuel gas into substantially the beginning of said spheralizing zone for combustion therewithin, whereby the dispersed glass is spheralized and forms glass beads.

3,293,015
METHOD AND APPARATUS FOR TEMPERING GLASS SHEETS ON A GAS SUPPORT BED
James C. Fredley, Tarentum, and George E. Sleighter, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Nov. 9, 1962, Ser. No. 236,676. Divided and this application Oct. 22, 1965, Ser. No. 502,244
5 Claims. (Cl. 65—25)

1. Apparatus for heating and tempering glass which comprises a pair of adjacent gas support beds each comprising a plurality of fluid outlets with adjacent exhaust areas disposed inwardly of the edges of the beds, means to supply hot gas to one of said beds and means to supply quench gas to the other of said beds.

3. A method of tempering glass in which a glass sheet at a temperature at which it may be tempered is disposed between a lower cooling gas support bed and an upper cooling gas bed, each bed supplying cooling gas through a plurality of channels, the pressure of gas flowing through

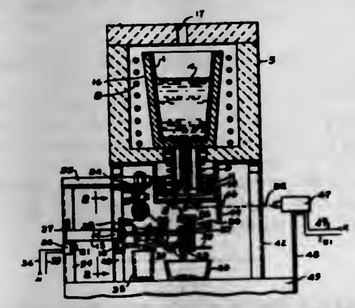


the channels of the lower bed being sufficient to support the glass, which comprises disposing the sheet a greater distance from the channels of the upper bed than from the channels of the lower bed, and feeding the gas through upper channels in a different flow pattern from the flow pattern of the flow of gas from said lower channels.

3,293,016
METHOD OF MANUFACTURING GLASS ARTICLES HAVING A HIGH MECHANICAL STRENGTH
Johannes Cornelissen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 3, 1964, Ser. No. 416,873
5 Claims. (Cl. 65—30)

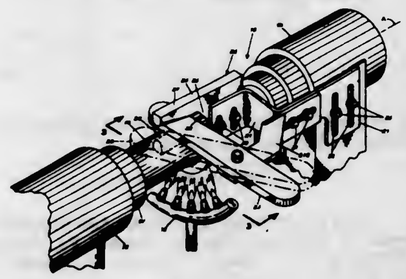
1. A method of strengthening glass articles consisting of an aluminosilicate of an alkali metal selected from the group consisting of sodium and lithium and containing at least 5 mol percent of Al_2O_3 and at most 20 mol percent of other glass-forming components comprising the step of immersing the glass articles in a bath of molten potassium nitrite at a temperature between 550° C. and at least 75° C. lower than the annealing temperature of the glass, said bath containing a constituent selected from the group consisting of stannic oxide, tin and aluminum.

3,293,017
METHOD FOR FORMING GLASS WAFERS
Weston H. Jenkins, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 20, 1963, Ser. No. 266,649
6 Claims. (Cl. 65—72)



6. The method of charging a glass-forming mold with a charge of molten glass having an extremely low viscosity which includes issuing the molten glass from an orifice having a diameter selected in accordance with the viscosity of the molten glass so that the glass issues from the orifice in freely forming and falling drops, and catching in said mold a predetermined number only of said drops.

3,293,018
FLANGE FORMING FIXTURE AND METHOD
William Russell Doty, Oakland, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed Sept. 18, 1963, Ser. No. 309,668
16 Claims. (Cl. 65—109)



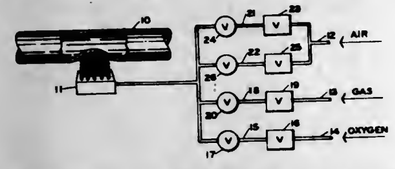
1. A tool for forming a precision flange at the edge of a rotating tubular glassware member, said edge having been heated to a plastic state, said tool comprising in combination,
mounting means releasably secured relative to said glassware member,
female means releasably attached to said mounting means and having a U-shaped end portion remote from said mounting means, said U-shaped end portion defining a recess having first and second side surfaces, an end surface, and a longitudinal axis parallel with the axis of rotation of said glassware member,
and male means movable into and releasable from the recess of said female means and releasably attached to said mounting bracket at a location remote from said female means.

12. The method of shaping a glassware member to form a flange at an end edge thereof wherein said member is provided with rotational movement relative to its longitudinal axis and said end edge is heated to a plastic state over a longitudinal section thereof, comprising the steps of
gathering said longitudinal section into an annulus of irregular cross section wherein the inside diameter of said annulus is at least equal to the inside diameter of said member,
positioning said annulus in a recess defined by side surfaces and a connecting end surface, said side surfaces being parallel to the rotational axis of said member and said end surface being normal to said side surface,
applying pressure to said annulus on a side remote from the end surface of said recess to direct said annulus against non-contacting portions of the side surfaces and end surface,
terminating said pressure when said annulus fills said recess,
and thereafter removing said glassware member from said recess.

3,293,019
METHOD FOR RESHAPING GLASS ARTICLES
Joseph E. Nitsche, Corning, and Roy E. Smith, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 5, 1963, Ser. No. 306,785
9 Claims. (Cl. 65—110)

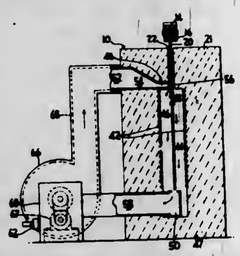
1. The method of reshaping a glass article which comprises the steps of directing against a bottom surface of a portion thereof a burner flame having heat and force sufficient to soften said portion and displace said portion

upwardly and subsequently substituting for said burner flame a cooling gas having a force sufficient to maintain



said portion in an upwardly displaced position until said portion has hardened in said position.

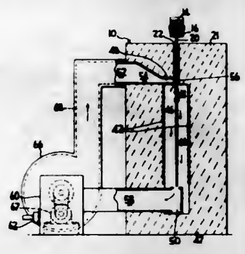
3,293,020
METHOD OF HEATING GLASS SHEETS
George E. Sleighter, Natrona Heights, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 6, 1963, Ser. No. 286,020
1 Claim. (Cl. 65—111)



A method of heating a glass sheet having at least one major surface thereof in contact with a solid member capable of deforming said glass sheet at elevated temperature incidental to treating the latter at elevated temperatures comprising first exposing the glass sheet to radiant energy to raise its surface temperature to the vicinity of its strain point and immediately thereafter applying a cool fluid to its surface to moderate its surface heating rate while continuing to irradiate the glass sheet until its interior temperature exceeds the strain point, characterized by initiating the application of said cool fluid to said surface when said surface temperature approaches the strain point of said glass.

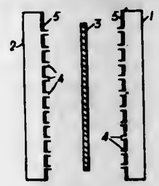
3,293,021
METHOD OF HEATING GLASS SHEETS
George W. Stilley, Freeport, and Harold E. McKelvey, New Kensington, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 6, 1963, Ser. No. 286,059
6 Claims. (Cl. 65—111)

1. A method of heating a glass sheet to a temperature above its strain point and below its softening point comprising heating said sheet by radiant energy by exposing said sheet to a source of radiant energy radiating heat at an energy level at least at the glass softening point and having a large portion of its radiated energy in the wave band between about 2.5 microns and about 4 microns in wave length characterized by first applying across the surface of said sheet relatively hot fluid at an elevated temperature above the strain point of said glass during said exposure to said radiant energy and, then, before the glass surface becomes susceptible to deformation and while continuing said exposure to said radiant energy, applying to said glass surface relatively cold fluid at a temperature below said strain point at a rate and for a time sufficient to retard the heating rate of the glass surface until the cumulative effect of said fluid application makes the glass surface less susceptible to distortion than it would have been if said glass sheet were heated



by radiation alone, and continuing said simultaneous exposure to radiant heat and said fluid until said glass sheet temperature is raised to a still higher temperature between said strain point and its softening point.

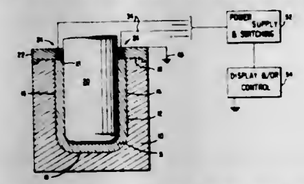
3,293,022
METHODS AND APPARATUS FOR PRODUCING TOUGHENED GLASS
John Reginald Beattie, Maghull, near Liverpool, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Apr. 1, 1963, Ser. No. 269,266
8 Claims. (Cl. 65—114)



6. A method of toughening glass in sheet form, comprising the steps of heating the glass sheet to a temperature near the softening point of the glass, rapidly chilling the glass sheet by directing streams of chilling medium simultaneously over both surfaces of the glass sheet and simultaneously with said rapid chilling, generating radiations in the wavelength range of 2.75 microns to 4.5 microns, to which radiations the glass is partially transparent, and directing said radiations at said surfaces as said surfaces are being rapidly chilled, while substantially preventing the direction at said surfaces of the glass sheet, radiations having a wavelength greater than 5 microns, to which radiations the glass is opaque, said generating, directing and preventing steps being continued long enough to produce a temperature differential between the inside and the surfaces of the glass sheet, greater than would be produced in the absence of said generating, directing and preventing steps, whereby a toughened glass sheet having a modified stress distribution is obtained.

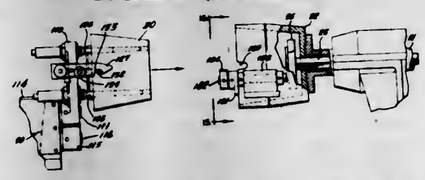
3,293,023
GLASS PRESS MOLD SENSING AND INDICATING MEANS
Arieh Carmi, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 23, 1964, Ser. No. 353,761
4 Claims. (Cl. 65—158)

1. In a glass press including a glass molding cavity defined by an electrically conductive mold, plunger and ring, an arrangement for determining the presence and position of molten high temperature and electrically conductive glass when it is placed as a gob in the bottom of the mold, said arrangement comprising; a plurality of electrical contacts carried by the electrically conductive mold in the bottom surface thereof, the contacts positioned at spaced points around the bottom of the mold at equal distances from the center thereof, insulating means insulating each of the plurality of contacts from the conductive mold so that electrically conducting glass gob contacting any one of the contacts in the mold will complete a circuit to that contact, the glass and the mold, and means for reading out the signal made by completing said circuit.



2. In a glass press including a glass molding cavity defined by a mold, plunger, and electrically conductive ring, an arrangement for determining the presence of molten high temperature and electrically conductive glass at the top of the cavity, said arrangement comprising; a plurality of electrical contacts carried by the electrically conductive ring which defines a top portion of the cavity, the contacts positioned at spaced points around the ring, insulating means insulating each of the plurality of contacts from the conductive ring so that electrically conducting glass contacting any of the contacts and the ring will complete a circuit through that contact, the glass and the ring, and means for reading out the signal made by completing said circuit.

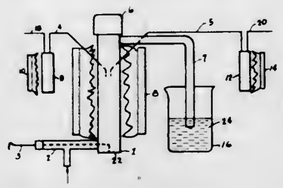
3,293,024
APPARATUS FOR THE CENTRIFUGAL MOLDING OF ARTICLES IN SPLIT MOLDS
Paul R. Laertzing, Vineland, N.J., assignor to Laertzing Corporation, Vineland, N.J., a corporation of New Jersey
Filed Mar. 20, 1963, Ser. No. 266,528
24 Claims. (Cl. 65—302)



4. Centrifugal molding apparatus, comprising in combination, a rotary mold holder casing, an axially divided mold body of a size when closed to fit in said holder casing, removable rotary mold body clamping means mounted to move against the outer end of the mold body and clamp it in said holder casing, a carriage having a holder means for engaging the mold body when closed and transfer means to move said carriage into and out of said rotary holder casing when the mold clamping means is moved clear of the mold body.

3,293,025
PRODUCTION OF ELEMENTAL CESIUM
Roy E. Jones, Trona, Calif., assignor to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 27, 1964, Ser. No. 355,233
5 Claims. (Cl. 75—66)

1. Process for producing elemental cesium comprising: preparing a first melt consisting essentially of cesium carbonate;
preparing a second melt consisting essentially of a metallic reductant;
continuously conducting a portion of said first melt and a portion of said second melt into a reaction zone, said reaction zone having an inert environment;



continuously admixing and reacting said first and second melts in said reaction zone to produce vaporous elemental cesium; and
continuously conducting said vaporous elemental cesium away from said reaction zone.

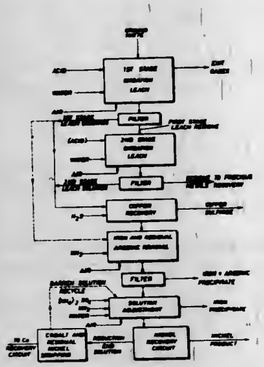
3,293,026
TIN PURIFICATION PROCESS
Frank A. Forward, Ottawa, Ontario, and Andrew I. Vizsolyi, Vancouver, British Columbia, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Canada
No Drawing. Filed Aug. 24, 1964, Ser. No. 391,752
9 Claims. (Cl. 75—101)

1. The method for treating impure tin metal to separate undesirable impurities therefrom which comprises leaching the impure tin at a temperature below 30° C. in an aqueous sulphuric acid solution under an overpressure of oxygen to produce a solution containing dissolved tin sulphate; separating the resulting solution from undissolved residue and hydrolyzing the tin sulphate by heating said solution to a temperature above about 50° C. under an oxygen overpressure to precipitate an oxidized tin compound from said solution; and separating said compound from the leach solution.

3,293,027
METHOD OF LEACHING HIGH GRADE NICKEL MATTE
Vladimir Nicolaus Mackiw, Fort Saskatchewan, Alberta, David John Ivor Evans, Edmonton, Alberta, and Wasyl Kunda, Fort Saskatchewan, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a corporation of Ontario
Filed July 20, 1964, Ser. No. 383,683
6 Claims. (Cl. 75—119)

1. In a process for leaching nickel and associated non-ferrous metal values from high grade nickel matte containing, in addition to nickel, sulphur and iron, at least one precious metal of the group comprising palladium, platinum, silver and gold and at least one metalloid compound of the group consisting of arsenic and antimony in which the matte is leached under oxidizing conditions in finely divided form at elevated temperature and pressure in an aqueous sulphuric acid solution, the improved procedure for increasing leaching efficiency, ensuring minimum dissolution of arsenic and antimony in the leach solution and concentrating the precious metals in the leach residue which comprises the steps of: forming a slurry of finely ground matte in aqueous sulphuric acid solution, the total sulphur content of said slurry being at least the stoichiometric amount required to combine with the non-ferrous metals content of the slurry as sulphates; sub-

jecting said slurry to a first stage leach at a temperature above said 250° F. and under a partial pressure of oxygen above about 10 p.s.i.; terminating said first stage leach at a slurry pH in the range of about 3.5 to about 5.5; separating the first stage leach solution from the undissolved residue and subjecting said first stage residue to a second stage leach at a temperature above about 250° F. and under a partial pressure of above about 10



p.s.i., continuing said second stage leach to extract substantially all the nickel and associated non-ferrous values contained in the matte, separating the second stage leach solution from the undissolved residue, treating said solution and the first stage leach solution to remove copper and iron therefrom and treating the purified leach solution for the recovery therefrom of substantially pure nickel and cobalt.

3,293,028

HIGH STRENGTH STEELS

Arthur R. Elsea, Frank J. Barone, and William R. Warke, Columbus, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

No Drawing. Filed July 18, 1962, Ser. No. 210,855
8 Claims. (Cl. 75—123)

1. An alloy steel composition consisting of 0.48 to 0.52 percent carbon, 0.75 to 0.95 percent manganese, 1.90 to 2.20 percent silicon, 0.90 to 1.10 percent tungsten, 0.10 to 0.15 percent vanadium, not more than about 0.04 percent combined phosphorus and sulfur, balance essentially iron.

3,293,029

WEAR-FACING ALLOY

John P. Broderick, Bayside, Daniel Paul Tamzman, Far Rockaway, and Frederick T. Wisinski, Seaford, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,034
Claims priority, application Great Britain, Aug. 4, 1964, 31,287/64
7 Claims. (Cl. 75—159)

1. A wear resistant alloy consisting essentially of the following constituents in the indicated ranges of percentages by weight:

Constituents:	Range
Nickel	15.0–40.0
Silicon	1.0–5.0
Boron	0.15–2.50
Manganese	0.20–2.00
Copper	Balance

3,293,030

NICKEL-BASE ALLOYS

Henry C. Child and Adam Dunlop, Rotherham, England, assignors to The Birmingham Small Arms Company Limited, Birmingham, England, a British company

No Drawing. Filed May 9, 1963, Ser. No. 279,301
Claims priority, application Great Britain, May 12, 1962, 18,338/62
2 Claims. (Cl. 75—171)

2. Nickel base alloys having improved creep strength and resistance to oxidation and corrosion at temperatures in the region of 1000° C. consisting essentially of the following, the proportions being by weight:

	Percent
Carbon	0.1
Chromium	5.0
Cobalt	10.0
Boron	0.05
Zirconium	0.05
Titanium	4.0–6.0
Aluminum	4.0–5.0
Tungsten	11.0–22.0

Nickel and impurities, balance.

3,293,031

DUCTILE IRIDIUM ALLOY

David W. Rhys, Hounslow, England, and Peter C. Crosswell, Los Angeles, Calif., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,427
Claims priority, application Great Britain, Dec. 23, 1963, 50,767/63
6 Claims. (Cl. 75—172)

1. An iridium alloy consisting essentially of about 0.1% to about 0.5% metal from the group consisting of titanium and zirconium with balance essentially iridium.

3,293,032

PROCESS FOR THE PREPARATION OF COLOUR IMAGES

Jan Jacken and Maurice Antoine de Rauzaix, Hove, Belgium, assignors to Gevaert Photo-Producten, N.V., Mortsel-Antwerpen, Belgium, a Belgian company

Filed Feb. 3, 1964, Ser. No. 342,305
Claims priority, application Great Britain, Aug. 2, 1961, 28,040/61
5 Claims. (Cl. 96—22)

5. A photographic process for preparing a direct positive colour image which comprises the steps of:

(1) exposing to a coloured object a photographic element containing a red-sensitive silver halide emulsion layer, a green-sensitive silver halide emulsion layer and a blue-sensitive silver halide emulsion layer, the red-sensitive silver halide emulsion layer containing a colourless naphthol colour coupler and in effective contact therewith a colourless quinolone-4 hydrazone compound, the green-sensitive silver halide emulsion layer containing a colourless naphthol colour coupler and in effective contact therewith a colourless 4-methyl-quinolone-2-hydrazone compound, the blue-sensitive emulsion layer containing a colourless 3-acylaminopyrazolone-5 colour coupler and in effective contact therewith a colourless 4-methyl-quinolone-2 hydrazone compound,

(2) developing the photographic element with an aromatic primary amino developing agent,

(3) treating the photographic element in an alkaline oxidative bleaching bath containing potassium ferricyanide,

(4) treating the photographic element in an acid solution having a pH of at least 1,

(5) fixing the photographic element to produce:

colourless reaction products at the places where development occurred, and

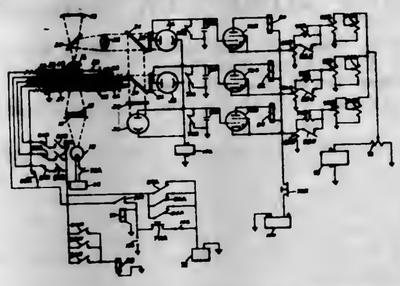
a positive colour image of the object to be reproduced as a result of oxidative coupling of colour coupler still present after development with the respective hydrazone compound in effective contact therewith.

3,293,033

METHOD FOR CONTROLLING EXPOSURE IN A PHOTOGRAPHIC COLOR PRINTER

Ralph B. Maddock and Robert E. Barbour, Minneapolis, Minn., assignors to Pako Corporation, Minneapolis, Minn.

Filed Jan. 18, 1960, Ser. No. 3,075
4 Claims. (Cl. 96—23)



1. The method of exposing a photographic multicolor sensitized material from a color image comprising first directing a wide band white printing light through an image to expose all emulsions of the sensitized material until the exposure to at least one of the three primary colors is completed, while simultaneously sampling the printing light reaching the sensitized material with three photoelectric means each responsive to one of the narrow band primary colors, then changing the printing light from a wide band white light to a narrow band colored light to complete the exposure to a color requiring additional exposure and simultaneously modifying the sampling means to compensate for the change in the effective emulsion sensitivity of the sensitized material which occurs with a change in the band width of the exposing light, then changing the printing light to another narrow band color required to complete an exposure not previously completed.

3,293,034

ALKOXY HYDROXYLAMINES AS PHOTOGRAPHIC DEVELOPERS

Milton Green, Newton Highlands, Mass., and Adnan A. Sayigh, North Haven, and Henri Ulrich, Northford, Conn., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed June 26, 1963, Ser. No. 290,619
21 Claims. (Cl. 96—29)

1. As a new developer composition, an aqueous solution comprising an alkaline material, a silver halide solvent, and a silver halide developing agent selected from the group consisting of compounds within the formula:

$$R^1—N—R^2$$
$$\quad\quad|$$
$$\quad\quad OH$$

wherein at least one of R^1 and R^2 is selected from the group consisting of alkoxyalkyl and alkoxyalkoxyalkyl radicals, and the other of said R^1 and R^2 is selected from the group consisting of alkyl, alkoxyalkyl, alkoxyalkoxyalkyl, and alkenyl radicals, and R^1 and R^2 when taken together with said

$$\quad\quad OH$$
$$\quad\quad|$$
$$—N—$$

is an alkoxy-substituted heterocyclic group.

3,293,035

TANNING DEVELOPMENT

Albert Emiel Van Hoof, Berchem-Antwerp, and Georges Arthur Holvoet, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., a Belgian company

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,203
Claims priority, application Netherlands, Apr. 26, 1962, 277,701
12 Claims. (Cl. 96—35)

1. In a process for producing a relief image in an imagewise exposed light-sensitive gelatino silver halide emulsion layer, the improvement which comprises subjecting said layer to tanning development with hydroquinone to form hardened and non-hardened areas, said tanning development being carried out in the presence of a hardening inhibiting compound substantially free of silver halide developing activity and selected from the group consisting of

(*a*) an aromatic hydroxy compound of the group consisting of a naphthol and a polyhydroxy benzene having at least two hydroxyl groups in meta position relative to one another, and

(*b*) a water-soluble primary amino compound of the group consisting of a lower aliphatic primary amine, an amino carboxylic acid, and an amino sulfonic acid; and

removing at least a portion of the emulsion in the unhardened areas thereof to produce said relief image.

12. Light-sensitive photographic material for image wise exposure with light and development in an aqueous alkaline liquid comprising at least one silver halide emulsion layer and having incorporated therein:

(1) Hydroquinone in amount generally sufficient to cause tanning development in the exposed areas of said layer in the presence of said aqueous alkaline liquid;

(2) A tanning inhibiting agent in an amount up to about 35 mole percent of said hydroquinone and generally sufficient to inhibit tanning development in the unexposed areas of said layer, said agent being free of developing activity and selected from the group consisting of;

(*a*) an aromatic hydroxy compound of the group consisting of a naphthol and a polyhydroxy benzene having at least two hydroxyl groups in meta position relative to one another, and

(*b*) a water-soluble primary amino compound of the group consisting of a lower aliphatic primary amine, an amino carboxylic acid, and an amino sulfonic acid; and

(3) A compound splitting off bisulfite ions in the presence of said liquid in an amount up to about 50 mol percent of said hydroquinone and generally sufficient to stabilize said emulsion layer against aerial oxidation.

3,293,036

BLEACH-FIX COMPOSITIONS AND PROCESS FOR PRODUCING COLORED PHOTOGRAPHIC IMAGES

Heinz Meckl, Cologne-Flittard, and Helmut Hiesler, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 7, 1963, Ser. No. 263,391
Claims priority, application Germany, Apr. 5, 1962, A 39,881
4 Claims. (Cl. 96—60)

1. In a process for the production of a photographic image which comprises

(a) imagewise exposure of a photographic multilayer color material comprising at least one light-sensitive silver halide emulsion layer which contains a color coupler capable of reacting with an oxidation product of a color-forming developer to form a dye,

(b) developing the said material to form a silver and a color image, and

(c) simultaneously bleaching and fixing the said developed material to remove the silver image from the light-struck areas and the silver halide from the areas not struck by light by a bleach-fixing bath containing

(1) a bleaching agent selected from the group consisting of ferric and cobaltic complex salts of a member selected from the group consisting of hydroxypolycarboxylic and aminopolycarboxylic acids,

(2) a fixing agent consisting of a water-soluble salt of thiosulfuric acid,

said fixing bath having a pH value of between 7 and 9, the improvement according to which the simultaneously bleaching and fixing is accomplished in effective contact with a reducing agent selected from the class consisting of a hydrazine salt, a water-soluble hydroxylamine salt and formamidine-sulphinic acid.

3,293,037

COMPOSITIONS OF MATTER COMPRISING INORGANIC PHOTOCHROMIC MATERIAL DISPERSED IN AN AMINOPLAST RESIN

John A. Chapoorian, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 21, 1962, Ser. No. 239,323
13 Claims. (Cl. 96—90)

1. A composition of matter comprising an aminoplast resin having uniformly dispersed throughout the body thereof an inorganic photochromic material selected from the group consisting of (A) TiO_2 doped with an oxide selected from the group consisting of Fe_2O_3, FeO, Cr_2O_3, CuO, MnO_2, Mn_2O_3, a mixture of Fe_2O_3 and NiO, a mixture of Fe_2O_3 and CuO, a mixture of FeO and NiO and a mixture of FeO and CuO, (B) Nb_2O_5 doped with an oxide selected from the group consisting of Fe_2O_3, FeO, Cr_2O_3, CuO, V_2O_5, MnO_2, and Mn_2O_3, (C) Al_2O_3 doped with an oxide selected from the group consisting of Cr_2O_3 and V_2O_5, (D) ZnO doped with an oxide selected from the group consisting of CuO and V_2O_5, (E) SnO_2 doped with CuO, (F) ZrO_2 doped with an oxide selected from the group consisting of CuO and NiO, (G) TiO_2 reacted with an oxide selected from the group consisting of MoO_3 and WO_3, (H) ZnO reacted with an oxide selected from the group consisting of MoO_3 and WO_3, (I) ZrO_2 reacted with an oxide selected from the group consisting of MoO_3 and WO_3, (J) SnO_2 reacted with an oxide selected from the group consisting of MoO_3 and WO_3 and (K) GeO_2 reacted with an oxide selected from the group consisting of MoO_3 and WO_3.

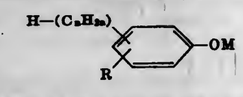
3,293,038

RUMINANT FEEDS CONTAINING ALKYLATED PHENOLS

Gino J. Marco, Webster Groves, and Eugene S. Erwin, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 7, 1963, Ser. No. 286,171
16 Claims. (Cl. 99—2)

1. A ruminant feed which comprises at least one cellulosic roughage component and a growth stimulating amount of an alkylated phenol of the structure



wherein R is an alkyl radical having from 7 to 12 carbon atoms; wherein n is an integer from zero to four; and wherein M is selected from the group consisting of hydrogen and alkali metals.

3,293,039

PECKING STONE FOR BIRDS

Raymond St. Hilaire, Paterson, N.J., assignor of fifty percent to Vasilije Starcev, Paterson, N.J.

No Drawing. Filed May 17, 1963, Ser. No. 281,336
1 Claim. (Cl. 99—4)

A pecking stone for birds comprising approximately 2½ ozs. finely divided oyster shell, 2½ ozs. gravel, 10 grams charcoal, 1 oz. pumice, 2 ozs. Glastone, 1½ ozs. honey, 6 grams cod liver oil, 4 grams salt and 2 ozs. water.

3,293,040

METHOD FOR CHILL-PROOFING BEER WITH WATER SOLUBLE ALKYL CELLULOSE ETHERS

Richard G. Shaler, Jr., San Anselmo, Calif., and Raymond L. McAdam, Las Vegas, Nev., assignors to American Tansul Company, Las Vegas, Nev.

No Drawing. Filed May 25, 1964, Ser. No. 370,850
10 Claims. (Cl. 99—48)

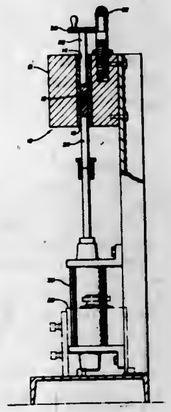
1. In the method of treating beer with a swelling gelling clay to chill-proof the beer, the improvement which comprises adding about .1–20% by weight with respect to the clay of a water soluble alkyl cellulose ether to the beer during the treatment thereof concurrently with said clay whereby the sludge level of the clay and the turbidity of the beer are reduced.

3,293,041

BEVERAGE EXTRACT TABLETTING METHOD

Jarrott T. Miller, San Mateo, Calif., assignor to Hills Bros. Coffee, Inc., San Francisco, Calif., a corporation of California

Filed Jan. 11, 1963, Ser. No. 256,900
8 Claims. (Cl. 99—66)



1. In a process for forming tea and coffee beverage extracts into highly soluble self-supporting tablets, the steps of depositing a quantity of dry finely divided beverage extract in a forming zone, heating exterior surface portions of beverage extract within said zone to a temperature within the range from 190 to 325° F. sufficient to cause some heat bonding of extract particles within said surface portions, simultaneously applying a relatively low pressure not in excess of 40 p.s.i. to said exterior surface portions to assist in forming a cohesive tablet having a thin shape-retaining heat softened and compressed outer crust, and ejecting the tablets from said zone.

3,293,042

GROUND COFFEE FILLED BEVERAGE TAPE

August D. Elman, Rockville Centre, N.Y., assignor to Rudd-Melikian, Inc., Hatboro, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 419,618, Sept. 25, 1964, which is a division of application Ser. No. 57,495, Sept. 21, 1960. This application Feb. 21, 1966, Ser. No. 528,761
1 Claim. (Cl. 99—77.1)

A beverage tape for use in a brewing machine having a brewing chamber, comprising two layers of water permeable material, a series of masses of ground coffee, each comprising a dense compressed briquette of uniform thickness and density substantially throughout the area thereof, said briquettes being spaced along the length of said layers and separated by uniform distances along such length and adapted to be sequentially subjected to a brewing operation in the brewing chamber of the brewing machine, said briquettes being positioned between said layers and having substantial dimensions and area in the plane of the tape and each such briquette having a clearly defined periphery, said layers of water permeable material being pressed into tight contiguity with the surface of each briquette and being adhesively bonded to each other completely around such briquette immediately adjacent the periphery of the briquette to form a closely fitting pod, the pod thus formed being equal to the volume of that briquette and said layers of material having flat areas between the pods and along each edge of the tape projecting well beyond the pods to provide flat sealing regions adapted to be engaged in the brewing machine at all sides of the brewing chamber.

3,293,043

UNBAKED BAKERY PRODUCTS FOR REFRIGERATOR STORAGE COATED WITH ACETYLATED MONOGLYCERIDES

Samuel A. Matz, Liverpool, Robert E. Duncan, Marcellus, and Donald E. Mook, De Witt, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 8, 1964, Ser. No. 336,354
2 Claims. (Cl. 99—92)

1. The method of making a packaged unbaked bakery product for refrigerated storage and subsequent baking comprising the steps of temporarily hardening a baking adjunct into the shape desired, completely coating the adjunct with an acetylated monoglyceride, and placing the coated adjunct into a container in contact with a shaped piece of unbaked bakery food.

3,293,044

METHOD OF MAKING AN EGG PRODUCT

David Torr, Oyster Bay, N.Y., assignor to Ralston Purina Company, St. Louis, Mo.

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,912
8 Claims. (Cl. 99—113)

5. The method of treating the yolks and albumen of whole eggs to form an egg product, comprising the steps of integrating the yolks and albumen to form a blended mixture thereof, adding anti-coagulent and preservative agents to said blended mixture, reducing said blended mixture in a colloid mill to a colloidal dispersion, homogenizing said colloidal dispersion in a homogenizer while maintaining the product within a temperature range of approximately 30–40° F., adding food mixes to the product, and raising the temperature of the product to occasion partial coagulation thereof.

3,293,045

INCREASING THE FLAVOR STRENGTH OF ANETHOLE, CINNAMALDEHYDE AND METHYL SALICYLATE WITH MALTOL

Joan M. Griffin, Forest Hills, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,126
3 Claims. (Cl. 99—134)

1. A method for flavoring foodstuffs and medicines which comprises incorporating therein from about 50 to about 300 parts per million of an agent selected from the group consisting of anethole, cinnamaldehyde, and methyl salicylate and from about 15% to about 100% of maltol by weight of said agent.

3,293,046

PRESERVATION OF VEGETABLE PRODUCTS

Matteus Hendrikus Werther, Zwollerkerspel, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed July 31, 1961, Ser. No. 127,993
Claims priority, application Great Britain, Aug. 8, 1960, 27,428/60
6 Claims. (Cl. 99—154)

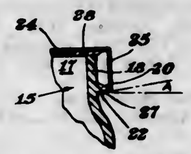
1. A process for treating a liquid-containing vegetable which comprises blanching the vegetable by heating it at an elevated temperature; liquidizing the vegetable by mechanical disintegration while it is still hot from the blanching without the addition of liquid by liberating the natural fluids contained therein; subjecting the hot liquidized vegetable to a subatmospheric pressure whereby gas contained in the vegetable is removed and the liquidized product is cooled by evaporation of part of the liquid of the product; and withdrawing the degassed and cooled liquidized vegetable from the influence of said subatmospheric pressure.

3,293,047

ALKENYL AROMATIC RESINOUS PACKAGING

Ralph E. Pfister, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 20, 1963, Ser. No. 289,257
6 Claims. (Cl. 99—171)



1. In an alkenyl aromatic resinous rigid container having a generally circular opening, a cylindrical configuration adjacent to said opening, the outer portion of the cylindrical portion of said container being provided with a plurality of thread portions adapted to engage internally projecting lugs on a mating closure, said thread portions and lugs so constructed and arranged so as to permit release of the closure from the container by a relative rotation of up to about 90°, the improvement which comprises providing the thread portions with a lug engaging surface disposed at an angle of up to 10° as measured from a plane generally parallel to the opening of the container and in a radially outward direction.

3,293,048

FOOD AND BEVERAGE COOKING CONTAINER AND METHOD OF USING SAME

Donald M. Kitterman, 1401 Fairfax Trafficway, Kansas City, Kans. 66115

Filed Feb. 24, 1964, Ser. No. 346,799
2 Claims. (Cl. 99—171)

1. A combined food package and cooking container comprising,

(a) an outer receptacle formed of a food compatible high melting point impervious flexible sheet material, said receptacle having walls connected in the form of a closed container,

(b) an inner receptacle formed of porous sheet material and containing dry food making material,

(c) said inner receptacle being confined in said outer receptacle with said walls of the outer receptacle being connected in surrounding relation to said inner receptacle to separate said inner receptacle from the remainder of the interior, a portion of said connection being a seal line that is rupturable,



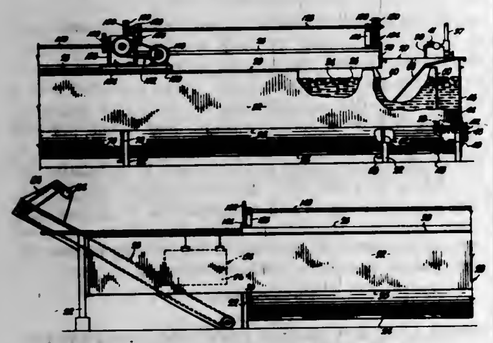
(d) and a quantity of liquid in the outer receptacle spaced from said inner receptacle and maintained separately therefrom by said connection of the outer receptacle walls, said seal line connection being rupturable to permit the liquid to enter the inner receptacle in contacting relation to the food making material and form a hot liquid food in response to internal pressure from subjecting said outer receptacle with the liquid therein to heat and vaporize a portion of said liquid.

3,293,049

METHOD OF DEFROSTING FOOD PRODUCTS

James A. Bonuchi, Merriam, Kans., and Richard A. Bracking, Kansas City, Mo., assignors to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri

Filed Mar. 20, 1964, Ser. No. 353,323
6 Claims. (Cl. 99—192)



1. A method for separating and raising the temperature of a plurality of individual food products frozen together in a block, comprising the steps of:

depositing a plurality of blocks of food products in a quantity of heating liquid overlying a relatively hard surface and at a level to only partially submerge the blocks and at a temperature to thaw said products;

lifting the blocks from said surface;

dropping the blocks onto said surface through the liquid overlying the surface to impactively break the blocks and separate the individual food products from each other with the liquid cushioning the shock to protect the products from damage;

flowing the liquid over the surfaces of the products exposed by the impact to facilitate complete separation of the products; and

applying heat to the separated food products to raise their temperatures.

3,293,050

METHOD AND COMPOSITION FOR PROVIDING CORROSION RESISTANCE TO METAL SURFACES

Frank I. L. Lawrence, Bradford, Pa., assignor to Kendall Refining Company, Bradford, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,470
17 Claims. (Cl. 106—14)

1. A corrosion resistant coating for metal surfaces consisting essentially of,

(a) about 12% to 18% of a soap selected from the group consisting of metal soaps and bentonite soaps of fatty acids,

(b) about 12% to 18% of an oleaginous solvent for said soap selected from the group consisting of 100 second low pour oils and the composition consisting essentially of 47% to 51% phenol extract of a heavy hydrocarbon resin and 49% to 53% mineral seal oil,

(c) about 1½% to 2½% of rust inhibitor selected from the group consisting of metallic sulfonates, metallic naphthenates, alkyl amines and alkyl amine salts, alkyl oxazolines, oxazoline salts of high molecular weight acids, sorbitol monooleates, and sulfonated castor oil; and

(d) about 60% to 66% of a composition consisting essentially of about 5% to 6½% petrolatum, about 12% to 14% air condensed hydrocarbon resin having a ring and ball softening point of about 250° F., about 59% to 64% of a member from the group consisting of odorless kerosene and kerosene, about 19% to 21% phenol extract of a heavy hydrocarbon resin and about 0.2% to 0.4% zinc diamyl dithiocarbamate.

3,293,051

HIGH TITANATE GLASS BEADS

Charles Edwin Searight, Ezra McLaurin Alexander, and John Robert Ryan, all of Jackson, Miss., assignors to Cataphote Corporation, Jackson, Miss., a corporation of Ohio

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,925
8 Claims. (Cl. 106—47)

1. As a new article of manufacture, a transparent glass bead element formed from glass essentially consisting of a composition of the following table wherein the quantities are in percent by weight:

TiO_2	55–75
BaO group	not above 45
ZnO	0–35
CdO	0–35
Bi_2O_3	0–35
PbO	0–35
Strong glass former group	not above 8

wherein the BaO group consists of BaO, CaO, SrO and MgO and the total amount of these oxides in the glass is at least 10% by weight, and the strong glass former group consists of SiO_2, Al_2O_3, B_2O_3, GeO_2 and P_2O_5 and the total amount of these oxides in the glass is at least 0.2% by weight.

3,293,052

GLASS ARTICLE AND METHOD OF MAKING IT

Loris G. Sawchuk and Stanley D. Stookey, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Mar. 14, 1963, Ser. No. 265,150
6 Claims. (Cl. 106—54)

1. A phototropic article comprising a body of a silicate glass having in at least a portion thereof crystals of at least one silver compound selected from the group consisting of silver molybdate, silver tungstate, and silver molybdate-tungstate solid solution, said portion of the glass containing, by weight on the analyzed basis, about 0.2–0.8% silver and 2.5–10% total of the oxide of at least one heavy metal selected from the group consisting of molybdenum and tungsten.

3,293,053

REFRACTORY AND FURNACE LINING

Allen M. Alper and Robert N. McNally, Corning, N.Y., assignors to Corhart Refractories Company, Inc., Louisville, Ky., a corporation of Delaware

No Drawing. Original application Sept. 26, 1963, Ser. No. 311,888. Divided and this application Nov. 8, 1965, Ser. No. 506,091
3 Claims. (Cl. 106—58)

1. A fused cast refractory consisting of, analytically by weight, at least about 75% to 89% MgO, about 11% to 21% CaO, less than 5% FeO, and less than 10% of other oxide selected from the group consisting of less than 5% alkali metal oxide, less than 5% rare earth oxide, less than 3% P_2O_5, less than 1% ThO_2, less than 5% ZrO_2, less than 5% SiO_2, less than 5% B_2O_3, less than 5% Al_2O_3 and less than 5% Cr_2O_3.

3,293,054

ADHESIVE COMPOSITION

Paul F. Lennox, Weston, Mass., and John B. Kirkland, Baltimore, Md., assignors to The Webtex Company, Wilmington, Mass., a voluntary association of Massachusetts

No Drawing. Filed Aug. 13, 1963, Ser. No. 301,882
2 Claims. (Cl. 106—123)

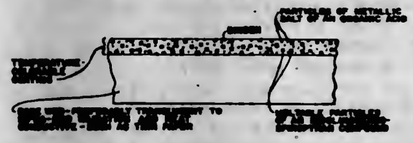
1. An adhesive composition consisting essentially of about 470 parts waste sulfite liquor solids, about 150 to 200 parts fuller's earth, about 365 parts glucose, about 70 parts lecithin, about 920 to 1015 parts china clay and about 715 parts water, the parts being parts by weight.

3,293,055

HEAT SENSITIVE COATING COMPOSITION AND COPY SHEET COATED THEREWITH

Henry H. Baum, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Dec. 12, 1963, Ser. No. 331,085
11 Claims. (Cl. 106—171)



1. A record copy sheet consisting of a base web having on a surface thereof a temperature-colorable coating including a profusion of minute solid particles of two kinds in intimate interspersion, one kind of said particle being a metallic salt of an organic acid, the metallic cation being at least divalent and the melting point of the salt being at least 65 degrees centigrade, and the other kind of particle being at least one indolinobenzospiropyran compound, said compound having an oxygen-containing radical at the 8' position selected from the group consisting of $—NO_2$, $—OCH_3$, and $—OC_2H_5$.

3,293,056

COMPOSITION FOR A COMBUSTIBLE CARTRIDGE CASE

Walter S. Baker, Joliet, Ill., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Original application Mar. 11, 1958, Ser. No. 720,800. Divided and this application Mar. 9, 1965, Ser. No. 452,428
4 Claims. (Cl. 106—177)

1. A coating composition for impregnating a cellulose fabric in the manufacture of a combustible cartridge case, said composition consisting essentially of a slurry of an oxidizing agent in a solvent solution of resinous binder, said oxidizing agent being selected from the group consisting of ammonium perchlorate and potassium perchlorate in an amount in the range of about 15 to 90 percent by weight of said slurry, said resinous binder being selected from the group consisting of polyvinyl chloride, polyvinyl acetate, polyvinyl chloride-acetate, polymers of polyvinyl chloride and polyvinyl acetate, polyvinyl butyral, glyceryl esters of hydrogenated rosin, ethyl cellulose, polyvinyl formal, and cellulose acetate-butyrate, and said solvent being selected from the group consisting of methyl ethyl ketone, methylene chloride, ethyl acetate, n-butyl acetate, acetone, petroleum ether, toluene, methanol, benzene, isopropanol and trichloroethane.

2. The coating composition of claim 1 which includes 2-biphenyl diphenyl phosphate as plasticizer therein.

3,293,057

MODIFIED STARCH COMPOSITION

George G. Rumberger, Kalamazoo, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,122
28 Claims. (Cl. 106—212)

1. A composition prepared by mixing together and reacting at an elevated temperature an aqueous dispersion of individual ingredients comprising starch, urea, and a polyfunctional aldehyde, wherein said starch is present in an amount of about 9% to about 95% by weight, said urea is present in an amount of about 5% to about 80% by weight, and said aldehyde is present in an amount of about 0.5% to about 20% by weight, all based on the total solids weight of said compositions, the pH of said dispersion being no greater than about 7.

3,293,058

COATING COMPOSITIONS

Edward Michael Evans, Penarth, Valerie Lewis, Cardiff, and Howard Williams, Wenvoe, Wales, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,911
Claims priority, application Great Britain, Jan. 2, 1962, 89/62
12 Claims. (Cl. 106—253)

1. A process for producing an aqueous surface coating composition which comprises reacting (1) a member selected from the group consisting of triglyceride ester of unsaturated fatty acid having at least 12 carbon atoms, fatty acid having at least 12 carbon atoms, and the methyl and polyglycol esters of fatty acids having at least 12 carbon atoms, with (2) a member selected from the group consisting of acyclic olefinic carboxylic acid having less

than ten carbon atoms in any chain, acyclic olefinic polycarboxylic acid aliphatic ester having less than ten carbon atoms in any carbon chain, and acyclic olefinic polycarboxylic acid anhydride having less than ten carbon atoms in any carbon chain, at a temperature above 110° C. until a water soluble oil/acid product is formed, reacting said water soluble product with from 1% to 10% by weight of formaldehyde in a reaction medium having a pH of about 3.5 to 9 and then dissolving the resultant product in an aqueous solution of a base.

11. An aqueous surface coating composition comprising a solution in an aqueous base of the reaction product of formaldehyde and the water soluble product obtained by reacting (1) a member selected from the group consisting of triglyceride ester of unsaturated fatty acid having at least 12 carbon atoms, fatty acid having at least 12 carbon atoms, and the methyl and polyglycol esters of fatty acids having at least 12 carbon atoms, with (2) a member selected from the group consisting of acrylic olefinic carboxylic acid having less than ten carbon atoms in any chain, acyclic olefinic polycarboxylic acid aliphatic ester having less than ten carbon atoms in any carbon chain, and acyclic olefinic polycarboxylic acid anhydride having less than ten carbon atoms in any carbon chain, at a temperature above 110° C.

3,293,059

ELECTROSTATIC IMAGE FIXING METHOD EMPLOYING INK AND RECORD MEDIUM HAVING CHEMICAL SIMILARITY

Philip A. Stowell, Paoli, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 29, 1961, Ser. No. 155,712
1 Claim. (Cl. 117—17.5)

The method of fixing a latent electrostatic image without the use of externally applied heat comprising the steps of:

(a) providing an electrostatic record medium with a dielectric thin film coating of styrenated resin material whereby to provide a toothed or textured surface thereupon,

(b) preparing a particulate electrostatic recording ink with a styrenated resin material having a characteristic and chemical similarity to the styrenated textured surface forming material in the record medium, and being sufficiently softer than this material whereby the ink particles will be deformed by the latter upon pressure contact therewith,

(c) producing a latent electrostatic image of the desired information upon the dielectric surface of said record medium,

(d) applying said recording ink to said dielectric surface thus to produce a visible image of said information, and

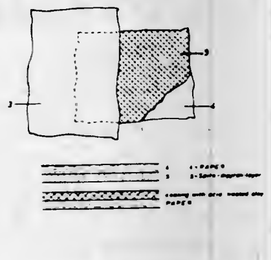
(e) finally permanently fixing said ink to said record member by passing said record member between adjustable calendering rolls so as to vary the amount of the calendering pressure upon said record member whereby said ink is deformed and adiabatically heated such that the ink particles are caused to collapse slightly raising their temperatures and fusing the same substantially eliminating any voids therebetween and chemically and mechanically bonding the ink to the textured surface of the dielectric material effectively permanently affixing the image on said record member.

3,293,060

WRITING AND MANIFOLDING MATERIAL

Ludwig Harbort, Hannover, Germany, assignor to Gunther Wagner, Hannover, Germany

Filed Aug. 20, 1965, Ser. No. 483,019
Claims priority, application Germany, Feb. 6, 1956, W 18,372
13 Claims. (Cl. 117—36.2)



1. In combination: a substrate, a first layer of acid activated clay anchored on said substrate, said acid activated clay being enriched with a non-volatile acid and exhibiting strong acidic reaction, and a second layer superimposed on said first layer and containing as active ingredient an effective amount of a spiro-dipyran, said spiro-dipyran, upon application of inscribing pressure, forming a visible color salt on said first layer.

3,293,061

PRIMARY AMINE MODIFIED SECONDARY OR TERTIARY AMINE-POLYKETO REACTION PRODUCT IN A HEAT DEVELOPABLE COPY SHEET

William R. Lawton, Nashua, N.H., assignor to Management Research Laboratories, Inc., Amherst, N.H., a corporation of New Hampshire

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,457
7 Claims. (Cl. 117—36.8)

1. A heat developable copy sheet containing a reaction product of a primary amine of the group consisting of an alkyl amine, an alkylene polyamine, a cycloalkyl amine and a furfuryl amine reacted in a non-acid medium and at a temperature below the decomposition temperature of said reaction product, with an intermediate reaction product of (1) an amine selected from the group consisting of a secondary and a tertiary amine and (2) a solid cyclic polyketo compound of the type normally used to form a dye by reaction with a primary amine, reacted with an excess of said amine in a non-acid medium at a temperature below the decomposition temperature of said intermediate reaction product.

3,293,062

CHEMICAL WATERMARK APPLIED ON FINISHED PAPER

Bruce D. Stoffremick and Franz V. E. Vanzie, Appleton, Wis., assignors, by mesne assignments, to Castonmark Corporation, Appleton, Wis., a corporation of Wisconsin

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,826
10 Claims. (Cl. 117—36)

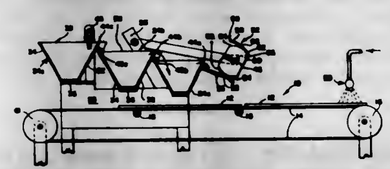
2. A method for making chemical watermarks in finished paper products which includes the steps of applying to the surface of finished paper a composition having curable hexamethoxymethylmelamine, a curing agent therefor which is a sulfonic acid derivative selected from the class consisting of an alkyl sulfonic acid and an aryl sulfonic acid, and a colorless organic polar solvent, applying said composition in the configuration of a selected design, and curing the composition in the paper after application to said finished paper, whereby a colorless, substantially insoluble chemical watermark is formed.

3,293,063

PROCESS AND APPARATUS FOR APPLYING LIQUID IN A DISCONTINUOUS MANNER TO A SUBSTRATE

Harold E. Pohl, Kankakee, Ill., and Clayton E. Workman, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

Filed May 23, 1963, Ser. No. 282,757
17 Claims. (Cl. 117—45)



13. An apparatus to apply liquid in a discontinuous manner onto a substrate member, said apparatus comprising: a liquid dispensing apron having an elongate discharge portion over which liquid is dispensed onto said substrate member, means to feed said liquid onto said apron at a predetermined rate with a predetermined distribution on the apron, means to periodically obstruct and then release liquid flow at said discharge portion at predetermined time intervals and at various predetermined locations at said discharge portion, so that when flow is so interrupted by said obstructing means at any one of said locations, liquid collects at said any one of said locations during such interruption, and upon release of collected liquid at said any one location, there is a concentration of liquid flow from said any one location onto said substrate member, means to move said substrate member, relative to said apron at a predetermined rate and along a path having a component perpendicular to a general line of elongation of said discharge portion, whereby said liquid is distributed onto said substrate member in a suitable manner.

14. A method to apply liquid in a discontinuous manner onto a substrate member, said process comprising:

(a) feeding said liquid onto a discharge apron at a predetermined rate and with a predetermined distribution so that said liquid flows over a discharge portion of said apron,

(b) periodically obstructing and then releasing flow over said discharge portion at predetermined time intervals and at predetermined locations, so that when flow is so interrupted at any one of said locations, liquid collects at said any one location during such interruption, and upon release of the collected liquid, there is a surge of liquid flow at said any one location, and

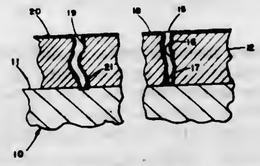
(c) moving said substrate member beneath said apron so that liquid flows onto said substrate member in a desired general pattern.

3,293,064

METHOD OF MAKING HEAT RESISTANT ARTICLE

William L. Aves, Arlington, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,631
9 Claims. (Cl. 117—46)



1. The method of protecting a body having a surface from the deleterious effects of high temperatures in an atmospheric environment comprising:

forming a porous coating on the surface by spraying the surface with a molten, refractory metal;

substantially covering the surface and the surfaces of the walls of the pores of the coating with a liquid solution of a thermally decomposable compound of a metal chosen from the group consisting of gold, silver, platinum, rhodium, palladium, and iridium;

and raising the coating to a temperature high enough to effect thermal decomposition of the compound in situ and thereby plating the chosen metal onto the surface and the surfaces of the walls of the pores of the coating.

3,293,065

METHOD OF COATING GLASS FOR SUBSEQUENT SOLDERING

Robert P. Rostter, Perrysburg, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Mar. 29, 1965, Ser. No. 445,854
3 Claims. (Cl. 117—46)

1. A method of coating glass sheets for subsequent soldering operations, comprising moving a glass sheet to be coated along a definite path, heating the sheet to a preselected temperature ranging between about 150° and 300° F., spraying a molten metal alloy on the heated sheet as it moves along said path to form a metallic coating thereon, directing a reducing flame against said metallic coating to remove oxides therefrom, applying a first layer of solder directly on the metallic coating upon continued movement of the sheet along said path and while said sheet is at said elevated temperature by spraying molten solder at a temperature between about 1000° and 1500° F. to produce a fine, dense, relatively thin layer of solder on said metallic coating, and then applying a second layer of solder directly on the first layer of solder as the sheet moves along said path by spraying molten solder at a temperature between about 350° and 500° F. to produce a realtively thicker layer on said first layer of solder.

3,293,066

HIGH SPEED ANTISTATIC MAGNETIC MEMBER

Robert S. Haines, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

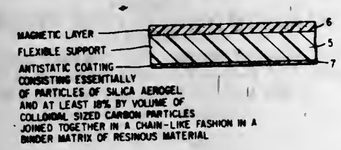
Filed Dec. 19, 1962, Ser. No. 245,837
7 Claims. (Cl. 117—68)

1. A magnetic record member comprising:

a flexible nonmagnetic support having two faces;

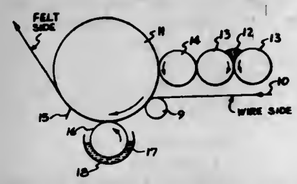
a magnetic layer covering one face of the support; and

a wear resistant antistatic coating having good frictional characteristics adherently bonded to the second face of the support, said antistatic coating consisting essentially of particles of silica aerogel and colloidal sized particles of carbon



joined together in a chain-like fashion, said colloidal sized carbon particles constituting at least about 18% by volume of the antistatic coating, said particles of silica aerogel and colloidal sized carbon uniformly dispersed in a binder matrix of resinous material.

3,293,067
PRODUCTION OF COATED PAPER
Joseph E. Streb and Charles S. Martin, Stevens Point, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Mar. 27, 1963, Ser. No. 268,291
5 Claims. (Cl. 117—68)

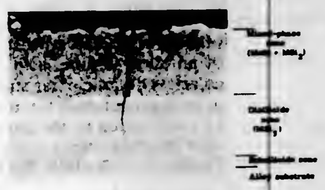


2. The method of making printable coated paper which comprises coating the felt side surface of a forwardly moving uncoated dry paper web with an aqueous coating composition comprising mineral pigment and adhesive, by imprint transferring thereto under pressure a preformed film of said composition from a resilient surfaced applicator roll coated with a metered amount of said composition distributed thereto from a pool maintained between a pair of gate rolls, and substantially simultaneously coating the opposed wire side surface of said web, while maintaining it in contact with said applicator roll, by applying thereto a second aqueous coating composition comprising mineral pigment and adhesive, wiping and leveling the latter coating while the web is still in contact with said applicator roll, stripping the coated web from the latter roll and heat drying the resulting coatings applied to the opposed surfaces of the web.

3,293,068
COATINGS FOR COLUMBIUM BASE ALLOYS
Elihu F. Bradley, West Hartford, Conn., and Edwin S. Bartlett, Worthington, and Horace R. Ogden and Robert I. Jaffee, Columbus, Ohio, assignors, by direct and mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 303,052
23 Claims. (Cl. 117—69)

1. An article of manufacture having good stress-rupture strength at high temperatures, high temperature oxidation resistance, and resistance to cyclic fatigue failure, which comprises a core of metal selected from the group consisting of columbium and columbium-base alloys, the article having a thermal shock failure resistant, defect insensitive, self-healing oxidation resistant surface layer consisting essentially of a mixture of manganese silicide and a silicide of the metal core.

19. The process of coating a fabricated base metal which process comprises surrounding a base metal selected from the group consisting of columbium and alloys thereof with a powdered pack of a finely ground source of manganese and a small amount of a volatilizable halide salt as active ingredients and an inert filler, heating the base metal and powdered pack for a time period sufficient to cause volatilization of the halogen in the halide salt and to produce deposition of elemental manganese



STRUCTURE OF A 1:1 Mn:Si RATIO COATING
500X MAGNIFICATION

on the surface of the base metal, then surrounding the manganized base metal with a powdered pack of a finely ground source of silicon and a small amount of a volatilizable halide salt as active ingredients and an inert filler, heating the base metal for a time period sufficient to cause volatilization of the halogen in the halide salt and to effect the creation of an exterior surface layer on the base metal composed predominantly of manganese silicide and a silicide of the base metal.

3,293,069
COATINGS FOR COLUMBIUM BASE ALLOYS
Elihu F. Bradley, West Hartford, Conn., and Edwin S. Bartlett, Worthington, and Horace R. Ogden and Robert I. Jaffee, Columbus, Ohio, assignors, by direct and mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 4, 1963, Ser. No. 314,035
18 Claims. (Cl. 117—69)

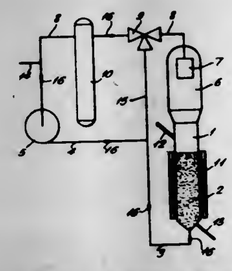


SILICIDE COATING DEPOSITED OVER Cb-14 Co SUBSTRATE
500X MAGNIFICATION

1. An article of manufacture having good stress-rupture strength at high temperatures, high temperature oxidation resistance, and resistance to cyclic fatigue failure which comprises a core of metal selected from the group consisting of columbium and columbium base alloys, the article having a defect, oxidation, and thermal-cyclic-failure resistant surface zone consisting essentially of at least one compound selected from the group consisting of CoSi, $CoSi_2$, and mixtures thereof.

14. The process of coating a fabricated base metal which process comprises surrounding a base metal selected from the group consisting of columbium and alloys thereof with a powdered pack of a finely ground source of cobalt and a small amount of a volatilizable ammonium halide salt as active ingredients and an inert filler, heating the base metal and powdered pack for a time period sufficient to cause volatilization of the ammonium halide salt and to produce deposition of elemental cobalt on the surface of the base metal, then surrounding the cobaltized base metal with a powdered pack of a finely ground source of silicon and a small amount of a volatilizable halide salt as active ingredients and an inert filler, heating the base metal for a time period sufficient to cause volatilization of the halogen in the halide salt and to effect the creation of an exterior surface layer on the base metal composed predominantly of at least one compound selected from the group consisting of $CoSi_2$, CoSi and mixtures thereof.

3,293,070
COATING WITH BERYLLIA
James Elgie Lloyd, and Frederick Samuel Martin, Lea, Preston, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 8, 1963, Ser. No. 271,182
Claims priority, application Great Britain, Apr. 19, 1962, 15,223/62
6 Claims. (Cl. 117—100)



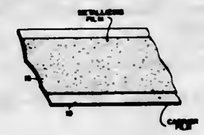
1. A method of coating a body with beryllia including the step of exposing the body to the vapour produced by heating basic beryllium nitrate, and employing thermal decomposition for producing the beryllia from said vapor.

3,293,071
PROCESS FOR TREATING CELLULOSIC TEXTILE MATERIAL
Leo Peloquin, Mount Rainier, and Arnold M. Sookne, Silver Spring, Md., and Joe T. Adams, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,841
5 Claims. (Cl. 117—104)

1. In the method for imparting wash and wear properties to a cellulosic fabric which comprises impregnating said fabric with a polyepoxide and a curing catalyst and thereafter curing the impregnated fabric, the improvement of effecting the impregnation of said fabric with said polyepoxide by spraying liquid non-aqueous polyepoxide on the surface of a cellulosic fabric which contains at least about 5 percent by weight of regain water, based on the bone dry weight of the fabric, and which is free of water other than water of regain in the fibers thereof.

3,293,072
CERAMIC-METALLIZING TAPE
Howard Daniel Doolittle and Kitty S. Ehre, Stamford, Conn., assignors, by mesne assignments, to Vitta Corporation, Wilton, Conn., a corporation of Connecticut
Filed June 29, 1961, Ser. No. 120,617
10 Claims. (Cl. 117—138.8)

1. A metallizing film comprising:
(A) at least one powdered metal compound suspended in
(B) a cast film of an organic film-forming polymer (a) selected from the group consisting of polyvinyl alcohol and poly-n-butyl methacrylate,



(b) said cast film consisting of not more than about 10% by weight of said polymer and about 90% by weight of powdered metal compound.

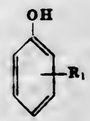
9. The metallizing film of claim 1 cast as a releasable, flexible layer on a supporting flexible film.

3,293,073
PROCESS FOR IMPARTING WASH AND WEAR PROPERTIES TO CELLULOSE-CONTAINING TEXTILE FABRIC AND RESULTING PRODUCT
Henry G. Goodman, Jr., White Plains, George H. Lourigan, New City, and Mary Lou Burke, Pleasantville, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 12, 1964, Ser. No. 344,189
14 Claims. (Cl. 117—139.4)

1. A process for imparting wash and wear properties to cellulose and cellulose-containing textile fabrics with minimum loss of strength and abrasion resistance which comprises applying to the said textile fabric about 0.5 percent to about 30 percent, based on the weight of the said textile fabric, of a polyepoxide capable of imparting wash and wear properties thereto, about 0.05 percent to about 10 percent, based on the weight of the said textile fabric, of an acid-acting epoxy curing catalyst and about 0.05 percent to about 1.5 percent, based on the weight of said textile fabric, of an aldehyde-reactive compound selected from the group consisting of (1) primary amides of the formula:



wherein X is independently selected from the group consisting of an oxygen atom and a sulfur atom and R is independently selected from the group consisting of an amino group, a lower alkylamino group, a lower dialkylamino group, a lower alkoxy group, and a phenoxy group, (2) alkali metal bisulfites, (3) phenols of the formula:

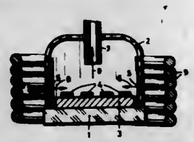


wherein R_1 is selected from the group consisting of a hydrogen atom, a methyl group, and a hydroxyl group, (4) dihydric alcohols of the formula:

$$HO—(C_nH_{2n}—O)_m—H$$

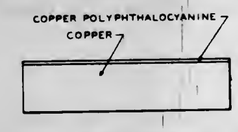
wherein m is an integer having a value of 1 to 4 and n is an integer having a value of 2 to 6, (5) guanidine, (6) dicyandiamide, (7) hydroxylamine, and (8) hexamethylene tetramine, and thereafter heating the said textile fabric to cure the said polyepoxide within the fibers thereof and thereby impart the wash and wear properties.

3,293,074
METHOD AND APPARATUS FOR GROWING MONOCRYSTALLINE LAYERS ON MONOCRYSTALLINE SUBSTRATES OF SEMICONDUCTOR MATERIAL
Julius Nicki, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Nov. 4, 1964, Ser. No. 409,025
Claims priority, application Germany, Nov. 5, 1963, S 88,180
16 Claims. (Cl. 117—201)



1. The method of epitaxially growing monocrystalline semiconductor layers upon disc-shaped electrodeless monocrystalline semiconductor substrates by thermal dissociation of gaseous semiconductor compound and precipitating the evolving semiconductor material upon the substrates in a reaction vessel having gas inlet and outlet openings, which comprises passing a gaseous flow containing said compound from a plurality of inlet openings parallel to the substrate surfaces which are to be coated while heating the substrates to the dissociation temperature of the compound, and removing the residual reaction gas from a locality substantially above the middle of the substrates.

3,293,075
THIN FILMS OF METAL POLYPHTHALOCYANINES ON SUBSTRATES AND COATING PROCESS
Bernard S. Wildi, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,804
11 Claims. (Cl. 117—211)



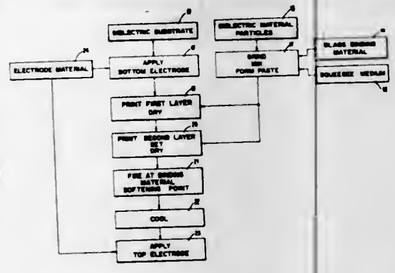
1. An as article of manufacture, a thin film, of 1 to 1000 microns of metal polyphthalocyanine on a metal-containing conductive surface of a substrate.

3,293,076
PROCESS OF FORMING A SUPERCONDUCTOR
Lloyd R. Allen, Belmont, John G. Rupp, Reading, and Robert A. Stauffer, Weston, Mass., assignors, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 17, 1962, Ser. No. 188,177
1 Claim. (Cl. 117—213)



In the process of forming a superconductor having high magnetic field tolerance which comprises providing a niobium surface of extended length, (*a*) treating said surface to make it wettable by molten tin, (*b*) applying a thin layer of tin to said surface and (*c*) heating the tin wetted surface to convert said tin layer to a stratum of Nb_3Sn compound at the surface of the wire, wherein the surface of the niobium wire is made wettable in said step (*a*) by (*a'*) exposing the surface to tin vapors to form a molecular molten layer of tin on the niobium surface and (*a''*) heating the said surface at an elevated temperature to convert said molecular layer of molten tin to Nb_3Sn prior to said step (*b*).

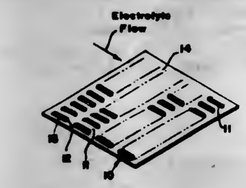
3,293,077
MICROELECTRONIC CAPACITOR MATERIAL AND METHOD OF FABRICATION
Harold D. Kaiser and Arthur H. Mones, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1964, Ser. No. 378,863
3 Claims. (Cl. 117—217)



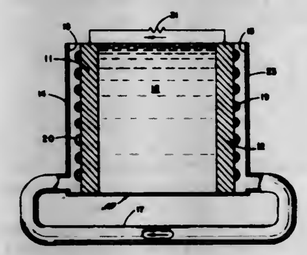
2. A method of forming a microelectronic capacitor device on a dielectric substrate which includes the steps of:
depositing a first electrode material on the substrate and forming a first capacitor electrode;
mixing a high permittivity dielectric material together with a glass binder material to form a resultant mixture thereof, said binder material comprising 5–15%, by volume, of said mixture;
dispersing said resultant mixture in a carrier vehicle to form a paste, the ratio of resultant mixture to vehicle being approximately 70–30%, by weight;
printing said paste on said first capacitor electrode;
firing said paste on said first capacitor electrode at a temperature above the softening point of said glass binder material but below the melting point of said first electrode material for binding said materials together and forming a non-porous dielectric composition, said dielectric material having a sintering temperature above and said binder material having a softening point below, the melting point of said first electrode material; and
depositing a second electrode material on said dielectric material and forming a second capacitor electrode.

3,293,078
SEA WATER BATTERY AND A LOUVERED ANODE FOR USE THEREIN
Raul H. Frye, Greenwich, Conn., assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed Feb. 28, 1964, Ser. No. 348,090
7 Claims. (Cl. 136—83)

1. A sea water battery cell comprising a silver chloride cathode, a separator, a sea water electrolyte, and a louvered anode having a plurality of louvers extending toward the cathode, the area of the louvers being approximately equal to the area of the web portion of the electrode, said louvers extending from the web portion a distance not exceeding about twice the thickness of the electrode, and said louvered anode being prepared from electrochemically active material consisting essentially of magnesium.



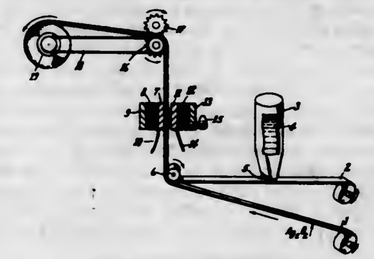
3,293,079
THERMOCELL
Ralph J. Bredd, Dallas, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 217,950
6 Claims. (Cl. 136—86)



1. A thermocell comprising:
a compartment having first and second walls made of a porous, inert, electrically conductive material and constituting a spaced pair of collectors, and a spaced pair of walls connecting and electrically isolating the collectors;
first and second manifolds respectively associated with the first and second collectors, each of said manifolds having an outer wall spaced outwardly of the compartment from the associated collector, each of the collectors serving as a wall in common between the compartment and the associated manifold;
means providing communication between the manifolds;
a gas permeating the collectors and filling the manifolds and communication-providing means;
a fused salt electrolyte in contact with the collectors and contained in the compartment between the collectors, the salt being a salt of the gas;
means for heating one of the collectors, said means lying between the outer walls of the manifolds and in contact with one of the collectors;
and means for cooling the other of the collectors, the last-named means lying between the outer walls of the manifolds and in contact with the other of the collectors.

3,293,080
FUEL CELL HAVING A TAPE COATED WITH SILVER PEROXIDE
Bernard A. Gruber, Boxford, and Ralph R. Kafesjian, Wakefield, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,557
6 Claims. (Cl. 136—86)

1. A tape-fed fuel cell comprising a reservoir of dry permeable tape coated with silver peroxide, means for wetting said tape with electrolyte, a zinc anode, and an inert cathode from which current is drawn during operation of the cell, and means for advancing said peroxide-coated tape, wetted with electrolyte, between and in contact with said anode and cathode substantially continuously during operation of said cell.

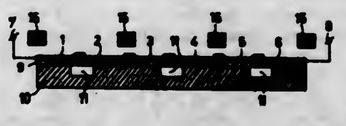


3,293,081
VENTING MEANS FOR A GALVANIC CELL
John L. S. Daley, Bay Village, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1964, Ser. No. 335,510
12 Claims. (Cl. 136—178)



1. A normally sealed galvanic cell capable of gas relief at a predetermined pressure, said cell comprising a container and a closure sealing one end of said container, said closure comprising a rigid cover having a shape which fits in said end of said container and having an aperture therein, an annular gasket disposed against said cover and around said aperture, a retaining means disposed around the periphery of said annular gasket and spaced therefrom so as to define a free space for radial movement of said annular gasket, and resilient means positioned over said annular gasket in pressure contact therewith and set to permit gas relief at a predetermined pressure from within said container said aperture and past said annular gasket, but to prevent gas relief from said container at pressures below said predetermined pressure.

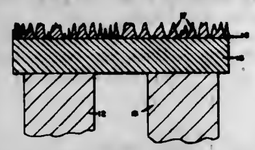
3,293,082
THERMO-ELECTRIC DEVICE FOR MEASURING THERMAL RADIATION ENERGY
Gerrit Pieter Brouwer and Johannes van der Wal, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 6, 1960, Ser. No. 54,088
Claims priority, application Netherlands, Sept. 22, 1959, 243,627
16 Claims. (Cl. 136—206)



9. A thermo-electric device responsive to radiant energy, comprising at least one thermocouple element, said thermocouple element comprising first and second flat members composed of different thermoelectric materials,

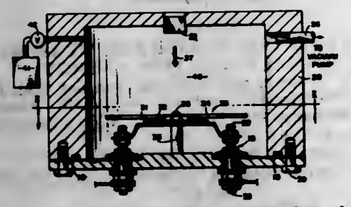
said first and second members being disposed in a co-planar relationship and aligned to provide at least one common junction at predetermined portions of said members, said one common junction being positioned so as to be exposed to said radiant energy on one side of said members, a conductiive member having a high thermal capacity and disposed on the other side of and adjacent said members so as to have a first predetermined spaced relationship with respect to said common junction portions of said members and a second relatively closer spaced relationship with respect to the other portions of said members, electrical insulating means separating said first and second members from said high thermal capacity member, and a thin metal layer arranged in heat conducting relationship with said insulating means and said high thermal capacity member.

3,293,083
THERMOELECTRIC STRUCTURES
Raymond T. Divers, Camillus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,686
3 Claims. (Cl. 136—230)



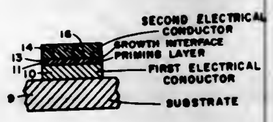
1. In a thermoelectric device having thermoelectric elements coupled together at their cold junction by a copper cold bridge conductor strap, and a heat sink to which the heat dissipated by the cold bridge may be transferred, insulation for the cold bridge serving to electrically insulate the bridge from the sink while simultaneously implementing heat transfer between the bridge and sink, said insulation comprising: an aluminum sheet bonded to the surface of the cold bridge; and an anodized surface layer on said aluminum sheet remote from the surface of the bridge, whereby an insulating alumina layer will be formed between the bridge and sink.

3,293,084
METHOD OF TREATING SEMICONDUCTOR BODIES BY ION BOMBARDMENT
James O. McCaldin, Los Angeles, Calif., assignor to North American Aviation, Inc.
Filed Sept. 9, 1963, Ser. No. 308,617
20 Claims. (Cl. 148—1.5)



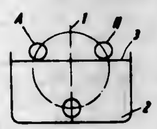
1. A method of permanently altering the electrical characteristics of at least one portion of a semiconductor body selected from the class consisting of silicon, germanium and alloys thereof, containing a preselected concentration of an acceptor comprising the steps of heating the body to a temperature of from about 300° C. to about 700° C. and bombarding said heated body with ions of at least one element selected from the class consisting of Na, K, Rb and Cs for a time and with an energy to form a volume in said body having a concentration of said at least one element sufficient to materially alter the conductivity charactistics of said volume.

3,293,085
ELECTRICALLY RESISTIVE BARRIER FILMS AND ELEMENTS EMBODYING THE SAME
Paul H. Smith, Arlington, and John L. Miles, Belmont, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 20, 1962, Ser. No. 225,101
13 Claims. (Cl. 148—6.3)



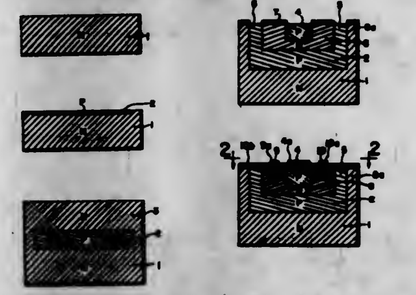
1. A method of forming an electrically resistive barrier film of a controlled thickness on the surface of an electrically conducting body, comprising the steps of
(1) providing a body of an electrically conducting film forming material;
(2) applying a reactant means to a surface of said body for producing a reaction product dielectric film of said body material and said reactant means on said surface of said body to provide a thin priming dielectric film;
(3) depositing on said priming film a layer of a different electrically conducting material having a lower affinity for ions of said reactant means than said body and containing an occluded quantity of said reactant means, said film and layer defining a growth interface at their meeting surface; and
(4) applying an electrostatic potential means across said priming film, at a temperature above —35° C., for diffusing ions from said body through said dielectric film and said ions of said reactant means to said film at said growth interface whereby said resistive barrier film is built up in thickness by the reaction product of the two groups of ions.

3,293,086
METHOD OF HARDENING WORKPIECES
Gerhard Seulen, Remscheid, and Hermann Kuhlbert, Wuppertal-Elberfeld, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, and Allgemeine Elektricitäts-Gesellschaft, Berlin-Grunewald, Germany
Filed May 11, 1964, Ser. No. 366,312
Claims priority, application Germany, May 11, 1963, D 41,541
2 Claims. (Cl. 148—153)



1. The method of hardening workpieces in which the workpieces are loaded onto a rotatable carrier, inductively heated and immersed in a quenching bath, which comprises the steps of periodically rotating the carrier to index it to a stop position in which at least two workpieces are located above the surface of the quenching bath while at least one further workpiece is in the bath, removing at least one hardened workpiece of those above the surface of the bath and replacing this by at least one unhardened workpiece at each stop position, inductively heating at least one unhardened workpiece of said workpieces above the surface of the bath for a prescribed time, and spraying the heated workpiece at least partially to quench it before it is indexed into the bath in the contingent event of the period required for effecting the said removal and replacement exceeding the prescribed period for heating.

3,293,087
METHOD OF MAKING ISOLATED EPITAXIAL FIELD-EFFECT DEVICE
Edwin H. Porter, Mountain View, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, Long Island, N.Y., a corporation of Delaware
Filed Mar. 5, 1963, Ser. No. 262,999
4 Claims. (Cl. 148—175)

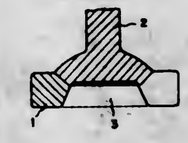


1. A method of making an isolated epitaxial field-effect device which comprises the steps of:
(a) forming a region of impurities of one conductivity type on a substrate of the opposite conductivity type, said region being surrounded by a periphery of said substrate;
(b) forming an epitaxial layer of said opposite conductivity type over said region of impurities while said region of impurities diffuses partially into said epitaxial layer to form a first gate region, said epitaxial layer intimately contacting and electrically joining said epitaxial layer to said substrate at said periphery;
(c) diffusing an extension region of said one conductivity type from the surface of said epitaxial layer into intimate contact with said first gate region, said extension region surrounding a portion of said epitaxial layer and being electrically joined to said region of impurities; and
(d) diffusing a second gate region of said one conductivity type from the surface of said epitaxial layer into the surrounded portion of said epitaxial layer to a depth above said first gate region, leaving a slice of said epitaxial layer between said first and said second gate regions as a channel.

3,293,088
METHOD FOR PRODUCING ADHERENT COATINGS ON CLEAN METAL PARTS
Willy Herbst, Hofheim, Taunus, Germany, Fritz Walter Artur Rechlitz, deceased, late of Bad Soden, Taunus, Germany, by Ernst Rechlitz, heir, and Anneliese Rechlitz, heiress, both of Stuttgart-Degerloch, Germany, and Herbert Vilsmeier, Hofheim, Taunus, and Ernst Wagner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,599
Claims priority, application Germany, Nov. 18, 1959, F 29,575
5 Claims. (Cl. 148—6.15)

1. A method for producing adherent uniform coatings on clean metals, particularly for preventing corrosion and providing adherence of lacquers and varnishes, which comprises the steps of contacting said clean metals with a solution of macromolecular substances of vinyl phosphonic acid in a solvent selected from the group consisting of water and aliphatic alcohols having 1 to 4 carbon atoms, and subsequently drying the metals thus treated at a temperature ranging from about 80° C. to about 200° C.

3,293,089
ZENER DIODE ELEMENT OF LOW JUNCTION CAPACITANCE
Masatoshi Migitaka and Takashi Tokuyama, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Aug. 21, 1963, Ser. No. 303,517
Claims priority, application Japan, Aug. 23, 1962, 37/34,951
1 Claim. (Cl. 148—33)



A Zener diode of the junction type having p- and n-regions, one of said regions having a grooved portion such that the junction area has only an angular peripheral surface.

3,293,090
CELLULOSE ACETATE-AMMONIUM NITRATE PROPELLANT CONTAINING A QUATERNARY AMMONIUM SALT OF A HEXACYCLIC UREIDE
Lionel A. Henderson, Columbus, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 7, 1964, Ser. No. 388,274
10 Claims. (Cl. 149—18)

1. An ammonium nitrate propellant composition comprising ammonium nitrate as the major component, between about 10 and 40 weight percent of an oxidizable organic binder material, and a small catalytic amount of a quaternary ammonium salt of a hexacyclic ureide, said ureide having 2–3 nitrogen atoms in the ring and in its enol form having 2–3 hydroxy substituted carbon atoms in the ring.

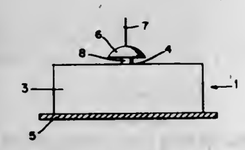
3,293,091
COMPLEX SALTS OF BASIC LEAD PICRATE
Joseph F. Kenney, Bridgeport, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 339,474
57 Claims. (Cl. 149—24)

3. A complex inclusion salt combining in characteristic crystalline form definite proportions of basic lead picrate, at least one but not more than two of the lead salts selected from the group of lead salts of monobasic acids of no greater acid strength than picric acid consisting of lead acetate, lead hypophosphite, lead nitroaminoguanidine, lead chlorate, lead azide, lead formate, lead propionate, lead glycolate, lead lactate, lead aminoacetate, lead acrylate, lead methacrylate, and lead butyrate, and one combining and precipitating lead salt selected from the group of lead salts of monobasic acids consisting of lead nitrate, lead acetate, lead lactate, lead acrylate, lead methacrylate, lead propionate, and lead formate.

48. A rimfire ammunition priming composition comprising in substantially the specified proportions the following ingredients:

	Percent
Monobasic lead picrate·lead nitrate·lead acetate	36 to 50
Tetracene	2 to 5
Potassium lead styphnate·lead hypophosphite	0 to 10
Normal lead styphnate	0 to 10
Oxidizer, which may be either or both barium or lead nitrate or a mixture of both nitrates	25 to 58
Barium nitrate	0 to 58
Lead nitrate	0 to 50
Basic lead nitrate	0 to 10
Lead dioxide	0 to 10
Lead thiocyanate	0 to 10
Boron	0 to 5
Antimony sulfide	0 to 5
Glass	0 to 33

3,293,092
SEMICONDUCTOR DEVICE FABRICATION
John B. Gunn, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 17, 1964, Ser. No. 352,501
6 Claims. (Cl. 156—17)

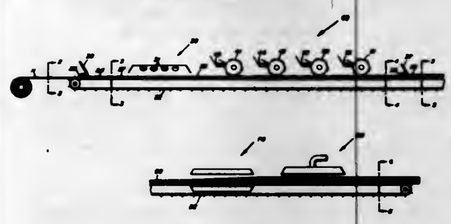


1. A method of making semiconductor devices including the fabrication of a semiconductor junction of small area comprising,
depositing at least one thin layer of first semiconductor material having a first band gap upon a substrate of second semiconductor material having a second band gap to form a junction therebetween,
applying a dot of etch-resistant material to cover a portion of said one thin layer,
etching the entire structure thus formed with an etchant effective to dissolve substantially only said first semiconductor material such as to remove all of said one thin layer from said substrate except for that portion underlying said dot of etch-resistant material, and
continuing said last-mentioned step to purposefully dissolve said underlying portion of said one thin layer except for a small part thereof defining said small area junction with said substrate.

3,293,093
DISSOLUTION OF METAL WITH ACIDIFIED HYDROGEN PEROXIDE AND USE AS COPPER ETCHANT IN MANUFACTURE OF PRINTED CIRCUITS
Harold F. Jones, Marcellus, Carmelo L. Alderuccio, Camillus, John G. Poor, Otisco, and Lawrence P. Gould, Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,572
18 Claims. (Cl. 156—18)

1. The method for dissolution of metal which comprises contacting the metal selected from the group consisting of copper and alloys thereof with an aqueous solution containing 2–12% by weight hydrogen peroxide, about 0.45–5.5 grams per liter hydrogen ion; and having incorporated therein a catalytic amount of an additive selected from the group consisting of phenacetin, sulfathiazole, silver ions, and mixtures thereof.

3,293,094
TEXTURED FOAM PROCESSES
R. Frank Nairn, Kennett Square, Pa., Joseph C. Harkins, Jr., Franklin Lakes, N.J., and Frank E. Ehrenfeld, Jr., Brookhaven, and Hilton Tarlow, Philadelphia, Pa., assignors to Congoleum-Nairn Inc., Kearny, N.J., a corporation of New York
Filed Dec. 20, 1965, Ser. No. 513,606
62 Claims. (Cl. 156—79)



1. In the process for producing a resinous cellular layer which comprises incorporating a blowing agent in a resinous composition and subsequently uniformly heating the composition to the decomposition temperature of the blowing agent and forming said cellular layer, the improvement which comprises producing said cellular layer with portions of said layer having a thickness contrasting with the remaining part of said layer by applying to said portions of the surface prior to said uniform heating an inhibitor which is capable of penetrating into said composition and substantially alters the temperature at which at least some of the blowing agent in said portions decomposes, and controlling the extent of said uniform heating with respect to time and temperature thereof to produce said contrast in thickness.

2. The process of claim 1 wherein said inhibitor is at least partially soluble in at least one component of said resinous composition below the decomposition temperature of said blowing agent.

27. The process of claim 2 wherein one surface of said resinous composition containing the blowing agent is laminated to a web backing and the opposite surface is laminated to a resinous composition wear layer.

3,293,095
METHOD OF PRODUCING OIL ABSORPTIVE LAMINATES
John C. Pitzer, Cincinnati, Ohio, assignor to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
No Drawing. Filed Oct. 10, 1962, Ser. No. 229,742
7 Claims. (Cl. 156—155)

1. A process for the preparation of an oil-absorptive laminated article which comprises (1) impregnating a porous base material with an aqueous solution of a leachable solid material, (2) drying the resulting impregnated base material, (3) impregnating the resulting dried, leachable solid material-impregnated base material with a water-insoluble, organic solvent-soluble thermosetting phenolic resin syrup, said leachable solid material being substantially insoluble in said resin syrup, (4) drying the resulting doubly-impregnated base material, (5) assembling a plurality of layers of said dried, doubly-impregnated base material in superimposed relationship, (6) laminating the resulting dried, doubly-impregnated base material, by the application of heat thereby curing said phenolic resin to a substantially insoluble and infusible form, and (7) contacting the resulting laminated article with water to dissolve a substantial amount of said leachable solid material therefrom.

3,293,096
OIL ABSORPTIVE LAMINATES
John C. Pitzer, Cincinnati, Ohio, assignor to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,150
8 Claims. (Cl. 156—155)

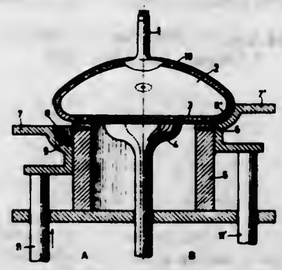
1. A process for the preparation of an oil-absorptive laminated article which comprises (1) impregnating a porous base material with a solution of a substantially water-insoluble leachable solid material in a chemically inert organic solvent, (2) drying the resulting impregnated base material, (3) impregnating the resulting dried, leachable solid material-impregnated base material with an aqueous solution of a thermosetting aminoplast resin, (4) drying the resulting doubly-impregnated base material, (5) assembling a plurality of layers of said dried, doubly-impregnated base material in superimposed relationship, (6) laminating the resulting dried, doubly-impregnated base material, by the application of heat thereby curing said aminoplast resin to a substantially insoluble and infusible form, and (7) contacting the resulting laminated article with a solvent for said leachable solid material to dissolve a substantial amount of said material therefrom.

3,293,097
METHOD OF MAKING A DAMPENING ROLL COVER FOR USE IN LITHOGRAPHIC PRINTING
Stanley G. Petersen, Minneapolis, and Leonard W. Sachi, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application July 16, 1962, Ser. No. 210,126, now Patent No. 3,229,351, dated Jan. 18, 1966. Divided and this application Mar. 1, 1965, Ser. No. 446,757
4 Claims. (Cl. 156—191)



1. A process for preparing a seamless, porous hygroscopic, cohesive non-woven cylindrical sleeve which comprises:
(1) wrapping a mandrel with multiple turns of a non-woven web containing hydrophilic, randomly disposed fibers which
(a) are substantially water insoluble at temperature below about 100° F.,
(b) can be longitudinally expanded when water wetted,
(c) have dimensional stability in the dry expanded state,
(d) longitudinally contract from the expanded state when wetted with water at room temperature,
(2) radially compressing said multiple turns of non-woven web under heat and pressure in the presence of moisture to compact said multiple turns and to cohere the fibers to each other without destruction of the essentially fibrous character of said web, forming a cylindrical sleeve,
(3) expanding said sleeve radially while in water wetted condition to increase the diameter thereof, and
(4) drying said sleeve in its expanded condition to impart dimensional stability thereto.

3,293,098
METHOD OF COVERING A GLASS WALL PORTION OF A CATHODE-RAY TUBE
Johannes Sprengers, Christiaan Franciscus Stuettgen, and Cornelis Hendrik van Glabbeek, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,506
Claims priority, application Netherlands, Apr. 26, 1962, 277,711
7 Claims. (Cl. 156—245)



1. A method of covering a portion of a glass wall of a cathode-ray tube adjoining an end window with an implosion-resistant layer which also serves as a frame for the end window comprising the steps, forming a material which constitutes an armour for the layer into an annular-shaped body, placing the annular-shaped body in an annular matrix having a shape similar to that of the portion of the wall to be covered with an implosion-resistant layer, placing the annular matrix containing the annular-shaped body on a cylindrical member having a cross-sectional area similar to that of the end window, interposing a sealing member between the cylindrical member and the end window, applying in a fluid state a hardenable material onto the annular shaped body in the matrix, moving the matrix on said cylindrical member toward said tube whereby the annular-shaped body covered with hardenable material is pushed against the wall of the tube and the hardenable material pressed through the annular-shaped body to the upper edge of the matrix, and allowing the hardenable material to harden before removing the matrix.

3,293,099
METHOD OF HEAT SEALING A MATERIAL OF THE TYPE HAVING A THERMOPLASTIC COATING ON EITHER SIDE OF A CARRYING LAYER
Sven Olof Sören Stark, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,470
Claims priority, application Sweden, Nov. 23, 1962, 12,577/62
3 Claims. (Cl. 156—289)

1. Method of heat sealing a material having a thermoplastic coating on both sides of a body layer which comprises compressing and heating an area of superposed layers of said material by means of a pair of cooperating clamping jaws provided with heat emitting means whereby the thermoplastic coatings facing each other and the thermoplastic coating facing said clamping jaws are melted, cooling said thermoplastic coatings in said area whereby said coatings are solidified and stabilized, energizing said heat emitting means practically instantaneously sufficiently to melt the thermoplastic coating facing said clamping jaws thereby preventing adhesion between said thermoplastic coating and said clamping jaws, releasing the pressure on said clamping jaws and separating them from said superposed layers.

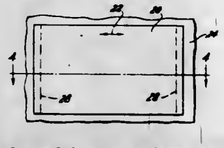
2. Method in accordance with claim 1 in which the clamping jaws are heated during the release of pressure and the following removal of the clamping jaws from said area for a sufficiently long period and with sufficient intensity to ensure that the thermoplastic material which may have deposited on the sealing surfaces of the clamping jaws is burnt or completely decomposed.

3,293,100

METHOD OF DECORATING WITH PLASTIC FILMS

John M. Questel, Cuyahoga Falls, Ohio, assignor to Morgan Adhesives Company, Stow, Ohio, a corporation of Ohio

Filed Aug. 27, 1963, Ser. No. 304,938
1 Claim. (Cl. 156—314)



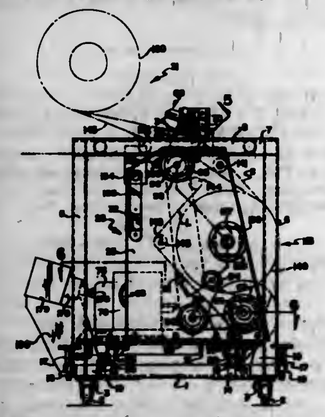
That method of applying to a base a relatively thin vinyl plastic sheet having grain which tends to shrink in the direction of the grain after application which includes the steps of applying a pressure sensitive adhesive which has insufficient strength to overcome the tendency of the sheet to shrink to the major portion of the back of the sheet but leaving at least one end of the sheet in the direction of the grain of the sheet uncovered, applying a bulk adhesive which has sufficient strength to overcome the tendency of the sheet to shrink and having a viscosity between about 600 and about 3000 cps. to the uncovered end, and wrapping the sheet around the base to engage the pressure sensitive adhesive to the base and to engage the bulk adhesive applied to the other end of the sheet whereby the bulk adhesive provides a stronger bond of the ends of the sheet than the tendency of the vinyl to shrink.

3,293,101

TIRE FABRIC TRANSFER MECHANISM

Armando Canterutti, Cuyahoga Falls, Ohio, assignor to NRM Corporation, a corporation of Ohio

Filed Apr. 29, 1963, Ser. No. 276,694
30 Claims. (Cl. 156—361)



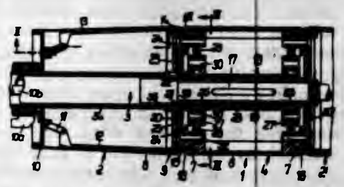
1. A transfer mechanism for tire fabric and the like comprising a frame, wheel means supporting said frame, vertically extending parallel side plates mounted on said frame, a stock roll including a tire fabric material and liner therefor wrapped thereon journalled between said plates, a drive roll and a liner roll journalled between said plates parallel to said stock roll, means to thread said liner from said stock roll about said drive roll and onto said liner roll, and drive means carried by said frame connected to said drive and line rolls operative to pay said liner from said stock roll onto said liner roll and deliver such fabric from said stock roll.

3,293,102

TYRE-BUILDING UP DRUM

Gerhard Held, Frankfurt am Main, Germany, assignor to Leonh. Herbert Maschinenfabrik, Bergen-Enkheim, Germany

Filed Nov. 18, 1965, Ser. No. 508,490
Claims priority, application Germany, Nov. 24, 1964, H 54,379
3 Claims. (Cl. 156—420)



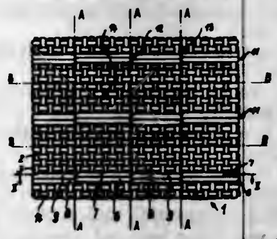
1. A tyre building-up drum comprising a number of radially displaceable segments having circumferentially inclined surfaces, a number of radially displaceable wedge-shaped bars having circumferentially inclined surfaces complementary to said segment inclined surfaces and engaging therewith in the radially outwardly extended positions thereof, said segment and wedge-shaped bars being guided only in the radial direction, a setting element displaceable relatively to said segments, and a plurality of links each articulated by one end portion to one of said segments and bars and at its other end portion articulated to said setting element, the effective length of said bar links being shorter than that of said segment links when in a substantially radial position and operable so that movement of said links will cause said segments to move radially outwardly before said bars and inwardly after said bars.

3,293,103

BASE FABRIC FOR CARPETS

Walter Georgii and Herbert Georgii, Sindelfingen, near Stuttgart, Germany, assignors to Zwelgart & Sawitzki, Sindelfingen, near Stuttgart, Germany

Filed June 5, 1964, Ser. No. 372,806
Claims priority, application Germany, June 10, 1963, Z 10,168
6 Claims. (Cl. 161—90)



1. A woven carpet base fabric comprising a first set of warp threads and weft threads and a second set of warp threads and weft threads interwoven in superimposed front and back layers in which said first and second sets form pattern portions; and first and second pairs of anchoring threads, woven into said back layer and forming floating loops on said front layer, said first pair of anchoring threads being woven into said first set of weft threads and warp threads and said second pair of anchoring threads being woven into said second set of weft threads and warp threads where the same are located in said back layer, and forming pairs of floating loops where the respective set of warp threads and weft threads forms said pattern portions of said front layer, said loops being adapted to hold tufts on said front layer, pairs of said loops being aligned and spaced from other pairs of said loops a distance corresponding to a plurality of said threads of said first and second sets of threads.

3,293,104

STYLED PILE FABRICS AND METHOD OF MAKING THE SAME

Donald Robert Hall, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 23, 1962, Ser. No. 239,716
11 Claims. (Cl. 161—67)



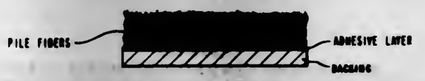
8. A styled pile fabric comprising a non-elit backing having attached to at least one surface thereof a face of a porous self-supporting layer having at least two faces, each being defined by the ends of a plurality of random contorted filamentary structures, said filamentary structures overlapping and being aligned generally in the same direction, the said filamentary structures forming a pile having a fiber density below 25 lbs./ft.^{3}, said pile constituting a network wherein at least a major proportion of the filamentary structures contact each other throughout the three dimensions of the pile, said layer having a predetermined pattern of isolated volumnal sections having an average fiber density less than 50% of said layer, the geometrical configuration of said sections extending throughout a single dimension of said layer and intersecting said planar surface.

3,293,105

PILE ARTICLE

Charles Richard Keller, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 22, 1963, Ser. No. 253,175
4 Claims. (Cl. 161—67)



1. A pile article comprising an adhesive layer and upstanding therefrom, at an average angle of between 45° and 90°, crimped synthetic organic polymeric filamentary structures aligned generally in the same direction and having an average denier per filament d of 2 to 25, the portions of said filamentary structures within the adhesive layer penetrating the surface thereof in randomly spaced apart fashion and being anchored thereby, the portions of said filamentary structures without the adhesive layer being characterized by: (a) forming a highly porous pile having a pile fiber density D between about 0.5 and 3.2 lbs./ft.^{3}, having a number of filamentary structures N between about 5,000 and 16,000 per square inch and having a face defined by the ends of the filamentary structures, (b) being intermingled in non-fixed touching engagement to provide a K value of between about 1.3 and 3.0, wherein K is the ratio of the average extended length of the filamentary structures to the height of the said pile, and (c) being uniformly spaced such that the standard deviation of the number of filamentary structures per sample area in any given plane parallel to said adhesive layer is less than 0.75 times the average number of filamentary structures per sample area in that plane, wherein the sample area is of such size to contain an average of 5 to 25 filamentary structures, with (d) the proviso that said pile fiber density bears such relation to K and d that K is at least

$$1+\frac{0.9}{D}$$

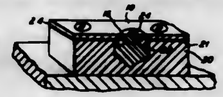
and d is between 2D and (14.3D—3.8).

3,293,106

CONNECTION FOR ATTACHING METAL FOIL TO PLASTIC SUBSTRATE

Eugene R. Cocco, Baltimore, and Edwin C. Hardesty, Perry Hall, Md.; said Cocco assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York, and said Hardesty assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 8, 1964, Ser. No. 394,812
8 Claims. (Cl. 161—112)



1. A connection for securing together materials having dissimilar bonding capabilities, comprising:

a support base composed of one material having at least one recess formed in one surface thereof,

a second flat material having one surface positioned in face-to-face relationship with said one surface of said base and including a second outer surface,

at least one protuberance formed from the second material and extending into the recess at an angle to the horizontal plane of said second material, the innermost end of said protuberance in the recess being apertured, and

an adhesive in each cavity adhesively bonded to said base, the adhesive extending from the recess through the aperture to cover all exterior surfaces of said protuberance substantially flush to said outer surface of said second material.

3,293,107

CORRUGATED PAPERBOARD

Earle W. Wells, Willow Grove, Pa., and Delbert A. Theobald, Fernandina Beach, Fla., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

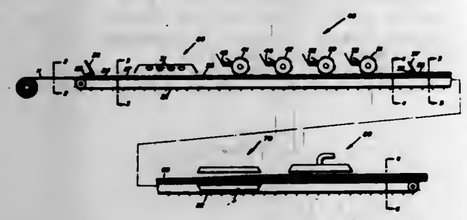
Filed Jan. 30, 1963, Ser. No. 254,985
1 Claim. (Cl. 161—137)



A multi-ply sheet of corrugated paperboard comprising, in combination, two outer liners each formed from two laminated liner sheets and each having a combined weight of the order of 84 pounds to 90 pounds per 1000 square feet, a corrugated medium layer adhered to the inside surface of each of the composite outer liners, and a third inner liner adhered between the two corrugated medium layers, one of the corrugated medium layers

being formed of two mediums laminated together and having a combined weight of at least approximately 52 pounds per 1000 square feet and a combined thickness of at least approximately .018 inch, the other corrugated layer being formed of a single medium having a weight of the order of 33 to 36 pounds per 1000 square feet and a thickness of approximately .012 inch, the two laminated corrugated mediums being adhesively interconnected, said one corrugated medium layer being substantially free from internal tension.

3,293,108
TEXTURED FOAM PRODUCTS
R Frank Nairn, Kennett Square, Pa., Joseph C. Harkins, Jr., Franklin Lakes, N.J., and Frank E. Ehrenfeld, Jr., Brookhaven, and Hilton Tarlow, Philadelphia, Pa., assignors to Congoleum-Nairn Inc., Kearny, N.J., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 508,185
42 Claims. (Cl. 161—160)



25. A cellular foam product having a surface containing depressed areas comprising a layer of cellular foam of resinous composition containing a blowing agent and thermal decomposition products of said blowing agent, said layer having first portions which correspond to said depressed areas and having a thickness less than the thickness of second portions of said layer, and having on the surface of one of said first and said second portions a second layer containing an inhibitor for said blowing agent which is at least partially soluble in said resinous composition below the decomposition temperature of said blowing agent and a portion of which has penetrated into and substantially altered the temperature at which said blowing agent decomposes.

29. The product of claim 25 wherein said layer of cellular foam has a resinous composition wear layer, said inhibitor is on the surface of said wear layer and a backing web is affixed to the opposite surface of said cellular foam layer.

3,293,109
CONDUCTING ELEMENT HAVING IMPROVED BONDING CHARACTERISTICS AND METHOD
Betty M. Luce, Willowick, and Milton L. Selker, Shaker Heights, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Sept. 18, 1961, Ser. No. 138,881
14 Claims. (Cl. 161—166)



10. In a composite laminar structure, a copper foil having an external surface adhered to a resinous lamina, said surface comprising a copper foil supporting substrate, a surmounting strata of copper-copper oxide particles deposited in random clusters to form a plurality of projections from said substrate and forming an irregular surface thereon, and subsequently applied sound metallic copper coacting in surmounting and intimate secure relation with said surmounting strata.

3,293,110
POLYMERIC STAPLE FIBER BLEND CONTAINING WEAKENED POLYAMIDE FIBERS
William H. Stine, Jr., and Ira G. Epstein, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 26, 1962, Ser. No. 205,193
10 Claims. (Cl. 161—169)

1. A blend of synthetic staple fibers, said blend being comprised of first and second components, the first component being crimped polyamide staple having frequent spaced weak spots in the length thereof, said staple being characterized as to weak spot frequency and severity by a significant decrease in break tenacity with increases in length, a crimp frequency of from 8–22 crimps/inch, a denier of from 8–15, a loop toughness of 2–27 and a staple length of at least three inches, the second component being crimped polymeric staple characterized by a crimp frequency of 6–12 crimps/inch, a denier of from 20–40, a loop toughness of at least 50 and a staple length of no more than about two inches, there being at least 25% by weight of said first component in the blend.

3,293,111
COATED POLYOLEFIN ARTICLES AND PROCESS OF MAKING SAME
George C. McCormick, Burlington, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Oct. 1, 1962, Ser. No. 227,530
11 Claims. (Cl. 161—184)

1. As an article of manufacture, a polyolefin substrate coated on at least one surface thereof with the reaction product of

(A) at least one copolymer essentially consisting of about 75 to 95 mol percent of vinylidene chloride and about 5 to 25 mol percent of at least one acid material selected from the group consisting of α,β-olefinically unsaturated, aliphatic carboxylic acids and their anhydrides and

(B) at least one polyepoxide in an amount such as to provide about 0.01 to 2.5 mols of epoxide groups per mol of carboxyl groups present in said copolymer.

3,293,112
AMINO-CROSS LINKED OXIDIZED ALPHA-OLEFIN POLYMER
Clifton L. Kehr, Edmer, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed May 6, 1963, Ser. No. 278,309
The portion of the term of the patent subsequent to Mar. 2, 1982, has been disclaimed
30 Claims. (Cl. 161—219)

1. A composition useful in the production of a cross-linked polymeric emulsion comprising (A) an emulsion containing an oxidized α-olefin polymeric material, said α-olefin polymeric material consisting of at least 50 mole percent ethylene and containing 0.1 to 4.0 milliequivalents carbonyl/gm. of oxidized α-olefin polymeric material and (B) 0.05 to 20.0 milliequivalents/milliequivalent of carbonyl in said polymeric material of a polyfunctional compound containing at least two alkaline reacting primary amino ($-NH_2$) groups.

3,293,113
CARBONATION OF PULPING LIQUOR WITH SUBSEQUENT PARTIAL OXIDATION OF STRIPPED HYDROGEN SULFIDES
Emil Teodor Venemark, deceased, late of Ornskoldsvik, Sweden, by Ruth Venemark, legal representative, Malmo, Sweden, assignor to Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a limited company of Sweden
No Drawing. Filed Dec. 13, 1963, Ser. No. 330,501
Claims priority, application Sweden, Dec. 17, 1962, 13,595/62
7 Claims. (Cl. 162—30)

1. A method of preparing a polysulfide-containing pulping liquor for use in the sulfate method of preparing cellulose pulp, which comprises using carbon dioxide for stripping hydrogen sulfide from a green liquor containing sodium sulfide and obtained from spent liquor produced in the sulfate pulping method, and thereby obtaining a stripped gas mixture comprising hydrogen sulfide and carbon dioxide, partially oxidizing to elemental sulfur the hydrogen sulfide in the stripped gas mixture, using air as the oxidizing agent, and thereby forming a mixture comprising elemental sulfur, carbon dioxide and hydrogen sulfide, separating the elemental sulfur from the gas mixture, treating the remaining gas mixture with a carbon dioxide absorbent, thereby removing carbon dioxide from the mixture, and obtaining a residual gas mixture comprising hydrogen sulfide and a small amount of carbon dioxide, separating carbon dioxide from the absorbent, recycling at least a portion of such carbon dioxide for stripping hydrogen sulfide from the green liquor, converting the recovered elemental sulfur to sodium polysulfide, and thereafter using the polysulfide to prepare a polysulfide-containing pulping liquor for the sulfate pulping method.

3,293,114
METHOD OF FORMING PAPER CONTAINING GASEOUS FILLED SPHERES OF THERMOPLASTIC RESINS AND PAPER THEREOF
Duane L. Kenaga and Ralph M. Gooch, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 3, 1964, Ser. No. 357,288
5 Claims. (Cl. 162—168)

1. A paper comprising paper making fibers having incorporated therein a plurality of synthetic resinous thermoplastic particles, each of the synthetic resinous particles having a generally spherical shape and defining a generally spherical gaseous space therein, the synthetic resinous particles being present in a proportion from about 0.5 to about 60 percent by weight of the weight of the paper making fibers in the paper and each of the resinous particles having a diameter of from about 0.5 to about 200 microns.

3,293,115
PROCESS FOR IMPREGNATING PAPER WHILE PARTIALLY DRY WITH A QUATERNIZED RESIN POLYELECTROLYTE AND A CLAY COATING
Trygve C. Lucken, Milford, N.J., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 20, 1964, Ser. No. 353,537
4 Claims. (Cl. 162—184)

2. A method of manufacturing conductive backing paper for recording elements for use in wet development electrostatic reproduction processes and the like, comprising

(a) highly refining a furnish of papermaking fibers to a substantially low value of freeness in the range of approximately 250 to 400 cc. Schopper Riegler;

(b) forming on a paper machine a weak wet web from said furnish of highly refined fibers;

(c) reducing the moisture content in said web after formation on the paper machine by a partial drying thereof;

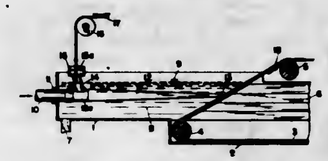
(d) impregnating at least one surface of said web with a solution of water soluble quaternized resin polyelectrolyte in a manner to provide said web with not substantially more than approximately 5%, based upon the dry solids weight of said papermaking fibers of said resin polyelectrolyte;

(e) further reducing the moisture content of said impregnated web of highly refined fibers by additional drying thereof;

(f) impregnating at least said one surface of said web with a clay coating not in substantial excess of 10% of the dry solids weight of said papermaking fibers, while subjecting said web to rolling pressure, whereby the highly refined fibers and the clay coating combine to provide substantial holdout of subsequently applied electrostatic sensitive coatings at one of the surfaces of said web and to provide substantial holdout of solvents used with electrostatic development toners at the other surface of said web;

(g) thereafter completely drying said impregnated web of highly refined fibers.

3,293,116
METHOD AND APPARATUS FOR MAKING CONTINUOUS WEBS FROM CONTINUOUS FILAMENTS
Fritz Opderbeck, Buederich, Theodor Plostz, Hoesel, Ludwig Schouring, Bad Salzuflen, Ulrich Kirchner, Biberach, Dieter Berger, Oberlahnstein, and Ludwig Wilken, Viersen, Germany, assignors to Feldmuehle Aktiengesellschaft, Duesseldorf, Germany
Filed Dec. 17, 1964, Ser. No. 419,248
Claims priority, application Germany, Dec. 20, 1963, F 41,606; June 6, 1964, F 43,112; Dec. 7, 1964, F 44,573
10 Claims. (Cl. 162—216)



1. A method of forming an elongated, longitudinally continuous web which comprises:

(a) moving a foraminous support having a face in a direction of movement substantially parallel to said face at a predetermined speed;

(b) causing a liquid carrier to flow continuously in a predetermined direction of flow transverse of said direction of movement from a feed area remote from said carrier to a deposition area adjacent said support, the velocity of flow of said carrier in said feed area being substantially greater than said predetermined speed and decreasing from said feed area toward said deposition area;

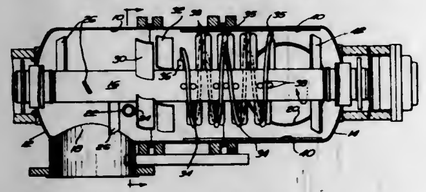
(c) continuously feeding a multiplicity of continuous filaments to said carrier in said feed area at a feeding speed substantially greater than said predetermined speed, but smaller than said velocity of flow in said feed area, whereby said filaments are elongated in the direction of flow in said feed area and are interengaged with each other in said deposition area; and

(d) depositing the interengaged filaments on said face of the support

(1) the interengaged filaments being sufficient in number to form a self-supporting web on said face.

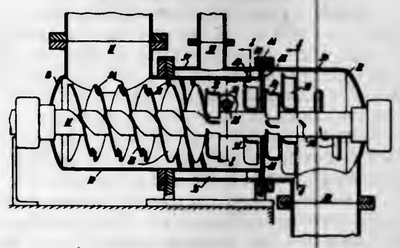
8. An apparatus for forming an elongated longitudinally continuous web comprising, in combination:
(a) a container;
(b) an endless foraminous support having two opposite major faces, a portion of said support constituting a movable wall of said container, whereby one of said faces is partly in the container;
(c) means for moving said support at a predetermined speed in an endless path, a portion of said path contiguously adjacent said container being parallel to said wall;
(d) an inlet for admitting liquid to said container;
(e) suction means for withdrawing liquid from the other face of said support in said portion of said path;
(f) means for defining a liquid level in said container, at least a portion of said one face being below said level in said container;
(g) a conduit having an orifice adjacent said portion of said face and a feed portion spaced from said orifice, said conduit flaring from said feed portion to said orifice, said orifice being below said level;
(h) means for admitting a liquid to said feed portion for movement in the conduit toward said orifice at a speed substantially greater than said predetermined speed; and
(i) means for admitting a multiplicity of filaments to said feed portion for engagement by the admitted liquid.

3,293,117
HIGH DENSITY PULP MIXING
Robe V. Pennington, Jr., and John P. Rich, Nashua, N.H., assignors, by mesne assignments, to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,250
7 Claims. (Cl. 162—236)



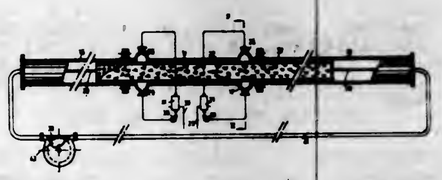
1. Apparatus for mixing a liquid with a pulp mass comprising,
a longitudinally extending cylindrical mixing chamber having
a pulp inlet opening near one end and
a pulp outlet opening near the other end,
means for feeding pulp longitudinally under pressure from said inlet through said chamber to said outlet,
a liquid inlet pipe extending transversely of said chamber near the axis thereof and having a series of liquid inlet openings therein for injecting liquid into pulp in a downstream direction across a transverse line approaching a diameter of said cylindrical chamber,
rotary means adjacent said liquid inlet openings rotating the pulp across a plane transverse of said chamber for spreading injected liquid in transverse layers within the pulp while pulp is fed longitudinally in said chamber,
sets of helical kneading blades downstream of said rotary means extending longitudinally of said chamber and rotatable therein to turn and knead the pulp with entrained liquid therein radially both inwardly and outwardly and longitudinally of said chamber both toward and away from said pulp outlet end and means beyond said kneading blades for discharging mixed liquid and pulp from said pulp outlet opening.

3,293,118
HIGH DENSITY PULP AND STEAM MIXING
Neil F. Putnam and Oscar Luthi, Nashua, N.H., assignors, by mesne assignments, to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,251
3 Claims. (Cl. 162—236)



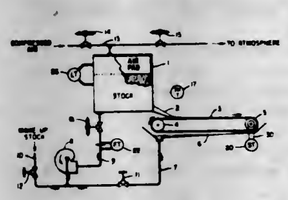
3. In the combination of a cylindrical receptacle and an annular fluid pressure chamber surrounding said receptacle having an annular end in communication with the entire circumference thereof; a pressure-actuated valve for opening and closing said annular end to said receptacle, comprising
a flat annular plate covering said annular end, and
means loosely supporting the outer circular edge of said plate,
the inner circular edge of said plate being unsupported and free to move under fluid pressure from the pressure chamber in one direction to open said annular end of said pressure chamber to said receptacle around the entire circumference thereof and to move under pressure from said receptacle in the opposite direction to close said annular end to said receptacle,
said plate, when opening the end of said pressure chamber, directing fluid from the chamber inwardly of the receptacle in a plane transverse of said receptacle.

3,293,119
LABORATORY APPARATUS FOR TREATMENT OF CELLULOSIC MATERIAL CONTINUOUSLY FED THROUGH A CONTAINER
Ole Johan Richter, Karlstad, Sweden, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden
Filed Sept. 16, 1963, Ser. No. 309,245
Claims priority, application Sweden, Sept. 21, 1962, 10,149/62
5 Claims. (Cl. 162—237)



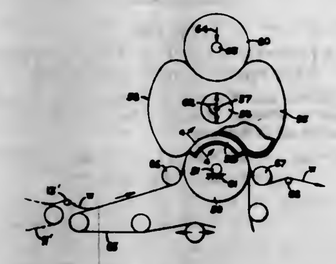
1. Laboratory apparatus comprising a cylindrical container intended for the performance of various treatments, preferably digestion of cellulosic material, during its continuous movement through the container, characterized in that the cylindrical container having a central zone and end parts on opposite sides of the central zone where the treatments should be performed, is provided with the end parts of a length considerably greater than the length of said central zone, a foraminous tube is completely enclosed within the container and serves for holding the treated material and the outer diameter of which approximately corresponds to the inner diameter of the container, and means to displace the foraminous tube through the central zone in order to carry the material from one end part of the container to the other end part thereof.

3,293,120
PAPER MACHINE PRESSURIZED HEADBOX CONTROL OF STOCK FLOW
George L. Harman, Jr. and Jack F. Shannon, Cleveland, Ohio, assignors to Bailey Meter Company, a corporation of Delaware
Filed July 29, 1964, Ser. No. 385,920,
6 Claims. (Cl. 162—253)



2. In a control system for a papermaking machine having a traveling web forming screen and a pressurized headbox containing a pool of stock and having an orifice for spouting stock on said screen, comprising in combination, means producing a first signal corresponding to the velocity of the screen, means producing a second signal corresponding to the level of stock in the headbox, means producing a third signal corresponding to the flow of stock to the headbox, and means under the joint control of all of said signals regulating the flow of stock to said headbox.

3,293,121
PNEUMATICALLY PRESSURIZED PAPER WET PRESS ASSEMBLY
Frederick A. Martin, Watertown, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Oct. 9, 1963, Ser. No. 315,052
14 Claims. (Cl. 162—358)



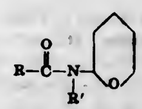
1. A paper machine press assembly comprising a press roll, means for guiding a non-porous flexible belt in lapping relation with said press roll, means for guiding a porous web between said belt and said press roll, and means for applying fluid pressure to the opposite surface of said belt from said press roll to compress said porous web against said press roll.

3,293,122
PESTICIDAL COMPOSITION CONTAINING O,O-DIMETHYL - O - (3 - METHYL - 4 - NITROPHENYL) PHOSPHOROTHIOATE AND O,O-DIMETHYL-O-(2,2-DICHLOROVINYL)PHOSPHATE
Shinichi Sumida, Sakai-shi, and Seiichiro Kawanishi, Toyonaka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,779
Claims priority, application Japan, Dec. 26, 1963, 38/70,597
3 Claims. (Cl. 167—22)

3. A method for combating insects which attack cruciferous plants which comprises applying to said plants an insecticial amount of an approximately 1:1 mixture by weight of O,O-dimethyl-O-(3-methyl-4-nitrophenyl) phosphorothioate and O,O-dimethyl-O-(2,2-dichlorovinyl) phosphate.

3,293,123
N-(2-TETRAHYDROPYRANYL) AMIDES AS FUNGICIDES
Angelo John Speziale, Creve Coeur, and Gino J. Marco, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Original application Oct. 11, 1961, Ser. No. 144,293. Divided and this application Nov. 10, 1964, Ser. No. 410,277
6 Claims. (Cl. 167—33)

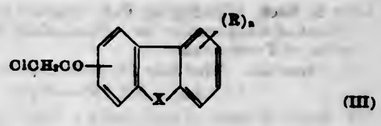
1. The method of controlling fungal growth which comprises contacting the said fungus with a fungicidal amount of an N-(2-tetrahydropyranyl) amide of the formula



wherein R is selected from the group consisting of (1) hydrocarbyl containing from 1 to 6 carbon atoms and is free of non-benzenoid unsaturation and (2) primary 1-chloroalkyl containing from 1 to 4 carbon atoms, and wherein R' is selected from the group consisting of hydrogen and hydrocarbyl containing from 1 to 6 carbon atoms and is free of non-benzenoid unsaturation, but when R is primary 1-chloroalkyl then R' is hydrogen.

3,293,124
ANTIMICROBIC COMPOSITIONS AND PROCESS FOR PROTECTION OF ORGANIC MATERIALS THEREWITH
Jakob Bindler and Ernst Medal, Ruhen, near Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware
No Drawing. Original application June 15, 1962, Ser. No. 202,657, now Patent No. 3,251,733, dated May 17, 1966. Divided and this application Jan. 20, 1966, Ser. No. 536,223
2 Claims. (Cl. 167—33)

1. An antimicrobic composition comprising as an active ingredient the compound of the formula



(III)

wherein
X is a member selected from the group consisting of —O—, —S—, —SO—, —SO_2— and —CH_2—,
R is a member selected from the group consisting of chlorine, nitro and methylsulphonyl, and

n is an integer from zero to one, in the presence of an inert carrier.

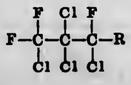
3,293,125

FLUOROCHLOROPROPANE FUMIGANTS

Everett E. Gilbert, Morris Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,498
5 Claims. (Cl. 167—39)

1. A process for combatting pest organisms by fumigation, the step which comprises contacting such organisms with the vapor of a fluorochloropropane having the general formula:



wherein R is a member selected from the group consisting of a chlorine atom and a fluorine atom.

3,293,126

WATER-DISPERSIBLE LIGNOSULFONATE FORMULATIONS OF METAL ETHYLENE BIS-DITHIOCARBAMATES

John T. Person and Joe C. Eller, Houston, Tex., assignors to Dawson Chemical Co., Inc., Houston, Tex., a corporation of Texas

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,966
4 Claims. (Cl. 167—42)

1. Method for preparing water dispersible formulations of metal ethylene bis-dithiocarbamates wherein the maximum particle size of the metal ethylene bis-dithiocarbamates is about 3 microns, or less, comprising

preparing a solution of metal lignosulfonate in water, said metal being a metal selected from the group consisting of manganese, zinc and copper,

adding to said solution, with agitation, a salt of ethylene bis-dithiocarbamate selected from the group consisting of sodium ethylene bis-dithiocarbamate and diammonium ethylene bis-dithiocarbamate, whereby metal ethylene bis-dithiocarbamate is precipitated in particulate form with the particles of about 3 microns size, or less, in the presence of the lignosulfonate, the lignosulfonate preventing growth of the precipitated particles,

and drying the resulting dispersion of metal ethylene bis-dithiocarbamate to produce a dry powdered water dispersible metal ethylene bis-dithiocarbamate formulation wherein the maximum particle size of the metal ethylene bis-dithiocarbamates is about 3 microns, or less, and growth in particle size thereof is inhibited by said lignosulfonate.

3,293,127

ARTERIAL EMBALMING FLUID AND METHOD FOR EMBALMING THEREWITH

John B. Beck, Wilmington, Del., assignor to Gold Crest Chemical Corporation Inc., Mendenhall, Pa., a corporation of Pennsylvania

No Drawing. Filed July 22, 1964, Ser. No. 384,512
6 Claims. (Cl. 167—49.5)

1. In the process of embalming a body by introducing into it an embalming fluid containing formaldehyde in a concentration sufficient to make it an effective embalming agent, the improvement according to which such embalming fluid also contains 0.005 to 0.5% by weight of substantially neutralized polyacrylic acid.

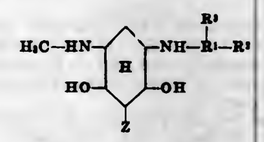
3,293,128

ANTHELMINTIC HYGROMYCIN B DERIVATIVES AND PROCESS OF USING SAME

Robert L. Mann, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Nov. 24, 1961, Ser. No. 154,890
7 Claims. (Cl. 167—65)

1. The N^1-substituted hygromycin B derivatives having the formula



and the salts thereof with pharmaceutically acceptable acids, wherein:

Z represents the sugar moiety of hygromycin B;

R^1 is a saturated or olefinic C_1–C_{12} aliphatic hydrocarbon connecting group;

R^2 is hydrogen, hydroxy, lower alkoxy or di (lower) alkylamino; and

R^3 is hydrogen; phenyl; naphthyl; phenyl having at least one substituent, the substituents being amino, hydroxy, lower alkoxy, di(lower)alkylamino, halogen, or methylenedioxy; or a heterocyclic group containing at least one hetero atom of the group consisting of O, S, and N.

3,293,129

IMMUNIZATION OF CATTLE AGAINST VIRUS DIARRHEA VIRUS

James A. Baker, Ithaca, N.Y., assignor to Cornell Research Foundation, Inc., Ithaca, N.Y., a corporation of New York

No Drawing. Filed Feb. 1, 1962, Ser. No. 170,501
1 Claim. (Cl. 167—78)

The method of immunizing cattle against virus diarrhea virus without thereby eliciting signs of illness comprising inoculating susceptible cattle with a standardized, safe and effective virus diarrhea virus vaccine prepared in accordance with a process which comprises the step which consists essentially of serially passing Oregon C24V strain of native virulent virus diarrhea virus 32 times through cell cultures of tissue cultured embryonic bovine kidney cells.

3,293,130

PANLEUKOPENIA VACCINE AND METHOD FOR THE PRODUCTION THEREOF

Eben A. Slater and Carrell J. Kucera, St. Joseph, Mo., assignors to Philips Roxane, Inc., St. Joseph, Mo., a corporation of Delaware

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,408
18 Claims. (Cl. 167—78)

1. A method of serially propagating panleukopenia virus in tissue culture medium which comprises, in the first passage, combining, in a form suitable for tissue culturing, disease-free domestic cat tissue, pre-infected with virulent panleukopenia virus of domestic cats by administering panleukopenia virus into disease-free domestic cats which are seronegative to panleukopenia, derived by aseptic removal of said tissue from such cats, sacrificed after they exhibit clinical and pathological signs of the disease, with a growth medium suitable for growth of said tissue, and at least six subsequent passages of the harvested virus from the first passage through tissue cultures of cat tissue from disease-free domestic cats.

3,293,131

FAT-SOLUBLE VITAMIN CONTAINING FEED SUPPLEMENTS

Charles M. Ely, Berkeley Heights, Anthony P. de Luca, Newark, and Melvin J. Mackiffian, Cranford, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,288
16 Claims. (Cl. 167—81)

1. A biologically available, fat soluble vitamin containing composition of matter comprising a multiplicity of small, substantially solid spheroidal particles comprising:

(a) a normally solid wax-like material having a melting point of at least 45° C.,

(b) a fat soluble vitamin containing material absorbed on an edible puffed material, said fat soluble vitamin containing material being present in amounts up to about equal parts by weight per part of said puffed material and amounts up to about 40% of the total weight of said composition, and

(c) an edible antioxidant,

said substances, (a), (b) and (c) being intimately combined with each other, said spheroidal particles having (a), (b) and (c) in substantially solid mass, said (a) being present in amounts of from about 10% to about 75% by weight of the combined weight of said composition.

3,293,132

SPRAY DRIED VITAMIN COMPOSITIONS AND METHOD OF PREPARATION

Lewis E. Steyle, Jr., South Plainfield, and Edward J. Hanus, Palisade, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,843
16 Claims. (Cl. 167—82)

1. A spray dried powder having free-flowing properties and which is directly compressible into tablets, comprising from 75 to 95 parts by weight of ascorbic acid, from 5 to 25 parts by weight of a carbohydrate, and from 0.5 to 5 parts by weight of a film-producing hydrophylic organic colloidal material.

3,293,133

METHOD OF IMPARTING COLOR TO PHARMACEUTICAL SOLUTIONS

John A. Hill, New Brunswick, N.J., assignor to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,230
7 Claims. (Cl. 167—82)

1. A process for imparting a uniform color to an aqueous pharmaceutical solution which comprises

(a) dissolving a water insoluble pharmaceutically acceptable non-toxic coloring material in an organic solvent;

(b) dispersing the said coloring material over the surface of a water soluble pharmaceutically acceptable free-flowing particulate material selected from the group consisting of sugars, salts and hydrocolloids by contacting said particulate material with the said colored organic solution;

(c) removing the said organic solvent to obtain a substantially dry coloring composition comprising particulate material having adherent to the surfaces thereof the said insoluble coloring material; and

(d) intimately introducing into an aqueous pharmaceutical product the said coloring composition to obtain a uniformly colored aqueous pharmaceutical solution.

3,293,134

DIAGNOSTIC REAGENT COMPOSITION FOR DETERMINING BLOOD COAGULATION FACTORS AND METHOD OF USE

James G. Lenahan, Florham Park, and Maurice L. Miller and Raphael Cohen, Morristown, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Sept. 8, 1961, Ser. No. 136,724
3 Claims. (Cl. 167—84.5)

1. A cephalin free diagnostic reagent composition for use in determining blood coagulation factors in both extrinsic and intrinsic coagulation systems having a pH of 7.2–7.6 and consisting essentially of

(1) tissue thromboplastin having weak activity toward human plasma;

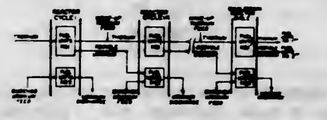
(2) adsorbed bovine plasma, free from Stuart factor, prothrombin, proconvertin and Christmas factor and containing proaccelerin and fibrinogen.

3,293,135

NUCLEAR REACTOR FUEL

Seymour Jaye, Solana Beach, and Dana H. Lee, Jr., Del Mar, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Original application July 20, 1964, Ser. No. 384,012, now Patent No. 3,268,912, dated Sept. 23, 1965. Divided and this application July 30, 1965, Ser. No. 509,655
1 Claim. (Cl. 176—17)



A nuclear reactor utilizing a thorium-uranium^{233} breeding cycle which reactor comprises a reactor core including nuclear fuel in segregated fuel units, said fuel units being spheroids having diameters less than about one millimeter, a first group of said fuel units containing uranium and a second group of said fuel units containing thorium, the fuel units of one of said groups being each coated with a protective coating of pyrolytic carbon and the fuel units of the other of said groups being uncoated.

3,293,136

NUCLEAR REACTOR AND METHOD FOR REFUELING SAME

Arthur M. Harris, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,296
10 Claims. (Cl. 176—30)

1. A nuclear reactor comprising a reactor core formed of a plurality of adjacent, generally vertically extending, elongated core elements, said core elements residing in a plurality of refueling zones, a pressure vessel surrounding said core, said pressure vessel having a height less than twice the length of said core elements, said pressure vessel also having formed therein a plurality of generally regularly spaced access openings located above said core across the top portion of said pressure vessel, a separate access opening centrally overlying each refueling zone, said access openings being of sufficient size to overlie a plurality of core elements and the total cross sectional area of all of said access openings being substantially less than the cross sectional area of said reactor core, nozzles extending vertically upward from said access openings, said nozzles permitting the core elements which directly underlie said access openings to be lifted axially therethrough and thereby withdrawn from the reactor, control rods being provided in at least certain of said refueling zones,

said control rods being axially aligned with the access opening for the zone, and removable control rod drive means disposed within the nozzles above said certain zones, said access openings being of sufficient size to permit entry of core element handling means for removing the core elements from the associated core zone.

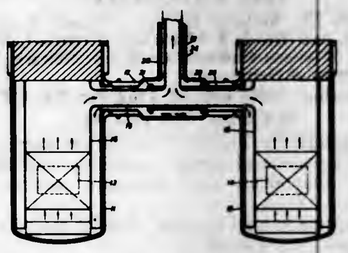
6. A method for refueling a zone of a nuclear reactor including a pressure vessel having disposed therewithin a reactor core made up of a plurality of elongated vertically disposed core elements and divided into a plurality of refueling zones, access to each of the refueling zones being by an access opening in the pressure vessel overlying and generally centrally disposed of each zone, the cross sectional area of the access opening being substantially less than the cross sectional area of the underlying zone, which method comprises removing from the reactor all of



the core elements in the central portion of a selected zone which are in axial alignment with a selected overlying access opening by lifting them axially through said overlying access opening, removing from the reactor peripheral core elements that are out of axial alignment with said overlying access opening by individually moving each of them laterally substantially into space vacated by the removal of said central core elements to place the core element in axial alignment with said overlying access opening and then lifting the core element upward through said access opening and out of the reactor, replacing peripheral core elements removed using fresh core elements when desired by reversing said last-mentioned removal steps, and replacing core elements in the central portion of said selected zone using fresh core elements if desired by lowering core elements axially in said zone.

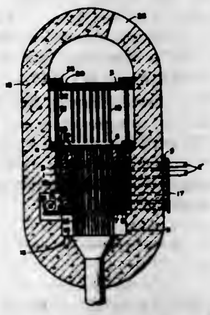
3,293,137
POWER GENERATION FROM NUCLEAR REACTOR PLANT
William George Hutchinson, Lymm, and John Webb, Wigan, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed May 18, 1964, Ser. No. 368,237
Claims priority, application Great Britain, May 28, 1963, 21,360/63
4 Claims. (Cl. 176—32)

1. In the generation of useful power from heterogeneous nuclear reactor plant having provision for two charges of nuclear fuel elements to be assembled into a potentially critical configuration, a method comprising the steps of controlling one assembled charge of fuel elements for maintaining therein a condition of nuclear criticality whilst concurrently controlling another assembled charge of fuel elements for maintaining therein a sub-critical condition, distributing coolant flow from a common source in proportions sufficient for the surface temperature of the fuel elements in both charges not to exceed a given maximum temperature, and subsequently changing over the respective conditions of the charges, whilst at the same time adjusting the coolant flow distribution correspondingly, whereby to enable the fuel elements of the



previously critical charge to decay undisturbed until such time as discharge is desired.

3,293,138
HEAT TREATING APPARATUS UTILIZING NUCLEAR ENERGY
Rudolf Schulten, Lutzelinchsen an der Bergstrasse, and oberen Klingenberg, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim, Germany, a corporation of Germany
Original application Mar. 23, 1960, Ser. No. 16,979, now Patent No. 3,181,999, dated May 4, 1965. Divided and this application Jan. 3, 1964, Ser. No. 335,479
Claims priority, application Germany, Mar. 24, 1959, B 52,589
10 Claims. (Cl. 176—39)

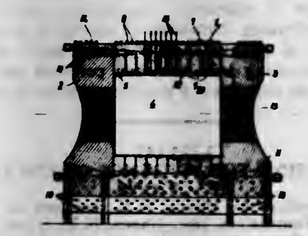


1. A furnace for heating processing of material by means of nuclear-fission energy, comprising a nuclear reactor having a graphite-moderated core structure, said core structure having two groups of bores, nuclear fuel elements insertable into one of said groups of bores for heating said core structure by nuclear chain reaction, and feeder means comprising a plurality of movable guide members and means for inserting said guide members respectively into the bores of said other group for feeding the material to be processed into said latter bores, said latter bores when containing said material constituting substantially the only cooling means of said core structure during furnace operation.

3,293,139
PRESTRESSED CONCRETE PRESSURE VESSEL FOR NUCLEAR REACTORS
Jean Bellier, Garches, France, assignor to Commissariat a l'Energie Atomique, Paris, Seine, France
Filed Apr. 24, 1964, Ser. No. 362,245
Claims priority, application France, May 8, 1963, 934,050
6 Claims. (Cl. 176—58)

1. Prestressed concrete pressure vessel for nuclear reactors comprising a gas-tight steel membrane which serves

as a lining for a chamber which is delimited by said pressure vessel and through which circulates a gas under pressure for the purpose of cooling the reactor, said pressure vessel consisting of a cylindrical shell, two bases which are separate from said shell and each disposed at one end of said shell and prestressing cables for the purpose of assembling said shell and said bases, the cylindrical shell at least consisting of an outer zone of



"active concrete" which is alone traversed by the prestressing cables and an inner zone of "passive concrete" which is subdivided by transverse and axial slots formed in said inner zone into a plurality of segments, whilst the inner zone serves as heat insulation for the concrete of the outer zone and also serves to transfer to said outer zone the pressure forces exerted by the coolant gas on the gas-tight lining membrane.

3,293,140
PROCESS FOR OBTAINING PRODUCTS RICH IN BIFIDUS II FACTOR
Michel C. G. A. Henry, Neuilly-sur-Seine, France, assignor to Eurorga, Seine-et-Oise, France, a company of France
No Drawing. Filed Dec. 5, 1963, Ser. No. 328,185
Claims priority, application France, Dec. 8, 1962, 918,910; Aug. 12, 1963, 944,462, 944,463; Mar. 20, 1964, Patent 1,355,563
6 Claims. (Cl. 195—4)

6. A process for the production of bifidus II factor, which comprises proteolytically digesting fish intestines at about 50° to 55° C. and a pH of about 5.8 to 6.2 to obtain bifidus II factor in an aqueous phase, separating said aqueous phase from the remainder of the reaction mixture, and recovering bifidus II factor from said aqueous phase.

3,293,141
FERMENTATION PROCESS FOR PRODUCING L-TRYPTOPHAN
Richard I. Mateles, Brookline, Mass., and Peter G. Lim, Wilmington, Del., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Apr. 20, 1964, Ser. No. 361,284
18 Claims. (Cl. 195—29)

13. A process for the production of L-tryptophan which comprises culturing under submerged aerobic conditions a mutant of Escherichia coli in which synthesis of enzymes involved in tryptophan biosynthesis have been genetically derepressed on a growth supporting nutrient medium containing an amount of carbohydrate and nitrogen-containing compounds in excess of that required for bacterial growth whereby L-tryptophan is accumulated.

16. A process for the production of L-tryptophan which comprises preparing an enzyme-containing cell suspension by culturing in the absence of triptophanase under submerged aerobic condition an anthranilic acid auxotroph of Escherichia coli on a nutrient medium containing a growth-limiting amount of at least one of the group consisting of anthranilic acid, indole, and L-tryptophan, to produce enzymes involved in tryptophan synthesis in excess of the amounts normally present, and thereafter adding to said cell suspension an amount of indole or anthranilic acid in excess of that required for bacterial growth and incubating said suspension still in the absence of tryptophanase until an accumulation of L-tryptophan is present.

3,293,142
α-AMYLASE AND THE PRODUCTION THEREOF
Nobuhiro Yamada, Takarazuka, and Katsumi Tsuda, Toyonaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
Filed June 18, 1964, Ser. No. 376,051
Claims priority, application Japan, June 22, 1963, 38/33,245
2 Claims. (Cl. 195—62)

2. α-Amylase, metabolite of black aspergillus Y-78 (ATCC-15475), which has the following properties;
(1) its optimum pH for activity is about 5.0 and its optimum temperature for 10 minutes of enzymation at the optimum pH is from 45 to 50° C.;
(2) it is stable in the pH range from about 6 to 9 when it is allowed to stand at 37° C. overnight, and loses its activity at pH 8.0 by heating at 70° C. for 30 minutes;
(3) its limit of starch decomposition is 95–100%;
(4) it has a strong decomposition action on pancoe, and a strong maltase activity;
(5) it hydrolyzes amylose, amylopectin and glycogen as substrates almost to glucose and its limit of hydrolysis of the said substrates is higher than 95 percent;
(6) its elementary analysis is C 49.98 to 50.43%, H 6.78 to 7.45%, and N 13.18 to 13.21%;
(7) its ultraviolet absorption spectrum is as shown on FIG. 3 of the accompanying drawings with a maximum absorption at the wave length of 277–280 millimicrons;
(8) its infrared absorption spectrum is as shown on FIG. 4, with the following significant absorption bands (in microns):
3.0 (strong)
3.44 (middle)
6.04 (broad, strong)
6.58 (broad, strong)
6.92 (weak)
7.19 (broad, weak)
8.13 (middle)
9.35 (broad, weak);
(9) it is easily soluble in water but insoluble in an organic solvent such as methanol, ethanol, acetone, ether, benzene, petroleum ether.

3,293,143
STABILIZATION OF BROMELAIN PREPARATIONS
Ralph M. Heinicke, Honolulu, Hawaii, assignor, by mesne assignments, to Castle & Cooke, Inc., Honolulu, Hawaii, a corporation of Hawaii
Filed Aug. 10, 1964, Ser. No. 388,356
13 Claims. (Cl. 195—63)

13. An enzymic preparation characterized by high specific activity and stability against deterioration comprising the reaction product obtained by recovering stem bromelain from enzyme-containing juice expressed from crushed plants of the family Bromeliaceae and admixing the enzyme-containing material with an ionizable stabilizing agent which furnishes benzoate ion for stabilizing said enzyme.

3,293,144
MALTING PROCESS USING ALCOHOLS
Eric Knoss, Elm Grove, John G. Fleckenstein, Brookfield, and Lawrence D. Bechard, Elm Grove, Wis., assignors to Kurth Malting Company, Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed May 13, 1963, Ser. No. 280,119
14 Claims. (Cl. 195—70)

1. In the process of malting a cereal grain which employs steeping grain until it acquires a moisture content suitable for germination, germinating the steeped grain under suitable conditions of aeration and moisture until green malt is produced and kilning the green malt, the improvement which comprises applying about 20 to 200,000 parts by weight of an alcohol per million parts of dry cereal grain to the grain in the period from harvesting the grain to a time after steep-out and before germination of the grain is substantially completed, the amount of said alcohol used being sufficient to significantly increase the malting yield and give a malt with alpha-amylase and modification values of industrial utility and with the alcoholic function of the alcohol being due solely to hydroxyl groups present.

3,293,145
STIMULATING MICROBIAL GROWTH
Richard I. Leavitt, Pennington, and Israel J. Hellwell, Princeton, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Aug. 26, 1964, Ser. No. 392,319
5 Claims. (Cl. 195—80)

1. Method of stimulating the growth of a microorganism selected from the group consisting of Achromobacter and Nocardia on an aliphatic hydrocarbon as the sole source of carbon for energy and growth which comprises incubating said microorganism in an aqueous mineral salt solution in the presence of oxygen and said hydrocarbon to form an incubation mixture, said solution containing 0.015 to 10% by weight of urea and 0.01 to 10% by weight of a water soluble inorganic ammonium salt, said mixture containing 0.001 to 5% by weight of a nonionic surface active agent, the joint use of said agent, urea, and ammonium salt having a synergistic effect on the growth rate of said microorganism as demonstrated by the growth rate is substantially greater than if a like incubation mixture were used but (1) which omits said agent, or (2) which omits said urea, or (3) which omits said ammonium salt, or (4) which omits said agent and urea, or (5) which omits said agent and ammonium salt.

3,293,146
COMPOSITION FOR DETECTING GUANASE AND PROCESS FOR DIAGNOSING VIRAL HEPATITIS THEREWITH
Alfred Henry Free and Allen Chsol Hue, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Mar. 25, 1964, Ser. No. 354,785
14 Claims. (Cl. 195—103.5)

1. A composition for the detection of the enzyme guanase in fluids which comprises
a reaction system comprising
guanine,
xanthine oxidase,
an azide for inhibiting the formation of interfering catalase-peroxide complexes,
a buffer for maintaining the reaction system at a pH of between about 7.5 to 8.5 during the hydrolytic deamination and oxidation of guanine with the concomitant formation of peroxides, and
a detection system comprising
a chromogen responsive to the presence of peroxides,
a catalyst having peroxidative activity in the presence of the azide for catalyzing the color producing reaction resulting from contact of said chromogen with peroxide, and
a buffer for maintaining the combined reaction system and detection system during color development at a pH of between 4.5 and 5.5.

11. A process for the diagnosis of viral hepatitis comprising contacting blood serum from an individual suspected of having viral hepatitis with a guanase detecting composition comprising a guanine containing reaction system capable of hydrolytic deamination and oxidation with the concomitant formation of hydrogen peroxide in the presence of guanase and a chromogenic detection system for detecting said hydrogen peroxide and thereafter diagnosing hepatitis if a positive response is obtained.

3,293,147
MEASURING THE PRESENCE OF ENZYME REACTIONS
Frank V. Kosikowski, Ithaca, N.Y., assignor to Cornell Research Foundation, Inc., Ithaca, N.Y., a corporation of New York
Filed Aug. 17, 1964, Ser. No. 390,003
9 Claims. (Cl. 195—103.5)

1. The method of measuring enzymes and enzymatic reactions comprising placing in a dialysis bag biological fluid and material to be tested, including a buffer and a chemical substrate, which is subject to a specific type of enzyme activity under test and which breaks down to a dialyzable product, incubating said bag and contents while it is immersed in a solution so that a product of the specific type of enzymatic activity within the bag passes through the bag, and measuring the quantity of a product of the specific enzymatic activity to provide an indication o fthe magnitude of that enzymatic activity.

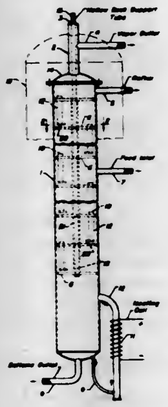
3,293,148
METHOD OF CLEANING STEEL SURFACES
Gaillard W. Dell, Detroit, and Edwin W. Goodspeed, Royal Oak, Mich., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Feb. 27, 1964, Ser. No. 347,684
4 Claims. (Cl. 252—103)

1. A method of cleaning steel surfaces which comprises contacting the surface to be cleaned with an aqueous alkaline solution consisting essentially of at least about 0.3 percent by weight of the solution of an alkali metal hydroxide, an oxidizing agent in an amount sufficient to provide oxidizing power equivalent to that of hexavalent chromium ions in the amount of at least about 0.002 percent by weight of the solution, at least about 0.1 percent by weight of the solution of a gluconic acid material and at least about 0.01 percent by weight of the solution of a polyethylene glycol having a molecular weight within the range of about 200 to about 20,000.

3,293,149
BUBBLE DECK FRACTIONATOR USEFUL FOR SMALL SCALE FRACTIONATION
Robert A. Longenecker, Park Ridge, and Leslie C. Hardison, Arlington Heights, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Aug. 30, 1963, Ser. No. 305,666
7 Claims. (Cl. 202—158)

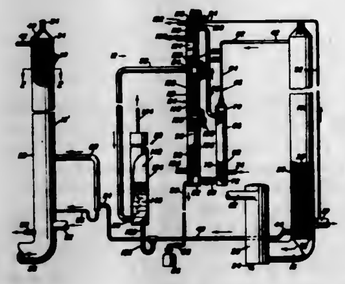
1. An improved fractionator comprising in combination,
(a) a vertically elongated housing having at least one fluid inlet thereto and at least two fluid outlets therefrom to discharge separated fractions,
(b) means supplying heat to fluid maintained in the lower portion of said housing, and

(c) a plurality of vertically spaced bubble decks within said housing,
(d) each of said decks having a weir and downpipe means, a plurality of spaced vapor openings therethrough, and an accompanying movable ball and seat means for the top of each of said vapor openings, and in addition,



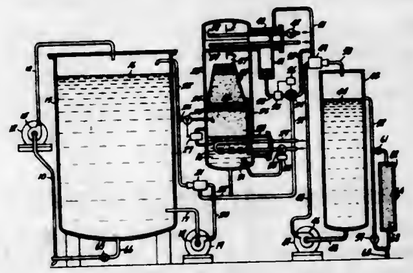
(e) each of said decks having perforate screen means extending substantially over and in contact with the entire upper face of the deck and being deformed above each of said movable ball means at said vapor openings, whereby to enhance vapor-liquid flow and contacting and to preclude each of the movable ball means above each vapor opening from being displaced from its seat means on the upper face of a deck.

3,293,150
APPARATUS FOR RECOVERING ESSENCE-BEARING VAPORS
Ralph W. Cook, 311 Main St., Dunedin, Fla. 33528
Filed Nov. 30, 1960, Ser. No. 72,708
3 Claims. (Cl. 202—160)



1. Apparatus for recovering flavor concentrate from an essence bearing vapor separated from vapor stripped liquid comprising, spaced vapor and liquid inlets for respectively receiving said essence bearing vapor and said stripped liquid, heat exchanger means connected to said inlets for conducting a baffled flow of said essense bearing vapor in heat exchange relation to said stripped liquid and in counter-current flow relation to condensing condensate, a vapor outlet connected to said heat exchanger means for removal of a concentrated vapor fraction from said baffled flow of essence bearing vapor, stripping means, reflux means for delivering a metered flow of reflux vapor from the vapor inlet of the heat exchanger means, receiver means operatively connected to said stripping means for collecting flavor bearing condensate discharged therefrom, vent means operatively connected to the stripping means for withdrawing non-condensible gas therefrom, first condenser means operatively connecting the vapor outlet to the stripping means for condensing the vapor fraction into flavor bearing condensate and non-condensible gas delivered to the stripping means, second condenser means operatively connecting the reflux means to the stripping means for delivering reflux liquid to the stripping means in counter current relation to the non-condensible gas delivered thereto, and pressure regulator means operatively connected to the heat exchanger means and the vent means for producing a constant pressure differential maintaining flow of said vapor fraction and reflux vapor to the first and second condenser means.

3,293,151
AQUEOUS RADIOACTIVE WASTE CONCENTRATOR
Franz Stephen Heiner, Stamford, Roscoe Kay Vesser, Cos Cob, and William Rodger Williamson, Waterford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 29, 1963, Ser. No. 268,915
6 Claims. (Cl. 202—181)

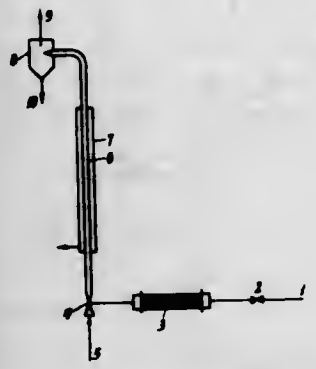


1. Apparatus for the concentration of aqueous radioactive wastes comprising, in combination,
(a) a batch storage tank,
(b) means to fill said batch storage tank with radioactive waste,
(c) a first pump drawing waste from said batch tank,
(d) a first eductor through which said pump forces waste which returns to said batch tank,
(e) an evaporator and condenser having a heating coil in its lower portion, a condensing coil in its upper portion, means collecting condensate from said condensing coil, and drop separators between said heating and condensing coils,
(f) a first valve enabling some flow from said first eductor to flow into the bottom of said evaporator and condenser,
(g) means responsive to the waste level in the bottom of said evaporator and condenser closing said first valve,
(h) a first pipe through which said first eductor draws waste from said evaporator and condenser to return with the waste flowing from said first eductor to said batch tank,
(i) a distillate holding tank,
(j) a second pump drawing water from said distillate holding tank,

(k) a second eductor through which said second pump forces water which returns to said distillate holding tank,
(l) a second pipe through which said second eductor draws a vacuum in said evaporator and condenser,
(m) a purity sensing device,
(n) a three-way valve actuated in response to said purity sensing device, and
(o) a third pipe leading from said means collecting condensate through said purity sensing device to said three-way valve, said three-way valve directing condensate to said second eductor to pass into said distillate tank and said three-way valve being activated in response to said purity sensing device directing distillate of lesser purity to said first eductor to pass into said batch tank.

3,293,152
METHOD FOR PREVENTING SCALE DEPOSITION

Leonard Sidney Herbert, Mount Waverley, Victoria, and Uldis Jekabs Sterns, Cheltenham, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a corporation of Australia
Filed Aug. 14, 1963, Ser. No. 302,059
Claims priority, application Australia, Aug. 20, 1962, 21,150/62, Patent 261,222
6 Claims. (Cl. 203—7)

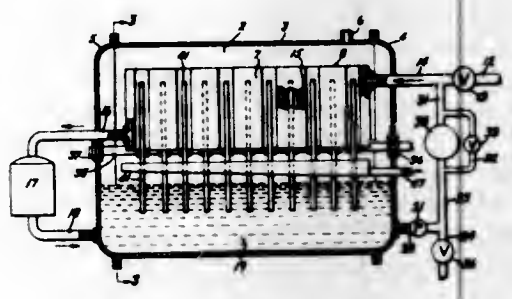


1. A method of preventing the formation of adherent scale deposits on the heat transfer surfaces of apparatus used for the evaporation of sea water containing concentrations of calcium and magnesium salts which consists of the step of adding a polyacrylic acid having a concentration expressed as the product of the parts per million and the molecular weight of between about 20,000 and about 960,000 to said sea water thus forming a regenerating self-stripping film on said heat transfer surfaces.

3,293,153
METHOD AND APPARATUS FOR DIFFUSION DISTILLATION

Edward L. Lustenader, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 11, 1961, Ser. No. 158,424
7 Claims. (Cl. 203—11)

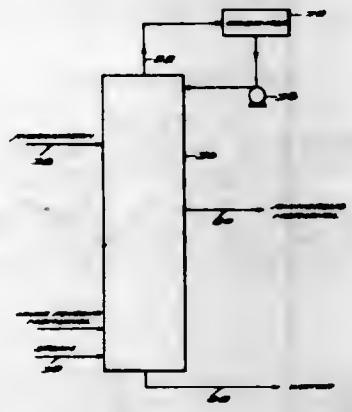
1. In a method for distillation of brackish or saline water, the steps comprising:
supplying distilland as a cooling medium at a temperature of from 70° F. to 115° F. to one end of a condenser located in the upper portion of a distillation chamber, removing distilland from the other end of the condenser,
heating the distilland removed from the condenser to a temperature below its boiling point at a pressure equivalent to atmospheric pressure or above,
passing the heated distilland into the lower portion of the distillation chamber containing a non-condensible gas while maintaining the chamber at a pressure sufficient to prevent boiling of the distilland in a counterflow relation to the flow of distilland in said condenser,



carrying portions of said heated distilland from the lower portion of the distilland chamber to positions adjacent to but spaced from the condensing surface of said condenser whereby a portion of the distilland so carried will evaporate and diffuse through the non-condensible gas to condense on the condensing surfaces, and
collecting the condensate from the condensing surfaces.

3,293,154
PROCESS FOR SEPARATING WATER FROM AQUEOUS METHANOL MIXTURES

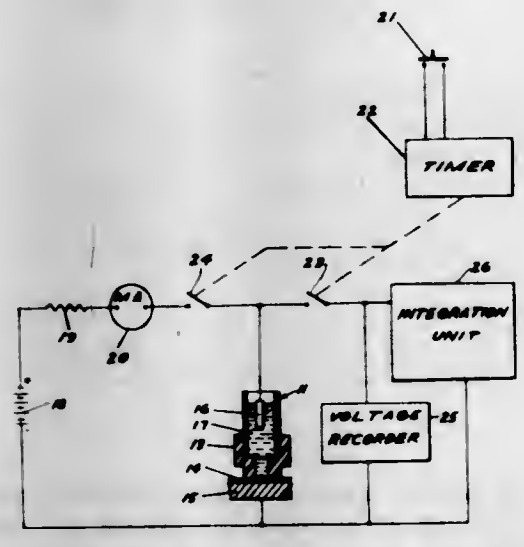
Roger H. Newton, % Commercial Solvents Corp., 3 Elk Drive, Terre Haute, Ind. 47802
Filed Feb. 15, 1963, Ser. No. 258,911
2 Claims. (Cl. 203—18)



1. In a process for separating water from a water methanol mixture to produce a methanol product with a reduced water content, the steps which comprise introducing a crude aqueous methanol mixture into a distillation column, distilling the aqueous methanol mixture in said distillation column to provide a methanol-water vapor, introducing into said column a water-insoluble normally liquid hydrocarbon which forms an azeotrope with the water which azeotrope has a boiling point lower than the boiling point of methanol, said water-insoluble hydrocarbon being contacted with the vaporous methanol-water mixture in molar amounts of about 1 to 3 times the molar amount of water present in the methanol-water mixture in the column at the height of water-insoluble hydrocarbon introduction, said hydrocarbon having a boiling point substantially no higher than the boiling point of methanol in the mixture, and recovering an essentially anhydrous methanol product with a reduced water content at a height in the column below the height where water-insoluble hydrocarbon is introduced and above

the point of crude aqueous methanol mixture introduction, said hydrocarbon being introduced at a height in the column where the vapor contains a minimum amount of water, said height of minimum amount of water being between the point of said essentially anhydrous methanol product recovery and the top of the column, and removing essentially water from the bottom of the column at a point below the point of said essentially anhydrous methanol product recovery.

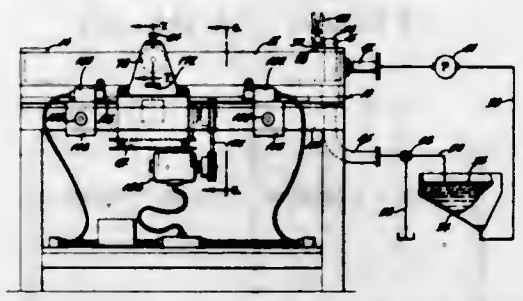
3,293,155
METHOD FOR DETERMINING THE CORROSION RESISTANCE OF ANODIZED ALUMINUM PARTS
Jack Stone, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,283
19 Claims. (Cl. 204—1)



1. The process for evaluating a metal oxide coating upon a metal base which comprises placing said coating within an electrical circuit including integration means wherein said metal base serves as a cathode of an electrolytic cell, said circuit comprising said base, an anode, an aqueous electrolyte in contact with said coating and said anode, impressing a constant difference of electrical potential upon said circuit which provides a resultant difference of electrical potential across said coating and measuring the electrical resistance of said coating with respect to time by integrating with said integration means a function of said electrical resistance selected from the group consisting of electric current through said coating and difference of electrical potential across said coating over a predetermined period of time.

3,293,156
METHOD AND APPARATUS FOR PLATING ETCHED HALF-TONE PRINTING PLATES
Thomas K. Allison, Moorestown, N.J., assignor to The Beck Engraving Company, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed June 25, 1963, Ser. No. 290,399
13 Claims. (Cl. 204—17)

10. In the method of electroplating etched half-tone printing plates by passing an electric current from an anode through an electrolyte solution to a cathode printing plate, the steps which comprise fixedly positioning an etched cathode printing plate with the plane of its etched surface disposed in closely spaced relation to a roller anode, immersing the cathode printing plate in an electrolyte solution in which the roller anode is also at least partially immersed, traversing the roller anode at a constant speed in said electrolyte solution back and forth over the surface area of the cathode printing plate in said closely spaced relation thereto to effect a uniform wave-like agitation of the electrolyte solution and thereby maintain the electrolyte solution continuously uni-



form between the traversing anode and the cathode printing plate, and passing an electric current from the traversing anode to the electrolyte solution to the cathode printing plate for a predetermined period of time to effect an electrolytic deposit upon the etch half-tone cavities of the cathode printing plate.

3,293,157
PROCESS FOR ELECTROLYTIC SILVERING
George I. Facsko, Ioan Radoi, and Roland Mingas, Timisoara, Rumania, assignors to Ministerul Invatamintului, a corporation of Rumania
No Drawing. Filed Apr. 22, 1963, Ser. No. 284,766
3 Claims. (Cl. 204—46)

1. Method of silver plating, which comprises passing an electric current from an anode through an aqueous alkaline solution of a soluble silver salt to a body to be plated which serves as the cathode, said solution containing 4-sulfonamidobenzoic acid and silver ions in a ratio of at least 1:1.

3,293,158
ANODIC SPARK REACTION PROCESSES AND ARTICLES
William McNeill, Philadelphia, and Leonard L. Gruss, Willow Grove, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 17, 1963, Ser. No. 309,580
21 Claims. (Cl. 204—56)

1. An electrochemical process for producing a hard, adherent coating on the surface of an article comprising at least one metal selected from the group consisting of Al, Zn, Bi, Ni, Co, Fe, Cu, Ag, Au, Ti, Zr, V, Mo, W, Nb, and Ta, said process comprising subjecting said metal to anodic spark reaction in an aqueous electrolyte wherein the anion constituent consists of aluminate ion in a concentration ranging from an effective normality up to 0.3 N.

10. The method of coating the surface of a metal selected from the group consisting of Al, Cd, Zn, Bi, Cu, Ti, Zr, W, Nb, and Ta, which comprises electrolytically treating which comprises electrolytic treatment of an anode of said metal in an electrolyte consisting of an aqueous tungstate solution at a voltage sufficiently high to cause sparking on the anode surface, the concentration of tungstate anion in said solution ranging from an effective normality up to 0.2 N.

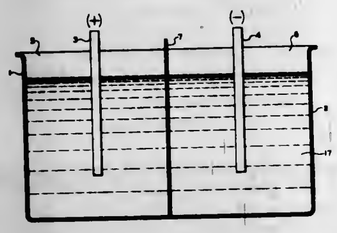
14. The method of producing a silicate coating on the surface of a metal selected from the group consisting of Al, Zn, Bi, Ni, Fe, Cu, Ti, Zr, V, Nb, Ta, Mo, and W, which consists of the electrolytic treatment of an anode of said metal in an electrolyte consisting of an aqueous silicate solution at a voltage sufficiently high to cause sparking on the anode surface, the concentration of silicate anion in said solution ranging from an effective normality up to 0.2 N.

3,293,159

PROCESS FOR PRODUCING A FUSED REDUCING BATH FOR DESCALING

Matthew Mekjean, Niagara Falls, and Charles A. Strack, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Aug. 30, 1961, Ser. No. 134,967
6 Claims. (Cl. 204—61)



1. A process for producing a reducing bath for the descaling of metal oxides on the surface of a metal article wherein the reducing bath is formed in a metal container having therein a source of positive and negative current separated from each other by a diaphragm thereby forming an anode zone and a cathode zone comprising imposing a decomposition voltage through a molten salt mixture within said container, said molten salt mixture being comprised of a substantially anhydrous mixture of at least about three percent alkali-metal sulfate in a major proportion of alkali-metal hydroxide, reducing said alkali-metal sulfate, maintaining the reduced alkali-metal sulfate in said cathode zone, thereby producing a reducing bath of alkali-metal hydroxide and reduced alkali-metal sulfate selected from the group consisting of alkali-metal sulfites, alkali-metal dithionites, alkali-metal thiosulfates, alkali-metal pyrosulfites, alkali-metal sulfides and mixtures thereof.

3. A process for the descaling of metal oxides on the surface of a metal article in a reducing bath wherein the reducing bath is formed in a metal container having therein a source of positive and negative current separated from each other by a diaphragm thereby forming an anode zone and a cathode zone comprising imposing a decomposition voltage through a molten salt mixture within said container, said molten salt mixture being comprised of a substantially anhydrous mixture of at least three percent alkali-metal sulfate in a major proportion of alkali-metal hydroxide, reducing said alkali-metal sulfate thereby producing a reducing bath of alkali-metal hydroxide and reduced alkali-metal sulfate selected from the group consisting of alkali-metal sulfites, alkali-metal dithionites, alkali-metal thiosulfates, alkali-metal pyrosulfites, alkali-metal sulfides and mixtures thereof in said cathode zone, passing into said cathode zone of said molten salt mixture containing said reduced alkali-metal sulfate, a metal article having on its surface metal oxides, reacting said metal oxides with said reduced alkali-metal sulfates, thereby reducing said oxides and subsequently withdrawing said metal article from said molten salt mixture.

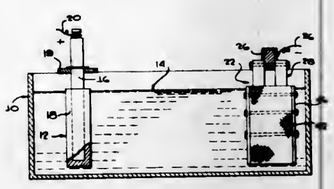
6. A process adapted to protect the component elements of a substantially anhydrous electrochemical descaling system from corrosion, said descaling system being a molten bath comprising a major proportion of an alkali-metal hydroxide in a metal container having therein anode and cathode means comprising electrically connecting said anode and cathode means of an electrochemical descaling system to a primary source of direct electrical current, electrically connecting the elements to be protected to a positive pole of a secondary source of direct electrical current, electrically connecting the negative pole of said secondary source of electrical current to said cathode means, passing a primary and secondary electrical current through said cathode to said anodes, and maintaining said secondary current to said elements to be protected substantially less than the primary current to said anode means of said electrochemical descaling system.

3,293,160

ELECTROLYTIC MANUFACTURE OF MANGANATES AND/OR PERMANGANATES

Charles A. Mazzuchelli, La Salle, Ill., and Joseph Samonides, Tipton, Tenn., assignors to E. J. Lavino and Company, Philadelphia, Pa., a corporation of Delaware

Filed Dec. 19, 1962, Ser. No. 245,934
1 Claim. (Cl. 204—82)



The process of making a permanganate which comprises providing an electrolyte make-up and supply tank with a solution of an alkali metals salt selected from the group consisting of sodium carbonate and potassium carbonate, heating said solution to about 65 to 70° C., conducting the heated solution into an electrolytic cell, electrolytically oxidizing an anode body consisting of substantially pure manganese metal suspended in said heated electrolyte solution in said electrolytic cell, suspending a cathode in the said electrolyte, passing a direct current through the said electrolyte in said cell, providing diaphragm a means in the cell for preventing the electrolyte from directly contacting the cathode while electrical energy flows to the cathode, thereby forming permanganate in the anolyte, drawing off the anolyte from the cell into a cooling receiver, adding a concentrated solution of potassium hydroxide to the anolyte as the anolyte flows to said cooling receiver to thereby prevent accumulation of bicarbonate without diluting the solution and to replace potassium ions removed by formation of permanganate, reducing the temperature of the anolyte solution in the cooling receiver from about 10 to 20° to effect formation and precipitation of permanganate crystals, then removing the crystals from the receiver to a centrifuge and returning the mother liquor obtained from the cooling and crystallizing step to the said make-up tank, then centrifuging the permanganate crystals to remove the adhering mother liquor and returning the centrifuged liquor to the make-up tank and from the make-up tank to the electrolytic cell, dissolving the centrifuged crystals in water, adding crystals from the centrifuge to the solution of dissolved crystals to give the solution a specific gravity of about 1150–1160, filtering the latter solution, then effecting crystallization of the permanganate from the said filtered solution, re-using the solvent for dissolving additional crystals, centrifuging the crystals obtained from the filtered solution to remove all of the solvent therefrom, and finally drying the crystals.

3,293,161

METHOD FOR STARTING UP MERCURY CATHODE ELECTROLYTIC CELLS

Henry W. Laub, Pasadena, Tex., assignor to Oronzio de Nora Impianti Elettrochimici, Milan, Italy, a corporation of Italy

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,946
7 Claims. (Cl. 204—99)

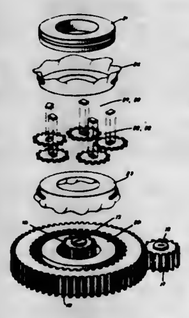
1. A method for starting up mercury electrolytic cells having metal cathodic contact surfaces by in situ wetting of the cathodic contact surfaces with mercury amalgam, within the cell, by the use of electrolytic current which comprises: (a) introducing an aqueous alkaline solution comprising sodium carbonate into said cell in contact with said cathodic surface, (b) impressing an electrolytic current on said cell, (c) introducing mercury onto said cathodic surface, (d) continuing said electrolytic current until said cathodic surface is wetted with mercury amalgam, then stopping said current, (e) removing said alkaline solution from said cell, (f) flushing said cell with the electrolytic solution to be electrolyzed, and subsequently (g) electrolyzing said electrolytic solution in said cell.

3,293,162

PROCESS FOR ELECTROPOLISHING BOTH SIDES OF A SEMICONDUCTOR SIMULTANEOUSLY

Miles V. Sullivan, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 30, 1964, Ser. No. 379,163
3 Claims. (Cl. 204—140.5)



1. A process for the electropolishing of a semiconductor wafer which comprises the steps of suspending a semiconductor wafer in an electrolyte between two closely spaced flat electrodes having parallel juxtaposed working faces and having a cloth fixed thereon, said cloth having a pile less then about 0.020 inch, applying an alternating current across said electrodes and rotating the said wafer along a plane substantially parallel to said electrodes, thereby permitting the simultaneous polishing of both faces of said wafer.

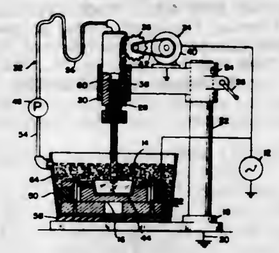
3,293,163

METHOD OF MAINTAINING SPACING IN ELECTRIC-DISCHARGE AND ELECTRO-CHEMICAL MACHINING

Thomas J. O'Connor, Ann Arbor, Mich., assignor to Esco Products, Inc., Ann Arbor, Mich., a corporation of Michigan

Filed Apr. 10, 1964, Ser. No. 358,704
7 Claims. (Cl. 204—143)

1. In an electric-machining process of removing material from an electrically conductive workpiece by means of an electrode tool, including maintaining a space between said tool and said workpiece by relative movement of said tool to said workpiece, supplying a working fluid to said space and impressing an electric current across said space, the improvement comprising maintaining said



space between said tool and said workpiece by including in said working fluid an effective amount of electrically insulating material substantially on a spherical configuration having a diameter between about two microns and ten-thousandths of an inch.

3,293,164

AZO COMPOUNDS AS PROMOTERS FOR THE SYNTHESIS OF HALOGENATED THIOETHERS

Paul F. Warner, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 3, 1963, Ser. No. 284,812
9 Claims. (Cl. 204—158)

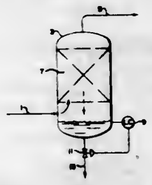
1. A process for producing halogenated thioethers comprising contacting an organic compound containing at least one unsaturated linkage between carbon atoms of aliphatic character with a mercaptan in a reaction zone in the presence of an azo compound which has an acyclic azo, —N=N—, group bonded to discrete non-aromatic carbons, at least one of which is tertiary and has attached, through carbon, a negative radical which has the remaining valences of said carbon satisfied only by elements of the class consisting of oxygen and nitrogen, at least one of said reactants being a halogenated compound, and subjecting the reactants to the influence of light rays.

3,293,165

SEPARATION PROCESS FOR RESOLVING WATER AND OIL SUSPENSION

Richard B. Olney, Berkeley, and Chandler H. Barkelew, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

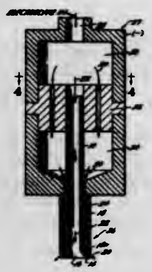
Filed Apr. 5, 1963, Ser. No. 270,841
8 Claims. (Cl. 204—188)



1. A process for resolving a suspension comprising water and oil into two phases which comprises (1) contacting the suspension with particles of solids in finely divided form wherein each of said particles is formed by electrolytically depositing one solid onto a different solid having a different electron donating capacity and abrading to

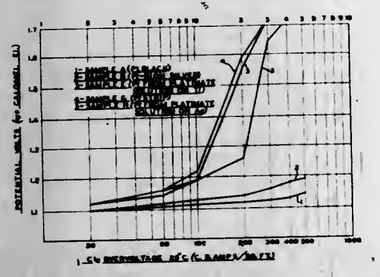
expose at least part of each of said solids on the surface of the particle and (2) recovering the constituents of the suspension as two substantially separate phases.

3,293,166
ELECTRODE FOR ELECTROLYTIC MACHINING
Irwin L. Cowing, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 29, 1963, Ser. No. 284,190
3 Claims. (Cl. 204—224)



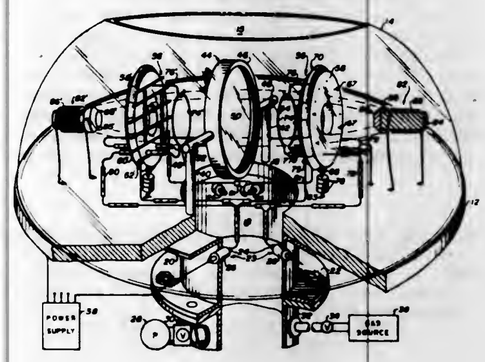
1. An electrolytic machining apparatus including an electrode comprising:
a hollow, metallic inner member open at a working end;
an outer metallic member disposed about the outer periphery of the inner member in spaced apart relationship therewith to form between the inner member and the outer member a peripheral passage open at the working end, the outer member having on its outer periphery a dielectric coating; and
means at the working end to direct electrolyte flowing from the peripheral passage in a direction outwardly toward the workpiece and away from the inner member.

3,293,167
PLATINUM BISMUTH ALLOY COATED ELECTRODES
Lawrence Greenspan, New York, N.Y., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Original application Oct. 8, 1962, Ser. No. 228,935. Divided and this application Feb. 15, 1966, Ser. No. 527,719
3 Claims. (Cl. 204—290)



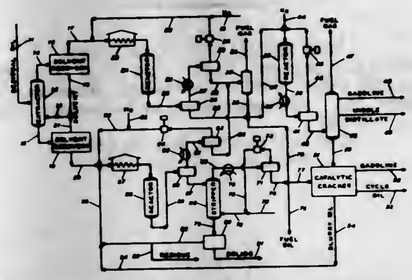
1. An anode for electrolyzing aqueous salt solutions comprising a metal core having a continuous adherent deposit of platinum containing from 0.01% to about 0.1 weight percent bismuth, the metal core having a composition different from the adherent deposit.

3,293,168
APPARATUS FOR COATING SUBSTRATES BY CATHODE SPUTTERING
Werner P. Schulz, San Bruno, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 22, 1964, Ser. No. 369,641
2 Claims. (Cl. 204—298)



1. A sputtering apparatus for coating the surface of an object with highly accelerated atoms of a preselected material comprising;
(a) enclosure means including a housing and base plate defining therewithin an evacuable airtight volume;
(b) inert gas source means communicably coupled to said evacuable volume within said enclosure means;
(c) vacuum pump means communicably coupled to said evacuable volume within said enclosure means;
(d) electrical terminal means integrally secured to said enclosure means to extend into said evacuable volume in electrically insulated relation;
(e) support means integrally secured to the upper surface of said plate and extending upwardly therefrom into the central region of said evacuable volume, said support means being adapted to secure and suspend said object to be coated substantially above said plate;
(f) filament means formed of said preselected material disposed in close proximity to said object at either side thereof;
(g) gaseous discharge electrode means including an alternate plurality of cathode and anode electrodes formed of said preselected material disposed in spaced aligned relation in close proximity to said filament means on either side thereof opposite the object to be coated;
(h) electromagnetic field generating means including two electromagnets disposed in spaced-apart aligned relation behind said gaseous discharge electrode means on either side thereof opposite said object to be coated;
(i) and alternating current power source means having a plurality of outputs each coupled via respective terminal means in electrical parallel to said filament means, and to said gaseous discharge electrode means, and in electrical series to said electromagnetic field generating means.

3,293,169
CONVERSION OF RESIDUA TO PRODUCE MIDDLE DISTILLATE OILS AND GASOLINE
Robert H. Koslowski, Berkeley, and Byron G. Spars, Mill Valley, Calif., assignors to Chevron Research Company, a corporation of Delaware
Filed June 22, 1965, Ser. No. 465,865
5 Claims. (Cl. 208—86)



1. The process which comprises:
separating residuum by solvent extraction into nonasphaltic residual oil and asphaltic residue;
passing hydrogen and nonasphaltic residual oil through a hydrocracking reaction zone at elevated temperature and pressure effective to convert at least 30% of said residual oil to distillates boiling below 1000° F.;
passing hydrogen and asphaltic residue through a separate thermal hydrocracking reaction zone at elevated temperature and pressure effective to convert from 30 to 60% of said asphaltic residue to distillates boiling below 1000° F.;
separating from the hydrogen-rich vapor effluents of said zones normally liquid distillate oils having normally gaseous hydrocarbons dissolved therein;
freeing said distillate oils of dissolved normally gaseous hydrocarbons, and then passing at least a portion of the distillate oils to a catalytic hydroconversion reaction zone with hydrogen to contact therein a sulfactive hydrogenation catalyst at elevated temperature and pressure;
also passing liquid residual oil effluent of the first-mentioned hydrocracking zone to said catalytic hydroconversion zone;
recovering hydrofined distillate oils and hydrofined residual oil from said catalytic hydroconversion zone;
and passing hydrofined residual oil so recovered to a catalytic cracking process employing a circulating powder cracking catalyst.

3,293,170
PREPARATION OF HYDROCARBON CONVERSION CATALYSTS AND THEIR USE IN THE HYDROCRACKING OF HYDROCARBONS
Anthony George Golde and Paul Anthony Lawrance, both of Sunbury-on-Thames, Middlesex, England, assignors to The British Petroleum Company Limited, London, England, a company of England
No Drawing. Filed May 26, 1964, Ser. No. 370,358
Claims priority, application Great Britain, June 7, 1963, 22,787/63
14 Claims. (Cl. 208—111)

9. A process for the conversion of hydrocarbons comprising contacting a hydrocarbon feedstock in a reaction zone under conversion conditions of temperature and pressure with a catalyst, said catalyst being prepared by impregnating a refractory oxide support with a water-soluble compound of an iron group hydrogenating metal to chemically bond metal cations of said compound to said support, the support being prepared before the addition of the hydrogenating metal compound and comprising at least one refractory oxide selected from the group magnesia, boria, alumina, silica, and titania and mixtures of the foregoing, thereafter washing the impregnated support with water to remove substantially all of the metal cations of the water-soluble compound not chemically bound to the support and drying the washed support, and recovering the treated hydrocarbon feedstock.

3,293,171
FLUIDIZED BED OPERATIONS
William Joseph Metrailer, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,869
6 Claims. (Cl. 208—163)

1. A process for improving a fluidized bed operation wherein said bed is fluidized with a gaseous fluid which comprises adding to a fluidized bed of particles free motion contactors consisting of a material having a density within the range of plus or minus 20 wt. percent of the apparent density of said fluidized bed under normal fluid bed operating conditions, wherein said contactors are at least twice as large as the average size particle in said bed and said contactors are added in a sufficient amount to substantially reduce the pressure drop fluctuation across the fluidized bed.

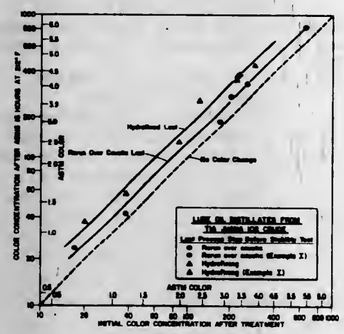
3,293,172
REGENERATIVE HYDROREFINING OF PETROLEUM CRUDE OIL
William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Apr. 29, 1964, Ser. No. 363,628
16 Claims. (Cl. 208—264)

1. A regenerative process for hydrorefining a hydrocarbon charge stock containing asphaltenes which comprises the steps of:
(a) admixing said charge stock with at least one organo-metallic compound of a metal selected from the metals of Group VI–B having an atomic number greater than 24, and Group V–B of the Periodic Table;
(b) decomposing said organo-metallic compound in said charge stock and reacting the resulting colloidal suspension with hydrogen;
(c) separating the resulting reaction mixture to provide a hydrorefined liquid product and a catalyst-containing sludge;
(d) contacting the sludge with an organic solvent to dissolve the organic-soluble material contained in said sludge and combining the resulting solution with said charge stock;
(e) treating the remaining portion of said catalyst-containing sludge at a temperature of from about 100° C. to about 500° C. with a sulfurous compound selected from the group consisting of sulfur monochloride, sulfur dichloride and a mixture thereof to convert asphaltenes contained therein to insoluble coke;
(f) separating the resulting insoluble coke from said sludge; and,
(g) admixing the remainder of said sludge, containing the aforesaid metal, with said charge stock.

3,293,173
COLOR IMPROVEMENT OF PETROLEUM LUBRICATING OILS
Patrick P. McCall, Madison Township, Middlesex County, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,710
7 Claims. (Cl. 208—264)

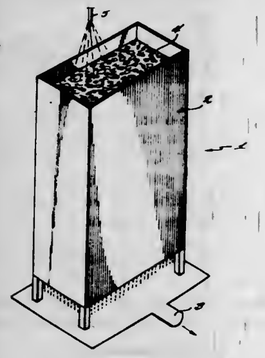
1. A process for improving the color and color stability of a petroleum lubricating oil base stock which comprises

hydrofining the lubricating oil base stock in the presence of a hydrofining catalyst and hydrogen, introducing an aqueous alkaline metal hydroxide into the hydrofined oil, said metal hydroxide being selected from the group consisting of hydroxides of the alkali metals and alkaline earth metals and being used in an amount between .0005 and .01 part by weight per part of oil by weight, heating



the resulting mixture of oil and metal hydroxide to a temperature between about 400° F. and 700° F. to vaporize and separate the water from the non-volatile solid metal hydroxide, distilling the oil under vacuum in a vacuum rerun tower in direct contact with the separated solid metal hydroxide to produce a lubricating oil stock of improved color and color stability.

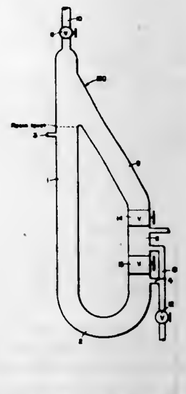
3,293,174
PLANT AND PROCESSES FOR THE TREATMENT OF EFFLUENT AND SEWAGE
Cyril Francis Robjohns, Brixham, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Mar. 8, 1963, Ser. No. 263,737
Claims priority, application Great Britain, Mar. 8, 1962, 9,034/62
8 Claims. (Cl. 210—17)



1. A trickling filter unit comprising in combination,
(a) means to support a bed of trickling filter media;
(b) said bed of trickling filter media comprising a mass of randomly arranged, discrete pieces of foamed inert polymeric material, and
(c) means operatively associated with said means to support said media to pass a liquid and a gas through said bed.

5. A process for treatment of liquid effluent and sewage comprising passing liquid effluent through a bed of randomly arranged discrete pieces of inert foamed polymeric material packing which contains on the surface thereof biologically active aerobic microorganisms and passing air up through the bed, whereby the organic content of the liquid effluent is biologically oxidized.

3,293,175
ION EXCHANGE PROCESSES
Karel Popper, Modesto, Calif. (166 Hazel Drive, Pleasant Hill, Calif. 94523) and Vladimir Slamecka, Chevy Chase, Md. (Georgia Institute of Technology, Atlanta, Ga. 30332)
Filed Feb. 19, 1963, Ser. No. 259,542
4 Claims. (Cl. 210—32)



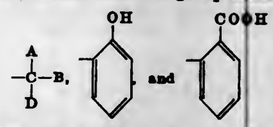
1. In an ion exchange cycle carried out with a bed of anion and cation exchange material located in a column having valve controlled exit means, wherein during one stage of the cycle a sparingly soluble alkaline earth metal compound is formed, the improvement which comprises regenerating said bed of anion and cation exchange material by retaining said sparingly soluble alkaline earth metal compound within the confines of the column, and flushing said compound through said column with water while the valve of the exit means is closed to cause the cations and the anions of said compound to regenerate the active sites of said anion and cation exchange material, respectively.

3,293,176
METHOD OF CHELATING WITH AN ETHER-GROUP-CONTAINING SEQUESTERING AGENT
Le Roy A. White, Root Road, Somers, Conn.
No Drawing. Filed Apr. 1, 1964, Ser. No. 356,629
19 Claims. (Cl. 210—58)

1. The method of treating liquid media to chelate ions therefrom which comprises contacting said media with a sequestering agent of the formula:

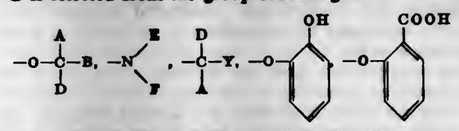
M—O—(CHX)$_a$(CHY)$_b$(CHZ)$_c$—G

wherein M is selected from the group consisting of

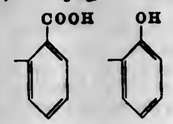


X, Y, and Z are selected from the group consisting of —H, —COOH, and —OH;
a, *b*, and *c* are integers of from 0 to 1, at least one member of *a*, *b*, and *c* being 1;

G is selected from the group consisting of



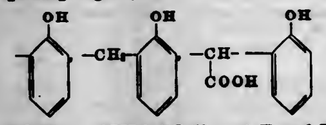
and —O—(CHX)$_a$(CHY)$_b$(CHZ)$_c$—O—M;
A, B, and D are selected from the group consisting of —CH$_2$COOH, —CH$_2$SO$_3$H, A, B and D together having no more than two of the units —COOH, —H, —SO$_3$H, —PO$_3$H$_2$, —CHOHCOOH,



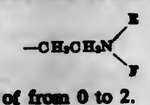
and no more than one unit of

—(CHZ)$_c$(CHY)$_b$(CHX)$_a$—O—M

E and F are selected from the group consisting of —CH$_2$COOH, —CH(COOH)$_2$, —H, —CH$_2$CH$_2$OH, —CH$_2$CH$_2$OCH$_2$CH$_2$OH,



—(CH$_2$)$_p$PO$_3$H$_2$, —(CH$_2$)$_p$SO$_3$H, and E and F together having no more than one unit of



p being an integer of from 0 to 2.

3,293,177
CONTROL OF RHEOLOGICAL PROPERTIES OF DRILLING FLUID
Charles A. Stratton and Mark W. Brunstetter, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 17, 1963, Ser. No. 281,316
6 Claims. (Cl. 252—8.5)

1. A water base drilling mud comprising, in combination:
sufficient water to maintain said water mud fluid;
sufficient suspended solids to form a filter cake on the wall of a well;
a sufficient amount of a compound selected from the group consisting of 1,7-naphthalenediol,
ammonium, alkali metal, and alkaline earth metal salts thereof, and
corresponding oxidation products thereof selected from naphthoquinone, naphthoquinhydrone, semiquinone radical and semiquinone radical-anion to maintain the viscosity of said mud low enough to be circulated.

3,293,178
PRODUCT AND PROCESS FOR RENDERING FILE FABRICS SOIL RESISTANT
Frederick John MacDonald, Hevenstown, Pa., and Alton A. Cook, Bloomfield, N.J., assignors to Arkansas Company, Inc., Newark, N.J., a corporation of New Jersey
No Drawing. Filed Feb. 20, 1964, Ser. No. 346,128
14 Claims. (Cl. 252—8.8)

1. A composition useful for rendering fibers soil resistant, consisting essentially of a di-(2-alkyl imidazoline)-ethylene urea condensate selected from the group consisting of di-(2-alkyl imidazoline)-ethylene urea, di-(2-alkyl imidazoline)-ethyleneaminoethylene urea and di-(2-alkyl imidazoline) - (diethyleneamino)-ethylene urea wherein said alkyl group contains 15 to 21 carbon atoms and a multivalent metal salt selected from the group consisting of water soluble salts of zirconium, tin, zinc, magnesium, calcium and barium, said salt being present in an amount equivalent to about 30 to 50% by weight of said condensate in said composition.

3,293,179
GREASE COMPOSITIONS
Richard A. Babcock, Westmont, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Aug. 14, 1964, Ser. No. 389,776
11 Claims. (Cl. 252—18)

1. A grease composition consisting essentially of a grease thickener and, as a vehicle, a lubricating oil obtained by hydrocracking relatively high boiling resin components of a residual oil fraction to produce a product containing a relatively high boiling lubricating oil fraction, separating said high boiling oil fraction from said product, resolving said separated high boiling oil fraction into a plurality of oil fractions of different boiling ranges, and thereafter combining portions of said resolved fractions to produce the desired lubricating oil vehicle.

7. A grease composition comprising: (A) a lubricating oil vehicle as defined by claim 1, and a gelling agent comprising sodium 12-hydroxy stearate, ammonium acetate, calcium acetate, calcium caprylate and lime flour.

3,293,180
GREASE COMPOSITION AND PROCESS THEREFOR
Arthur E. Axworthy, Concord, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 30, 1964, Ser. No. 363,907
10 Claims. (Cl. 252—39)

1. A grease composition having improved thermal stability consisting essentially of the reaction product obtained (a) by heating a mixture of 2.5–12% by weight expanded clay and 0.1–4% by weight of at least one sulfate of a metal having an atomic number of from 26 to 29 inclusively with 84.0–97.4% by weight of a methylphenyl polysiloxane oil at a temperature of 400–550° F. for a period of at least one hour and (b) by milling said reaction mixture.

3,293,181
DIALKYL DITHIOPHOSPHATES AND LUBRICANTS CONTAINING THEM
Frank A. Stuart, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Oct. 15, 1965, Ser. No. 496,655
5 Claims. (Cl. 252—32.7)

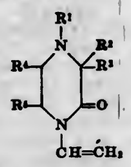
1. Zinc salts of mixed dialkyl dithiophosphoric acids in which the alkyl groups are derived from a mixture of isobutanol and a branched chain primary hexyl alcohol, the mole ratio of isobutanol to hexyl alcohol being within the range of 0.1:1 to 8:1.

4. A lubricant composition consisting essentially of a major proportion of an oil of lubricating viscosity and a minor proportion sufficient to inhibit oxidation and corrosion of the zinc salt of claim 1.

3,293,182
FUEL AND LUBRICANT COMPOSITIONS
La Verne N. Bauer, Cheltenham, and Peter L. de Benneville, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Oct. 2, 1964, Ser. No. 401,236
12 Claims. (Cl. 252—51.5)

1. A composition comprising a major portion of a member from the group consisting of a lubricating oil and a normally liquid hydrocarbon fuel and a minor por-

tion sufficient to prevent sludge deposition of an oil-soluble copolymer having a molecular weight in the range from about 20,000 to 2,000,000 made from at least one monomer selected from the group consisting of C_{1-18} alkyl esters of α,β-unsaturated lower alkanoic acids, dialkyl fumarates, maleates and itaconates of up to 24 carbon atoms, vinyl esters of fatty acids and styrene and at least one compound having the formula



in which

R^1 is selected from the group consisting of hydrogen alkyl of up to 18 carbon atoms and aralkyl of up to 18 carbon atoms,

R^2 is selected from the group consisting of hydrogen and methyl,

R^3 is selected from the group consisting of hydrogen and alkyl of up to 18 carbon atoms,

R^4, individually, is selected from the group consisting of hydrogen and alkyl of 2 to 4 carbon atoms,

R^5, individually, is selected from the group consisting of hydrogen and alkyl of up to 4 carbon atoms, and

R^4 and R^5 collectively, including the carbon atom to which they are attached, form a five to seven member saturated ring optionally including alkyl substituents, wherein the total carbon content of R^4 and R^5 collectively is up to 18 carbon atoms, said compound being present in amount from about 0.5 to 80% by weight.

3,293,183

DEVELOPER FOR ELECTROSTATIC IMAGES

Josef Mathas, Malvern, South Australia, Australia, assignor to Research Laboratories of Australia Limited, Adelaide, South Australia, Australia

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,531
Claims priority, application Australia, Aug. 14, 1961, 8,036/61
2 Claims. (Cl. 252—62.1)

1. For developing electrostatic images a developer consisting essentially of an electrically insulating hydrocarbon carrier liquid having a volume resistivity in excess of 10^9 ohm cm., pigment particles suspended in said carrier liquid and also dispersed in said carrier liquid a cellulose polymer but which is substantially soluble in a hydrocarbon solvent which is miscible with said carrier liquid and which has a KB value in excess of 90.

3,293,184

METHOD FOR MAKING A FERROMAGNETIC MEMORY CORE

Gerrit Antonie Herman van Driel, Cornelis Jacobus Esveldt, and Petrus Johannes Flinzenberg, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,493
Claims priority, application Netherlands, Dec. 13, 1962, 286,715
1 Claim. (Cl. 252—62.5)

A method of manufacturing magnet core having an outer diameter not exceeding 0.6 mm. and an inner diameter which is at least half that of the outer diameter, a switching time not exceeding 0.25 μsec. and a value of the quotient $uV1/dVz>3$ with a disturbance ratio of 0.61 comprising the steps, heating at about 625° C. a finely-divided mixture of about 14 to 15 mol percent of Li_2O, about 5 to 7 mol percent of NiO, and about 78 to 81 mol percent of Fe_2O_3 to form a presintered material, finely dividing and forming said presintered material into a slurry, increasing the consistency of the slurry to a mass having a weight 1.1 to 1.2 times that of the initial slurry, removing particles from the thickened slurry which have a dimension exceeding $\frac{1}{10}$ the outer diameter of the core, drying the slurry containing only smaller particles, compressing the latter particles into a shape of the core with a density of about 2.3 to 3.0 gms./cm.^{3}, heating said core in an atmosphere containing at least as much oxygen as air on a substratum of a high-melting point metal in less than one minute up to a temperature between about 1060° C. and 1180° C., maintaining the core at said temperature for about 1.5 to 10 minutes to sinter the same, cooling the sintered core at a rate of at least 5° C. per minute and not exceeding 20° C. per minute to a temperature which is at least 70° C. below the sintering temperature, and quenching the so fired core in air.

3,293,185

METHOD OF THAWING ICE WITH COMPOSITION CONTAINING NITRATES

William T. Curless, Overland Park, Henry L. Grimsme, Jr., Wichita, and Glenn A. Terry, Prairie Village, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,747
1 Claim. (Cl. 252—70)

The method of thawing ice consisting of applying to the surface of ice a composition consisting essentially of from about 50 to about 96 percent by weight calcium nitrate, the remainder consisting of ammonium nitrate and not more than about 13 percent water.

3,293,186

ADDING AND RESTORING IMAGE AREAS TO PLATES

Simon L. Chu, New York, and Gerald F. O'Connor, Ossining, N.Y., assignors to Polychrome Corporation, Yonkers, N.Y.

No Drawing. Filed Apr. 15, 1963, Ser. No. 272,850
6 Claims. (Cl. 252—79.3)

1. A composition for transforming an oleophobic non-image area of a lithographic plate into an oleophilic image area consisting essentially of an aliphatic compound selected from the group consisting of oleic acid and dodecyl alcohol, about 0.275% to 2.92% of hydrogen zirconium fluoride, about 20.8% to 62.5% of an abrasive, about 124% to 250% of an acidic gum, and as a surfactant about 5.4% to 16.7% of a fatty alcohol sulfate, said percentages being calculated on the weight of said aliphatic compound.

ERRATUM

For Class 252—103 see:
Patent No. 3,293,148

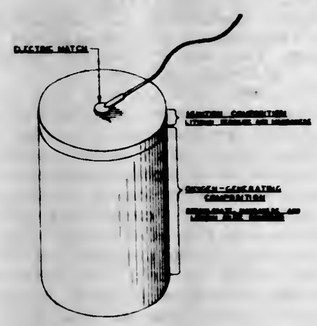
3,293,187

OXYGEN-GENERATING PRODUCT

Meyer M. Markowitz, Ardmore, Pa., assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania

Filed Oct. 23, 1963, Ser. No. 318,223
14 Claims. (Cl. 252—186)

1. An oxygen-generating composition consisting essentially of an intimate mixture of an alkali metal perchlorate selected from the group consisting of sodium-, potassium- and lithium perchlorate manganese metal powder and a lithium oxide compound selected from the group consisting of lithium oxide, lithium hydroxide and lithium peroxide, the perchlorate being present in an amount between about 90 and about 60 mol percent and the manganese metal powder being present in an amount between about 10 and about 40 mole percent, said percentages being based on the weight of the two said in-



gredients, and the lithium oxide compound being present in an amount between about 3 and about 6%, by weight, based on the weight of the alkali metal perchlorate.

3,293,188

PREPARATION OF DICHLOROCYANURATE, SODIUM TRIPOLYPHOSPHATE AND SODIUM SULFATE CONTAINING BLEACHING, STERILIZING AND DISINFECTING COMPOSITION

Arthur G. Brown, Menlo Park, and William W. Lee and Kenneth M. Sancier, Palo Alto, Calif., assignors to Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 29, 1959, Ser. No. 823,280
2 Claims. (Cl. 252—187)

1. The method of preparing a sterilizing and disinfecting powder that is homogeneous throughout which comprises mixing ingredients consisting essentially of a dichlorocyanurate with a synergistic carrier agent mixture of sodium tripolyphosphate and sodium sulfate decahydrate, heating said mixture until water is liberated from said sodium sulfate decahydrate, allowing said mixture to cool until a solid homogeneous mass is formed, and pulverizing said homogeneous mass to form said powder, said dichlorocyanurate being present in an amount sufficient to provide said powder with from about 0.5 to about 50 percent by weight available chlorine.

3,293,189

CORROSION-INHIBITED PHOSPHATE SOLUTIONS AND COMPOSITIONS USEFUL FOR MANUFACTURING THEM

William W. Morgenthaler, St. Ann, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1962, Ser. No. 235,865
12 Claims. (Cl. 252—387)

1. An aqueous ammonium phosphate composition consisting essentially of, in addition to at least one inorganic ammonium orthophosphate selected from the group consisting of monoammonium orthophosphate and diammonium orthophosphate, an inorganic water-soluble thiocyanate compound; there being dissolved in said compositions from about 0.5 to about 25 weight percent of said inorganic ammonium orthophosphate, and from about 0.03 to about 7.5 weight percent of dissolved thiocyanate ion.

12. A method of retarding the corrosion of copper and copper alloys upon contact with a normally corrosive aqueous ammonium orthophosphate solution consisting essentially of water and, dissolved therein, from about 0.5 to about 25 weight percent of ammonium orthophosphate selected from the group consisting of monoammonium orthophosphate, diammonium orthophosphate and mixtures thereof, which method comprises effecting said contact when said aqueous ammonium orthophosphate solution contains dissolved therein from about 0.075 to about 7.5 weight percent of thiocyanate ions.

3,293,190

METHOD FOR MODIFYING THE ELECTRICAL AND CATALYTIC PROPERTIES OF A SUPPORTED CATALYST

James T. Richardson, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,144
2 Claims. (Cl. 252—301.1)

1. A method of modifying the electrical and catalytic properties of a supported catalyst including semiconducting compounds by the addition of a desired modifying material comprising the steps of: at a temperature less than the fusion temperature of the catalyst, introducing into the crystal lattices of the supported catalyst in homogeneous dispersion throughout the crystal lattices, a S^{35} radioactive isotope which upon decay will form the desired modifying material; and allowing the introduced radioactive isotope to decay to form the desired Cl^{35} modifying material.

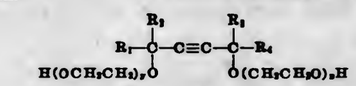
3,293,191

ETHYLENE OXIDE ADDUCTS OF TERTIARY ACETYLENIC ALCOHOLS

Gilbert B. Carpenter, The Hague, Netherlands, and Morton W. Leeds, Murray Hill, and Robert J. Tedeschi, Whitehouse Station, N.J., assignors, by mesne assignments, to Cumberland Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application June 26, 1961, Ser. No. 119,301. Divided and this application Oct. 29, 1964, Ser. No. 413,672
3 Claims. (Cl. 252—351)

1. An aqueous composition comprising water and an amount of an ethylene oxide adduct having the structural formula



in which R_1 and R_4 are alkyl radicals containing from 3 to 6 carbon atoms, R_2 and R_3 are selected from the group consisting of methyl and ethyl, x and y have a sum in the range of 3 to 20, inclusive, sufficient to substantially lower the surface tension and increase the wetting properties of the aqueous composition.

3,293,192

ZEOLITE Z-14US AND METHOD OF PREPARATION THEREOF

Philip K. Maher, Baltimore, and Carl V. McDaniel, Laurel, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Aug. 23, 1965, Ser. No. 481,669
8 Claims. (Cl. 252—430)

1. As a composition of matter a synthetic ultra stable zeolitic aluminosilicate having the composition expressed in terms of oxide mole ratios as follows:

$$XM_{2/n}O:Al_2O_3:3.5\text{–}7SiO_2:YH_2O$$

where M represents at least one cation having a valence of not more than 4 and n is the valence of M, X may vary from 0 to 1 and Y may be any value up to 9, said zeolite being characterized by

an alkali metal content of less than 1%

a cubic cell size of 24.2 to 24.45 A.

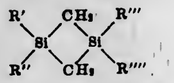
an X-ray diffraction pattern essentially the same as shown in Table A
and an ultra stable structure as evidenced by retention of a surface area of greater than 150 m.²/g. after calcination at a temperature of 1725°F. for a period of 2 hours.

3,293,193
CHEMICAL PROCESS FOR PRODUCTION OF POLYOXYETHYLENE COMPOUNDS
Stanley E. Krahler, Wilmington, and Frank J. Marascia, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 9, 1963, Ser. No. 271,580
8 Claims. (Cl. 260—2)

1. In the condensation of ethylene oxide with an organic hydroxy compound selected from the group consisting of alcohols, phenols, ethers of polyethylene glycol having a molecular weight up to 3000 and mixtures of these hydroxy compounds followed by neutralization of the condensation product, the improvement which comprises reacting in a substantially anhydrous atmosphere in the proportion of 1 mol of hydroxy compound having a water content of less than 0.2%, about 360–800 mols of ethylene oxide having a water content of less than 0.005% and about 0.005 mol to 0.6 mol of sodium hydride at a temperature of about 100° C. to about 140° C.

3,293,194
POLYMERIZATION OF DISILACYCLOBUTANE IN THE PRESENCE OF A PLATINUM CATALYST
John Cormack Lovie, Irvine, and James Alastair Crichton Watt, Fairlie, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Feb. 1, 1965, Ser. No. 429,662
Claims priority, application Great Britain, Feb. 14, 1964, 6,267/64
4 Claims. (Cl. 260—2)

1. A process for the production of silmethylene polymers comprising polymerising a substituted disilacyclobutane of the general formula



wherein the groups R', R'', R''' and R'''', which may be the same or different, are selected from the group consisting of lower alkyl, lower alkoxy and phenyl radicals, and halogen and hydrogen atoms, in the presence of simple and complex salts of a platinum metal catalyst selected from the group consisting of platinous bromide, platinous chloride, chloroplatinic acid,
di-μ-chlorodichlorobis(cyclohexene)diplatinum (11),
di-μ-chloro-dichlorobis(decene)-diplatinum (11),
bis(diethylsulphide)dichloroplatinum (11),
dimethylbis(triphenylphosphine)platinum (11),
bis(tripropylarsine)dichloroplatinum (11),
methylbis(trimethylphosphine)bromoplatinum (11),
bis(tripropylphosphine)dichloroplatinum (11),
sodium chloroplatinate,
di-μ-chloro-dichlorobis(tributylphosphine)diplatinum (11),
palladous bromide,
palladous chloride,
bis(triphenylphosphine)dichloropalladium (11),
di-μ-chlorodichlorobis(triethylphosphine)dipalladium (11),
ruthenium trichloride,
iridium trichloride and
iridium hydroxide.

3,293,195
ION EXCHANGE RESINS PREPARED FROM A MIXED RESIN OF VINYL PYRIDINE COPOLYMERS AND EPIHALOHYDRIN-POLYALKYLENE POLYAMINES AND METHODS OF MAKING AND USING SAME
Albert H. Greer, Haddonfield, N.J., assignor to Ritter Pfaudler Corporation, a corporation of New York
No Drawing. Filed Nov. 29, 1963, Ser. No. 327,099
19 Claims. (Cl. 260—2.1)

1. A weakly basic, anion exchange resin comprising the condensation product of (a) an epihalohydrin, (b) a lower polyalkylene polyamine and (c) a fluid, partially cross-linked copolymer of (1) a monomer selected from the group consisting of an aliphatic amine and a heterocylic amine, said monomer having a polymerizable $CH_2=C<$ group, with (2) a cross-linking agent having at least two terminal $CH_2=C<$ groups, wherein said copolymer is present in molar proportions of from about 0.05 to about 1.0 mole per mole of said polyamine and said epihalohydrin is present in molar proportions of from about 2.5 to about 4 moles per mole of polyamine, and wherein said monomer constitutes from about 50 to 99.9 molar percent of said copolymer.

3,293,196
FORMABLE STYRENE POLYMER COMPOSITION AND METHOD OF PRODUCING FOAMED STYRENE POLYMER
Kiyoshi Nakamori, Ikeda-shi, Osaka-fu, Japan, assignor to Sekisui Sponge Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Filed Feb. 26, 1963, Ser. No. 261,219
Claims priority, application Japan, Apr. 16, 1962, 37/15,525; Apr. 25, 1962, 37/16,920; May 24, 1962, 37/21,391
8 Claims. (Cl. 260—2.5)

1. A composition capable of being foamed and extruded, comprising (a) styrene polymer particles having integrated therewith propane, (b) at least one acid which has been coated with a liquid paraffin selected from the group consisting of boric acid, malonic acid, maleic acid, fumaric acid, succinic acid, itaconic acid, citraconic acid, oleic acid, tartaric acid, phthalic acid, benzoic acid, benzene sulfonic acid, toluene sulfonic acid, diglycolic acid and potassium bitartrate, and (c) at least one carbon dioxide liberating agent selected from the group consisting of carbonates and bicarbonates of alkalies and alkaline earth metals, the said components having been mixed homogeneously.

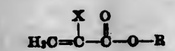
3,293,197
ELASTOMER BLENDING PROCESS
Harry L. Vincent, Stanton, and Norman Reginald Legge, Rolling Hills Estates, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 15, 1963, Ser. No. 302,447
12 Claims. (Cl. 260—2.5)

1. A rubber blending process comprising:
(a) emulsifying a rubber cement with a rubber latex;
(b) adjusting the pH of the emulsion to between about 3 and about 4.5;
(c) subjecting the emulsion to a high rate of shear; and,
(d) steam-coagulating the rubbers, whereby cement solvent is flashed off and coagulated rubber crumb is recovered.

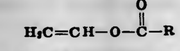
3,293,198
FOAMED PRODUCTS AND PROCESS THEREFOR
Donald E. Jefferson, Greenbelt, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Nov. 20, 1963, Ser. No. 325,163
17 Claims. (Cl. 260—2.5)

1. The process of forming a stable cellular crosslinked polymeric composition from a non-gaseous polymerizable

monoethylenic vinylidene monomer having aliphatic carbon to carbon unsaturation solely in the double bond in the vinylidene radical selected from the group consisting of:
(1) Esters of acrylic and methacrylic acid of the formula:



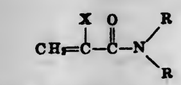
wherein X is a member of the group consisting of hydrogen and methyl and R is a hydrocarbon radical of the group consisting of alkyl and aryl, said radical members contining up to 18 carbon atoms,
(2) Vinyl esters of saturated monocarboxylic acids of the formula:



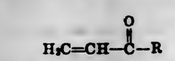
wherein R is a radical of the group consisting of alkyl and aryl, said radical members containing up to 18 carbon atoms,
(3) Vinyl ethers of the formula:



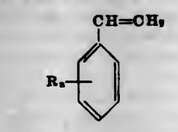
wherein R is an alkyl containing 1 to 18 carbon atoms,
(4) Amides of acrylic and methacrylic acid of the formula:



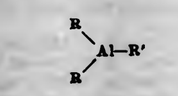
wherein X is a member of the group consisting of hydrogen and methyl and R is a radical of the group consisting of alkyl and aryl, said radicals not necessarily being the same and containing in combination up to 18 carbon atoms,
(5) Vinyl ketones of the formula:



wherein R is a radical of the group consisting of alkyl and aryl, said radical members containing up to 18 carbon atoms,
(6) Styrenes of the formula:



wherein *n* is an integer from 1 to 3 and R is a member of the group consisting of halogen, hydrogen, alkoxy and alkyl, said alkoxy and alkyl members containing 1 to 4 carbon atoms which comprises contacting said vinylidene monomer under ambient conditions with an aluminum alkyl compound of the formula



wherein R is an alkyl and R' is a member of the group consisting of hydrogen, chlorine and an alkyl, all of said alkyl groups containing 1–8 carbon atoms in the presence of free oxygen, 2,2'-azobis[isobutyronitrile] and a multifunctional monomer selected from the group consisting of triallyl cyanurate, allyl acrylate, allyl methacrylate, diallyl itaconate, triallyl aconitate and diallyl oxalate.

3,293,199
PROCESS FOR THE POLYMERISATION OF VINYL CHLORIDE
Malcolm James Abercrombie, Dinas Powis, Glamorgan, Wales, assignor to British Geon Limited, London, England, a British company
No Drawing. Filed July 31, 1963, Ser. No. 299,109
Claims priority, application Great Britain, Aug. 30, 1962, 33,339/62
6 Claims. (Cl. 260—17)

1. A process for the production of vinyl chloride polymers and copolymers of vinyl chloride with other monomers which comprises mixing vinyl chloride or vinyl chloride together with other copolymerisable monomers with an oil soluble polymerisation initiator, a substituted cellulose compound and stearyl alcohol to form an aqueous suspension, polymerising the suspension and recovering the formed polymers or copolymers.

3,293,200
HUMIN MATERIAL EXTENDED-THERMOSETTING ADHESIVE, AND PROCESS OF MAKING THE SAME
Warren S. MacGregor, Camas, Wash., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
No Drawing. Filed Feb. 27, 1963, Ser. No. 261,400
6 Claims. (Cl. 260—17.2)

1. An aqueous thermosetting adhesive composition comprising a mixture of from about 40% to about 99% of a water-soluble phenol-aldehyde resin and from about 1% to about 60% of a water-insoluble, finely divided humin material consisting of the product obtained from the manufacture of levulinic acid by severe acid hydrolysis of lignocellulose at a temperature in excess of about 150° C. but less than about 210° C., said humin material consisting essentially of lignin, degradation products and ash, and being substantially free of carbohydrates, the percentages being expressed by weight on a dry solids basis.

3,293,201
EMULSIONS OF CURABLE RESINOUS COMPOSITIONS AND A SALT OF AN ADDUCT OF AN UNSATURATED DICARBOXYLIC ACID AND A FATTY OIL
Fred S. Skinner, New Kensington, and Roger M. Christensen, Gibsonia, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 7, 1962, Ser. No. 177,991
6 Claims. (Cl. 260—23)

1. An air-drying aqueous emulsion coating composition consisting essentially of
(I) from about 5 percent to about 70 percent of an adduct of
(a) about 6 percent to about 45 percent by weight of a member of the class consisting of alpha-beta-ethylenically unsaturated dicarboxylic acids, and mixtures thereof, and
(b) about 55 percent to 94 percent by weight of an unsaturated fatty ester, said adduct having at least about 50 percent of its acidity neutralized, and
(II) about 30 percent to 95 percent of a resinous composition selected from the class consisting of epoxy esters containing unconjugated unsaturated aliphatic radicals of at least 8 carbon atoms; adducts of an unsaturated fatty acid containing at least 8 carbon atoms and a polymer of an unsaturated primary alcohol and a monomer containing a single $CH_2=C<$ group; diisocyanate modified alkyd resins, and diisocyanate modified drying oils.

3. The coating composition of claim 1 wherein component II is an adduct of a styrene-allyl alcohol copolymer and an unsaturated fatty acid having at least 8 carbon atoms.

4. The coating composition of claim 1 wherein the adduct is an adduct of maleic anhydride and linseed oil.

3,293,282
POLYVINYL CHLORIDE-POLYVINYL ACETATE BLENDS WITH KETONE SOLVENTS AND METHODS OF SPRAYING SAME
Bernard Weisman, Brooklyn, N.Y., assignor to Shade Specialties, Ltd., Brooklyn, N.Y., a corporation of New York
No Drawing. Filed Feb. 27, 1964, Ser. No. 347,682
9 Claims. (Cl. 260—32.8)

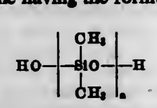
1. A spraying composition for application to fabrics to produce window shades, lamp shades and the like comprising approximately 3 to 10% by weight of said composition of a resin mixture consisting of approximately 20% to 60% by weight of said mixture of polyvinyl chloride and approximately 40% to 80% by weight of said resin mixture of polyvinyl acetate, a solvent mixture for the resin comprising approximately 8% to 41% by weight of said composition of cyclohexanone and approximately 4% to 30% by weight of said composition of a volatile liquid organic solvent having a boiling point below 120° C., and approximately 42% to 85% by weight of said composition of a propellant which is a non-solvent for the resin.

3,293,283
THERMOSETTABLE RESIN COMPOSITIONS AND METHOD FOR FORMING LOW FRICTION SURFACE COATINGS
George F. Paulus, Port Huron, Mich., assignor to Acheson Industries, Inc., Port Huron, Mich., a corporation of Michigan
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,667
12 Claims. (Cl. 260—37)

1. A dispersion for use in forming low friction surface coatings consisting essentially of a fluorocarbon polymer selected from the group consisting of fluorinated and fluoro-chlorinated polymers of C_2–C_4 olefins having a molecular weight in the range of about 2,000 to about 10,000 and being in the form of fine particles having a size within the range of about ½ to about 10 microns, at least one thermosettable resin dissolved in a solvent for said resin, said dispersion containing total solids in the range of about ½% to about 50%, said fluorocarbon polymer constituting between about 5% and about 60%, by weight of the total solids, and said thermosettable resin constituting between about 40 and about 95%, by weight of the total solids.

3,293,284
COMPOSITIONS CONTAINING SILANOL CHAIN-STOPPED POLYDIMETHYLSILOXONE, METHOXY-STOPPED SILOXONE COPOLYMER, AND METHYLTRIACETOXYSILANE
Clarence L. Smith, Elmora, and George P. De Zuba, Waterford, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Sept. 4, 1962, Ser. No. 221,326
1 Claim. (Cl. 260—37)

A substantially anhydrous fluid composition comprising by weight, (1) 100 parts of a silanol chain-stopped polydimethylsiloxane having the formula



(2) from 15 to 40 parts of a methoxy-stopped copolymer of 10 to 30 mole percent of methylsiloxy units and 90 to 70 mole percent of dimethylsiloxy units, based on moles of methylsiloxy units and dimethylsiloxy units, (3) from 2 to 20 parts of methyltriacetoxysilane, and (4) from 10 to 300 parts of a filler, where n is an integer equal to from 10 to 10,000, inclusive.

3,293,285
POLYOXYMETHYLENE FIBERS FOR THICKENING ORGANIC RESINS
Carroll F. Doyle, Ellicott City, and Luther O. Young, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed July 12, 1963, Ser. No. 294,748
36 Claims. (Cl. 260—37)

1. Thixotropically thickened composition comprising a resinous organic liquid having incorporated therein a small amount of fibers of irradiation produced polyoxymethylene, said fibers having a major dimension less than about 50 microns and a length to diameter ratio greater than about 10 to 1.

3,293,286
STABILIZED POLYETHYLENE COMPOSITIONS HAVING ANTI-BLOCK CHARACTERISTICS
Shaffer Evatt Horne, Texas City, Tex., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 6, 1963, Ser. No. 328,510
6 Claims. (Cl. 260—41)

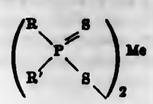
1. A method for improving the anti-block characteristics of polyethylene without promoting degradation under conditions of elevated temperature and mechanical working which comprises incorporating in said polyethylene from about 0.01 to about 1.0% by weight of a diatomaceous earth which has been treated by intimately admixing said diatomaceous earth at atmospheric pressure and temperature with an excess of an aqueous alkaline solution having a concentration from about 1% to about 50% of an alkali selected from the group consisting of ammonia and the alkali metal and alkaline earth metal hydroxides, carbonates and phosphates, separating said diatomaceous earth from said solution by filtration, washing it with an excess of water, and then heating it to dryness at a temperature from about 100° to 150° C.

3,293,287
STABILIZATION OF POLYALDEHYDES WITH TRIALKYL PHOSPHITES
Eli Perry, Galveston, Tex., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Sept. 20, 1962, Ser. No. 225,143
3 Claims. (Cl. 260—45.7)

1. A thermally-stabilized polymeric composition comprising a high polymer of an aliphatic saturated aldehyde having from 2 to 10 carbon atoms and from about 0.01% to about 15% by weight of said polymer of a trialkyl phosphite in which the alkyl groups contain from 1 to 20 carbon atoms.

3,293,288
STABILIZATION OF POLYOLEFINS WITH CERTAIN METAL DITHIOPHOSPHINATE SALTS
Jerry Peter Millonig and Frank Joseph Arthur, Jr., both of Franklin Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 6, 1964, Ser. No. 357,738
5 Claims. (Cl. 260—45.75)

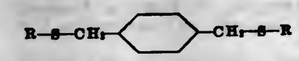
1. A composition having stability against the deteriorating effects of heat and light, which comprises a polymer of a member selected from the group consisting of ethylene and propylene and from 0.01 percent to 5.0 percent of a salt represented by the formula:



wherein R and R' are individually selected from the group consisting of alkyl of 2–18 carbons, lower cycloalkyl, monocyclic and lower aralkyl; and Me is a cation of metal selected from the group consisting of zinc, nickel, lead, cadmium, calcium, copper, tin and manganese.

3,293,209
LOW PRESSURE POLYMERS STABILIZED BY DIETHERS OF DIMERCAPTANS
Francis P. Baldwin, Summit, Robert L. McDougall, Newark, Clifford W. Mecomber, Roselle, and Jeffrey H. Bartlett, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Apr. 4, 1961, Ser. No. 100,501
6 Claims. (Cl. 260—45.95)

1. Novel chemical diethers of dimercaptans corresponding to the formula



wherein R is an alkyl group containing 12 to 20 carbon atoms.

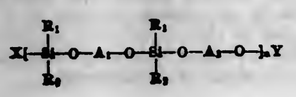
3. A composition of matter comprising a low pressure solid alpha ethylenically unsaturated olefin hydrocarbon polymer prepared by utilizing a partially reduced heavy transition metal halide catalyst, stabilized against process and oxidative degradation by .005 to 2 weight percent based on the polymer of each of both a phenolic antioxidant and the diethers of dimercaptans of claim 1.

3,293,210
STABILIZED POLYOXYMETHYLENES CONTAINING ZINC DIALKYL DITHIOPHOSPHATE AND 2-HYDROXY-4-ALKOXY BENZOPHENONE
Vivian Griffiths, Welwyn Garden City, and John Carswell McGowan, Harpenden, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Mar. 28, 1963, Ser. No. 268,595
Claims priority, application Great Britain, Apr. 2, 1962, 12,560/62
5 Claims. (Cl. 260—45.75)

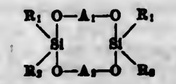
1. An oxymethylene polymer composition exhibiting improved stability comprising a high molecular weight oxymethylene polymer and a stabilizing system comprising: (a) zinc dialkyl dithiophosphate and (b) a 2-hydroxy-4-alkoxy benzophenone, each of said dithiophosphate and said benzophenone present in an amount of from 0.1 to 5% by weight, based on the weight of the oxymethylene polymer.

3,293,211
PROCESS FOR THE PRODUCTION OF HIGH MOLECULAR WEIGHT LINEAR ORGANO-SILICIC ACID ARYLENE POLYESTERS
Heinrich Krimm, Krefeld-Bockum, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed July 11, 1961, Ser. No. 123,130
Claims priority, application Germany, July 16, 1960, F 31,682, F 31,683
6 Claims. (Cl. 260—47)

1. A process for the production of high molecular weight linear organo-silicic acid arylene polyesters which comprises (1) heating at temperatures from about 300 to about 450° C. under reduced pressure, a high molecular weight linear polyester of the general formula:



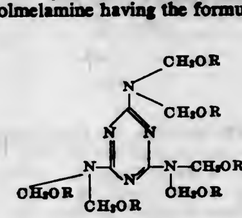
wherein A_1 and A_2 denote arylene radicals, R_1 and R_2 denote members of the group consisting of methyl, ethyl and phenyl radicals, n denotes a whole number greater than 3, X denotes a member of the group consisting of a halogen atom, methoxy, ethoxy, phenoxy, —O—R_3—OH and —O—R_3—OH, and Y denotes a member of the group consisting of hydrogen, a halogen-, methoxy-, ethoxy-, phenoxy-, dimethyl-, diethyl-, methylethyl-, diphenyl-, -methylphenyl-, and -ethylphenyl-silane radical, (2) distilling off from the reaction mixture the thus formed macrocyclic organo-silicic acid arylene esters of the general formula:



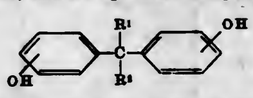
wherein A_1, A_2, R_1 and R_2 have the same significance as above, and (3) reheating said macrocyclic silicic acid arylene esters at temperatures from about 150° to about 400° C., thus reforming, by splitting the cyclic ester chain, a high molecular weight linear organo-silicic acid arylene polyester.

3,293,212
THERMOSETTING REACTION PRODUCT OF HEXAKIS - (ALKOXYMETHYL)MELAMINES AND BISPHENOLS
George Edward Power, Cincinnati, Ohio, and Robert James Kassal, Gainesville, Fla., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 24, 1963, Ser. No. 290,232
5 Claims. (Cl. 260—47)

1. A composition of matter consisting of a reaction product produced by the reaction of a hexaalkyl ether of a hexamethylolmelamine having the formula



wherein R is an alkyl radical having from 1 to 4 carbon atoms, inclusive, and a bisphenol having the formula



wherein R^1 and R^2 are selected from the group consisting of hydrogen, an alkyl radical having from 1 to 4 carbon atoms, inclusive, and R^1 and R^2, in combination with the central carbon atom, constitute a saturated cyclic hydrocarbon of 5 to 6 carbon atoms the central carbon atom being part of said cyclic hydrocarbon.

3,293,213
TERPOLYMERIC RESINS FROM BIS-(p-HYDROXYCUMYL)BENZENE
Oliver A. Barton, Florham Park, and Enid Schwartz, New Providence, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed July 23, 1962, Ser. No. 211,863
14 Claims. (Cl. 260—47)

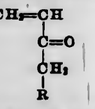
1. Terpolymeric resins obtained by reaction of a bisphenol of the group consisting of 1,4-bis(p-hydroxycumyl)benzene and 1,3-bis(p-hydroxycumyl)benzene and an epoxide resin prepared from 2,2-bis(p-hydroxyphenyl)propane and epichlorohydrin.

3,293,214
PREPARATION OF A SULFOMETHYLATED BISPHENOL-FORMALDEHYDE COMPOSITION FOR TREATING WOOL
James F. Feeman, Wyomissing, Pa., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
No Drawing. Filed May 15, 1962, Ser. No. 194,993
1 Claim. (Cl. 260—49)

A process for preparing a water soluble condensation product which comprises dissolving 2,2-bis(4-hydroxyphenyl) propane in aqueous alkali, condensing 2 moles of the solubilized alkaline bis-phenol with from 1 to 1.8 moles of formaldehyde at temperatures up to reflux, strongly acidifying the reaction mass and heating the acidified mixture to temperatures up to reflux to complete the condensation to a water insoluble resinous material, redissolving the resinous material in aqueous alkali, reacting the redissolved resin in the presence of a compound consisting of from about 1 to 4 moles of formaldehyde-bisulfite adduct at temperatures up to reflux to introduce an average of from 1 to 2 sulfomethyl groups for each four benzene nuclei in the total structure, precipitating the water soluble condensation product by acidifying and salting the reaction mass and then recovering the precipitated condensation product.

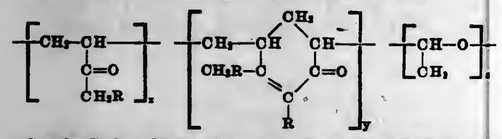
3,293,215
ALKYLVINYL KETONE-ACETALDEHYDE COPOLYMERS
Jerry N. Keral, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,905
9 Claims. (Cl. 260—64)

1. A process which comprises contacting acetaldehyde with a vinyl ketone having the formula



wherein R is selected from the group consisting of hydrogen and an alkyl radical having from 1 to 3 carbon atoms, inclusive, in the presence of a tertiary phosphine having a pKa of at least about 8.0 and at a temperature ranging from about —20° C. to about 50° C.

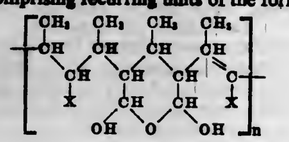
5. A copolymer having the structural formula



wherein R is selected from the group consisting of hydrogen and an alkyl radical having from 1 to 3 carbon atoms, inclusive, and the ratio of x:y:z ranges from about 1:1:1 to about 1:3:10.

3,293,216
DERIVATIVES OF POLYCROTONALDEHYDE
Jerry Norman Keral, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 1, 1963, Ser. No. 262,255
9 Claims. (Cl. 260—67)

1. A polymer possessing excellent thermal softening properties comprising recurring units of the formula



wherein n is the number of recurring units in the polymer and X is selected from the group consisting of

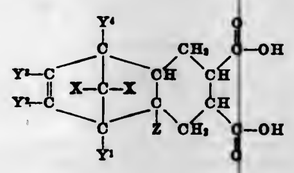
(A) —CHOH—SO_2Y
wherein Y is an alkali metal
(B) —COOH and
(C) —CH=N—Z
wherein Z is selected from the group consisting of
(1) —NH—R
wherein R is selected from the group consisting of an aryl radical and a substituted aryl radical, each of said aryl radicals having from 6 to 10 carbon atoms, inclusive, and
(2) —NH—CO—NH_2.

3,293,217
METHOD OF PRODUCING POLYOXYMETHYLENE
Masataka Amagasa, 15 Kamicho Kosugafukuro, and Tadashi Yamaguchi, 66 Nakajimacho, both of Sendai-shi, Japan
No Drawing. Filed Mar. 12, 1963, Ser. No. 264,715
Claims priority, application Japan, Mar. 15, 1962, 37/10,232
5 Claims. (Cl. 260—67)

1. A method of producing polyoxymethylenes by means of the polymerization of trioxane, which is characterized in that the polymerization is effected in the presence of 1/12 to 20 moles of fluid sulfur dioxide per mole of trioxane at a temperature of —20° to 100° C.

3,293,218
FORMALDEHYDE-POLYHALOGENATED POLYCYCLIC ACID ANHYDRIDE COPOLYMERS
Henri Sidi, Paramus, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed July 9, 1963, Ser. No. 293,845
10 Claims. (Cl. 260—67)

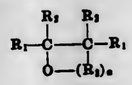
1. A copolymer consisting essentially of recurring oxymethylene groups and recurring polyhalogenated methanooctahydronaphthoyl groups derived from a comonomer selected from the group consisting of (a) polyhalogenated methanooctahydronaphthalic acids having a structure represented by the formula



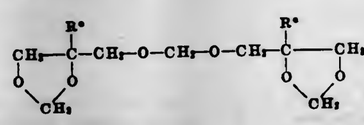
in which each X is a substituent selected from the group consisting of hydrogen, chlorine, and bromine, Y^1, Y^2, Y^3, and Y^4 each is a substituent selected from the group consisting of chlorine and bromine, and Z is a substituent selected from the group consisting of hydrogen, chlorine, bromine, and lower alkyl groups, (b) the anhydrides of said acids, (c) the lower alkylene and alkyl esters of said acids, and (d) mixtures thereof, said copolymer being characterized by an inherent viscosity of at least 0.1 when measured at 150° C. on a 0.5 percent by weight solution of the copolymer in dimethylformamide containing 1 percent by weight of diphenylamine.

3,293,219
POLYACETAL TERPOLYMERS CONTAINING RANDOMLY RECURRING GROUPS DERIVED FROM A METHYLENE-BIS-(4-OXYMETHYL-1,3-DIOXOLANE)
Roy T. Gottemann, Glen Rock, Henri Sidi, Paramus, and Robert Hood Barth, Ridgefield, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed July 10, 1963, Ser. No. 294,178
5 Claims. (Cl. 260—67)

1. A normally solid, thermally stable, polyacetal terpolymer consisting essentially of (a) randomly recurring oxymethylene groups, (b) from about 0.1 to about 15 percent by weight of randomly recurring oxyalkylene groups derived from a cyclic ether having the structural formula



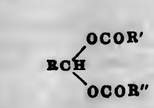
in which R_1 and R_2 represent members selected from the group consisting of hydrogen atoms, alkyl groups having from 1 to 3 carbon atoms, and halogen-substituted alkyl groups having from 1 to 3 carbon atoms, R_3 represents a member selected from the group consisting of methylene, oxymethylene, lower alkyl and haloalkyl-substituted oxymethylene groups, and n is an integer in the range from zero to three, and (c) from about 0.1 to about 15 percent by weight of randomly recurring groups derived from a methylene-bis-(4-oxymethyl-1,3-dioxolane) having the structural formula



in which R° represents a member selected from the group consisting of hydrogen atoms, lower alkyl and hydroxy-substituted alkyl groups, the polyacetal terpolymer being characterized by a viscosimetrically determined average molecular weight in the range from 10,000 to 100,000.

3,293,220
PROCESS FOR HEAT STABILIZATION OF POLYOXYMETHYLENE
Muneyoshi Minami, Yoshiro Tsuda, Kiichiro Sando, Junzo Kashiro, and Kiyoshi Tamura, all of Shiga-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Oct. 8, 1963, Ser. No. 314,599
Claims priority, application Japan, Oct. 11, 1962, 37/43,795
4 Claims. (Cl. 260—67)

1. A process for the heat stabilizing of polyoxymethylene which comprises substitutionally acylating polyoxymethylene with an aldehyde dicarboxylate of the formula:



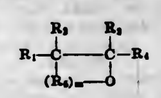
wherein R is selected from the group consisting of alkyl radicals having from 1 to about 20 carbon atoms, an aryl radical, an alicyclic radical, a furfuryl radical and substituted derivatives thereof; and R′ and R″ are selected from the group consisting of organic radicals derived from lower aliphatic monocarboxylic acids, fatty acids, aromatic carboxylic acids and furoic acid;
in the presence of a catalytic amount of an acylating catalyst selected from alkali and alkaline earth salts of saturated aliphatic monocarboxylic acids, aromatic amines, aliphatic amines, heterocyclic nitrogen-containing compounds and salts thereof, said aldehyde dicarboxylate being employed in an amount of from 2 to 10 times by weight of the polyoxymethylene.

3,293,221
PROCESS FOR THE PRODUCTION OF COPOLYMERS OF FORMALDEHYDE OR TRIOXANE
Werner Kern and Volker Jaacks, Mainz (Rhine), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt, Germany
No Drawing. Filed Oct. 13, 1965, Ser. No. 495,666
Claims priority, application Germany, Aug. 29, 1959, D 31,399; Mar. 10, 1960, D 32,824
9 Claims. (Cl. 260—67)

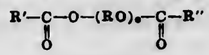
1. A method of preparing solid copolymers which comprises copolymerizing at least one formaldehyde compound selected from the group consisting of monomeric formaldehyde and trioxane with 1,3-dioxacycloheptane under essentially water free conditions.

3,293,222
BRANCHED CHAIN COPOLYMERS OF FORMALDEHYDE
Henri Sidi, Paramus, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed Nov. 5, 1965, Ser. No. 506,571
6 Claims. (Cl. 260—67)

1. A normally solid, high molecular weight, branched chain copolymer comprising the acylated polymerization product formed by (a) contacting a formaldehyde source selected from the group consisting of monomeric formaldehyde and trioxane and at least one cyclic ether having a structure represented by the formula



in which R_1, R_2, R_3 and R_4 each represents a substituent selected from the group consisting of hydrogen, lower alkyl, and chloro-substituted lower alkyl, R_5 represents a divalent substituent selected from the group consisting of methylene, oxymethylene, alkyl- and haloalkyl-substituted methylene, and alkyl- and haloalkyl-substituted oxymethylene, and m represents a number from zero to three, with a polymerization initiator in the presence of an alkylene dicarboxylate having a structure represented by the formula



in which R is a divalent substituent selected from the group consisting of —CH_2— and —$CH(CH_3)$—, R′ and R″ each represent substituents selected from the group consisting of alkyl groups having from 1 to 18 carbon atoms, cycloalkyl groups, and aryl groups, and n is an integer from 1 to 3, at a temperature in the range from about —100° C. and 80° C. under substantially anhydrous conditions, and (b) heating the polymerization product in the presence of the alkylene dicarboxylate until all of its terminal groups are substantially completely acylated.

3,293,223
POLYESTERS FROM MIXTURES OF NAPHTHALENE DICARBOXYLIC ACIDS
Irl N. Duling West Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Mar. 3, 1964, Ser. No. 349,146
12 Claims. (Cl. 260—75)

1. A condensation polymer of (A) a mixture selected from the group consisting of a mixture of the 2,6- and 2,7-isomers of naphthalene dicarboxylic acids and a mixture of the lower dialkyl esters of the 2,6- and 2,7-isomers of naphthalene dicarboxylic acids and (B) a diol selected from the group consisting of 1,4-cyclohexanedimethanol, 1,2-ethanediol, 1,3-propanediol and 1,4-butanediol, the relative proportions of the (A) and (B) constituents being such as to form a polyester having a molecular weight in the range of from 2400 to 24,000 and the weight ratio of 2,6-isomer to 2,7-isomer in said polyester being in the range of 1:3 to 19:1.

3,293,224
TRIS(2-HYDROXYETHYL)ISOCYANURATE HOMOPOLYMER
Charles B. R. Fitz-William, Jr., Richmond, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,854
4 Claims. (Cl. 260—77.5)

1. A method of preparing tris(2-hydroxyethyl)isocyanurate solid resinous homopolymer which comprises heating tris(2-hydroxyethyl)isocyanurate at temperature of 150° to 250° C. in the presence of an acidic etherification-type condensation catalyst.

4. Solid resinous homopolymer of tris(2-hydroxyethyl)isocyanurate, prepared by the method of claim 1.

3,293,225
METHOD FOR PRODUCING STABILIZED POLYMERS OF δ-VALEROLACTONE
Ryuichi Waksun, Kazuo Sasotome, and Yasuto Kodaira, all of Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan
No Drawing. Filed Feb. 4, 1964, Ser. No. 342,536
Claims priority, application Japan, Feb. 6, 1963, 38/4,726
4 Claims. (Cl. 260—78.3)

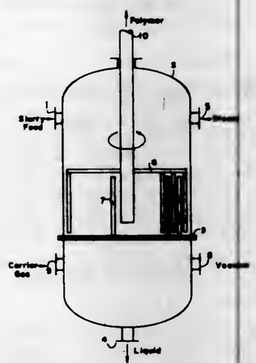
1. A method for producing a polymer, comprising polymerizing δ-valerolactone in the presence of an initiator having in its molecule more than one functional group selected from the class consisting of hydroxyl and amino groups, and acylating the resulting polymer to convert the terminal hydroxyl groups of the polymer into ester linkages, and thereby heat stabilize the polymer.

4. A method for producing a polymer, comprising polymerizing δ-valerolactone in the presence of an initiator having in its molecule two functional groups selected from the class consisting of hydroxyl and amino groups, and reacting the resulting polymer with an isocyanate compound to convert the terminal hydroxyl groups of the polymer into urethane linkages, and thereby heat stabilize the polymer.

3,293,226
PROCESS FOR THE HALOGENATION OF POLYMERS AND COPOLYMERS OF BUTADIENE
Emery A. F. de Schriver, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 8, 1963, Ser. No. 322,501
Claims priority, application Netherlands, Apr. 16, 1963, 291,579
7 Claims. (Cl. 260—85.1)

1. The process for halogenating a rubbery butadiene polymer containing at least about 65% by weight of butadiene comprising reacting the polymer with an elemental halogen having an atomic weight greater than 30 in a tetrahalomethane solvent at temperatures between about −30° C. and +50° C. in the presence of 1–15 atmospheres hydrogen halide pressure whereby a halogenated polymer having 40–68% by weight of halogen separates from the tetrahalomethane and is separated therefrom.

3,293,227
RECOVERY OF POLYMERS FROM SLURRIES
Henry F. Boggess and Jerome C. Wroblaski, Texas City, Tex., assignors to Monsanto Company, a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 245,778
10 Claims. (Cl. 260—88.2)



3. A method for separating granular solid polymer from a polymer-liquid slurry in a pressure vessel and recovering finely-divided solid polymer in a form for ready conveying, said method comprising, in sequence, introducing said polymer-liquid slurry into said pressure vessel, filtering said polymer-liquid slurry to remove a major portion of said liquid carrier from said polymer, contacting the resulting polymer with a displacing fluid to remove the remaining portion of said liquid carrier from said polymer, drying the resulting polymer, said steps of filtering, contacting and drying being conducted in a single vessel while mechanically agitating said polymer to prevent agglomeration of the same, and removing the resulting polymer from said pressure vessel in a finely-divided form suspended in a gaseous medium.

4. The process of claim 3 wherein the solid polymer is chosen from the group consisting of an olefin homopolymer and an olefin copolymer.

3,293,228
METHOD FOR PRODUCING α-OLEFIN POLYMERS UTILIZING TITANIUM TRICHLORIDE AND AN ANTIMONY-ALUMINUM COMPLEX AS THE CATALYST
Yukichi Takashi and Itsuho Aishima, Nobeoka-shi, and Yuji Kobayashi and Yoshio Tsunoda, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, a corporation of Japan
Filed Sept. 20, 1962, Ser. No. 224,963
14 Claims. (Cl. 260—93.5)

1. A method for producing a poly-α-olefin which comprises polymerizing an α-olefin selected from the group consisting of propylene, butene-1, pentene-1, 3-methyl-butene-1, 4-methyl-pentene-1 and styrene, in the presence of a catalyst prepared by reacting (A) titanium trichloride with (B) one organo-metallic complex selected from the group consisting of:

(1) $SbR_xXAl_yR'_6$
wherein X represents one member selected from the group consisting of Cl and Br; R represents an ethyl group; and R' represents an alkyl group having 2 to 6 carbon atoms and the number of the alkyl group having at least 4 carbon atoms is limited to at most 3,

(2) $SbR_3''XAl_2R'_3X'$,
wherein X and X' represent respectively members selected from the group consisting of Cl and Br; R represents an ethyl group; R' represents an alkyl group having 2 to 6 carbon atoms and the number of the alkyl group having at least 5 carbon atoms is limited to at most 2; and R'' represents an alkyl group having 2 to 6 carbon atoms,

(3) $SbR_4XAlR'_nX'_{3-n}$
wherein X and X' represent respectively members selected from the group consisting of Cl, Br and I; R and R' represent respectively alkyl groups having 1 to 6 carbon atoms; and *n* is an integer between 1 and 3, the mole ratio of said organo metallic complex to titanium trichloride being 0.1–10:1.

3,293,229
STABLE, PROMOTED CATALYST SYSTEMS FOR HIGHLY CRYSTALLINE ALPHA OLEFIN POLYMERS
Isaac Levine, East Brunswick, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 28, 1963, Ser. No. 254,448
9 Claims. (Cl. 260—93.7)

8. Method for polymerizing olefinically unsaturated hydrocarbon monomers having the formula

$$R_o—CH=CH_2$$

wherein R_o is member selected from the class consisting of hydrogen, saturated aliphatic, alicyclic and aromatic hydrocarbon groups which comprises contacting said monomer with a highly geometrically uniform essentially spheroidal particulate organo-metallic catalyst having an average particle size between 200 and 300 Angstroms in diameter and wherein no appreciable number of particles exceeds 500 Angstroms, said catalyst having been produced from a co-catalyst comprising the fluid shear reaction product of

(A) transition metal halides having the formula

$$MO_aX_b$$

wherein M is a transition metal selected from the class consisting of metals of groups IV–*b*, and V–*b* and VI–*b* of the Deming periodic table having a valence *z* greater than 3 in the compound MO_aX_b; O is oxygen and X is a halogen; *b* is an integer having a value of 2 to *z* and *a* is an integer equal to $z-b/2$ and has a value of at least zero, and

(B) an organo-aluminum compound having the formula

$$AlR_mY_{3-m}$$

wherein R is a hydrocarbon group free of aliphatic unsaturation, *m* is a number greater than zero and not more than 3, and Y is a halogen, and a catalytically activating amount of a hydrocarbon aluminum monohalide compound free of aliphatic unsaturation and from 0.01 to 40 mole percent, based on the transition metal halide, of a halogen free polyalkyl aluminum compound.

3,293,230
THREE-COMPONENT ORGANOMETALLIC-TRANSITION METAL HALIDE CATALYSTS AND OLEFIN POLYMERIZATION
Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Jan. 8, 1965, Ser. No. 424,212
The portion of the term of the patent subsequent to Sept. 15, 1981, has been disclaimed and dedicated to the Public
10 Claims. (Cl. 260—93.7)

1. In the polymerization of olefinic hydrocarbon material containing at least three carbon atoms to form solid, crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture containing an organometallic compound having the formulas RM', R_2M^2 and RM^2X wherein M' is an alkali metal selected from the group consisting of sodium, potassium and lithium, M^2 is a metal selected from the group consisting of magnesium and zinc, R is a radical selected from the group consisting of alkyl radicals containing 1 to 8 carbon atoms, phenyl and benzyl and X is a halogen atom selected from the group consisting of chlorine, bromine and iodine, a halide of a transition metal selected from the group consisting of titanium, zirconium, vanadium, chromium and molybdenum, the halide being selected from the group consisting of chlorine, bromine and iodine and an ester having the formula $RCOOR_1$ wherein R has the formula $—(CH_2)_nCOOR_2$ wherein *n* is a number from 0 to 4 and R_1 and R_2 are alkyl radicals containing 1 to 4 carbon atoms, the molar ratio of transition metal halide to said ester being within the range of 1:1 to 1:0.1.

3,293,231
METHOD FOR PROVIDING INCREASED YIELDS OF HIGHLY CRYSTALLINE ALPHA OLEFIN POLYMERS
Robert J. Turbett, Millington, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 28, 1963, Ser. No. 254,449
3 Claims. (Cl. 260—93.7)

1. In the method for polymerizing olefinically unsaturated hydrocarbon monomers having the formula

$$R_o—CH=CH_2$$

wherein R_o is a member selected from the class consisting of hydrogen, saturated aliphatic, alicyclic and aromatic hydrocarbon groups which comprises contacting said monomer with a highly geometrically uniform essentially spheroidal particulate organometallic catalyst having an average particle size between 200 and 300 Angstroms in diameter and wherein no appreciable number of particles exceeds 500 Angstroms, said catalyst having been produced from a co-catalyst comprising the fluid shear reaction product of

(A) transition metal halides having the formula

$$MO_aX_b$$

wherein M is a transition metal selected from the class consisting of metals of groups IV*b*, V*b* and VI*b* of the Deming periodic table having a valence *z* greater than 3 in the compound MO_aX_b; O is oxygen and X is halogen; *b* is an integer having a value of 2 to *z* and *a* is an integer equal to $z-b/2$ and has a value of at least zero, and

(B) an organo-aluminum compound having the formula

$$AlR_mY_{3-m}$$

wherein R is a hydrocarbon group free of aliphatic unsaturation, *m* is a number greater than zero and not more than 3, and Y is a halogen and a catalytically activating amount of a hydrocarbon aluminum monohalide compound free of aliphatic unsaturation, said fluid shear producing a heat output of at least 10 calories per minute

per liter of agitated fluid, the improvement which comprises effecting the contacting in the presence of, as a diluent, an inert aromatic compound free of aliphatic unsaturation which is liquid under the polymerization conditions used.

3,293,232
STABLE OLEFIN CATALYST SYSTEMS
Arthur K. Ingberman, Bridgewater, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Original application Aug. 21, 1961, Ser. No. 132,578, now Patent No. 3,179,604, dated Apr. 20, 1965. Divided and this application Mar. 2, 1964, Ser. No. 348,754
8 Claims. (Cl. 260—93.7)

1. Method for polymerizing olefinically unsaturated hydrocarbon monomers having the formula R—CH=CH$_2$ wherein R is a member selected from the class consisting of hydrogen, saturated aliphatic, alicyclic and aromatic hydrocarbon groups which comprises contacting said monomer with a highly geometrically uniform essentially spheroidal particulate organo-metallic catalyst having an average particle size between 200 and 300 Angstroms in diameter and wherein no appreciable number of particles exceeds 500 Angstroms, said catalyst having been produced from

(A) transition metal halides having the formula

$$MO_aX_b$$

wherein M is a transition metal selected from the class consisting of metals of groups IV*b*, V*b* and VI*b* of the Deming periodic table having a valence *z* greater than 3 in the compound MO_aX_b; O is oxygen and X is a halogen; *b* is an integer having a value of 2 to *z* and *a* is an integer equal to

$$\frac{z-b}{2}$$

and has a value of at least zero, and

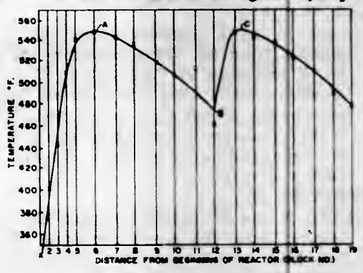
(B) an organo-aluminum compound having the formula

$$AlR_mY_{3-m}$$

wherein R is a hydrocarbon group free of aliphatic unsaturation, *m* is a number greater than zero and not more than 3, and Y is a halogen, by contacting said metal halide reactant with a sufficient amount of said organo-aluminum compound reactant to reduce the valence of a portion of M to less than 3 while each reactant is dissolved in a reaction medium comprising an inert organic solvent therefor which is not a solvent for their reaction product, and throughout the contacting step subjecting the reactants to continual high speed agitation in a pattern characterized by internal fluid shear which is sufficient to produce at least 10 calories per minute per liter of solvent and precipitating the reaction product from the reaction medium.

3,293,233
PROCESS FOR POLYMERIZING ETHYLENE AT HIGH PRESSURES IN THE PRESENCE OF A MIXTURE OF PEROXIDES HAVING DIFFERENT HALF LIVES
Michael Erchak, Jr., Ridgewood, Kenneth W. Doak, Wyckoff, and Robert M. Douglas, Dumont, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of California
Filed Apr. 9, 1963, Ser. No. 271,660
4 Claims. (Cl. 260—94.9)

1. A process for polymerizing ethylene in a tubular reactor at pressures of at least 15,000 p.s.i. and at temperatures which rise, due at least in part to the heat generated by the polymerization reaction, from about 225° F. to as high as 600° F., said tubular reactor containing along the length thereof at least first and second spaced apart peroxide initiator introduction points, the ethylene being continuously introduced at one end of the reactor, said process comprising continuously introducing a first mixture of at least three peroxide initiators at the first introduction point to cause a first polymerization temperature curve rise, and a second mixture of at least two peroxide initiators at the second introduction point to cause a second polymerization temperature curve rise, said first mixture of initiators having a major proportion



of initiators having a 10 half-life at temperatures of from 110° to 175° F. and distinct but overlapping decomposition temperature ranges, said second mixture of initiators having a major proportion of initiators having a 10 hour half-life at temperatures of above 175° F. and distinct but overlapping decomposition temperature ranges, said second mixture of peroxide initiators being introduced after cooling the ethylene polymerization reaction from the first polymerization temperature rise occurring after introduction of said first mixture of peroxide initiators.

3,293,234
RECOVERY OF POLYOLEFINS
James V. Cavender, Jr., Texas City, Tex., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed June 14, 1963, Ser. No. 287,781
11 Claims. (Cl. 260—94.9)

11. In a process for the production of polyethylene by polymerization of ethylene in the presence of a catalytic amount of a catalyst comprising titanium tetrachloride and diisobutylaluminum hydride, said catalyst being suspended in n-hexane, the improvement providing for recovery of polyethylene having reduced catalyst residues which comprises quenching the catalyst after polymerization has taken place and before any subsequent removal of the polymer from the reaction mixture by heating said reaction mixture with methanol and from about 2 to about 4 moles of ferric ammonium sulfate per mole of titanium in said reaction mixture at a temperature in the range from about 90° to about 100° C. for a period of time from about 30 to about 60 minutes and recovering polyethylene from the resulting mixture.

3,293,235
RECOVERY OF POLYOLEFINS
James V. Cavender, Jr., and Clinton E. Howard, Texas City, Tex., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed June 14, 1963, Ser. No. 287,782
11 Claims. (Cl. 260—94.9)

11. In a process for the production of polyethylene by polymerization of ethylene in the presence of a catalytic amount of a catalyst comprising titanium tetrachloride and diisobutylaluminum hydride, said catalyst being suspended in n-hexane, the improvement providing for recovery of polyethylene having reduced catalyst residues which comprises quenching the catalyst after polymerization has taken place and before any subsequent removal of the polymer from the reaction mixture by heating said reaction mixture with methanol and from about 1.0 to about 2.0 moles of hydroxylamine hydrochloride per mole of titanium in said reaction mixture at a temperature in the range from about 90° to about 100° C. for a period of time from about 30 to about 60 minutes and recovering polyethylene from the resulting mixture.

3,293,236
PROCESS FOR ISOLATING α_1-ANTITRYPSIN
Hermann E. Schultze and Norbert Heimburger, Marburg, near Marburg (Lahn), Germany, assignors to Behringwerke Aktiengesellschaft, Marburg (Lahn), Germany, a corporation of Germany
No Drawing. Filed June 11, 1964, Ser. No. 375,424
Claims priority, application Germany, June 12, 1963, B 72,263
4 Claims. (Cl. 260—112)

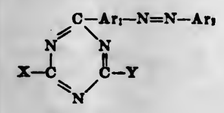
1. A process for isolating α_1-antitrypsin from a solution comprising human or animal body fluids, which process consists solely of buffering said body fluids at a pH between 5.0 and 5.5 with a buffer salt to give a solution containing buffer salt at a molarity between 0.005 and 0.05, contacting the buffered solution with an exchanger containing carboxymethyl groups to adsorb dissolved serum substances other than α_1-antitrypsin therefrom and then recovering α_1-antitrypsin from the solution contacted with said exchanger.

3,293,237
PROCESS OF SOLUBILIZING NATIVE COLLAGEN BY REACTING SAID COLLAGEN WITH A STOICHIOMETRIC AMOUNT OF A MINERAL ACID
Charles J. W. Wiegand, Minneola, Kans., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,446
4 Claims. (Cl. 260—123.7)

1. A process for producing a collagen sol consisting of reacting collagen in the natural state in aqueous medium with a stoichiometric quantity of mineral acid to produce a collagen salt, permitting the reaction to continue until the formation of the collagen salt of the mineral acid is substantially complete, adjusting the water content to provide a concentration of about from 1% to 4% collagen salt in the aqueous medium, warming the aqueous collagen salt and maintaining it at a temperature of at least about 30° C. while physically dispersing the collagen salt in the aqueous medium to produce a collagen sol.

3,293,238
AZO DYESTUFFS CONTAINING A HALOGENATED TRIAZINE
Charles H. Chang, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,627
4 Claims. (Cl. 260—153)

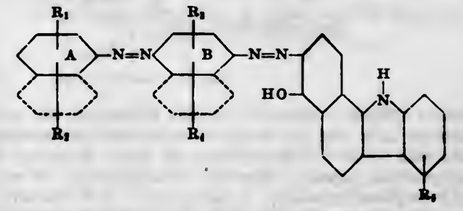
1. A compound of the formula:



wherein X is Cl or Br; Y is Cl, Br or—Ar_1—N=N—Ar_2; Ar_1 is a benzene, naphthalene, anthracene, or diphenyl radical nuclearly substituted by 1 to 4 OH groups, at least one of such groups being in ortho position relative to the azo bridge; and Ar_2 is the residue of a diazotizable primary aromatic amine containing at least one water solubilizing sulfonic or carboxylic acid group.

3,293,239
CARBAZOLE DISAZO DYESTUFFS
Eiji Kolke, Kazuo Odanyashi, and Fujio Kanazawa, Toyonaka-shi, and Hideo Otsuka, Fuse-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., and to Toyo Spinning Co., both of Osaka, Japan, both corporations of Japan
No Drawing. Filed Aug. 16, 1963, Ser. No. 302,736
Claims priority, application Japan, Oct. 25, 1962, 37/47,637
4 Claims. (Cl. 260—164)

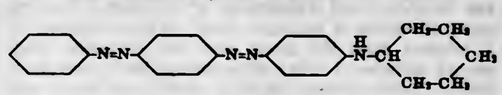
1. A disazo disperse dyestuff having the formula:



wherein R_1 and R_2 each represents a member selected from the group consisting of hydrogen and chlorine atoms, lower alkyl and lower alkoxy radicals and nitro radical, R_3 and R_4 each represents a member selected from the group consisting of hydrogen and chlorine atoms and lower alkyl and lower alkoxy radicals; R_5 represents a member selected from the group consisting of hydrogen and chlorine atoms and alkyl radicals having up to 12 carbon atoms; and A and B each represent a nucleus selected from benzene and naphthalene nuclei.

3,293,240
DISAZO DISPERSE DYESTUFFS
Eiji Kolke and Fujio Kanazawa, Toyonaka-shi, and Hideo Otsuka, Fuse-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., and Toyo Spinning Co., Ltd., Osaka, Japan, corporations of Japan
No Drawing. Filed Aug. 13, 1963, Ser. No. 301,885
Claims priority, application Japan, Aug. 15, 1962, 37/35,390
2 Claims. (Cl. 260—186)

1. A disazo disperse dyestuff having the formula:



3,293,241
AMYLACEOUS MATERIALS
Peter S. Francis, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Sept. 26, 1962, Ser. No. 226,436
7 Claims. (Cl. 260—233.3)

1. Process of producing amylaceous materials of high viscosity which comprises reacting an amylaceous material with a mixed ether-ester of polyoxyethylene having 6–18 carbon atoms in its linear saturated hydrocarbon group, said amylaceous material being selected from the group consisting of the lower hydroyalkyl starches, the lower carboxyalkyl starches, the lower dialkylaminoalkyl starches, acetylated starch and underivatized starch, said amylaceous material being in the gelatinized state prior to said reaction, the reaction temperature being about room temperature to approximately the boiling point of said mixed ether-ester, the reaction time not exceeding about one minute when underivatized starch is the amylaceous material, the amount of said amylaceous material and said mixed ether-ester being about 4%–20% and about 0.017%–2.0%, respectively, by weight of the total amount of said amylaceous material and said mixed ether-ester employed.

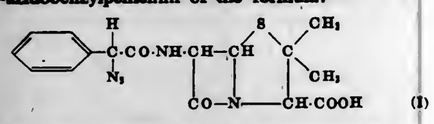
3,293,242

α-AZIDOBENZYL PENICILLINS

Bernt Olof Harald Sjoberg and Bertil Ake Ekstrom, Sodertalje, Sweden, assignors, by mesne assignments, to Beecham Group Limited, Brentford, England, a corporation of Great Britain and Northern Ireland

No Drawing. Filed July 5, 1962, Ser. No. 207,793
Claims priority, application Great Britain, July 21, 1961, 26,488/61
2 Claims. (Cl. 260—239.1)

1. A member selected from the group consisting of the acid α-azidobenzylpenicillin of the formula:



(I)

and its sodium, potassium, calcium, aluminum and ammonium salts and its non-toxic substituted ammonium salts with an amine selected from the group consisting of tri(lower)alkylamines, procaine, dibenzylamine, N-benzyl-beta-phenethylamine, 1-ephenamine, N,N'-bis-dehydroabietylethylenediamine, N,N'-dibenzylethylenediamine and dehydroabietylamine.

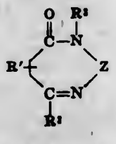
3,293,243

8-ARYL-2,3,6,7-TETRAHYDRO-1,4-DIAZOCIN-5(4H)-ONES AND RELATED COMPOUNDS

Theodore S. Sulkowski, Haverford, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,678
10 Claims. (Cl. 260—239.3)

1. A compound selected from the group consisting of compounds of the formula:



and their pharmaceutically acceptable acid addition salts, wherein Z is selected from the group consisting of ethylene, propylene and o-phenylene; R' is selected from the group consisting of hydrogen, lower alkyl and phenyl; R^2 is selected from the group consisting of lower alkyl, phenyl, halophenyl, lower alkoxyphenyl, halo lower alkylphenyl, hydroxyphenyl, thienyl, pyridyl and furyl; and R^3 is selected from the group consisting of hydrogen and lower alkyl.

3,293,244

PROCESS FOR PREPARATION OF 3-SUBSTITUTED AMINO-$\Delta^{1,3,5(10)}$-ESTRATRIENES AND 19-NOR-$\Delta^{1,3,5(10)}$-PREGNATRIENES

Francisco Alvarez, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,084
18 Claims. (Cl. 260—239.5)

1. A process for the preparation of a 3-substituted amino - $\Delta^{1,3,5(10)}$ - steroid which comprises reacting a member selected from the group consisting of $\Delta^{5(10)}$-6-ol-3 - one; $\Delta^{5(10)}$ - 6 - acyloxy - 3 - one; 3 - cyclo (lower)-alkylenedioxy - $\Delta^{5(10)}$ - 6 - ol and 3 - cyclo (lower) - alkylenedioxy - $\Delta^{5(10)}$ - 6 - acyloxy steroids of the estrane and 19 - nor pregnane series, dissolved in an inert organic solvent, with a member selected from the group consisting of primary and secondary monoamines and polyamines, in the presence of a weak acid catalyst.

6. A process for the preparation of a 3-(N-piperidinyl)-$\Delta^{1,3,5(10)}$-steroid which comprises reacting a member selected from the group consisting of $\Delta^{5(10)}$-6-ol-3-one; $\Delta^{5(10)}$ - 6 - acyloxy - 3 - one; 3 - cyclo (lower) alkylenedioxy - $\Delta^{5(10)}$ - 6 - ol and 3 - cyclo (lower) alkylenedioxy-$\Delta^{5(10)}$ - 6 - acyloxy steroids of the estrane and 19 - nor pregnane series, dissolved in an inert organic solvent, with piperidine in the presence of a weak acid catalyst.

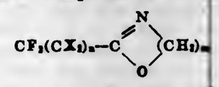
3,293,245

2-FLUOROALKYL OXAZOLINES AND OXAZINES

Morton H. Litt, Taghi G. Bonsiri, and Alan J. Levy, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

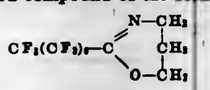
No Drawing. Filed July 13, 1964, Ser. No. 382,350
5 Claims. (Cl. 260—246)

1. A fluorinated compound of the formula:



wherein *n* is an integer of from 0 to 15, *m* is an integer of from 2 to 3 and X at each occurrence is material independently selected from the group consisting of fluorine, chlorine and hydrogen.

4. A fluorinated compound of the formula:



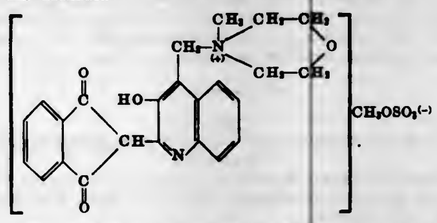
3,293,246

WATER-SOLUBLE CATIONIC QUINOPHTHALONE DYESTUFFS AND PROCESS FOR PREPARING THEM

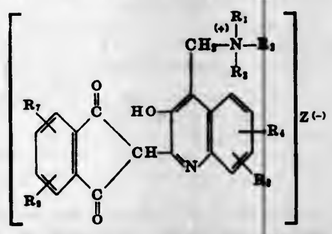
Otto Fuchs, Frankfurt am Main, and Friedrich Iseke, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,811
Claims priority, application Germany, Apr. 5, 1962, F 36,476
10 Claims. (Cl. 260—247.1)

6. The water-soluble cationic quinophthalone dyestuff of the formula



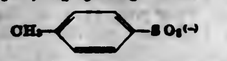
7. The process for preparing the water-soluble cationic quinophthalone dyestuff of the Formula 1



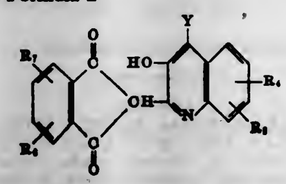
(1)

wherein R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl, hydroxy lower alkyl, benzyl, naphthyl, phenyl and divalent groups forming together with the quaternary nitrogen atom a saturated heterocyclic ring selected from the group consisting of piperidyl and

morpholinyl, R_3 represents a lower alkyl, R_4 R_5, R_6 and R_7 represent members of the group consisting of hydrogen, chlorine, bromine and lower alkyl, and $Z^{(-)}$ represents an anion of the group consisting of chloride, bromide, iodide, $CH_3OSO_3^{(-)}$, $C_2H_5OSO_3^{(-)}$ and

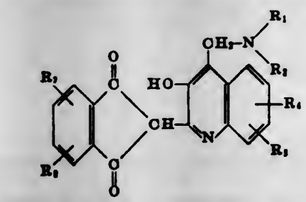


which comprises reacting at a temperature in the range of front about 70° C. to about 150° C. a quinophthalone having the Formula 2



(2)

in which Y represents a member of the group consisting of hydrogen and bromide, and R_4, R_5, R_6 and R_7 are defined as above, with formaldehyde and an amine of the group consisting of ammonia, a lower monoalkyl amine, a lower dialkyl amine, a di-(hydroxy lower alkyl) amine, benzylamine, aniline, N-lower alkylaniline, piperidine and morpholine, and alkylating the primarily obtained quinophthalone aminomethyl compounds having the Formula 3



(3)

in which R_1, R_2, R_4, R_5, R_6 and R_7 are defined as above, with an alkylating agent.

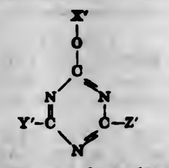
3,293,247

HYDROXYPHENYL-1,3,5-TRIAZINES

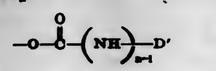
Max Duennenberger, Frenkendorf, Hans Rudolf Biland, Basel, Christian Luethi, Muenchenstein, and Max Schellenberg, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,964
Claims priority, application Switzerland, Mar. 18, 1964, 3,458/64
16 Claims. (Cl. 260—248)

1. A hydroxyphenyl-1,3,5-triazine of the formula



in which X' represents a member selected from the group consisting of hydrogen, alkyl, aryl and alkoxy containing up to 25 carbon atoms which is linked with the oxygen atom through a carbon atom; Y' represents a benzene radical which is linked with the triazine ring directly through a cyclic carbon atom and contains in ortho-position to the bond with the triazine ring a hydroxyl group and in para-position a member selected from the group consisting of a hydroxyl group, an etherified hydroxyl group and the group



wherein *n* stands for a whole number from 1 to 2 and D' is an alkyl, cycloalkyl or benzene residue containing up to 18 carbon atoms and Z' represents a member selected from the group consisting of a halogen atom and a benzene radical, and the molecule contains in all no more than 3 free hydroxyl groups.

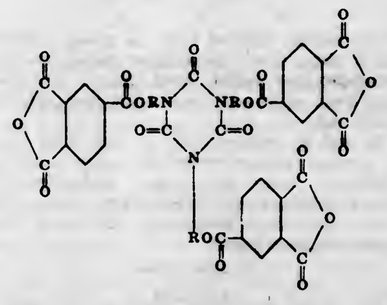
3,293,248

ISOCYANURATE-TRIANHYDRIDE POLYMER

Howard E. Shaffer, Burnt Hills, N.Y., assignor to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York

No Drawing. Filed Dec. 4, 1964, Ser. No. 416,105
3 Claims. (Cl. 260—248)

1.



where R is a lower alkylene radical having at least one carbon atom.

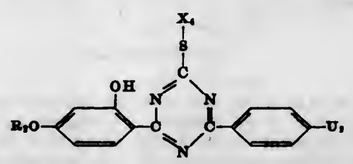
3,293,249

HYDROXYPHENYL-TRIAZINES AND PROCESS FOR THEIR MANUFACTURE

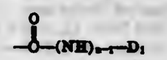
Hans Rudolf Biland, Basel, Christian Luethi, Muenchenstein, and Max Duennenberger, Frenkendorf, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,331
Claims priority, application Switzerland, May 4, 1964, 5,799/64
4 Claims. (Cl. 260—248)

1. A hydroxyphenyl-1,3,5-triazine of the formula



where X_4 represents a member selected from the group consisting of a phenyl group, a para-chlorophenyl group, an alkylphenyl group whose alkyl radical contains 1 to 4 carbon atoms and a 2-benzthiazolyl group; R_1 represents a member seelcted from the group consisting of a hydrogen atom, a C_1–C_{12} alkenyl group, a C_1–C_{12} alkyl group and a radical of the formula



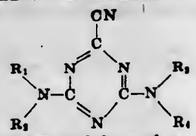
wherein *n* stands for a whole number from 1 to 2 and D_1 for a member selected from the group consisting of a C_1–C_{18} alkyl group, a C_1–C_{12} cycloalkyl group and a benzene radical and U_2 represents a member selected from the group consisting of a hydrogen atom and a chlorine atom.

3,293,250
HERBICIDAL CYANO-s-TRIAZINES

Enrico Knusli, Riehen, near Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Original application Nov. 1, 1961, Ser. No. 149,170, now Patent No. 3,202,499, dated Aug. 24, 1965. Divided and this application Jan. 13, 1965, Ser. No. 431,755
Claims priority, application Switzerland, Nov. 2, 1960, 12,237/60
3 Claims. (Cl. 260—249.9)

1. A compound of the formula:



R_1 is a member selected from the group consisting of lower alkyl, lower alkoxy(lower)alkyl, lower alkylmercapto(lower)alkyl, lower alkenyl, lower alkenyloxy(lower)alkyl and lower alkenylmercapto(lower)alkyl, and

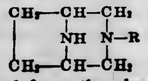
R_2, R_3 and R_4 independently of each other represent a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy(lower)alkyl, lower alkylmercapto(lower)alkyl, lower alkenyl, lower alkenyloxy(lower)alkyl and lower alkenylmercapto(lower)alkyl.

3,293,251
REARRANGEMENT PROCESS FOR 3,8-DIAZABICYCLO-(3.2.1)-OCTANE DERIVATIVES

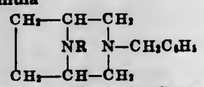
Giorgio Cignarella, Milan, Italy, and Emilio Testa, Vacallo, Ticsin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed May 31, 1963, Ser. No. 284,340
Claims priority, application Great Britain, June 15, 1962, 23,157/62
3 Claims. (Cl. 260—268)

1. Process for preparing 3-acyl-3,8-diazabicyclo-[3,2,1]-octanes of the formula



wherein R is selected from the class consisting of propionyl and benzoyl, which comprises subjecting a compound of the formula



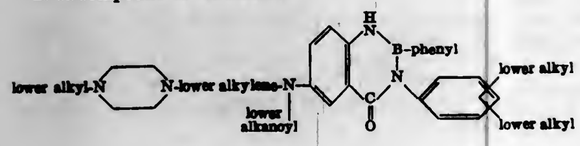
wherein R is as above defined, to the action of hydrogen under pressure in the presence of palladium catalyst to effect replacement of the benzyl group with hydrogen, and then heating the product to cause rearrangement of the aryl group from N_8 to N_3.

3,293,252
BENZAZABORINONE DERIVATIVES AND RELATED COMPOUNDS

Josef Fried, Chicago, Ill., and Frank Herbert Bergeim, Highland Park, and Harry Louis Yale and Jack Bernstein, New Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,058
13 Claims. (Cl. 260—268)

2. A compound of the formula

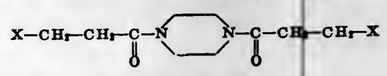


3,293,253
N,N'-BIS-(LOWERALKYLSULFONYLOXY-PROPIONYL) PIPERAZINES

Bruce W. Horrom, Waukegan, and John A. Carbon, Lake Bluff, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,756
2 Claims. (Cl. 260—268)

1. A bis compound corresponding to the formula



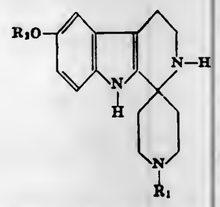
wherein each X is loweralkylsulfonyloxy.

3,293,254
2',3',4',9'-TETRAHYDRO-6'-ALKOXY SPIRO-[PIPERIDINE-4,1'-[1H]PYRIDO[3,4-b]INDOLES]

Jackson B. Hester, Jr., Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

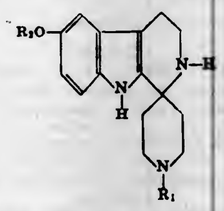
No Drawing. Filed Jan. 31, 1964, Ser. No. 341,756
7 Claims. (Cl. 260—294.7)

1. A compound selected from the group consisting of the free base form and acid addition salts of a compound of the formula:



wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, inclusive.

4. A process for producing a 2',3',4',9'-tetrahydro-6'-alkoxyspiro[piperidine - 4,1'-[1H]pyrido[3,4 - b]indole] of the formula:



wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, in-

3,293,255
NEW SUBSTITUTED COUMARINS

Darius Molho, Boulogne, and Eugène Boschetti, Veniss-ieux, France, assignors to Lipha, Lyonnaise Industrielle Pharmaceutique

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,900
Claims priority, application France, Apr. 5, 1963, 930,612, Patent 1,369,991; Mar. 12, 1964, 967,044, Patent 1,397,382
12 Claims. (Cl. 260—295.5)

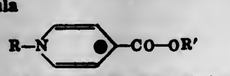
11. Nicotinate of 2(N-diethylamino) ethyl-3-carboxamide-4-hydroxy coumarin.

3,293,256
PROCESS FOR PREPARING STABLE FREE PYRIDINIUM RADICALS

Edward M. Kosower, Syosset, N.Y., and Edward J. Poziomek, Edgewood, Md., assignors to the United States of America as represented by the Secretary of the Army

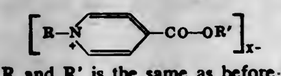
No Drawing. Filed July 7, 1964, Ser. No. 380,963
3 Claims. (Cl. 260—295)

1. In a method for the preparation of stable free radicals of the formula



where R is selected from the group consisting of alkyl radicals of 1–4 carbons, aralkyl radicals of 7–10 carbons and aryl radicals of 6–7 carbons and where R' is a lower alkyl group of 1–4 carbons which comprises the steps of

(a) stirring in a high vacuum a compound of the formula:



where R and R' is the same as before and X^- is a radical selected from the group consisting of iodide, bromide, chloride and toluene sulfonic acid radicals with a finely divided metal of the group consisting of zinc, sodium, magnesium and aluminum in an inert organic solvent at a temperature in the range 0–30° C.;

(b) separating the residue from the solvent;

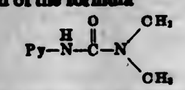
(c) the improvement which consists of distilling the residue into a liquid nitrogen trap whereby an improved yield of said free radicals is obtained.

3,293,257
PYRIDYL UREA COMPOUNDS

William G. Woods, Fullerton, and Robert F. Crawford, La Mirada, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,369
4 Claims. (Cl. 260—295)

1. A compound of the formula



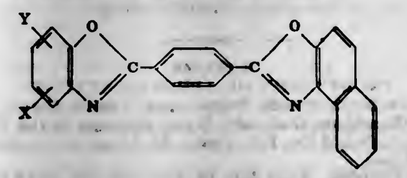
wherein Py is selected from the group consisting of α-pyridyl, γ-pyridyl and the chloropyridyl groups.

3,293,258
CERTAIN 1-(2-BENZOXAZOLYL)-4-(2-NAPHTHOXAZOLYL)-BENZENE COMPOUNDS

Adolf Emil Siegrist, Basel, Erwin Maeder, Aesch, Basel-Land, Peter Liechti, Binningen, and Leonardo Guglielmetti, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed June 2, 1965, Ser. No. 460,814
Claims priority, application Switzerland, June 19, 1964, 8,059/64
14 Claims. (Cl. 260—307)

1. An oxazole compound of the formula



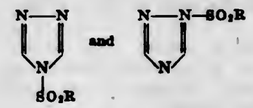
in which X is a member selected from the group consisting of a hydrocarbon radical containing from 1 to 12 carbon atoms, a chlorine atom, and an alkoxy group containing from 1 to 4 carbon atoms, Y stands for a hydrogen atom and X and Y together may form a saturated 6-membered carbocycle condensed with the benzene ring.

3,293,259
CERTAIN 1-ARYLSULFONYL-1,2,4-TRIAZOLES

Milton Wolf, West Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,643
8 Claims. (Cl. 260—306)

1. The compounds selected from the group consisting of



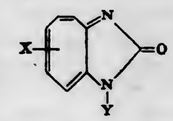
and the acid-addition salts thereof, wherein R is selected from the group consisting of thienyl, phenyl and X-substituted phenyl, wherein X is selected from the group consisting of lower alkyl, lower alkoxy and halo.

3,293,260
1-SUBSTITUTED CYCLOHEPTIMIDAZOL-2(1H)-ONE COMPOUNDS

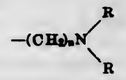
Genshun Sunagawa, Hideo Nakao, Junichi Nakazawa, Nobuo Soma, Yasunobu Sato, Mitsuo Watatani, Yasuhiro Matsumoto, and Shinsaku Kobayashi, all of Shinagawa-ku, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan

No Drawing. Filed Sept. 10, 1963, Ser. No. 307,866
Claims priority, application Japan, Sept. 17, 1962, 37/40,284; Aug. 16, 1963, 38/42,967
9 Claims. (Cl. 260—309.6)

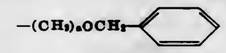
1. A compound having the formula



wherein X is hydrogen, a straight or branched alkyl group of 1 to 5 carbon atoms, halogen or nitro group, and Y is



group, a piperidino alkyl group of 1 to 5 carbon atoms in the alkyl moiety, a pyrrolidino alkyl group of 1 to 5 carbon atoms in the alkyl moiety, a piperazino alkyl group of 1 to 5 carbon atoms in the alkyl moiety, a pyridylalkyl group of 1 to 5 carbon atoms in the alkyl moiety, an unsaturated aliphatic hydrocarbon radical of 2 to 5 carbon atoms, $-(CH_2)_n(OR)$ group or



group, R being an alkyl group of 1 to 5 carbon atoms and *n* being an integer of 1 to 5 inclusive.

3,293,261
1-ISOPROPYL-3-PHENYL-5-AMINOPYRAZOLE

Harry E. Snyder, Jr., Norwich, N.Y., assignor to The Norwich Pharmacal Company, Norwich, N.Y., a corporation of New York

No Drawing. Filed July 6, 1964, Ser. No. 380,681
1 Claim. (Cl. 260—310)

1-isopropyl-3-phenyl-5-aminopyrazole.

3,293,262

PROCESS FOR THE PRODUCTION OF HIGHLY HALOGENATED COPPER PHTHALOCYANINES

André Pugin, Riehen, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Feb. 28, 1964, Ser. No. 348,275
Claims priority, application Switzerland, Mar. 13, 1963, 3,170/63
12 Claims. (Cl. 260—314.5)

1. A process for the production of highly halogenated copper phthalocyanines, comprising heating to 160–260° C., tetrahalogeno-phthalo-dinitrile with a copper donator in sufficient amount for setting free at least one gram atom of copper for every 4 moles of the said dinitrile, in the presence of at least 0.25 mole of ammonia introduced as a member selected from the group consisting of ammonia and an ammonia donator, and recovering the resulting highly halogenated copper phthalocyanines from the reaction mixture.

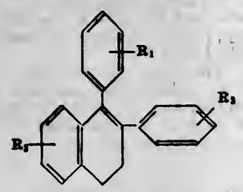
3,293,263

DIPHENYLBENZOCYCLOALKENES

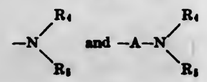
Daniel Lednicer, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,220
16 Claims. (Cl. 260—326.5)

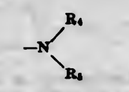
1. A compound selected from the class consisting of (a) compounds having the formula



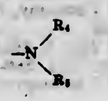
wherein R_1 is selected from the class consisting of hydrogen, lower-alkyl, trifluoromethyl, lower-alkenyl, lower-alkenyloxy, halogen, lower-alkylmercapto,



wherein R_4 and R_5 taken individually represent lower-alkyl and R_4 and R_5 taken together with the attached nitrogen atom represent a heterocyclic radical selected from the class consisting of pyrrolidino, lower-alkylpyrrolidino, piperazino, lower-alkylpiperazino, piperidino, lower-alkylpiperidino, morpholino, hexamethylenimino, homopiperazino, and homomorpholino, and A is an alkylene group containing from 1 to 6 carbon atoms, inclusive; R_2 represents one or two substituents selected from the class consisting of hydrogen, lower-alkyl, trifluoromethyl, lower-alkenyl, lower-alkenyloxy, halogen, lower-alkylmercapto and



wherein R_4 and R_5 have the significance above defined; R_3 represents one or two substituents selected from the class consisting of hydrogen, hydroxy, lower-alkyl, trifluoromethyl, lower-alkenyl, lower-alkoxy lower-alkenyloxy, halogen, lower-alkylmercapto and



wherein R_4 and R_5 have the significance above defined, provided that R_1, R_2 and R_3 do not each represent hydrogen simultaneously,

(b) the addition salts with pharmacologically acceptable acids of those compounds of the above formula which contain a tertiaryamino substituents,

(c) the quaternary ammonium salts obtained by reacting the free bases of the above formula with a member selected from the group consisting of lower-alkyl halides, lower-alkenyl halides, di(lower-alkyl) sulfates, aralkyl halides, and lower-alkyl arylsulfonates.

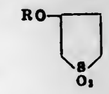
3,293,264

SYNTHESIS OF 2,3-DIHYDROTHIOPHENE-1, 1-DIOXIDE

Robert P. Yunick, Schenectady, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,348
4 Claims. (Cl. 260—332.1)

1. The method for producing 2,3-dihydrothiophene-1,1-dioxide which comprises heating at a temperature of from 200° C. to 750° C. a compound of the formula:



wherein R is a saturated aliphatic oxyhydrocarbyl radical bonded through a carbon atom to the oxytetrahydrothiophene-1,1-dioxide group and containing from 2 to 10 carbon atoms and from 1 to 2 oxygen atoms, said oxygen being present in the form of a moiety selected from at least one member of the group consisting of a hydroxyl moiety, an ether moiety or a carbonyloxy moiety.

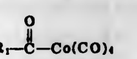
3,293,265

PREPARATION OF π-(2,4)-(BUTENO-4-LACTONYL) COBALT TRICARBONYL COMPOUNDS

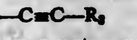
Richard F. Heck, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,850
12 Claims. (Cl. 260—343.6)

1. The process for preparing a π-(2,4)-(buteno-4-lactonyl) cobalt tricarbonyl which comprises reacting an acylcobalt tetracarbonyl of the general formula



in which R_1 represents a radical of the group consisting of saturated and ethylenically unsaturated aliphatic and cycloaliphatic radicals, and aromatic radicals, with an acetylenic compound of the general formula



in which R_2 and R_3 each represents a radical of the group consisting of hydrogen, saturated and ethylenically unsaturated aliphatic and cycloaliphatic radicals, and aromatic radicals, the aromatic group of said aromatic radicals being a hydrocarbon aromatic group.

3,293,266

PRODUCTION OF β-PROPIOLACTONE

Rikitaro Kato, Syoichi Nagato, and Yasushi Omori, all of Higashi-ku, Osaka-shi, Japan, assignors to Dai Nippon Celluloid Co., Ltd., Osaka-shi, Japan, a corporation of Japan

No Drawing. Filed July 15, 1964, Ser. No. 382,937
11 Claims. (Cl. 260—343.9)

1. A process for the production of β-propiolactone from ketene and an aldehyde comprising reacting the ketene and aldehyde in the presence of a complex catalyst

of β-propiolactone, aluminum chloride and zinc chloride which is prepared by adding β-propiolactone dropwise into a solution of anhydrous aluminum chloride in a solvent containing a small amount of zinc chloride, water being also added to said solution.

3,293,267

ESTERS OF DIARYL CARBINOL CARBOXYLIC ACIDS, DIARYL CARBINOL CARBOXYLIC ACIDS AND ANHYDRIDES OF SAID DIARYL CARBINOL CARBOXYLIC ACIDS

John H. McCracken, Monroeville, and Johann G. D. Schulz and Arthur C. Whitaker, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 18, 1963, Ser. No. 288,603
23 Claims. (Cl. 260—346.3)

1. A process for preparing an ester of a diaryl carbinol carboxylic acid which comprises hydrogenating a ketone of the formula



wherein Ar_1 and Ar_2 are aryl radicals selected from the group consisting of phenyl, biphenyl, naphthyl, phenanthryl, anthryl, indyl, dihydronaphthyl and cyclohexylphenyl, R_1 and R_2 are selected from the group consisting of alkyl radicals having from one to 19 carbon atoms and n_1 and n_2 have a value from 0 to four, with the sum of n_1 and n_2 being from one to four, in a liquid alkanol in the presence of hydrogen and a hydrogenation catalyst selected from the group consisting of nickel, cobalt and copper chromite at a temperature of about 110° to about 180° C.

3,293,268

PRODUCTION OF MALEIC ANHYDRIDE BY OXIDATION OF n-BUTANE

Richard I. Bergman, Princeton, N.J., and Norman W. Frisch, Levittown, Pa., assignors to Princeton Chemical Research, Inc., Princeton, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,132
8 Claims. (Cl. 260—346.8)

1. A method for the preparation of maleic anhydride, which comprises oxidizing a reactant consisting essentially of a saturated aliphatic hydrocarbon having from 4 to 10 carbon atoms, at temperatures of from 500° to 600° C., in the presence of a phosphorus-vanadium-oxygen-containing complex catalyst selected from the group consisting of:

(a) a catalyst prepared by reacting phosphoric acid with vanadium oxalate in aqueous solution, and drying and heating the reaction product at temperatures of from 300° to 500° C., the resulting material containing from 1.0 to 3.0 gram atoms of phosphorus per gram atom of vanadium present therein;

(b) a catalyst prepared by reacting phosphoric acid with ammonium meta-vanadate in aqueous solution, and drying and heating the reaction product at temperatures of from 300° to 500° C., the resulting material containing from 1.8 to 2.2 gram atoms of phosphorus per gram atom of vanadium present therein; and

(c) a catalyst prepared by reacting a phosphorus compound selected from the group consisting of phosphoric acid and P_2O_5 with a vanadium compound in an aqueous solution of a hydrogen halide, and drying and heating the reaction product at temperatures of from 300° to 500° C., the resulting material containing from 1.02 to 1.5 gram atoms of phosphorus per gram atom of vanadium present therein.

3,293,269

EPOXIDATION OF OLEFINS

Larry G. Welgamoth, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Nov. 12, 1964, Ser. No. 411,090
8 Claims. (Cl. 260—348.5)

1. The epoxidaion of a hydrocarbon olefin having 2 to about 20 carbons that comprises introducing said olefin and carbon dioxide into contact, under epoxidation conditions, with a reaction medium comprising a reaction solvent selected from the class consisting of water and organic solvents inert to said reaction under said epoxidation conditions containing:

(1) from 5 to about 95 weight percent of a hydroperoxide selected from the class consisting of hydrogen peroxide and organic hydroperoxides consisting of hydrogen, carbon and oxygen and having from 1 to about 20 carbons;

(2) from about 10 to 500 parts by weight per 100 parts of said solvent and hydroperoxide of an alkaline material, sufficient to maintain the pH of said reaction medium between about 6 and 11; and

said epoxidition conditions comprising temperatures from −50° to 250° C. and pressures from about 1 to 10,000 p.s.i.g.

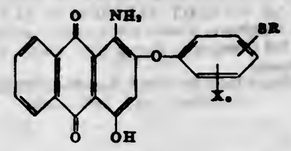
3,293,270

1-AMINO-4-HYDROXY-2-(ALKYLTHIO- AND HYDROXYALKYLTHIOPHENOXY)-ANTHRAQUINONES

Volker Hederich, Cologne-Deutz, Gustav Gehrke, Cologne-Flittard, and Karlfried Wedemeyer, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation of application Ser. No. 245,419, Dec. 18, 1962. This application Sept. 27, 1965, Ser. No. 490,678
Claims priority, application Germany, Dec. 23, 1961, F 35,650
8 Claims. (Cl. 260—380)

1. A compound of the formula



wherein R is a member selected from the group consisting of lower alkyl and hydroxy lower alkyl; X is a member selected from the group consisting of lower alkyl and lower alkoxy; and *n* is an integer of 0–2.

3,293,271

6-FLUOROESTRA OR ANDROSTAPENTAENES, INTERMEDIATES AND METHODS OF PREPARING THE SAME

Milton Heller, New City, N.Y., Robert Herman Lenhard, Ridgefield Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,391
10 Claims. (Cl. 260—397.3)

8. The compound 6α-fluoroandrosta-1,4,8(14),9(11)-tetraene-3,17-dione.

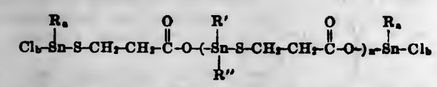
3,293,272
MANUFACTURE OF SUCCINYL MONOGLYCERIDE
Ernest H. Freund, Evanston, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 8, 1964, Ser. No. 395,013
8 Claims. (Cl. 260—404.8)

1. A method for preparing a half ester of succinic acid and a mono-acylated polyhydric alcohol comprising, reacting succinic anhydride with a mono-acylated polyhydric alcohol having an acyl residue of a fatty acid having a saturated straight carbon chain of from 14 to 24 carbon atoms and a polyhydric alcohol residue having a straight carbon chain of from 2 to 6 carbon atoms, said reaction being carried out under heterogeneous phase conditions at a temperature below the melting point of the succinic anhydride and above the melting point of the mono-acylated polyhydric alcohol.

3,293,273
ORGANOTIN MERCAPTO ETHYLENE CARBOXYLATES AND METHOD FOR PRODUCING SAME
Carl R. Gloskey, Stirling, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 9, 1963, Ser. No. 271,590
10 Claims. (Cl. 260—429.7)

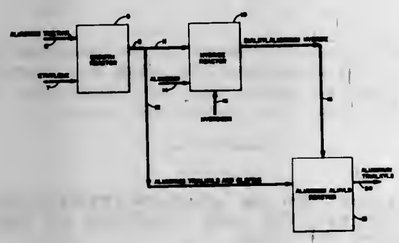
1. The method of preparing a novel composition which comprises reacting R_aSnCl_{b+1} with substantially equimolar amounts of R'R''SnO and $HSCH_2CH_2COOH$, wherein R, R', and R'' are each selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, aryl aralkyl, and alkaryl, a is less than 3, and $a+b$ equals 3.

7. A novel composition



wherein R, R', and R'' are each selected from the group consisting of alkyl, alkenyl, alkynyl, cycloalkyl, aryl, aralkyl, and alkaryl, a is less than 3, $a+b$ equals 3 and n equals 1–5.

3,293,274
PROCESS FOR PREPARATION OF HIGH MOLECULAR WEIGHT ALUMINUM ALKYLS
George C. Feighner, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma
Filed June 19, 1961, Ser. No. 117,891
6 Claims. (Cl. 260—448)



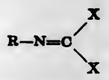
1. In a process where a low molecular weight aluminum trialkyl is reacted with a low molecular weight mono-1-olefin to produce a reaction product comprising high molecular weight aluminum trialkyls and high molecular weight olefins, the improvement which comprises reacting said reaction product with aluminum and hydrogen, whereby a portion of the aluminum trialkyl is converted to aluminum dialkyl hydride which then reacts with olefin to produce aluminum trialkyl and recovering high molecular weight aluminum trialkyl product reduced in olefin content.

3,293,275
METHODS OF PREPARING ORGANOMETALLIC COMPOUND
Richard J. Pratt, Menomonee Falls, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
No Drawing. Filed July 16, 1963, Ser. No. 295,513
4 Claims. (Cl. 260—448.2)

4. A method for producing an alpha silyl ester comprising admixing an ethyl alpha halo ester selected from the group consisting of the chloro and bromo acetates, propionates, butyrates, and valerates with zinc, and a trialkylchlorosilane; reacting the halo ester with zinc, and reacting the resulting halozincester with the trialkylchlorosilane.

3,293,276
PROCESS FOR THE PRODUCTION OF ISOTHIOCYANATES
Engelbert Kühle and Klaus Sasse, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed July 2, 1963, Ser. No. 292,497
Claims priority, application Germany, July 20, 1962, F 37,371
3 Claims. (Cl. 260—454)

1. A process for the production of isothiocyanates which comprises heating an isocyanate dihalide of the formula



wherein
R is a member selected from the group consisting of alkyl of 1–15 carbon atoms, cycloalkyl of 5–6 carbon atoms, benzyl, phenyl, naphthyl, and the substitution product thereof, the substituent consisting of at least one member selected from the group consisting of chloro, bromo, fluoro, alkyl of 1–4 carbon atoms, haloalkyl of 1–4 carbon atoms and nitro; and
X is a member selected from the group consisting of chloro and bromo;
together with a pentasulphide of the formula

$$Y_2S_5$$

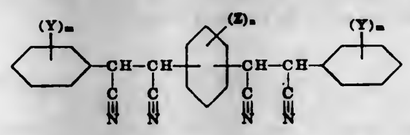
wherein
Y is a member selected from the group consisting of phosphorus, arsenic and antimony; the reaction being effected in the presence of an inert organic solvent at a temperature of about 80–220° C.; and recovering the resulting isothiocyanate product.

3,293,277
BORON-CONTAINING POLYMERS AND METHOD OF PREPARING THE SAME
Robert J. Convery, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,395
5 Claims. (Cl. 260—462)

1. Method of preparing a boron-containing polymeric product which comprises contacting the trans-trans-cis isomer of cyclododecatriene-1,5,9 with diborane in the presence of a minor amount of a free oxygen containing gas and an oxygen containing non-nitrogenous Lewis base as the sole Lewis base and separating a polymeric product from the reaction mixture.

3,293,278
DERIVATIVES OF DIPHENETHYLBENZENE
Ferdinand B. Zienty, Warren Woods, and Myron J. Hohn, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 5, 1964, Ser. No. 373,865
1 Claim. (Cl. 260—465)

An $\alpha,\alpha',\beta,\beta'$-tetracyanodiphenethylbenzene of the formula



wherein
Y is a monovalent substituent selected from the group consisting of alkyl, phenol, tolyl, phenoxy, tolyloxy and alkoxy having not more than 18 carbon atoms, nitro and halogen,
Z is a monovalent substituent selected from the group consisting of methyl, nitro and halogen,
m is a cardinal number from 0 to 5, inclusive, and
n is a cardinal number from 0 to 4, inclusive.

3,293,279
PREPARATION OF UNSATURATED NITRILES BY A CATALYTIC PROCESS
Howard S. Young and Edgar L. McDaniel, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 15, 1964, Ser. No. 375,303
8 Claims. (Cl. 260—465.3)

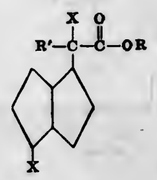
1. A process for preparing acrylonitrile or methacrylonitrile which comprises reacting a mixture containing propylene or isobutylene, respectively, ammonia and oxygen; said mixture containing about 0.1 to about 5 moles of ammonia and about 0.1 to about 5 moles of oxygen per mole of said olefin; in the vapor phase at a temperature of about 300° C. to about 600° C. in the presence of a solid calcined catalyst which consists essentially of (1) about 1 to about 20 weight percent of arsenic oxide, calculated as As_2O_5 and (2) about 5 to about 60 weight percent molybdoceric acid supported on (3) about 30 to about 94 weight percent of an inert carrier; the amount of molybdoceric acid being greater that the amount of arsenic oxide; said catalytic mixture having been calcined at a temperature of about 200° C. to about 600° C.

3,293,280
PROCESS FOR THE PREPARATION OF UNSATURATED NITRILES
Howard S. Young and Edgar L. McDaniel, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 15, 1964, Ser. No. 375,304
3 Claims. (Cl. 260—465.3)

1. A process for preparing acrylonitrile or methacrylonitrile which comprises reacting a mixture containing propylene or isobutylene, respectively, ammonia and oxygen; said mixture containing about 0.1 to about 5 moles of ammonia and about 0.1 to about 5 moles of oxygen per mole of said olefin; in the vapor phase at a temperature of about 300° C. to about 600° C. in the presence of a solid calcined catalyst which consists essentially of (1) about 1 to about 20 weight percent of arsenic oxide, calculated as As_2O_5, and (2) about 5 to about 60 weight percent hexamolybdochromic acid supported on (3) about 30 to about 94 weight percent of an inert carrier; the amount of hexamolybdochromic acid being greater than the amount of arsenic oxide; said catalyst having been calcined at a temperature of about 200° C. to about 600° C.

3,293,281
LOWER ALKYL BICYCLO(3.3.0)OCTANE ACETATE DERIVATIVES
Rostyslaw Dowbenko, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,328
8 Claims. (Cl. 260—468)

1. A compound of the formula:



where R is a lower alkyl radical; R' is selected from the group consisting of hydrogen, halogen and lower alkyl radicals; and X is selected from the group consisting of hydrogen and halogen, at least one of the substituents represented by X being halogen.

3,293,282
PROCESS FOR TREATMENT OF PLASTICIZERS
Martin W. Farrar, Kirkwood, Mo., and Katharine G. Johnston, Granite City, Ill., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Apr. 2, 1963, Ser. No. 269,859
11 Claims. (Cl. 260—475)

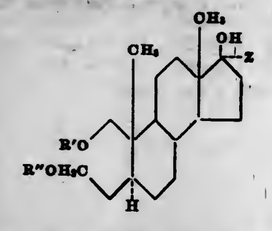
1. A process which comprises contacting a dialkyl ester of a dicarboxylic acid selected from the group consisting of orthophthalic, adipic, azelaic and sebacic acids with an alkali earth metal silicate selected from the group consisting of barium and calcium silicates.

3,293,283
PROCESS FOR TRANSESTERIFYING LOWER ALKYL ACRYLATES
Kenneth Rowland Dobson, Hull, and Bertram Yeomans, Preston, near Hull, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company
No Drawing. Filed Jan. 17, 1964, Ser. No. 338,316
Claims priority, application Great Britain, Feb. 7, 1963, 4,964/63
6 Claims. (Cl. 260—486)

1. In the process for the production of acrylates by the transesterification reaction of a lower alkyl acrylate with a member selected from the group consisting of acyclic, alicyclic and aromatic alcohols having from 3 to 20 carbon atoms at an elevated temperature and recovering the desired acrylate from the product mixture by distillation, the improvement wherein the reaction is conducted in the presence of a tetra-alkoxy derivative of titanium as catalyst and of a hydrocarbon plasticizer oil having a boiling point at least 50° C. higher than the acrylic ester product, and wherein the catalyst is hydrolysed in the product mixture and the produced titania separated prior to recovering the desired acrylate product.

3,293,284
1,2-SECO-A-NOR-5 ALPHA - ANDROSTANE - 1,2,17 BETA-TRIOLS, 17-ALKYLATED-1,2-SECO-A-NOR-5 ALPHA - ANDROSTANE - 1,2,17 BETA - TRIOLS AND ESTERS THEREOF
Raphael Pappo, Skokie, and Christopher Jung, Morton Grove, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Aug. 7, 1964, Ser. No. 388,278
8 Claims. (Cl. 260—488)

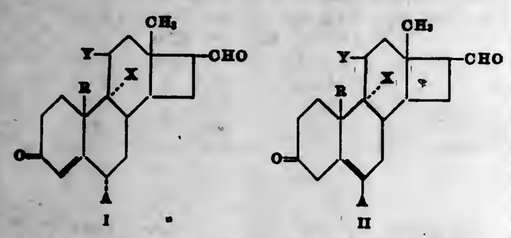
1. A compound of the formula



wherein Z is selected from the group consisting of hydrogen and a lower alkyl radical, R′ and R″ are members of the class consisting of hydrogen and lower alkanoyl radicals, R is hydrogen when Z is an alkyl radical, and R is selected from the group consisting of hydrogen and a lower alkanoyl radical when Z is hydrogen.

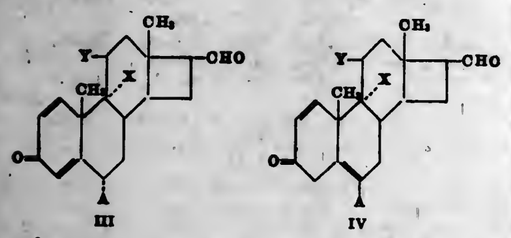
3,293,285
16-FORMAL AND 16-HYDROXYMETHYL-D-NOR-STEROIDS AND DERIVATIVES
Eugene P. Oliveto, Glen Ridge, and Hans Reimann, Wayne, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed June 3, 1965, Ser. No. 461,174
20 Claims. (Cl. 260—488)

1. A compound selected from the group consisting of a D-nor-steroid of the following Formulae I–V:



I

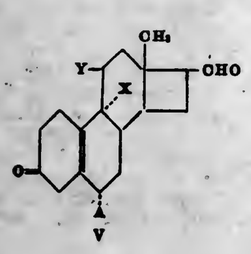
II



III

IV

and



V

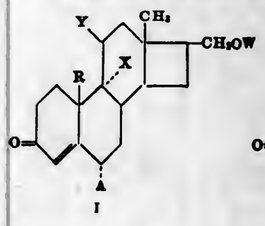
wherein A is a member selected from the group consisting of hydrogen, lower alkyl, and halogen;

R is a member selected from the group consisting of hydrogen and methyl;

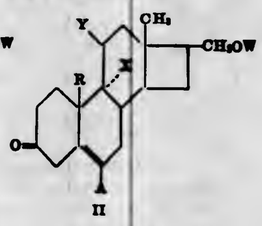
X is a member selected from the group consisting of hydrogen and halogen;

Y is a member selected from the group consisting of hydroxy, lower alkanoyloxy, and keto, hydrogen provided X is hydrogen, and halogen provided X is halogen.

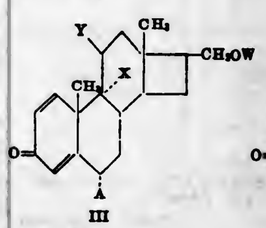
2. A compound selected from the group consisting of a D-nor steroid of the following Formulae I–V:



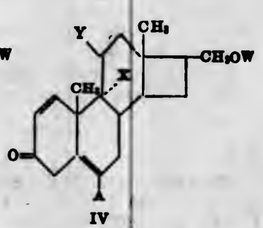
I



II

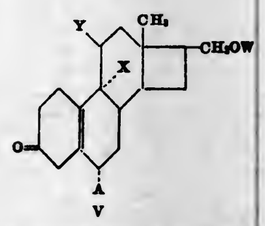


III



IV

and



V

wherein A is a member selected from the group consisting of hydrogen, lower alkyl, and halogen;

R is a member selected from the group consisting of hydrogen and methyl;

X is a member selected from the group consisting of hydrogen and halogen;

Y is a member selected from the group consisting of hydroxy, lower alkanoyloxy, and keto, hydrogen provided X is hydrogen, and halogen provided X is halogen;

and W is a member selected from the group consisting of hydrogen and an acyl radical of a hydrocarbon carboxylic acid having up to eight carbon atoms.

3,293,286
PROCESS FOR PREPARING TERPENIC ESTERS WITH A PHOSPHORUS-CONTAINING CATALYST
Robert L. Webb, Jacksonville, Fla., assignor, by mesne assignments, to Union Camp Corporation, a corporation of Virginia
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,125
19 Claims. (Cl. 260—489)

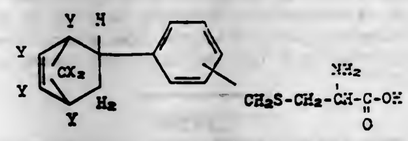
3. An improved process for preparing esters of terpenic compounds, comprising reacting a terpene allylic halide in which the halogen is selected from the class consisting of chlorine and bromine with a carboxylic acid salt in the presence of a phosphorus-containing catalyst selected from the group consisting of phosphorus, phosphonium salts, and trivalent phosphorus compounds having the formula



wherein R, R_1 and R_2 are selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, alkylamino, aryl amino, cycloalkylamino and amino, said catalyst being in sufficient amounts to measurably increase the yield of said esters.

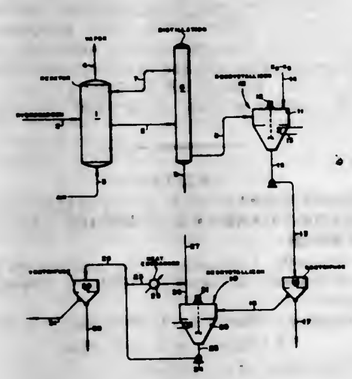
3,293,287
3-(POLYHALOBICYCLO[2.2.1]-HEPT-5-EN-2-YL-BENZYLTHIO)-ALANINE
Carleton W. Roberts, Midland, and Daniel H. Haigh, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,543
4 Claims. (Cl. 260—516)

1. Member of the group consisting of a compound of the formula



its alkali metal salts, and its ammonium salt, wherein X represents a member of the group consisting of hydrogen and halogen of atomic weight less than 50, and Y represents halogen of atomic weight of 25 to 100.

3,293,288
PROCESS FOR THE SEPARATION OF MONOBASIC AND DIBASIC AROMATIC ACIDS
Harry E. Cier and Helen L. Wilder, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Dec. 2, 1963, Ser. No. 327,309
9 Claims. (Cl. 260—525)



1. A method for separating monobasic C_8 and C_9 aromatic acids from dibasic C_8 and C_9 aromatic acids from a mixture containing at least one monobasic acid and at least one dibasic acid which comprises heating said mixture with a saturated C_5 to C_8 liquid hydrocarbon whereby monobasic acid will dissolve in said hydrocarbon and said dibasic acid remains as a solid phase, separating said hydrocarbon from said solid phase, cooling said hydrocarbon whereby monobasic acid precipitates as a solid, and recovering said solid monobasic acid.

3,293,289
SYNTHESIZING CARBOXY-TERMINATED POLYMERS
George B. Butler, Gainesville, Fla., and Henry C. Allen, Decatur, Ala., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Sept. 18, 1962, Ser. No. 224,570
24 Claims. (Cl. 260—533)

1. The process of synthesizing carboxy-terminated liquid polymers from ethylenically unsaturated monomers which undergo addition polymerization, said process comprising the steps of:

(*a*) emulsifying thoroughly a mixture comprising water, reducing agent, emulsifier, and ethylenically unsaturated monomer selected from the group consisting of butadiene-1,3, isoprene, hexadiene-2,4, chloroprene, and mixtures thereof, while maintaining the temperature and pressure at levels which minimize vaporization loss of said unsaturated monomer, wherein said reducing agent is a member selected from the group consisting of inorganic water-soluble ferrous and cobaltous salts;

(*b*) adding to the emulsion mixture defined in step (*a*) with mixing and at a uniform rate a water-miscible solution of peroxide of a saturated cyclic ketone having 5 to 7 carbon atoms in the carbocyclic ring and of such a quantity that the reducing agent is always in excess of the stoichiometric quantity required to reduce the peroxide, the peroxide thereby undergoing reduction by the reducing agent as the peroxide solution is added and thereafter rearrangement to yield the corresponding alkanoic acid free radicals which initiate and terminate the polymerization reaction with the monomers, the rate of adding the peroxide solution being such that polymerization is terminated within a predetermined molecular weight range, and the molar ratio of said ethylenically unsaturated monomer to said cyclic ketone peroxide being such as to yield enough alkanoic free acid radicals from the latter to terminate the polymerization of said ethylenically unsaturated monomer at an average molecular weight of about 3000–5000;

(*c*) acidifying the resulting reaction mixture to a pH of 2.0 to 4.5 with an inorganic, non-oxidizing mineral acid;

(*d*) recovering the produced polymer of a molecular weight range of 3,000 and 5,000.

3,293,290
PROCESS FOR THE PRODUCTION OF UNSATURATED ALDEHYDES AND ACIDS
Duane L. Flint, Fullerton, and William D. Schaeffer, Pomona, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,339
11 Claims. (Cl. 260—533)

1. A process for the manufacture of unsaturated aldehydes and acids from a hydrocarbon having from 3 to about 8 carbon atoms and selected from the class consisting of monoolefins and paraffins that comprises contacting a gaseous mixture of said hydrocarbon and oxygen with a catalyst comprising an active component selected from the class consisting of phosphomolybdic acid, the iron and bismuth salts of said acid and mixtures thereof in the presence of from several parts per million to about 1.0 volume percent of said gaseous mixture of a promoter selected from the class consisting of hydrogen bromide and hydrogen iodide at a temperature from about 300° to about 600° centigrade.

3,293,291

THE OXIDATIVE CONVERSION OF OLEFINIC HYDROCARBONS TO CARBONYLIC COMPOUNDS

Freddy Wattimena, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,825
Claims priority, application Netherlands, May 29, 1962, 279,024
6 Claims. (Cl. 260—533)

1. The process for the oxidative conversion of a monoolefinic hydrocarbon having from two to about ten carbon atoms to the molecule to carbonylic compounds selected from the group consisting essentially of aldehydes, ketones and monocarboxylic acids, which consists essentially of contacting said monoolefin in admixture with oxygen, water vapor, and from about 0.001 to about 0.5 atom molecule of hydrogen chloride for each molecule of olefin present, in vapor phase, at a temperature of from about 180° to about 350° C. with a solid combination catalyst consisting essentially of (A) about one atom divalent palladium in combination with (B) from about 3 to about 15 atoms of divalent copper, (C) about one to about 7 atoms of an alkali metal having an atomic number of 11 through 55 and (D) from about 3 to 15 atoms of trivalent didymium, said palladium, copper, alkali metal and didymium being present in the form of chlorides and sulfates.

3,293,292

BUTANE OXIDATION

Kenneth L. Olivier, Placentia, and William D. Schaeffer, Pomona, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 22, 1966, Ser. No. 544,399
8 Claims. (Cl. 260—533)

1. The oxidation of normal butane to acetic acid which comprises contacting a hydrocarbon consisting essentially of normal butane with oxygen in a liquid phase reaction zone in the presence of an organic reaction solvent inert to said oxidation containing catalytic amounts of bromine between about 0.005 and about 0.10 molal of a cobalt salt soluble in said reaction solvent and between about 0.005 and about 0.10 molal of a manganese salt soluble in said organic reaction solvent at a temperature between about 150° and 450° F. and sufficient pressure to maintain said organic reaction solvent in liquid phase.

3,293,293

PRODUCTION OF UREAS AND THIOUREAS

Werner F. Dreier, Geneva, Switzerland, and John J. Wise, Arlington, Mass., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,490
22 Claims. (Cl. 260—552)

1. A process for producing ureas, thioureas and substituted derivatives thereof which comprises effecting reaction of a nitrogen compound having the general formula:



wherein R and R_1 represent substituents selected from the groups consisting of hydrogen, and alkyl radicals, aryl radicals, cycloalkyl radicals and substituted derivatives thereof and a compound selected from the group consisting of carbon dioxide, carbon disulfide and carbonyl sulfide in the presence of a catalyst comprising a crystalline alumino-silicate which contains active cation sites within an ordered internal structure.

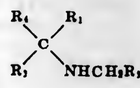
3,293,294

α-CARBOXAMIDOMETHYLAMINO-CARBOXAMIDES

Duff Shederic Allen, Jr., Dobbs Ferry, and Edward Rudolph Russo, Nanuet, N.Y., and Sidney A. Frankel, Edison, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 28, 1965, Ser. No. 491,032
3 Claims. (Cl. 260—558)

1. A compound of the formula:



wherein R_1 and R_2 are carboxamido, R_3 is lower alkyl and R_4 is selected from the group consisting of phenyl and halophenyl and acid addition salts selected from the group consisting of hydrochloride, hydrobromide, sulfate and nitrate.

3,293,295

PROCESS FOR PREPARING AMINES FROM NITRO COMPOUNDS

Edward A. Swakon, Hammond, Ind., and Edmund Field, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,228
5 Claims. (Cl. 260—563)

1. A process for preparing an amine from the corresponding nitro substituted compound selected from the class consisting of nitro-substituted paraffin hydrocarbons having 1 to 20 carbon atoms, nitro-substituted alicyclic hydrocarbons, nitro-substituted aromatic hydrocarbons, nitro-substituted furans, nitro-substituted thiophenes, nitro-substituted acridine, nitro-substituted chlorinated paraffin hydrocarbons, nitro-substituted chlorinated aromatic hydrocarbons, nitro-substituted chlorinated cyclohexane and nitro-substituted methoxy-substituted aromatic hydrocarbons which comprises reducing only the nitro group with carbon monoxide and water in the presence of an alkaline reaction medium at a temperature in the range of 200 to 350° C. and a carbon monoxide pressure of from 50 to 1,000 atmospheres.

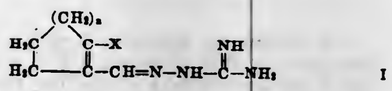
3,293,296

AMIDINOHYDRAZONES OF 2-HALO-1-CYCLOALKENE-1-CARBOXALDEHYDES AND SALTS THEREOF

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,258
6 Claims. (Cl. 260—564)

1. A compound of the formula:



I

wherein X is selected from the group consisting of chlorine and bromine and *n* is an integer from zero to 8, inclusive.

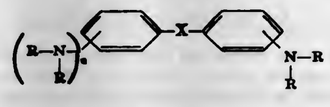
3,293,297

N-OXYALKYLATED-AMINEDIPHENYL-OXO- AND AMINO-COMPOUNDS

James J. Louvar, Evanston, Anthony J. Guarnaccio, Niles, and Ted Symon, Lombard, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Original application Mar. 28, 1963, Ser. No. 268,561. Divided and this application July 30, 1964, Ser. No. 386,404
4 Claims. (Cl. 260—571)

1. An N, oxyalkenylated-aminodiphenyl compound having the general formula:



in which X is selected from the group consisting of oxygen and nitrogen, R is selected from the group consisting of hydrogen, hydroxyalkyl, hydroxyalkoxyalkyl or mixtures thereof, at least one R being hydroxyalkyl or hydroxyalkoxyalkyl, where the hydroxyalkyl contains from 2 to 6 carbon atoms and the hydroxyalkoxyalkyl contains from 4 to 12 carbon atoms, and N is an integer of from 0 to 1.

3,293,298

HYDROGENATION PROCESS FOR THE PREPARATION OF PRIMARY AMINES

Dennis Szabo, Villeneuve-la-Garenne, France, assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed July 17, 1963, Ser. No. 295,800
Claims priority, application Great Britain, July 18, 1962, 27,667/62
6 Claims. (Cl. 260—583)

1. A process for preparing primary fatty amines containing from 8 to 22 carbon atoms, which comprises hydrogenating the corresponding nitrile in the presence of a nickel hydrogenation catalyst and 1–10% by weight of the nitrile of an alumina-containing polar adsorbent, the reaction being conducted at a temperature not substantially in excess of 150° C.

3,293,299

PROCESS FOR MAKING TETRAKIS (DIMETHYLAMINO)ETHYLENE

Herbert Boden, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,871
5 Claims. (Cl. 260—583)

1. In the synthesis of tetrakis(dimethylamino)ethylene from dimethylamine and chlorotrifluoroethylene in an inert atmosphere, the improvement compriaing the sequential steps of:

(1) reacting dimethylamine and chlorotrifluoroethylene in a mole ratio between 8/1 and 20/1 at autogenous pressure and at a temperature in the range 45–70° C.;

(2) raising the temperature of the reaction product of 1 to about 70° C. and separating the lower layer containing by-product molten salts therefrom;

(3) cooling the product remaining from 2 to ambient temperature and drowning the same in 1–10 volumes of water;

(4) separating the lower aqueous wash layer from the tetrakis(dimethylamino)ethylene, washing the tetrakis(dimethylamino)ethylene with from 1–10 volumes of water, withdrawing the aqueous layer; and

(5) contacting the thus purified tetrakis(dimethylamino)ethylene with activated alumina.

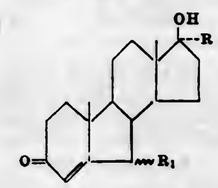
3,293,300

NOVEL 6-SUBSTITUTED 17α-ALKYL-B-NORTESTOSTERONE DERIVATIVES

Louis R. Fare, Willingboro, and Kenneth G. Holden, Stratford, N.J., and Joseph R. Valente, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

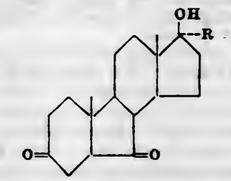
No Drawing. Filed Mar. 10, 1964, Ser. No. 350,671
10 Claims. (Cl. 260—586)

1. A compound of the formula:



in which R is a member selected from the group consisting of methyl and ethyl; and R_1 is a member selected from the group consisting of hydroxy, chloro and bromo.

9. A compound of the formula:



in which R is a member selected from the group consisting of methyl and ethyl.

3,293,301

PREPARATION OF CARVONE

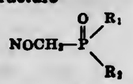
John M. Derfer, Jacksonville, Bernard J. Kane, Atlantic Beach, and Donald G. Young, Jacksonville, Fla., assignors to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,851
13 Claims. (Cl. 260—587)

1. The process of converting limonene to carvone involving (1) converting limonene to limonene nitrosochloride by treatment with nitrosylchloride, (2) dehydrochlorinating the limonene nitrosochloride thus formed to carvoxime, and (3) hydrolyzing the thus formed carvoxime to carvone, characterized in that: (a) steps 1, 2, and 3 are carried out in the presence of a water-soluble nonreactive solvent selected from the group consisting of isopropyl alcohol, ethyl alcohol, normal propyl alcohol, 1,2-dimethoxyethane, and tetrahydropyran and having a boiling point of at least 75° C.; (b) step 2 consists essentially in heating the mixture formed in step 1 to at least 75° C. in the absence of a base until the nitrosochloride is substantially dehydrochlorinated; (c) adding water, an excess of a water-soluble carbonylic compound selected from the group consisting of C_{1-6} aliphatic and cycloaliphatic aldehydes and ketones and not more than 1 mol of water-soluble acid, based on the carvoxime to the mixture formed in step 2; (d) heating the homogeneous mixture formed by (c) to hydrolyze the carvoxime to carvone, thereafter recovering carvone from the heated mixture by distillation; and (e) further characterized in that all of the foregoing steps and procedures are carried out without the isolation of intermediates.

3,293,302
PROCESS FOR PREPARING HYDROXYMETHYLPHOSPHINE OXIDES
Ivan C. Popoff, Ambler, and James Ping King, Elkins Park, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed June 24, 1963, Ser. No. 290,235
5 Claims. (Cl. 260—606.5)

1. The process of preparing hydroxymethylphosphine oxides having the structure



where R_1 and R_2 are hydrocarbon groups selected from the class consisting of alkyl and aryl groups containing from one to ten carbon atoms which comprises fusing a chloromethylphosphine oxide of structure

$$R_1R_2P(O)CH_2Cl$$

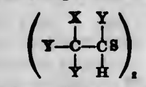
with an alkali metal acetate and hydrolyzing the fusion mass.

3,293,303
METHOD OF REACTING PENTABORANE(11) WITH AN ACETYLENIC COMPOUND
Emil A. Lawton, Columbus, and Arthur Levy, Worthington, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
No Drawing. Filed June 25, 1956, Ser. No. 593,773
3 Claims. (Cl. 260—606.5)

1. A method for the preparation of solid reaction products of pentaborane(11) and an acetylene hydrocarbon which comprises reacting the pentaborane(11) and an acetylene hydrocarbon containing from 2 to 8 carbon atoms at a temperature of from about —25° C. to 50° C., the molar proportion of acetylene hydrocarbon to pentaborane(11) being within the range from about 0.5 to 5.

3,293,304
BIS(POLYHALOETHYL) DISULFIDES
Paul C. Aichenegg, Prairie Village, Kans., assignor to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 14, 1963, Ser. No. 301,966
4 Claims. (Cl. 260—608)

1. The compound having a formula



where X is selected from the group consisting of chlorine and bromine and Y is selected from the group consisting of chlorine, bromine and hydrogen, and a single Y is hydrogen and the other two Y's are chlorine or bromine.

3,293,305
POLYFLUORINATED ORGANIC COMPOUNDS
Robert N. Haszeldine, Windyridge Lymm Road, Disley, England; Alan R. Parkinson, 25 High View St., Bolton, England; and John M. Birchall, 22 Lorna Road, Cheadle Hulme, England
No Drawing. Filed Sept. 12, 1962, Ser. No. 223,266
Claims priority, application Great Britain, Sept. 18, 1961, 33,384/61
13 Claims. (Cl. 260—612)

1. A compound of the formula R_f—R, where R_f is a perfluorinated aromatic radical selected from the group consisting of perfluorophenyl, perfluoronaphthyl, perfluoroanthracenyl, perfluorophenanthryl, perfluorodiphenyl, perfluorodiphenylmethane and perfluoro-lower alkylphenyl, R is an aromatic radical selected from the group consisting of phenyl, xylyl, naphthyl, methyl naphthyl, anthracenyl, phenanthryl, diphenyl, diphenyl methane, diphenyl ether, chlorophenyl, methoxyphenyl, and nitrophenyl, and the R_f and R radicals are connected to one another directly through aromatic ring carbon atoms.

3,293,306
PERFLUORINATED ETHER ALCOHOLS
Ronald Eugene Le Blanc, Wilmington, and John Hartwell Fasmacht, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 14, 1963, Ser. No. 287,777
5 Claims. (Cl. 260—615)

1. Compounds of the structure

$$XCF_2CF_2O(CFXCF_2O)_nCFXCH_2OH$$

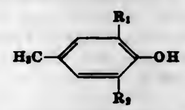
wherein n is an integer of from one to fifty and X is selected from the group consisting of fluorine and the trifluoromethyl group and wherein all X's are the same.

3,293,307
PREPARATION OF SUBSTITUTED ETHANES
Edward J. McNelis, Wallingford, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,925
12 Claims. (Cl. 260—619)

1. Method for preparing substituted ethanes having the general formula



wherein R_1 and R_2 are selected from the group consisting of alkoxy radicals having from 1 to 8 carbon atoms and alkyl radicals having from 1 to 8 carbon atoms which comprises reacting substituted p-cresol having the general formula



with silver oxide at a temperature in the range of from 0° C. to 100° C. in an inert atmosphere for a period of time ranging between 10 seconds and 10 hours wherein the molar ratio of substituted p-cresol to silver oxide is at least 1:1 and thereafter recovering said substituted ethane product.

3,293,308
MODE OF RESIN TREATMENT REMAINING AS WASTE AT THE PRODUCTION OF PHENOL BY THE CUMENE METHOD
Alexander Borisovich Vol-Epstein, I Chelomeevskhaya 4/34 Korp. B, Apt. 239, Moscow, U.S.S.R.
No Drawing. Filed June 19, 1961, Ser. No. 144,276
5 Claims. (Cl. 260—621)

1. In the process for the manufacture of phenol by the cumene method whereby there is formed a decomposition reaction mixture comprising phenol, acetone, alpha-methylstyrene, acetophenone, dimethylphenyl carbinol, dimeric alpha-methylstyrene, 2-phenyl-2-hydroxyphenyl-propane, sodium phenolate, and sodium sulfate, and wherein the phenol and acetone are substantially separated from said decomposition reaction mixture to leave a residue containing said alpha-methylstyrene, acetophenone, dimethylphenyl carbinol, dimeric alpha-methylstyrene, para-alpha-cumyl phenol, sodium phenolate and sodium sulphate, the improvement which comprises removing the sodium salts from said residue, then catalytically hydrogenating said sodium-free residue to form additional quantities of phenol, ethylbenzene and cumene, and thereafter fractionally distilling said hydrogenated sodium-free residue to separate the ethylbenzene fraction, the phenol fraction, and the cumene fraction.

3,293,309
PREPARATION OF o-BROMOPHENOLS
John W. Zemba, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 25, 1962, Ser. No. 212,487
14 Claims. (Cl. 260—623)

1. A process for making an o-bromophenol selected from the group consisting of o-bromophenol, 6-bromo-o-cresol, and 6-bromo-m-cresol, which process comprises contacting a corresponding p-bromophenol with an effective amount of at least one acidic catalyst selected from the group consisting of hydrogen bromide and a Friedel-Crafts catalyst at about 100° to about 200° C. for a period of time sufficient for a substantial degree of isomerization to take place, and separating an o-bromophenol from the reaction mixture thereby formed.

7. A process for making o-bromophenol which comprises the step of reacting by contacting about 1.0 to about 1.5 moles of bromine with one mole of phenol at 40–200° C., heating the reaction mixture thereby obtained at about 100° to about 200° C. in the presence of an effective amount of at least one acidic catalyst selected from the group consisting of hydrogen bromide and a Friedel-Crafts catalyst for a period of time sufficient for a substantial degree of isomerization to take place, separating at least a substantial portion of the o-bromophenol thereby formed from the reaction mixture, adding to the residual reaction mixture a quantity of phenol about equivalent to the o-bromophenol separated therefrom, and recycling the phenol-containing mixture to the bromination step.

3,293,310
PREPARATION OF DINITROTOLUENE AND TRINITROTOLUENE WITH BORON TRIFLUORIDE AND NITRIC ACID
Jean P. Picard, Morristown, Daniel R. Satriana, Verona, and Louis Silverman, Dover, N.J., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Feb. 8, 1966, Ser. No. 526,335
8 Claims. (Cl. 260—645)

1. A process for preparing an explosive selected from the group consisting of 2,4,6-trinitrotoluene and 2,4-dinitrotoluene comprising the steps of
reacting toluene with a mixture of boron trifluoride and nitric acid, and
refluxing the reacted mixture.

3,293,311
PREPARATION OF 1-HALODECAHYDRONAPHTHALENES
Edwin L. De Young, Chicago, and Ted Symco, Lombard, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Apr. 7, 1964, Ser. No. 358,094
14 Claims. (Cl. 260—648)

1. A process for the production of a 1-halodecahydronaphthalene which comprises treating essentially pure trans-decahydronaphthalene with a polyhalogenated saturated hydrocarbon in the presence of an organic proxide catalyst at a temperature at least as high as the decomposition temperature of said catalyst, and recovering the resultant 1-halodecahydronaphthalene.

3,293,312
STABILIZED CHLORINATED HYDROCARBON COMPOSITIONS
André Ryckaert, Uccle, Brussels, Belgium, and Charles Domon, deceased, late of Etterbeek, Brussels, Belgium, by Lucie Jeanne Henriette Domon, nee Depauw, heir, Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a company of Belgium
No Drawing. Filed Feb. 11, 1964, Ser. No. 344,078
Claims priority, application Belgium, Feb. 13, 1963, 502,752
2 Claims. (Cl. 260—652.5)

1. A chlorinated hydrocarbon containing, for the stabilization of the chlorinated hydrocarbon against oxidation, a synergistic mixture comprising at least two different phenolic compounds each in a concentration of 0.002 to 0.5 gram per liter of chlorinated hydrocarbon, a first of said phenolic compounds being selected from the group consisting of phenol, p-cresol, pyrocatechol, p-methylcatechol and p-tertiary-butylcatechol and a second of said phenolic compounds being selected from the group consisting of pyrocatechol, p-methylcatechol and p-tertiary-butylcatechol.

3,293,313
METHOD OF MAKING ORGANIC LITHIUM COMPOUNDS
Walter Leonard Borkowski, Media, Pa., assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania
No Drawing. Filed May 1, 1962, Ser. No. 191,453
9 Claims. (Cl. 260—665)

2. In the method of preparing organolithium compounds wherein the source of the organo constituent is an organic halide the improvement comprising, contacting said organic halide with a mixture of sodium metal and lithium metal in an inert reaction medium said mixture comprising at least one mol of lithium per mol of organic halide and at least one-third mol of sodium per mol of lithium.

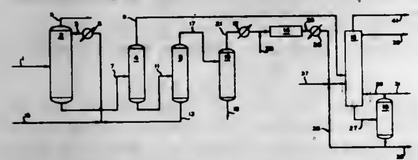
3,293,314
EQUILIBRATION OF LOWER ALKYL SUBSTITUTED AROMATIC HYDROCARBONS
John J. Brodbeck, El Cerrito, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Mar. 4, 1965, Ser. No. 437,317
10 Claims. (Cl. 260—668)

1. In the equilibration of a non-equilibrium lower alkyl substituted isomerizable aromatic hydrocarbon feed characterized by vapor phase contacting said feed in a reaction zone at a temperature in the range from about 600–1000° F., a pressure less than about 200 atmospheres and a liquid hourly space velocity less than about 10, with a solid acidic mixed metal-oxide catalyst having equilibration and coke forming activities, the improvement which comprises effecting said contacting in the presence of added ammonia and thereby inhibiting coke formation.

2,293,315
ALKYLATION PROCESS AND CATALYST THEREFOR
William G. Nixon, Westchester, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Jan. 24, 1964, Ser. No. 339,895
16 Claims. (Cl. 260—671)

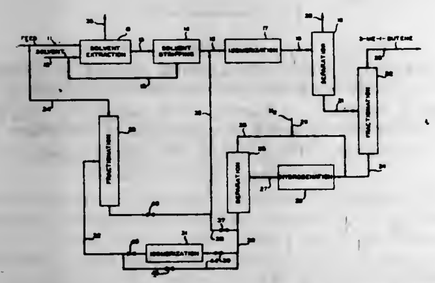
1. A process for the alkiation of an alkylatable aromatic hydrocarbon with an olefin-acting compound at alkylation conditions in the presence of a substantially anhydrous catalyst comprising a phosphoric acid-containing composite in which the phosphoric acid portion is chemically combined with an oxide of sulfur.

3,293,316
BUTADIENE PURIFICATION
Harris A. Clay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,854
9 Claims. (Cl. 260—681.5)



1. A process for recovering butadiene from a hydrocarbon mixture containing butadiene, butene-1 and acetylenes comprising:
removing butene-1 as overhead in an extractive distillation zone by selectively absorbing butadiene and acetylenes from said mixture;
removing a concentrated butadiene stream from the rich solvent as overhead in a first stripping zone;
removing a concentrated acetylenes stream from the rich solvent as overhead in a second stripping zone;
selectively hydrogenating said concentrated acetylenes stream in a catalytic zone and
recovering substantially pure butadiene as overhead in a separation zone from the effluent of said catalytic zone and concentrated butadiene stream.

3,293,317
PRODUCTION OF 3-METHYL-1-BUTENE
William B. Whitney, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 5, 1962, Ser. No. 185,358
8 Claims. (Cl. 260—683.2)



1. A process for the production of 3-methyl-1-butene which comprises contacting a C_5 hydrocarbon stream containing at least one component selected from the group consisting of 2-methyl-1-butene and 2-methyl-2-butene in a solvent extraction zone in which said one component is dissolved in a selective solvent, withdrawing from said solvent extraction zone a hydrocarbon stream consisting of undissolved hydrocarbons, passing a rich solvent stream containing said one component from said solvent extraction zone to a solvent stripping zone, withdrawing from said solvent stripping zone said selective solvent stripped of said one component, passing from said solvent stripping zone to a first isomerization zone a hydrocarbon stream containing said one component, contacting the hydrocarbon feed passed to said first isomerization zone with an isomerization catalyst which will initiate the conversion of 2-methyl-1-butene and 2-methyl-2-butene to 3-methyl-1-butene at a temperature in the range of 1050–1200° F. and for a time sufficient to approach at least 50 percent equilibrium conditions for the isomerization of said 2-methyl-2-butene and 2-methyl-1-butene to 3-methyl-1-butene, thereby also producing unavoidably substantial amounts of isoprene, passing an effluent stream containing 3-methyl-1-butene and isoprene produced in said first isomerization zone and said unconverted one component from said first isomerization zone to a separation zone in which a C_4 and lighter hydrocarbon stream is separated from a 3-methyl-1-butene product stream and from a C_5 hydrocarbon stream containing isoprene and said unconverted said one component, withdrawing from said separation zone a C_4 hydrocarbon and lighter vaporous stream, withdrawing from said separation zone a 3-methyl-1-butene product stream, passing a C_5 hydrocarbon stream containing isoprene and said unconverted said one component from said separation zone to a hydrogenation zone in which isoprene is contacted with a selective hydrogenation catalyst which is adapted to initiate the reaction of selective hydrogenation of isoprene to one of 2-methyl-1-butene and 2-methyl-2-butene, passing hydrogen to said hydrogenation zone, contacting the hydrocarbon feed stream in said hydrogenation zone with a hydrogenation catalyst, withdrawing an effluent stream containing 2-methyl-1-butene and 2-methyl-2-butene from said hydrogenation zone, separating hydrogen from said hydrogenation zone effluent stream, passing said hydrogen-free hydrogenation zone effluent stream containing 2-methyl-1-butene and 2-methyl-2-butene to a second isomerization zone wherein said effluent stream is contacted with an isomerization catalyst which will initiate the conversion of the 2-methyl-1-butene to 2-methyl-2-butene, passing an effluent stream containing 2-methyl-2-butene from said second isomerization zone to a fractionation zone, passing an overhead product containing 2-methyl-1-butene and lighter products from said fractionation zone to said solvent extraction zone as recycle to thereby eliminate build-up of lighter products in said system, withdrawing from said fractionation zone a bottom product stream containing 2-methyl-2-butene, and recycling said bottom product stream from said fractionation zone to said first isomerization zone.

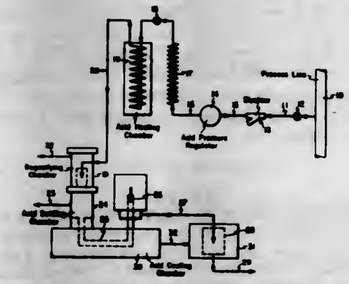
3,293,318
DEHYDROGENATION PROCESS
Kestutis A. Keblys, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,940
9 Claims. (Cl. 260—683.3)

1. A process for the dehydrogenation of an n-paraffin having from 6 to 24 carbon atoms to the corresponding olefin, said process comprising contacting a feed containing at least one n-paraffin with a catalyst consisting substantially of from 30 to 100% of an active ingredient selected from the group consisting of titanium dioxide, zirconium dioxide, hafnium dioxide, and mixtures thereof, and from 0 to 70% of a catalytic support selected from the group consisting of alumina and magnesia, said process being carried out at a temperature of from 400 to about 560° C.

3,293,319
CATALYTIC DEHYDROGENATION OF PARAFFINIC HYDROCARBONS
Vladimir Haensel, Hinsdale, and James Hoekstra, Evergreen Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Apr. 8, 1966, Ser. No. 541,066
14 Claims. (Cl. 260—683.3)

1. A process for dehydrogenating a saturated hydrocarbon which comprises contacting said saturated hydrocarbon with a catalytic composite of alumina, from about 0.01% to about 1.5% by weight of lithium, from about 0.05% to about 5% by weight of a Group VIII metallic component and a metallic component selected from the group consisting of arsenic, antimony, bismuth and compounds thereof, at dehydrogenation conditions including a temperature within the range of from about 400° C. to about 700° C., the second-mentioned metallic component being in sufficient amount to inhibit the cracking and isomerizing activity of said Group VIII component at said conditions.

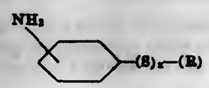
3,293,320
SPECIFIC GRAVITY ANALYZER AND CONTROL IN AN ALKYLATION PROCESS
William Henry Mageerl and Edison Charles Fanguy, Baton Rouge, and Ben Rousain Babin, Duplessis, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,285
10 Claims. (Cl. 260—683.59)



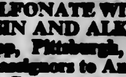
9. A method for the continuous determination and control of the specific gravity of the acid stream in an acid catalyzed alkylation process comprising the following steps:
(A) diverting a portion of the alkylation process stream so as to form a sample stream;
(B) heating said sample stream;
(C) stripping said heated sample stream of light hydrocarbons and skimming off liquid alkylate;
(D) cooling and then maintaining said sample stream at a desired testing temperautre;
(E) passing said sample stream through a column of known height at said testing temperature;
(F) taking the differential pressure of the pressure exerted by said sample stream in said column and the pressure exerted by an air stream of known and selectable pressure wherein said air stream is adjusted to the desired pressure level by passing a portion of said air stream into a mercury pool and thereafter regulating the flow rate of the total air stream until said portion of said air stream displaces a column of mercury of desired height;
(G) utilizing said differential pressure to control acid flow into said alkylation process stream.

3,293,321
AMINOPHENYL SULFIDES AS ANTIOZONANTS FOR RUBBER
Robert W. Layer, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 18, 1963, Ser. No. 324,232
6 Claims. (Cl. 260—805)

1. A sulfur-vulcanizable natural rubber vulcanizate containing 1.0 to 6.0 parts per 100 parts of said vulcanizate by weight of an antiozonant compound of the structure



where x is an integer from 1 to 2 and R represents a member of the class consisting of hydrogen, and



and mixtures of O,O′-diaminodiphenyl sulfide and p,p¹-diaminodiphenyl sulfide.

3,293,322
HOMOGENEOUS COPOLYMER OF EPOXY RESIN AND VINYL ARYL MONOMER, CURED WITH A BF_3-AMINE COMPLEX
Charles J. Pennino, Monroeville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Apr. 9, 1963, Ser. No. 271,599
4 Claims. (Cl. 260—837)

1. A self-curing composition which is essentially free of volatile solvents and in the absence of a filler can be maintained in a liquid state at normal room temperature for at least six months, but which will cure at elevated temperatures consisting essentially of a mixture of:
(1) 100 parts by weight of an epoxy ether resin,
(2) from 0.1 to 85 parts of a vinyl aryl monomer, and
(3) from 1 to 10 parts of a single catalyst that is a boron trifluoride amine complex that catalyzes the copolymerization of the epoxy resin and said monomer to provide a cured homogeneous product, said cured product being characterized by the substantial absence of solvent extractable polystyrene.

3,293,323
PHENOLIC ADDUCT OF HALOGENATED BUTYL RUBBER
Irwin J. Gardner, Fanwood, Samuel B. Robison, Westfield, and Francis P. Baldwin, Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Sept. 10, 1962, Ser. No. 222,646
3 Claims. (Cl. 260—846)

2. The adduct of a halogen containing rubbery copolymer of an isoolefin having from 4 to 7 carbon atoms with from 0.5 to 30 parts by weight of a conjugated diolefin having from 4 to 10 carbon atoms and a complex of a phenol and a Friedel-Crafts catalyst chosen from the group consisting of $AlCl_3$, $ZnCl_2$ and $FeCl_3$.

3. An adhesive dip comprising a latex of a composition defined in claim 2 containing resorcinol and formaldehyde in the molar ratio of 1:2.

3,293,324
2-DIMETHYLAMINO-2-METHYL-1-PROPANOL-p-TOLUENE SULFONATE WITH UREA-FORMALDEHYDE RESIN AND ALKYD RESIN
Frederick E. Tropp, Pittsburgh, and Ray T. Corkum, McDonald, Pa., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 8, 1962, Ser. No. 236,395
7 Claims. (Cl. 260—850)

1. 2-dimehtylamino-2-methyl-1-propanol p-toluenesulfonate.

2. A composition of matter comprising a thermosetting urea-formaldehyde resin and as a catalyst therefor from about 1% to about 5%, by weight, based on the total weight of the urea resin solids of 2-dimethylamino-2-methyl-1-propanol p-toluenesulfonate.

6. A composition of matter comprising a blend of an alkyd resin and an alkylated urea-formeldehyde resin and as a catalyst therefor from about 1% to about 5%, by weight, based on the total weight of the urea resin solids of 2-dimethylamino-2-methyl-1-propanol p-toluenesulfonate.

3,293,325

COPOLYMERS OF VINYL ACETATE WITH MONO-ALLYLESTERS OF POLYCARBOXYLIC OR HYDROXY CARBOXYLIC ACIDS WITH AN AMINOPLAST RESIN

Ian H. McEwan, Weston, Ontario, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada

No Drawing. Filed Dec. 4, 1963, Ser. No. 328,046
Claims priority, application Canada, Dec. 8, 1962, 864,120
6 Claims. (Cl. 260—851)

1. A coating composition containing as essential ingredients, a copolymer comprising more than 50% by weight of copolymerized vinyl acetate and from about 4.5% to about 20% by weight of copolymerized monoallyl ester of an acid selected from the group consisting of polycarboxylic acids and hydroxy carboxylic acids, in admixture with a thermosetting aminoplast resin selected from the group consisting of alkylated and non-alkylated urea-aldehyde, melamine-aldehyde, dicyandiamide-aldehyde and triazine-aldehyde resins.

3,293,326

DYEABLE INTERPOLYMERS CONSISTING OF ALPHA-OLEFINS AND A NITROGEN CONTAINING COMPOUND

James L. Jezl, Swarthmore, and Hobet M. Kheighatian, Springfield, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 6, 1965, Ser. No. 469,845
18 Claims. (Cl. 260—878)

1. A composition consisting essentially of a highly crystalline linear interpolymer selected from the group consisting of random copolymers and block copolymers wherein from about 0.01 to about 10 mol percent of the recurring units thereof in their monomeric form are (I) at least one nitrogen compound selected from the group consisting of (A) an amine containing at least one amino group and at least one terminally unsaturated alkenyl radical containing 3 to 14 carbon atoms, and (B) the addition salts of said nitrogen compound, and the remainder of said recurring units in their monomeric form are (II) at least one terminally unsaturated olefin having the formula: $CH_2{=}CHR$ wherein R is selected from the group consisting of hydrogen and an alkyl radical containing 1 to 8 carbon atoms.

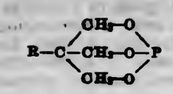
3,293,327

CYCLIC PHOSPHITES AND PHOSPHATES

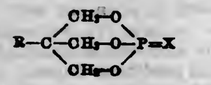
Ingenuin Hechenbleikner, Clarksburg, Francis C. Lanoue, North Adams, and Carl W. Panse and Ernest Bianco, Adams, Mass., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed July 21, 1958, Ser. No. 749,606
27 Claims. (Cl. 260—936)

1. Compounds selected from the group consisting of



and



where R is selected from the group consisting of hydroxymethyl and 1 to 16 carbon atom alkyl and X is selected from the group consisting of oxygen, sulfur and selenium.

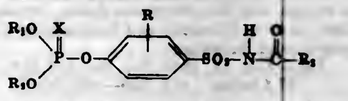
3,293,328

ACYLSULFAMOYLPHENYL PHOSPHATES AND METHOD OF PREPARING THE SAME

Gerald Berkelhammer, Ewing Township, Mercer County, and Frank Albert Wagner, Jr., Belle Mead, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 28, 1963, Ser. No. 283,718
7 Claims. (Cl. 260—944)

1. A compound of the formula:



wherein R_1 and R_2 are lower alkyl, X is selected from the group consisting of sulfur and oxygen atoms, R is selected from the group consisting of hydrogen, chlorine and lower alkyl and R_3 is selected from the group consisting of phenyl, lower alkyl and chloro lower alkyl.

7. A method of preparing O,O-dimethyl O-4-(acetylsulfamoyl)phenyl phosphorothioate which comprises reacting N-acetyl-1-phenol-4-sulfonamide with O,O-dimethylphosphorochloridothioate in a solvent having a pH from about 9.5 to about 12.

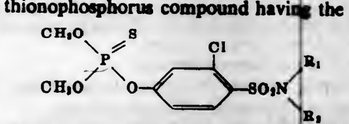
3,293,329

O,O-DIMETHYL-O-(3-CHLORO-4-N,N-DILOWER ALKYLSULFAMOYLPHENYL)THIONOPHOSPHATES

Saichiro Kuramoto and Yoshihiko Nishizawa, Toyonaka-shi, Keinei Fujimoto, Minoo-shi, Hideo Sakamoto, Itami-shi, Masataka Nakagawa, Yamatokoriyama-shi, and Toshio Mizutani, Amagasaki-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed July 29, 1964, Ser. No. 386,065
5 Claims. (Cl. 260—944)

1. A thionophosphorus compound having the formula,



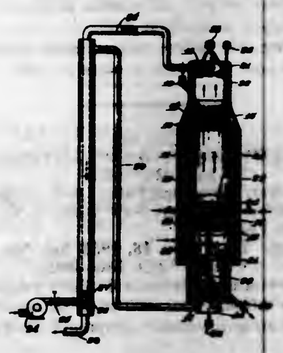
wherein R_1 and R_2 are respectively a lower alkyl radical of from 1 to 4 carbon atoms.

3,293,330

FLUIDIZED PROCESS FOR CALCINING PARTICULATE LIMESTONE

Frank S. White, Apple Valley, Calif., assignor to Chas. Pfizer & Co., Inc., a corporation of California

Filed Dec. 21, 1962, Ser. No. 246,493
1 Claim. (Cl. 263—53)



An improved continuous process for calcining fluidizable particulate limestone consisting of particles substantially all of which are coarser than 100 mesh, which comprises the steps of passing said limestone countercurrent to a flow of air through a series of fluidized beds successively comprising a preheating bed, a heated calcining bed and a cooling bed, centrifugally classifying by internal adjustable means the solids entrained in the exhaust gases emerging from said preheating bed into a relatively coarse fraction and a relatively fine fraction, recycling to said preheating bed the relatively coarse fraction, permitting the relatively fine fraction to escape in said exhaust gases, passing said hot exhaust gases depleted of said coarse fraction countercurrent to and in indirect heat transfer relationship with the cool air flowing to said cooling bed, and discharging the calcined lime product from said cooling bed at a temperature between about 1100° and 1250° F.

3,293,331

METHOD OF FORMING REPLICAS OF CONTOURED SUBSTRATES

Paul E. Doherty, Arlington, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 13, 1962, Ser. No. 236,921
6 Claims. (Cl. 264—1)



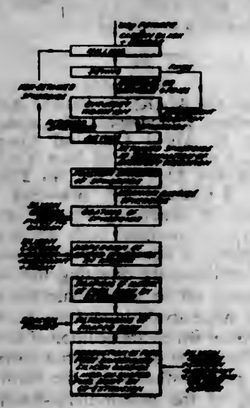
1. Method of increasing the height of the peaks of a replica formed from a corrugated substrate consisting of periodically recurring peaks and valleys, characterized by the step of shadowing the ridges of said peaks prior to the formation of said replica.

3,293,332

PROCESS FOR FABRICATING A FISSION PRODUCT RETENTIVE NUCLEAR FUEL BODY

Bryan Edward Ingleby, Seaforth, Preston, England, assignor to United Kingdom Atomic Energy Authority, London, England

Original application Mar. 29, 1963, Ser. No. 269,884. Divided and this application Feb. 3, 1965, Ser. No. 437,343
Claims priority, application Great Britain, Apr. 13, 1962, 14,675/62; Mar. 11, 1963, 9,536/63
4 Claims. (Cl. 264—5)



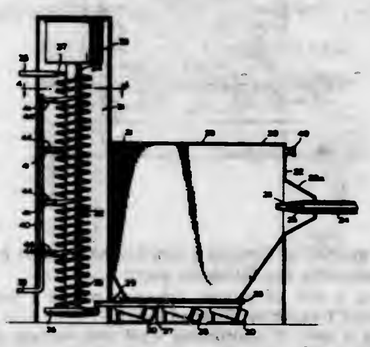
1. For production of a fission-product-retaining fuel body, a process comprising the steps of granulating mixed uranium dioxide and carbon, spheroidising the granules so formed, effecting reaction-sintering of the spheroids thus formed so as to convert them to spheroids of uranium carbide, coating the uranium carbide spheroids with silicon carbide, mixing the coated spheroids with silicon carbide and carbon, extruding the mixture to form compacts, and effecting self bonding of the compacts by effecting reaction between said last-added carbon and silicon to produce dense fuel bodies.

3,293,333

PRODUCTION OF FINE SPHERICAL METAL PARTICLES

William P. Weesley, John S. Crosier, and Vincent E. Furnas, Jr., Jefferson County, Ky., assignors to Reynolds Metal Company, Richmond, Va., a corporation of Delaware

Filed Aug. 16, 1962, Ser. No. 217,414
11 Claims. (Cl. 264—12)



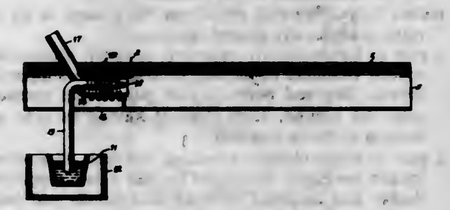
1. Method for the production of fine spherical metal particles which comprises subjecting molten metal to the action of a high velocity stream of gas inert to said metal, to disintegrate the metal into fine particles, discharging the molten metal particles and said gas stream into an enclosed cooling zone having an atmosphere of exothermic gas containing nitrogen and carbon dioxide, said exothermic gas providing available oxygen in an amount insufficient to interfere with normal surface tension forces of the particles causing sphere formation, allowing the particles to assume spherical shape in said atmosphere, and exposing the spherical particles to inert gas containing about 5% free oxygen by volume.

3,293,334

PREPARATION OF SPHERICAL METAL POWDER

Linton D. Byland, Chesterfield County, and Francis B. Rothwisch, Goochland County, Va., and William P. Weesley, Jefferson County, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

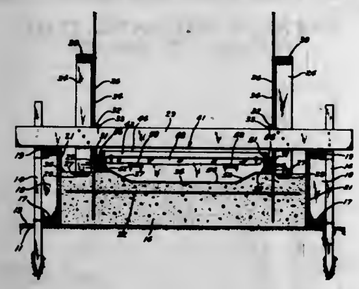
Filed Aug. 16, 1962, Ser. No. 217,415
7 Claims. (Cl. 264—12)



1. Method of producing spherical metal powder, which comprises subjecting molten metal to the action of a high velocity stream of exothermic gas containing nitrogen and carbon dioxide, to disintegrate the metal into fine particles,

said gas providing available oxygen in an amount insufficient to interfere with surface tension forces of the particles effecting sphere formation, and passing said gas stream and the particles of molten metal through a spherodizing zone to cause sphere formation and solidification of the spherical particles.

3,293,335
METHOD AND APPARATUS FOR FORMING CONCRETE BOX CULVERT FOUNDATION
Walter H. Herberger, R.R. 4, Indianola, Iowa 50125
Filed Mar. 16, 1964, Ser. No. 352,216
2 Claims. (Cl. 264—31)



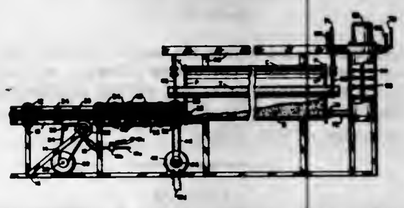
1. A method of forming a concrete box culvert foundation comprising the following steps:
staking a pair of ground engaging panels a predetermined transverse distance apart;
laying a mat of reinforcing steel rods on the ground surface between said panels;
supporting a pair of longitudinally extended elements from and intermediate said panels in transversely spaced parallel relation;
supporting a pair of longitudinally extended members from and intermediate said panels in transversely spaced relation and with the upper surfaces of said members placed in a common horizontal plane;
raising said mat above the ground surface and suspending said mat below said members;
pouring concrete in between said panels until it covers said mat and the bottom and side surfaces of said elements;
placing a foundation floor shaping screed between and on both of said members; and
moving said screed longitudinally along said members and through said concrete and utilizing said members to prevent transverse horizontal movement of said screed.

2. Apparatus for forming a concrete box culvert foundation comprising the following combination:
a pair of elongated panels the upper edges of which are horizontally disposed above the upper surfaces of the foundation to be formed;
means supporting said panels on the ground in an upright, transversely spaced relation;
a pair of longitudinally extended, parallel, transversely spaced elements connected to said panel supporting means, disposed between said panels and extended over the ground, each element having its side and bottom surfaces exposed;
a pair of longitudinally extended, parallel, transversely spaced members connected to said panel supporting means and disposed between said panels and intermediate said elements, the upper surfaces of said members lying in a common horizontal plane;
a mat of reinforcing steel suspended from said panel supporting means and disposed in spaced relation above the ground; and
screed means movably mounted on said members longitudinally of said panels, said screed means including a screed member having an undersurface shaped according to a desired surface of the foundation to be formed, and having further side walls disposed contiguous to the inner surfaces of said members for limiting the transverse movement of said screed.

3,293,336
PROCESS FOR IMPROVING PARTICLEBOARD
Max Himmelheber, Saarstr. 7, Ruesselsheim, Germany
No Drawing. Filed Jan. 21, 1963, Ser. No. 252,556
Claims priority, application Germany, Jan. 27, 1962, H 44,724
3 Claims. (Cl. 264—37)

1. The process for manufacturing particleboard panels by forming the panels from a particle mixture, which comprises providing the particle mixture with an addition of dust resulting from sanding other previously formed panels.

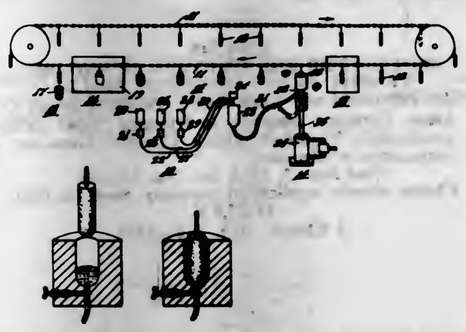
3,293,337
APPARATUS AND METHOD FOR FILLING A VOID WITH A RESINOUS FOAM
Dennis Rosato and Kenneth Shertzer, Janesville, Wis., assignors to Triangle Conduit & Cable Co., Inc., New Brunswick, N.J., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,690
5 Claims. (Cl. 264—45)



1. A method of filling the space within a casing with a foamed resinous body, comprising delivering a measured mass of a foamable resinous mixture into an enclosure extending longitudinally of the space defined by a casing, said enclosure having an end movable relative thereto, withdrawing said enclosure while maintaining said end in fixed position relative to said casing to deposit said mass along one wall of said casing and timing said deposit to permit said resinous mixture to react substantially immediately subsequent to completion of said deposit and foam and expand to fill said space.

3,293,338
METHOD OF MAKING FOAM ARTICLES
Walter D. Voelker, Philadelphia, Pa., assignor, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Nov. 23, 1962, Ser. No. 239,620
2 Claims. (Cl. 264—54)

1. A method of producing shaped articles of polyurethane foam on a continual basis which comprises continuously preparing a liquid polyurethane-foam-forming-composition, continuously directing the liquid composition to a dipping vat so as to maintain a pool thereof within the vat, successively immersing each of a plurality of advancing forms which are positioned above the dipping vat and have the shape of the desired polyurethane foam article in the pool, withdrawing the form from the vat with a coating of the polyurethane-foam-forming-composition adhering thereto, heating the coated form to cure the coating to a polyurethane foam article of the desired shape, and removing the polyurethane foam article from the form; said dipping vat having a shape like that of said form and a volume of such magnitude that the immersed form displaces a substantial proportion of the polyurethane-foam-forming-composition contained therein, said polyurethane-foam-forming-composition being continuously supplied to said vat at a rate equal to the



rate of its removal therefrom through adhering to said form, and the relative movement of said form and said vat being controlled to effect immersion and withdrawal of said form in said vat along substantially the same vertical path.

3,293,339
METHOD OF DRAWING AND DYEING ARTICLES OF POLYPROPYLENE
David Shaff Gates, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 28, 1963, Ser. No. 268,536
7 Claims. (Cl. 264—78)

1. A method comprising drawing a shaped article of polypropylene having gamma orientation and an orientation angle of 10° to 45° at a temperature of between about 10° and 80° C. in contact with a homogeneous liquid draw bath which wets the polymer, has a surface tension less than about 60 dynes per centimeter and contains a dye soluble therein, whereby the dye is imbibed in the body of the article.

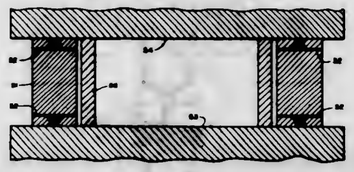
3,293,340
METHOD OF PRODUCING COLORED STRUCTURES
Daniel Woerring, Chicago, Ill., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 290,610, June 26, 1963. This application Feb. 9, 1966, Ser. No. 526,061
6 Claims. (Cl. 264—78)

1. A process for the production of colored, regenerated cellulose tubing which exhibits improved transparency and brightness comprising the steps of;
(*a*) admixing a vat dye in a viscose solution, said vat dye being in the form of a pigment paste;
(*b*) forming and regenerating said vat dye-containing viscose solution until a regenerated cellulose tubing is obtained;
(*c*) immersing said vat dye-containing regenerated cellulose tubing in a reducing solution maintained at a temperature of between about 35° C. to 50° C. for a period of between about 1 to 5 minutes such that said vat dye is reduced and solubilized in situ, said reducing solution containing salt of sufficient concentration to prevent migration of the soluble leuco form of the vat dye from the tubular structure but of insufficient concentration to cause precipitation of undesirable products in the tubular structure; and
(*d*) oxidizing and insolubilizing said vat dye in situ.

3,293,341
HEAT TREATMENT OF HOLLOW-SHAPED STRUCTURES
Paul J. Beeks and Robert J. Maljkovich, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,118
7 Claims. (Cl. 264—94)

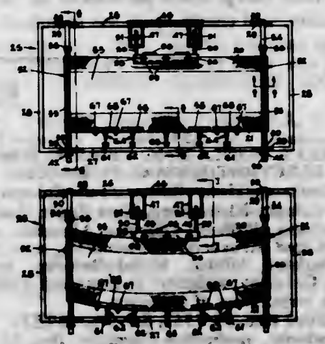
1. A method for preparing a hollow structure having improved stiffness comprising molding a polymer of a mono-1-olefin by use of a fluid pressure differential to form a hollow structure, cooling such structure to below its crystalline freeze point, heat treating said structure at a temperature of 1 to 50° F. below its crystalline freeze point for a period of time sufficient to increase the structure's resistance to deformation, and thereafter cooling said structure.

3,293,342
METHOD FOR MANUFACTURE OF VALVE SEALING MEANS
Marvin H. Grove, 340 Middle Ave., Piedmont, Calif. 94611
Filed Sept. 23, 1963, Ser. No. 310,640
6 Claims. (Cl. 264—157)



1. In a method for the manufacture of seal rings for valves from two different resilient materials, one of which is relatively hard and wear resistant compared to the other, the steps of introducing a heat curable stock of softer resilient material into a circumferential recess formed in one side portion of a ring formed of the harder material, applying a platen against said side portion of the ring whereby surfaces of the recess and surfaces of the platen define a closed cavity within which said softer material is compressed, and then curing the softer material by heat supplied from the platen.

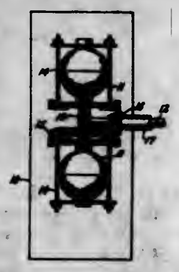
3,293,343
METHOD FOR MAKING GLARE-REDUCING LAMINATED GLAZING UNITS
Paul T. Mattimoe and Harry E. Conner, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 20, 1963, Ser. No. 281,466
6 Claims. (Cl. 264—291)



1. A method of preforming a generally rectangular thermoplastic interlayer for use in a curved laminated glass unit, said plastic interlayer having spaced rectilinear glare-

reinforcing bands extending along and parallel to a first pair of opposite edges thereof, comprising supporting said interlayer substantially in a plane by engaging a second pair of opposite edges, applying tractive forces to one edge of said first pair of opposite edges in a direction perpendicular to said edge and in the plane of the interlayer, heating said interlayer while applying said tractive forces to cause said interlayer including said first pair of opposite edges thereof to be deflected intermediate said second pair of engaged edges in the direction of said forces and said first pair of edges to become curved, and arresting the deflection of a portion of the other of said first pair of opposite edges centrally thereof while continuing to apply said tractive force to said one edge of said first pair.

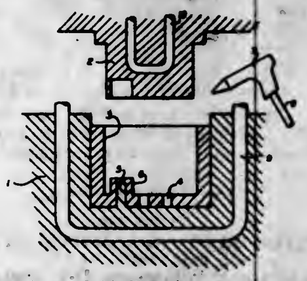
3,293,341
ROTATIONAL MOLDING METHOD
Gerald L. Bruner, South Bend, and John S. Bruner, Michiana, Ind., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed June 17, 1963, Ser. No. 288,591
9 Claims. (Cl. 264—302)



1. A method of making a hollow fuel tank of thermoplastic resin which comprises, coating the inner surface of a fuel tank mold with a plasticizer for the resin, depositing in the mold a finest dry charge of particles of thermoplastic vinyl resin and a thick, viscous, fuel resistant plasticizer therefor, said charge being less in volume than the volume of said mold, rotating the mold in a plurality of planes while heating the charge to distribute it and fuse the same into a layer over the surface of the mold in the form of the fuel tank, cooling the material in the layer and removing the article from the mold.

5. A method of making hollow articles of plasticized thermoplastic vinyl resin comprising, fluxing a thermoplastic vinyl resin and a plasticizer therefor, making small particles of said fluxed resin and plasticizer, depositing in a mold a finest charge of the particles of the fluxed resin and plasticizer, said charge being less in volume than the volume of said mold, rotating the mold in a plurality of planes while heating the particles to distribute the compound and coalesce the particles into a layer over the surface of the mold in the form of the object to be molded, cooling the compound in the layer, and removing the article from the mold.

3,293,345
PROCESS FOR THE EJECTION OF MOLDED PLASTIC PARTS FROM HOT MOLDS
Willy Zobrowski and Erich Behr, Troisdorf, Bonn Cologne, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bonn Cologne, Germany, a corporation of Germany
Filed Sept. 5, 1962, Ser. No. 221,421
Claims priority, application Germany, Sept. 14, 1961, D 37,036
5 Claims. (Cl. 264—334)



1. In the production of plastic articles by molding under heat and pressure wherein the article is molded in a multipart mold while the mold is hot and following the molding, at least one mold part is removed to provide the molded article ready for removal from a remaining mold part with a portion of the surface of the article exposed and a portion of the surface thereof in contact with the remaining mold part and while the remaining mold part is hot and the article is hot, and the article in hot condition is susceptible to injury upon application thereof of a force for the removal thereof from the remaining mold part but in a relatively cool condition is of sufficient strength for the removal, the step of contacting exposed surface of the article with a liquid which evaporates on such contacting taking heat from the article to cool it so that the article can be removed from the remaining mold part without injury thereto, and the step of removing the article following said contacting, the remaining mold part being supplied with heat for the molding and the supply of heat being continued during said contacting and the removal of the molded article, whereby the article is removed without substantial cooling of the remaining mold part.

ELECTRICAL

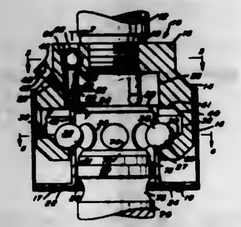
3,293,346
HEAT INSULATING CEILING FOR ELECTROTHERMAL-FURNACES
Alfred Steinberg, Wesseling, near Cologne, Alfred Schütz, Cologne-Klettenberg, Kurt Zeyer, Troisdorf, near Cologne, Wilhelm Hellmann, Cologne-Dellbrück, near Cologne, Alfred Hermann, Wesseling, near Cologne, and Reinhard Hille, Knapsack, near Hürth-Hermülheim, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany
Filed Nov. 30, 1963, Ser. No. 329,531
Claims priority, application Germany, Dec. 31, 1962, K 48,614
7 Claims. (Cl. 13—9)

1. In a cover for large electrothermal furnaces, said cover being provided with a heat insulating ceiling and being composed of cover segments which are interconnected and connected to the rim portion of the furnace jacket in gastight manner, the improvement which



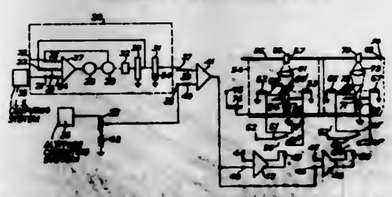
consists in a self-supporting, heat insulating concrete ceiling producing a heat damming effect, the heat insulating ceiling being disposed below and spaced from the said cover-forming cover segments, said ceiling having a center portion and having electrode receiving ducts, the center portion of the heat insulating ceiling having an aperture extended from electrode duct to electrode duct, and the aperture being covered with a loosely secured crossing made of the same material as the heat insulating ceiling.

3,293,347
ELECTRODE STUB CLAMP
Patrick J. Weeding, Mountainside, N.J., assignor to Consarc Corporation, Rancocas, N.J., a corporation of New Jersey
Filed Oct. 24, 1965, Ser. No. 504,498
9 Claims. (Cl. 13—14)



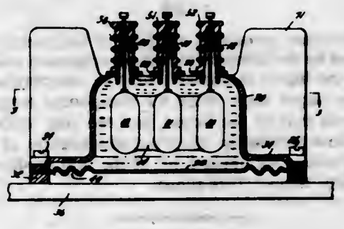
1. Apparatus comprising a hollow body open at one end, a perforated cage disposed in said hollow body, said hollow body being reciprocably disposed with respect to said cage, movable members in said body, means for moving said movable members for partially projecting them into said cage, said cage being rotatable in said body about its longitudinal axis, latch means for retaining said cage in a definite position with respect to said body while permitting the cage to rotate about said longitudinal axis so that relative reciprocable movement between said body and said cage is prevented, a current carrying means connected to the other end of said body, said body and said members being made from a material which is a good electrical conductor.

3,293,348
FLIGHT TRAINING APPARATUS
Alexander Richard Blackaddie, Three Bridges, Crawley, and Melville Leslie Shelley, Hurstpierpoint, England, assignors to Communications Patents Limited, London, England
Filed Aug. 27, 1962, Ser. No. 219,567
Claims priority, application Great Britain, Sept. 19, 1961, 33,538/61
14 Claims. (Cl. 35—10.2)



1. Ground-based flight training apparatus for simulating visual effects corresponding to those provided to an aircraft in flight by a surface-located visual navigational aid, comprising a representation of a landing area, an optical viewing device for viewing a portion of the representation, means for providing relative movement of the viewing device and the said representation, in accordance with computed simulated movement of an aircraft relative to the landing area, and means for displaying the scene viewed by said viewing device, including at least one light source associated with the representation, positioned correspondingly to a light projection unit of said visual navigational aid, and means for varying the character of the light transmitted from the said source of light in accordance with the computed simulated movement of the aircraft, whereby the scene displayed by the said display means shows visual effects corresponding to those provided by said visual navigational aid in relation to an aircraft following said simulated computed movement.

3,293,349
LIQUID IMMERSED RECTIFIER ASSEMBLY
Edward J. Diebold, Palos Verdes Estates, Joe Wilecky, El Segundo, and Frank Pauli, Torrance, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed May 13, 1964, Ser. No. 367,052
2 Claims. (Cl. 174—12)



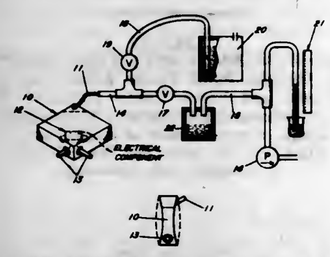
1. A tank for housing electrical equipment, said tank comprising:
- a main dome section including upstanding side walls and an enlarged flange extending transverse thereto thereabout, the cross-sectional area defined within said upstanding side walls being less than the total area defined within said upstanding side walls plus the area of said flange;
- a flexible wall secured to said flange at its outermost periphery to define a completely sealed volume, said volume being filled with fluid, said flexible wall lying in a plane which is parallel to said flange but spaced therefrom such that an area of said flexible wall which is equal to said total area will be exposed to said fluid;
- whereby said flexible wall will experience less movement in compensating for a given volumetric change in said volume in response to expansion or contraction of said fluid than if the area of said flexible wall which were exposed to said fluid were equal to said area defined within said upstanding side walls.

3,293,350
ARRANGEMENT FOR MAINTAINING SHORT TERM THERMAL STABILITY OF AN ELECTRICAL CURRENT-CARRYING COMPONENT
William A. Yonkers, Mountain Lakes, N.J., assignor to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey
Filed May 12, 1964, Ser. No. 366,776
2 Claims. (Cl. 174—15)

1. An improved arrangement for cooling an electrical component over a predetermined ambient temperature range comprising,
- (a) a sealed can having opposed normally-flat side walls which bow inwardly and outwardly when the internal pressure is below and above atmospheric pressure, respectively,
- (b) a liquid partially filling the can, said liquid having a boiling point, at atmospheric pressure, substantially equal to the upper limit of the predetermined ambient temperature range, the space above the liquid

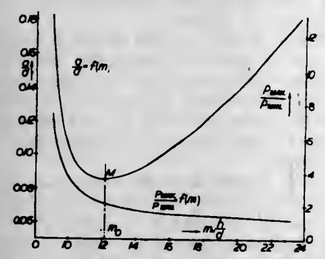
being filled solely by the vapor of the liquid and the internal pressure of the can being approximately 5 pounds per square inch absolute at a temperature of 65° F.,

(c) an electrical component immersed in the liquid and proximate to the bottom of the can, and



(d) electrical terminals carried by the can and connected to the component, the arrangement being such that the liquid in contact with the component passes to the vapor stage when the component temperature exceeds that of the liquid, and the side walls of the can bow outwardly when the temperature of the liquid exceeds the upper limit of the said predetermined ambient temperature range.

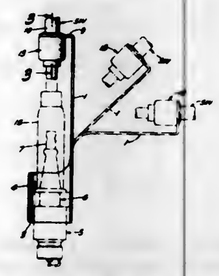
3,293,351
ELECTRIC POWER CABLE
Joseph Antoine Giaro, 17 Rue du Bois d'Airemont, Mont-sur-Marchienne, Belgium
Filed Feb. 3, 1964, Ser. No. 342,127
Claims priority, application Belgium, Feb. 5, 1963, 627,999; Nov. 8, 1963, 640,009
2 Claims. (Cl. 174—25)





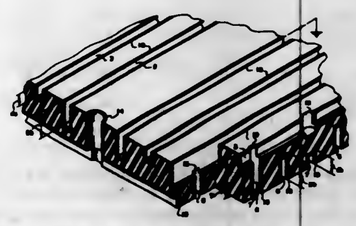
1. Electric power cable comprising at least one conductor, a dielectric under a pressure greater than atmospheric when no current is passing, an impermeable sheath and an elastic metallic armouring of high mechanical resistance and high resilience laid helicoidally over said sheath and having a relative thickness a/d where a is the thickness of the armouring and d the diameter over which the armouring is laid at the minimum when said relative thicknesses are plotted as ordinates against the relative pitches h/d of said armouring as abscissae for the said cable, where h is the pitch of said armouring and d the diameter over which the armouring is laid.

3,293,352
SPARK PLUG ATTACHMENT FOR GROUNDING SHEATHED WIRES
Russell G. Livingston, Los Angeles, Calif., assignor to Hallett Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Apr. 24, 1964, Ser. No. 362,483
5 Claims. (Cl. 174—35)



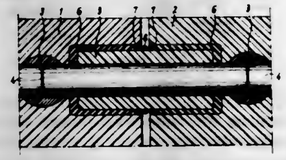
1. Shield means for grounding the metallic sheath of a spark plug wire comprising in combination: a spark plug for an internal combustion engine and having a metal base; a wire connected to said plug for supplying electrical energy thereto; an electrically conductive sheath on said wire; an elongate metal shield member having a length greater than that of said plug; said shield member including an elongate arm having an arcuate metal clamp formed on one end and extending laterally therefrom and embracing the metal base of said plug; said arm extending upwardly from said clamp along one side of said plug with the other end thereof spaced from said plug; and metal clamp means on said other end of said arm engaging and making electrical connection with said sheath.

3,293,353
SHIELDED INTERCONNECTING WIRING MEDIUM
Hendrik B. Hendriks and Jim D. Burch, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Mar. 30, 1964, Ser. No. 358,634
16 Claims. (Cl. 174—36)



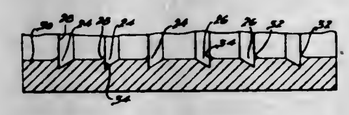
13. A board for use in an interconnecting medium comprising: an insulative panel, a first plurality of spaced grooves formed in one side of said panel, and a second plurality of spaced grooves formed in the opposite side of said panel, said first plurality of grooves being transversely arranged to said second plurality of grooves and selected grooves of said first plurality of grooves extending through said panel to a depth to provide openings intersecting selected grooves of said second plurality of grooves.

3,293,354
CONNECTION OF ELECTRICALLY INSULATED HIGH-VOLTAGE CONDUCTORS
Jan Christiaan Claeon and Johannes Gerardus Franciscus Eyndak, Hengelo, Netherlands, assignors to N.V. Fabriek Van Electrische Apparaten Voorheen F. Hazemeijer & Co., Hengelo, Netherlands, a Dutch corporation
Filed Dec. 19, 1962, Ser. No. 245,930
Claims priority, application Netherlands, Dec. 28, 1961, 272,750
3 Claims. (Cl. 174—84)



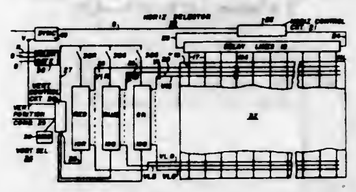
1. A semi-permanent connection between electrically insulated high-voltage conductors comprising insulating parts surrounding the conductors and separated by a gap containing a member of flexible insulating material held under pressure in said gap, the insulating parts having constant transverse dimensions over the entire length of the gap formed between them, the insulating member consisting of a filler sheath in the form of a sleeve covering the inner insulating part and being anchored to the free end thereof, said sheath having outer dimensions larger than the inner dimensions of the outer insulating part, the insulating parts being joined together by compression, in the gap so that the air between this sheath and the insulating parts is permanently expelled.

3,293,355
ELECTRICAL CONNECTOR
Walter E. Gropp and Dirk Landmann, New Cumberland, Pa., assignors to Berg Electronics, Inc., New Cumberland, Pa., a corporation of Pennsylvania
Filed Feb. 6, 1964, Ser. No. 343,042
2 Claims. (Cl. 174—84)



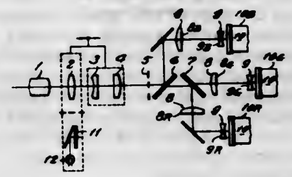
1. An electrical connector adapted for crimping around one or more conductors, said connector comprising a ferrule forming channel having two series of flat topped inclined ribs formed on the inside of the channel and extending transversely of the channel with the ribs of one series inclined toward the ribs of the other series and with one series spaced longitudinally of the channel so as to be disposed at one end of the other series, a flat topped central rib separating said series of ribs, the tops of all of said ribs defining the inner surface of said channel, the sides of adjacent ribs intersecting at an acute angle to form V-shaped grooves between such ribs with the grooves adjacent one series of ribs inclined toward the ribs of the other series, the one side of each rib in each series facing the other series being oriented perpendicular to said surface and extending upwardly past said surface to form a sharp cutting edge above the top of such rib, the other side of each rib in each series and both sides of said central rib being oriented obliquely to said surface so as to make an obtuse angle therewith, the width of said ribs being substantially greater than the width of said grooves.

3,293,356
SOLID STATE DISPLAY DEVICE FOR PROVIDING COLOR DISPLAYS
William R. Alkan, 10410 Magdalena Road, Los Altos Hills, Calif. 94022
Filed May 31, 1963, Ser. No. 284,448
23 Claims. (Cl. 178—5.4)



1. In a color display device, a plurality of sets of selector grids, a plurality of sets of color control grids extending in a direction perpendicular to said first grids, a plurality of sets of color producing means, the grids of at least one of said color control sets being disposed in superposed relation with the grids of a second one of said color control sets, each different set of color producing means being operative to provide a light output in a different color, and means for supporting each of said color control grid sets for use with a different one of said selector grid sets in controlling a light output by at least one corresponding set of said color producing means.

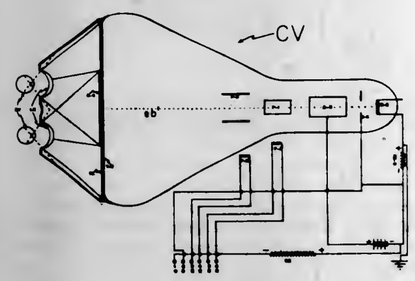
3,293,357
INTERNAL FOCUSING COLOR TELEVISION CAMERA
Yoshikazu Doi and Syusaku Hosaka, Saitama-ken, and Hiroshi Nomura, Tokyo, Japan, assignors to Fuji Shashin Koki Kabushiki Kaisha, Saitama-ken, Japan, and Nippon Television Hoso-mo Kabushiki Kaisha, Tokyo, Japan, both corporations of Japan
Filed July 30, 1963, Ser. No. 298,606
6 Claims. (Cl. 178—5.4)



1. A color television camera comprising an object lens means, transducing means for translating visual images into electrical signals representative of the color characteristics of said images, a front and a rear relay lens means which are interposed between said object lens means and said transducing means for passing light rays parallelly from said front relay lens means to said rear relay lens means, said front relay lens means being mounted for movement relative to said object lens means along the path taken by said light rays, to enable said camera to be focused, the dichroic mirrors arranged between said front and rear relay lens means for resolving light from said front relay means into three primary colors, said front relay means being divided into two

parts, of which the front part is the negative one and the rear part is the positive one so that any aberration may be effectively corrected in the old focusing range.

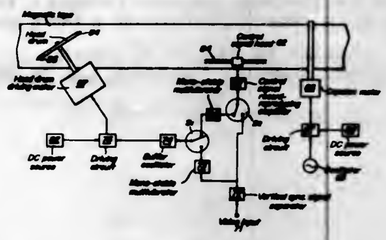
3,293,358
CATHODE RAY TUBE OPTICAL VIEWING DEVICE FOR REPRODUCING WIDE ANGLE STEREOSCOPIC STEREOPHONIC MOTION PICTURES
Harvey L. Ratliff, Jr., Amarillo, Tex., assignor of one hundred percent to Jetru Inc., Amarillo, Tex.
Filed Jan. 10, 1963, Ser. No. 250,562
5 Claims. (Cl. 178—6.5)



1. A cathode ray tube optical viewing device for reproducing wide angle stereoscopic stereophonic portrayals comprising: an enclosed, hollow casing, one portion of said casing being adapted to fit adjacent the face of a viewing observer, said one portion having two ocular openings, a means to support said ocular openings in position to be looked through by a viewing observer, said means allowing said viewing device to be moved laterally, vertically, and forwardly and rearwardly, and to be rotated about the vertical axes and both horizontal axes, one television unit having a single screen mounted within said casing, a left eye view wide angle motion picture image being reproduced on said screen by said television unit, optical means making said left eye view image visible only through the left of said ocular openings, a right eye view wide angle motion picture image being reproduced on said screen in partially overlapped relation with said left eye view image, said optical means making said right eye view image visible only through the right of said ocular openings, said overlapped relation making possible extremely wide angle viewing, oculars mounted in each of said ocular openings, speakers being arranged to reproduce sound from four different directions, said television unit, said screen, said optical means, said oculars, and said speakers co-operating together to recreate a portrayal through the sense of wide angle stereoscopic viewing and the sense of four directional stereophonic hearing.

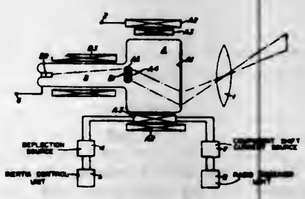
3,293,359
MAGNETIC RECORDING AND REPRODUCING DEVICES
Shino Yamoka, Toyonaka-shi, Shozo Arstani, Osaka, Ichiro Arimura, Kyoto, and Osahiko Yano, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Nov. 29, 1963, Ser. No. 326,800
Claims priority, application Japan, Dec. 1, 1962, 37/54,253; Dec. 28, 1962, 37/59,696
6 Claims. (Cl. 178—6.6)

1. A device for recording and reproducing a broadband signal comprising a magnetic tape, a rotary head including a magnetic transducer, said transducer being adapted to successively sweep diagonally across said tape, a source for a reference signal having a synchronous characteristic, means for deriving a control signal responsive to said reference signal source, an electric motor for rotation in synchronism with said control signal, said motor being a brushless D.C. synchronous motor, and a



D.C. power source for supplying power to said motor through a semiconductor switching circuit, said control signal being operative to control said semiconductor switching circuit for driving said motor.

3,293,360
TELEVISION EQUIPMENT FOR MOBILE CRAFT
Norman Neville Parker Smith, Billericay, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Apr. 13, 1964, Ser. No. 359,517
Claims priority, application Great Britain, Apr. 17, 1963, 15,210/63
8 Claims. (Cl. 178—6.8)

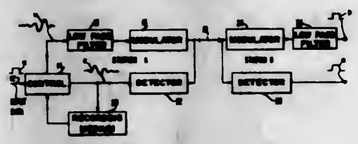


4. A television equipment for a missile or other mobile craft comprising a camera tube, an image intensifier tube having a photo-cathode and a fluorescent screen, optical means for projecting a first light image on to the cathode of said image intensifier tube to occupy only a fraction of the area of said photo-cathode, means controlled in dependence upon changes of attitude of the craft for causing electron emission produced by the first light image from the photo-cathode to produce on the fluorescent screen of the image intensifier tube a corresponding second light image the position of which is substantially the same irrespective of the position of the first light image on the photo-cathode and means for projecting the image on the fluorescent screen on to the picture receiving area of the camera tube so as approximately to fill the same.

3,293,361
TRANSMISSION SYSTEMS
Emil Hopner and Hans R. Ulander, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 18, 1962, Ser. No. 245,540
6 Claims. (Cl. 178—69)

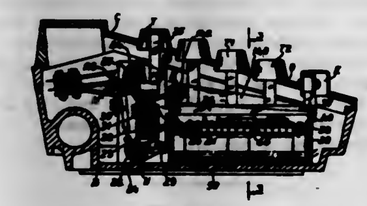
1. In a transmission system having a given characteristic which distorts components of a pulse of a given time duration as the pulse passes from a sending end to a receiving end of said system forming at the receiving end a distorted waveform having a duration many times that of said given duration, the combination comprising

(a) signal generating means located at said sending end for generating a plurality of signals each one having a time reversed waveform of that of said distorted waveform,
(b) a summing network connected at said sending end to transmit waveforms applied thereto and,



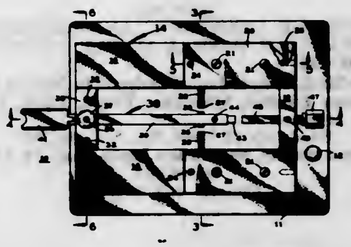
(c) a control circuit located at said sending end and responsive to the application of a series of data pulses having said given time duration for applying one of said signals for each of said data pulses to said summing network.

3,293,362
ENCODING KEYBOARD
Jean Herman Veldkamp, Noord, Netherlands, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France
Filed June 28, 1963, Ser. No. 291,313
Claims priority, application France, July 5, 1962, 903,037
5 Claims. (Cl. 178—79)



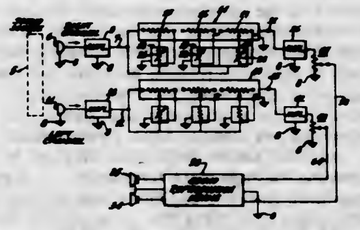
1. Keyboard for the transmission of coded indications by means of a number of electric conductors to which voltage is applied separately or in combination in accordance with a code, the said keyboard comprising a series of keys for the establishment of indications, each of the said keys being fast with an actuating bar disposed transversely of and above a series of encoding bars disposed parallel to one another, each encoding bar being formed with notches situated in positions below the actuating bars and in such manner that depression of a transmission key and of the actuating bar fast therewith for the transmission of an indication also depresses those encoding bars situated below them, which are not formed with notches in the positions situated below the actuating bar which is depressed, an electromagnet, displaceable intermediate members disposed one below each encoding bar and above a groove formed longitudinally in the movable armature of the said electromagnet which actuates the said intermediate members, the said groove being so formed that, when the electromagnet is not energised, depression of one or more encoding bars by manipulation of a transmission key lowers the intermediate member corresponding to each depressed encoding bar and engages it in the groove of the movable armature of the electromagnet, depression of at least one of the encoding bars thereafter closing a first electric contact by which the said electromagnet is energised and attracts its movable armature, which carries with it in its movement the intermediate member or members engaged in the groove in the said armature, each of the intermediate members thus carried along closing another electric contact for applying voltage to one of the conductors serving for the coded transmission of an indication, the displacement of the said movable armature as a result of the energisation of the said electromagnet bringing under the intermediate members not engaged in the groove in the movable armature another portion of the said armature which prevents the engagement of other intermediate members and depression of other encoding bars as long as the said electromagnet is energised.

3,293,363
TELEGRAPH KEY
Andrew Pfeiffer, Box 458, R.F.D. 1, Old Lyme, Conn. 06371
Filed June 5, 1963, Ser. No. 285,790
7 Claims. (Cl. 178—108)



1. A telegraph key comprising a base member, a pair of spaced contact elements mounted on said base member, an arm swingably mounted on said base member and rockable between positions alternately engaging said contact elements and an intermediate neutral position out of engagement with said contact elements, a manipulating handle mounted on said arm for movement thereof, a first permanent magnet on said arm at the end remote from said manipulating handle and movable therewith, and a second relatively stationary permanent magnet mounted on said base and closely spaced to the path of said first magnet, said first and second magnets having opposite poles in confronting registry when said arm is in said intermediate neutral position.

3,293,364
SOUND SIGNAL CORRECTION SYSTEM
Donald L. Richter, Bellmore, N.Y., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,963
10 Claims. (Cl. 179—1)



1. In an audio frequency signal translating system for recording high level audio frequency signals in a manner that the dynamic loudness characteristics thereof are

maintained when said signals are reproduced at low levels, the combination comprising,

a signal input circuit for receiving high level audio frequency signals, and a signal output circuit for delivering a modified version of said audio frequency signals for recording,

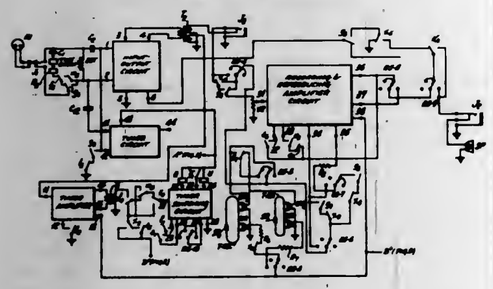
first means interconnected between said input and output circuits and responsive to the level of the high level audio frequency signals applied to said input circuit for compressing relatively low frequency components of said audio frequency signals applied to said input circuit, and

second means interconnecting said input and output circuits and responsive to the level of the high level audio frequency signals applied to said input circuit for expanding mid-frequency range components of said audio frequency signals applied to said input circuit.

3,293,365
TELEPHONE ANSWERING AND RECORDING APPARATUS WITH A SINGLE AMPLIFIER CIRCUIT

Toshio Mitsui, Tokyo, Japan, assignor to Nippon Electric Company Limited, Minatoku, Tokyo, Japan, a corporation of Japan

Filed July 22, 1964, Ser. No. 384,313
Claims priority, application Japan, Aug. 24, 1963, 38/45,807
6 Claims. (Cl. 179—6)

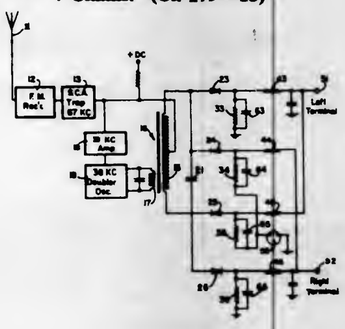


1. In a telephone answering device of the type having an announcement store and a message store, and means for driving each relative their respective transducers for delivering a record announcement in response to an incoming call and recording the massage in response thereto from the calling party, the improvement therein comprising: means responsive to an incoming call for establishing a D.C. holding circuit for the telephone line; an amplifier circuit; means responsive to an incoming call for driving said announcement store and coupling said amplifier circuit in readout relation between said line and the announcement store transducer; means responsive to the completion of the announcement cycle for deactivating said announcement store driving means, activating the message store driving means and coupling said amplifier circuit in recording relation between said line and the message store transducer for a predetermined time; means responsive to a predetermined signal over said line for activating the message store driving means, coupling said amplifier circuit in readout relation between said line and the message store transducer, for recycling said message store from the beginning and for negativing said predetermined time effect and allowing said message store to recycle independent thereof; and means responsive to a predetermined condition of said message store during the recycle for releasing said line and returning said telephone answering device to its condition before the reception of the incoming call.

3,293,366
FM STEREO MULTIPLEX RECEIVER HAVING STEREOPHONIC INDICATING MEANS

Leslie P. Golonski, Hanover Park, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Mar. 18, 1965, Ser. No. 440,774
7 Claims. (Cl. 179—15)

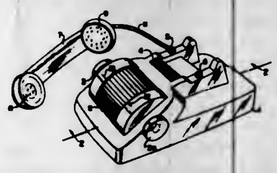


1. A multiplex stereophonic receiver, including in combination, first circuit means responsive to reception of frequency modulated signals to derive audio frequency stereophonic and monophonic signals, second circuit means providing switching signals in response to reception of stereophonic signals, third circuit means connected to said first and second circuit means for passing monophonic signals substantially free of distortion and for translating the stereophonic signals to develop separated left and right stereophonic signals, said third circuit means including rectifier means developing a direct current potential in response to the switching signals applied thereto from said second circuit means, and indicator means coupled to said rectifier means and responsive to the direct current potential developed thereby to indicate that stereophonic signals are being received by said receiver.

3,293,367
BINARY SWITCHING INTERCOMMUNICATING TELEPHONE SYSTEM

John Looker, 9149 White Oak Ave., Northridge, Calif. 91324

Filed Aug. 27, 1963, Ser. No. 304,837
9 Claims. (Cl. 179—18)



1. An intercommunicating telephone system comprising:

a plurality of substations including a first substation for initiating a call and a second substation for receiving said call, each of said substations having a unique binary calling code;

a plurality of code conductors looped between said substations;

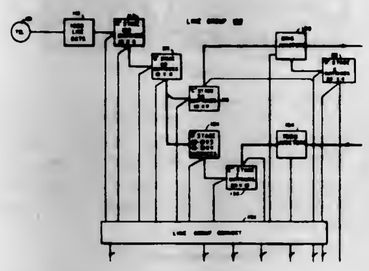
coding means including a mechanical selector means representing said calling code located at said initiating substation and including switch means corresponding to said calling code means being responsive to the initiation of said call to said receiving substation for producing a coding signal in said code conductors designating the receiving substation;

connecting means responsive to the initiating of said call at said initiating substation and to said code signal in said code conductors for connecting said initiating substation with said receiving substation.

3,293,368
MARKER FOR A COMMUNICATION SWITCHING NETWORK

William R. Wedmore, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Aug. 27, 1963, Ser. No. 304,892
14 Claims. (Cl. 179—18)



1. Marker apparatus for a communication switching system to select paths and establish connections between a first set of terminals and a second set of terminals through a plurality of switching stages arranged in tandem between terminals of the first set and terminals of the second set, each of said stages comprising a plurality of relays arranged in coordinate arrays, each relay having an operate winding and a hold winding, with a unidirectional device individual to each of said relays and connected in series with the operate winding thereof, at the coordinate points of each of said arrays, each relay having a normally open set of its own contacts connected in series with its hold winding, there being links interconnecting adjacent stages, each link including an operate conductor interconnecting the series combination of the operate winding and unidirectional device and a hold conductor interconnecting the series combination of the hold winding and normally open contacts of a relay in each of the adjacent stages, busy links having the hold path contacts closed at each end and having holding current flowing through the hold windings so that a given potential appears on the hold conductor;

said marker apparatus comprising an arrangement for selecting a group of possible links for a given connection and for connecting the hold conductors thereof to individual inputs of a detecting arrangement, means in the detecting arrangement to distinguish between the circuit condition on an idle link and the said potential on a busy link hold conductor,

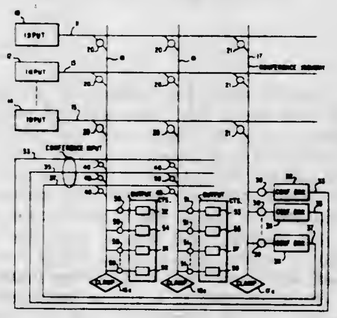
a route selector comprising a scanning arrangement having counting means and coincidence checking means, with connections from the counting means and the detecting arrangement to the coincidence checking means, means to produce a path-found signal from the coincidence checking means responsive to the counting means being in a position corresponding to a path via idle links,

means for applying a first marking potential to the terminal of the first set and a second marking potential to the terminal of the second set of the selected path which produces a potential difference in the forward direction of said unidirectional devices between the two selected terminals through a series path including the operate winding of one coordinate point relay of each of said stages, which causes said relays in the path between the selected terminals to operate and thereby establish a communication path, a holding circuit being then completed in series through the hold windings and said series contacts of the relays in the established path, and means effective subsequent to the establishment of the holding path for removing said marking potentials and thereby open the operate circuit.

3,293,369
CONFERENCE COMMUNICATIONS SYSTEM EMPLOYING TIME DIVISION MULTIPLEX

Eugene N. Schroeder, Bethesda, Md., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 20, 1963, Ser. No. 332,151
12 Claims. (Cl. 179—18)



1. A conference connection system for use in a time multiplexed switching system, comprising:

a plurality of input circuits adapted to provide analog signals;

a conference highway;

a plurality of first time gates, one for each input circuit, connecting said input circuits to said conference highway;

a second plurality of time gates connected to said conference highway;

a plurality of conference boxes, each connected through one of said second plurality of time gates, to said conference highway, whereby upon the simultaneous closure of one of the time gates of each of said first and said second plurality of time gates, the analog signal from one of said input circuits is sampled and provided to one of said conference boxes as a pulse amplitude sample;

means in each of said conference boxes for maintaining the amplitude of said sample as a constant level signal for a predetermined duration subsequent to the reception of a pulse amplitude sample; and

means for providing said constant level signal as a conference input to said time multiplexed switching system.

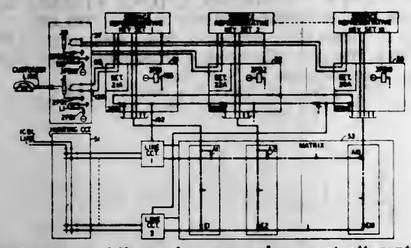
3,293,370
MAKE BUSY LINE CIRCUIT FOR KEY TELEPHONE SYSTEMS

Donald A. MacLeod, Oakland, Calif., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

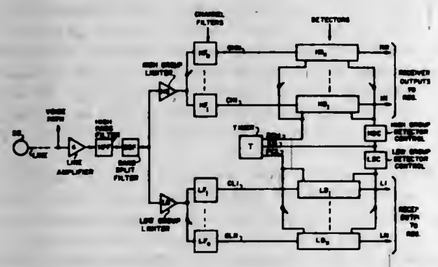
Filed Dec. 30, 1963, Ser. No. 334,235
7 Claims. (Cl. 179—18)

7. A key telephone system including a plurality of key telephone stations; ringing means, signaling means in said stations including visual and audible indicating

means responsive to said ringing means, a first and a second line terminating in each of said stations; a first means responsive to a terminating call on said first line including means for manually establishing a connection to a called station, detector means including rectifier means, transistor switch means and first relay means, said rectifier means coupled to said transistor switch means for controlling said first relay means responsive to said ringing means; a second means responsive to a terminating call on said second line including switching matrix means for establishing a connection to a second line on a called station; call diverting means for transferring to an idle station any subsequent attempted connection to said second lines; electrical and sensory busy line indicator means individual to each of said first lines; and key station busying means responsive to a terminating call on said first or said second line prior to an answer condition thereon including second relay means responsive to said detector means and to said second means to energize said electrical and sensory busy line indicator means and to enable said diverting means prior to enabling said visual and audible indicating means and to preclude any connection to a station subsequent to the establishment of said terminating call on either said first or said second line.

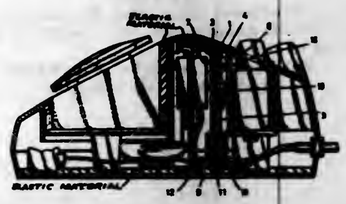


3,293,371
TIMING ARRANGEMENT FOR MULTI-FREQUENCY SIGNAL RECEIVERS
Robert V. Burns, Markham, and Robert T. Cleary, Lockport, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 25, 1963, Ser. No. 318,909
13 Claims. (Cl. 179—84)



1. A signal receiver for sensing signal bursts, each of said bursts comprising frequencies from a plurality of frequency groups, said receiver comprising: means for separating said signal bursts into the individual component frequencies; means associated with said separating means for detecting said components, said detecting means including component sensing means and output means; and means connected to and controlled by said component sensing means for timing a predetermined interval upon the coincident receipt of said component frequencies and for timing a second predetermined interval upon the loss of any one of said component frequencies.

3,293,372
TELEPHONE SET
Willy Lohs, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Nov. 6, 1961, Ser. No. 150,403
Claims priority, application Germany, Nov. 24, 1960, S 71,393
7 Claims. (Cl. 179—100)



1. A telephone set comprising a cover and a base plate forming parts of a housing, a preferably plate-shaped insulating carrier provided with the interior wiring of the telephone set, and means within the housing including flanges forming channels for receiving and disposing said wiring plate in position by sliding insertion thereof into said receiving means.

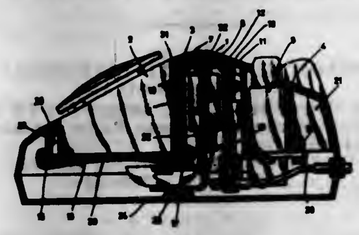
3,293,373
TELEPHONE SET
Willy Lohs, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Nov. 6, 1961, Ser. No. 150,404
Claims priority, application Germany, Nov. 24, 1960, S 71,392
3 Claims. (Cl. 179—100)



1. A telephone set comprising a plurality of component elements, a housing including a cover member and a base member, at least one of said members forming mounting means common to said component elements, means for clamping in mounted position at least some of said component elements between said common mounting means, said mounting means including means for initially receiving predetermined component elements in relatively loose engagement therewith, said component elements being by the other of said members secured in inserted position in the respective receiving means, key guide means formed on the respective receiving means, and keying means carried by predetermined component elements for cooperation with said key guide means for the purpose of assuring insertion of the corresponding component elements in proper position thereof.

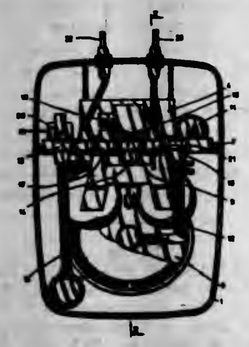
3,293,374
TELEPHONE SET
Willy Lohs, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, a corporation of Germany
Filed Nov. 6, 1961, Ser. No. 150,418
Claims priority, application Germany, Nov. 24, 1960, S 36,119
4 Claims. (Cl. 179—100)

1. A telephone set comprising a cover and a base plate forming a housing, component elements disposed interiorly of the housing, socket-like receiving means formed interiorly of the housing for receiving the respective elements, and clip means for holding predetermined ones of



said component elements in assigned position within a respective receiving means provided therefor.

3,293,375
TELEPHONE SET
Willy Lohs, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Nov. 6, 1961, Ser. No. 150,467
Claims priority, application Germany, Nov. 24, 1960, S 71,394
4 Claims. (Cl. 179—100)



1. A telephone set comprising a base plate and a cover forming a housing, component elements disposed within the housing and cord means extending therefrom, means carrying the interior wiring for said telephone set including sockets for receiving said plug means, the terminal wires of said component elements and of said cord means being provided with plug means for establishing connections with said interior wiring, said plug means being in plugged positions thereof secured against displacement by the action of a part of said housing.

3,293,376
COMMUNICATION SYSTEM UTILIZING FREQUENCY DIFFERENTIAL TIME DELAY
Emil Hopner, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,698
4 Claims. (Cl. 179—100.2)

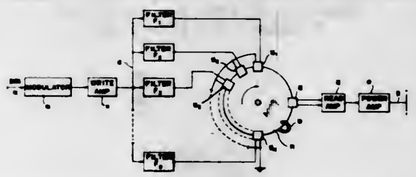
1. In a communication system having a transmitter and a receiver operatively connected by a communication link, apparatus for operating upon the message signal at the transmitter according to a first transform to derive a transmitted signal, and apparatus for operating upon the transmitted signal at the receiver according to a second transform which is the inverse of said first transform to re-establish the message signal comprising:

(a) a signal storage medium associated with said transmitter and continuously movable at a uniform velocity along a fixed path serially past a succession of signal recording instrumentalities and a signal sensing instrumentality;

(b) a plurality of filters commonly connected and receptive of the message bearing signal at said transmitter, and individually connected to respective ones of said signal recording instrumentalities, each of said filters being so constructed as to pass signals within a different predetermined frequency range, whereby each of said recording instrumentalities will record signals having a different frequency range in accordance with the filter connected thereto;

(c) a signal storage medium associated with said receiver and continuously movable at a uniform velocity along a fixed path seriately past a signal recording instrumentality and a succession of signal sensing instrumentalities;

(d) means operatively connecting the signal sensing instrumentality at said transmitter and the signal recording instrumentality at said receiver;



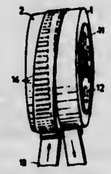
(e) a plurality of filters at said receiver each individually connected to a respective one of said signal sensing instrumentalities and commonly connected to produce a composite signal output of the individual outputs of said filters, each of said filters having a frequency response substantially identical to that of a corresponding filter in said transmitter;

(f) the instrumentalities at said transmitter and said receiver being so relatively disposed that the sums of the distances *"a"* and *"b"* are constant for all pairs of corresponding instrumentalities, the distance *"a"* being the distance separating any given one of the recording instrumentalities from the sensing instrumentality at the transmitter measured in the direction of movement of said storage medium, the distance *"b"* being the distance separating the recording instrumentality at said receiver from any given one of the sensing instrumentalities measured in the direction of movement of said storage medium, and corresponding pairs of instrumentalities consisting of an instrumentality at the transmitter and one at the receiver each connected to like filters.

3,293,377
DEVICE FOR REDUCING TAPE FRICTION IN A VIDEO TAPE RECORDER
Franciscus Theodorus Backus, Johannes Hendrik Wessels, and Theodoor Maria Albert Lips, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,158
Claims priority, application Netherlands, Apr. 9, 1962, 277,695
6 Claims. (Cl. 179—100.2)

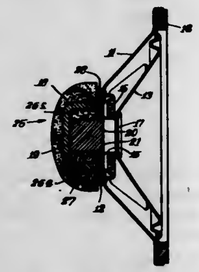
1. A device for magnetically recording and reproducing signals on a tape, comprising: a stationary cylindrical drum having a chamber and a cylindrical periphery, a portion of said periphery being adapted to be traversed by a moving magnetic tape, a rapidly rotating disc located in said chamber, said disc being concentric with said

drum. a magnetic head located on the circumference of said disc, said head magnetically co-acting with said tape, and at least one slot in the periphery of said drum, said



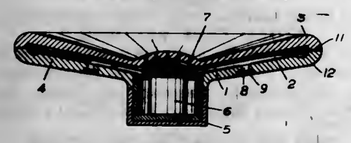
slot communicating with the drum chamber and said tape, the rapid rotation of the disc forcing air through said slot and between the periphery of the drum and the tape.

3,293,378
LOUDSPEAKER
Elmore A. Heppner, Round Lake, Ill., assignor to Heppner Manufacturing Co., a corporation of Illinois
Filed June 28, 1963, Ser. No. 291,371
3 Claims. (Cl. 179—115.5)



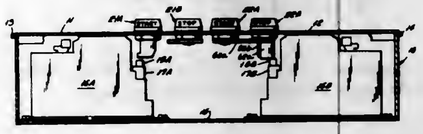
3. In combination with a loudspeaker having a plate provided with a circular opening therein, a magnet secured in position on one side of the plate and having a portion extending into the opening to produce an annular gap therewith and a voice coil movable in said gap, a dust cover for one side of said plate, said dust cover being preformed of polystyrene foam and being secured in dustproof relationship to said side of the plate and said dust cover having a recess enclosing the magnet.

3,293,379
EARPHONE
Rudolf Görike, 57c Sternwartestrasse, Vienna, Austria
Original application Jan. 17, 1961, Ser. No. 83,289. Divided and this application July 15, 1963, Ser. No. 295,032
Claims priority, application Austria, Jan. 23, 1960, A 496/60
4 Claims. (Cl. 179—115.5)



1. An earphone comprising a housing having a top opening, an ear piece envelope including a rear plate portion having a substantially central opening with an opening bounding wall peripherally connected to said housing adjacent the top thereof and also having a front plate portion, said piece envelope defining an internal cavity above said housing and extending radially outwardly beyond said housing, a greatly miniaturized electrodynamic drive system in said housing, and a diphragm of substantially normal size disposed in said cavity.

3,293,380
ENCLOSURE MOUNTED DEPRESSIBLE PUSH BUTTON MEANS
Russell S. Davis, Detroit, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1964, Ser. No. 412,972
7 Claims. (Cl. 200—5)



1. In a device of the class described, an enclosure having a cover operable between open and closed positions, a first and a second electrical device each disposed within said enclosure and having at one end thereof a first and a second movable control element, said control elements being spaced from said cover in its said closed position, said one ends facing one another with said control elements of said first device positioned in a first line spaced from and extending generally in the same direction as a second line passing between said control elements of said second device, an individual depressible pushbutton means individual to each of said control elements, each of said push button means being movable to operate its respective control elements, said pushbutton means mounted to said cover means and positioned in a third line transverse to said first and second lines, said first, and second and said third lines extending generally parallel to said cover in its closed position.

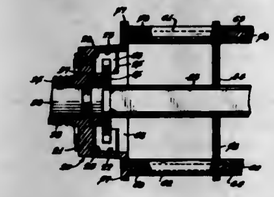
3,293,381
CONTACT MECHANISM WITH ROTATABLE AND SLIDABLE SWITCH ACTUATORS
Jay M. Eitel, Los Altos, Calif., assignor to Telsta Corp., San Carlos, Calif., a corporation of California
Original application Sept. 6, 1962, Ser. No. 221,693. Divided and this application Mar. 28, 1966, Ser. No. 537,741
5 Claims. (Cl. 200—6)



1. In a control mechanism, a housing, a control lever mounted on the housing for generally pivotal movement therein, a portion of the control lever being rotatable axially with respect to the remaining portion, switch means movable between open and closed positions mounted on the remaining portion of the control lever, and means carried by the rotatable portion of the control

lever for moving said switch means between said open and closed positions in any pivotal position of the control lever by rotational movement of the rotational portion of the control lever.

3,293,382
MULTI-SECTION ROTARY SWITCH UNITARY INDEX MECHANISM WITH IMPROVED SPRING BIASED DETENT BALL AND ADJUSTABLE STOP LIMIT STRUCTURE
Raymond F. Lewandowski, Mount Prospect, Bernard J. Golbeck, Crystal Lake, and Henry G. Garn, McHenry, Ill., assignors to Oak Electro/Netics Corp., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,510
30 Claims. (Cl. 200—14)



13. In a multi-section rotary switch, the combination of: a housing; a shaft rotatably mounted in said housing; an index member mounted for rotation with said shaft, and having means defining a plurality of index stations; a detent member mounted for limited movement on said housing and adapted to engage different ones of said index stations upon rotation of said shaft to locate said shaft in a desired position; means urging said detent member into engagement with said index member; and strut screws formed integrally with said housing and extending rearwardly therefrom for carrying the switch sections of said multi-section rotary switch, the rearward end of said strut screws being deformed to retain the rearmost switch section in assembled relation on said strut screws.

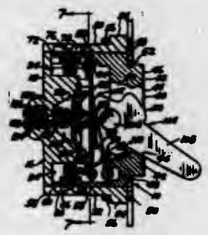
3,293,383
ELECTROLYTES FOR ELECTROLYTIC LEVEL SWITCHES
Kenneth C. Halliday, Jr., Port Washington, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
No Drawing. Original application Apr. 1, 1963, Ser. No. 269,766. Divided and this application Oct. 8, 1965, Ser. No. 494,230
11 Claims. (Cl. 200—152)

1. An electrolyte for use in a level switch, consisting essentially of a liquid solution in an aliphatic linear ester having at least 6 carbon atoms and not more than 12 carbon atoms and having a liquid phase above —40 degrees centigrade, of a halogen selected from the group consisting of iodine and bromine and an alkali metal salt selected from the group consisting of iodide and bromide of potassium and sodium, the alkali metal salt being present in amounts of approximately 4 to 5 grams per 100 cubic centimeters of ester and the halogen being present in amounts of approximately 3 to 4 times that of the alkali metal salt.

3,293,384
DIAPHRAGM TIME DELAY SWITCH
Robert H. Velgt, Port Huron, Mich., assignor to Aseco, Incorporated, Port Huron, Mich., a corporation of Michigan
Filed Feb. 12, 1965, Ser. No. 432,332
14 Claims. (Cl. 200—34)

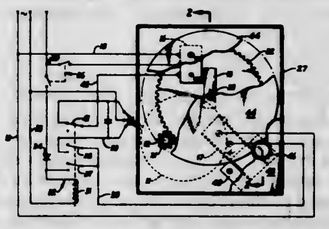
1. In a delayed action switch having a pair of electrical contacts and means for selectively moving said contacts into and out of engagement, said means comprising,

(a) spring means comprising a leaf spring member having a contact portion carrying one of said contacts and being movable intermediate a position engaging and disengaging said contacts,
(b) said leaf spring member further comprising a tongue portion connected with said contact portion and movable relative thereto,
(c) said spring means further comprising a U-shaped spring member connected with said contact portion and said tongue portion and operable to urge separation of said portions whereby upon a force being directed against said tongue portion in one direction said contact portion will be urged in the opposite direction,
(d) a lever member having a portion engaging said tongue portion and being operable upon movement toward a first position to move said tongue portion in a first direction and said contact portion through said spring member toward a position in which said contacts are in engagement,



(e) means operable upon said lever member being moved to a second position to urge said tongue portion in an opposite direction to thereby move said contact portion through said spring member toward a position in which said contacts are disengaged,
(f) said last mentioned means including a diaphragm engaging said tongue portion and moved to a collapsed position by said tongue portion upon movement of said lever member to a position engaging said contacts and operable in an expanded position to urge said tongue portion to a position disengaging said contacts and means delaying expansion of said diaphragm for a predetermined time period after movement of said lever member to said second position.

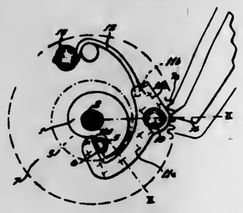
3,293,385
CYCLE TIMERS
Daisy Travaglio, Kensington, Calif., assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed Sept. 12, 1963, Ser. No. 308,512
2 Claims. (Cl. 200—38)



1. A cycle timer, comprising an output shaft mounted for rotation, a reversible synchronous electric motor drivingly connected to said shaft, an arm fixedly connected to said shaft for swinging movement therewith in first and second directions of rotation between two predetermined positions upon rotation of said shaft in opposite directions, and control means for reversing said motor rota-

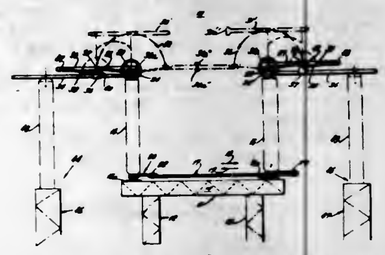
tion, said control means including spaced first and second snap-acting switch means mounted in the path of movement of said arm and responsive to said arm contacting said switch means for reversing the direction of rotation of said motor, said switch means being adjustably mounted for selective adjustment of the spacing therebetween so as to vary the duration of time required for said arm to move therebetween.

3,293,386
MECHANICALLY CONTROLLED ELECTRICAL SWITCH, ESPECIALLY FOR AN ALARM TIMEPIECE
André Bayner and Ali Schneiter, Neuchatel, Switzerland, assignors to Ebauches S.A., a firm of Switzerland
Filed July 22, 1964, Ser. No. 384,454
Claims priority, application Switzerland, Aug. 13, 1963, 9,900/63
2 Claims. (Cl. 200—38)



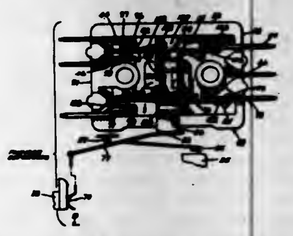
1. In a mechanically-controlled electric switch mechanism for an alarm timepiece, the combination of,
- a rotatable shaft fixed to the hour wheel of the timepiece,
- a non conductive cam rotatably mounted on said shaft and including a switch-actuating surface comprised of an undercut step having a top and bottom joined by a gradually-rising slope,
- a contact having a surface flush with the step thereof for defining conductive zones on the step alternating with the non-conductive zones thereof,
- a metallic disc carried by said shaft,
- a central sleeve circumscribing said shaft,
- an insulating plate mounted in said sleeve,
- an alarm wheel carried by said sleeve,
- a two-arm lever swingably mounted on said alarm wheel,
- a return spring anchored to said alarm wheel and bearing upon one arm of said lever for urging the other arm of said lever into bearing relationship with the switch-actuating surface of said cam,
- the cam-contacting arm of said lever having a nose riding sequentially moving tangentially between the extremities of said step on each rotation of said cam,
- a metallic blade, and
- a metallic washer establishing a friction fit between said alarm wheel and insulating plate and an electric contact between said sleeve and metallic blade,
- said sleeve and metallic blade serving as a conductive element with the nose of said lever in contact with said contact and as a non-conductive element with the nose of said lever in contact with said cam,
- the speed of the relative displacement between the nose of said lever and step of said cam being a function of the rotative speed of said cam and of the angle formed between the step and the tangent to the switch-actuating surface of said cam, said lever in contact with the step of said cam alternately closing and opening an electric circuit accordingly as said lever is in contact with the conductive or non-conductive zones.

3,293,387
CENTER BREAK THRUST TYPE SWITCH
Arem Foti, Greensburg, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 2, 1965, Ser. No. 444,990
5 Claims. (Cl. 200—48)



1. A disconnect switch comprising a base, first and second insulator columns secured at spaced intervals on said base; first and second disconnect switch assemblies mounted upon an associated insulator column; each of said assemblies comprising first and second pivot points, a switchblade and first and second links of substantially equal length; a first end of said first and second links being pivotally linked to said first and second pivot points; the second ends of said first and second links being pivotally coupled to said switchblade at spaced intervals, thereby forming a parallelogram linkage for pivoting said switchblade between an engaged and a disengaged position; the ends of said first and second disconnect switchblades closest to one another being provided with a substantially tapered point and a tulip clip, respectively, for providing suitable electrical engagement therebetween when said disconnect switch is in the engaged position.

3,293,388
PLUNGER OPERATED SWITCH UNIT FOR USE IN A DYNAMOELECTRIC MACHINE
John L. Slonneger, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed Feb. 24, 1965, Ser. No. 435,013
12 Claims. (Cl. 200—67)



2. A switch unit comprising a housing formed with switch accommodating means, first and second switching devices mounted in said means each of which includes an associated relatively high current carrying movable contact arm, a plunger having a portion mounted within said accommodating means for reciprocal movement between depressed and extended positions to act upon the movable contact arms thereby to operate said switching devices, and a toggle spring disposed in biasing engagement with said plunger and continuously biasing said plunger to one of said positions, the movable contact arm of said second switch device applying a bias to said plunger during at least a part of the movement thereof between the two positions, said toggle spring exerting a force on the plunger substantially greater than the force applied on the plunger by the movable contact arm of said second switch device to provide a controlling force on said plunger by said first switching device to provide snap action of the movable contact arm thereof, the movable contact arm of said second switching device having a lost motion connection with said portion of the plunger and being operable by said plunger portion during a part but not all of the reciprocal movement between the depressed and extended positions, whereby said first and second switching devices are both actuated by said plunger and the force required for operating said plunger approximates the force exerted upon said plunger by said toggle spring.

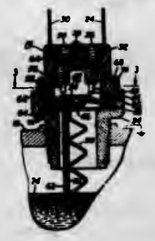
3,293,389
VALVES FOR HYDRAULIC SYSTEMS
Erika Elfriede Verena von Bleichenbacher, Asunderstrasse 30, Zurich, Switzerland
Filed Jan. 27, 1964, Ser. No. 340,147
1 Claim. (Cl. 200—81.9)



A valve device for hydraulic systems, said device comprising first means for connection to a source of hydraulic fluid under pressure, second means for connection to utilization apparatus operated by hydraulic fluid; a chamber connecting said first means to said second means and sealed fluid-tight to both of said means, said second means comprising a channel with an entrance facing said chamber; a flap valve within said chamber, mounted for movement between an open position in which fluid can flow from said first means through said second means and a closed position in which said fluid is prevented from flowing through said second means, said valve comprising a closing member seating in said entrance of said channel; a spring bearing against said valve and one wall of said chamber to retain said flap valve in its open position against normal fluid flow through said chamber, said spring having a calibrated force of a predetermined amount permitting said flap valve to close when the rate of said fluid flow exceeds a predetermined value; a resilient spring within said chamber and having a free end with a hook thereon for holding said flap valve in closed position after said valve has moved to such position; and electrical contact means within said chamber engaged by said valve to indicate when said valve is in closed position.

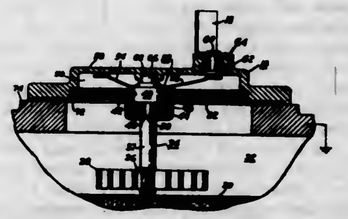
3,293,390
BIMETAL OPERATED COOLANT LEVEL SWITCH
Willard C. Shaw, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,120
5 Claims. (Cl. 200—113)

1. A temperature sensitive switch comprising: a switch body having a threaded body adapted to be threaded into a wall of a fluid container; a first terminal carried by said switch body and adapted to conductively engage a lead to a power source; a second terminal carried by said switch body and adapted to conductively engage an indicating lamp; a bimetallic element carried by said switch body and having a portion arranged to be suspended into a fluid passage, said bimetallic element being deflectable substantially along its longitudinal axis in response to temperature changes of fluid in the fluid passage; first movable contact means carried by said bimetallic element and being drivable into engagement with said first terminal; second contact means carried by said switch body and being grounded therethrough; and resilient means engaging said bimetallic element insulating an area of said switch body in which the switching takes place and adapted to be driven



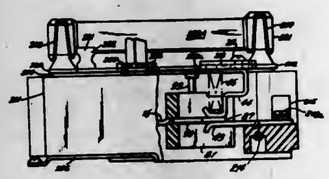
by said bimetallic element during a deflection thereof in response to a temperature change of the fluid in the container into conductive engagement with the second terminal means, said first contact means being deflectable while engaging the first terminal means and deflecting during the time when said second contact means deflects into said second terminal.

3,293,391
SPIRAL BIMETAL OPERATED COOLANT LEVEL SWITCH
Marvin T. Carlson, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,121
7 Claims. (Cl. 200—113)



1. A fluid level indicator comprising: a switch body; first terminal means carried through one wall of said switch body and adapted to conductively engage a power source; second terminal means carried in one wall of said switch body and adapted to electrically engage an indicator light, said second terminal means having a conductive portion exposed within said switch body; contact means pivotally supported by said switch body and including two outwardly projecting resilient legs, a first of said legs selectively engaging the exposed portion of the second terminal, a second of said resilient legs being arranged to maintain a conductive relationship between said switch body and a ground; and temperature responsive means carried by said contact means and including a portion in conductive engagement with the first terminal, said temperature responsive means having means arranged to pivot said contact means in response to a raising of temperature of a fluid thereby moving a first of said outwardly projecting legs into conductive engagement with the second terminal providing thereby a ground for the light connected thereto.

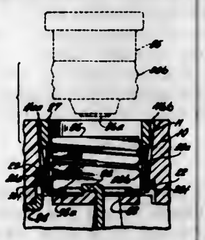
3,293,392
FUSE PROTECTED ELECTRICAL SWITCH
John B. Cataldo, Bloomfield Hills, Andrew J. Kralik, Detroit, Frank W. Knapp, Birmingham, and Robert W. Thomas, St. Clair Shores, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application July 27, 1962, Ser. No. 212,890, now Patent No. 3,217,130, dated Nov. 9, 1965. Divided and this application Aug. 2, 1965, Ser. No. 487,951
3 Claims. (Cl. 200—114)



1. A reciprocating assembly for use in a multiphase circuit interrupter wherein each phase is comprised of a stationary contact pair and is controlled by a circuit interrupter operating mechanism comprising an insulating body portion, first means contained within said body portion for coupling said operating mechanism to each of said contact pairs; said first means comprising a plurality of portions projecting from said body portion, each associated with one phase of said multiphase breaker, each projecting portion extending in a direction substantially perpendicular to said body portion, and having a cavity of a configuration to position the ends of the contacts facing said projection portion substantially within at least the opening of said cavity; an insulating means mounted within said cavity adjacent the opening thereof and positioned to slideably engage the opposing faces of said contact pair; a conductive member mounted within said cavity behind said conductive member and positioned to slideably engage the opposing faces of said contact pair when said circuit interrupter is moved to its closed position; said conductive member resiliently mounted at the end adjacent said insulating means for self alignment of said conductive member with said contact pair to provide a sufficient conductive path therebetween; a housing for said circuit interrupter; said housing having a plurality of apertures; each aperture being positioned adjacent an associated said contact pair and for observation of said contact pair when said circuit interrupter is in the tripped position and to prevent observation of said contact pair when said circuit interrupter is in the closed position so as to permit observation thereof only when each contact pair is fully deenergized; a plurality of transparent inserts mounted to cover each of said housing apertures to permit observation of said contact pairs while excluding foreign matter from said housing interior; a plurality of fuse clip assemblies mounted upon the upper surface of said housing, each assembly having first and second fuse clips adapted to receive a fuse member therebetween; said fuse clips mounted in mechanical parallel with its associated contact pair; each of said assemblies connected in electrical series with its associated contact pair.

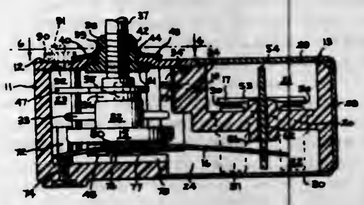
3,293,393
FUSE MOUNTING MEANS
George H. Phelps, Northport, Long Island, Herman H. Kobryner, Forest Hills, and Alexander R. Norden, New York, N.Y., assignors to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,771
19 Claims. (Cl. 200—133)

1. Fuse mounting means comprising an insulating cylindrical receptacle having fixed therein a peripheral contact of delimited transverse span about the axis of the receptacle, a substantially cylindrical fuse adapter removably inserted in said receptacle, said adapter internally provided with a fuse socket and externally formed for contiguous fit into the side wall form of the receptacle, the adapter including a contact metal connector with a peripheral radially extending portion of delimited transverse



span about the axis of the socket for engaging the peripheral contact in the receptacle when the adapter is in operative down position in the receptacle and in a particular rotative relation to the axis of the receptacle, and means between the adapter and the receptacle coacting to establish said rotative relation.

3,293,394
TEMPERATURE RESPONSIVE CONTROL DEVICE WITH SNAP ACTING SWITCH
Paul R. Staples, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed July 23, 1965, Ser. No. 474,246
8 Claims. (Cl. 200—140)



1. A hydraulic thermostat comprising a housing that includes an expansible member cooperating with a snap-acting spring mechanism of an electrical switching means, said expansible member being adapted to be connected by a fluid-filled capillary tube to a remote temperature sensor, and a shaft mounting means extending through one wall of the housing for supporting the expansible member therefrom, said expansible member being adapted to expand and contract according to the direction and extent of the temperature change experienced by the temperature sensor, the said snap-acting spring mechanism comprising a slotted spring blade to form three longitudinal strips, the two side strips being formed downwardly at opposite points to establish bearing points and shorten the effective lengths of the side strips so as to apply a compressive force on the center strip, the spring blade having retaining members at one end mating with cooperating portions of the housing so as to allow for vertical movement therebetween while preventing horizontal displacement, and the point of an adjustable supporting screw means located beneath the retained end of the spring blade, the spring blade having a three point support arrangement formed by the said screw means and the pair of bearing points of the blade resting on the housing, the expansible member bearing on the center strip at a point within the three point support arrangement, and an electrical switching means including fixed contact means and movable contact means for making and breaking an electrical circuit, and connector means between the end of the spring blade opposite the retained end and the movable switch contacts, the housing including supporting and guiding means for the said connector means.

3,293,395
ELECTROLYTES FOR ELECTROLYTIC LEVEL SWITCHES
Kenneth C. Halliday, Jr., Port Washington, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
No Drawing. Original application Apr. 1, 1963, Ser. No. 269,766. Divided and this application Oct. 8, 1965, Ser. No. 494,262
11 Claims. (Cl. 200—152)

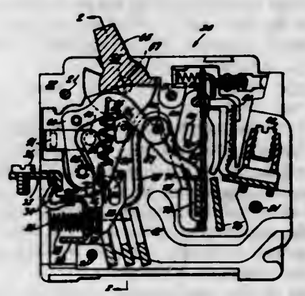
1. An electrolyte for use in a level switch, consisting essentially of a liquid solution in an aliphatic linear ester having at least 6 carbon atoms and not more than 12 carbon atoms and having a liquid phase above −40 degrees centigrade and an aliphatic normal alcohol having at least 3 carbon atoms and not more than 6 carbon atoms and having a liquid phase in a temperature range of approximately −50 degrees to +100 degrees centigrade, of a halogen selected from the group consisting of iodine and bromine and an alkali metal salt of the halogen selected from the group consisting of sodium bromide and sodium iodide, the alcohol and the ester being present in amounts of approximately ⅓ and ⅔, respectively, the alkali metal salt being present in amounts of approximately 4 to 5 grams per 100 cubic centimeters of alcohol and ester and the halogen being present in amounts of approximately 2 to 4 times that of the alkali metal salt.

3,293,396
TILT RESPONSIVE SWITCH
Dewey D. Boyd, 3813 Donna Circle, North Highland, Calif. 95660
Filed Oct. 11, 1965, Ser. No. 494,707
1 Claim. (Cl. 200—152)



In combination with a motor vehicle having an electrical system including a hot line extending from a battery and electrical apparatus operable through said hot line, a tilt responsive switch comprising a plate-like substantially rectangular rear wall of dielectric material having means adjacent the top thereof adapted for attachment to the fire wall of the motor vehicle, a housing comprised of transparent dielectric material rigidly affixed to said rear wall, and including a bottom wall, side walls, a front wall and a top wall, said side and bottom walls coinciding with the side and bottom edges of said rear wall, said top wall being positioned below said means adapted for attachment to the fire wall, a pair of aligned oppositely disposed electrical contact members, one extending through each side wall immediately adjacent said bottom wall, a dielectric partition in said housing secured to said front and rear walls but terminating short of each side wall to define a pair of restricted openings at each end of said partition, one immediately above each contact member, said contact members being adapted to be connected in the hot line of the vehicle between the battery and the apparatus operated thereby, and mercury normally filling the lower part of said housing to the bottom of the openings at each end of said partition normally providing a conductive electrical path between said contact members, said mercury escaping through one of said restricted openings upon excessive tilting of the vehicle to break the circuit through the hot line and deenergize all electrical apparatus.

3,293,397
CIRCUIT BREAKER OPERATING MECHANISM WITH INTERMEDIATE SLOT IN CONTACT ARM
Martin V. Zabaty, Warren, Mich., and Felix E. Myers, Haddon Heights, N.J., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 15, 1965, Ser. No. 425,710
10 Claims. (Cl. 200—153)



4. An operating means for use in a molded case circuit breaker having a stationary contact and cooperating movable contact; said operating means comprising a pivotally mounted contact arm carrying said movable contact; said contact arm having an intermediate slot of predetermined configuration; a toggle means comprising a first link, having a first end connected to and movable within said intermediate slot; overcenter means and a releasable cradle operatively connected to said toggle means for rapidly moving said toggle means between an On and Off position; said toggle means when in said On position locating said first end at a first location within said intermediate slot, and when in said Off position locating said first end at a second location within said intermediate slot; the path traversed by said first end within said slot between said first and second locations defining the movement of said contact arm movable contact into and out of engagement with said stationary contact.

3,293,398
ELECTRIC SWITCH DEVICE HAVING CONSTANT CONTACT PRESSURE
Everett P. Larsh, 124 E. Monument Ave., Dayton, Ohio 45402
Filed Oct. 9, 1964, Ser. No. 402,758
7 Claims. (Cl. 200—165)



1. an electric switch device comprising:
support structure,
a stationary contact member carried by the support structure,

an elongate resilient stem attached to the support structure at a fixed position in spaced relationship from the stationary contact member so that the stem extends from said fixed position to a position adjacent the stationary contact member, the resilient stem having an integral contact portion adjacent the stationary contact member, the stem being bendable to move the contact portion into engagement with the stationary contact member,

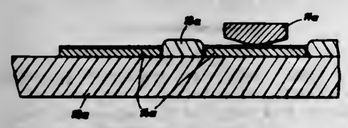
abutment means fixedly carried by the support structure at a position spaced from the stationary contact member, the resiliency of the resilient stem urging the contact portion of the stem into engagement with the abutment means, the abutment means thus establishing the normal spacing between the contact portion of the stem and the stationary contact member,

an abutment member carried by the resilient stem adjacent the contact portion thereof,

a U-shaped resilient leaf member having an attachment leg connected to the resilient stem along a portion of the length thereof, the U-shaped resilient leaf member also having a free leg extending from the resilient stem, the free leg of the leaf member having an engagement portion intermediate the resilient stem and the abutment member carried thereby, said engagement portion of the free leg of the leaf member normally being in resilient engagement with the abutment member,

movement of the engagement portion of the free leg of the leaf member toward the resilient stem causing bending of the leaf member so that the attachment leg of the leaf member bends the stem toward the stationary contact member, thus causing movement of the contact portion of the stem into engagement with the stationary contact member, the engagement portion of the free leg of the resilient leaf member ordinarily being spaced from the abutment member during engagement of the contact portion of the stem with the stationary contact member.

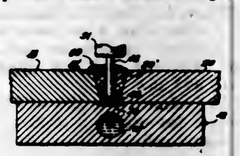
3,293,399
PRINTED CIRCUIT CONTACT ARRANGEMENT
Hans-Joachim Heinrich, Oldenburg, Germany, assignor to Beico Filtertechnik G.m.b.H., Braunschweig, Germany, a corporation of Germany
Filed Mar. 12, 1965, Ser. No. 439,155
6 Claims. (Cl. 200—166)



1. A printed circuit comprising a nonconductive base, a plurality of conductor strips spacedly carried on a surface of said base and projecting beyond said surface, and an adhering insulating thermosetting filler hardened from a liquid state between said strips and bridging the space therebetween while rising to substantially the level of said strips with a configuration of the junction between the strips and said filler determined by the surface tension of the liquid.

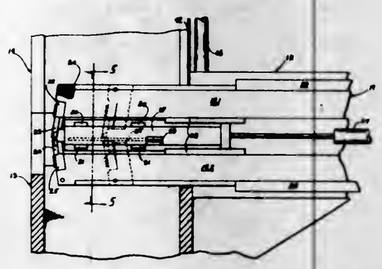
3,293,400
SUBMERGED ARC WELDING PROCESS
Julian P. Bregdon, Hampton, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed July 6, 1966, Ser. No. 563,149
8 Claims. (Cl. 219—73)

1. The method of seam welding metallic workpieces by a submerged arc welding process comprising, providing a chill back-up means having an elongated groove formed therein, positioning the edges of a pair of workpieces adjacent one another with said edges over the groove in the back-up means, disposing flux between said edges and in said groove, inserting a hot wire between said edges within said flux and spaced above said back-up means, producing an arc from said hot wire to melt the flux and adjacent portions of the workpieces to produce a molten puddle between said edges of the work-



pieces and in the groove, and providing a cold wire within said groove adjacent said hot wire to augment cooling of said molten puddle and flux within said groove adjacent to the surface of the groove to produce a solid flux layer to serve as a barrier layer to keep the molten puddle away from the back-up means and to insulate the arc from the back-up means to prevent melting of the back-up means and poisoning of the weld.

3,293,401
METHODS OF AND APPARATUS FOR JOINING METAL STRIP
Arthur L. Williams and Francis A. Bodenheim, Warren, Ohio, assignors, by mesne assignments, to The McKay Machine Company, a corporation of Ohio
Filed Oct. 12, 1962, Ser. No. 230,843
16 Claims. (Cl. 219—97)



1. The method of joining a pair of metal strip ends together in end-to-end relation which comprises moving a gauge bar between two pair of clamping jaws, shifting the strip ends between respective pair of jaws and in abutment with respective opposed sides of the gauge bar, clamping the strip ends between respective jaw pairs, withdrawing said gauge bar in a direction edgewise of the strip ends from between said clamping jaw pairs and also shifting a cutting tool in a direction edgewise of the strip ends from one side of the strip ends and positioning both said bar and said tool on the other side of the strip ends and in spaced relation therefrom, positioning a shield between said cutting tool and the strip ends, passing current between the strip ends to raise them to welding temperature, relatively moving the jaw pairs toward each other to press the heat-softened strip ends together and then holding said pairs of jaws immobilized while the heat-fused strip ends cool and harden, shifting said shield from between said cutting tool and the strips ends, moving said cutting tool between said immobilized pairs of jaws and along the line of strip end juncture to remove transversely projecting portions of metal upset by movement aforesaid of the jaw pairs toward each other, and opening said pairs of jaws to release the joined strip ends.

3,293,402
PNEUMATIC OPERATED WELDING STUD HOLDER
Chester D. Graham, Weymouth, Mass., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Aug. 5, 1963, Ser. No. 299,961
6 Claims. (Cl. 219—98)



1. A welding stud holder, comprising:

a stud chuck having a passageway extending completely therethrough with one end of said chuck being split longitudinally into a plurality of separate resilient grip portions so that welding studs inserted into said passageway are held therein by frictional engagement with said grip portions;

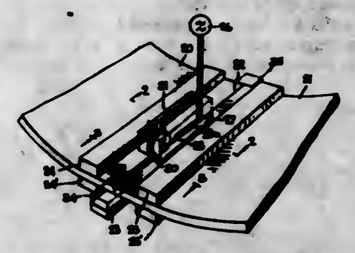
a chuck holder member with a cavity therein for the reception of said chuck, said holder member being attached to said chuck with the grip portions thereof positioned at least partially within said cavity and having an aperture extending from the exterior of said holder member into said cavity;

sealing means including a tubular sleeve of elastomer material positioned around the grip portions of said chuck in said cavity and having a pair of sealing flange portions at the opposite ends thereof to form an air-tight chamber with said holder member between said holder member and said chuck, for moving said grip portions inward by substantially solely inward movement of said sleeve when the air pressure within said chamber is increased; and

means for forcing air into said chamber through the aperture in said holder chamber to raise the air pressure in said chamber to urge the resilient grip portions of said chuck inward into engagement with a welding stud positioned in the passageway of said chuck to prevent movement of the stud with respect to said chuck, and for removing at least a portion of said air from said chamber to lower the air pressure in said chamber so that said welding stud can be removed from said chuck.

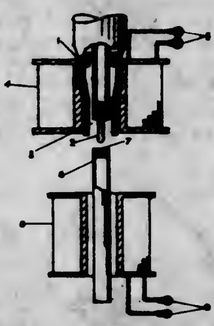
3,293,403
BUTT WELDING OF METAL MEMBERS BY HIGH FREQUENCY HEATING CURRENT
Wallace G. Rinia, Lindenhurst, N.Y., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 31, 1965, Ser. No. 484,393
17 Claims. (Cl. 219—10)

1. Method for butt welding an edge surface of one metal portion to an edge surface on another metal portion which comprises: positioning said metal portions and retaining same stationary with respect to each other with their said edge surfaces abutting; progressively, along the desired welded seam line at said abutting surfaces, heating said surfaces and the metal closely adjacent thereto substantially throughout the thickness of the metal to welding temperature by the use of high frequency current while the metal portions are being advanced longitudinally of said desired seam line with respect to a predetermined weld point; providing means supporting the thus-heated metal of said abutting edge surfaces at least at the region of said point; and while



in their relatively stationary positions with respect to each other, also applying pressure thereto in a direction substantially of the plane of said abutting surfaces to bring under welding pressure the thus-heated metal as confined by the supporting means and by the metal which remains solid along regions spaced somewhat from the seam line.

3,293,404
ARC WELDING
Ambrey Mee, Roskilde, Denmark, and Frank John Hetzler, San Jose, Calif., assignors to Aktieselskabet Atomenergikommissionen, Copenhagen, Denmark
Filed Nov. 13, 1963, Ser. No. 323,377
Claims priority, application Denmark, Nov. 14, 1962, 4,897
5 Claims. (Cl. 219—123)



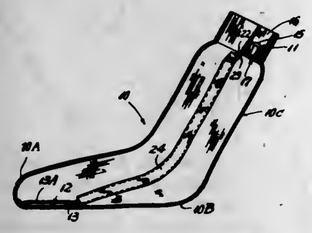
1. Apparatus for welding having means for creating a welding arc between a welding electrode and a work piece, means for providing a magnetic field to move said welding arc in a predetermined track comprising two magnets one of which is placed so as to have a majority of the lines of force emanating therefrom passing through the welding arc where this leaves the welding electrode, the other of which is placed so as to have a majority of the lines of force emanating therefrom passing through the welding arc where it meets the weld.

3,293,405
ELECTRICALLY HEATED FOOTWEAR
Raphael J. Costanzo, 129 Park St., Bridgeport, Conn. 06606
Filed Sept. 13, 1965, Ser. No. 487,011
4 Claims. (Cl. 219—211)

2. In combination

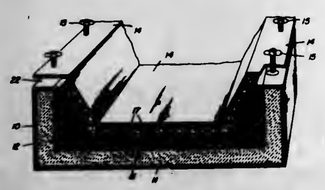
(a) a woven sock having a toe portion, a heel portion and a connected leg portion,

(b) means defining a pocket adjacent the upper end of said leg portion adapted to receive a low voltage battery of less than 6 volts,
(c) electrical non-conductive means defining a pocket in the toe portion of said sock,
(d) a heater disposed in said toe pocket,
(e) said heater including a flat resistor strip of electrical resistance material,
(f) radiation means connected in heat transfer relationship to said flat resistor strip for defining an expanded radiation surface for said heater,



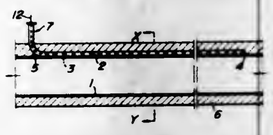
(g) said radiation means including a pair of heat conducting sheets of material for sandwiching said resistor strip in heat transfer relationship therebetween,
(h) means joining said heat conducting strips together and electrically insulating said strips from said resistor strip,
(i) electrical conductors connecting said resistor strip in circuit to said battery, and
(j) means maintaining said conductors against the leg portion of said sock.

3,293,406
METHOD AND APPARATUS FOR BAKING CARBONACEOUS LININGS
Gordon Alexander Bain, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Dec. 14, 1964, Ser. No. 418,086
16 Claims. (Cl. 219—279)



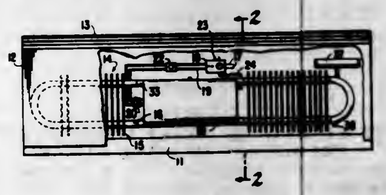
1. A method of baking a carbonaceous lining which is disposed, to a thickness of at least several inches, in an upwardly facing cavity of a vessel and which is composed essentially of carbon and binder, adapted to release combustible fumes on heating, and is capable of being baked to a hard, coherent state, comprising radiating infrared heat energy substantially downwardly to and throughout the surface of said lining for a sufficient length of time from a multiplicity of sources of said energy disposed above and distributed over said surface, to cause evolution of said fumes and to bake said lining to said hard, coherent state, and while admitting air to the vicinity of said lining for combustion, burning said fumes in a region closely above said lining by maintaining said sources, during said radiation, sufficiently close to said lining, within a spacing therefrom of not more than four inches, to effectuate such burning.

3,293,407
APPARATUS FOR MAINTAINING LIQUID BEING TRANSPORTED IN A PIPE LINE AT AN ELEVATED TEMPERATURE
Masao Ando, Tokyo, Japan, assignor to Chiyoo Corporation, a corporation of Japan
Filed Nov. 7, 1963, Ser. No. 322,168
Claims priority, application Japan, Nov. 17, 1962, 37/51,557
14 Claims. (Cl. 219—301)



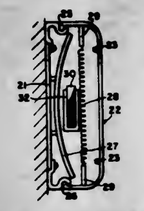
1. An apparatus for transporting liquid while maintaining it at an elevated temperature comprising an arrangement including a liquid transporting pipe, at least one heat-generating pipe of ferro-magnetic material supported in substantially axially parallel relation with said transporting pipe so as to conduct heat generated in said heat-generating pipe to the liquid in said transporting pipe, and said heat-generating pipe having an inner wall portion and an outer surface portion a wall thickness greater than the penetration depth of alternating current flow through the inner wall portion of said heat-generating pipe to thereby obviate any provision of electrical insulating means on the outer side of said heat-generating pipe, and an inner electric conductor line connected to a source of A.C. supply and supported within said heat-generating pipe in its longitudinal direction in electrically insulated relation from the inner wall portion of said heat-generating pipe, and said electric conductor line being electrically connected at the end thereof remote from the A.C. supply source in such a way that alternating current from the supply source flows through said electric conductor line, reaches said remote end of said heat-generating pipe and returns to the source through the inner wall portion of said heat-generating pipe, whereby said heat-generating pipe is heated by the skin effect of the alternating current flow through the inner wall portion thereof and the outer surface portion of said heat-generating pipe receives solely the heat so generated without any electric current flow therethrough.

3,293,408
HEAT TRANSFER UNIT FOR SPACE HEATER
Richard Henry Stotz, 1411 River Drive, Fremont, Ohio 43420
Filed June 4, 1964, Ser. No. 372,496
5 Claims. (Cl. 219—341)



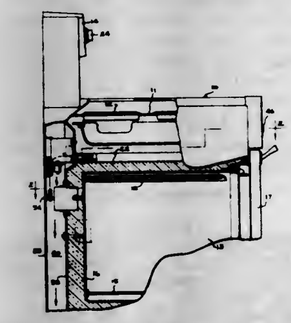
1. An electric water heater for a baseboard space heater, comprising, a first elongated chamber adapted to be positioned horizontally, an electric heating element located within and extending lengthwise of said chamber, a second chamber located above and extending parallel to said first chamber, means joining said chambers and providing communication between said chambers throughout a major portion of the length of said heating element, a third chamber located beneath said first chamber and extending parallel thereto, means joining said first and third chambers and providing communication therebetween throughout a major portion of the length of said heating element, and means at an end of said second and third chambers to receive the ends of a radiator tube.

3,293,409
ELECTRIC BASEBOARD HEAT STORAGE UNIT
Charles D. Snelling, 2949 Greenleaf St., Allentown, Pa. 18104
Original application Oct. 21, 1964, Ser. No. 405,489. Divided and this application May 12, 1966, Ser. No. 549,528
2 Claims. (Cl. 219—378)



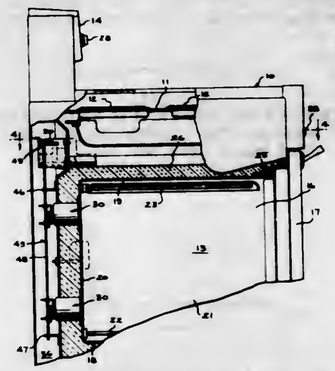
1. A baseboard heat storage and heat releasing unit comprising an elongated housing having a back side for mounting against the base of a wall and an open front, a foraminous grill covering the front side of said housing, a heat reflector connected to the back side of said housing having a polished surface and being shaped for reflecting substantially all the heat outwardly thereof through said grill, an electric resistance heater supportably disposed within and along said housing in spaced relation to an elongated heat storage modular element supportably disposed in heat absorbing relationship with said electric resistance heater, said heater and said heat storage modular element being positioned between the heat reflector and said grill, said grill, reflector, heater and heat storage modular element extending substantially the length of the housing, said modular element being formed of a hollow longitudinal container having encapsulated therein a chemical heat storage material characterized by a relatively high heat of transition.

3,293,410
OVEN THERMOSTAT WITH ANTICIPATOR HEATER
Stanley B. Welch, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 12, 1964, Ser. No. 374,680
6 Claims. (Cl. 219—393)



1. A domestic oven comprising a cabinet having walls defining an oven cavity, heating means for said cavity, control means for said heating means to effect various cooking operations, a hydraulic temperature control means for said heating means settable to control the heating means to hold a selected temperature, said temperature control means comprising an elongated fluid-filled bulb having a capillary tube joined to a temperature responder, said bulb being located outside the walls of the oven cavity, and normally in heat transfer relation therewith to sense the temperature of the oven wall, an anticipator heater associated with the bulb, and means controlling said heater to be energized when the said heating means is energized so as to reduce the temperature lag between the oven wall and the bulb.

3,293,411
OVEN TEMPERATURE CONTROL WITH REMOTE SENSOR
Raymond L. Dills, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 12, 1964, Ser. No. 374,689
8 Claims. (Cl. 219—393)

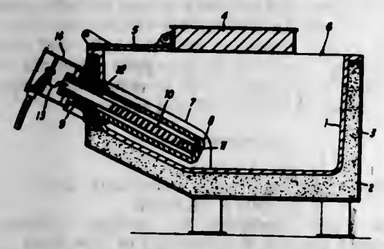


1. A domestic oven comprising a cabinet having walls defining an oven cavity, heating means for said cavity, means for connecting the heating means to a source of energy, control means for said heating means to effect various cooking operations, a temperature control means for said heating means settable to control the heating means to hold a selected temperature, said temperature control means comprising a temperature sensor associated with a manually settable temperature responder so that the experienced temperatures of the sensor will be reflected by the responder which in turn is adapted to control the energy delivered to the heating means; the invention comprising the location of the sensor outside the oven cavity where the sensor in one position is in thermal contact with the wall defining the oven cavity, and means for moving the sensor away from the oven wall a predetermined amount so the sensor experiences a temperature which is an analog of the oven wall temperature.

3,293,412
ELECTRICALLY HEATED FURNACE FOR MOLTEN METAL
Henry Joseph Profitt, Evesham, and David Walter King, Solihull, England, assignors to Morganite Thermal Designs Limited, Norton, England
Filed May 14, 1964, Ser. No. 367,386
Claims priority, application Great Britain, May 16, 1963, 19,483/63
3 Claims. (Cl. 219—421)

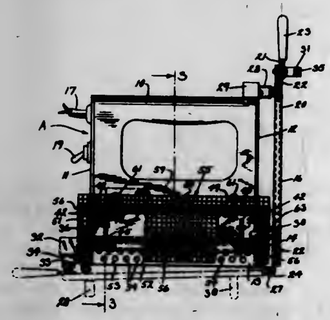
1. An electrically heated furnace for molten metal comprising a thermally insulated bath, said bath being of oblong shape in plane and having longer side walls and shorter end walls and a bottom at the lower edges

of the walls, and at least one electrical immersion heater inserted through one of the longer side walls and extending within the bath in a downwardly inclined direction through a major part of the depth of the bath and across a substantial part of the width of the bath, said bath bottom having a part which slopes upwardly to said one



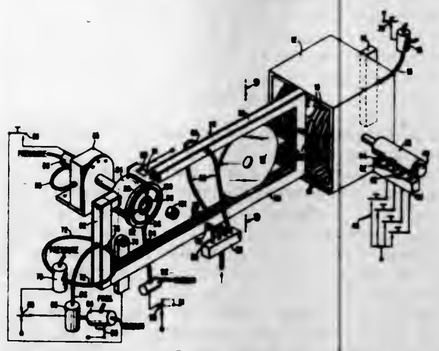
of the longer side walls, said part of the bath bottom lying closely beneath the said heater and at substantially the same angle as the inclination of the heater, said bath further having on each side of each said heater a partition upstanding from the sloping part of the bottom and extending above the said heater.

3,293,413
ELECTRIC PAINT SOFTENER AND BLISTERER
Henry E. Meltzer, 1745 Flett St., Racine, Wis. 53403
Filed June 4, 1964, Ser. No. 372,628
9 Claims. (Cl. 219—533)



1. In an electric paint softener and blisterer, a base member in the nature of an inverted pan providing an upper wall and depending side and end walls, a pair of spaced parallel upright supporting members, each having its lower end portion secured to a respective end wall of said base member, a longitudinally extending handle secured between the upper portions of said upright members and having its lower end termination spaced well above said upper wall of said base member, a heating element within said base member and carried by said upper wall, a heating plate in spaced parallel relationship with said upper wall carried within said base member, a combination cover and stand hingedly supported adjacent one end of said base member and having its pivot point beyond and below said heating plate and adapted to be pivoted about 270 degrees between its closed and open positions, a supporting plate secured to said base member adjacent the end opposite said pivot point to form a support and to space said heating plate from the work when said device is in use, means positioned above said base member in the space between said upper wall thereof and said lower end termination of said handle to direct rising heated air away from said handle, protective means for said softener and blisterer being so constructed and arranged as to prevent contact with said heating plate and base member, said combination cover and stand having supporting feet on one side thereof to support the device in a horizontal position when said cover is closed and a foot projecting outwardly on the opposite side thereof at the end opposite said pivot to support the device in a substantially vertical position when said cover is open, and latch members secured respectively to said handle and said supporting plate to cooperate with one of said feet and said respective foot to hold said combination cover and stand alternately in its closed and open positions.

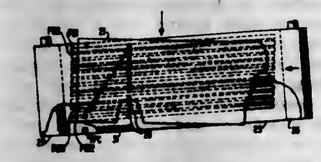
3,293,414
RECORD TRANSPORT DEVICE
Casper L. Barcia, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 15, 1962, Ser. No. 217,185
11 Claims. (Cl. 235—61.11)



9. Circular record member handling apparatus comprising:
a record storage station;
a utilization station;
an air-lubricated path between said storage station and said utilization station; pneumatic means at said storage station for ejecting said member into said path with sufficient momentum to carry said member along said path to said utilization station;
a spindle to said utilization station, means for rotating said spindle;
means, including a vacuum device, for positively positioning said member adjacent to said spindle;
means for clutching said spindle into contact with said member, whereby said member is caused to rotate with said spindle; and
restoring means for returning said member to said storage station, said restoring means including means for clutching said spindle out of contact with said member, means for applying air pressure to said vacuum device to eject said member into said path, and means for applying vacuum pressure to said pneumatic ejector means to position said member in said storage station.

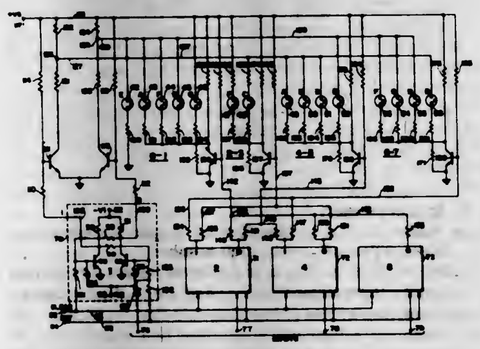
3,293,415
DATA PROCESSING INPUT APPARATUS
Michael Fiehl, East Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 3, 1962, Ser. No. 241,912
6 Claims. (Cl. 235—61.11)

1. Apparatus for reading record cards comprising, in combination,
card feeding means for feeding said record cards in seriatim past a reading station, with the largest dimension of the card perpendicular to the direction of travel of the card;
radiant energy supply means at said reading station for uniformly illuminating said cards as they pass said reading station;
cyclically movable mask means for scanning said card, said mask means having a plurality of apertures therein corresponding to a column of indicia on said record;



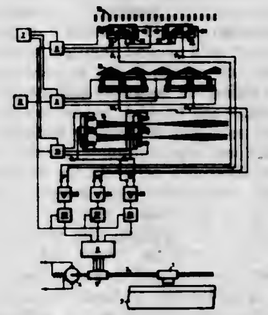
a plurality of photosensitive elements, one for each row of indicia located on said record;
said mask means and said photosensitive elements being angularly disposed with respect to the direction of travel of said record cards to compensate for the motion of said cards, said photosensitive means being irradiated by radiant energy supplied from said supply means when correspondence occurs between an indicium on said record and one of the apertures in said mask means; and
distributor means for determining the location of said apertures with respect to the columnar locations of indicia on said record cards.

3,293,416
DATA CONVERSION FOR COUNTER HAVING ELECTROLUMINESCENT READOUT
Hamilton C. Chisholm, Orinda, and Richard F. Hall, Pleasant Hill, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Apr. 4, 1963, Ser. No. 270,620
10 Claims. (Cl. 235—92)



1. A counter and readout device therefor comprising a plurality of binary stages each of which provides one or more discrete outputs, a readout device including a segmented display and control means coupled therewith for controlling the operation of the readout device, a plurality of lamps arranged to operate said control means, terminal means for connecting said lamps to a source of voltage, the improvement comprising
at least certain of said lamps being arranged in groups for controlling the selection of pairs of numbers to be displayed by said readout device,
a pair of control transistors,
means coupling said control transistors with one of said binary stages, said terminal means and certain of said lamps for controlling the selection of even or odd numbers to be displayed by said readout device,
a control matrix coupled with at least one of the outputs of the remaining binary stages, and
a plurality of buffer transistor switches corresponding to the number of said groups individually connected with said groups of lamps and said matrix for selective control of said groups of lamps in accordance with signals supplied by said matrix to cause the selection of a pair of numbers for display by said readout device, whereby a single number is displayed by said readout device.

3,293,417
TRAVEL-RESPONSIVE CONTROL DEVICES FOR REGULATION OF TRANSLATORY OR ROTARY MOTION
Walter Heinemeier, Nuremberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 6, 1963, Ser. No. 263,352
Claims priority, application Germany, Mar. 6, 1962, S 78,344
7 Claims. (Cl. 235—151.11)

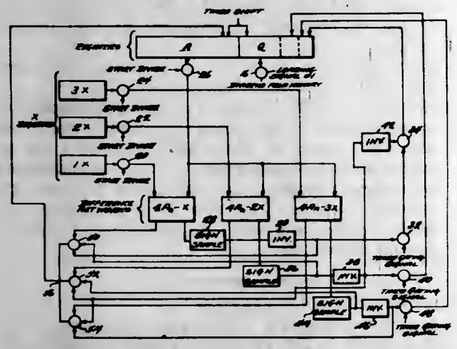


1. A travel-responsive control apparatus for positioning two relatively movable structures relative to each other, said control apparatus comprising a plurality of soft-magnetic rasters of different periods on one of said structures, programming means for determined programs indicating determined positions of said movable structures relative to each other, a plurality of sensing-head means for each raster on the other structure, each of said sensing-head means having two sensing gaps being mutually displaced along the rasters an odd multiple of the period of the corresponding raster, excitation means for independently exciting the sensing gaps according to a predetermined program of said programming means, a plurality of magnetic means responsive to the magnetic condition of the respective sensing-head means due to the excitation means and the effect of the raster, and output means coupled to said magnetic means and to said programming means and responding sequentially to said magnetic means for comparing the output at said magnetic means to said program and for moving one structure relative to the other to a determined relative position indicated in a determined program of said programming means.

3,293,418
HIGH SPEED DIVIDER

James E. Thornton, Chippewa Falls, Wis., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed July 8, 1964, Ser. No. 381,042
6 Claims. (Cl. 235—156)

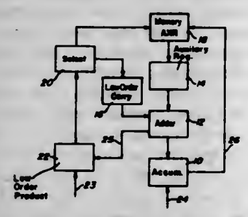


1. A high speed parallel divider for a digital computer comprising a first register means for storing multiples of a divisor and a second reigster means for storing a dividend, the highest order digits of said dividend being located in the highest order bit positions of said second register, a plurality of difference networks, a third register means, means for shifting a plurality of dividend bits forming a portion of said dividend from the highest order positions of said second register into the lowest order bit positions of said third register and simultaneously shifting the remainder of said dividend into the highest order bit positions of said second register; means for applying said plurality of dividend bits in said third register to each of sad difference networks and means for simultaneosuly applying each of said divisor multiples to separate ones of said networks to thereby perform a plurality of trial subtractions; sign sampling means associated with each of said difference networks for determining the sign of each trial subtraction; logic means responsive to said sign sampling to generate a plurality of partial quotient bits, and means for applying the generated plurality of partial quotient bits to the lowest order positions of said second register means, and means to simultaneously shift said partial quotient bits to higher order bit positions of said second register on subsequent shifting of said dividend bits.

3,293,419
INFORMATION HANDLING DEVICE

William G. Daly, Jr., Lexington, Mass., assignor to Honeywell Inc., a corporation of Delaware

Filed Feb. 24, 1964, Ser. No. 346,965
16 Claims. (Cl. 235—159)

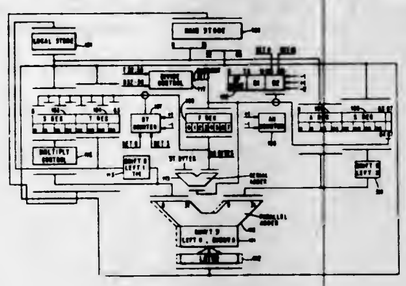


1. In a cyclically operable computer for performing multiplication with multi-digit numbers in a mode of operation wherein selective multiples of a multiplicand are generated and stored, additional multiples being generated essentially spontaneously from those previously stored in accordance with the value of respective, successive digits of a multiplier; including: means for storing said selective values of said multiplicand, means for generating said additional multiples of said multiplicand, said last-named means further comprising: means for transferring a signal representation of one of said selected multiples from said storage means to a digital data-receiving device, first means operatively conditioned by said transfer means to effect a straight transfer of said signal representation from said storage means, additional means operatively connected with said first means and conditioned by said transfer means to effect the transfer of said signal representation alternatively in a complemented or non-complemented representation; second means operatively conditioned by said transfer means to effect a shifted transfer of said signal representation from said storage means, further means operatively connected with said second means and conditioned by said transfer initiating means to effect the transfer of said shifted signal representation alternatively in complemented or non-complemented representation, means actuated in response to generation of a complemented signal representation to increment the succeeding multiplier digit, and further means actuated in response to generation of said complemented signal representation to transfer an indication thereof to said digital data receiving device whereby said additional multiples are generated from said previously stored multiples in accordance with the conditioning of said first or second means and whether the transfer is effected in said complemented or non-complemented representation.

3,293,420
COMPUTER WITH COMPATIBLE MULTIPLICATION AND DIVISION

Stanley H. Pitkowsky and James H. Shelly, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 22, 1964, Ser. No. 384,362
11 Claims. (Cl. 235—164)

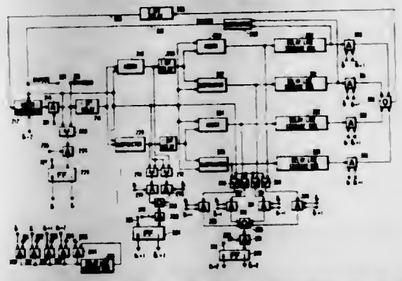


1. In a computer:
an adder having a plurality of stages corresponding to the orders of a multi-digit number;
a first register having a plurality of stages for storing signals representative of a first multi-digit number;
first coupling means connecting said first register to said adder for selectively generating and transferring in parallel to said adder, signals representing said first number, either to corresponding stages of said adder or to higher order stages of said adder shifted by a first predetermined number of stages;
a second register having a plurality of stages for storing signals representative of a second multi-digit number;
second coupling means connecting said second register to said adder for selectively generating and transferring in parallel to said adder, signals representing said second number, either to corresponding stages of said adder or to higher order stages of said adder shifted by a second predetermined number of stages;
third coupling means connecting the output of said adder to said first and second registers for selectively generating and transferring in parallel to said registers, signals representing the output of said adder, either to corresponding stages of said first or second registers or to higher or lower stages of said first or second register shifted by a third predetermined number of stages;
and control means, including means coupled to said first, second and third coupling means, operative to energize selected combinations of said coupling means.

3,293,421
DIVIDER CIRCUIT INCLUDING PYRAMID ARRANGEMENT OF ADDERS AND SUBTRACTORS

James W. Diefenderfer, Nichols, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 29, 1964, Ser. No. 407,466
11 Claims. (Cl. 235—164)

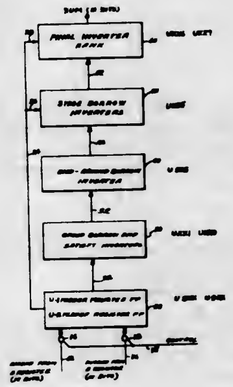


1. A divider circuit including a plurality of N stages each of which generates one quotient bit for each iteration in a division operation, where N is any integer greater than 1, the first stage including an adder-subtractor circuit for developing signals representing a remainder, the second stage including an adder for developing a first possible remainder and a subtractor for developing signals representing a second possible remainder, a delay circuit connected between the adder-subtractor of the first stage and the adder and the subtractor in the second stage for supplying delayed signals representing the remainder from the first stage to the adder and the subtractor of the second stage, the third and succeeding stages including an adder and a subtractor coupled through a delay circuit to each adder of the preceding stage, the third and succeeding stages including an adder and a subtractor coupled through a delay circuit to each subtractor of the preceding stage, whereby each stage generates signals representing twice as many possible remainders as the preceding stage, first means having an output coupled to the adder-subtractor of the first stage, the adder and subtractor of the second stage and the adders and subtractors of the third and subsequent stages for supplying signal thereto representing the divisor, the signals representing the divisor and each possible remainder including signals representing a sign of the quantity, second means in each stage which develops a quotient bit by comparing the signal representing the sign of the divisor with each signal representing the signs of each possible remainder, said second means providing a quotient bit of 1 when the signs are alike and a quotient bit of 0 when the signs are unlike, said second means including further means coupled to the adder and subtractor devices of each succeeding stage for selecting a particular adder or subtractor which develops the correct remainder for that stage, whereby N quotient bits are generated for each iteration of the division operation, and means for initially supplying signals representing the dividend to the junctive of the delay circuit and the adder-subtractor of the first stage.

3,293,422
BORROW PYRAMID HAVING SIMULTANEOUS BORROW GENERATION AND NORMALIZE SYSTEM

Ronald G. Hintz, St. Paul, Minn., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

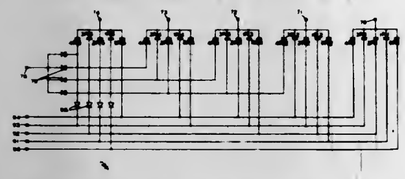
Filed June 4, 1963, Ser. No. 285,514
6 Claims. (Cl. 235—168)



1. The combination of at least two borrow pyramids having simultaneous borrow generation to develop a sum having at least twice the length of that which a single pyramid is capable of producing and wherein each pyramid is of the type having a plurality of sequentially occurring logic ranks including: a first logic rank having input means for receiving in combination two operands and their complements, said input means generating a borrow or a satisfy if ether are present for each operand digit combination; a second logic rank connected to the first logic rank, said second logic rank having checking means to group said first logic rank generated borrows and satisfies; a third logic rank connected to said second logic rank, said third logic rank having checking means to determine which generated satisfy will satisfy a generated borrow; a fourth logic rank which is connected to the third logic rank and to the first logic rank, said fourth logic rank having enabling means to allow the generated borrows to be satisfied by the determined generated satisfy; a fifth logic rank which is connected to the fourth logic rank and to the first logic rank, said fifth logic rank having a final output means to jointly merge the satisfied borrow of the fourth rank with the generated borrows and generated satisfies of the first rank; the improvement comprising: add control means connected between the third logic ranks of separate pyramids and selectively conditioned to merge said third logic ranks to permit the third logic rank checking means of each pyramid to be conditioned by the presence of

generated borrows and generated satisfies of another pyramid, whereby the results of each said pyramid third logic rank conditions the fourth logic rank enabling means and the fifth logic rank final output means to produce a final sum which is at least twice the length of the sum which can be produced by a single pyramid.

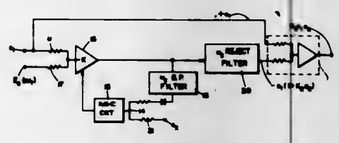
3,293,423
QUINARY ADDER CARRY CIRCUIT
Lennie A. Burnett, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 13, 1964, Ser. No. 337,315
1 Claim. (Cl. 235—174)



In an adding circuit for producing the quinary portion of a biquinary code sum of two numerical representations of the same order of value, the adding circuit having a set of five input terminals representing the quinary digital values of the numerical order and switching networks connected to each of the input terminals having five contacts each representing a quinary digital value of the numerical order, a carry signal generation system comprising in combination:

(a) a carry signal terminal,
(b) a first diode,
(c) means for connecting said first diode between said carry signal terminal and the highest quinary digital value contact of the switching network connected to the input terminal corresponding to the highest quinary digital value,
(d) a second diode,
(e) means for connecting said second diode between said carry signal terminal and the second highest and highest quinary digital value contacts, respectively, of the switching networks connected to the input terminals corresponding to the highest and second highest quinary digital values,
(f) a third diode,
(g) means for connecting said third diode between said carry signal terminal and the third highest, second highest and highest quinary digital value contacts, respectively, of the switching networks connected to the input terminals corresponding to the highest, second highest and third highest quinary digital values,
(h) a fourth diode,
(i) means for connecting said fourth diode between said carry signal terminal and the fourth highest, third highest, second highest and highest quinary digital value contacts, respectively, of the switching networks connected to the input terminals corresponding to the highest, second highest, third highest and fourth highest quinary digital values, said diodes all faced for conduction toward said output terminal,
(j) a set of five quinary output terminals, each terminal representing a quinary digital value in the order of value of the input terminals,
(k) contacts in each of the switching networks representing each quinary digital value,
(l) means for operating one contact in each of the switching networks to represent therein the value of one quinary digit,
(m) means to apply a predetermined potential to one of the input terminals to represent another quinary digital value to be summed with said one digit,
(n) means for connecting the contacts in each switching network to said output terminals, the order of connection of said contacts being cyclicly advanced one digit place from one switching network to the switching network connected to the next higher value digital input terminal whereby the predetermined potential is connected to one of said output terminals cyclically advanced by a number of digital value positions corresponding to said one quinary digit to represent the sum of said one and other digits, and
(o) an additional set of four diodes, the diodes of the additional set being connected between said first, second, third and fourth diodes, respectively, and the second highest, third highest, fourth highest and lowest digit value output terminals and faced for conduction toward said output terminals to prevent false carry signals.

3,293,424
ANALOG MULTIPLIER
Benjamin Fisher, Anaheim, Calif., assignor to North American Aviation, Inc.
Filed May 28, 1963, Ser. No. 283,746
18 Claims. (Cl. 235—194)



1. Means for multiplying a first and third signal comprising

Gain-controlled means having a gain-control input and further having a signal input adapted to be connected to a first and second signal source;

Signal-combining means for differentially combining at least one of the outputs of said first and second signal sources with the output from said gain-controlled means,

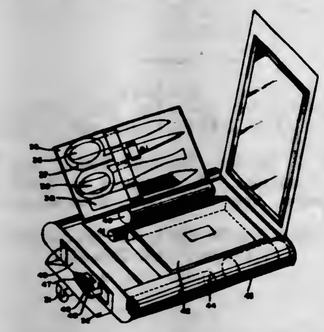
said gain-control input being responsively connected to the output of said gain-controlled means for automatically adjusting the gain of said gain-controlled means; and

Signal code means for suppressing from said gain-control input that component of the output of said gain-controlled means corresponding to said first signal, said gain-control input being adapted to be further responsively connected to a third signal source, whereby the output of said signal-combining means is indicative of the product of such first and third signals.

3,293,425
LIGHTED LIPSTICK
Ludmilla Senkewich and Alexander M. Senkewich, New York, N.Y., assignors of five percent to James M. Hellman, Rye, N.Y., and five percent to Marjorie Kingston, Flushing, N.Y.
Filed Apr. 15, 1964, Ser. No. 359,975
5 Claims. (Cl. 240—6.45)

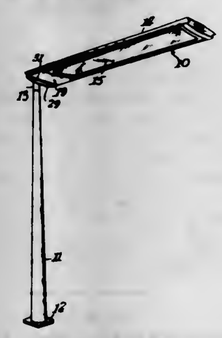
1. A compact comprising a substantially rectangular case having a closure hinged to the face adjacent one end thereof and extending short of the opposite end of said face, a mirror attached to the inside of said closure, a cover hinged on the opposite end of said case, a latch attached to said cover, said latch when the compact is not being used extending from said cover to engage and

keep both the cover and the closure in closed position, a light bulb secured to said cover whereby when said cover is opened, said light bulb will be outside the con-



fines of the case so that the end of said case will operate as a shield and direct the light rays away from said mirror and toward the face of the user.

3,293,426
LIGHTING FIXTURE
Arthur E. Zeltz, Lombard, and Samuel J. Zagel, Chicago, Ill., assignors to Compco Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 27, 1963, Ser. No. 326,438
6 Claims. (Cl. 240—25)



1. A fluorescent light fixture, comprising a casing providing a lamp space and a ballast space, at least part of said ballast space being defined by an outer wall of said casing, a door opening in said outer wall and a door mounted on said outer wall closing said door opening and adapted to pivot outwardly of said space, a ballast mounted on said door for movement with said door into and out of said space fastener means at one end of said door only releasably coupling said door to said wall, and electric wire means coupling said spaces with the exterior of said casing whereby only said fastener means needs to be removed to pivot said door outwardly to expose said ballast for replacement.

3,293,427
HEADLIGHT BLACKOUT ADAPTER
Leendert Hellemans, 5276 Linden Ave., Long Beach, Calif. 90805
Filed Sept. 14, 1964, Ser. No. 396,331
2 Claims. (Cl. 240—46.53)

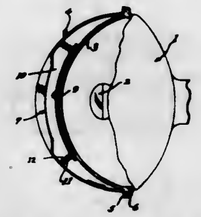
1. A headlight blackout adapter for a vehicle comprising,

a semispherical bowl adapter to be positioned in front of a vehicle headlight,

means on the bowl securing the same to the vehicle headlight, comprising spring clips,

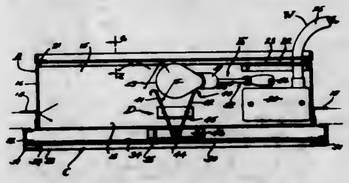
said bowl having a slot therein,

the walls of the bowl extending to the slot being tapered inwardly.



and a plate on the inside of said bowl and positioned opposite said slot and spaced inwardly therefrom, an annular mounting ring on the headlight engaged by the spring clips.

3,293,428
COMBINED ACCESS SCUTTLE AND LIGHT FIXTURE
Harold L. Herman, Burbank, Calif., assignor of one-half to Irving Herman, Encino, Calif.
Filed Jan. 21, 1966, Ser. No. 522,084
8 Claims. (Cl. 240—78)



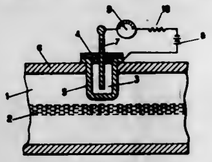
1. An access scuttle comprising a surrounding casing adapted to be mounted in a room ceiling and of a length to extend substantially through the ceiling wall thereof and of a size to provide a passageway for a person therethrough, said casing having opposite ends thereof open, a light diffuser mounted on one end portion of the casing for opening movement relative thereto and substantially covering said open end thereof, and a lamp device mounted in the casing intermediate the open ends and having means projecting toward the center portion of the casing for supporting a lamp, said lamp device including means for supportably extending the lamp through the other open end of the casing for illuminating an adjacent area.

3,293,429
APPARATUS FOR DETECTION AND INTENSITY MEASUREMENT OF HIGH ENERGY CHARGED PARTICLE BEAMS
Hubert Leboutet and Roger Jean, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, Paris, France
Filed Aug. 17, 1962, Ser. No. 218,227
Claims priority, application France, Sept. 7, 1961, 872,547
16 Claims. (Cl. 250—41.9)

1. In combination with an evacuated duct means within which a high energy particle beam is adapted to propagate, at least one ionization chamber located adjacent the path of the beam, and measuring means for measuring the degree of ionization within said chamber to thereby detect the beam.

12. A measuring device for use with a pulsed accelerator having evacuated duct means enabling therethrough the movement of a particle beam with the particles there-

of having a relatively high energy, comprising ionization chamber means filled with an ionizable gas and operatively associated with said duct means adjacent the path of said beam, means for separating the beam into a plurality of



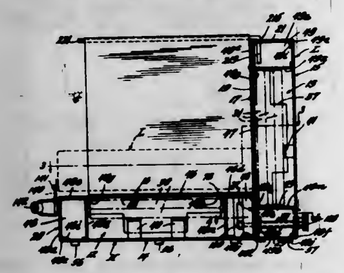
beams according to the energy levels of the particles thereof, and means for measuring the intensity of said last-mentioned beams by measuring the degree of ionization within said chamber means.

3,293,430

PORTABLE SERIALOGRAPHY APPARATUS WITH A PAIR OF SWINGABLE HOUSINGS FOR SUPPORTING X-RAY FILM CASSETTES

Alois J. Wustner, 11009 Lombardy Road, Silver Spring, Md. 20901

Filed Oct. 7, 1964, Ser. No. 402,069
15 Claims. (Cl. 250—66)



1. A hand portable serialography apparatus for use in X-ray diagnostic procedures, comprising:

(A) a pair of housings each of generally parallelepiped configuration, having a pair of opposed parallel side walls joined to a pair of opposed parallel end walls, said side and end walls each being joined to a top wall and to a bottom wall, said housings being connected to one another adjacent one of their corresponding side walls for swingable movement of one of said housings relative to the other through an angle of ninety degrees, each of said housings having:

(1) an opening formed in an end wall thereof each of said openings being configured for inserting a cassette holder into and withdrawing the same from each of said housings, and

(2) an opening formed in the wall thereof confronting the corresponding wall of the other of said housings, for exposing X-ray film carried by said cassette holders;

(B) means mounted interiorly of a side wall of one of said housings, for supporting a pivoted member adjacent each end of said side wall of said housing;

(C) means mounted interiorly of a side wall of the other of said housings and adjacent each end thereof, for receiving said pivoted member;

(D) a pivoted member disposed in each of said supporting means and extending through each of said receiving means;

said supporting means being formed with means to cooperate with said pivoted members to permit said swingable movement of said housings relative to one another, for selectively disposing one of said housings either (1) in a position wherein it extends at a right angle to the position of the other housing, or (2) in a position wherein it is superposed over said other housing; and

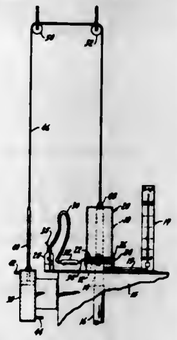
(E) means formed on said pivoted member for securing said housings to one another in each of the aforenamed selective positions.

3,293,431

FLUORESCENT TRACER TECHNIQUE FOR DETECTING DEFECTS IN AIR PERMEABLE BODIES

Raymond G. Bennett, Olympia Fields, and Willis H. Risse, Flossmoor, Ill., assignors to Novo Industrial Corporation, New York, N.Y., a corporation of New York

Filed Dec. 26, 1963, Ser. No. 333,551
7 Claims. (Cl. 250—71)



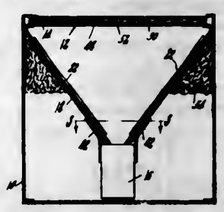
1. A method to detect flaws in an air permeable body section with opposed faces, which includes the steps of creating a pressure differential between the outside and inside faces so air flows through the air permeable body section, serially exposing contiguous reduced areas in said outside face to substantially scan the entire face, carrying a fluorescent agent to such outside exposed face by the air flow through the body section, passing the fluorescent agent through defects in the body section, part of the faces and onto an adjacent surface, and detecting the fluorescent agent on said adjacent surface.

3,293,432

LARGE AREA SCINTILLATION DETECTOR HAVING A PLURALITY OF LIGHT TRANSMITTING SHEETS

Richard C. McCall, Watertown, and Alfred C. Jasins, Waltham, Mass., assignors to Controls For Radiation, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 1, 1963, Ser. No. 320,770
9 Claims. (Cl. 250—71.5)



1. Radiation detection apparatus comprising a planar scintillator,

said scintillator having a thickness in the order of one percent of its maximum linear dimension and including phosphor means for producing light in response to ionizing radiation impinging thereon,

a coupler comprising a plurality of sheets of light transmitting material having internal reflection characteristics,

said sheets being secured together to form a hollow tube,

each sheet having a first end surface at one end thereof immediately adjacent and optically coupled to the corresponding peripheral face of said scintillator, and a second end surface at the opposite end thereof,

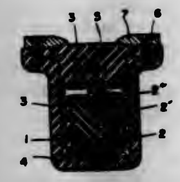
and a light sensor optically coupled to said second end surfaces for response to light transmitted through said coupler.

3,293,433

BADGE HOLDER OF DETECTIVE GLASS FOR RADIATION DOSIMETRY

Ryosuke Yokota, Yokohama-shi, and Saburo Nakajima, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan

Filed Oct. 24, 1963, Ser. No. 318,549
Claims priority, application Japan, Oct. 31, 1962, 37/64,943
1 Claim. (Cl. 250—83)



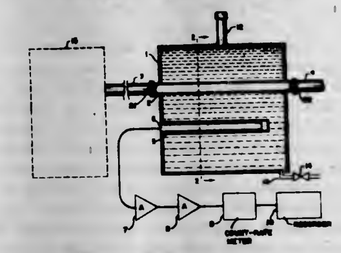
A badge holder of a detective glass body for radiation dosimetry, said badge holder comprising an inside casing having lower and upper sections, said upper section including a knob, said inside casing being of material selected from the group consisting of tetra and trifluoroethylenechloride resin and adapted to contain said glass body, an outside casing made of a conventional synthetic resin and a radiation filter made of tin utilized for radiations having energy above 100 kev. and material selected from brass and copper for radiations of 100 to 50 kev., said filter being sandwiched between said inside and outside casings.

3,293,434

PHOTONEUTRON MONITOR FOR DETECTING REACTOR FUEL ELEMENT FAILURES

Arthur H. Dexter, Aiken, S.C., and Alwyn C. Lapsley, Charlottesville, Va., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 17, 1963, Ser. No. 317,098
8 Claims. (Cl. 250—83.1)



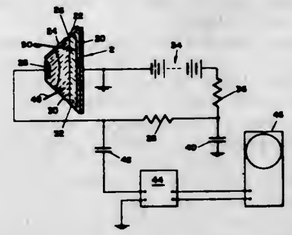
1. A monitor for detecting radiation in a fluid stream comprising a body of material which reacts with the radiation to be detected to produce neutrons, a hollow duct extending through said body of material, means for passing the fluid to be monitored through said duct, a hollow instrument well in said body of material, and a means in said instrument well for detecting the neutrons thus produced.

3,293,435

SEMICONDUCTOR CHARGE MULTIPLYING RADIATION DETECTOR

Gerald C. Huth, Malvern, Pa., assignor to General Electric Company, a corporation of New York

Filed Feb. 12, 1963, Ser. No. 257,935
2 Claims. (Cl. 250—83.3)



1. A device for detecting energetic particles comprising:

(a) a semiconductor junction of two different conductivity types, a first contact of large area in contact with semiconductor of the first said conductivity type, a second contact of small area in contact with semiconductor of the second said conductivity type, the said junction being of larger area than the said second contact, the semiconductor being beveled so that its cross section at a given distance from the said first contact is less than that at any lesser distance from the said first contact;

(b) means for applying potential across the said semiconductor junction by connection to the two said contacts, in the direction of poor conduction of the said junction, and of such magnitude as to produce "avalanche" multiplication of minority carriers in the charge depletion region of the said semiconductor;

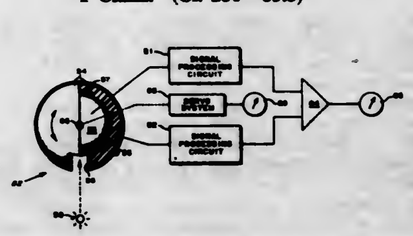
(c) means for detecting flow of charges in the said semiconductor between the said contacts.

3,293,436

DIRECTIONAL RADIATION DETECTOR MOUNTED ON A ROTATING TABLE

George E. Wilcox, Doylestown, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 7, 1963, Ser. No. 314,569
1 Claim. (Cl. 250—83.3)



A detecting system for determining the range of a radioactive object and the angular location thereof from a predetermined reference axis, comprising:

a source of radiation of known disintegration rate,

a pair of spherical detecting elements one of which encapsulates the other remote from said source for measuring the intensity of said source, the outer spherical detector having a slot formed therethrough providing communication with the inner detector, the directional facing of said slot being referenced with respect to said predetermined reference axis,

means connected to said spherical detecting elements for rotating said elements in a horizontal plane and for providing an output which is indicative of the angular position of said source from said elements,

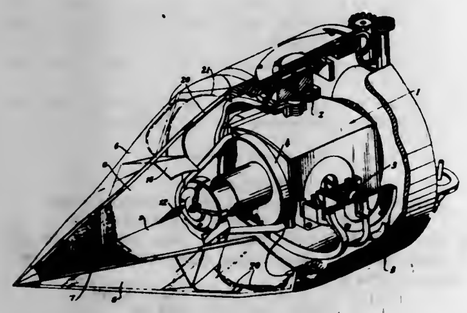
shielding means interposed between said inner and outer detectors in alignment with and diametrically opposite said slot for precluding the radiant energy from said source entering said slot from passing through to said outer detector,

circuit means coupled to each of said detectors for converting the count rate received by said detectors to a voltage signal representative of the count rate,

differential circuit means receiving said voltage signals and providing an output signal representative of the difference thereof, the output of said differential circuit means receiving a maximum when one of said detectors receives the full intensity of said source and the other of said detectors is totally shielded from said source by said shielding means, and

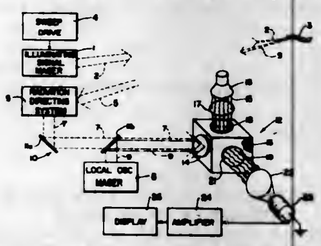
indicator means adapted to receive the difference signal for indicating the distance of said source from said detecting elements when said slot is in alignment with said source.

3,293,437
SCREEN FOR GUIDED MISSILES TO INHIBIT SPURIOUS RESPONSES
Timothy Gordon Bevon Boydell, Heaton, Bolton Lancashire, England, assignor to Hawker Siddeley Dynamics Limited, Hatfield, England
Filed June 30, 1959, Ser. No. 824,137
Claims priority, application Great Britain, July 1, 1958, 21,122/58
9 Claims. (Cl. 250—83.3)



1. In a guided missile including a homing head containing a sensing system sensitive to heat radiations emanating from a target and angularly movable to cover a predetermined field of look, the missile having a transparent nose piece through which the said radiations can pass into the sensing system, a screen adapted to fit closely within the length and breadth of the nose piece of opaque non-reflective material and radiating outwardly from a center line in the form of a cross, said screen comprising two substantially polygonal blanks, said blanks being formed of two similar substantially triangular portions, a forward elongated, substantially triangular, tapered portion and a rearward truncated triangular portion, and subsidiary screens of opaque non-reflective material disposed between the rearward ends of said blanks adjacent the truncated triangular portion.

3,293,438
SIGNAL MIXING DEVICE FOR PRODUCING HIGH FREQUENCY RADIATION
Luther Davis, Jr., Wayland, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed May 24, 1963, Ser. No. 282,944
8 Claims. (Cl. 250—199)



1. A device for mixing two signals comprising:

maser means for generating each of said signals;

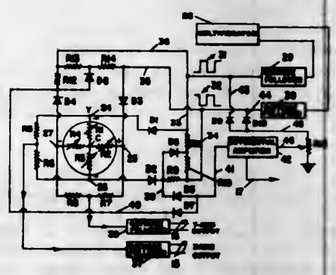
a material including potassium vapor having at least three energy levels;

pumping means for raising the energy of said vapor from a first level to a second level;

means for directing said signals to said material and raising the energy of said vapor from said second level to a third higher level;

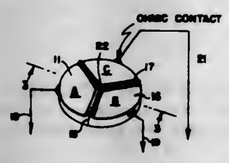
and means for detecting time variations of radiation accompanying transitions between energy states of said atoms of potassium.

3,293,439
TWO AXIS PHOTOELECTRIC POSITIONING SYSTEM INCLUDING ALTERNATE AXIS ACTIVATION OF PHOTOCELL
William F. Marmstette and Ruth B. Marmstette, both of 20624 Earl St., Torrance, Calif. 90503
Filed July 9, 1963, Ser. No. 293,642
4 Claims. (Cl. 250—203)



1. A photoelectric system for controlling an operation by electrical signals, including: a photoelectric cell comprising a light sensitive element whose resistance varies in response to light striking said element, said element being of finite area and of symmetrical configuration relative to two mutually perpendicular axes, the exact center of said area coinciding with the origin of said axes; first, second, third and fourth electrodes positioned on said axes at points equally spaced from said origin, said first and third electrodes constituting a first pair of electrodes on opposite sides of said origin along one of said axes and said second and fourth electrodes constituting a second pair of electrodes on opposite sides of said origin along the other of said axes; means connected to said electrodes for alternately applying voltages to said first and second pairs of electrodes, the electrical resistances of said element measured from said center to said electrodes, respectively, all being equal when light strikes the exact center of said area and being unequal when light strikes a portion of said area closer to one electrode than to another; and means connected to said electrodes for providing said electrical signals from said first pair of electrodes when voltage is applied to said second pair, and from said second pair of electrodes when voltage is applied to said first pair only when said resistances are unequal.

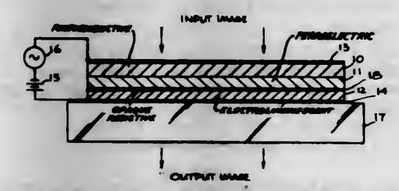
3,293,440
GRAIN BOUNDARY PHOTO-ORIENTER WITH INTEGRAL SHIELDS
Rolf K. Mueller, Bloomfield Hills, Mich., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Nov. 21, 1963, Ser. No. 325,405
8 Claims. (Cl. 250—211)



1. A photosensitive semiconductor device, which comprises:

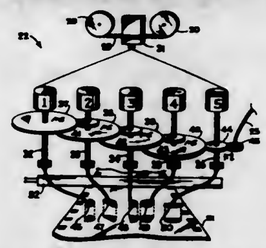
a semiconductor body of a single semiconductor type and having a substantially planar top surface and a plurality of intersecting grain boundaries which extend from said top surface through said body, said top surface being provided with an integral ridge centered on each of said grain boundaries so that each said grain boundary bisects each said ridge.

3,293,441
IMAGE INTENSIFIER WITH FERROELECTRIC LAYER AND BALANCED IMPEDANCES
Benjamin Kazan, 2062 Tigertail Road, Los Angeles, Calif. 90049, and John S. Winslow, 4380 Canyon Crest Road, Altadena, Calif. 90065
Filed May 12, 1965, Ser. No. 456,901
2 Claims. (Cl. 250—213)



1. Light amplifying apparatus comprising: continuous layers of a photoconductive material, a ferroelectric material and an electroluminescent material in a sandwich arrangement with the photoconductive layer being an outside layer and in which the layers are in contact with each other throughout their face-to-face surfaces, the parameters of said layers being such that the sum of their direct-current impedances is considerably greater than the sum of their alternating-current impedances, said ferroelectric layer being doped to reduce its direct-current impedance to a magnitude that is respectively of the same order as the direct-current impedances of the photoconductive and electroluminescent layers; and transparent conducting layers on the top and bottom surfaces, respectively, of said sandwich arrangement.

3,293,442
WORK POSITION PROGRAMMING AND RECORDING SYSTEM USING SYMBOLS ON A TRANSPARENT MEDIUM
William F. Marmstette and Ruth B. Marmstette, both of 20624 Earl St., Torrance, Calif. 90503
Filed Dec. 16, 1963, Ser. No. 330,847
6 Claims. (Cl. 250—219)



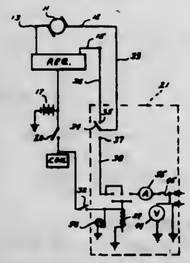
1. A system for positioning a work in accordance with a given program comprising, in combination: servo motor means for moving said work in response to a control signal and holding said work in a moved position when said control signal is terminated; programming means connected to said servo motor means for providing said control signal in accordance with a given program; and a position indicating means connected to said programming means and responsive to the position of said work to provide an indication thereof in said programming means, said control signal being generated when the indicated position is different from the program position and terminated when the indicated position corresponds to the program position, said programming means including a transparent medium having a succession of groups of symbols thereon, each group representing a coordinate point at which it is desired to position said work; a plurality of light responsive means corresponding in number to the number of symbols in each group; means for positioning said transparent medium with respect to said light responsive means such that light passes through said medium to said light responsive means and is intercepted by the symbols of one of said groups corresponding to a given coordinate point, each of said light responsive means providing a signal when its position relative to its associated symbol is different from a given position and providing no signal when its position corresponds to the position of its associated symbol, said control signal being responsive to signals from said light responsive means, said position indicating means including a motion transferring means from said servo motor to said light responsive means for effecting relative positioning of said light responsive means and said medium in accordance with the position of said work so that when said work reaches a position corresponding to said given coordinate point, the relative positions of said light responsive means and medium are such that no signals are received therefrom so that said work is held in its moved position until the next successive group of symbols is positioned to intercept light passing to said light responsive means.

3,293,443
VEHICLE POWER CONVERTER
William Earl Burch, Jr., Snook, Tex., assignor to Burch Electronics, Inc., College Station, Tex., a corporation of Texas
Filed June 16, 1965, Ser. No. 464,521
7 Claims. (Cl. 307—38)

1. A power converter for supplying electrical power to an electrical power requiring unit and adapted for attachment to a vehicle having an electrical circuit including a battery, a generator, and a regulator, said regulator having a field terminal connected to the field terminal of

said generator, an armature terminal normally connected to the armature terminal of said generator, and a battery output terminal connected to said battery, said power converter comprising:

a relay having a switch with input and output sides and an intermediate contact point therebetween and having a coil connected to the electrical circuit of said vehicle through first switch means;

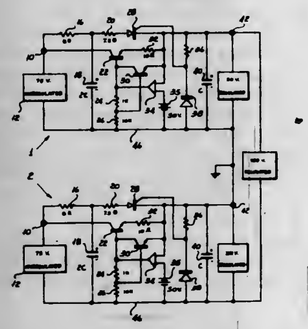


second switch means for selectively connecting the armature terminal of said generator with the input said of said relay switch and disconnecting the armature terminals of said regulator and said generator;

a continuity switch connected ahead of the input side of said relay switch and having contact means for contacting the intermediate contact point on said relay switch; and

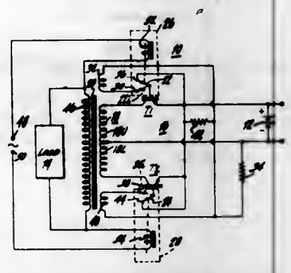
means for connecting the output side of said relay switch to said electrical power requiring unit.

3,293,444
BUILD-UP CIRCUIT FOR SERIES-CONNECTED POWER SUPPLIES
Aram H. Hagopian, New York, N.Y., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 5, 1962, Ser. No. 221,499
9 Claims. (Cl. 307—66)



7. A build-up circuit for series-connected power supplies including in combination a first and a second regulated power supply each providing an output of predetermined polarity, means connecting said outputs in series-aiding relationship, a first and a second auxiliary source of power, means responsive to a reversed polarity output of the first supply for momentarily coupling the first source to said first output, and means responsive to a reversed polarity output of the second supply for momentarily coupling the second source to said second output.

3,293,445
POWER SUPPLY CIRCUIT
Gilbert R. Levy, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,379
6 Claims. (Cl. 307—66)



6. A power supply circuit comprising

(a) an inverter circuit including an electrical amplifying device having two main electrodes and a control electrode,

(b) a transformer having a primary winding and a first and a second secondary winding,

(c) a switch having an operating coil and three contacts,

(d) one of said contacts being connected to said control electrode, a second of said contacts being connected to one of said main electrodes, and a third of said contacts being connected to said one main electrode through said first secondary coil,

(e) said switch including means for normally connecting said one and said third contact,

(f) a first pair of terminals for connection to a direct current source and a second pair of terminals for connection to an alternating current source,

(g) a connection from one of said second pair of terminals through said operating coil and through said primary winding in tandem to the other of said second pair of terminals,

(h) means for connecting a load across said primary winding, and

(i) means for completing a connection between said first pair of terminals over a path including said main electrodes and at least a portion of said second secondary winding in tandem, whereby said coil is operated only upon current flowing through said operating coil from said alternating current source to disconnect one contact from said third contact of said switch and to connect said first contact to said second contact of said switch.

3,293,446
A.C. STANDBY POWER SUPPLY SYSTEMS
John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 13, 1963, Ser. No. 282,529
11 Claims. (Cl. 307—66)

1. A standby A.C. electrical power supply system connectable to an A.C. power source, to a direct current source, and to a load, said system comprising:

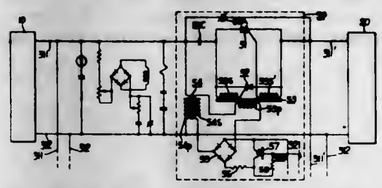
reference signal means for producing an alternating reference signal having a predetermined amplitude;

static output means connected to the load, said output means energizable by the direct current source and controllable by the reference signal means to substantially instantaneously furnish electrical power to the load;

voltage sensing means responsive to a measure of the A.C. power source output and the reference signal for producing an output indicating the difference in

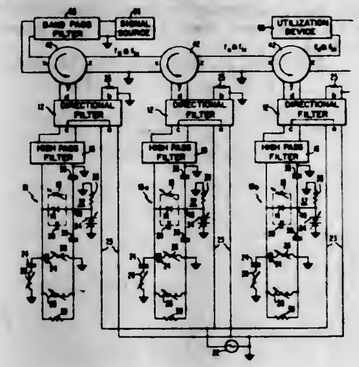
amplitude between the measure of the reference signal and the A.C. power source output;

switching means for connecting the A.C. power source to and disconnecting the A.C. power source from the load, said switching means responsive to the



voltage sensing means output when said output indicates a predetermined level of the A.C. power source to disconnect the A.C. power source from the load and to energize the output means by the direct current source.

3,293,447
PARAMETRIC TUNNEL-DIODE AMPLIFIER FREQUENCY CONVERTER USING PUMP HARMONIC
Paul L. Fleming, Brewster, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 10, 1963, Ser. No. 271,899
7 Claims. (Cl. 307—88.3)



1. A frequency converter comprising,

a non-linear negative conductance device having a current-voltage characteristic including a positive resistance region and a negative resistance region forming a point of inflection, the slope of said negative resistance region being greater than that of said positive resistance region,

means for biasing said device in said positive resistance region in the vicinity of said point of inflection,

means for applying a pump voltage having a first frequency to said device,

means for applying a signal voltage having a second frequency to said device,

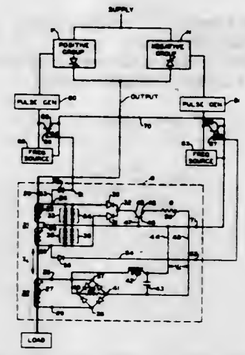
means for applying a voltage having a third frequency equal to the lower sideband of the second harmonic of said first frequency to said device, said second frequency being approximately equal to but less than said first frequency and said third frequency being approximately equal to but greater than said first frequency,

first circuit means tuned to substantially said first, second and third frequencies coupled to said device,

idler circuit means tuned to substantially a frequency equal to the difference between said first and second frequencies coupled to said device, and

energy extracting means coupled to said first circuit means for providing an output voltage having a frequency equal to one of said second and third frequencies.

3,293,448
PULSE-FORMING CIRCUIT
Carmelo J. Amato, Shaker Heights, Ohio, assignor to Lear Siegler, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,583
12 Claims. (Cl. 307—88.5)



1. A circuit for producing from a half wave of an alternating input signal a unidirectional output signal when the instantaneous level of the half wave of alternating input signal exceeds a predetermined proportion of its half wave average value comprising

an input terminal to which the input signal is applied,

an output terminal from which the output signal is supplied,

a first sensing of signal-producing circuit means operatively connecting said input terminal and said output terminal for sensing the instantaneous level of the input signal and providing a first signal at said output terminal proportional to said input signal,

a second sensing and signal-producing circuit means operatively connected to said input terminal for sensing and averaging the instantaneous level of the input signal and providing a second signal proportional to a constant fraction of the average value of a half wave of the input signal, and

a comparing and control device connected to said first and second circuit means for receiving and comparing the signals provided by them and for providing a short circuit path for diverting from said output terminal that portion of said first signal whose level is less than the level of said second signal and for permitting that portion of said first signal whose level is greater than the level of said second signal to appear at said output terminal.

3,293,449
SOLID STATE THYRATRON REPLACEMENT
Frank W. Gutzwiller, Auburn, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 24, 1963, Ser. No. 289,989
16 Claims. (Cl. 307—88.5)

1. A solid state switching apparatus capable of being utilized in a circuit as a direct substitute for a thyratron, said apparatus comprising:

(a) an envelope structure provided with at least first, second, and third terminal pins adapted to be received by conventional thyratron receiving socket terminals and corresponding directly to the anode, cathode, and

control grid terminal pins respectively of the thyratron,

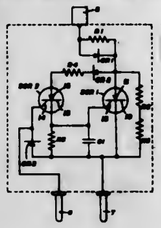
(b) a silicon controlled rectifier mounted within said envelope and having relatively high power handling capability and relatively low input impedance with respect to the thyratron,

(i) said controlled rectifier having anode, cathode, and gate electrodes,

(c) a semiconductor voltage-controlled breakdown device mounted within said envelope and having relatively low power handling capability and relatively high input impedance with respect to said controlled rectifier,

(i) said breakdown device having first, second, and third electrodes,

(ii) said first electrode serving to initiate a breakdown of said breakdown device,

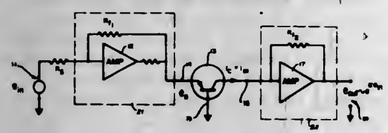


(d) said second and third electrodes of said breakdown device being coupled to said anode and gate electrode respectively of said controlled rectifier,

(e) said anode and cathode electrodes of said controlled rectifier being coupled to said first and second terminals respectively of said envelope structure, and

(f) said first electrode of said breakdown device being coupled to said third terminal of said envelope structure.

3,293,450
TRANSFER CIRCUIT HAVING WIDE RANGE ANTILOGARITHM RESPONSE
James F. Gibbons, Palo Alto, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Sept. 16, 1963, Ser. No. 309,144
4 Claims. (Cl. 307—88.5)



1. An antilog transfer circuit comprising:

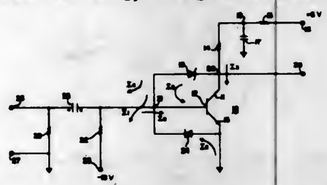
a transistor having an emitter-base junction and a collector-base junction;

means for applying to said emitter-base junction a voltage signal the antilog of which is desired; and

means for maintaining substantially zero volts across said collector-base junction and for detecting collector current to provide an output signal proportional to the antilog of said voltage signal.

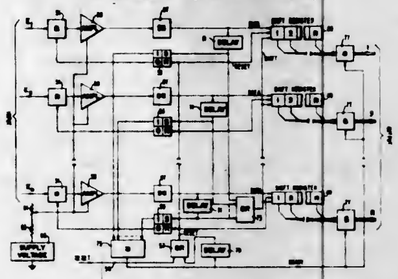
3,293,451
PEAK DETECTOR
Eugene W. Henning and John R. Newell, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,498
6 Claims. (Cl. 307—88.5)

1. A peak detector for use with a source of unidirectional electrical signals comprising a semiconductor device having a control electrode and a pair of output electrodes, a biasing means, said device being biased by said biasing means to conduct a very small amount compared to the amount of conduction when said device is in a saturated condition, a feedback means between one of said output electrodes and said control electrode, said feedback means maintaining said device conducting a small amount while the amplitude of the signal voltage is increasing, and an energy storage means, said energy



storage means being connected to said source of signals to store a charge which creates a voltage proportional to the amplitude of said signals, said energy storage means providing a current which renders said device saturated while signal amplitude is decreasing to render said feedback means non-operative, whereby said detector produces a rectangular output pulse as said signal amplitude decreases from a peak voltage value.

3,293,452
RELATIVE MAGNITUDE DETECTOR
Lawrence P. Horwitz, Chappaqua, and Otto Mond, White Plains, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 22, 1963, Ser. No. 317,966
11 Claims. (Cl. 307—88.5)



1. An apparatus for providing an indication of the relative magnitude of a plurality of input signals comprising, in combination:

a plurality of current paths, each responsive to an input signal, and each comprising an asymmetrically-conducting impedance and a thresholded switching device for providing an output when a predetermined magnitude of current is exceeded;

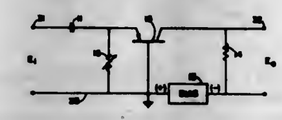
another current path, including a common impedance, controllably responsive to the current in each of said current paths for generating a back-biasing signal to cause the asymmetrically-conducting impedance in all controlling current paths, except for the controlling current path to which the largest input signal is applied, to hinder the flow of current in said paths;

and a plurality of means, each responsive to an output generated by a thresholded, current-sensitive switching device for controlling the current paths to inhibit the effect of the corresponding input signal on the common impedance when the threshold of the switching device is exceeded;

a plurality of indicating means responsive to the switching means for indicating the relative magnitude of the input signal;

whereby each of the applied input signals causes the corresponding threshold device to be activated in the sequence determined by the relative magnitudes of the applied input signals.

3,293,453
NEGATIVE RESISTANCE MULTISTABLE CIRCUIT SWITCHING
George Abraham, 3107 Westover Drive, SE., Washington, D.C. 20020
Filed Feb. 28, 1964, Ser. No. 348,915
4 Claims. (Cl. 307—88.5)



1. A multistable switching circuit triggerable by single-polarity pulses comprising:

a terminal for receiving single-polarity pulses;

a negative resistance device;

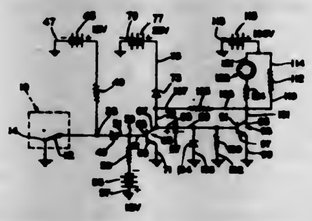
a capacitor connecting said terminal to said negative resistance device;

said capacitor having a value proportioned relative to the resistance of said negative resistance device, such that the pulses applied to said negative resistance device are differentiated;

output impedance means connected to said negative resistance device;

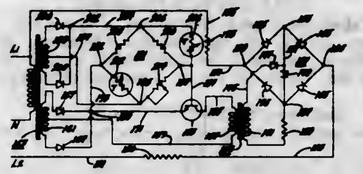
said output impedance means having a value proportioned relative to the resistance of said negative resistance device such that said negative resistance device is caused to operate in a bistable mode, thereby being triggered alternately to high and low conductive states by successive pulses.

3,293,454
INDICATOR LAMP CONTROL CIRCUIT EMPLOYING CHARGE-CONTROLLED TIMING CAPACITOR COUPLING CASCADED TRANSISTORS
Frank J. Thomas, West Paterson, and Thomas J. Levin, Midland Park, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 351,920
13 Claims. (Cl. 307—88.5)



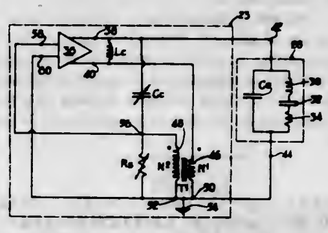
1. The combination comprising a first source of electrical energy, a first circuit energized from said first source including a first resistor and a control means for opening and closing the first circuit, a second circuit for the first source of electrical energy including a diode and a second resistor, the second circuit being rendered ineffective upon the closing of the first circuit by the control means and effective upon the opening of the first circuit by the control means, a first current control device including means responsive to a voltage drop across the second resistor to render the first current control device effective during a flow of current through the second circuit, a timing capacitor, a discharging circuit for the timing capacitor including the first current control device, a charging circuit for the timing capacitor operative upon the first current control device being rendered ineffective, the charging circuit for the timing capacitor including a third resistor, a second current control device including means responsive to a voltage drop across said third resistor to render the second control device operative for effecting a control function during a flow of current in said charging circuit.

3,293,455
ELECTRICAL APPARATUS EMPLOYING FOUR-LAYER DIODE AND THERMISTOR
Charles C. Gambill, Tipp City, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,408
5 Claims. (Cl. 307—88.5)



1. In combination, an electrical load, alternating current supply conductors connected to said electrical load, a multiple layer semiconductor diode connected in series with said electrical load, said diode having the characteristic that its resistance to current flow breaks down when a predetermined voltage is applied across it, means for applying across said diode every half cycle a voltage peak substantially at the time in the alternating current sine wave to said diode when the supply voltage passes through zero, and a three terminal semiconductor amplifier associated with said applying means for amplifying said voltage peak above said predetermined voltage to cause said diode to conduct current during substantially all of a plurality of consecutive substantially identical half cycles of alternating current.

3,293,456
ULTRASONIC CLEANING APPARATUS
Andrew Shoh, Stamford, Conn., assignor, by mesne assignments, to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,751
18 Claims. (Cl. 310—8.1)

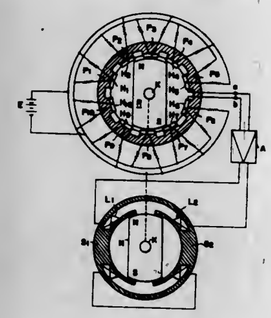


1. A circuit for connection to an electromechanical transducer to produce an electrical signal corresponding to the instantaneous load-varying component of the electrical impedance of the transducer, said circuit comprising in combination:

(A) compensating means for developing a first electrical signal corresponding to the load-invariant component of the electrical impedance of the transducer,

(B) a transformer comprising a primary winding inductively coupled with a secondary winding,
(1) said primary winding being connectable in circuit with the transducer so that said secondary winding produces a second electrical signal corresponding to the instantaneous total electrical impedance of the transducer; and,
(C) an electrical summing network,
(1) connected in circuit with said compensating means and with the secondary winding of said transformer,
(2) said summing network subtracting said second electrical signal to produce an output electrical signal corresponding to the instantaneous load-varying component of the electrical impedance of the transducer.

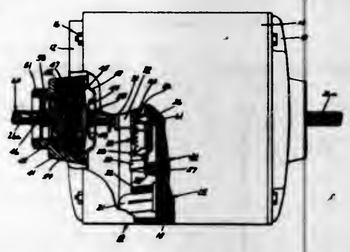
3,293,457
BRUSHLESS D.C. MOTOR PROVIDED WITH HALL-EFFECT DEVICES
Ryutaro Mori and Toshio Numakura, Kodaira-shi, Tamio Uemura, Hitachi-shi, and Yoshiya Miyamoto, Sendai-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Sept. 25, 1963, Ser. No. 311,471
Claims priority, application Japan, Sept. 28, 1962, 37/55,475
1 Claim. (Cl. 310—10)



An electric motor utilizing Hall-effect devices comprising a rotor which generates a constant magnetic flux, stator poles for driving the said rotor, driving coils wound about the said stator poles, a large number of Hall-effect devices disposed about the periphery of the said rotor at substantially equal angular intervals, a stator core supporting the said Hall-effect devices, electrical connections such that the output terminals of the said Hall-effect devices are series-connected in succession so as to cause the outputs of all said Hall-effect devices generated by the said magnetic flux of the rotor to be all added in the same direction, and means to utilize the combined output so produced to control current passing through the said driving coils so as to create a rotational torque on the said rotor.

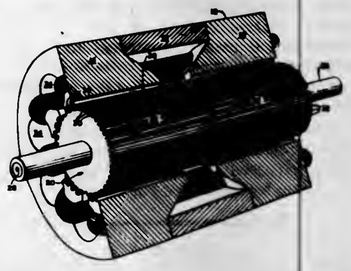
3,293,458
DYNAMOELECTRIC MACHINE WITH A MAGNESIUM HYDROXIDE COATED SHAFT
Ronald N. Nelsen, DeKalb, Ill., assignor to General Electric Company, a corporation of New York
Filed Dec. 16, 1963, Ser. No. 330,677
4 Claims. (Cl. 310—45)

1. A dynamoelectric machine comprising a frame carrying a pair of separated bearings, a stator mounted to said frame, a rotor secured to a shaft, with the shaft having journal surfaces rotatably supported by said bearings, said shaft having at least one output end projecting externally of said frame, and a generally uniform hard, smooth magnesium hydroxide film adhering to and covering said shaft end, said film forming at least the journal



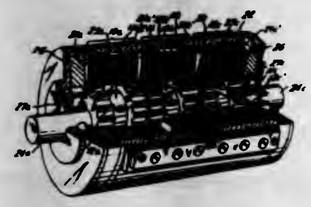
surface associated with said shaft end, said magnesium hydroxide film protecting the shaft from moisture and forming a low friction region at the covered journal surface.

3,293,459
STEPPING MOTORS AND CONTROL MEANS
Kenneth G. Kreuter and Larry S. Smith, both of Goshen, Ind., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,818
17 Claims. (Cl. 310—49)



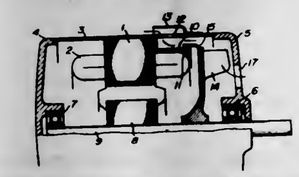
1. A stepping motor comprising a stator, said stator having first and second adjacent coaxial pole sections and a coaxially disposed permanent magnet intermediate said pole sections, first and second like pluralities of pole pieces extending inwardly of said first and second pole sections, respectively, armature means coaxially disposed within said stator and separated from said pole pieces by an air gap, a first plurality of substantially symmetrical evenly spaced teeth on the periphery of said armature means adjacent said air gap, a second plurality of substantially symmetrical evenly spaced teeth on said pole pieces adjacent said air gap, and a plurality of energizing windings on said pole pieces with like windings on respective corresponding ones of said first and second pluralities of said pole pieces; said armature being adapted to assume an equilibrium position with respect to said stator and said first and second pluralities of teeth being arranged such that in said equilibrium position there is substantial alignment between the said teeth on preselected ones of the pole pieces of one of said stator sections and said teeth on said armature and substantial misalignment between the said first and second pluralities of teeth on the remaining pole pieces of said one of said stator sections and on the corresponding ones of said pole pieces on the other of said stator sections and substantial alignment thereof on the said remaining pole pieces of said other of said stator sections; and said motor including means adapted to selectively apply direct current energization to the energizing windings on said preselected ones of said pole pieces and constrain said armature to assume said equilibrium position.

3,293,460
ELECTRIC STEPPING MOTOR WITH A NON-MAGNETIC SPACER BETWEEN ADJACENT ROTOR SECTIONS
Rinzo Iwai, Tokyo, and Hiroshi Iwano, Mitaka-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed June 1, 1965, Ser. No. 460,188
Claims priority, application Japan, Feb. 22, 1960, 35/8,367
3 Claims. (Cl. 310—49)



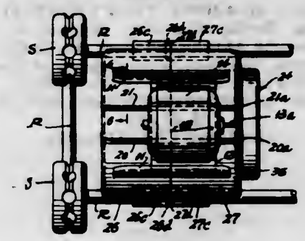
1. A stepping motor, comprising
a plurality of magnetic rotor portions adjacent each other in an axial direction, each of said rotor portions having radially extending teeth;
a plurality of magnetic stator portions adjacent each other in an axial direction, each of said stator portions having radially extending teeth projecting toward the teeth of a corresponding one of said rotor portions, each of said stator portions being positioned coaxially and magnetically interlinked with and surrounding the corresponding one of said rotor portions, the teeth of each of said stator portions being angularly displaced from the teeth of the others of said stator portions;
a non-magnetic plate positioned between each pair of adjacent rotor portions and forming a magnetic separation therebetween; and
means affixing each non-magnetic plate to each of the rotor portions between which it is positioned.

3,293,461
ELECTRIC MOTORS OF TOTALLY ENCLOSED TYPE
Tamio Uemura, Hitachi-shi, and Yoshiya Miyamoto, Sendai-shi, Japan, assignors to Hitachi, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan
Filed Mar. 31, 1964, Ser. No. 356,297
Claims priority, application Japan, Apr. 2, 1963, 38/16,280
1 Claim. (Cl. 310—57)



An electric motor of the totally enclosed type, comprising,
a cylindrical housing, a first end bracket having an air intake opening and a second end bracket, each of said end brackets being secured to said housing,
an annular stator core disposed within said housing and provided with an annular arrangement of stator coils, a rotor shaft rotatably supported at either end by said end brackets, concentric with said stator coil arrangement, and a rotor secured to said shaft,
a fan having a radial disc portion secured to said shaft between said rotor and said first end bracket, a fan portion disposed on the surface of said disc portion facing said first end bracket, and an annular end portion at the circumference of said disc extending parallel to said rotor shaft,
a stationary member having an annular portion surrounding the annular arrangement of stator coils,
said annular end portion of said fan slightly overlapping said fan, slightly overlapping the annular portion of said stationary member to define an annular gap therebetween, and
heat conductive electrically insulating material substantially filling the space formed between the annular portion of said stationary member and said arrangement of stator coils thereby securing said stationary member to said stator coil and said stator core and providing support for said stationary member necessary to insure uniformity in said gap,
said housing having air outlet means therein adjacent to said stationary member,
said annular end portion and said disc portion of said fan being formed of separate members secured to one another, said annular end portion having an L-shaped cross-section,
said stationary member having a flange portion abutting one side of said stator core, said annular portion of said stationary member being cylindrical in configuration.

3,293,462
POWER UNIT FOR TOYS OR THE LIKE
John H. Wright, Evanston, Ill., assignor to A. G. Spalding & Bros., Inc., Chicopee, Mass., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,638
6 Claims. (Cl. 310—68)



1. A power unit for a toy or the like comprising a base provided with opposed projecting lips on the sides thereof, a motor carrier, an electric motor attached to said carrier, said carrier having edges cooperating with said lips to adjustably secure the carrier to said base, spaced terminal leads each having a first portion disposed on the base between said lips and a second portion extending over an end of said base and in spaced relation to a pair of energizing terminal contacts thereon, said carrier having motor contacts electrically connected to said motor and engaging with said first portions of the terminal leads, and a switch member rotatably mounted on said end of the base and having contact bars thereon for selectively electrically connecting said second portions of the terminal leads to said terminal contacts.

3,293,463
LEAD POSITIONER AND ANCHOR FOR DYNAMOELECTRIC MACHINES
Ralph E. Church, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Dec. 2, 1963, Ser. No. 327,453
11 Claims. (Cl. 310—71)

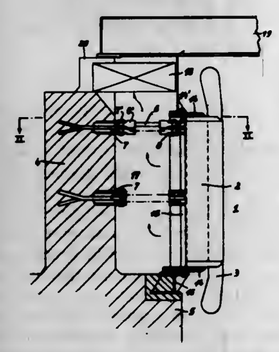
1. A stator for a dynamoelectric machine comprising a core having a yoke section and a plurality of salient poles extending from said yoke section and defining winding slots therebetween, the inner surfaces of said poles

defining a rotor receiving bore, each salient pole having a narrow portion extending from said yoke and a dimensionally wider portion adjacent said bore, and at least one of said slots having an entrance defined by the corresponding but opposite polar tips of adjacent poles, a winding on said core including coils wound on said salient poles and extending through said slots, a plurality of in-



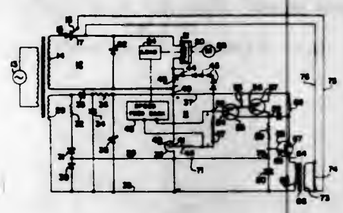
put leads connected to said winding, and a lead wire positioner and anchor comprising a body portion for receiving and holding said leads in position on said stator, said body portion fitting into said one slot between the coils accommodated therein and tightly engaging said yoke and the salient poles defining said slot, whereby said anchor is held in said one slot.

3,293,464
ELECTRICAL MACHINE WITH VERTICAL SHAFT
Franz Spirk, Berlin, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed Sept. 21, 1964, Ser. No. 398,015
Claims priority, application Germany, Sept. 24, 1963, S 87,465
11 Claims. (Cl. 310—89)



6. Electrical machine of the vertical shaft type comprising a circular stator including a concrete supporting ring and a packet of superimposed substantially circular core laminations coaxially disposed within said concrete supporting ring; a plurality of anchoring elements secured to said concrete supporting ring, a plurality of tensioning bolts having end fittings respectively fastened to said packet of core laminations and said anchoring elements, said tensioning bolts holding said packet of core laminations in spaced relation to said supporting ring and being adapted to transmit tangentially and radially directed forces, arising during operation of the electrical machine, from said packet of core laminations to said concrete supporting ring.

3,293,465
CURRENT LIMIT CIRCUIT
John R. Zeller, Cleveland Heights, Ohio, assignor to Reliance Electric and Engineering Co., a corporation of Ohio
Filed Jan. 7, 1963, Ser. No. 249,840
12 Claims. (Cl. 310—94)



1. A control circuit comprising in combination, a load coil,
means to establish a feedback voltage,
means connected to variably energize said coil in accordance with said feedback voltage,
means to establish a current limit voltage signal in accordance with the energization of said load coil,
at least one diode rectifier,
loop circuit means connecting said control voltage and current limit voltage signal in series with said diode rectifier with said diode rectifier being poled to conduct current in a direction for a voltage drop additive to said feedback voltage,
and said diode rectifier conducting upon the voltage applied thereto from said loop circuit means exceeding the forward voltage drop of said diode rectifier to cause current flow through said loop circuit means to effectively increase said feedback voltage and thus limit the energization to said coil.

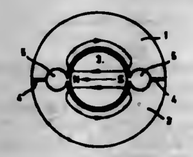
3,293,466
AXIAL AIRGAP ELECTRIC ROTARY MACHINES
Jacques Henry-Baudot, Antony (Seine), France, assignor to Printed Motors Inc., New York, N.Y.
Filed July 27, 1961, Ser. No. 127,286
Claims priority, application France, Aug. 3, 1960, 835,050
7 Claims. (Cl. 310—154)



1. An axial airgap electric rotary machine comprising a disc-shaped printed-circuit winding made of conductors intimately adhering on one face at least of an insulating annular carrier on the airgap face thereof, said winding having an active part formed of substantially radial conductor portions cooperating with at least one magnetic pole ring, said pole ring being formed of coercive magnetic material permanently magnetized to present magnetic poles of opposite polarities in alternate areas of the air-gap face of said ring, said pole ring having a radial height greater than that of the active part of the winding, and magnetic polar pieces of magnetically soft material mounted on the magnetized areas of said pole ring, the faces of said polar pieces which engage said ring having a radial height substantially equal to that of the permanent magnet ring, and said polar pieces having air-

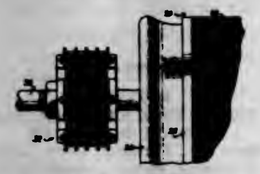
gap faces adjacent said winding of a radial height substantially equal to the radial height of the active part of said winding.

3,293,467
SINGLE-PHASE ELECTRIC MOTORS
Robert Favre, Lausanne, Switzerland, assignor to Golay, Buchel & Cie S.A., Malley, Switzerland, a firm
Filed Aug. 24, 1964, Ser. No. 391,444
Claims priority, application Germany, Aug. 24, 1963, G 38,545
1 Claim. (Cl. 310—156)



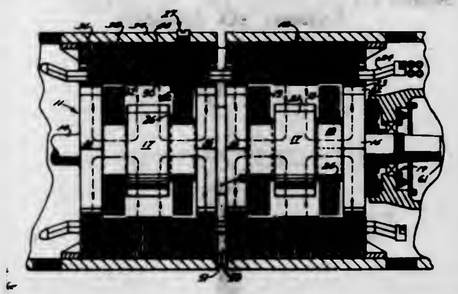
A self-starting, single-phase electric motor having:
(A) a diametrically magnetised rotor having polar axes;
(B) a substantially annular two-pole stator surrounding said rotor, said stator being split diametrically along the inter-pole axes thereof thus forming two gaps therebetween, said stator having poles arranged symmetrically in relation with the rotor; and boundary surfaces;
(C) air gaps between said stator and rotor;
(D) the reluctance of the boundary surfaces along said air gaps being less than that of the magnetic circuit intermediate the boundary surfaces of said stator.

3,293,468
SATURISTORS COMPRISING HARD MAGNETIC MATERIALS ENERGIZED BY ALTERNATING CURRENTS
Philip L. Alger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,591
22 Claims. (Cl. 310—166)



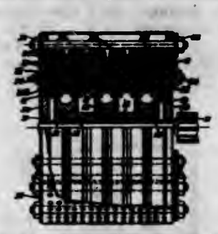
18. An induction motor comprising:
a wound rotor having two or more parallel connected windings,
a stator equipped with a pole changing winding,
a reactor comprising a laminated magnetic core having legs of hard magnetic material of more than one million gauss-oersteds stored magnetic energy when fully magnetized,
a coil on each of said legs adapted for energization by an alternating current,
said coils being connected in series with said rotor windings,
said coils and rotor windings being connected in such a way that when the stator winding with one number of poles is energized, currents in each phase of the parallel connected rotor windings flow in the same direction, and when the stator winding is energized with the other number of poles of the currents in the parallel connected rotor windings flow in opposite directions.

3,293,469
ELECTRICAL ALTERNATOR
James L. Crawford, Chillicothe, and Paul J. Stachler, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 28, 1964, Ser. No. 340,683
6 Claims. (Cl. 310—168)



1. In a rotor for an electric generator the combination comprising:
a cylindrical rotor core; and
a plurality of pole pieces approximately elliptical in shape so as to have a major axis, said pole pieces disposed at spaced apart locations on said core with their major axes generally perpendicular to the longitudinal axis of said core;
said pole pieces including at least one first pole piece;
said pole pieces including second pole pieces wherein a pair of said second pole pieces is disposed on opposite sides of a first pole piece and oriented to have their major axes generally perpendicular to the major axes of said first pole pieces.

3,293,470
ELECTROMAGNETIC MACHINES
Geoffrey Richard Polgreen, Undercoombe, Wendover, Buckinghamshire, England
Filed May 8, 1963, Ser. No. 278,967
Claims priority, application Great Britain, May 9, 1962, 17,764/62
13 Claims. (Cl. 310—178)



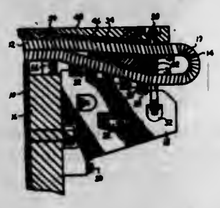
1. An electromagnetic machine comprising a rotor member, a stator member, at least one set of elements in each said member, said set comprising in one said member means defining two magnetic circuits each including an annular flux gap and a source of magnetic flux provided by permanent magnetic ceramic material and current collecting means mounted on the circuit-defining means but spaced from said flux gap, each set comprising in the other said member two annular conductors each extending through a separate one of the flux gaps into sliding contact with a respective one of said current collecting means, means electrically interconnecting all said conductors and current collecting means in series so that a current path is formed through said conductors for the flow of current in one direction through one flux gap and in the opposite direction through the other flux gap cutting lines of flux in each flow direction.

3,293,471
LAMINATED CORE CONSTRUCTION FOR ELECTRIC INDUCTIVE DEVICE
Milton V. De Jean, Pitcairn, Pa., and Michael J. Lacy, Florissant, Mo., assignors to General Electric Company, a corporation of New York
Original application Oct. 28, 1963, Ser. No. 320,255. Divided and this application Nov. 1, 1965, Ser. No. 505,852
5 Claims. (Cl. 310—217)



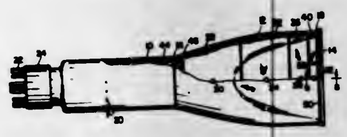
5. A stator core for use in a dynamoelectric machine comprising a plurality of laminations forming a laminated stack having a bore, winding accommodating means formed adjacent said bore and at least two bolt holes extending through the stack spaced from said means and arranged adjacent the outer periphery of said laminations, and a cured resinous adhesive material disposed between adjacent laminations solely in the vicinity of said bolt holes, said material bonding said laminations together in juxtaposed relation.

3,293,472
END TURN SUPPORT ARRANGEMENT
Robert W. Stevens, 2065 Chepstow Road, Schenectady, N.Y. 12303
Continuation of application Ser. No. 163,606, Jan. 2, 1962. This application Aug. 9, 1965, Ser. No. 478,241
5 Claims. (Cl. 310—260)



1. In a dynamoelectric machine having a laminated core with a plurality of axially extending circumferentially spaced slots therein, and a winding in said core including a plurality of coils in said slots having inner and outer overlapping layers of end turns projecting axially outward from the core, the improvement of an end turn support system comprising:
(a) a pad of insulating material in a substantially inflexible state disposed between the overlapping layers of end turns and positioned in intimate contact with and conforming to the facing surfaces of adjacent end turns in both the inner and outer layers, the material of said pad being characterized by an initially viscous form permanently curable to said substantially inflexible state; and
(b) means separate from said pad rigidly secured to said core and essentially immovable relative thereto biased against the inner surface of said inner layer and the outer surface of said outer layer providing constriction of said layers toward each other,
(c) whereby said pad and said means combine to render said end turns substantially immovable relative to said core when the winding is subjected to magnetic and vibratory forces.

3,293,473
THIN, POROUS STORAGE PHOSPHOR LAYER
Robert H. Anderson, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Mar. 19, 1962, Ser. No. 180,457
11 Claims. (Cl. 313—68)



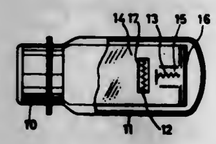
1. A storage target, comprising:
a conductive substrate body providing a target electrode; and
a charge storage means including an integral semicontinuous dielectric layer of phosphor material supported on one side of said substrate body and having a thickness that is within the range of thicknesses over which said phosphor material is capable of storing an electrical charge image produced on said layer and will emit a light image corresponding to said charge image for an indefinite time when bombarded by electrons, said integral phosphor layer within said range of thicknesses being sufficiently thin and porous to enable secondary electrons emitted from the bombarded side of said phosphor layer to be transmitted through the phosphor layer and collected by the target electrode on the opposite side of said phosphor layer.

3,293,474
PHOSPHOR DIELECTRIC STORAGE TARGET FOR CATHODE RAY TUBE
Charles B. Gibson, Jr., Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Aug. 1, 1963, Ser. No. 299,422
7 Claims. (Cl. 313—68)



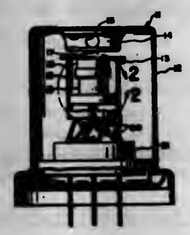
1. A storage target for storing an electron image, comprising:
a nonconducting support member of electrical insulative material;
a coating of conductive material in contact with one side of said support member having a plurality of separated apertures which extend through said coating to said support member; and
a storage dielectric layer of secondary emissive phosphor material in contact with said one side of said support member in the form of a plurality of spaced dielectric storage areas contained in the apertures of the conductive coating, said dielectric areas being separated from each other by the elements of said conductive coating to enable the bistable storage of electron images formed thereon.

3,293,475
MULTIFILAMENT LAMP WITH A FULL SHIELD FOR ONE FILAMENT
Sven Grunsing, Furugvagen 48, Sandviken, Sweden, and Erling Nordmark, P.O. Box 179, Kungsgarden, Sweden
Filed Feb. 13, 1964, Ser. No. 344,593
Claims priority, application Sweden, May 8, 1963, 5,036/63
4 Claims. (Cl. 313—117)



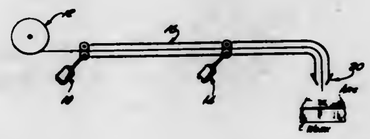
1. A glow lamp for automobile headlights and the like, having a long distance filament and a dim filament and a shield below said dim filament, said shield extending from the lamp base forwardly along a substantially horizontal plane level with the center of the lamp, said shield covering the major part of the space within the glass envelope along said plane, the lateral edges and the front edge of the shield being only slightly spaced from the inner side of the glass envelope, the long distance filament being situated in an aperture in said shield at the rear of said dim filament.

3,293,476
ELECTRODE ASSEMBLY FOR AN ELECTRON DISCHARGE DEVICE MADE FROM A MATERIAL HAVING A LOW CARBON CONTENT
Morris Feinleib, Los Altos, and Robert L. Lunn, Menlo Park, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Jan. 4, 1963, Ser. No. 249,350
14 Claims. (Cl. 313—311)



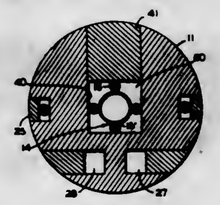
1. An electron discharge device comprising an envelope, electrode elements in said envelope, supporting means in said envelope for said electrodes, said electrode elements including a cathode, said cathode and a preponderance of the parts of said electron discharge device which operate in the range of the cathode operating temperature and above made of material having a carbon content not exceeding 100 parts per million.

3,293,477
PUSH-PULL WELDING WIRE DRIVE SYSTEM
Roscoe R. Lobosco, Fanwood, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 22, 1964, Ser. No. 341,827
17 Claims. (Cl. 314—69)



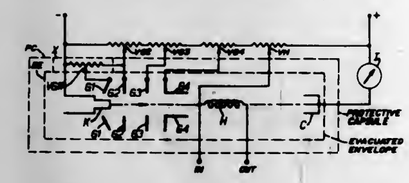
1. A wire drive system for feeding consumable electrode welding wire from a remotely located source of such wire to a consumable wire electrode arc welding torch which comprises a first wire feed means and a second wire feed means, one of said means having a relatively good speed-load characteristic such that the forces exerted by said means on the wire are sufficient to determine the wire feed speed and the other of said means having poor speed-load characteristics.

3,293,478
TRAVELING WAVE TUBE WITH LONGITUDINAL RECESS
Richard H. Winkler, Palo Alto, Calif., assignor to General Electric Company, a corporation of New York
Filed Mar. 28, 1963, Ser. No. 268,753
12 Claims. (Cl. 315—3.5)



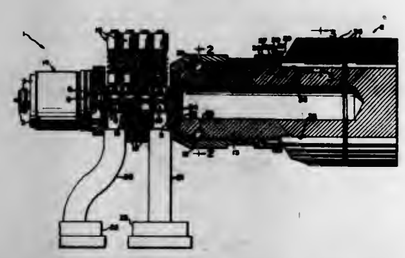
1. A traveling wave tube of the type wherein an electron beam interacts with a traveling wave comprising: a substantially solid body member having a central cavity and a wall thickness approximately equal to the size of the cavity and including an electron source for providing the electron beam, a slow-wave assemblage arranged in energy interchanging relationship with said electron beam and a collector arranged to intercept said electron beam, said electron source and collector being disposed within said body member, said body member having a longitudinally extending rectangular recess therein for receiving said slow-wave assemblage, said recess beginning at the outer surface of the body member and communicating with the central cavity, and means extending along the length of said recess for maintaining said slow-wave assemblage mechanically tight within said cavity of said body member.

3,293,479
ULTRA LOW NOISE TRAVELLING WAVE TUBE HAVING A GRID VOLTAGE ARRANGEMENT THAT INCLUDES A PRE-SET POTENTIOMETER
Graeme Oliver Chalk, Chelmsford, Essex, England, assignor to English Electric Valve Company Limited, London, England, a British company
Filed Aug. 26, 1964, Ser. No. 392,198
Claims priority, application Great Britain, Sept. 11, 1963, 35,858/63
4 Claims. (Cl. 315—3.5)



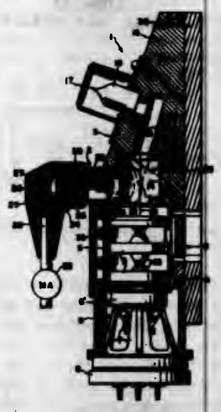
1. An ultra low noise travelling wave tube comprising a cathode, a delay line, a collector, at least three grids spaced between said cathode and said collector, a potentiometer having two end terminals and a slider terminal movable between said two end terminals, the slider terminal of said potentiometer being coupled to one of the two grids closest to said cathode, one end terminal of said potentiometer being coupled to the other of said two grids closest to said cathode, means for applying an individually adjustable potential between the two end terminals of said potentiometer, and means for applying individually adjustable potentials to said collector, delay line, and the remaining grids of said travelling wave tube.

3,293,480
POLE PIECE AND COLLECTOR ASSEMBLY FOR HIGH FREQUENCY ELECTRON DISCHARGE DEVICE WITH COOLING RIBS
Elden G. Green and Louis Thomas Zitelli, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 24, 1963, Ser. No. 282,991
7 Claims. (Cl. 315—5.38)



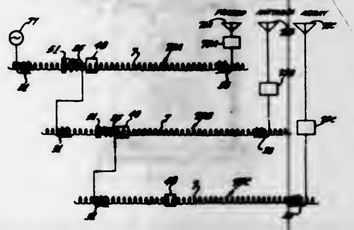
1. A collector structure for a high frequency electron discharge device comprising,
a cup-shaped pole piece member of magnetic material,
a thermally conductive collector core member disposed within and in D.C. isolation with said cup-shaped pole piece member,
said core member being supported on and mechanically attached to said pole piece member by means of an insulating support ring, said ring being located in a transverse plane, said transverse plane traversing approximately through the center of gravity of said core member, said device further including a plurality of insulating members positioned near one end of said core member, said one end being disposed within said pole piece member, said plurality of insulating members being disposed relative to said core member and said pole piece member such that D.C. electrical shorting between said core member and said pole piece member cannot occur due to relative displacement forces occurring between said core member and said pole piece member.

3,293,481
HIGH FREQUENCY ELECTRON DISCHARGE DEVICE
Curtis E. Ward, Los Altos, and James R. Schwartz, Mountain View, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 8, 1963, Ser. No. 293,443
12 Claims. (Cl. 315—5.38)



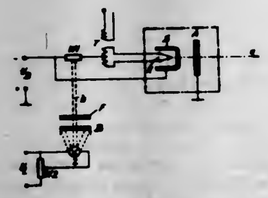
1. An electron discharge device comprising an electron gun adapted and arranged to generate and direct an electron beam along a predetermined beam axis, said gun being disposed at one end of said axis, a collector structure disposed at the other end of said axis, interaction means disposed along said axis between said gun and collector for interaction with said electron beam, and an ion draining electrode asymmetrically disposed within said collector structure with respect to the beam axis and radially spaced from said beam axis, said ion draining electrode being adapted and arranged to collect ions thereon.

3,293,482
PLURAL OUTPUT TRAVELING WAVE TUBE
Herbert J. Wolkstein, Livingston, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 21, 1962, Ser. No. 204,246
10 Claims. (Cl. 315—9)



10. A system for transmitting RF energy from a single RF source to a number of load elements, comprising:
(a) a corresponding number of traveling wave amplifier tubes, each comprising:
(1) an electron gun and a collector determining an elongated beam path therebetween;
(2) an elongated slow wave structure extending along and coupled to said path; and
(3) RF input and output means coupled to opposite ends of said structure;
(b) means coupling said source to the input means of one of said tubes;
(c) means coupling the output means of each tube to one of said load elements;
(d) each of said tubes, except the last one, comprising an auxiliary RF output means coupled to the slow-wave structure of the tube at a point of zero db gain; and
(e) means coupling the auxiliary output means of each tube with the input means of the next tube.

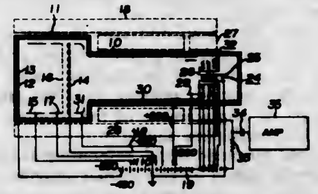
3,293,483
RADIATION CONTROLLED ELECTRON RADIATION SOURCE
Albrecht Engel, Berlin-Siemensstadt, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Jan. 8, 1962, Ser. No. 164,673
13 Claims. (Cl. 315—10)



1. An electron radiation source comprising the combination of a cathode and a control diaphragm, an adjusting member with variable resistance value disposed in a lead extending to the cathode, said adjusting member effecting by alteration of the potential of the cathode, which is positive with respect to the potential of the control diaphragm, control of the power and of the focusing of the electron beam emitted from the cathode, said adjusting member being sensitive to radiation whereby the resistance thereof is variable responsive to incident radiation directed thereagainst, means, associated with and forming a part of said source, for respectively producing the incident radiation and means, likewise associated with and forming a part of said source, for altering the values which characterize the incident radiation and thereby affect the resistance value of the radiation sensitive adjusting member.

3,293,484
PICKUP STORAGE TUBE
Yoshiaki Nakayama, Ohta-ku, Tokyo, Kaichiro Odagawa, Tsurumi-ku, Yokohama-shi, and Shin Hasegawa, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co. Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Mar. 19, 1964, Ser. No. 353,038
3 Claims. (Cl. 315—11)

1. A pickup storage tube adapted for storing an optical image as a charge image for a desired period of time comprising
a vacuum envelope having a face plate at one end thereof,
a photocathode deposited on the inside of said face plate and adapted to emit photoelectrons in accordance with the brightness of the optical image focused on said photocathode,
a storage target spacedly positioned from said photocathode oppositely from said face plate,
said storage target including
a metallic storage mesh having openings therethrough,
an insulator coating on said mesh on the side facing said photocathode whereby secondary electrons are emitted after said insulator coating is struck by said photoelectrons and charge images are stored on the surface of said insulator coating,
and a conductive material coating on said mesh on the opposite side from said insulator coating,
a collector mesh electrode located adjacent and parallel to said target on the side with said photocathode adapted to collect emitted secondary electrons,





an electron gun provided at one end of said envelope opposite from said photocathode and adapted to emit a reading electron beam,
said reading electron beam scanning said target,
and means to collect electrons moving from said target through the action of said reading electron beam whereby the optical image may be stored as a charge image on said target until as a signal electric current it may be converted into an output signal.

3,293,485
POLAR DISPLAY APPARATUS USING HALL MULTIPLIER
Glen H. Smerage, Mountain View, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 329,793
1 Claim. (Cl. 315—23)

In a radio frequency direction finding system, apparatus providing a polar display of an incident radio frequency signal which is received by a rotating antenna and has a magnitude which is a function of the angular displacement of rotating antenna, said apparatus comprising
a sinusoidal waveform generator,
means for applying an angular displacement signal which is proportional to the angular displacement of the rotating antenna to said sinusoidal waveform generator,
said generator providing a first sinusoidal output which is a function of the sine of the angle of displacement of the rotating antenna and a second sinusoidal output which is a function of the cosin of the angle of displacement of the rotating antenna,
a signal amplifier responsive to the incident signal received by the rotating antenna for generating a signal voltage,
a first amplifier responsive to the first sinusoidal output for generating a first current output which is proportional to the sine of the angle of displacement of the rotating antenna,
a second amplifier responsive to the second sinusoidal output for generating a second current output which

is proportional to the cosine of the angle of displacement of the rotating antenna,

a first Hall multiplier having

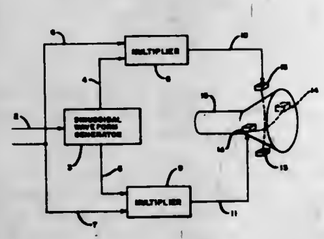
a first magnetic circuit responsive to the first current output of said first amplifier for generating a sinusoidally varying magnetic field proportional to the angle of displacement of the rotating antenna, and

a first Hall semiconductor element responsive to the signal voltage of said signal amplifier for generating a signal current in said element proportional to the magnitude of the incident signal received by the rotating antenna,

said first Hall semiconductor element producing a first Hall voltage product output proportional to the product of the incident signal received by the rotating antenna and the sine of the angle of displacement of the rotating antenna,

a second Hall multiplier having

a second magnetic circuit responsive to the second current output of said second amplifier for generating a sinusoidally varying magnetic field proportional to the angle of displacement of the rotating antenna, and



a second Hall semiconductor element responsive to the signal voltage of said signal amplifier for generating a signal current in said element proportional to the magnitude of the incident signal received by the rotating antenna,

said second Hall semiconductor element producing a second Hall voltage product output proportional to the product of the incident signal received by the rotating antenna and the cosine of the angular displacement of the rotating antenna, and

a cathode ray tube having

a vertical deflection system responsive to the first Hall voltage product output, and

a horizontal deflection system responsive to the second Hall voltage product output whereby to provide a polar display of the incident signal received by the rotating antenna.

3,293,486

LINEARITY CORRECTION CIRCUIT

Bernard E. Nicholson, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 3, 1964, Ser. No. 357,025
5 Claims. (Cl. 315—27)

1. A circuit arrangement for providing electromagnetic deflection of an electron beam in a cathode ray device, comprising:

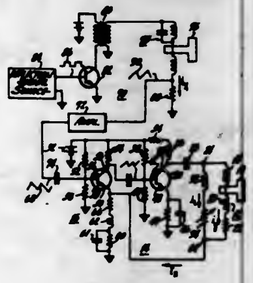
a cathode ray device;

a deflection output circuit having a deflection winding positioned with respect to said device for deflecting an electron beam thereof and linearity correction circuit means coupled in parallel with said deflection winding;

an amplifier coupled to said output circuit for causing a cyclical output circuit current, i_d, to flow in said deflection output circuit in response to a cyclical input signal;

said amplifier including an amplifying stage having an amplifying device;

means for applying a cyclical input signal and a signal having a waveform conforming to said output circuit current waveform to said amplifying device;



said amplifier adapted for varying output circuit current, i_d, for providing correspondence in linearity between a waveform of said input signal and a waveform of said output current,

said linearity correction circuit comprising electrical circuit elements adapted for causing a waveform of current which flows in said deflection winding to vary from the waveform of said output circuit current, i_d, in a manner for providing a linear deflection of said electron beam in said cathode ray device.

3,293,487

ANODE FOR A MAGNETRON HAVING DEVERSE SIZE CAVITY RESONATORS

Alan Hugh Pickering, Springfield, Chelmsford, England, assignor to English Electric Valve Company Limited, London, England, a company of Great Britain

Filed July 25, 1962, Ser. No. 212,313
Claims priority, application Great Britain, Oct. 4, 1961, 35,751/61
14 Claims. (Cl. 315—39.45)



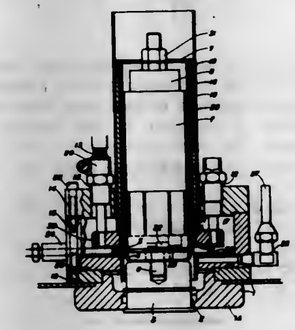
1. A rising sun magnetron including an anode system comprising a metal carcase member, a plurality of separate metal vane members which are fixed to said carcase member so as to project radially inward therefrom at equal angular intervals round the carcase member, and a plurality of separate metal intermediate members which are also in fixed positions in relation to said carcase member and project radially inward therefrom but which are of substantially shorter radial length than the vane members so as to project inwardly for a substantially shorter distance, each intermediate member occupying part of the space between two different adjacent vane members, certain adjacent vane members having an intermediate member between them and other adjacent vane members being without an intermediate member between them.

3,293,488

LOW INDUCTANCE CAPACITOR AND SWITCHING ASSEMBLY

Robert S. Dike and Edwin L. Kemp, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 8, 1963, Ser. No. 271,529
3 Claims. (Cl. 315—59)



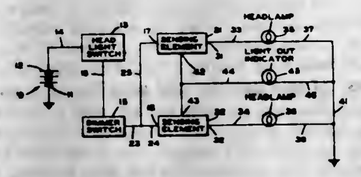
1. A low inductance capacitor and ignitron assembly comprising a capacitor, a centrally-located electrode and a peripherally located ground ring at the top of said capacitor, the diameter of said electrode being greater than the distance between the electrode and the ground return ring, an ignitron mounted on said electrode, said electrode and at least a part of said ignitron being immersed in insulating oil.

3,293,489

HEADLAMP OUTAGE INDICATOR

Richard G. Marshall, Huntsville, Ala., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Nov. 19, 1964, Ser. No. 412,525
2 Claims. (Cl. 315—83)



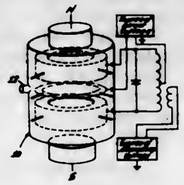
1. In a system for indicating a burned out condition of a headlamp the combination comprising, a source of electrical energy, a headlamp, a sensing element coupling at all times said source of electrical energy with said headlamp, said sensing element including a first terminal coupled to said source of electrical energy and a second terminal connected to said headlamp, a U-shaped bimetal element having one end connected to and anchored at said first terminal and having the other end connected to and anchored at said other terminal, a central contact positioned to engage the central portion of said U-shaped bimetal element when there is no current flow through said element to said headlamp, and an indicator lamp connected to said central contact.

3,293,490

APPARATUS FOR OBTAINING CONTROLLED PRODUCTION OF CHARGED PARTICLES

Kenneth R. MacKenzie, Pacific Palisades, Calif., assignor, by mesne assignments, to Robert A. Cornog, Woodland Hills, Calif.

Filed July 25, 1961, Ser. No. 126,554
22 Claims. (Cl. 315—111)



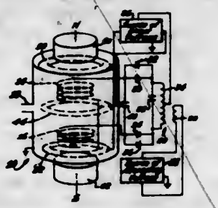
1. In combination for obtaining a controlled production of charged particles, means including at least one wall defining a controlled space, means operatively coupled to the wall for obtaining the introduction of a plurality of molecules into the controlled space, control means disposed within the controlled space for obtaining a reciprocal movement of electrons through the controlled space to obtain the production of charged particles by the electrons during such movement, and means disposed within the controlled space and outside of the path of the reciprocal movement of the electrons for preventing any contact of the electrons against the space means including the wall.

3,293,491

APPARATUS FOR PRODUCING CHARGED PARTICLES

Loris K. Hanson, Santa Monica, Calif., assignor, by mesne assignments, to Robert A. Cornog, Woodland Hills, Calif.

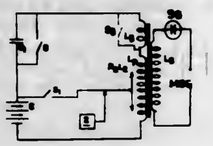
Filed Feb. 13, 1962, Ser. No. 172,962
14 Claims. (Cl. 315—111)



1. In combination for obtaining a controlled production of charged particles from a plurality of molecules of a gas, first electrode means for obtaining a movement of charged particles toward and away from the first electrode means; second electrode means for obtaining a movement of charged particles toward and away from the second electrode means; the first and second electrode means being displaced from each other in a particular direction and being constructed to produce forces on the charged particles, upon the introduction of a voltage to the electrode means and in accordance with the introduction of a voltage to the electrode means, in a direction for obtaining a movement of charged particles between the electrode means and for concentrating the charged particles during the movement of the charged particles between the electrode means; means operatively coupled to the first and second electrode means for introducing alternating voltages to the first and second electrode means in an opposing phase relationship to produce a first force between the electrode means for obtaining a movement of the charged particles between the first and

second electrode means at a frequency directly related to the frequency of the alternating voltage and for obtaining an oscillatory movement of the charged particles at the first and second electrode means between each movement of the charged particles and for obtaining the ionization of molecules of gas by the charged particles during the movements of the charged particles; means displaced from the first and second electrode means in the particular direction for producing a second force on the charged particles in cooperation with the first force to obtain a concentration of the charged particles during the movement of the charged particles between the electrode means; and means for introducing the plurality of molecules of a gas into the space between the first and second electrode means.

3,293,492
IGNITION SYSTEM EMPLOYING A FAST HIGH MAGNETIC BUILDUP
Herman Wald, Astoria, N.Y. (97—11 Horace Harding Expressway, Queens, N.Y. 11368)
Filed July 8, 1963, Ser. No. 293,480
8 Claims. (Cl. 315—199)



1. An auxiliary ignition control device for use in ignition systems of internal combustion and like engines comprising an ignition transformer coil for accumulating magnetic energy including a primary winding having a plurality of tapped portions, a source of voltage supply, a circuit breaking means, an electrical main circuit including said primary winding, said voltage source and said circuit breaking means in series for recurrently closing and opening said main circuit to control the rate of input current pulses effecting a recurrent storage of energy from said source, the duration of said input pulses includes a first and second transition periods, including in combination, an auxiliary switching device connected in parallel with any of said tapped portions of said primary winding with inclusion of said voltage source forming an auxiliary circuit, said auxiliary switching device selectively inserting any of said tapped portions into said auxiliary circuit and open same immediately after said circuit breaking means closes and having a speed responsive device adapted to control the tapping connection to any of said tapped portions of said primary winding becoming effective in said auxiliary circuit in response to mechanical means controlled by the speed of said engine, said auxiliary switching device opens any of said portions of said primary winding just prior the current reaches its normal steady-state value demanded by said whole primary winding allowing to reach in said main circuit at the end of said second transition period a substantially constant steady-state current irrespective of the rapidity of said input pulses.

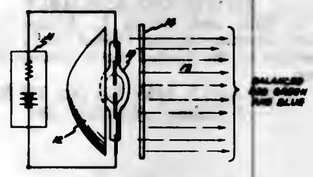
3,293,493
LIGHT SOURCE FOR COLOR SYNTHESIS
Peter D. Johnson, Schenectady, and James T. La Tourrette, Huntington, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 25, 1963, Ser. No. 311,528
1 Claim. (Cl. 315—358)

A high intensity light source for color synthesis, said source comprising:

(a) an hermetically sealed light-transmissive envelope containing a noble gas atmosphere;

(b) a pair of arc electrodes positioned in said envelope and defining an arc gap therein having a spacing in the range from 1 millimeter to 5 millimeters;

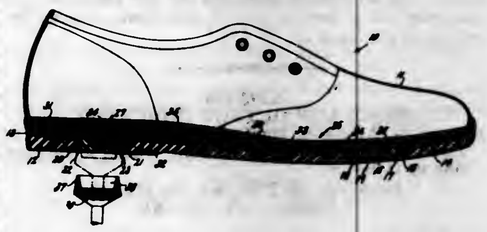
(c) a charge of mercury in said envelope weighing about 30 milligrams for each cubic centimeter of volume enclosed by said envelope;



(d) a quantity of zinc in said envelope being sufficient to provide the maximum partial pressure of zinc vapor corresponding to operating temperatures; and a quantity of thallium in said envelope sufficient to provide the maximum partial pressure of thallium vapor corresponding to operating temperature; and

(e) a source of electrical power connected to said electrodes, said source supplying sufficient electrical energy to said electrodes to provide an inner wall operating temperature of said envelope in the range from 750° C. to 850° C.

3,293,494
CONDUCTIVE SHOE METHOD OF MAKING SAME
Joseph H. Fischer, Woodbury, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 24, 1964, Ser. No. 362,222
8 Claims. (Cl. 317—2)



1. A conductive shoe comprising: a non-conductive thin, flexible outsole having an aperture extending therethrough; a non-metallic flexible conductive plug in said aperture, said plug having a thickness approximating the thickness of said outsole, said plug having a ground engaging surface and an inner surface, said ground engaging surface having an inwardly extending continuous groove forming an outer plug portion that is securely bonded to said outsole and a central flexible plug portion; and conductive means interconnecting said inner plug surface with the innermost portion of said shoe, so that, said conductive means and said plug form an electrical grounding path for the wearer.

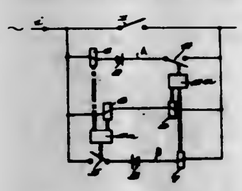
3,293,495
CONTROL CIRCUITS
Vernon Z. Smith, Wayne, Pa., assignor to Omnitronics, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Jan. 29, 1963, Ser. No. 254,623
7 Claims. (Cl. 317—11)

1. For use with a control circuit having a semiconductive switching means, an inductive operating unit and a capacitive surge accommodating unit coupled in series, and a direct current passage means coupled in parallel with said capacitive unit, the improvement which comprises a protective circuit coupled in parallel with that portion of said control circuit including said inductive unit and said capacitive unit, the protective circuit comprising semiconductive blocking means coupled to said inductive operating unit in a sense to block the passage of current through the protective circuit responsive to both a steady-state current and an increasing current



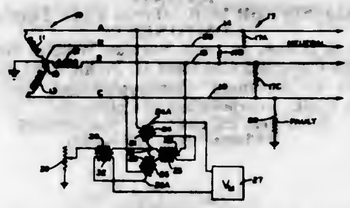
flowing through said inductive operating unit, and to pass current through said protective circuit responsive to a decrease in the level of current flowing through said inductive operating unit, thereby to effect the rapid dissipation of energy stored in the capacitive surge accommodating unit and energy stored in the inductive field about the inductive operating unit and prepare the control circuit for the next cycle of operation.

3,293,496
SWITCHING DEVICE FOR INTERRUPTION OF ALTERNATING CURRENT
Giovanni Indoni, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Feb. 6, 1963, Ser. No. 256,702
Claims priority, application Switzerland, Feb. 14, 1962, 1,774/62
15 Claims. (Cl. 317—11)



1. In a switching apparatus for interruption of alternating current loads, the combination comprising a main switch inserted in the circuit carrying the alternating current to be interrupted, two branch switching circuits connected in parallel with said main switch, each said branch circuit including a branch interrupter and a one-way electric valve connected in series, said one-way electric valves being connected antiparallel so as to have oppositely directed current passing directions, said branch interrupters being closed when said main switch is closed and said main switch then carrying substantially all of the load current, at least one tripping device responsive to current flow in said branch circuits and at least two other tripping devices responsive to the recovery voltage appearing across the contacts of said main switch when opened, and circuit means connecting said tripping devices with said branch circuit interrupters such that opening of the interrupter in each said branch circuit takes place only during that half wave of the alternating current for which the appertaining one-way electric valve is blocked.

3,293,497
GROUND FAULT DETECTOR
Abraham B. Bramller, 835 Ocean Ave., Brooklyn, N.Y. 11235, William C. Broderick, 219 Concord Drive, River Edge, N.J. 07661, and John Stalkey, 84—24 96th St., Woodhaven, Queens, N.Y. 11421
Filed Apr. 3, 1962, Ser. No. 184,809
9 Claims. (Cl. 317—18)



1. A ground fault detector for polyphase transmission systems having a conductor for each phase and a conductor for a systems ground comprising:

(a) an impedance component connected between each of said conductors and a reference junction terminal,

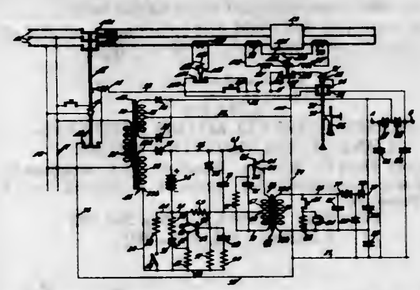
(b) coupling means associated with said impedance components for obtaining a voltage which is proportional to the vector sum of the voltages between said conductors and the reference junction terminal,

(c) a common impedance component connected between said junction terminal and ground for the passage of third harmonic frequencies,

(d) coupling means associated with said common impedance for subtracting the third harmonic voltage values from said vector sum, and

(e) means for applying said voltages to an electrical utilization device.

3,293,498
AUXILIARY ELECTRICAL POWER SYSTEM
John Bonde, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Continuation of application Ser. No. 192,579, May 4, 1962. This application Oct. 22, 1965, Ser. No. 507,608
2 Claims. (Cl. 317—88)



1. Means for providing tripping energy for a circuit breaker comprising:

tripping means responsive to a momentary current of predetermined amplitude for tripping the circuit breaker;

first electrical energy storage means;

means for charging the first storage means to a preselected level;

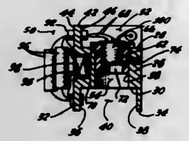
inverter means energized by the first storage means for producing a relatively high voltage output;

second electrical energy storage means connected to receive the output and to be charged thereby, said second storage means comprising a first circuit and a second circuit connected in parallel with both circuits connected to be charged by the rectified

source, and said storage means including means to block current flow between said first circuit and said second circuit; and

means for connecting a selected one of said first circuit or said second circuit across the tripping means.

3,293,499
CHASSIS FOR MOUNTING ELECTRICAL COMPONENTS
Thomas S. Inston, Jr., and Norman William Gradwohl, Canoga Park, and Guenther G. Prehn, Simi, Calif., assignors to Advanced Communications, Inc., Chatsworth, Calif., a corporation of California
Filed Feb. 25, 1963, Ser. No. 260,655
1 Claim. (Cl. 317—101)



A chassis for supporting a plurality of electrical components in an interconnected electrical relationship, said chassis including:

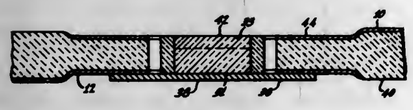
a central mounting bar of electrically conductive magnetically shielding material and having a pair of oppositely oriented sides, so that the bar has a predetermined thickness,

a plurality of pockets disposed in said bar and extending inwardly from one of said sides to form an electrically conductive surface, each of said pockets forming first mounting spaces large enough to receive one of said components and at least partially surrounding a component disposed therein,

a pair of electrically conductive flanges extending from said mounting bar and projecting in opposite directions from said sides, said flanges forming a common external surface that is substantially normal to said sides, and

means for mounting additional ones of said components on said flanges adjacent said external surface so as to be separated from said first components by said electrically conductive surfaces of said flanges.

3,293,500
PRINTED CIRCUIT BOARD WITH SEMICONDUCTOR MOUNTED THEREIN
Harvey Dow G. Scheffer, Westfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,772
5 Claims. (Cl. 317—101)

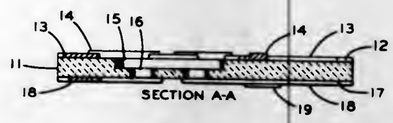


1. In combination,

an insulating substrate formed with printed means on opposite surfaces thereof, and with a hole through the means on said opposite surfaces and through the substrate, and a depressed area on both surfaces of the substrate surrounding the hole; and

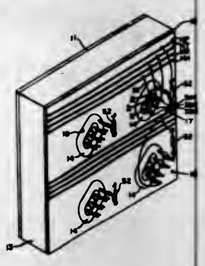
a device having a body of smaller cross-section than the hole and planar terminals of larger area than the hole which extend beyond the body, the device being located in said hole with its planar terminals in the depressed areas in electrical contact with the printed means and not extending above the depth of the depressed areas.

3,293,501
CERAMIC WITH METAL FILM VIA BINDER OF COPPER OXIDE CONTAINING GLASS
Jacob H. Martin, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Nov. 24, 1964, Ser. No. 413,477
2 Claims. (Cl. 317—101)



1. In a ceramic capacitor, a ceramic based microcircuit or the like, structure including a ceramic substrate having at least one conductive film bonded thereto: the improvement wherein said conductive film is derived from an intimate mixture of a noble metal, a glass composition and an organocopper compound, said organocopper compound being decomposable to an adhesion-enhancing proportion of copper oxide equivalent to from 0.1 to 30% by weight of said glass composition and said noble metal; said film having been fired to a temperature sufficient to decompose said organocopper compound to copper oxide and effectively bond said conductive film to said substrate via said copper oxide and said glass composition.

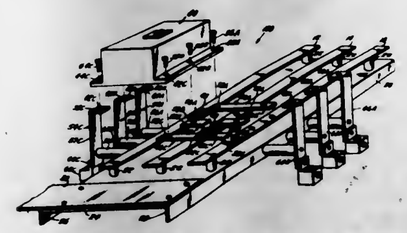
3,293,502
MINIATURE DRY REED RELAY CROSSPOINT MATRIX PACKAGE
John D. Belerle, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,960
3 Claims. (Cl. 317—112)



1. A reed relay crosspoint matrix package comprising in combination: a plurality of relay bobbins, one at each of the crosspoints of said matrix, each said bobbin having a plurality of reed capsules with terminals extending therefrom; two printed circuit cards of insulating material having apertures therethrough and disposed perpendicularly to and at the two ends, respectively, of said bobbins; a support structure positioned between said cards for supporting both said bobbins and said cards; the apertures of said cards being aligned with the corresponding bobbins, with the apertures of at least one of said cards being of a size sufficient to pass at least said capsules, and one of said cards having sets of generally rectilinear and mutually parallel vertical conductors and the other of said cards having sets of generally rectilinear and mutually parallel

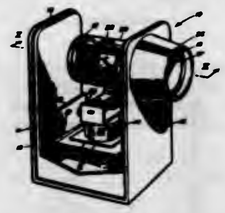
horizontal conductors printed thereon; the conductor set on at least said one card being laterally spaced from and clearing said apertures; and means for electrically interconnecting said terminals to said conductors.

3,293,503
PANELBOARD ASSEMBLY WITH SIDE MOUNTED SUPPORT MEANS AND LINE TERMINALS ACCESSIBLE FROM REAR
John A. Herrmann, Grosse Pointe Farms, and Russell S. Davis and Warren C. Rauhauser, Detroit, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 5, 1964, Ser. No. 372,891
6 Claims. (Cl. 317—119)



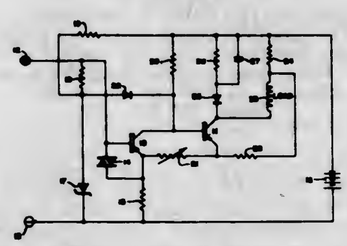
1. The combination of a panelboard assembly and at least one circuit breaker mounted thereto; said panelboard extending in a longitudinal direction, and said circuit breaker mounted transverse to said longitudinal direction, at a predetermined position along the length of said panelboard; said circuit breaker having space-separated line and load terminals; said line terminals of said circuit breaker located in a first row, extending in said longitudinal direction; said load terminals of said circuit breaker located in a second row, extending in said longitudinal direction; said panelboard comprising a plurality of bus means, extending in said longitudinal direction; first conducting means for electrically connecting said line terminals to said bus means, and second conducting means for electrically connecting said load terminals to an external circuit; said first conducting means including a first portion forwardly extending from said bus means, and a second portion secured to said bus means; said first portion including first circuit breaker terminal connecting means, positioned along said first row for receiving said line terminals; said second conducting means including a forwardly extending first portion, and a rearwardly extending second portion; said first portion including second circuit breaker terminal connecting means positioned along said second row for receiving said load terminals; said first portions of said first and second conducting means forwardly accessible for mounting and removal of said circuit breaker; said second portions of said second conducting means rearwardly accessible, in non-interference relationship, with said circuit breaker, whereby said circuit breaker may be removed while the second portion of said second conducting means remains connected to an external circuit; a frame support, longitudinally extending substantially the entire length of said panelboard; first support members rigidly mounting said bus means to said frame support; second support members rigidly mounting said second conducting means to said frame support; individual ones of said first and second conducting means in transverse alignment to define a desired number of circuit breaker terminal locations, adapted to receive individual sets of said line and load terminals; said frame support having a generally U-shaped cross-section, including a central portion and side flanges; said first support members including insulator posts forwardly extending from said central portion; said second support members including an individual insulator post sidewardly extending from at least one of said side flanges at each of said circuit breaker terminal locations for each of said second conducting means; said second conducting means having a body portion, secured to its respective insulator post; said body portion joining its respective first and second portions.

3,293,504
PHOTO-ELECTRIC RELAY COMPRISING A DIRT-FREE TRANSPARENT ENCLOSURE FOR THE OPTICAL ELEMENTS
Don R. Percival, Shrewsbury, Mass., assignor to Machinery Electrification, Inc., Northboro, Mass., a corporation of Massachusetts
Filed Sept. 24, 1963, Ser. No. 311,120
1 Claim. (Cl. 317—124)



A photo-electric relay, comprising a photosensitive element consisting of a cadmium selenide photo resistor which has a high resistance when light falls on it and a low resistance when no light falls on it, a relay coil, the element and the coil being connected in series for connection across an electric source, a movable element associated with the coil and adapted on movement to bring about a switching function, and means including a lens and an apertured member causing the light to pass in a defined path to the photosensitive element, the apertured member and the lens being joined by a tube of transparent plastic material, the apertured member consisting of a disc fastened in an intermediate portion of the tube and provided with a central aperture which is located at the focal point of the lens.

3,293,505
CONSTANT CURRENT SELECTOR MAGNET DRIVER
Raymond J. Miller, Skokie, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed May 29, 1963, Ser. No. 284,211
9 Claims. (Cl. 317—148.5)



1. A constant current inductor driving circuit including

(a) an electronic trigger amplifier having at least input and output stages, the input stage normally being in a first state of conduction,

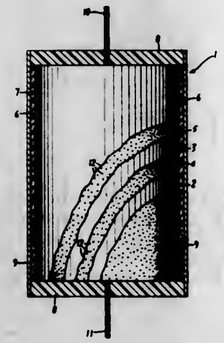
(b) an inductor connected to the output of the output stage of the trigger amplifier,

(c) means for establishing a stabilized reference voltage,

(d) means for periodically applying input signals to the input stage to place the input stage in a second state of conduction, and

(e) means operative only when the input stage is in said second state of conduction for applying the reference voltage to the output stage to render it conductive, the reference voltage causing a predetermined constant current to flow through the output stage and the inductor when the output stage of the trigger amplifier is rendered conductive.

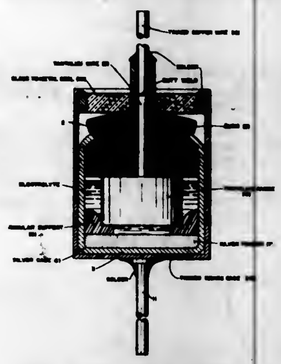
3,293,506
ELECTROLYTIC CAPACITORS AND ELECTROLYTE THEREFOR
Bernard F. G. Chemnot, Paris, France, assignor to Marc Wood International, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 8, 1963, Ser. No. 314,606
24 Claims. (Cl. 317—230)



1. An electrolyte for an electrolytic capacitor consisting essentially of a blend of from about 1.3 to about 4.3 moles of water, about 18 moles of an alcohol selected from the group consisting of aliphatic monohydric and dihydric alcohols having from 1 to 6 carbon atoms, from about 0.65 to about 1.35 moles of an alkanolamine, from about 0.1 to about 0.7 mole of boric acid, and a total of from about 0.7 to about 1 mole of at least one aliphatic dicarboxylic acid selected from the group consisting of saturated and unsaturated aliphatic dicarboxylic acids having from 4 to 10 carbon atoms.

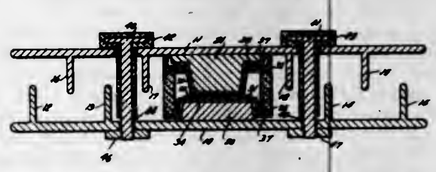
3,293,507
ELECTROLYTIC DEVICE COMPRISING A SEALED-CONTAINER COMBINATION
Cyril Smith, Buckingham, England, assignor to Plessey-UK Limited, Essex, England, a British company
Filed Apr. 21, 1964, Ser. No. 361,399
4 Claims. (Cl. 317—230)

1. An electrolytic capacitor assembly comprising a first electrically conductive housing with a single open end and containing an electrolyte, an insulative support disposed adjacent the bottom of said housing, a tantalum anode deposited on said insulative support with a tantalum terminal riser projecting from the anode, an insulative sealing member impervious to said electrolyte closing the open end in said first housing and having a portion projecting beyond the end thereof, said insulative sealing member having a bore extending through it with said terminal riser projecting through the bore and said sealing member being compressed-sealed therewith, an end portion of said first housing being crimped around the periphery of said sealing member and into sealing engagement with the member, a second electrically conductive housing with an open end therein enclosing the first housing and having electrical contact therewith, a first glass-to-metal seal assembly comprising a terminal support hermetically sealed therein and comprising a terminal passageway, said terminal riser extending into said passageway and being secured to said support in an hermetically



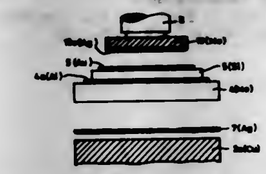
sealed joint closing the passageway, and said glass-to-metal seal assembly closing the end portion of said second housing in an hermetically sealed joint extending around the periphery thereof.

3,293,508
COMPRESSION CONNECTED SEMICONDUCTOR DEVICE
John L. Boyer, El Segundo, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Apr. 21, 1964, Ser. No. 361,400
4 Claims. (Cl. 317—234)



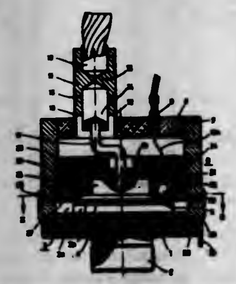
1. A semiconductor device comprising a subassembly support, a semiconductor wafer carried by said subassembly support, and compression structure for applying compression forces to opposing surfaces of said subassembly support; said subassembly support comprising a first dish-shaped conductive header, a second dish-shaped conductive header, and a cylindrical insulator; said first and second dish-shaped conductive headers having flat bottom sections secured to axially extending peripheral sections; each of said axially extending peripheral sections extending away from one another and terminating in respective flanges; said cylindrical insulator extending between said respective flanges and being secured to said flanges at the respective opposite ends of said cylindrical insulator; said flat bottom sections being adjacent one another; said wafer being interposed between said flat bottom sections; said compression structure being connected to said flat bottom sections and biasing said flat bottom sections toward one another and into high pressure engagement with the respective opposite surfaces of said wafer; said compression structure including a first and second conductive plate positioned adjacent said flanges of said first and second headers, respectively, and a clamping means for clamping said first and second conductive plates toward one another; each of said first and second conductive plates having extending conductive portions for mechanically engaging said flat bottom sections of said first and second header, respectively.

3,293,509
SEMICONDUCTOR DEVICES WITH TERMINAL CONTACTS AND METHOD OF THEIR PRODUCTION
Reimer Emeis, Ebermannstadt, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Dec. 27, 1962, Ser. No. 247,658
Claims priority, application Germany, Dec. 30, 1961, S 77,373
17 Claims. (Cl. 317—234)



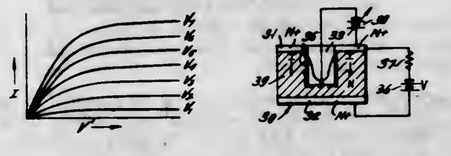
1. An electronic semiconductor device comprising a plate-shaped and substantially monocrystalline semiconductor body with a broad-area electrode of metallically conducting ductile material, a conducting terminal structure having a contact-pressure plate of metal whose thermal coefficient of expansion is similar to that of said semiconductor body, said plate having a coating of contact metal thermo-compressively bonded with said electrode material, spring means connected with said structure for pressing said body and said plate together, said coating and said electrode having respective planar surfaces in area contact with each other, at least one of said contact surfaces being substantially uniformly rough and having a roughness depth between 0.5 to 50 microns.

3,293,510
SEMICONDUCTOR CONTROLLED RECTIFIER WITH SPRING BIASED ELECTRODE CONTACTS
Joachim Pfaffenberger and Heinz Martin, Munich, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 21, 1963, Ser. No. 267,047
Claims priority, application Germany, Mar. 24, 1962, S 78,647
6 Claims. (Cl. 317—235)



1. A controllable semiconductor device, comprising a housing having a bottom portion and a generally bell-shaped top portion peripherally joined and sealed to each other, the top portion of said housing having an inner peripheral shoulder, a substantially flat semiconductor body having respective main electrodes on top and bottom surfaces and a control electrode on one of said surfaces adjacent to and in spaced relation with one of said main electrodes, said semiconductor body being mounted in said housing in contact engagement with the bottom portion of said housing, said one of said main electrodes and said control electrode facing away from the bottom portion of said housing, two conductor means for said one of said main electrodes and said control electrode respectively, said conductor means being spaced from each other, pressure contact means having an insulating carrier structure and mutually insulated contact members on said structure, said insulating carrier structure being mounted in the top portion of said housing and secured in a given position relative thereto for abutment against the inner peripheral shoulder of said top portion of said housing, spring means urging said contact members toward said respective electrodes, said contact members providing abutment of said respective conductor means with said one of said main electrodes and said control electrode respectively and forming respective glide contacts therewith, and latching means affixed to the top portion of said housing for holding said insulating carrier structure in said position.

3,293,511
FIELD EFFECT TRANSISTOR WITH CONCENTRIC INTERIOR ELECTRODE
John M. Gault, Manhattan Beach, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Aug. 21, 1963, Ser. No. 303,592
3 Claims. (Cl. 317—236)



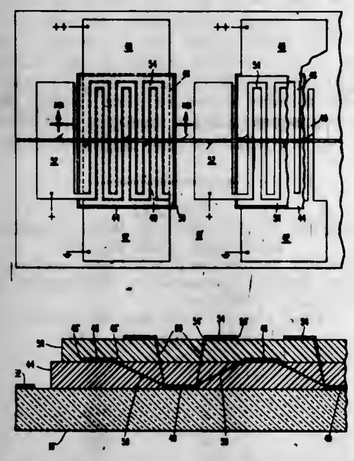
1. A field effect transistor comprising a wafer of semiconductor material of one of the conductivity types having a centrally located opening therein extending from one surface of said wafer to a given depth; at least a portion of the walls of said opening being of the other of the conductivity types; and first and second electrode means on the upper and lower surfaces of said wafer and a third electrode means connected to the interior wall of said opening.

3,293,512
THIN FILM, SOLID STATE AMPLIFIER WITH SOURCE AND DRAIN ON OPPOSITE SIDES OF THE SEMICONDUCTOR LAYER
John G. Simmons, Norristown, and Robert L. Frank, Rosemont, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 20, 1963, Ser. No. 310,376
5 Claims. (Cl. 317—235)

2. Solid state field effect apparatus comprising,
a high temperature substrate of electrically insulating material,
a conductive layer from one to three thousand angstroms thick disposed on said substrate,
a relatively thick semiconductor layer one micron thick disposed on said substrate and covering said conductive material layer thereon,
a conductive material layer from one to three thousand angstroms thick disposed on said semiconductor layer and being laterally spaced from said first mentioned conductive layer such that said conductive layers effectively are disposed on opposite sides of said semiconductor layer,
means for applying electrical potentials of opposite polarities to said conductive material layers producing an electrical field in said semiconductor layer and providing a transverse component of electron flow, perpendicular to said conductive layers,

a relatively thin electrically insulating layer one to two angstroms thick disposed over said last named conductive material layer and said semiconductor layer,

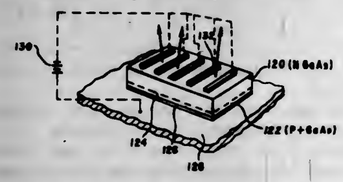
a conductive material layer one to three thousand angstroms thick disposed and overlying said insulating layer and arranged in a manner substantially bridging the lateral space separating the first two conductive material layers,



means for applying suitable electrical potential to said last named conductive material layers thereby to produce a control field in said insulating layer extending between the two first named conductive material layers,

said insulating layer upon the production of said electrical field therein being effective as a blocking barrier preventing the injection of electrons from said last named conductive material layer into said semiconductor layer and acting to control the transverse component of electron flow through the bulk of the semiconductor material layer between the first and second mentioned conductive material layers.

3,293,513
SEMICONDUCTOR RADIANT DIODE
James R. Biard and Gary E. Pittman, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 8, 1962, Ser. No. 215,642
9 Claims. (Cl. 317—237)



1. A semiconductor device comprising

(a) a gallium-arsenide body having a pair of opposing parallel faces,

(b) said body defining a p-type conductivity region including one of said pair of faces and a contiguous n-type conductivity region including the other of said pair of faces,

(c) said p-type and n-type regions defining a p-n junction therebetween,

(d) a first non-rectifying electrical contact connected to a major portion of said one of said pair of faces,

(e) a second non-rectifying contact connected to a minor portion of said other of said pair of faces,

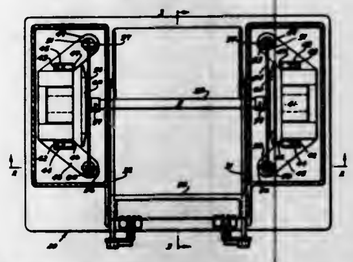
(f) said second contact comprising a plurality of equally spaced, commonly connected metallic members.

3,293,514
COATED ELECTRICAL COMPONENT
Leon Podolsky, Pittsfield, Mass., and James R. Teeple and John B. Heron, Jr., Nashua, N.H., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Nov. 7, 1961, Ser. No. 150,725
6 Claims. (Cl. 317—242)



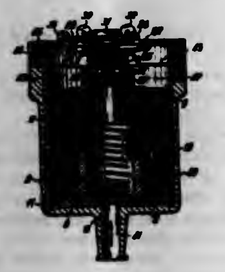
1. An electrical component comprising a component assembly having a plurality of lead wires extending therefrom, said lead wires extending through and linked by a non-frangible insulating yoke, said yoke having a rectangular face on its side remote from said component assembly, said yoke having beveled sidewalls tapering outwardly away from said component assembly; said rectangular face having riser feet extending therefrom, and a frangible insulating dip material covering the component assembly and the beveled sidewalls to a point just even with said rectangular face.

3,293,515
LONG TRAVEL LINEARLY RECIPROCATING ELECTRIC MOTOR
William F. Klemm, 17570 Prairie Ave., Detroit, Mich. 48221; John F. Langs, administrator of said William F. Klemm, deceased
Filed Sept. 24, 1963, Ser. No. 311,850
3 Claims. (Cl. 318—37)



1. In a linearly reciprocable alternating current electric motor, a first electromagnet having an energizeable first coil, a second electromagnet having an energizeable second coil, means supporting said electromagnets in spaced-apart relationship, spaced armatures disposed between said electromagnets, spring means for supporting said armatures spaced from said electromagnets, elongated knife blade means, means for securing the ends of the knife blade means to said armatures for endwise movement between said electromagnets, a circuit having conductors for connecting both said coils to a source of alternating current supply, a first electrical one-way valve interposed in the circuit to said first coil to pass current thereto in one direction of current flow and to block current in the opposite direction of current flow, and a second electrical one-way valve interposed in the circuit to said second coil to pass current thereto in said opposite direction of current flow and to block current in said one direction of current flow.

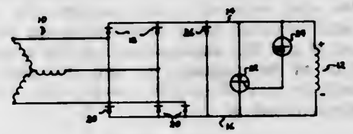
3,293,516
ELECTROMAGNETICALLY DRIVEN PUMPS, PARTICULARLY FUEL PUMPS
Günther Maier, Gerlingen, Württemberg, Günther Baumann, Stuttgart, and Rudolf Bablitzka, Ludwigsburg, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Nov. 18, 1964, Ser. No. 412,195
Claims priority, application Germany, Nov. 28, 1963, B 74,441
8 Claims. (Cl. 318—128)



1. In a pump, in combination, a housing; electromagnet means having a coil and being fixedly mounted in said housing; piston means forming an armature of said electromagnet means, said electromagnet means when energized displacing said piston means from one end position to another end position along a given stroke; spring means urging said piston means from said other position in the reverse direction of said given stroke back to said one end position when said electromagnet means is deenergized; an electrical circuit in which said electromagnet means is connected to be supplied with current through said electrical circuit; and switching means connected to said circuit and responding automatically to the position of said piston means for energizing said electromagnet means when said spring means displaces said piston means to said one end position thereof and for maintaining said electromagnet means energized until said piston means reaches said other end position thereof, said switching means deenergizing said electromagnet means when said piston means reaches said other end position and maintaining said electromagnet means deenergized until said piston means is displaced by said spring means back to said one end position, said switching means including an envelope of non-magnetizable material filled with a protective gas and being fixedly mounted in said housing, and a pair of magnetizable switch contact members situated in said envelope said contact members being constructed so as to tend to stay in an open position and to move to a closed position when subjected to the influence of a magnetic field, said switching means further including a permanent magnet fixed to said piston means for reciprocation therewith, said permanent magnet having a magnetic field which in one end position of said piston means acts on said contact members of magnetizable material so as to place said contacts in said closed position where they engage each other.

8. In a pump as recited in claim 1, wherein said electrical circuit includes a power transistor, a first resistor connected in series between the base of said power transistor and one of said switch contact members, the emitter of said transistor being connected to one end of said coil of said electromagnet means and said other contact member being connected to the other end of said coil, and a second resistor connected in parallel with the emitter-base circuit of said transistor.

3,293,517
CONTROL SYSTEM FOR SYNCHRONOUS MACHINES
George M. Rosenberry, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,113
7 Claims. (Cl. 318—167)



1. A synchronous machine and polyphase exciter combination wherein the exciter supplies excitation power to the machine field winding,

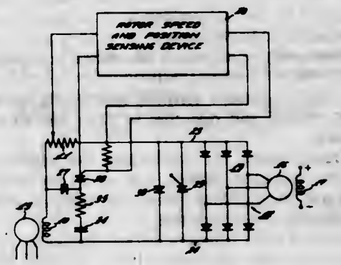
rectifiers connected between all but one of the exciter output winding terminals and a terminal for the machine field winding for supplying excitation power thereto,

means connecting the other terminal of the field winding to the neutral point in the exciter output winding,

a silicon controlled rectifier connected across the machine field winding terminals in a direction to carry negative induced field current,

a control device connected between the gate of said controlled rectifier and the field winding and being responsive to voltages induced in said field winding to convert the controlled rectifier to a conducting state when said voltages reach a predetermined maximum.

3,293,518
SYNCHRONOUS MOTOR STARTING CIRCUIT
Manfred E. Neumann, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 16, 1964, Ser. No. 383,021
7 Claims. (Cl. 318—176)



1. A circuit for connecting a synchronous motor field winding to its exciter for synchronous operation and to be short circuited and isolated from its exciter for subsynchronous acceleration, comprising:

a first semiconductor switch device having a pair of load terminals connected to short circuit the field

winding in at least one direction of induced field current when said first device is turned on, said device being of the type to stop conduction in said one direction when an opposite polarity voltage is applied across its load terminals, said load terminals being connectable to the exciter terminals for synchronous operation,

a capacitor having one of its terminals connected to one terminal of said first semiconductor device,

a second semiconductor device connecting said capacitor across the terminals of the field winding to be charged on half cycles of induced field current opposite to said one direction of induced field current,

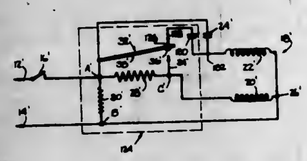
a third semiconductor device responsive to a control signal to turn on and conduct between a pair of load terminals, one of its load terminals being connected to the other terminal of said capacitor, the other of its load terminals being connected to the other terminal of said first semiconductor device to apply the voltage of the capacitor to said first device in a polarity to turn off said first device when said third device is turned on.

3,293,519

SURGE CURRENT LIMITER FOR THE SPLIT PHASE CAPACITOR A.C. COMPRESSOR MOTOR OF A DOMESTIC AIR CONDITIONER

W Robert Dresser, Trumbull, Conn., assignor to Barlow Controls, Inc., Amsterdam, N.Y., a corporation of New York

Filed June 10, 1963, Ser. No. 286,670
15 Claims. (Cl. 318—221)



1. A surge current limiter for connecting a split phase capacitor A.C. motor of a domestic air conditioner to a domestic power line, said limiter comprising:

(a) a high wattage surge current limiting resistor,

(b) a low wattage holding resistor,

(c) circuit means for connecting the surge current limiting resistor permanently in series between the motor and the domestic power line so long as potential is supplied by the power line so as to limit starting current supplied to the motor,

(d) a normally open switch connected in shunt with the surge current limiting resistor,

(e) a heat responsive element controlling the normally open switch and operable to close the switch when heated,

(f) circuit means for connecting the holding resistor to the domestic power line so as to permanently energize the holding resistor so long as potential is supplied by the power line,

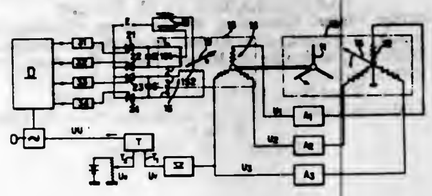
(g) both of said resistors being physically located in heat exchange relationship with the heat responsive element so that when potential is supplied by the power line the surge current limiting resistor initially will limit the current supplied to the motor and thereafter the heat generated by the resistors will operate the heat responsive element to close the normally open switch and shunt the surge current limiting resistor which thereafter is held closed by the heat generated by the holding resistor.

3,293,520

ARRANGEMENT FOR GENERATING A ROTARY MOVEMENT AT A VARIABLE SPEED

Jean Marie Lehry, 282 Rue St. Jacques, Paris, France

Filed Oct. 16, 1962, Ser. No. 230,863
Claims priority, application France, Oct. 28, 1961, 877,346
3 Claims. (Cl. 318—227)



1. A device for producing a controlled variable-speed rotation comprising:

(a) an asynchronous motor comprising a squirrel-cage rotor, the speed of rotation of which is to be controlled, and a stator winding;

(b) an alternator comprising a rotary armature mechanically driven by said squirrel-cage rotor and a field-piece of the polyphase type for producing a rotating field which turns at a rate equal to the slip frequency voltage induced in said squirrel-cage rotor;

(c) power amplifier means having inputs connected to said armature and outputs connected to said stator winding for supplying excitation energy to the latter;

(d) a source of polyphase signals connected to said alternator field-piece for supplying excitation energy thereto;

(e) a D.C. power supply connected to the center of each phase of said field-piece;

(f) a plurality of electronically controlled switch means connected to each end of each of said phases for controlling the direction of current flow from said power supply through each of said phases;

(g) relaxation oscillator means generating a continuous train of pulses at a rate equal to $2ng$, where n equals the number of phases of said field-piece and g equals the slip frequency induced in said squirrel-cage rotor;

(h) subdividing distributing means fed by said relaxation oscillator means; and

(i) logical decoding circuitry fed by said distributing means and comprising one logic unit for each of said switch means for feeding thereto pulses at a rate g for generating a rotating field in said field-piece.

3,293,521

DRIVING AND CONTROL GEAR FOR COAL PLOUGHS AND OTHER MINING MACHINES

Jan L. J. van Vroenhoven, Heerlen, Netherlands, assignor to Staatscarbon N.V., Heerlen, Netherlands

Filed Feb. 18, 1964, Ser. No. 345,385
Claims priority, application Netherlands, Feb. 19, 1963, 289,204
5 Claims. (Cl. 318—281)

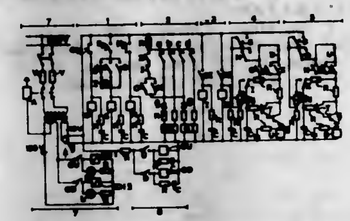
1. A device for driving and controlling coal ploughs and other mining machines reciprocally movable between the ends of a coal face of a mine comprising:

(a) a pair of switches at each end of the face worked by the machine and positioned in operative relationship with respect to the machine to be successively actuated by the passage of the machine thereby;

(b) a pair of memories connected to said switches and operable between two states in accordance with the actuation of said switches by the machine;

(c) the first switch of each pair of switches being connected to the memories so as to maintain said memories in a first state when said first switch is actuated by the machine as it passes thereby from a position intermediate the first switches of each switch pair;

(d) the second switch of each pair of switches being connected to said memories such that as the machine moves from a position intermediate the first one of a pair of switches past the second switch of the pair, a memory is changed to its second state; and such that as the machine moves past the second switch from a position at one end of the face toward a position intermediate the first and second switches of the pair, the memory is maintained in its second state;



(e) said first switch of each pair of switches also being connected to the memories such that as the machine moves past the first switch from a position intermediate the first and second ones of a switch pair toward a position intermediate the first switches of each pair, the said memory is returned to its first state; and

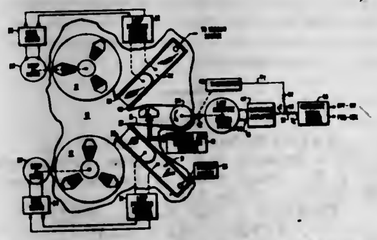
(f) control means connected to said memories, said control means including means for directing the movement of said machine, the directing means being responsive to the states of said memories for automatically reversing the movement of the machine at the ends of the face, said control means further including means for partially interrupting the operation of said directing means when the machine is non-automatically stopped at an end of the face whereby said machine is permitted to travel only toward the opposite end of the face.

3,293,522

MOTOR DRIVE CIRCUITS

Martyn A. Lewis, Los Angeles, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Mar. 22, 1963, Ser. No. 267,166
10 Claims. (Cl. 318—327)



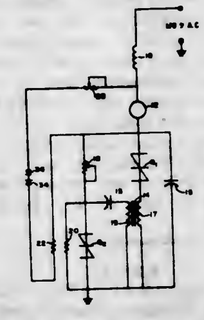
4. In a capstan tape drive system, a system for bidirectionally driving the tape comprising a capstan in constant contact with the tape surface, a motor coupled to drive the capstan and providing an output torque proportional to the magnitude of the applied current, means for sensing the actual speed and direction of the motor, means for providing an input signal indicative of the desired motor speed and direction, means responsive to the sensing means and the input signal means for delivering a constant level current to the motor having a polarity dependent upon the desired rotational direction in response to input signals greater than a predetermined magnitude and for delivering a current proportional to the difference between the desired speed and the actual speed in response to input signals less than said predetermined magnitude, and threshold setting means for adjusting the minimum amplitude of signal to the current delivering means.

3,293,523

FIVE LAYER DIODE COUNTER E.M.F. SPEED CONTROL SYSTEM

Jearld L. Hutson, Richardson, Tex., assignor to Hunt Electronics Company, Dallas, Tex., a corporation of Texas

Filed Aug. 5, 1963, Ser. No. 299,784
17 Claims. (Cl. 318—331)



1. A motor control that comprises:

(A) A symmetrical five layer semiconductor device capable of switching from a normally high impedance state to a low impedance state responsive to the presence of a triggering voltage of predetermined character and returning to the high impedance state when the current through said device is reduced below a predetermined value;

(B) Means for connecting the armature winding of a motor to be controlled in series with said diode means;

(C) Means for producing said triggering voltage responsive to the presence of a control signal and coupling said triggering voltage to said diode means;

(D) Means for producing said control signal; and

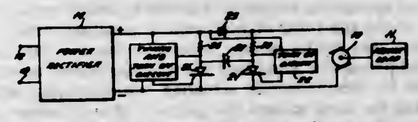
(E) Means to vary the time relationship between the beginning of a half cycle of alternating current supply voltage and said control signal as a function of the effective voltage across said armature winding.

3,293,524

COUNTER E.M.F. SPEED CONTROL SYSTEM

Frank Wilbert Parrish, El Segundo, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

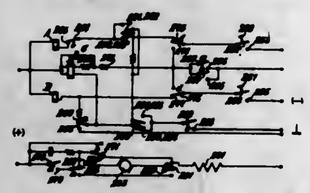
Filed Feb. 10, 1964, Ser. No. 343,732
3 Claims. (Cl. 318—331)



1. In a D.-C. motor energizing circuit; a regenerative control circuit including the series connection of a load resistor and a first controlled rectifier connected in parallel with said motor, a second controlled rectifier in parallel with said motor circuit, and a capacitor connected directly between the anodes of said first and second controlled rectifiers; and a first control circuit connected to the gate circuit of said first controlled recti-

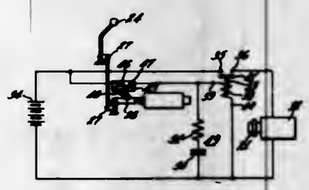
fier, and a second control circuit connected to the gate circuit of said second controlled rectifier; said first control circuit including comparator circuit means connected to switching means; said switching means turning on said first controlled rectifier when switched to a conductive condition; said comparator circuit being connected to said switching means and said energizing circuit for comparing the input voltage to the motor armature voltage and rendering said switching means conductive responsive to overspeeding of said motor; said second control circuit normally supplying gate current to said second controlled rectifier for maintaining said second controlled rectifier normally conductive; said second controlled rectifier ceasing conduction responsive to turn on of said first controlled rectifier and discharge of said capacitor; said second control circuit including time delay circuit means whereby a firing gate current for said second controlled rectifier is reestablished only after a predetermined time from the turn-off of said second controlled rectifier; the subsequent turn on of said second controlled rectifier turning off conduction of said first controlled rectifier; said time delay circuit means including second switching means connected to said gate circuit of said second controlled rectifier; said switching means being normally conductive and being rendered non-conductive responsive to turn on of said first controlled rectifier.

3,293,525
OPERATING APPARATUS FOR TAXIMETER
Wilhelm Haupt, Villingen, Black Forest, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany
Continuation of application Ser. No. 835,895, Aug. 25, 1959. This application Mar. 18, 1964, Ser. No. 353,321
Claims priority, application Great Britain, Apr. 15, 1959, 12,789/59
20 Claims. (Cl. 318—467)



1. For use in a taximeter or the like, in combination a unit including a rotary control means having a plurality of angularly spaced control positions; an electric motor having a stator and a rotor connected to said control means for rotating the same; brake means for braking rotation of said rotor of said electric motor, said brake means having an inactive condition, a potentially active condition and an active braking condition, which latter braking condition said braking means is adapted to assume only from said potentially active condition and from which braking condition it automatically returns to its inactive condition after a limited braking time period; energizing means for energizing and de-energizing said stator and rotor of said motor; actuating means for placing said brake means from said inactive into said potentially active condition thereof; manually operable means for simultaneously actuating said energizing means so that the same causes energization of said motor and cooperating with said actuating means for placing said brake means into said potentially active position thereof; and automatic operating means driven in synchronism with said control means and having a plurality of operating positions corresponding to said control positions of said control means and actuating in each of said operating positions thereof said energizing means so as to de-energize said rotor so that said de-energized rotor continues to rotate due to inertia and placing simultaneously said brake means from said potentially active into said active braking condition thereof, whereby said brake means will automatically and instantaneously be placed into active braking condition instantaneously braking said rotor, and after braking of said rotor said brake means will then automatically return into its inactive condition thereof.

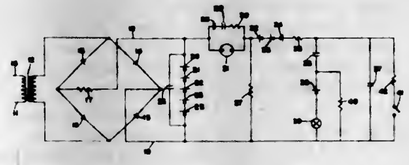
3,293,526
MOTOR CONTROL HAVING MEANS TO PREVENT RELEASE OF CONTACTOR DURING MOTOR ACCELERATION
Myron J. Boyajian, Chicago, Ill., assignor to Allis Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 27, 1964, Ser. No. 355,160
7 Claims. (Cl. 318—434)



1. A control for a motor energized from a D.C. source, the motor having a uniform starting load whereby the motor requires substantially a constant predetermined time interval to accelerate to about its running speed, comprising,
a motor switch having load terminals which are open when said motor is idle and are adapted when closed to connect said motor to said source and complete an energizing circuit to said motor and having input terminals and responsive to an input at said input terminals to close the circuit between said load terminals,
a control switch for connecting said motor switch input terminals to the D.C. source to close said motor switch, and being adapted when released to disconnect said motor switch input terminals from said D.C. source, and
electrical time delay means connected in shunt with said input terminals of said motor switch and being operative upon opening of said control switch for preventing said motor switch from releasing for a time interval after opening of said control switch approximately equal to said predetermined time interval for accelerating.

3,293,527
ELECTRONIC CONTACT FUZE
Harry Julich, Jamaica, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 1, 1964, Ser. No. 393,794
5 Claims. (Cl. 320—1)

2. In an electronic contact fuze, the combination of means for applying a substantially constant unidirectional voltage,
a parallel circuit having in one of its branches a gas diode and in the other of its branches a series-connected capacitor and first resistor,
a second resistor,
a fuze arming circuit,
a zener diode connected between said parallel circuit and said arming circuit, and
means for applying said unidirectional voltage through said second resistor to said parallel circuit and to said zener diode, the values of said first and second resistors being so related that after a predetermined



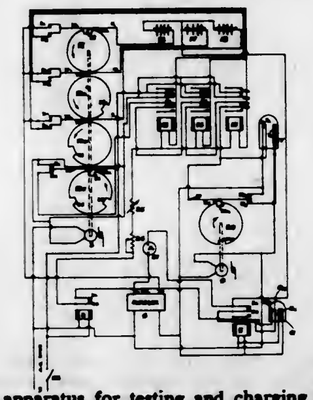
time delay said capacitor is charged to the firing voltage of said gas diode and voltage is applied through said zener diode to said fuze arming circuit.

3,293,528
HOLDER FOR BATTERY-OPERATED DRIVING UNIT
Frank Rosen and Earl E. Sutton, Mansfield, Ohio, assignors to Dominion Electric Corporation, a corporation of Ohio
Filed Apr. 10, 1964, Ser. No. 358,766
10 Claims. (Cl. 320—2)



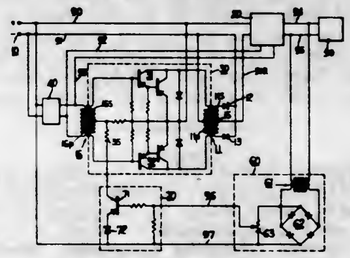
1. A holder for holding a battery-powered driving unit for a toothbrush or the like, said driving unit having an elongated body, the body having a first end portion and a second end portion, said first end portion having a first electric contact member on the end wall thereof and a second electric contact member on the side wall thereof for providing electrical connection with a battery carried by the unit for charging the battery, said unit having an actuating shank extending axially thereof from said second end portion of the body for attachment to a toothbrush or the like, said holder comprising the combination of an elongated portion having an open side through which a said unit may be laterally moved to engage said elongated portion, said elongated portion having side walls extending generally parallel to each other to embrace therebetween a said unit extended along said elongated portion, a socket portion at one end of said elongated portion having a recess adapted to accommodate therein said first end portion of a unit extended along said elongated portion of the holder, the axis of said socket portion being parallel to and spaced from said side walls, a pair of spaced fingers carried by said elongated portion and extending therefrom at an axial distance from said socket portion and adapted to embrace the actuating shank of a said unit extended along said elongated portion and held by said holder, a first electric terminal member carried by said holder in said socket portion adjacent the axis thereof in position for electrical engagement with the said first electric contact member of a said unit held by said holder, a second electric terminal member carried by said holder in said socket portion adjacent a side thereof in position for electrical engagement with said second electric contact member of a said unit held by said holder, and battery charging means carried by said holder and in electrical connection with said terminal members to provide for charging the battery of a said unit held by said holder.

3,293,529
MULTIPLE AUTOMATIC BATTERY TESTER AND CHARGER
John G. Fontaine, 2817 NE. 26th Court, Fort Lauderdale, Fla. 33306
Filed Dec. 23, 1963, Ser. No. 332,559
8 Claims. (Cl. 320—15)



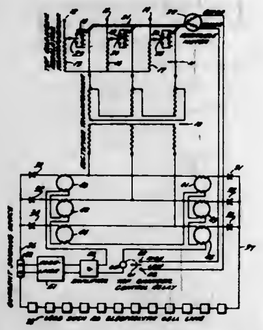
1. An apparatus for testing and charging a group of batteries comprising, means operating to test current output from the batteries in the group at spaced, predetermined intervals, a battery charger, and means controlled by the testing means for setting the charger in operation to supply charging current to either all or any one of the batteries when the charge level in all of the batteries or any one of them in the group is below a predetermined point and is indicated by the testing means.

3,293,530
ELECTRICAL POWER CONVERSION SYSTEM HAVING OUTPUT CONTROL MEANS
John Bende, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 3, 1963, Ser. No. 313,550
12 Claims. (Cl. 321—8)



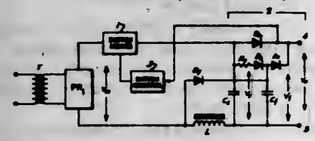
1. A system for controlling the output voltage of an electrical power converter comprising:
a source of electrical energy,
auxiliary means powered by energy from the source for producing a unidirectional electrical output,
a power converter powered by energy from the source and by the auxiliary means output for producing an output for a load, and
means connected to control the auxiliary means and connected to receive the power converter output for making the auxiliary means operative when the converter output voltage is less than a predetermined voltage and for cyclically varying the auxiliary means output voltage substantially in phase with the power converter output voltage as a function of the difference between the power converter output voltage and said predetermined voltage.

3,293,531
MAGNETIC VERNIER CONTROL FOR REGULATED RECTIFIERS
Isadore K. Dorfeet, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1964, Ser. No. 351,446
5 Claims. (Cl. 321—16)



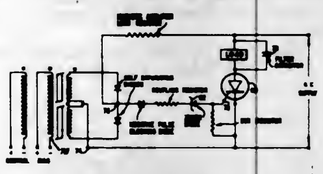
1. A rectifier system including a transformer connectable to an A.-C. source, regulator means connected to said transformer and operable to alter the output voltage thereof by discrete steps, motor means connected to regulator means to alter the condition of said regulator, a rectifier connected between said transformer and an output system, a phase control means in said rectifier, said phase control means being connected to an auxiliary regulating means; said auxiliary regulating means having an input circuit connected to said rectifier and an output circuit connected to phase control means, and relay control means connected to said motor and operable to a first and second condition to cause said motor to respectively increase or decrease the output of said transformer; said phase control means having a range of regulation smaller than the range of regulation of said regulator; said output circuit of said auxiliary regulator being further connected to said relay control means; said relay control means being operable to its said first condition responsive to a first output level from said auxiliary regulator and being operable to its said second condition responsive to a second output level from said auxiliary regulator, whereby said phase control means regulates between the discrete steps provided by said regulator in accordance with the output of said auxliary regulator.

3,293,532
SWITCHING AND FLYBACK TECHNIQUES IN REGULATED D.C. POWER SUPPLIES
Lester Dubin, Pelham Manor, Sol Greenberg, Port Washington, and George Gautherin, Woodside, N.Y., assignors to Lambda Electronics Corporation, Huntington, N.Y., a body corporate of New York
Filed June 5, 1963, Ser. No. 285,830
19 Claims. (Cl. 321—18)



1. A flyback stabilized, wide band, regulated power supply adapted to convert an A.C. input to a regulated D.C. output comprising a power rectifying switching circuit adapted to be energized by said A.C. input in synchronism therewith and including switch means and choke means, an output circuit including having an output terminal and flyback stabilizing and filter means comprising first filter means connected to said power switching circuit and responsive to current flow supplied by said switch means through said choke means and second filter means connected to said power switching circuit and to said choke means for responding to current supplied by said choke means during the flyback period thereof, a first current path independent of said choke connecting said first filter means to said output terminal, a second current path independent of said choke means connecting said second filter means to said output terminal, and regulating feedback means interconnecting said output circuit and said power switching circuit for regulating said output.

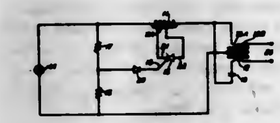
3,293,533
MAGNETIC AMPLIFIER CONTROL APPARATUS
Paul W. Covert, Valencia, Pa., assignor to Magnetics, Inc., a corporation of Pennsylvania
Filed July 5, 1962, Ser. No. 207,584
6 Claims. (Cl. 321—47)



1. Static relay apparatus comprising
magnetic amplifier means including saturable core means, load winding means, and rectifier means,
A.C. voltage supply means for the magnetic amplifier means sufficient to overdrive the magnetic amplifier means in the range of 8 to 15 times its normal voltage regulating capacity,
resistor means connected in a series circuit with the load winding means and rectifier means, the series circuit being connected across the A.C. voltage supply means,
control winding means for the magnetic amplifier,
bias winding means for the magnetic amplifier,
controllable unidirectional conducting means including anode terminal means, cathode terminal means, and gating terminal means,
circuit means for connecting the cathode terminal means and the gating terminal means of the unidirectional conducting device across the load winding means of the magnetic amplifier means such that a firing signal is delivered to the unidirectional conducting means prior to saturation of the saturable core means of the magnetic amplifier means, and
Zener diode means connected to the gating terminal means for blocking bias signal voltage.

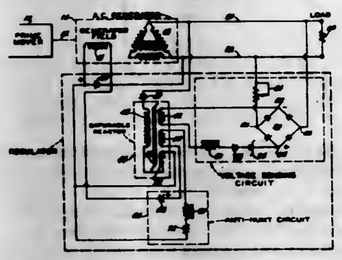
3,293,534
SELF-STARTING AND SUSTAINING FREQUENCY REDUCER
Herman I. Tillinger, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 17, 1965, Ser. No. 440,586
6 Claims. (Cl. 321—69)

1. In a frequency reducing circuit having an A.-C. input and including a non-linear impedance element and a resonant circuit containing said element tuned to oscillate at a sub-harmonic frequency of said input, means for starting and sustaining said oscillations comprising, in combination, a unidirectionally conductive solid state device connected across a portion of said impedance element; means including a path for applying said A.-C. input signal to said device for firing said device a first time thereby to initiate said sub-harmonic oscillations; and means including a path for applying said sub-harmonic



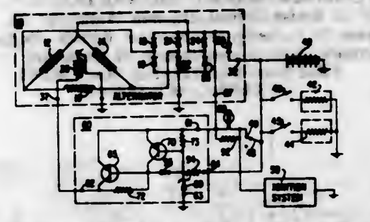
oscillations to said device for firing said device at least once during each subsequent sub-harmonic half cycle of the same polarity.

3,293,535
VOLTAGE REGULATOR SYSTEM
Morton I. Rosenberg, Springfield, Mass., assignor to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed Feb. 14, 1964, Ser. No. 344,853
8 Claims. (Cl. 322—28)



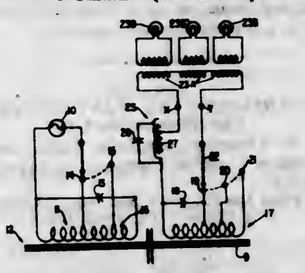
7. A voltage regulator for an alternating-current generator having a pair of output lines across which an alternating output voltage is produced and having a winding responsive to current through it to vary said output voltage, said regulator comprising:
a saturable reactor comprising a saturable magnetic core having thereon an output winding and control windings;
a first asymmetrically-conductive device in common series circuit with said output winding;
connections for connecting said series circuit between a generator output line and a generator control winding;
a voltage-sensing circuit responsive to alternating voltage of more than a predetermined value to apply a direct control current to one of said reactor control windings, said voltage sensing circuit comprising a rectifier circuit and an inductor connected to provide A.C. isolation between said rectifier circuit and said one control winding and also comprising a voltage threshold device connected between said rectifier circuit and said one control winding to permit application of voltage to said one control winding from said rectifier circuit only when the output voltage of said rectifier circuit exceeds a predetermined threshold value;
a second asymmetrically-conductive device and connecting means for connecting said second asymmetrically-conductive device in parallel with said generator control winding; and
an anti-hunt circuit for applying to another of said reactor control windings a current varying in degenerative phase in accordance with the rate of change of voltage across said generator control winding.

3,293,536
ELECTRONIC VOLTAGE REGULATOR WITH OUTPUT TRANSISTOR BIASED BY ISOLATION DIODE
Theodore A. Bylos, Villa Park, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 10, 1963, Ser. No. 286,745
4 Claims. (Cl. 322—28)



1. A voltage regulator for use in a vehicular electrical system which incorporates a voltage producing device with an excitation winding therein and which further incorporates an isolation diode connecting the voltage producing device in series with a storage battery, said voltage regulator including in combination, a first output transistor having base, emitter and collector portions, said emitter and collector portions thereof being adapted for connection in series between the output of the voltage producing device and the excitation winding thereof, a voltage sensing circuit including a second control transistor connected to said base portion of said output transistor and providing cut off bias thereto when the voltage at the output of the voltage producing device exceeds a predetermined level, and conductor means for connecting said base and emitter portions of said output transistor across the isolation diode and forming a series connection between the voltage producing device and the storage battery, so that the voltage drop across the isolation diode acts to forward bias said output transistor.

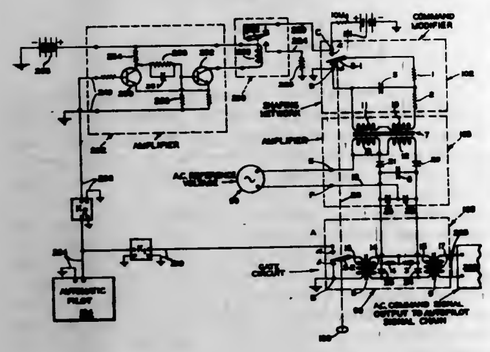
3,293,537
HIGH LEAKAGE REACTANCE STATIC CONSTANT CURRENT REGULATOR
Joseph G. Sola, River Forest, Ill., assignor to Basic Products Corporation, Elk Grove, Ill., a corporation of Wisconsin
Continuation of application Ser. No. 102,280, Apr. 11, 1961. This application Feb. 1, 1965, Ser. No. 429,217
6 Claims. (Cl. 323—6)



1. In a constant alternating current regulator system for supplying a load, the combination including a source of alternating current energy, a high leakage reactance transformer having a primary for connection to said source and secondary having a terminal for connection to the load, a first capacitor connected in shunt with said primary, a second capacitor connected in shunt with said secondary, said second capacitor having a reactance equal to the leakage reactance of said transformer referred to the secondary at the frequency of said source, and filter means in series with said terminal for connection from said secondary to said load, said filter means being tuned

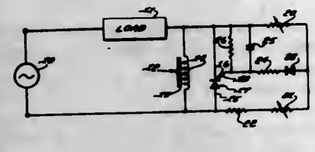
substantially to the third harmonic of the applied alternating current frequency so as to offer high impedance to said harmonic.

3,293,538
MEANS FOR CONTROLLING A SIGNAL MODIFIER AS A FUNCTION OF THE MAGNITUDE OF AN UNMODIFIED A.C. SIGNAL INPUT
Joseph A. Blaish, Elizabeth, and Nathaniel N. Moore, Wayne, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,501
4 Claims. (Cl. 323—9)



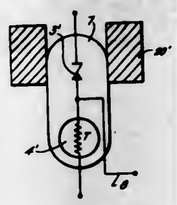
1. In a signal modifying system of a type including a source of direct current voltage, a shaping network, means for connecting said source of direct current voltage to said network for shaping the voltage, an alternating current source for supplying a signal of varying magnitude, and a gating circuit connected to said signal source and to the shaping network and controlled by the voltage from the shaping network for modifying said alternating current signal in accordance with the voltage from the shaping network; the improvement comprising electrical triggering means responsive to the magnitude of the alternating current signal, and relay means operated by said triggering means upon the alternating current signal exceeding a predetermined magnitude to vary the direct current voltage applied to the shaping network through said connecting means so as to limit the alternating current signal to a predetermined magnitude.

3,293,539
VARIABLE FULL-WAVE POWER CONTROL CIRCUIT
William W. Chambers, Anaheim, Calif., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Jan 25, 1963, Ser. No. 253,799
1 Claim. (Cl. 323—22)



A circuit for controlling the full-wave power delivered from an alternating current source to a load comprising a saturable reactor including a saturable core and winding,
a controlled rectifier having its anode and cathode electrodes connected to said winding,
a voltage divider connected to said winding including series connected resistors, one of the resistors being a thermistor, and
means connecting the control electrode of said control rectifier to the point between said resistors, said control electrode being responsive to a current of a predetermined magnitude to cause firing of said controlled rectifier and conduction between said anode and cathode electrodes.

3,293,540
TEMPERATURE COMPENSATED CIRCUIT ARRANGEMENTS
Bela A. Silard, Pleasantville, and Herbert Schulkind, Laurelton, N.Y., assignors to Photovolt Corporation, New York, N.Y.
Filed Apr. 8, 1964, Ser. No. 358,304
2 Claims. (Cl. 323—68)

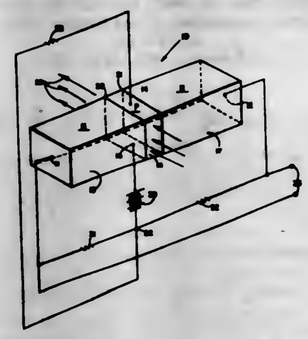


1. In an electrical circuit arrangements having at least one component having a characteristic which varies with temperature, in combination, a heat sink; temperature sensitive means connected to said component for overcompensating the effect on said component of a change in temperature, said temperature sensitive means comprising a resistor having a resistance which varies in a determined relationship with temperature, said temperature sensitive means being adjustably positioned in relation to said heat sink in a manner whereby the heat transfer between said temperature sensitive means and said heat sink may be adjusted; and adjustable attenuating means for reducing the compensating effect provided by said temperature sensitive means, said adjustable attenuating means comprising variable resistance means connected in circuit with said temperature sensitive means.

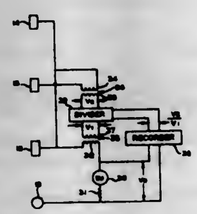
3,293,541
MAGNETIC SENSING DEVICE
Yujiro Yamamoto, Santa Ana, Calif., assignor to North American Aviation, Inc.
Filed Apr. 2, 1964, Ser. No. 356,857
1 Claim. (Cl. 323—94)

An electromagnetic transducer comprising
a body of semiconductive material having three contiguous portions, the center portion being of a given conductivity type, and the end portions being of an opposite conductivity type to form two parallel junctions.
means for providing a direct current path through said center portion substantially parallel to said junctions, means for applying a variable magnetic field to said center portion which is perpendicular to the direct current path through said center portion,
means connected to said two end portions for back-biasing a first portion of each of said junctions and for forward-biasing the remaining portions of said junctions, said back biased portions being equal to said forward biased portions in the absence of said applied magnetic field and being unequal in the presence of said field by an amount proportional to the flux density of said field, and

a pair of output terminals connected to said end portions for deriving an output signal which is proportional to the flux density of the applied magnetic field.

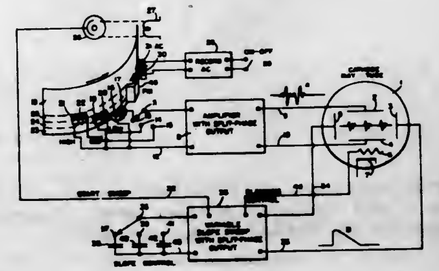


3,293,542
ELECTRICAL WELL LOGGING APPARATUS INCLUDING A DRILL COLLAR HAVING SPACED ELECTRODES MOUNTED THEREON FOR MAKING RESISTIVITY MEASUREMENTS WHILE DRILLING
Raymond G. Piety, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,693
2 Claims. (Cl. 324—10)



1. Apparatus for use in making electrical measurements in wells comprising a drill bit collar, a drill bit secured to said collar, three electrodes mounted on the exterior surface of said collar so as to be spaced vertically from one another when said collar is lowered into a well, said electrodes being insulated from one another and from said bit, an alternating current source, a resistance element connected between one terminal of said alternating current source and said bit, said resistance element having a resistance sufficiently large that a substantially constant current is emitted into surrounding formations from the drill bit when said apparatus is lowered into a well, a first transformer having one terminal of the primary coil thereof connected to the second terminal of said alternating current source, means connecting the second terminal of the primary coil of said first transformer to the outer two of said three electrodes, a second transformer having the primary coil thereof connected between the second terminal of said alternating current source and the center one of said three electrodes, means to measure the potential difference between the second terminal of said voltage source and said drill bit, and voltage dividing means connected to the secondary coils of said first and second transformers to divide the potential across the secondary coil of said second transformer by the potential across the secondary coil of said first transformer.

3,293,543
MAGNETIC INK TESTER UTILIZING A.C. OR D.C. MAGNETIZATION AND VISUAL INDICATIONS
Victor H. Nelson, Huntington, and Howard E. Wheeler, Brooklyn, N.Y., assignors to Radar Measurements Corp., Hicksville, N.Y., a corporation of New York
Filed July 9, 1962, Ser. No. 208,464
2 Claims. (Cl. 324—34)

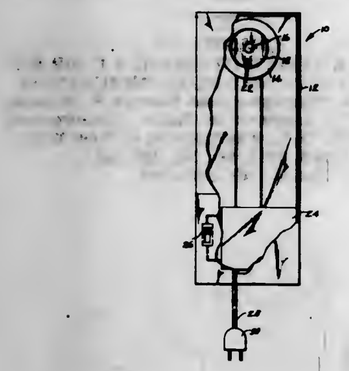


1. In a device for testing magnetic ink on a check or the like, the combination of; a check moving means including a wheel and a belt for gripping to said wheel a check carrying magnetic ink samples, to move said check around said wheel; a scanning zone located about said wheel, said scanning zone containing a permanent magnet and an A.C. recording head each spanning a plurality of contiguous laterally displaced longitudinal areas on the check; means for exciting said A.C. recording head with an A.C. current for producing bar patterns on magnetic ink appearing on the check within said areas; a plurality of magnetic pickup devices mounted in positions staggered laterally and longitudinally within the scanning zone and adapted to individually pick up said bar patterns from each of said areas; means for selecting each of said pickup devices; means for amplifying signals picked up by the selected pickup; cathode ray tube means for visually displaying said amplified signals for examining the relative quality of the recordings of said bar pattern on said ink samples; a gate adjacent to the path of said check around said wheel; and means for moving said gate to an exit position to emit said check from its path around said wheel.

3,293,544
NAIL DETECTOR UTILIZING METALLIC PARTICLES
Robert Seng, 2519 High St., South Fort Mitchell, Ky. 40203
Filed Sept. 24, 1964, Ser. No. 398,875
1 Claim. (Cl. 324—41)

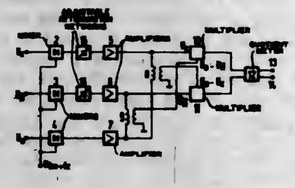
A nail detector device comprising, in combination, a hollow, rectangular plastic case, a transformer secured within one end of said case providing means for stepping down the voltage supplied by a conventional power source, a coil of wire secured within the other end of said case, a spool adapted to carry said coil of wire, the output winding of said transformer electrically connected to said coil, said spool having a hollow compartment therein carrying a plurality of iron filings, said spool having an opening to provide means for inserting a pencil to mark the location of a hidden nail after it has been found by the use of said detector, a circular clear plastic face

carried by said case above said coil and core providing means for observing the formation of said filings, a switch
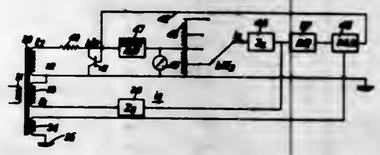


carried by said case, said switch being in series with one side of said transformer providing means for opening and closing the electrical circuit of said device.

3,293,545
CIRCUIT ARRANGEMENT COMPRISING VOLTAGE DIVIDER NETWORKS FOR MEASURING IMPEDANCES
Klaus Schlüter, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Aug. 24, 1964, Ser. No. 392,340
Claims priority, application Germany, Aug. 26, 1963, S 86,295; Sept. 30, 1963, S 87,672
12 Claims. (Cl. 324—57)



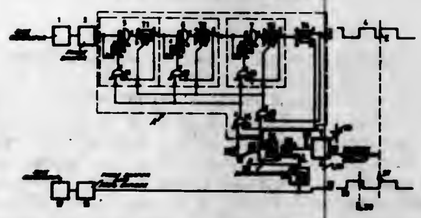
12. A circuit arrangement for measuring impedances, particularly at high measuring frequencies, comprising three similarly constructed complex voltage divider networks, each comprising a series combination of first impedance and a second impedance, a signal source, the output of which is connected in parallel with the respective series combinations, operative to apply a test voltage thereto, respective impedances connected in parallel with respective second impedances of said first and second divider networks, at least one of said last mentioned impedances comprising an impedance to be measured, at least one of said impedances other than an impedance to be measured, comprising a fixed standard impedance, circuit means operatively connected to the respective voltage divider networks for deriving the difference between the voltage drops across selected respective second impedance, and further circuit means for producing a quotient from voltages selected from said voltage drops and different voltages derived from said last mentioned means, which quotient provides a determination of the value and phase and thus the real portion and the imaginary portion of an impedance being measured.

3,293,546
SELF-BALANCING IMPEDANCE MEASURING BRIDGE
Raymond Calvert and John Milldwater, Chessington, England, assignors to The Wayne Kerr Laboratories Limited, Surrey, England, a British company
Filed June 12, 1963, Ser. No. 287,404
Claims priority, application Great Britain, June 13, 1962, 22,788/62
15 Claims. (Cl. 324—57)



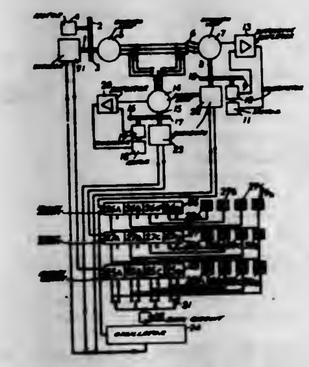
1. An electrical bridge to give an output in accordance with the magnitude of an unknown impedance comprising a voltage source, a standard impedance, means for applying a voltage from said source to said standard impedance to provide a first current constituting a reference, a voltage-controllable resistance, a fixed resistor connected in series with said voltage-controllable resistance to form a potential divider, means for applying a voltage from said source across said potential divider, means for applying the voltage between one end of the potential divider and the junction of the voltage-controllable resistance and fixed resistor to the unknown impedance to provide a second current, comparison means for comparing said first and second currents to produce a control signal dependent on the difference of the two currents, circuit means for applying said control signal to said voltage-controllable resistance to control the voltage from said potential divider in the sense to tend to bring the two currents to equality, and output means responsive to the voltage applied to the unknown impedance.

3,293,547
PHASE SYNCHRONIZATION OF ALTERNATING VOLTAGES
Frido Weisaker, Grafelfing, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Oct. 24, 1963, Ser. No. 318,543
Claims priority, application Germany, Oct. 29, 1962, S 82,228
8 Claims. (Cl. 324—57)



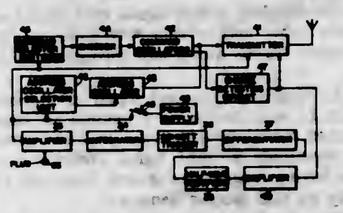
1. A circuit arrangement for the synchronizing of the phase of a first and of a second alternating voltage, comprising means for the generation of a first alternating voltage, means for the transformation of said first alternating voltage into a first square-wave voltage, a series circuit of bistable multivibrators, the output of said transformation means being connected to the input of the first multivibrator of said series circuit in which within said series circuit, the first output of a multivibrator is operatively connected with the first and second parallel-connected inputs of the subsequent multivibrator, the first output of the last multivibrator supplying the first alternating voltage to be adjusted in phase, a gate whose output is connected with the third inputs of said bistable multivibrators other than that of the last in such series circuit and whose second input is operatively connected with an output of said last multivibrator in such series circuit, means for the generation of a second alternating voltage and for the derivation therefrom of a second square-wave voltage of a frequency greater than that of said first square-wave voltage, means for deriving a setting command pulse from said second square-wave voltage, and means for supplying such setting command pulse to the first input of said gate.

3,293,548
MEANS FOR TESTING APPARATUS WHICH CAUSES A ROTATABLE SHAFT TO FOLLOW THE MOVEMENTS OF ANOTHER ROTATABLE SHAFT
Dennis Albert Hunt, Northolt, Middlesex, England, assignor to Rotax Limited, London, England
Filed Dec. 10, 1962, Ser. No. 243,469
Claims priority, application Great Britain, Dec. 8, 1961, 43,982/61
5 Claims. (Cl. 324—158)



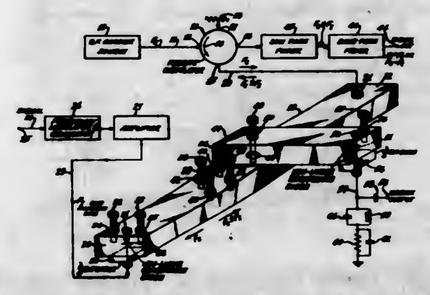
1. Means for testing apparatus for correlating the angular positions of first and second rotatable shafts, the apparatus being of the kind including a first synchro unit for producing an electrical output of magnitude dependent on the angular position of the first shaft, a second synchro unit to which the output is fed, and a motor operable by said second unit for moving the second shaft angularly so that the angular positions of the shafts are correlated, the means comprising a third synchro unit and associated third shaft connected to a point intermediate the first and second synchro units, first, second and third encoders associated with the first, second and third shafts respectively and serving when energised to produce digital signals representing the angular positions of the first, second and third shafts, an oscillator for energising said encoders simultaneously once in each cycle of the oscillator, first, second and third memory units connected respectively to the first, second and third encoders, each of said memory units comprising a number of bistable circuits corresponding to the number of digits in each digital signal produced by each encoder, and the digits serving respectively to set said bistable circuits to one or the other of their stable states each time said oscillator energises the encoders, the arrival of digital signals at a bistable circuit serving to cancel any signals previously stored, first, second and third display units connected to the first, second and third memory units respectively for indicating the signals stored in the memory units, and adjustable switch means which when the signal received by a selected one of the memory units has a predetermined value operates the control means to prevent further energisation of the encoders.

3,293,549
RADIO COMMUNICATION SYSTEM FOR CONTROL OF LOCOMOTIVES
Herbert W. Patterson, Victor, N.Y., assignor to The General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 23, 1963, Ser. No. 310,512
4 Claims. (Cl. 325—64)



1. A method of remotely operating a vehicle by a serial train of spaced bursts of a modulated carrier frequency wherein a transmitter transmits a short burst in response to each keying of the transmitter and the vehicle is operated as governed by the character of the modulated carrier frequency, detecting each beat of a living heart, producing an electrical signal in response to each detected beat, and keying the transmitter in response to each electrical signal whereby modulated carrier pulses are transmitted in response to and at the same rate as the living heart.

3,293,550
TRANSMIT MONITOR
Charles R. Hegge, Jr., Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 23, 1963, Ser. No. 297,038
15 Claims. (Cl. 325—133)

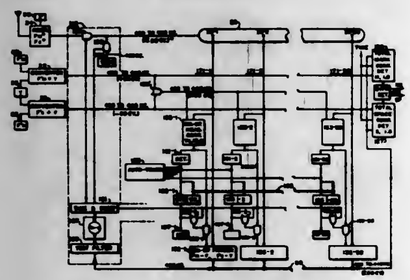


1. An arrangement for monitoring the performance of a radio frequency transmitter comprising, in combination,
a source of a carrier signal of a first frequency,
a first non-linear frequency converter,
means for applying said carrier signal to said first converter,
a source of a modulating signal of a second frequency,
means for applying said modulating signal to said first converter in a manner to cause said first converter to modulate said carrier and produce a third signal composed of modulated sidebands spaced on either side of said first frequency by said second frequency,
first and second output terminals,
means coupled to said first converter and responsive to said third signal for applying a selected one of said sidebands to said first output terminal,
and a second nonlinear frequency converter coupled between said first converter and said second output terminal and responsive to said carrier signal and said third signal for mixing said carrier signal and

said third signal and producing at said second output terminal a fourth difference frequency signal of a frequency equal to said second frequency.

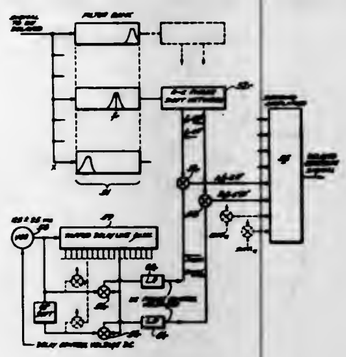
5. In combination,
a waveguide,
a non-linear frequency mixing device positioned in said waveguide at a point spaced from one end of said waveguide,
means for coupling a first signal of a first frequency into the other end of said waveguide so that said first signal travels along said waveguide to said device,
means for applying a second signal of a second frequency to said device in a manner to cause said device to modulate said first signal and produce in said waveguide a third signal composed of sidebands having frequencies spaced from said first frequency by said second frequency,
and means coupled to said waveguide at a point intermediate said mixing device and said other end of said waveguide and responsive to said first signal and said third signal in said waveguide to produce a fourth signal of said second frequency.

3,293,551
COMMON CHANNEL MULTIPATH RECEIVER
William G. Elrich, Media, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 24, 1963, Ser. No. 333,237
2 Claims. (Cl. 325—320)



1. In a receiver for a wideband correlation communication system for transmitting digital information identified by selectively transmitted plural functions thru a communication channel subject to propagation of multipath signals delayed in several amounts according to a delay pattern which is repeated in similar form for successive digital signal periods,
having a tapped delay line for said signals with outputs connected to various tap circuits,
and a source of corresponding plural receiver functions for correlation with said signals,
the combination with said delay line and source,
of means to combine said plural receiver functions,
means in each tap circuit to correlate the received signal with said combined functions to produce a measuring output of sustained amplitude and phase corresponding to the prevailing long term correlation in said tap circuit as determined by prevailing path delays,
means to recombine the delay line tap output with said measuring output to provide output signals from each tap circuit of weighted amplitude and phase determined by the measuring output,
such that all tap circuit outputs are in a common phase relation to be combined on a common bus,
and means to correlate the combined output on said bus with the separate plural functions to determine which of such plural functions had been transmitted, whereby the several multipath components contribute to an output of maximum signal to noise ratio.

3,293,552
PHASE SLOPE DELAY
William Sichak, Nutley, Jack B. Harvey, Clifton, and Robert T. Adams, Short Hills, N.J., assignors, by mesne assignments, to Communication Systems, Incorporated, Carson City, Nev., a corporation of Nevada
Filed Feb. 13, 1964, Ser. No. 344,621
8 Claims. (Cl. 328—56)

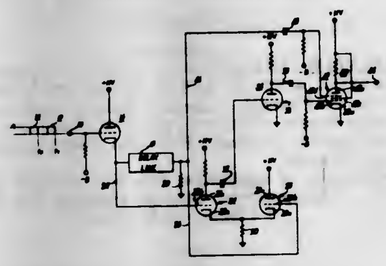


1. A circuit for delaying an incident signal comprising: means for slicing the frequency spectrum of said signal into a plurality of bands; means coupled to said slicing means for adding a phase shift to each band proportional to the center frequency thereof; and means coupled to said adding means for combining the phase shifted bands and producing a delayed replica of the original signal.

3,293,553
PULSE TIME AND AMPLITUDE COMPARING CIRCUITRY
John I. Brown, Jr., Raytown, Mo., assignor to Wilcox Electric Company, Inc., Kansas City, Mo., a corporation of Kansas
Filed July 2, 1962, Ser. No. 206,949
6 Claims. (Cl. 328—115)

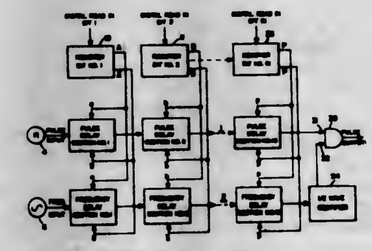
1. A pulse time and amplitude comparing circuit for producing a command signal when a predetermined time spacing and amplitude relationship exists between a first input signal pulse and a second, subsequent input signal pulse comprising:
means for delaying the input pulses a time equal to said time spacing;
an active electrical device operable to normally produce an output signal of a predetermined level, and having a pair of elements for controlling said level;
means intercoupling the output of the delay means and one of said elements for exciting the latter in response to delayed pulses delivered by said delay means;
means for receiving the input pulses and coupled with the other of said elements for exciting the latter in response to said input pulses,

said intercoupling means and said receiving means being operable to drive the respective elements coupled thereto in a manner to produce opposite changes in said level, and to effect a change therein in a predetermined direction when both of said elements are simultaneously excited and when the delayed pulses and the input pulses have said amplitude relationship; and



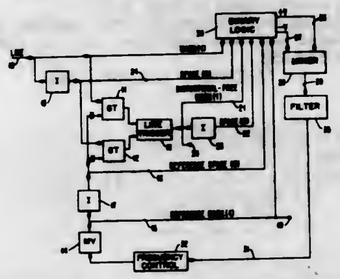
means coupled with the output of said delay means and the output of said device for producing said command signal, and including structure for permitting the production of said command signal only when the level of said output signal changes in said direction and arrival of one of the delayed pulses at said structure occurs during said change of the level in said direction.

3,293,554
STABLE WIDE BAND PULSE DELAY
Herman J. Yost, Ellicott City, James B. Couvillion, Laurel, and Bernard L. Harris, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 31, 1964, Ser. No. 356,333
18 Claims. (Cl. 328—154)



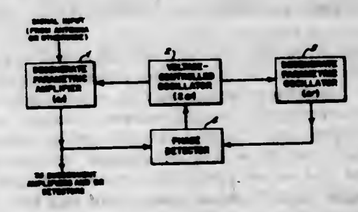
1. In a delay system having a wide band pulse signal which has a definite phase relation with a basic frequency signal, the combination of first and second chains of delay sections; a plurality of registers having outputs connected to inputs of only one delay section in both the first and second chains of delay sections; said first and second chains each having an input and an output terminal; means connecting the pulse signal to the input terminal of said first chain; means connecting the basic frequency signal to the input terminal of said second chain; a first gate means having input terminals and an output terminal; means connecting the output terminal of said first chain to one input of said gate means; and half wave rectifier means connecting the output terminal of said second chain to another input terminal of said gate means.

3,293,555
SYSTEM FOR CONTROLLING THE SAMPLING OF SERIALLY RECEIVED SIGNAL ELEMENTS
Alexander Massaro, Poughkeepsie, Albert C. Boscolo, Beacon, Larry L. Stickler, Wappingers Falls, Lawrence A. Tate, Poughkeepsie, and Walter D. Van Gleson, Jr., Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 25, 1963, Ser. No. 290,589
8 Claims. (Cl. 328—155)



1. A system for controlling the generation of a reference wave used to sample at an optimum time serially received signal elements transmitted at a predetermined frequency, said system including in combination:
means producing a reference signal having an adjustable frequency substantially equal to said predetermined frequency;
means responsive to said reference signal and received signal elements for producing a signal which is a reconstruction of said received elements and which is distortion-free with respect to said reference signal;
logic means, responsive to said received signal elements, said reference signal, and said distortion-free signal for producing an output representing the phase relationship between said three inputs;
and means, responsive to the output of said logic means, connected to said reference signal producing means, for adjusting the generation of said reference signal to sample the received elements at the optimum time.

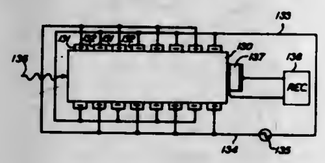
3,293,556
PHASE-LOCKED AMPLIFIER
Kenneth L. Kotzebue, 2809 Daniels, Dallas, Tex. 75205, and Lawrence A. Blackwell, 7319 Lakewood, Dallas, Tex. 75214
Original application July 6, 1959, Ser. No. 825,018, now Patent No. 3,217,259, dated Nov. 9, 1965. Divided and this application Aug. 2, 1965, Ser. No. 487,645
7 Claims. (Cl. 330—4.9)



1. A signal receiver comprising a parametric amplifier, a pump for said amplifier, means connected to said pump for deriving from the output of said pump a matching signal in half-frequency electrical synchronism therewith, a phase detector connected to the output of said amplifier and said means for matching the output of said amplifier with said matching signal and, when the phase therebetween varies, for producing and applying to said pump a

correction signal thereby to maintain the output of said amplifier substantially in half-frequency electrical synchronism with the output of said pump.

3,293,557
ELASTIC WAVE DEVICES UTILIZING MIXED CRYSTALS OF POTASSIUM TANTALATE-POTASSIUM NIOBATE
Richard T. Denton, South Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application Mar. 19, 1964, Ser. No. 353,049. Divided and this application June 1, 1966, Ser. No. 554,552
11 Claims. (Cl. 330—4.6)

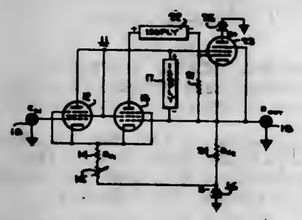


1. Device comprising a body consisting essentially of the composition:

$$KTa_xNb_{1-x}O_3$$

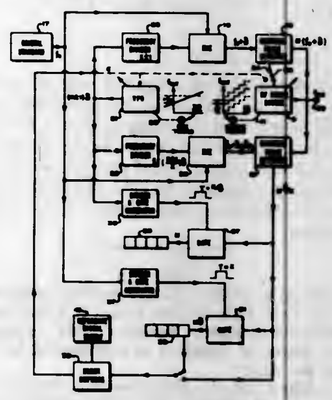
in which x equals from 0.2 to 0.8, together with a first means for applying an electric field across at least a portion of the said body and a second means for transmitting elastic wave through a portion of the said body, the said first and second means being such that the presence of an electric field affects a transmission property of the said body for the said elastic wave.

3,293,558
AMPLIFIER
John F. Walton, McLean, Va., assignor, by mesne assignments, to Halliburton Company, a corporation of Delaware
Filed Jan. 31, 1963, Ser. No. 255,406
14 Claims. (Cl. 330—69)



1. An amplifier system for electrical signals comprising a differential amplifier and an output stage, said differential amplifier having first and second amplifying devices, said output stage having a third amplifying device, each of said amplifying devices having a first electrode for emitting electrically charged carriers, a second electrode for collecting said charged carriers and a control electrode for controlling flow of charged carriers between said first and second electrodes, means for applying an input signal to said control electrode of said first amplifying means interconnecting said first electrodes of said first and second amplifying devices to vary said first electrodes in the same sense in response to an input signal, a signal output connection, means for applying the signal on said signal output connection to said control electrode of said second amplifying device, a first source of voltage, means connecting said second electrode of said first amplifying device to said signal output connection through said first source of voltage, a second source of voltage, a first impedance, means connecting said second electrode of said second amplifying device to said control electrode of said second amplifying device through at least said second source of voltage and said first impedance connected in series, means for coupling at least a part of the signal voltage developed across said first impedance to said control electrode of said third amplifying device, and further means connecting said first electrode of said third amplifying device to said signal output connection so as to develop an output signal thereon.

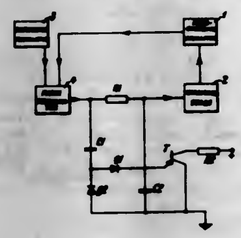
3,293,559
VARIABLE FREQUENCY SIGNAL APPARATUS HAVING A STABILIZING REFERENCE SIGNAL
Darwin L. Howard, Colorado Springs, Colo., and Giacomo Vargia, Redwood City, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 323,320, Nov. 13, 1963. This application Mar. 18, 1966, Ser. No. 541,897
7 Claims. (Cl. 331—2)



1. Signal apparatus comprising:
an input circuit for receiving a signal frequency from a source;
a source of reference frequency;
means connected to the source for receiving said reference frequency and to the input circuit for receiving the signal frequency at said input circuit for producing a control signal representative of the phase relationship between the signal frequency at said input circuit and an integer multiple of the reference frequency;
means connected to one of said sources for applying said control signal thereto to maintain phase lock between the signal frequency at the input circuit and an integer multiple of the reference frequency;
circuit means having an input connected to the input circuit for receiving the signal frequency and having another input;
a source of first frequency equal to the reference frequency offset by a selected frequency value;
means connecting the source of first frequency and the other input of said circuit means for applying thereto a frequency proportional to the first frequency, said circuit means producing an output signal as a modulation product of the frequencies of signals applied to the inputs thereof;
a source of second signal proportional to said selected frequency value; and
means connected to said circuit means and to said source of second signal for producing a first output as the combination of said output signal and second signal, the first output being representative of

the number of the harmonic of the reference frequency to which the signal frequency at the input circuit is phase locked.

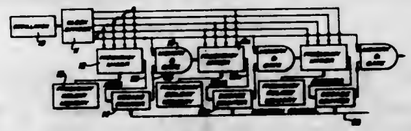
3,293,560
CIRCUIT ARRANGEMENT FOR THE AUTOMATIC REGULATION OF AN OSCILLATOR TO A REFERENCE FREQUENCY
Gottfried Tobleman, Zurich, Switzerland, assignor to Albiswerk Zurich A.G., Zurich, Switzerland
Filed June 3, 1965, Ser. No. 461,024
Claims priority, application Switzerland, Sept. 24, 1964, 12,422/64
3 Claims. (Cl. 331—4)



1. Circuit for automatic regulation of the frequency of a main oscillator, having a reactance stage controlling its frequency, with respect to a reference frequency, and controlled, in the case of non-synchronization, with a search voltage from a search oscillator to widen the pull-in range, said circuit comprising, in combination, a phase discriminator connected to said reactance stage; means applying the main oscillator frequency and a reference frequency to said phase discriminator to derive differential frequency, said phase discriminator, in the case of synchronization, having a D.C. output voltage and, in the case of non-synchronization, having an A.C. output voltage; means applying the D.C. output voltage of said phase discriminator to said reactance stage; a search oscillator producing a saw-tooth voltage; a control circuit for said search oscillator and including a condenser; means connecting said condenser to the input of said reactance stage; separator means connected to the output of said phase discriminator and separating the A.C. voltage output thereof from the D.C. voltage ouput thereof; and a rectifier stage connecting said separator means to said condenser to apply the A.C. voltage output of said phase discriminator to said condenser; whereby said sawtooth oscillator is energized in a non-synchronized state of said main oscillator in accordance with the degree of frequency deviation of the latter and is de-energized in the synchronized state of said main oscillator.

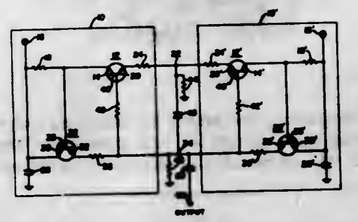
3,293,561
FREQUENCY SYNTHESIZER
James M. Hogerty, Altamonte, and Dwight S. Lord, Redondo Beach, Calif., assignors to Rutherford Electronics Co., El Segundo, Calif., a corporation of California
Filed Sept. 27, 1965, Ser. No. 490,430
11 Claims. (Cl. 331—38)

1. In a frequency synthesizer for providing from a single frequency source a selected one of a range of output frequencies, the combination of:
frequency divider means having the single frequency source as an input for providing four outputs each of the frequency lower than said single frequency, with said four outputs related to each other to provide an output count of at least nine in ten counts of said single frequency; and
frequency mixer means having said four output frequencies of said divider means as inputs and including switching means for selectively connecting the



inputs thereof to an output thereof to provide a selected combination of said four frequencies at the mixer means output.

3,293,562
PARALLEL REDUNDANT CRYSTAL OSCILLATOR
Alwin Halmel, Rochester, N.Y., assignor to Stromberg-Carlson, Rochester, N.Y., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,152
4 Claims. (Cl. 331—56)

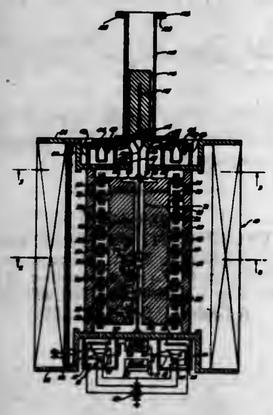


4. A parallel redundant oscillator comprising a first common point and a second common point, first and second amplifier means and frequency determining means connected in parallel between said first and second common points for generating a signal of predetermined frequency, each of said first and second amplifier means including a voltage amplifier having an input connected to said first common point and an output, and a current amplifier having an output connected to said second common point and an input connected to the output of said voltage amplifier, a first isolation resistor connected between the input of said voltage amplifier and said first common point, and a second isolation resistor connected between the output of said current amplifier and said second common point.

3,293,563
MICROWAVE POWER SOURCE INCLUDING PLURAL WAVE-BEAM INTERACTION CIRCUITS WITH A PLURALITY OF FEEDBACK CIRCUIT MEANS INCLUDING A COMMON RESONANT CAVITY
John E. Nevins, Jr., Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 352,151
3 Claims. (Cl. 331—82)

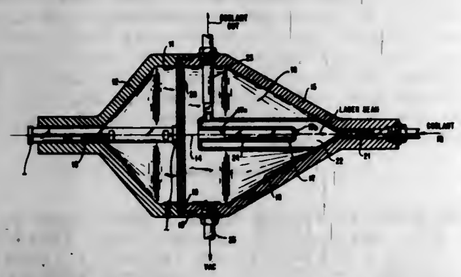
1. A microwave power source for generating microwave signals at a preselected frequency comprising: means for providing a plurality of streams of electrons along a plurality of respective predetermined paths, a plurality of slow-wave structure means each disposed along and about one of said predetermined paths for propagating electromagnetic wave energy in such manner as to provide interaction between said electron streams and the respective electromagnetic wave energy propagated along the respective slow-wave structure means, a plurality of feedback means for removing electromagnetic wave energy from one region of each of said plurality of slow-wave structure means and for applying it to

another region of each of said plurality of slow-wave structure means, respectively, said plurality of feedback means including common means resonant at said pre-



selected frequency, and means for obtaining output electromagnetic wave energy at said preselected frequency from each of said plurality of slow-wave structure means.

3,293,564
CONICAL ENERGY REFLECTING COUPLING DEVICE
George J. Fan, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,401
1 Claim. (Cl. 331—94.5)



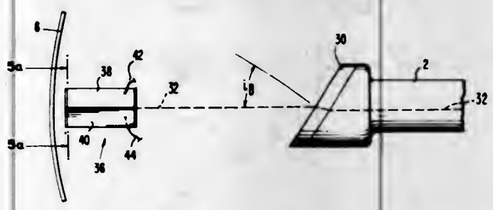
An energy coupling device for repeatedly redirecting the radiating energy from a source of radiant energy to the irradiated target comprising:

(a) an elongated source of radiant energy substantially cylindrical in configuration;

(b) an elongated target substantially cylindrical in configuration to be irradiated by the energy from said source, the said source and the said target lying along a common axis spaced from one another;

(c) and a reflecting cavity enclosing said source and said target comprised of an internal cylindrical reflecting surface having a ratio of length to diameter less than 3 and greater than 2, a first internal conical reflecting surface enclosing said source and having an apex angle less than 140° and greater than 100°, and a second internal conical reflecting surface enclosing said target and having an apex angle less than 60° and greater than 30°, whereby the energy radiated by said source is directed by multiple reflections from the reflecting surfaces of said cavity to said target, and the energy which is not absorbed by said target is repeatedly redirected by the surfaces of said cavity to said target for further absorption thereby.

3,293,565
LASER IMAGING EMPLOYING A DEGENERATE OPTICAL CAVITY
Wilton A. Hardy, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,702
1 Claim. (Cl. 331—94.5)



A pair of reflecting mirrors disposed to define an optical cavity,

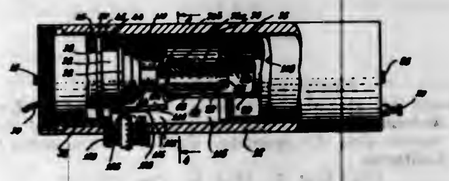
an active element disposed within said cavity and operative to coact with said cavity to produce a stimulated emission of light along a plurality of angularly disposed axes within said cavity,

means for pumping said active element,

a plurality of electrooptical elements arranged as an array between said active element and one of said mirrors,

and means for selectively actuating a predetermined number of said electrooptical elements so as to modify the transmission of stimulated emitted laser light through said actuated elements, whereby a light pattern appears on one of said mirrors in accordance with said selection.

3,293,566
IMPROVED MICROWAVE OSCILLATOR TUNING MEANS
Benjamin F. Gregory, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.
Filed Apr. 7, 1965, Ser. No. 446,378
9 Claims. (Cl. 331—98)



1. A tunable microwave source comprising, in combination,

(A) a substantially cylindrical electrically conductive housing,

(B) a vacuum tube triode mounted within said housing and having cathode, grid and plate terminals,

(1) said cathode terminal being directly connected to said housing,

(C) a tapered grid sleeve mounted upon and electrically connected to said grid terminal in a position within said housing concentric about the cylindrical axis thereof,

(1) said grid sleeve having a truncated conical configuration so as to situate a free and open end thereof on a smaller diameter than the remaining portion thereof,

(D) means electrically connected to said plate terminal, said means comprising

(1) a plate line member disposed coaxially within said grid sleeve, and

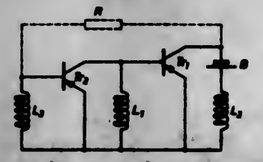
(2) a sliding line electrically contacting said plate line and selectively axially movable to frequency tune said source.

3,293,567
SEMICONDUCTOR DEVICE IN THE ULTRA-LOW-TEMPERATURE STATE
Kiichi Kamimura, Kodaira-shi, and Noboru Takeuchi, Yamato-machi, Kitatama-gun, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Sept. 23, 1964, Ser. No. 398,494
Claims priority, application Japan, Oct. 1, 1963, 38/51,941
1 Claim. (Cl. 331—107)



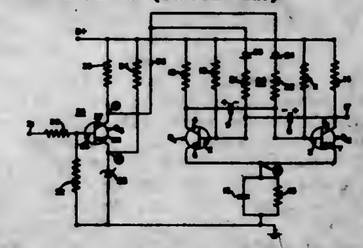
A semiconductor device which comprises a semiconductor device maintained during operation in a state wherein it is maintained at a low temperature, a D.-C. current is passed therethrough in one direction, and a magnetic field is applied thereto in a direction perpendicular to the direction of the D.-C. current, whereby an electric field oscillation is generated within the semiconductor device, and comprises a semiconductor structure one end surface of which is in conjunction with a side surface of the semiconductor device which surface is perpendicular to both the current direction and the applied magnetic field direction, whereby oscillating electric fields are propagated through the said semiconductor structure.

3,293,568
AMPLITUDE STABILIZED ELECTRO-MECHANICAL OSCILLATOR
Wolfgang Ganter and Günther Glaser, Schramberg, Wurttemberg, Germany, assignors to Gebruder Junghans Aktiengesellschaft, Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed Feb. 12, 1964, Ser. No. 344,397
Claims priority, application Germany, Feb. 20, 1963, J 23,215
3 Claims. (Cl. 331—109)



1. In an oscillator comprising a semiconductor amplifier the output of which is connected to a driving coil for coupling energy to a mechanical oscillating element, which driving coil is coupled back to the input of said amplifier through a control coil, the improvement comprising a controllable resistance connected in parallel with said control coil, said resistance being responsive to the amplitude of oscillation such that its resistance varies to keep said amplitude constant.

3,293,569
MULTIVIBRATOR WITH ELECTRICALLY VARIABLE PULSE REPETITION FREQUENCY
Arvid E. Englund, Jr., and William J. Little, Lynchburg, Va., assignors to General Electric Company, a corporation of New York
Filed Jan. 4, 1965, Ser. No. 423,164
1 Claim. (Cl. 331—113)



In an electrically controlled variable-speed multivibrator for producing output pulse trains at two distinct repetition rates, the combination comprising:

(a) first and second transistors, each having collector, emitter and base electrodes;

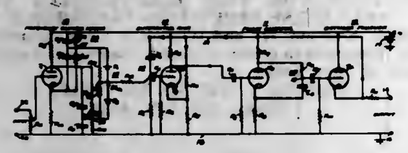
(b) timing circuit means for establishing regenerative feedback paths between the collector of said first transistor and the base of said second transistor, and the collector of said second transistor and the base of said first transistor to establish the normal operating speed of the multivibrator for producing a pulse train having a first repetition rate, said first named means including a capacitor connected between the collector of said first transistor and the base of said second transistor, and a primary timing resistor, connected from the base of said second transistor to a point of potential to provide a discharge path for said first capacitor, and a further capacitor and a further primary timing resistor connected respectively between the collector of said second transistor and the base of said first transistor and said point of potential;

(c) two further timing resistors adapted to be connected in shunt with said primary timing resistors to vary the time constant of the timing circuit means and the pulse repetition rate of the output pulses from said multivibrator, and

(d) electrically activated switch means, including diodes connected in series with said further resistors, said diodes conducting temporarily, whereby timing for the normal operational speed is established essentially by the time constant of said capacitors and primary resistors,

(e) a third transistor having input, output, and common electrodes, a constant voltage reference element connected between the common electrode and a point of reference potential, said third transistor being adapted to receive a control signal at its input electrode to change its conducting state, means coupling the diodes to the output electrode of said third transistor whereby said diodes are continually forward-biased in response to said control signal for continually connecting said further resistors in shunt with the primary resistance for the duration of said control signals, thereby varying the equivalent resistance of said timing circuit and the operating speed of the multivibrator to produce a pulse train having a different repetition rate.

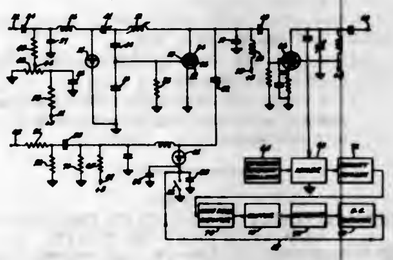
3,293,570
VOLTAGE CONTROLLED PHASE SHIFT OSCILLATOR
Lewis M. Nielson, 1374 Thurston Ave., Salt Lake City, Utah 84110
Filed Aug. 11, 1966, Ser. No. 479,022
2 Claims. (Cl. 331—135)



1. A voltage controlled phase shift oscillator comprising in combination, a common circuit, a pair of input terminals, a pair of output terminals, one terminal of each of said pairs of terminals connected to said common circuit; a potential source, a differential amplifier consisting of an electron discharge amplifier having anode, cathode and control electrodes, the anode of the differential amplifier coupled to said potential source through an anode load resistor; a first phase shifter consisting of a capacitor in series with paralleled resistors, each of said paralleled resistors having a diode connected thereacross, the junction formed by said parallel resistors and diodes and said capacitor coupled to said control electrode; a phase inverter consisting of a triode valve having its anode coupled through a load resistor to the positive terminal of said potential source and its cathode to the common circuit through its cathode resistor, the grid of said triode being capacitively coupled to the anode electrode of said electron discharge amplifier; a second phase shifter consisting of a series connected capacitor and resistor having its resistor terminal connected to the anode of said triode and its capacitor terminal to the cathode of said triode; a cathode follower having its grid element capacitively coupled to the output of said second phase shifter, its cathode element connected to one of said output terminals through a load decoupling resistor and its anode element connected to the positive terminal of said potential source; a feedback path consisting of an electrical conductor connecting the cathode element of said cathode follower to the capacitor of said first phase shifter and to a terminal of a voltage divider having its intermediate tap connected to the cathode of the differential amplifier and its other terminal connected to said common circuit; and voltage control means for varying the bias on said diodes whereby the resistance component of said first phase shifter is varied and hence the frequency of the phase shift oscillator.

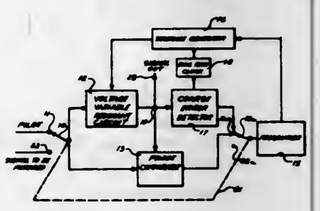
3,293,571
VARIABLE REACTANCE SOLID STATE FREQUENCY MODULATION SYSTEM
Adolf Hans Bett, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,753
2 Claims. (Cl. 332—29)

1. A radio frequency oscillator comprising:
an electronic device having an input electrode,
an output electrode and a common electrode,
circuit means including a resonant frequency determining circuit coupling said output electrode to said input electrode to sustain oscillations,
a capacitive voltage divider coupled between said output electrode and said input electrode,
a connection from a point intermediate the ends of said voltage divider to said common electrode,
means including a variable reactance solid state electronic device and having electric current rectifying properties coupled between said frequency determining circuit and said common electrode to effect frequency modulation of said oscillator,
a source of modulating signals,
means coupling said source to said variable reactance device, and



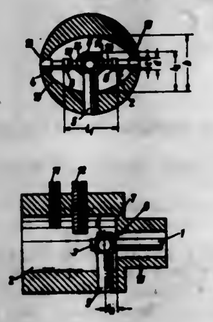
means to develop a back bias voltage across said variable reactance device except during a part of the radio frequency cycle whereupon said diode conducts whereby to cause said modulating signals to vary both the reactance and resistance of said variable reactance device to effect frequency modulation of said oscillator.

3,293,572
ELECTRICALLY VARIABLE RESONANT CIRCUIT CONTROLLED BY THE FREQUENCY OF A SEPARATE PILOT INPUT SIGNAL
Harold A. Smith, Plainfield, N.J., assignor to Devenco Incorporated, New York, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,376
6 Claims. (Cl. 333—17)



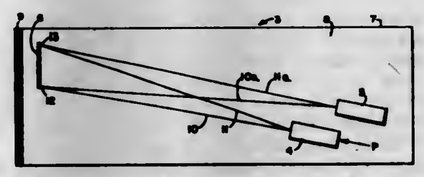
1. An electrically tunable filter arrangement comprising:
(a) An electrically variable resonant circuit;
(b) Means for producing and supplying to said resonant circuit a tuning signal which varies in discrete steps for the purpose of tuning said resonant circuit;
(c) Means for applying a pilot signal to said resonant circuit, the frequency spectrum of said pilot signal bearing a predetermined relationship to the frequency to which the resonant circuit is to be tuned;
(d) Means for comparing the output of said resonant circuit with said pilot signal and generating a signal proportional to the relationship between them; and
(e) Means responsive to the signal generated by said comparing means for conditioning said tuning signal producing means for stepwise variation when the resonant frequency of resonant circuit is outside a predetermined value from the desired frequency, and for maintaining said tuning signal at one of the discrete output values of said tuning signal producing means when the resonant frequency of said resonant circuit is within said predetermined value from the desired frequency.

3,293,573
COAXIAL TO ELLIPTICAL WAVEGUIDE COUPLING
Wolfgang Kraak and Dieter Rastetter, both of Backnang, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Mar. 25, 1965, Ser. No. 442,649
Claims priority, application Germany, Mar. 25, 1964, T 28,909
16 Claims. (Cl. 333—21)



1. In an arrangement for the excitation of a wave in a generally elliptical waveguide having a short circuit end wall for centrally coupling a coaxial line thereto, the improvement comprising: a cross bar connected at its ends to the wall of the waveguide and having enlarged portions and conductively connected with the inner conductor of such coaxial line, said cross bar being disposed at a predetermined distance from the short circuit wall and parallel to the major cross sectional axis of the waveguide; and a centrally disposed metal cross piece positioned at a right angle to the inner conductor and to the cross bar, one end thereof being connected to the wall of the waveguide and the other end protruding slightly beyond said cross bar.

3,293,574
DIFFRACTION DELAY LINE FOR PULSE EXPANSION AND COMPRESSION
Richard V. Baum, Phoenix, Ariz., assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,109
4 Claims. (Cl. 333—30)



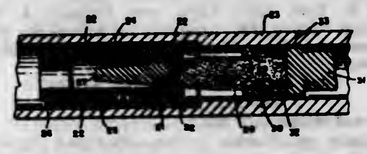
1. In an apparatus to effect expansion or compression of a pulse the combination of
a substantially rectangularly shaped quartz block having one beveled cut off end and the other end step cut to provide a substantially rectangularly shaped extension therefrom,
a reflective grating cut into the beveled cut off end of the quartz block to reflect any sonic wave impinging thereon in proportion to frequency, said grating comprising between about 50 and about 150 curved reflector surfaces arranged sequentially to be responsive to successively increasing or decreasing pulse frequencies,
an input transducer operatively affixed to the end of the shorter part of the step cut, and
an output transducer operatively affixed to the extended part of the step cut, said transducer being in substantially parallel relationship to said reflector surfaces of said reflective grating.

3,293,575
ELECTROMECHANICAL FILTER HAVING MEANS TO REDUCE HARMONIC TRANSMISSION
Hans Allmaier, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Aug. 27, 1962, Ser. No. 219,564
Claims priority, application Germany, Sept. 29, 1961, S 76,058
3 Claims. (Cl. 333—72)



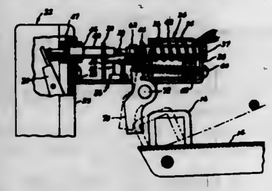
1. An electromechanical filter having at least one elongated metallic resonator vibrating in longitudinal direction, said resonator being provided at each of its longitudinal ends with an electrostrictive excitation element in the form of a thin disk metalized on the side thereof which faces away from the metallic resonator to pass a fundamental frequency, a further pair of disks of electrostrictive material adapted to reduce harmonics of said fundamental frequency, each of said last mentioned disks being disposed contiguous to the metalized coating of a corresponding first mentioned disk, the free end surface of each of said second mentioned disks being provided at its free end surface with a metalized coating serving as an electrical contact for effecting electrical connection thereto.

3,293,576
3 TO 8 MEGAHERTZ MINIATURE TUNER
Harold T. Lyman, Milford, Conn., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 12, 1965, Ser. No. 425,092
5 Claims. (Cl. 334—76)



1. A variable inductance tuner comprising: an inductance coil having a first end and a second end; a thin ferrite shell surrounding said coil and extending beyond both ends thereof; a first ferrite ring abutting the first end of said coil, a portion of said first ring extending within said ferrite shell; an inner movable tuning core; moving means connected to one end of said core for moving said movable core within said coil from the second end thereof; and a second ferrite ring being mounted on the end of said movable core which extends from said coil, the magnetic circuit being nearly completed by said movable core, said first and second ferrite rings and said ferrite shell at the lowest tuned frequency.

3,293,577
UNDERVOLTAGE RELEASE FOR CIRCUIT BREAKER
George W. Kissel and Henry E. S. Owen, Unionville, Conn., assignors to General Electric Company, a corporation of New York
Filed Sept. 21, 1965, Ser. No. 488,854
20 Claims. (Cl. 335—20)



20. An automatic tripping device for circuit breakers comprising:
(a) a support for mounting on an associated circuit breaker;
(b) a solenoid mounted on said support;
(c) an actuating armature reciprocally engaged by said solenoid;
(d) a tripping plunger slidably mounted on said support, said tripping plunger being adjustable in length for engagement with and to operate a trip member of the associated circuit breaker;
(e) a compression spring means mounted on said support and engaging said tripping plunger for biasing said tripping plunger from a latched position to a tripped position to engage and operate a circuit breaker trip member of the associated circuit breaker;
(f) a latch member pivotally mounted on said support and engaged with said actuating armature, said latch member including a leg portion releasably engageable with said tripping plunger in the latched position thereof;
(g) adjustable tension spring means mounted between said support and said latch member for biasing said latch; and
(h) a resetting lever pivotally mounted on said support and having a portion engaged with said tripping plunger to effect sliding movement thereof to the latched position.

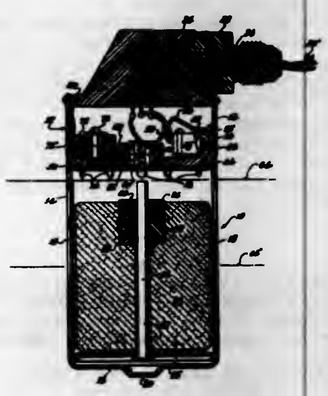
3,293,578
AXIALLY SPLIT BOBBIN WITH UPPER, AND LOWER, SEMI-CYLINDRICAL INTERLOCKING SECTIONS FOR REED RELAYS
Robert K. Else, Glen Ellyn, and Anthony J. Wilkis, Downers Grove, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Jan. 6, 1966, Ser. No. 519,067
3 Claims. (Cl. 335—152)

1. A reed relay comprising:
an axially split bobbin having upper and lower interlocking sections,
said upper and lower bobbin sections respectively having upper and lower mating flange halves on each end thereof, each of said lower flange halves having a platform portion extending therefrom with at least one aperture therethrough,
said upper bobbin section having upper flange halves on each end thereof;
at least two reed switches located within said upper and lower bobbin sections, respectively;
a first pair of terminals connected to said reed switch in said lower bobbin section and mounted in and extending through said two platform portions, respectively;
a second pair of terminals supported by said upper bobbin section, connected to said reed switch in said upper bobbin section, and having free ends extending



through said apertures in said two platform portions, respectively;
and a coil wound about said bobbin between said flanges.

3,293,579
LIQUID LEVEL INDICATOR INCORPORATING PERMANENT MAGNETS
Jay A. Harper, Gardena, Calif., assignor to Acme Machine Works, Inc., Hawthorne, Calif., a corporation of California
Filed Apr. 23, 1965, Ser. No. 450,358
12 Claims. (Cl. 335—207)



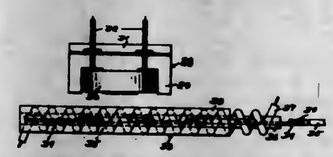
1. In means to detect the arrival of a member at a given position along a given path, the combination of:
first permanent magnet means generally aligned with the given path at a location beyond the given position and movable from a first normal position to a second position, the first permanent magnet means being biased to seek its normal first position;
second permanent magnet means carried by the member, the first and second permanent magnet means being oriented relative to each other to create a magnetic force therebetween to cause the first permanent magnet means to move from its normal first position to its second position in response to the arrival of the member at said given position; and
third permanent magnet means positioned for its flux to interact directly with the flux of the second permanent magnet means to modify the effect of the magnetic force between the first and second permanent magnet means, said third permanent magnet means being adjustable to vary the degree to which its flux interacts with the flux of the second permanent magnet means.

3,293,580
LATCHING MEANS FOR SOLENOID DEVICES
Michael B. Cotton, Emsworth, England, assignor to Plessey-UK Limited, Ilford, England, a British company
Filed June 11, 1964, Ser. No. 374,547
Claims priority, application Great Britain, June 18, 1963, 24,128/63
6 Claims. (Cl. 335—253)



1. An electromagnetic solenoid device including electromagnetic driving means having an armature and an energizing winding, said armature being arranged for movement to a minimum reluctance position in response to the energization of said winding, an output member coupled to said armature, and a first locking means for preventing movement of said output member in the de-energized condition of said winding, said locking means including a magnetic member displaceable by the magnetic flux produced in response to the energization of said winding to render the locking means ineffective and thereby release the output member for movement by said armature.

3,293,581
WIDE LINEAR RANGE INDUCTIVELY COUPLED SENSING DEVICE
John Joyce, Milton, Mass., assignor to John Joyce, Inc., Milton, Mass., a corporation of Massachusetts
Filed Aug. 10, 1960, Ser. No. 48,784
2 Claims. (Cl. 336—119)



1. In combination, first and second circuits, said first circuit including a first member having a magnetic field at least when current is flowing therethrough, said second circuit including a cable member extending in spaced relation to the field of said first member and to its path, said cable member including a lengthwise core comprising a series of spaced magnetic portions, a conductor portion in the form of a coil about said core, and means insulating said portions from each other, one of said members being movable relative to the other and one of said circuits including a current source, said relative movement being attended by an induced current in the other circuit.

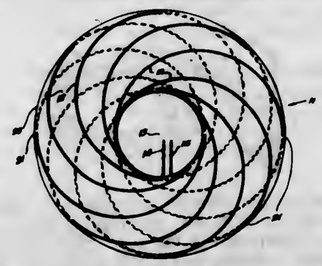
3,293,582
ELECTRICAL DEVICE AND METHOD OF MAKING THEREOF
Clifford G. Schmidt, Bristol, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Aug. 6, 1963, Ser. No. 300,246
3 Claims. (Cl. 336—169)

2. An electrical device comprising a coil having a commutating surface formed thereon corresponding to a path of movement of a brush movable on said commutating surface in electrical engagement therewith, said coil comprising a closed core of magnetic material, a length of conducting wire having an insulation layer thereover wound on said core to form a plurality of winding turns, at least some of said winding turns having a similar portion with interstices between the portions, each of said similar portions having a face of the conductor and a face of the insulation layer surrounding the face of the conductor, a hardened relatively thick covering on an area of said coil including and adjacent to at least the similar portions to substantially fill the interstices,



said covering having a face surrounding the face of the insulation layer and forming a contiguous covering except for the faces of the conductor and insulation layer, and a conducting material bonded to the face of the conductor and having an outer surface defining the commutating surface, the faces of the conductor, insulation layer and covering lying on a surface that is parallel to and below the commutating surface and normally being free of the core within the interstices.

3,293,583
TOROIDAL INDUCTOR
John Kromholz, Oak Ridge, Tenn., assignor of one-third to Benjamin E. Bucuto, Jr., Vanderburgh County, Ind.
Filed July 17, 1961, Ser. No. 127,062
15 Claims. (Cl. 336—189)



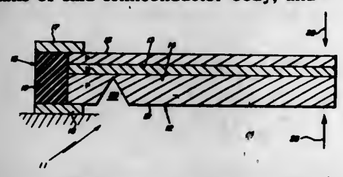
1. An inductor comprising a continuous winding of successive turns of wire forming a continuous helix of toroidal shape, and having a substantially circular cross section in a transverse radial plane, each of said turns being located in a plane which is inclined with respect to the normal axis of the toroidal helix and which is substantially tangent to diametrically opposite circular cross sections of said toroid.

3,293,584
STRAIN TRANSDUCER TRANSISTOR
Wilhelm H. Legat, Woodside, Lewis K. Russell, Livermore, and Alan F. Dixon, Palo Alto, Calif., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Aug. 16, 1964, Ser. No. 388,523
6 Claims. (Cl. 338—2)

1. A strain transducer transistor comprising:
(a) an axially extending semiconductor body having a first substrate layer of selected conductivity type, a second layer of opposite conductivity type overlying one side of the first layer, and a third layer of opposite conductivity type overlying the opposite side of the first layer, said second and third layers having respective parallel first and second planar surfaces, and parallel first and second P-N junctions therein between said first layer and the respective

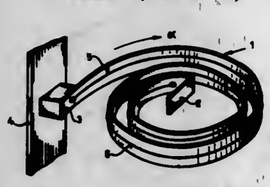
second and third layers and extending in planes parallel with said first and second surfaces respectively,

(b) said second surface of said semiconductor body having a groove extending transversely thereacross and into said third layer and terminating short of said second junction and oriented perpendicular to the axis of said semiconductor body, and



(c) support means engaged with the respective second and third layers of the semiconductor body to maintain said body in an axially extending, cantilevered position, and first, second and third electrode means connected to the respective layers for electrically connecting said layers to an external circuit.

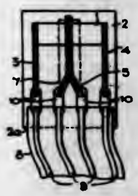
3,293,585
EXPANSION BODY
Klaus Horn, Karlsruhe, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed July 2, 1964, Ser. No. 379,940
Claims priority, application Germany, July 8, 1963, S 86,050
7 Claims. (Cl. 338—6)



1. An expansion element comprising a body in the form of a substantially flat, spiral spring having a plurality of turns positioned in the same plane suspended between a fixed mounting and a driving member and which is elastically deformable by torque acting thereon, expansion-sensitive resistances supported on surfaces of said body along a substantial length thereof in insulating relationship thereto, said resistances being so disposed on said body that rotation of one end of said body with respect to the other end, upon the application of torque forces thereto, is reflected directly in a polar oriented stress operative to effect a change in the resistance values of said resistances.

3,293,586
HALL PLATE DEVICES
Emanuel Cohen, Prestwich, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Mar. 20, 1963, Ser. No. 266,743
Claims priority, application Great Britain, Mar. 28, 1962, 11,915/62
7 Claims. (Cl. 338—32)

1. The manufacture of a Hall plate device by providing a plate of semi-conductor Hall effect material on a sheet of mechanically protective insulating material with an area of the sheet left uncovered by the plate at one side of the latter, subsequently forming current input ohmic contacts on the plate by deposition of conductive material in electrical contact with the plate at opposite ends thereof, said material extending as respective strips from said opposite ends of the plate on to said uncovered area of the sheet, similarly depositing as a first output voltage ohmic contact for said plate further conductive material in electrical contact with the plate at an intermediate position along its said side and extending as a further strip on to said uncovered area of the sheet, applying over said further strip a film of insulating material extending across the plate with a small area thereof left exposed at its opposite side, and similarly depositing as a second voltage output ohmic contact for the plate of conductive material in electrical contact with said small area of the plate and extending as a strip over said film of insulating material and on to said uncovered area of the sheet, all said conductive strips being electrically isolated from each other and extending on to said uncovered area sufficient for external connection to be made to the strips at a position removed from the Hall plate.



6. A Hall plate device comprising a Hall plate of semiconductor Hall effect material on a sheet of mechanically protecting insulating material with an area of the sheet left uncovered by the plate at one side of the latter, current input ohmic contacts for the plate comprising two deposited strips of conductive material in electrical contact with and connected directly to the plate at opposite ends thereof, said strips extending continuously from the point of connection with the plate to said uncovered area of the sheet, a first output voltage ohmic contact constituted by a further strip of deposited conductive material in electrical contact with and connected directly to the plate at an intermediate position along its said side and extending continuously from the point of connection with the plate to said uncovered area of the sheet, a film of insulating material overlying said further strip and extending across the plate with a small area of the plate left exposed at its opposite side, and a second output voltage ohmic contact constituted by another strip of deposited conductive material in electrical contact with and connected directly to said small area of the plate superimposed above said further strip and extending continuously from the point of connection with the plate over said film and on to the uncovered area of the sheet, all said strips being electrically isolated from each other and extending on to said uncovered area sufficient for external connection to be made at positions removed from the Hall plate.

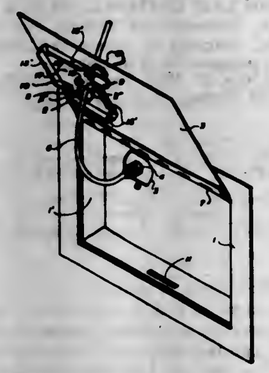
3,293,587
ELECTRICAL RESISTOR AND THE LIKE
Preston Robinson, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Continuation of abandoned application Ser. No. 262,626, Mar. 4, 1963. This application Oct. 26, 1965, Ser. No. 506,426
2 Claims. (Cl. 338—300)

1. A resistor having a cylindrical ceramic member carrying on the outside of its cylindrical surface a number of closely spaced turns of helical electrically conductive coating of metallic electrical resistance material in which the side edges of the turns are microscopically smooth and straight, the surface of the ceramic member being glazed in the spaces between turns and recessed below the ceramic surface on which the turns are coated,



the coating having end terminations between which the turns are connected.

3,293,588
ELECTRICAL OUTLET LOCKING COVER
Isaac S. Blender, West Orange, N.J., assignor to Blender-Tongue Electronics, Newark, N.J., a corporation of New Jersey
Filed Dec. 21, 1964, Ser. No. 419,963
2 Claims. (Cl. 339—37)



1. A locking cover for an electrical outlet and the like having a front plate apertured to receive an electrical connector for connection to such outlet together with adjacent cable therefor; a further plate pivotally secured against the rear surface of the front plate so as to enable orientation in different positions rearward of the front plate aperture; the further plate having a solid portion that in one of such different positions of orientation completely blocks the said aperture to prevent access to the outlet, a first apertured portion that in another of such different positions of orientation becomes alined with the said front plate aperture to permit insertion and withdrawal of a connector and cable, a second apertured portion contiguous with the first apertured portion and of cross-dimension less than that of the first apertured portion and that of the connector but greater than that of the cable that in still another position of orientation prevents withdrawal of the connector from the outlet; means for locking the further plate in each of its said positions of orientation, and a recess containing the outlet rearward of the locking cover, the said locking means comprising flange means extending from the further plate for engaging wall portions of the said recess.

3,293,589
ELECTRIC PLUG ADAPTER
George W. Oates, Crystal City, Mo. 63100
Filed June 12, 1964, Ser. No. 374,650
2 Claims. (Cl. 339—74)

1. An electric plug adapter comprising,

(a) a housing composed of complementary half sections,

(b) each of said half sections having abutting bearing edge portions along one end thereof and a beveled bearing portion along the other end portion of at least one half section to effect rocking of said half sections relative to each other,

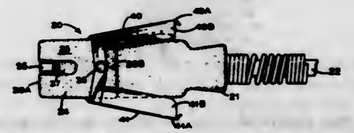
(c) each of said sections having complementary recesses formed therein to define spaced, longitudinally extending and expandable sockets, said sockets opening to either end of said housing,

(d) a pair of electrical contact members enclosed in said housing,

(e) each of said electrical contacts comprising facing sections and a longitudinal web joining said sections to form a female end portion disposed within said housing adjacent one end thereof and a male end portion projecting beyond the other end portion thereof,

(f) said web being resilient whereby said facing sections at each of said end portions may be forced out of its normal position to provide a snug fit with a complementary connector,

(g) co-operating means formed on said contacts and said respective recesses to prohibit relative movement therebetween,



(h) means for maintaining said half sections cooperatively associated with each other,

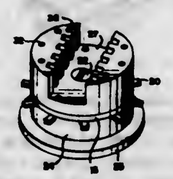
(i) said latter means including a pin means extending transversely of said half sections for maintaining said half sections in cooperable assembled relationship,

(j) a spring means for maintaining said half sections biased toward one another at one end thereof,

(k) and a pair of actuators pivoted about said pin means, each of said actuators being oppositely disposed on either side of said housing,

(l) each of said actuators having portions thereof in camming relationship with each of said half sections whereby movement of the actuators toward each other overcome the force of said spring means and cams said half sections to effect lateral rocking thereof to permit the flexing of the biased female end portions of said contacts.

3,293,590
MICROCIRCUIT SOCKET
Alfred F. Weeksy, Jr., 120 165th Ave. NE., Bellevue, Wash. 98100
Filed June 18, 1964, Ser. No. 376,033
2 Claims. (Cl. 339—192)



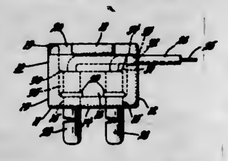
1. A socket for a microcircuit package of the type having a body with two parallel sides from which two rows of leads project laterally in opposite directions, said socket comprising a non-conductive socket member having a base and having a pocket thereabove with two parallel sides interrupted by respective series of lateral pocket extensions open to the top of the socket, said pocket being adapted to receive said package with the leads thereof

occupying said extensions, a circuit board mounted on the base of said socket member and having circuit board leads and respective terminals connected to said circuit board leads, openings in said socket member from said pocket extensions through the base of the socket and registering with respective of said terminals, and compressible spring conductor means extending through said openings from operative engagement with said terminals into said pocket extensions so as to be compressed by said leads of the microcircuit package.

3,293,591
SUB-MINIATURE ELECTRICAL PLUG

Clarence A. Mayer, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 22, 1964, Ser. No. 376,869
5 Claims. (Cl. 339—107)

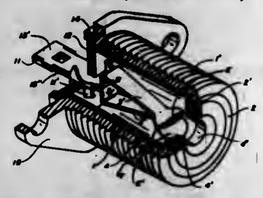


1. An electrical plug structure having prong means readily insertable and replaceable, comprising, a box-shaped main body portion entirely of moldable insulating material integral with opposite sidewalls each internally undercut for a tab lock grooving in locations parallel to external flanging extending laterally outwardly for removal of plug structure from mating socket installation, a lid portion having opposite outward locking tab projections mating with said grooving, a reduced thickness hinge portion integral between said lid portion and said box-shaped main body portion, and a pressure foot means carried integrally along one side of said lid portion for wire engagement and lateral displacement thereof to insure against short circuit between adjacent prong means and to permit wire strain relief laterally thereof.

3,293,592
ELECTRICAL COAXIAL CONNECTOR

Isaac S. Blonder, West Orange, N.J., assignor to Blonder-Tongue Electronics, Newark, N.J., a corporation of New Jersey

Filed May 18, 1965, Ser. No. 456,614
7 Claims. (Cl. 339—177)



1. An electrical coaxial connector having, in combination, an outer conductive cylinder having forward and rearward ends, the former of which is provided with an inwardly extending annular flange; a thin-walled insulating cylindrical sleeve of length substantially equal to that of the outer cylinder and of outer diameter just less than the inner diameter of the outer cylinder, open at its rearward end and provided at its forward end with an apertured washer of outer diameter just less than the diameter of the annulus of the said annular flange, such that the insulating sleeve fits within the outer cylinder with their respective rearward ends juxtaposed and with the forward end of the insulating sleeve limited by the said annular flange and with its apertured washer disposed within the said annulus of the flange; an inner conductive member comprising a pair of resilient L-shaped elements disposed facing each other with their shorter arms touching substantially in-line to form the base of a substantially isosceles triangle, the sides of which are formed by the longer arms inclining toward each other and resiliently touching at their free ends, the elements having rearward juxtaposed conductive extensions; and a thin insulating plate covering the rearward end of the outer conductive cylinder and provided with slot means for receiving the said juxtaposed extensions of the inner member and rigidly mounting the same, the L-shaped elements extending within the outer cylinder and sleeve with their said touching free ends terminating near the aperture of the said washer, substantially on the longitudinal axis of the outer cylinder.

3,293,593
MODULAR TERMINAL BLOCK

Erik J. Nielsen, Mequon, and Thomas Farris, Jr., Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Nov. 29, 1963, Ser. No. 326,678
10 Claims. (Cl. 339—198)



6. In a terminal strip, a plurality of terminal blocks of one type arranged in end to end abutting relation in a row and each carrying a terminal connector and having a projection on one face and a cavity opening through an opposite face, the cavity of each block being arranged to accommodate the projection of an adjacent block when the blocks are assembled in said row facing in the same direction, a single reversing block having a pair of oppositely facing projections each substantially identical with the projections on the terminal blocks so that each projection of the reversing block can be accommodated in said cavities, selectively, and thereby the reversing block may be selectively positioned at an end of the row and intermediate the ends of the row in a terminal strip when one reversing block and a plurality of terminal blocks are assembled to provide a terminal strip, and each projection having an opening therein for accommodating the shank of a threaded fastener and having a shoulder adjacent to the opening for engagement by the head of the fastener so that any selected ones of the blocks can be connected directly to a supporting channel member by a threaded fastener, said terminal blocks and the reversing block each having means for positioning it on the channel supporting member and clamping means, including a separate clamping member at at least one end of the row of blocks, for clamping engagement with the channel member for maintaining the blocks in longitudinally assembled relation on said channel member.

3,293,594
RADIATING ENERGY DETECTION SYSTEM

Howard M. Greene, Jr., 13812 Plummer St., Northridge, Calif. 90731

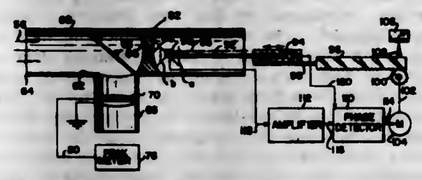
Filed Jan. 10, 1964, Ser. No. 337,009
5 Claims. (Cl. 340—1)

2. A ranging system for manifesting distance to a remote sound source, comprising:

focusing means for concentrating a segmental wavefront of sound radiated from said sound source to a focal point on a focal axis;

a transducer for converting sonic radiation into an electrical energy signal;

vibrating means for effectively vibrating said transducer through a pattern along said focal axis;



means for motivating said transducer along said focal axis whereby to position said transducer at said focal point at which sound from said source is concentrated; and

means for manifesting the position of said transducer to indicate distance.

3,293,595
TELEMETERING SYSTEM

Katsumi Takami, Kitatama-gun, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Dec. 6, 1963, Ser. No. 328,701
Claims priority, application Japan, Dec. 29, 1962, 37/59,761
3 Claims. (Cl. 340—2)



1. A telemetering system comprising means for emitting compressional wave energy and varying the frequency of said wave; vibrator means as sole power source for receiving said compressional wave and transducing said compressional wave energy into electrical energy; a resonance circuit, the resonance frequency of which varies in response to variation in a value to be measured, for converting the electric energy supplied from said vibrator means into an electromagnetic wave whose frequency varies in response to the variation of said resonance frequency and emitting said electromagnetic wave; and means for receiving said electromagnetic wave and detecting said resonance frequency.

3,293,596
REFRACTION AND REFLECTION SEISMOGRAPH EQUIPMENT AND METHOD OF USE

Norman Reed Paterson, Toronto, Ontario, and Carl Walter Faessler, Scarborough, Ontario, Canada, assignors, by mesne assignments, to Hunteo Limited, Toronto, Ontario, Canada

Substituted for abandoned application Ser. No. 819,078, June 9, 1959. This application Sept. 17, 1963, Ser. No. 318,137
9 Claims. (Cl. 340—15.5)

1. The method of seismic exploration, employing a chart and a recording marker, in which a seismic energy pulse is initiated at a given point and received at a selected distance therefrom, the steps being repeated at varying distances and the pulses recorded on said chart in the form of a two-dimensional, time and distance plot comprising the steps of: holding said chart stationary; holding said marker stationary at a position at one side of said chart; initiating a seismic pulse at a given point; initiating motion of said marker at constant velocity from said one side of said chart to the other in response to initiation of said pulse, said motion being along a first traverse line parallel to the time axis of said chart and spaced therefrom by a distance proportional to said distance between said pulse initiation point and the receipt thereof; causing said marker to mark said chart in response to receipt of a pulse during motion of said marker as aforesaid; returning said marker to its stationary position at said one side of said chart; moving said chart along its distance

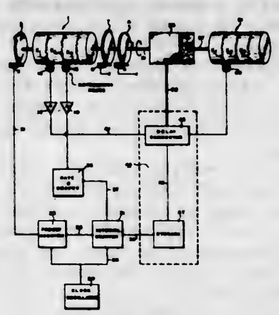


axis an amount proportionate to a change in said selected distance, holding said chart stationary again and repeating motion of said marker along a second traverse line and causing the same to mark said chart as aforesaid; the foregoing steps being repeated at least once for every distance between said pulse initiation point and the receipt thereof.

3,293,597
APPARATUS FOR CORRECTING REPRODUCIBLE SEISMOGRAMS

Tobias Flatow and Armistead M. Moore, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Feb. 17, 1964, Ser. No. 345,209
5 Claims. (Cl. 340—15.5)



1. Apparatus for removing from the traces of a reproducible seismogram variations of coherent events on the time axis thereof produced by lack of isotropy and lack of homogeneity in the earth, comprising:

first and second signal channels;

reproducing means for reproducing each trace of said seismogram in succession in said first and second channels;

first means in said first signal channel for detecting a given event in the electrical signal therein;

second means connected to said first means and to said reproducing means for measuring time variations from reproduction of events at a given time on the time axis of said seismogram to detection of said given event by said first means;

means in said second signal channel connected to said second means for time delaying the signal in said second signal channel inversely in accordance with said time variations; and

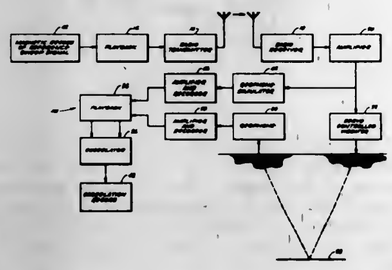
means for recording the time delayed signal from said last-named means.

3,293,598

METHOD AND APPARATUS FOR MINIMIZING EFFECTS OF PHASE DISTORTION IN SEISMIC PROSPECTING

Graydon L. Brown, Jimmy R. Cole, Delbert W. Fair, and Douglas S. Sullivan, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Oklahoma

Filed Mar. 4, 1964, Ser. No. 349,336
3 Claims. (Cl. 340—15.5)



1. A method for seismic prospecting comprising:

(a) recording a seismic signal on a recording medium that is to be transmitted into the ground;

(b) operating a transducer in contact with the ground in accordance with the recorded seismic signal;

(c) maintaining the output phase of said transducer signal in synchronism with the phase of said recorded seismic signal;

(d) receiving said seismic signal transmitted into the ground by a seismic signal receiving means in contact with the ground at a location spaced from said transducer;

(e) simultaneously applying said recorded seismic signal to a phase distortion network having a phase response versus frequency characteristic substantially identical to that of said seismic signal receiving means;

(f) recording said phase distorted seismic signal along with the signal received by said seismic signal receiving means, on a recording medium in side by side relation and in time synchronism with each other;

(g) correlating said recorded and distorted seismic signal with said signal received by said seismic signal receiver means;

(h) recording said correlated signal.

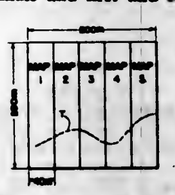
3,293,599

MAP DISPLAY APPARATUS

Joe N. Nay, Allston, and Leon G. Wilde, Andover, Mass., assignors to Laboratory For Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed July 1, 1964, Ser. No. 379,634
2 Claims. (Cl. 340—24)

1. A map display apparatus for providing a continuous indication of the instantaneous position of a moving vehicle comprising a plurality of contiguous map segments arranged in sequence end to end to form a continuous strip map sequentially displaying adjacent areas of an overall map, each map segment including a predetermined portion of the contiguous map segment; indicating means overlying said strip map to provide an indication of the position of the moving vehicle on the strip map; means for moving said strip map in accordance with the motion of said moving vehicle in a first direction; means for moving said indicating means in accordance with the motion of said moving vehicle in a direction orthogonal to said first direction; switching means adapted to be actuated as indicating means approaches a lateral edge of said continuous strip map; electronic digital processing means responsive to the actuation of said switching means to cause the contiguous map segment to be substituted for the existing map segment and to cause said indicating means to move with respect to the substituted map segment to a location corresponding to the instantaneous geographical position of said moving vehicle; said electronic digital processing means including generating means to produce a continuous train of clock pulses; gating means having first and second input terminals and first and second output ter-



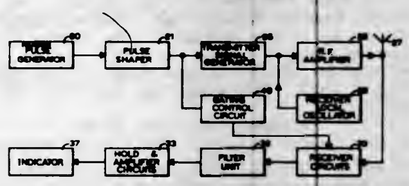
minals; coupling means responsive to the actuation of said switching means to couple said clock pulse train to said first and second input terminals of said gating means; a first counter having an input line connected to said first output terminal of said gating means and an output line connected to said means for moving the strip map; a second counter having an input line connected to said second output terminal of said gating means and an output line connected to said means for moving the indicating means; said gating means responsive to the actuation of said switching means to pass said clock pulse train to said first and second counters; said first and second counters being responsive to said clock pulse train to provide an output pulse train to said map moving means and said indicating moving means, respectively; and, sensing means coupled to the output of said generating means for providing an output signal to said coupling means to disable the latter means after the occurrence of a predetermined number of clock pulses.

3,293,600

PROXIMITY INDICATING SYSTEM

Thomas H. Gift, Redondo Beach, Calif. (1141 Fountain Way, Anaheim, Calif. 92805)

Filed Mar. 23, 1964, Ser. No. 354,972
12 Claims. (Cl. 340—33)



1. In a proximity indicating system for producing a warning signal on each one of a plurality of vehicles when said vehicles come within radio signal range of each other, a plurality of vehicles and a proximity unit on each one of said vehicles, each of said units comprising

means for generating uniform long duration pulses of radio frequency energy at a predetermined frequency and at a random pulse rate,

antenna means for radiating said radio frequency energy,

receiving means for producing output signal pulses in response to the pulses transmitted by the units of others of said vehicles, said receiving means being connected to said antenna means,

control means coupled to said radio frequency generating means, said control means disabling said receiving means during the occurrence of a pulse from said radio frequency generating means, and

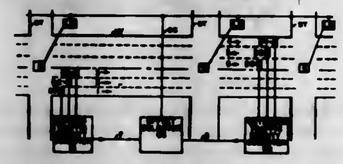
means responsive to the output of said receiving means for generating a warning signal when signals are received by said receiving means from units on other vehicles, said warning signal generating means including detector means responsive to the output of said receiving means, said detector means having an output for signals above a predetermined amplitude and pulse length discriminating means connected to the output of said detector means, said pulse length discriminating means responding only to pulses having a predetermined (long) duration.

3,293,601

TRAFFIC CYCLE OFFSET SELECTORS

George Donald Hendricks, Campbells Island, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Continuation of abandoned application Ser. No. 768,193, Oct. 20, 1958. This application Mar. 12, 1965, Ser. No. 444,896
13 Claims. (Cl. 340—35)



1. In a traffic control system for use along a thoroughfare having inbound and outbound lanes and traffic actuable detector means for detecting traffic in each said lane, comprising traffic density computing means for developing output signals representative of the magnitude of traffic density in each said lane, balance detector means for determining the output signals of greater and lesser magnitude and developing a pair of first switching signals in accordance therewith, a plurality of ratio detector means each for determining the ratio of the magnitudes of said output signals and developing a second switching signal when said ratio is greater than a predetermined ratio, first switching means connecting said computing means to said ratio detector means and responsive to said first switching signals above a predetermined value to actuate at least one of said ratio detector means, a plurality of preferential offset control circuits, and second switching means connected to each said ratio detector means and to one of said preferential offset control circuits and responsive to said second switching signal to connect said one preferential offset control circuit with a voltage source for energizing same.

3,293,602

LIGHTED BARRICADE

Andrew J. Vivinio, 225 Cochran Way, New Castle, Pa. 16602

Filed July 22, 1964, Ser. No. 384,404
1 Claim. (Cl. 340—81)

A lighted barricade comprising an elongated horizontally disposed body member of substantially inverted V-shape in cross section having a flattened top portion between angularly disposed wall portions, end frame members secured to the lower outermost corners of the inverted V-shaped body member and clamping means on said end frame members, legs pivoted to said angularly disposed wall portions of said inverted V-shaped body member adjacent the ends thereof and arranged to be engaged by said clamping means on said end frame members so as to secure the same thereto, means in said inverted V-shaped body member for detachably securing a flashing light assembly, said means being positioned adjacent oppositely disposed relatively large openings in said angular wall portions of said inverted V-shaped body



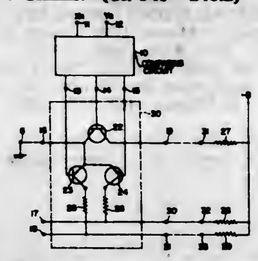
member so that said flashing light assembly may be positioned with the light emitting portion thereof in spaced alignment with said openings, said clamping means on the end frame members comprising eye bolts, each of which threadably engages a threaded opening in each of said end frame members and a bar having a threaded opening therein engaged on said eye bolt and wherein inwardly extending short arms are formed on said end frame members inwardly from the ends thereof and arranged to engage said bar.

3,293,603

COMPARING AND SELECTING CIRCUIT FOR DIGITAL NUMBERS

Setsuro Kinbara, Tokai-mura, Naka-gun, Ibaraki-ken, Japan, assignor to Nihon Genshiryoku Kenkyu Sho, Tokyo, Japan

Filed Mar. 12, 1963, Ser. No. 264,490
Claims priority, application Japan, Mar. 27, 1962, 37/11,255
3 Claims. (Cl. 340—146.2)



1. A comparing and selecting circuit for digital numbers comprising three transistors provided per figure of a base number and a number to be compared with the base number, three control signals generated in accordance with the magnitude of the two numbers in the same figure and means for conducting only one of said three transistors through the combination of said three control signals to provide a comparison output.

3,293,604

CHARACTER RECOGNITION SYSTEM UTILIZING ASYNCHRONOUS ZONING OF CHARACTERS

Seymour Klein, Philadelphia, Pa., and John P. Boltz, Levittown, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 25, 1963, Ser. No. 253,911
19 Claims. (Cl. 340—146.3)

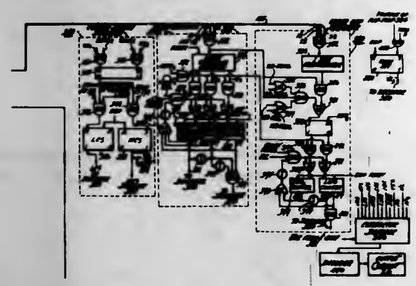
12. In an optical character reading system for reading characters from a document, said characters being formed of one or more distinctive features, one of said features

comprising vertical strokes, said system including means for scanning successive ones of said characters to derive signals representing the features of said characters, the combination comprising

a stroke detector coupled to said scanning means to detect the occurrence of said vertical strokes in said characters,

a plurality of storage devices for storing vertical stroke feature signals and other feature signals,

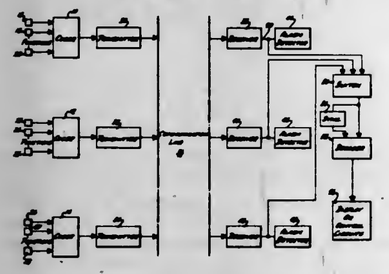
storage control switch means coupled to said scanning means for directing said feature signals into one storage device at a time,



classification means coupled to said stroke detector for classifying each character into one of a plurality of categories based on the detection of said vertical strokes, and

zoning means coupled to said classification means for asynchronously actuating said storage control switch means based on said classification to switch feature signals away from one storage device and into the next successive storage device so as to effectively divide said character into a plurality of zones.

3,293,605
DIGITAL MONITORING SYSTEM
Lawrence Moore, 1280 Lincoln Ave., Palo Alto, Calif. 94301
Continuation of application Ser. No. 138,114, Sept. 14, 1961. This application Jan. 20, 1966, Ser. No. 532,491
12 Claims. (Cl. 340—150)



1. An encoding station for providing a pulse train having sequentially and cyclically encoded thereon a plurality of condition responsive functions each of which has a first and a second condition, and each of which is associated with a different period within one cycle of said pulse train, said encoding station comprising:

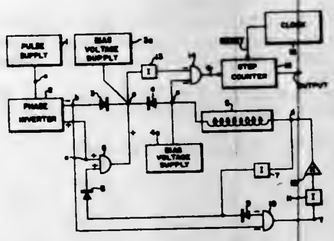
a source of periodic pulses for providing a timing cycle consisting of one function pulse associated with each function;

modulation means responsive to said periodic pulses and the condition of said functions and operative to sequentially modulate each of said function pulses in accordance with the condition of the associated function and to provide a cycle signal after completing a sequence of modulation;

means responsive to said cycle signal and operative to disable said source of periodic pulses for a first time interval to provide a cycle pulse indicative of the end of a cycle; and

means responsive to the condition of said functions and operative to disable said source of periodic pulses for a second time interval when a function changes its condition to provide a change of condition pulse indicative of a change of condition of a function.

3,293,606
PULSE CODE DETECTOR HAVING A DELAY LINE FOR DETECTING PULSE SPACING
Marvin Ackerman, Sunnyvale, and David R. Domke, Jr., Cupertino, Calif., assignors to Admiral Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 11, 1963, Ser. No. 272,363
9 Claims. (Cl. 340—167)



1. Apparatus for detecting signals having between three and four equally spaced signal pulses wherein the spacing between said pulses is approximately equal to the time required for a pulse to travel the length of a single delay line, said apparatus requiring as pulse-delaying means only said single delay line, which comprises:

(a) a delay line of length approximately equal to the pulse spacing;

(b) means for passing a first pulse into one end of said delay line time-coincident with one of said signal pulses;

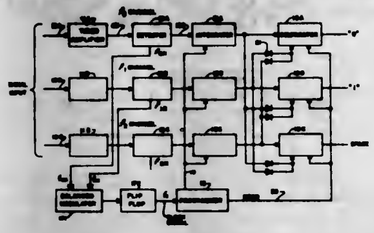
(c) means for passing a second pulse into the opposite end of said delay line time-coincident with a different one of said signal pulses;

(d) means for detecting the time coincidence of said first pulse emerging from said opposite end of said delay line with the signal pulse next following said one pulse; and

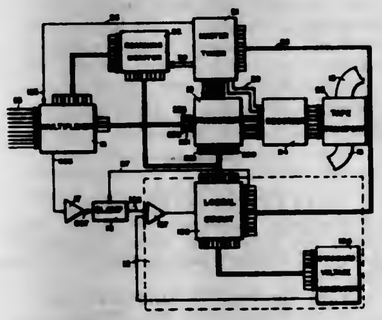
(e) means for detecting the time coincidence of said second pulse emerging from said one end of said delay line with the signal pulse next following said different pulse, thereby detecting the presence of all of said signal pulses.

3,293,607
COHERENT DECISION MAKING RECEIVER SYSTEM
David C. Kalbfell, 941 Rosecrans, San Diego, Calif. 92106
Filed Oct. 20, 1961, Ser. No. 147,422
6 Claims. (Cl. 340—171)

1. A decision making receiver of frequency shift keyed input signals having coherently related signal and keying frequencies comprising, in combination, a plurality of signal channels individual to said signal inputs, each said channel having a detector for producing a reference oscillatory signal whose frequency is servoed to the frequency of its input signal and utilizing its reference signal to demodulate its input signal thereby to provide a demodulated output signal, means for beating a predetermined pair of the channel reference signals to provide a beat signal therefrom whose frequency is the difference between those of said pair of reference signals, means for converting said beat signal to a clock signal whose frequency duplicates the original transmitter keying frequency, and means timed by the clock signal for comparing the demodulated signal outputs to determine which of the signal inputs is greatest during each clock interval.



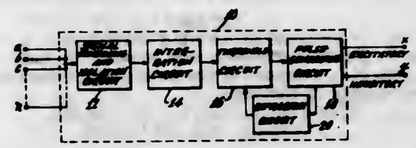
3,293,608
HIGH SPEED DATA CONVERSION AND HANDLING
Martin L. Klein and Harry C. Morgan, Woodland Hills, and Richard B. Rush, Granada Hills, Calif., assignors to North American Aviation, Inc.
Filed Apr. 17, 1957, Ser. No. 653,485
21 Claims. (Cl. 340—172.5)



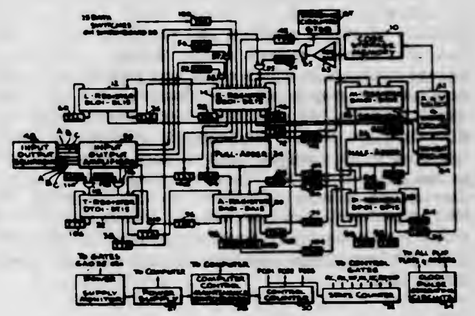
6. Apparatus for preparing analog data from a plurality of sources for digital computation comprising means for sequentially producing fixed voltages momentarily retaining the instantaneous value of successively different analog data at successive instants, means for converting each such voltage into a digital code signal while such voltage is momentarily retained, transcribing the code signals, converting the signals into magnetic impulses and means for subjecting a magnetic tape to such impulses to record the signal.

3,293,609
INFORMATION PROCESSING APPARATUS
Thomas B. Martin, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 28, 1961, Ser. No. 134,475
21 Claims. (Cl. 340—172.5)

1. A neural logic network which operates upon a pair of input signals to satisfy the logical AND function, which network comprises three neuron circuits, each responsive to input signals and each providing output signals when said input signals exceed a given threshold, means for applying one of said pair of input signals to said three neuron circuits for exciting a first of said neuron circuits, inhibiting a second of said neuron circuits, and also exciting a third of said neuron circuits, means for applying the other of said pair of input signals to said three neuron circuits for exciting said second neuron circuit, inhibiting said first neuron circuit, and also exciting said third neuron circuit, and means for inhibiting said third neuron circuit with said output signals from said first and said second neuron circuits.



3,293,610
INTERRUPT LOGIC SYSTEM FOR COMPUTERS
Harry A. Epperson and Samuel Goldstein, Los Angeles, and James P. Nickles, Woodland Hills, Calif., and Robert H. Statz, Boston, Mass., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Jan. 3, 1963, Ser. No. 249,211
6 Claims. (Cl. 340—172.5)



1. In a system wherein peripheral data storage equipment is employed with a computer having a memory and which computer operates in response to command signals, said equipment providing an equipment available signal when it is ready to provide data to be stored in said computer memory, the improvement in an interrupt operation comprising:

means responsive to said equipment available signal for generating an interrupt signal,

means for inhibiting read-out operation of the computer memory responsive to said interrupt signal,

means for applying said interrupt signal to said means for inhibiting,

means responsive to the inhibition of said memory read-out operation for generating an interrupt command,

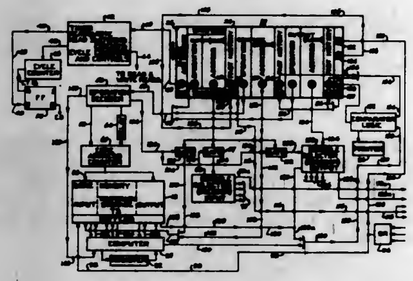
data means responsive to said interrupt command and to the equipment available signal for generating a memory address signal,

register means, means for entering said memory address signal into said register means,

means in said computer responsive to said interrupt command and said memory address signal in said register means for storing in said computer memory at the designated address data in said computer required to be used at the termination of said interrupt operation, and

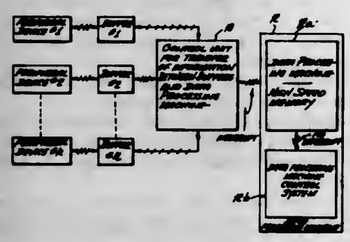
means responsive to said address signal in said register means for providing a signal indicative of the availability of said computer to accept data from said peripheral equipment.

3,293,611
SWITCH SCANNING SYSTEM
Jerry S. Goldfeld, Paterson, and Matthew J. Rolls, Fair Lawn, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Feb. 26, 1963, Ser. No. 261,051
13 Claims. (Cl. 340—172.5)



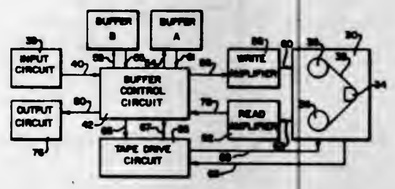
1. Switch position scanning apparatus comprising means for scanning in each of repeated cycles, in sequence a plurality of switch positions and producing switch position data signals; storage means having a plurality of storage positions in which are stored past history switch position data; means normally blocking entry of current switch position data into said storage means; switch motion detection means producing in response to switch motion a signal signifying such motion; means responsive to the latter signal for entering current switch position data during a cycle subsequent to that in which said latter signal had been initiated; and means responsive to switch motion signifying signal during a current data entry cycle for immediately blocking further entry of current history data.

3,293,612
DATA PROCESSING
Andrew T. Ling, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 28, 1963, Ser. No. 268,736
7 Claims. (Cl. 340—172.5)



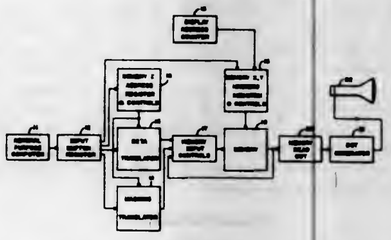
7. In a data processing system, a plurality of buffers, each for storing data bits; memory means for storing, in given locations thereof, instruction bits indicative of operations to be performed on data bits transferred between the respective buffers and the memory means; and a control unit responsive to a ready condition of a buffer, for performing the operations called for by the instruction bits for that buffer which are stored in the memory means, and for transferring the data bits on which the operations are performed between said memory means and the ready buffer.

3,293,613
INFORMATION RECORDING SYSTEM
Andrew Gabor, Port Washington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Apr. 5, 1963, Ser. No. 270,884
9 Claims. (Cl. 340—172.5)



1. An information processing system comprising:
a tape handler apparatus including an information transfer station,
means for storing information,
an information signal input terminal,
means for coupling information from said input terminal at the rate it is received into said storage means,
means responsive to a predetermined state of said storage means to couple information stored in said storage means to said information transfer station at a rate higher than said received rate, and
means for advancing a tape a predetermined distance relative to said station both during intervals when information is coupled to said information transfer station and during intervals when no information is coupled to said transfer station, whereby information is recorded on the tape with a predetermined format irrespective of the rate at which information is received at said input terminal.

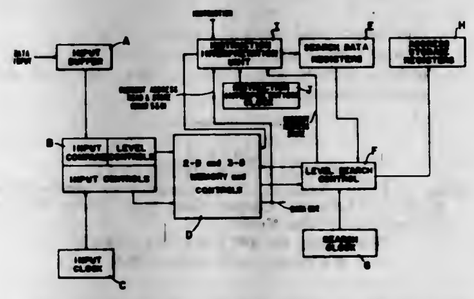
3,293,614
DATA CONVERTER SYSTEM
Gerald E. Fenimore, Mooresville, William R. McConnell, Plainfield, and Leland M. Nave, Indianapolis, Ind., assignors to Hazeltine Research, Inc., a corporation of Illinois
Filed Apr. 29, 1963, Ser. No. 276,295
16 Claims. (Cl. 340—172.5)



1. A data converter system in which information signals representative of discrete symbols and their corresponding locations within a display area are converted to a second signal for reproduction in a line scan type display wherein the entire display area comprises a plurality of illuminable dot elements, said system comprising:
means for accepting said information signals;
means for converting that part of said information signals representative of the symbols into said second signal in which each of the symbols are represented by a plurality of information bits corresponding to unique dot elements in the line scan display;

storage means having a separate storage element for each dot element in the entire display area; means for placing each information bit in the storage element that corresponds to the dot element at which it is to be displayed in accordance with that part of said information signals representative of the symbols' location;
and means for reading from said storage means said information bits at a rate corresponding to the rate at which they are to be presented on said line scan display.

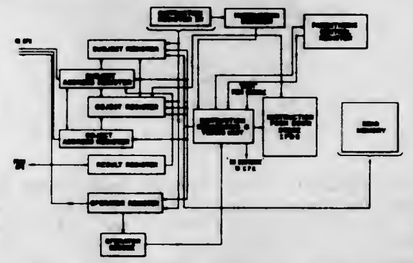
3,293,615
CURRENT ADDRESSING SYSTEM
Alvin P. Mallery, Chappaqua, and Ralph F. Schauer, Hawthorne, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 3, 1963, Ser. No. 285,443
17 Claims. (Cl. 340—172.5)



1. In a computer data storage system including a high speed randomly addressable word organized memory wherein a given data string comprising a plurality of variable field length machine words organized into a plurality of hierarchical level may be addressed at its beginning point by providing the memory organization with a beginning address, said beginning address further giving access to a special memory storage location having sufficient storage space for storing at least one complete X–Y memory address which constitutes a current address, the improvement which comprises a search instruction interpretation system including:
means for selectively accessing this special storage location upon command;
means for automatically reading out said "current" address stored therein said current address comprising the address of the last portion of data in said data string accessed;
means for automatically using this address as the starting point for a new search in said data string, and means for automatically storing the address of a new portion of data accessed in the data string in said special storage location.

3,293,616
COMPUTER INSTRUCTION SEQUENCING AND CONTROL SYSTEM
Alvin P. Mallery, Chappaqua, and Ralph F. Schauer, Hawthorne, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 3, 1963, Ser. No. 292,606
10 Claims. (Cl. 340—172.5)

1. An automatic instruction sequencing system for use with a digital computer including a main memory and associated controls and a central arithmetic processing unit, said system comprising
means for interpreting and ordering an instruction sequence which comprises a first register for storing the address of a first operand,
a second register for storing the address of a second operand
a third register for storing a current operator associated with said two operands,
means for comparing the next operator with the current operator and for determining the relative priority of said operators,
means operative in response to the priority determination to selectively perform the operation specified by said current operator; move the contents of both the first operand register and the operator register respectively into a single push-down store and move the contents of the second operand register into the first operand register and place said next operator in the said operator register,

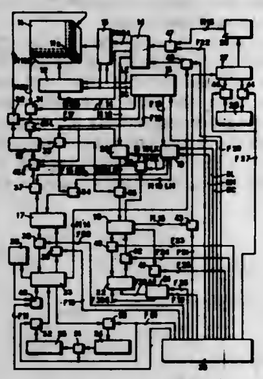


means for again comparing the next occurring operator with the operation currently stored in the operator register, and if of lower or equal precedence performing the current operation and subsequent to the performance determining whether the next subsequent operator is of equal or lower precedence than the stored operator and if so, reading the operator and associated operand backout of the push-down store and performing the required operation,
further means for detecting a grouped instruction in an instruction sequence and
means for performing an entire grouped instruction before any previously stored or subsequent operation may be performed.

3,293,617
WIRED SYMBOLIC ADDRESSING SYSTEM
Gérard Marie Georges Cotiet, Paris, France, assignor to Compagnie des Machines Bull (Société Anonyme), Paris, France
Filed July 24, 1963, Ser. No. 297,345
Claims priority, application France, July 24, 1962, 904,871
5 Claims. (Cl. 340—172.5)

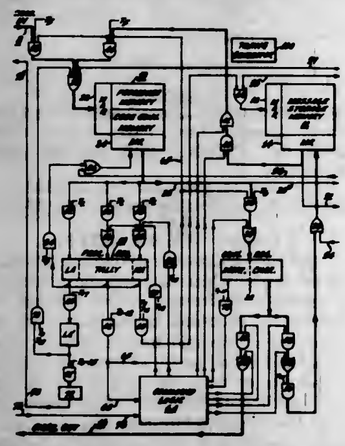
1. Wired symbolic addressing system for selecting quantities to be processed which are contained in a store, by means of symbolic addresses, called indexes, forming part of instructions recorded in the said store, the said indexes occupying in the said store a reduced number of locations, the said store being adapted to contain three different categories of data, the data of the first category consisting of instructions, the data of the second category consisting of developed addresses, and the data of the third category consisting of the quantities to be processed, the said system comprising first selecting means co-operating with the aforesaid store to select instructions from the said store, an intermediate register designed as a store output in order to receive at least a part of an instruction extracted from the said store, second selecting means co-operating with the said intermediate register to select an index from the aforesaid part of an instruction con-

tained in the said intermediate register, an index register associated with the aforesaid second selecting means in order to receive the said selected index, first transmission means connected to the said index register and to the said first selecting means for transmitting the index contained in the said register to the aforesaid first selecting means in order to select a developed address from the aforesaid store, an address register, second transmission



means connected to the aforesaid intermediate register and to the aforesaid address register in order to transmit the aforesaid developed address to the said address register, third transmission means connected to the said address register and to the aforesaid first selecting means in order to transmit this developed address to the aforesaid first selecting means so as to choose from the aforesaid store a quantity to be processed.

3,293,618
COMMUNICATIONS ACCUMULATION AND DISTRIBUTION
Ronald S. Klein, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 4, 1963, Ser. No. 313,808
8 Claims. (Cl. 340—172.5)



1. An accumulation unit for transferring data characters from a plurality of input lines to a corresponding plurality of message storage zones in a message storage memory, comprising

a procedure memory having addresses (identifying respective input lines) for corresponding procedure word storage locations,

means to cyclically address all of said procedure word locations,

a code conversion memory having addresses (identifying characters in at least one character code) for corresponding conversion word storage locations containing equivalent characters in another code,

a procedure register and a conversion register connected to receive information read in sequence from said procedure and conversion memories, respectively,

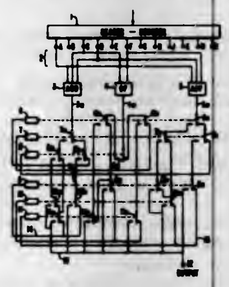
means using the contents of said procedure register to address an input line and a word location in said message storage memory,

a first decoder means responsive to the contents of said procedure register to condition a character signal path from the input lines to the address input of said conversion memory, and to condition a character signal path from said conversion memory to said conversion register,

a second decoder means to decode the contents of the conversion register and condition a character signal path from the conversion register to the addressed location in said message storage memory, and

means to modify and update the contents of said procedure register and write it back into said procedure memory.

3,293,619
INFORMATION RETRIEVAL
Hans P. Luhn, Armonk, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1963, Ser. No. 333,076
5 Claims. (Cl. 340—172.5)



1. Apparatus for ascertaining the presence or absence, in a record comprising at least n terms, each containing a plurality of elements, of a set of n terms containing, in one-for-one correspondence, a particular set of n partial terms, where n is an integer greater than 2, and at least one partial term contains a plurality of elements, comprising:

(a) matching register means for comparing each term of the record simultaneously with all of said set of partial terms and for producing a term identification signal whenever a match for a partial term is found within a term of the record;

(b) storage register means responsive to the term identification signals of said matching register means and effective to store all identifications which may contribute, in any permutation, to a set of n term identifications corresponding to said set of n partial terms; and

(c) network means controlled by said storage register means and effective when said set of n term identifications is complete to produce a compliance indicating signal.

3,293,620
THIN FILM MAGNETIC MEMORY HAVING NONDESTRUCTIVE READOUT
Andre M. Renard, Costa Mesa, Calif., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 3, 1961, Ser. No. 150,029
11 Claims. (Cl. 340—174)



1. In a memory element, the combination of:

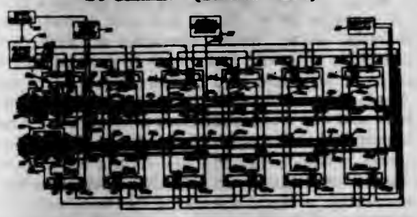
a thin film of magnetic material having an easy axis of magnetization and two possible oppositely-oriented states of magnetization along said easy axis;

means for generating a transverse magnetic field in said film oriented substantially orthogonally to said easy axis, said transverse magnetic field having a magnitude which in combination with either of said states of magnetization produces a resultant field in said film having an orientation intermediate said easy axis and the axis of said transverse magnetic field;

means for generating simultaneously with said transverse field a magnetic field in said film oriented obliquely to said easy axis, said field having a magnitude which in combination with one of said states of magnetization produces rotation of the magnetic field in said film in a central portion thereof only so as to provide a first domain of one orientation in said portion while leaving the remaining domains of said film unaffected, whereby said remaining domains will grow upon termination of said field to eliminate said first domain; and

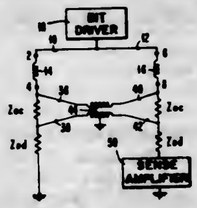
means for generating a voltage which varies as a function of magnetic field change in said film.

3,293,621
MAGNETIC CORE BINARY COUNTER
Edmundo E. Newhall, Brookside, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 30, 1962, Ser. No. 241,261
14 Claims. (Cl. 340—174)



1. In combination in a multistage counter circuit, first through sixth inclusive ferromagnetic, multiapertured cores, each of said cores including a cross leg, a shunt leg, and a driving leg which completes a closed magnetic path through said cross leg, said shunt leg being connected in parallel with said driving leg, said cross legs included in said second through sixth cores including a plurality of apertures located on the long axes thereof, said cross leg included in said first core including a plurality of magnetic circuits each comprising four shunt-connected, ferromagnetic members, each of said counter stages comprising one of said magnetic circuits included in said first magnetic core and a first and second delaying network, each of said delaying networks comprising an aperture included in each of said second through sixth cores and a plurality of shortcircuited coupling windings, including an input and an output winding, each linked to a plurality of said core apertures, said input and output windings included in said first delaying network and said input winding included in said second delaying network being coupled to each magnetic member of said magnetic circuit, said output winding included in said second delaying network being connected to each magnetic member included in the magnetic circuit of the next succeeding counter stage.

3,293,622
TERMINATION FOR COMBINED BIT AND SENSE WINDINGS
Wilbur D. Pricer, Wappingers Falls, and Norbert G. Vogl, Jr., Albany, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,584
15 Claims. (Cl. 340—174)

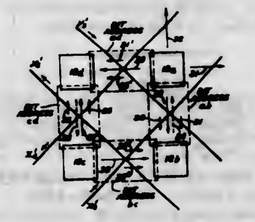


1. In combination with two parallel lines which may be energized in common- or difference-mode to produce either common-mode signals or difference-mode signals on said lines, a terminal circuit comprising:

means for terminating the parallel lines for at least one of said mode of signals;

dual purpose means connected to said parallel lines and responsive to energization in each of said modes for establishing between said parallel lines and said terminating means, a connecting circuit in response to energization by one of said mode of signals and an open circuit in response to energization by the other of said mode of signals.

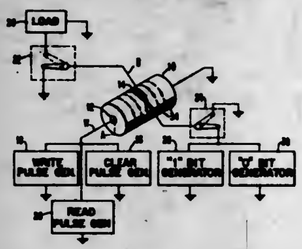
3,293,623
MAGNETIC MEMORY MATRIX ASSEMBLY
Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 6, 1963, Ser. No. 285,993
6 Claims. (Cl. 340—174)



1. A magnetic memory circuit comprising a first magnetic plate having a plurality of posts protruding therefrom, said posts being arranged in an array of rows and columns, a second magnetic plate having substantially rectangular hysteresis characteristics for completing flux

paths between each post and its adjacent posts, and a plurality of first and second drive conductors positioned along first and second diagonals of said array such that said drive conductors intersect uniquely between each post and each of the adjacent posts in said rows and columns.

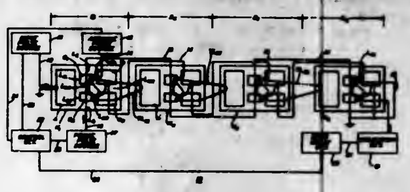
3,293,624
NON-DESTRUCTIVE READOUT MAGNETIC MEMORY
Robert F. Elliott, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 19, 1963, Ser. No. 302,814
10 Claims. (Cl. 340—174)



1. A magnetic information storage system comprising:
(a) a magnetic member made of material exhibiting different stable states of flux remanence,
(b) first means operative to pass a first current in a given direction through said member for applying a first field thereto placing said member in a first state of flux orientation and distribution to represent a first information value,
(c) second means operative to pass a second current through said member directed transverse with respect to said given direction for applying a second field directed transverse with respect to said first field which is of insufficient magnitude to cause an appreciable change in the first state of remanent flux orientation and distribtuion,
(d) third means for operating said first and second means to pass said first and second currents concurrently and then to terminate said first current prior to the termination of said second current thereby to establish said member in a second state having a flux orientation similar to that of said first state but a different remanent state of flux distribution relative to said first remanent state of flux distribution to represent a second information value,
(e) fourth means operative to pass a third current in said given direction through said member to temporarily alter the flux distribution in said second state without returning said member to said first state, and
(f) means for sensing the temporary alteration of the flux distribution in said second state.

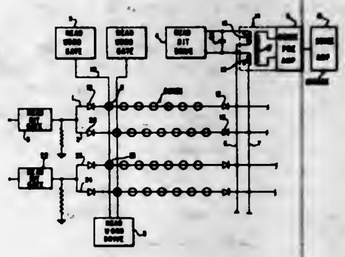
3,293,625
MULTI-APERTURE CORE SHIFT REGISTER
Kent V. Miller, Ridgewood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 18, 1963, Ser. No. 309,634
10 Claims. (Cl. 340—174)

1. In a combination, a plurality of cores, each having substantially rectangular hysteresis characteristics and being apertured to provide an input flux path and first and second output flux paths, said input flux path having a first leg, said first and second output flux paths including different portions of said first leg, a plurality of transfer loops each coupling said first and second output flux paths of a different one of said cores and the input flux path of a next adjacent core, first signal means coupled to said cores for driving said cores to an initial binary



representation, and two-phase signal means coupled to said plurality of cores for advancing said initial representation from core to core.

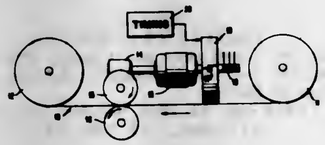
3,293,626
COINCIDENT CURRENT READOUT DIGITAL STORAGE MATRIX
Robert E. Thomas, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,713
9 Claims. (Cl. 340—174)



1. A digital storage device comprising a core matrix divided into data words and data bits comprising said words, each of said words including at least one bit, first means including first and second windings to provide half select pulses to cores representing data bits in a first and second plurality of words on first and second windings respectively, second means operating at least partially coincidentally with said first means to provide half select pulses to at least one core representing a bit of one of the words in said first and second plurality of words, whereby said one word is selected, coupling means having two inputs and an output, and means for connecting said half select pulses on said first and second winding to said two inputs, respectively, in a canceling relationship and for connecting a signal caused by the switching of a selected core to said inputs in a non-cancelling relationship.

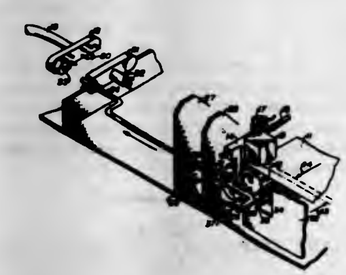
3,293,627
MAGNETIC REPRODUCING SYSTEM UTILIZING TWO OVERLAPPED HEADS TO CENTER ON ONE TRACK
Raymond P. Anyzas, Poughkeepsie, and Edward J. Wroblewski, Millbrook, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1962, Ser. No. 246,688
5 Claims. (Cl. 340—174.1)

1. In a system for reproducing from a record tape having longitudinally spaced transverse record track portions, said track portions having a predetermined width, a predetermined longitudinal track centerline spacing, and recorded track defining indicia at one end of each of said tracks, the system including drive means, and means controlled by said drive means for longitudinally moving said tape, comprising in combination:
first and second reproducing heads;
means controlled by the drive means adapted to mount said heads adjacent to each other in an overlapped position for movement across the tape such that a portion of both said heads cooperate with the same track portion on the tape for reproducing information recorded thereon;



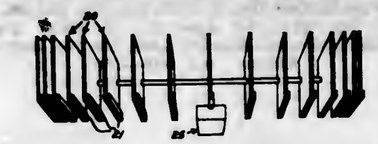
and means responsive to signals of reproduced track defining indicia by both of said heads for selecting the signals from a particular one of said first or second reproducing heads for reproducing the remainder of a particular one of the transverse record tracks.

3,293,628
MECHANICAL INHIBITOR FOR ELIMINATING EXTRANEOUS SIGNALS IN A MAGNETIC MEMORY UNIT
John L. Rodgers, Concord, and James W. Healy, Wakefield, Mass., assignors to Dana Corporation, a corporation of California
Filed Mar. 18, 1963, Ser. No. 265,955
2 Claims. (Cl. 340—174.1)



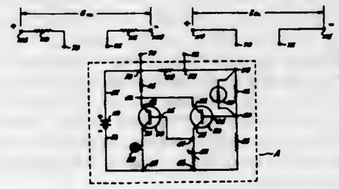
1. In a magnetic information storage system including a magnetizable medium and a transducer head disposed for movement relative to the medium the combination comprising:
coupling means for detachably associating an information generation means with the medium and head, said means having an engaged condition and a disengaged condition;
adjustable stop means disposed in the path of the head for limiting the travel of the head in one direction;
means associated with said stop means and said coupling means, and responsive to said coupling means being in its engaged condition to adjust the stop means to limit the travel of the head to a position further in the one direction than the stop means allows the head to travel when the coupling means is disengaged.

3,293,629
PLANAR MEDIA MAGNETIC CODE IDENTIFICATION SYSTEM
Donald S. Oliver, West Acton, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Continuation of application Ser. No. 21,754, Apr. 12, 1960. This application Apr. 2, 1965, Ser. No. 445,358
5 Claims. (Cl. 340—174.1)



1. A data bearing media identification system comprising:
(a) planar media having data recorded on the planar faces of said media,
(b) a magnetizable region affixed only to planar faces of said media adjacent edges of said media and magnetized to produce remnant flux emanating from said edges in a direction substantially perpendicular to said edges in accordance with an identity code indicative of said data recorded, and
(c) means for determining the identity of said media, said identification means including means for sensing the remnant flux emanating from said edges.

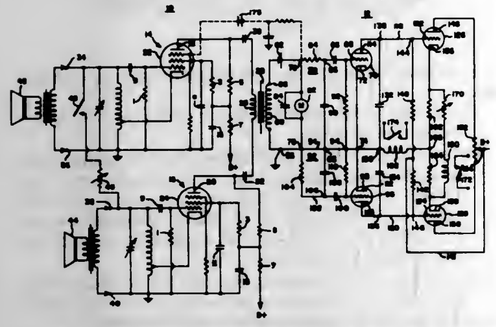
3,293,630
TRANSISTORIZED MONITORING CIRCUIT
Arthur B. McKaig, 9648 NE. 33rd, Bellevue, Wash. 98004
Filed July 19, 1963, Ser. No. 296,166
3 Claims. (Cl. 340—248)



1. A circuit for monitoring the magnitude of a first electric signal and producing an indication whenever the magnitude of said first electrical signal deviates beyond at least one predetermined limit, said circuit comprising a source of direct current potential, first and second transistors having their emitters connected in common to the positive side of said source through a first resistor and having the base of said first transistor and the collector of said second transistor connected in common to the negative side of said source through a second resistor, an indicator connected between the collector of said first transistor and the negative side of said source, means including said source normally biasing said second transistor to a predetermined conductive level such that its emitter to collector potential maintains said first transistor nonconductive, means for continuously applying to the emitter base circuit of said second transistor to a direct current signal proportional in magnitude to the magnitude of said first electrical signal in opposition to the potential applied to said second transistor emitter base circuit by said biasing means whereby, when said direct current signal reaches a predetermined magnitude, the emitter collector potential of said second transistor permits initiation of conduction by said first transistor

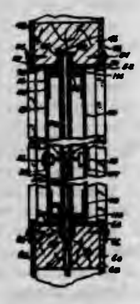
and, upon initiation of conduction of said first transistor, the voltage drop induced thereby in said first resistor augments the effect of said applied direct current signal.

3,293,631
DETECTION APPARATUS
Joshua Pressack, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Original application Dec. 3, 1962, Ser. No. 241,896, now Patent No. 3,222,664, dated Dec. 7, 1965. Divided and this application May 25, 1965, Ser. No. 469,961
7 Claims. (Cl. 340—258)



1. In an intruder detection system: a pair of oscillator circuits each having frequency determining portions set to yield oscillations at substantially the same amplitude and frequency, one oscillator circuit being slightly detuned from the other in frequency; intruder responsive synchronizing means intercoupling the frequency determining portions of said circuits for maintaining said oscillations locked in synchronism throughout the range of operation of the system, said synchronizing means being condition responsive upon the ingress of an intruder within the effective range of the system which tends to change the degree of intercoupling between said circuits; means separate from said intercoupling means connected to said circuits for deriving signals proportional to the change in intercoupling resulting from the ingress of said intruder; and alarm means responsive to a predetermined level of said derived signal for providing a perceptible indication.

3,293,632
REVERSIBLE WALL PANEL
Michael J. Blume, 15638 Stratford, Southfield, Mich. 48075
Filed Mar. 20, 1964, Ser. No. 353,624
8 Claims. (Cl. 340—282)



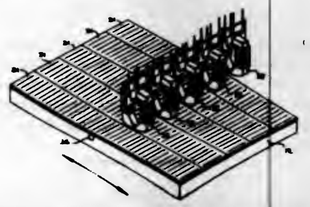
1. A system for providing access to X-ray apparatus from either of two adjoining rooms, comprising

(a) a panel disposed in an opening in the common wall between said rooms and an X-ray apparatus mounted to said panel,

(b) means for reversing said panel with respect to said wall so as to vary said X-ray apparatus between two positions, each position exposing said X-ray apparatus to a different one of said two rooms,

(c) means for electrically actuating said X-ray apparatus and means electrically connected with said actuating means and operable to lock said panel to said wall and against rotation in response to energization of said actuating means whereby to lock said X-ray apparatus in one of said two rooms during use.

3,293,633
DIGITAL TRANSDUCER
Lawrence W. Gardenhire and George Birkel, Jr., Eau Gallie, Fla., assignors to Radiation Incorporated, a corporation of Florida
Filed Sept. 18, 1962, Ser. No. 224,384
13 Claims. (Cl. 340—347)

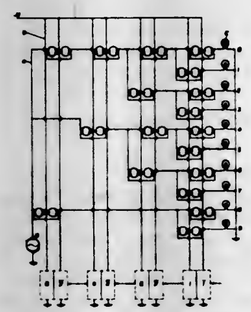


12. A system for deriving a coded indication of the position of a body movable in response to an input force, said indication including a series of parallel binary bits, comprising a magnetic record carrier, said carrier including a plurality of tracks extending parallel to each other along one direction, each of said tracks including a series of binary bit indications extending along said direction, said indications of each track alternately having one of only two values, each of said indications being a binary magnetic flux level, a flux level responsive pick up head for each of said channels, each of said pick up heads including means for deriving a voltage indicative of the flux level of its respective channel, and means for moving said magnetic record carrier relative to said pick up heads, the movement of said carrier along said one direction being related by a predetermined function to the force applied to said body.

3,293,634
BINARY-TO-DECIMAL DECODING MATRIX USING STATIC SWITCHES
Teodor Teitel, Bucharest, Rumania, assignor to Institute of Atomic Physics, Bucharest, Rumania
Filed Mar. 4, 1963, Ser. No. 264,472
Claims priority, application Rumania, Mar. 5, 1962, 45,201
5 Claims. (Cl. 340—347)

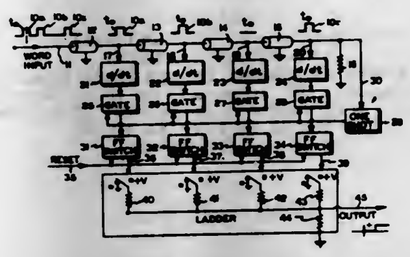
1. A magnetic matrix decoder for connecting an input terminal selectively to one of ten output terminals to provide an output decimal system numerical indication of a multiple bit binary input, said matrix comprising, in combination, a plurality of magnetic switching elements arranged electrically at selected intersections of columns and rows, with the columns corresponding to respective binary input bits and the rows corresponding to respective numerical digits in the decimal system; each element comprising a pair of annular cores of magnetic material arranged in substantially coplanar juxtaposed relation; a load winding on each core, the load windings on the cores of each pair having the same number of turns and being connected in series opposite; a source of A.C. potential;

a matrix input terminal connected to one terminal of said source; a plurality of matrix output terminals each corresponding to a receptive one of said rows; a plurality of digit indicators each connected between a respective output terminal and the other terminal of said source, each digit indicator corresponding to a respective binary code input; said load windings being connected in cascade between said input terminal and said output terminals; the number and column position of the said elements connected to a respective output terminal corresponding to the binary code representation of the digit of the associated indi-



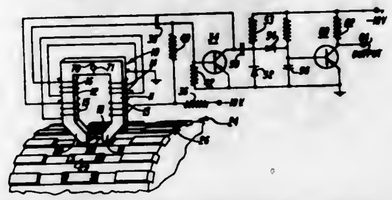
cators; a plurality of control windings equal in number to said elements, each control winding being common to both cores of a respective element and those control windings arranged along a respective column being connected in series; and means for selectively applying a D.C. potential to all of the control windings along selected columns in accordance with a respective binary code input to saturate those cores arranged along said columns to provide a low impedance A.C. path between said input terminal and the respective output terminal corresponding to said binary code input.

3,293,635
CONVERTER SYSTEM
Tibor Jankovich, Jenkintown, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 265,227
10 Claims. (Cl. 340—347)



1. A decoding system comprising an analog voltage generator having a series of input lines and an output line with each input line being individually energizable to add a preselected increment of analog voltage to the output line, a multisection delay line having a series of equal delay line sections corresponding to the number of digits to be decoded, gating means interconnecting each section of the delay line to a different input line of the generator, conductor means for applying a serially received digital code of pulses to the multisection delay line, and means responsive to the first of digital code of pulses traversing all of said delay line sections to simultaneously close said gate circuits.

3,293,636
MAGNETIC FLUX RESPONSIVE SENSING DEVICE
Maurice J. Dunne, Newtown, Conn., assignor to Unimation, Incorporated, Bethel, Conn., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,528
18 Claims. (Cl. 340—347)

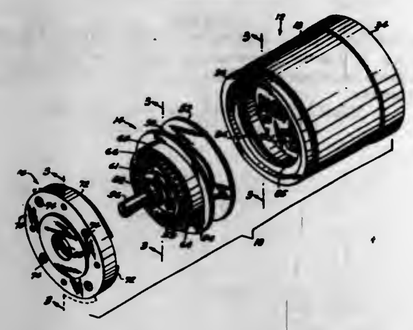


1. A polarity sensitive device for sensing low magnitude magnetic fields of predetermined polarity, comprising magnetic core means including a pair of symmetrically positioned core elements, a feedback winding on each of said core elements, an electron control device having a control electrode and an output electrode, means connecting said feedback windings in series opposition to said control electrode, means for coupling energy from the output electrode circuit of said control device to said feedback windings, means for establishing oppositely directed magnetic fluxes linking said feedback windings so that the series combination of said feedback windings is balanced and is ineffective to produce sustained oscillations, means defining an external magnetic field of predetermined orientation, means for positioning said field defining means in flux linking relation to said core elements to unbalance said series combination of said feedback windings in a direction dependent upon the orientation of said magnetic field, and means responsive to unbalance of said series combination in the positive feedback direction for producing sustained oscillations.

3,293,637
ANALOG-TO-DIGITAL CONVERTER
Arthur Robert Abbott and Willis E. Littlefield, Jr., Dover, N.H., and George L. Chapman, Jr., York Village, Maine, assignors to Eastern Air Devices, Inc., Dover, N.H., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,840
15 Claims. (Cl. 340—347)

15. In an analog-to-digital converter, a housing, an input shaft rotatably mounted in said housing, a plurality of disk-shaped code members each of which bears on one of its surfaces alternately-positioned electrically insulating and conductive sections arranged in concentric rows in a pattern adapted to provide a digitally-coded electrical output when said code member is electrically energized and aligned with brushing electrical contacts positioned to contact selected portions of each of said rows of sections and adapted to sense the coded information appearing on said code members, a plurality of brushing electrical contacts for detecting the coded information provided by said code members, a plurality of brush-blocks secured to said housing, said brushing contacts being mounted in a predetermined, code-sensing pattern on said brush-blocks, a plurality of solid, substantially inflexible electrically conductive members electrically connected to said brushing contacts for transmitting coded eletrical signals

from said brushing contacts, said conductive members extending between and being secured to said brush-blocks to make electrical connections between said brush-blocks and to add structural stability to said converter apparatus, and electrically conductive pins extending outwardly from



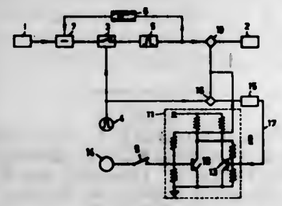
said housing of said converter, said pins being electrically connected to said conductive members, structurally supported by said housing, and adapted to provide for convenient electrical connection of said converter into associated equipment by plugging said pins into mating electrical receptacles.

3,293,638

ARRANGEMENT FOR CONVERTING AN INFORMATION SIGNAL

Johan Cornelis Balder and Cornelis Kramer, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 18, 1964, Ser. No. 345,790
Claims priority, application Netherlands, Feb. 21, 1963, 289,316
9 Claims. (Cl. 340—347)



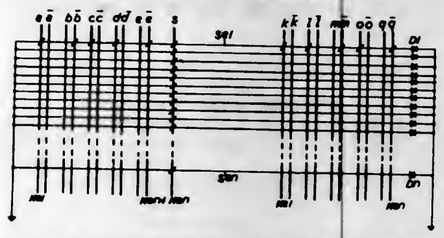
1. An arrangement for converting an information signal into a group of pulses characteristic of the value of the information signal, which are recorded in a recording device, characterized in that the arrangement comprises a pulse modulator acting as a switch and a pulse generator connected thereto, the output pulses of the pulse modulator being applied to the cascade arrangement of a low-pass filter and a subtraction device, while to this subtraction device is also applied the information signal in order to obtain a difference signal which controls the pulse modulator acting as a switch, which arrangement is further provided with a recording device in the form of a counting device and a start-stop circuit which upon starting connects the counting device to the output circuit of the pulse modulator and automatically breaks the connection between the counting device and the output circuit of the pulse modulator after a predetermined number of pulses of the pulse generator reckoned from the starting instant.

3,293,639

TRANSLATION CIRCUITS

Friedrich Ulrich, Stuttgart-Weil im Dorf, Germany, assignor to International Standard Electric Corporation

Filed Nov. 24, 1964, Ser. No. 413,478
Claims priority, application Germany, Dec. 4, 1963, St 21,411; Dec. 5, 1963, St 21,421; Dec. 7, 1963, St 21,430; Dec. 13, 1963, St 21,456, St 21,458 St 21,459; Jan. 24, 1964, St 21,597
32 Claims. (Cl. 340—347)



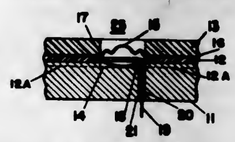
1. An electrical translation circuit, which includes a set of input ferro-magnetic cores each having an input winding, means for applying a code combination to be translated into the equivalent code form in parallel fashion to appropriate ones of said input windings, electrical coupling loops individual to each of a plurality of code combinations, means including each of said loops threading a combination of said input cores operated responsive to a code combination to be translated applied to said input winding to induce inhibiting conditions into all of said loops except the loop individual to the received code combination to be translated, a set of output ferro-magnetic cores each of which has an output winding, each said loops threading selected ones of said output cores such that when one of said loops is energized output signals are obtained from the selection of said output windings which represents the loop's code combination's translation, means including each of said loops coupling cores which are not energized on reception of its code combination to the input windings, energized input winding means for causing an inhibiting pulse to be induced in all loops threading said coupled cores in a first sense, means for applying said operating pulse to all of said loops via an input winding on a further core threaded by all of said loops, said operating pulse being induced into each said loop in the reverse sense to said inhibiting pulses, and a non-linear device in the low resistance condition for an operating pulse included in each said loop.

3,293,640

ELECTRONIC SYSTEMS KEYBOARD AND SWITCH MATRIX

Albert Chaifin, Philadelphia, Pa., and Martin Schneider, Los Angeles, Calif., assignors to the United States of America as represented by the Secretary of the Army

Filed May 22, 1964, Ser. No. 369,647
13 Claims. (Cl. 340—365)



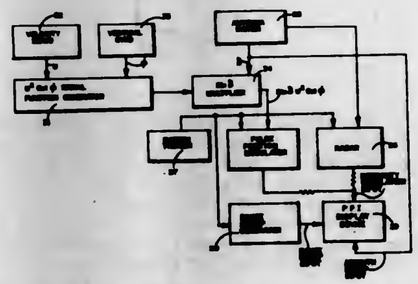
1. An electronic switch element for capacitance control of a circuit function, comprising in combination,
a conductive baseplate,
an insulating spacer plate bonded to said base plate and providing a recess therein,
a conductive disk in said recess having an insulating dielectric surface coating,
means engaging said disk along one dielectric surface coating to resiliently hold said disk with said surface coating spaced from said base plate in a minimum capacitive relation thereto,
a sheet of spring metal bonded to the spacer plate on the opposite side from the baseplate to seal said switch element against moisture and gaseous atmospheres, and
a depressible outwardly-bowed flexible circular control element integral with said sheet and aligned with said disk to snap into driving engagement therewith when depressed and inwardly bowed in the opposite direction,
thereby to rapidly reduce the space between the disk and the base plate and bring the said dielectric surface coating into close maximum capacitive relation with the base plate for effective capacitance switching change and circuit control thereby.

3,293,641

LATERAL MANEUVER INDICATOR

Dale E. Bonnett, Fullerton, and Bernard L. Fasiglietti and Rolland J. Meisch, Anaheim, Calif., assignors to North American Aviation, Inc.

Filed Feb. 15, 1965, Ser. No. 432,791
21 Claims. (Cl. 343—5)



14. In cooperation with a ground-mapping radar having an azimuthally scanning antenna and a plan position indicator,
Function generator means responsive to the forward velocity U and bank angle ϕ of an utilizing aircraft for generating substantially function $U^2 \cot \phi$;
Multiplier means responsive to said function generator and the azimuth direction δ_1 of said antenna for providing an output indicative of the function $\sin \delta_1 U^2 \cot \phi$; and
Pulse position modulator means responsive to said multiplier means and a system trigger of said radar for providing a pulse, the time-phase occurrence of which is modulated as a function of said speed, direction angle and roll angle, an intensity modulation input of said plan position indicator being responsive to said modulated pulse for providing a curved cursor display corresponding to the predicted flight path of said utilizing aircraft.

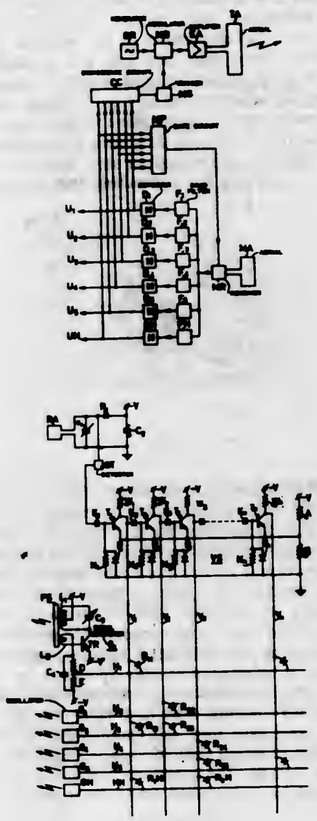
3,293,642

SIGNAL RESPONSIVE CODING ARRANGEMENT

Antonius Cornelis Maria Gloine, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 29, 1964, Ser. No. 400,169
Claims priority, application Netherlands, Oct. 2, 1963, 298,735
6 Claims. (Cl. 343—6.5)

1. A signalling system for uniquely identifying an object movable with respect to a reference point, comprising means for transmitting a first signal from said object to said point, said first signal having a magnitude inversely proportional to the distance between said object and said point, threshold gating means located at said point and responsive to said first signal for producing a second signal when said first signal exceeds the threshold



of said gating means, means for transmitting said second signal to said object, means responsive to said second signal for modifying said first signal to create a composite signal uniquely descriptive of said object, and decoding means responsive to said composite signal for indicating the identity of said object.

3,293,643

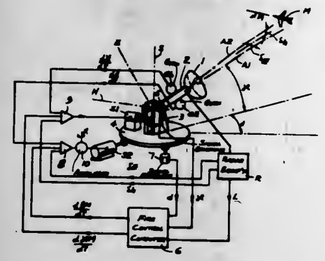
FIRE CONTROL SYSTEM FOR USE ON BOARD A SHIP

Åke Hugo Petrus Blomqvist, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Filed June 22, 1964, Ser. No. 376,965
Claims priority, application Sweden, July 2, 1963, 7,361/63
2 Claims. (Cl. 343—7.4)

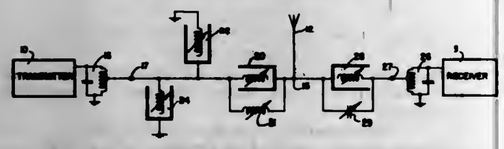
1. A fire control system for use on board of a ship, said system comprising, in combination, a sighting means for determining direction and range data of a target, said sighting means including a detector rotatable about a first axis substantially parallel to the deck plane of the ship and a second axis substantially normal thereto, first servomotor means rotating said detector about said first axis and second servomotor means rotating said detector about said second axis, said sighting means producing a first

error signal corresponding to the angular deviation between the direction of said detector and the direction to the target about said first axis and a second error signal corresponding to the angular deviation between the direction of said detector and the direction to the target about a third axis perpendicular to the direction of the detector and said first axis of rotation of said detector; a first angular-velocity-sensitive gyro means mounted on said detector so as to be responsive to the angular velocity of said detector about said first axis for producing a first rate signal proportional to said angular velocity and a second angular-velocity-sensitive gyro means mounted on said detector so as to be responsive to the angular velocity of said detector about said third axis for producing a second rate signal proportional to said angular velocity; a fire control computer for computing the velocity and the



direction of movement of the target for aiming a weapon on board the ship; circuit means feeding said direction and range data determined by said sighting means to said computer, said computer producing a first rate prediction signal proportional to the predicted angular velocity of the target about said first axis of rotation of said detector corresponding to said computed velocity and direction of movement of the target and a second rate prediction signal corresponding to the predicted angular velocity of the target about said third axis corresponding to said computed velocity and direction of movement of the target; and means for feeding said first error signal, said first rate signal and said first rate prediction signal to said first servomotor means and for feeding said second error signal, said second rate signal and said second rate prediction signal to said second servomotor means.

3,293,644
WAVE TRAP SYSTEM FOR DUPLEX OPERATION FROM A SINGLE ANTENNA
Joseph Lece, Morton Grove, and Ronald J. Wanat, Streamwood, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 13, 1964, Ser. No. 382,310
10 Claims. (Cl. 343—180)



1. A circuit for simultaneously connecting a transmitter and a receiver to the same antenna, and wherein the transmitter operates at a first frequency and the receiver operates at a second frequency different from the first frequency, said circuit including in combination, an antenna terminal, a transmitter connector, a receiver connector, first tuned circuit means having relatively low impedance at the first frequency connecting said transmitter connector to said antenna terminal, second tuned circuit means connected between said transmitter connector and a reference potential and having relatively low impedance at a frequency spaced from the first frequency by the same amount that the second frequency differs from the first frequency and in the opposite direction, third tuned circuit means having relatively low impedance at the second frequency connected between said transmitter connector and the reference potential, and fourth tuned circuit means having relatively low impedance at the second frequency connecting said receiver connector to said antenna terminal.

3,293,645
SLOTTED CYLINDRICAL ANTENNA
Elza R. Farley, Belmar, and Stafford W. Thompson, Red Bank, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed July 9, 1964, Ser. No. 381,596
13 Claims. (Cl. 343—768)



9. In a missile, a slotted cylinder antenna surrounding said missile, the peripheral wall of said cylinder being flush with the outer wall of said missile and having a series of spaced peripheral slots provided therein, said slots arranged in planes perpendicular to the axis of said cylinder, and means for feeding a first group of adjacent slots in phase and for feeding the remaining of said slots in anti-phase with said first group of slots.

3,293,646
FERRITE-FILLED, COAXIAL-STUB, ANTENNA TUNER
Helmut Brueckmann, Little Silver, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 8, 1965, Ser. No. 470,639
7 Claims. (Cl. 343—750)



1. A variable, inductive, antenna loading device comprising a center conductor; a coaxial conductor extending along a portion of said center conductors; a coaxial tuning stub extending along a portion of said coaxial conductor;

a slotted ferrite slug positioned between said coaxial conductor and said coaxial tuning stub; a shorting bar, positioned within the slot in said ferrite slug, making electrical contact between said coaxial conductor and said coaxial tuning stub; means for varying the relative positions of said ferrite slug and said shorting bar; and a coaxial feed-line connected between said center conductor and said coaxial conductor.

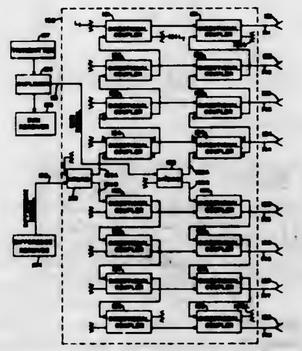
3,293,647
DOPPLER ANTENNA ARRAY WITH FEED SWITCHING
Mervyn James Crumpton, Chelmsford, Essex, England, assignor to The Marconi Company Limited, a British company
Filed Mar. 14, 1963, Ser. No. 265,121
Claims priority, application Great Britain, Mar. 19, 1962, 10,399/62
6 Claims. (Cl. 343—768)



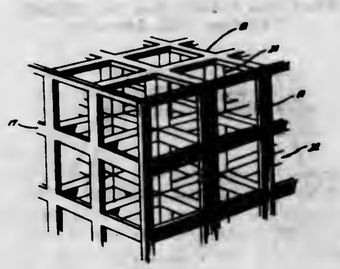
5. A Doppler navigation aiding equipment having an aerial system connected and arranged to serve both for transmission and reception wherein said system includes four gyrators, two aerial feed channels, and two branch feed channels branched out of a main feed channel, two of the gyrators being interposed between corresponding ends of the two aerial feed channels and one branch feed channel and the other two gyrators being interposed between the other corresponding ends of the aerial feed channels and the other branch feed channel, means being provided for connecting the detected outputs of the gyrators to a receiver and for connecting the main feed channel to a transmitter.

3,293,648
MONOPULSE RADAR BEAM ANTENNA ARRAY WITH NETWORK OF ADJUSTABLE DIRECTIONAL COUPLERS
Donald H. Kuhn, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 27, 1961, Ser. No. 148,271
9 Claims. (Cl. 343—854)

1. A monopulse radar, beam synthesis, signal distribution network, interposed between a common multi-element antenna array and equipment including a receiver, for providing individually adjusted even and odd aperture illumination functions comprising:
(a) a plurality of feed transmission lines adapted to feed components of both sum and difference signals to respective elements of the antenna array;
(b) a first signal transmission line;
(c) a first hybrid connected to said first signal transmission line to distribute energy into two equal parts;
(d) a first series of directional couplers symmetrically connected to said first hybrid, each directional coupler being connected to distribute energy partly to a first port of the successive directional coupler and partly to a respective said feed transmission line in accordance with a first monopulse aperture illumination function;
(e) a second signal transmission line;
(f) a second hybrid connected to said second signal transmission line to distribute energy into equal parts; and
(g) a second series of directional couplers symmetrically connected to said second hybrid, each second directional coupler being connected to distribute energy partly to the successive directional couplers and partly to a respective said feed transmission line through a second port of a corresponding first directional coupler isolated from said first port, said distribution of energy by said second directional couplers being selected in accordance with a second monopulse aperture illumination function with allowance for partial energy distribution through said first series of directional couplers.

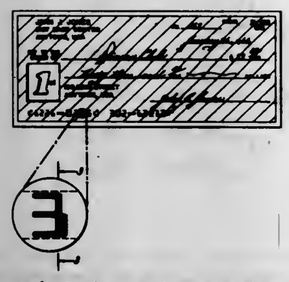


3,293,649
OPEN-WORK DIELECTRIC LENS TO PROVIDE FOR AIR COOLING
Ralph W. Fox, Bina Bell, and Murray Hoffman, Rydal, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 19, 1963, Ser. No. 274,259
8 Claims. (Cl. 343—911)



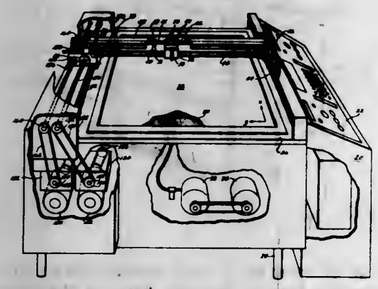
1. As an element of a wave manipulating unit, such as a microwave lens: a generally flat grid-like system of dielectric bar and stud members integrally interconnected in mutually intersecting relationship, said system comprising (a) bar members arranged as a flat, perforate array of polygons, such as squares, and (b) stud members associated with said array, a pair of said stud members being provided at each corner of said polygons, and each stud member of such a pair projecting from one of the two flat sides of said array, whereby air can be passed into and from the unit, formed of such systems, in all directions between the various stud members and through said polygons.

3,293,650
DE-ENCODABLE DOCUMENTS AND METHODS FOR PREPARATION THEREOF
Melvin S. Burns, 1520 W. Jackson, Phoenix, Ariz. 85007
Filed Feb. 1, 1966, Ser. No. 524,171
6 Claims. (Cl. 346—1)



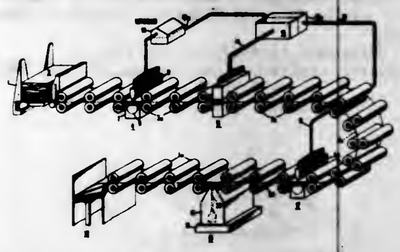
1. A method of preparing a machine readable document having de-encodable recognition characters in the clear band thereof comprising
(a) applying to the clear band, prior to imprinting of said recognition characters, a film from which said characters are solvent releasable without injury to the document; and
(b) preprinting recognition characters upon said film.

3,293,651
X–Y PLOTTER
Heinz Joseph Gerber, West Hartford, and David J. Logan, Glastonbury, Conn., assignors to The Gerber Scientific Instrument Company, Hartford, Conn., a corporation of Connecticut
Filed Oct. 4, 1962, Ser. No. 228,289
7 Claims. (Cl. 346—29)



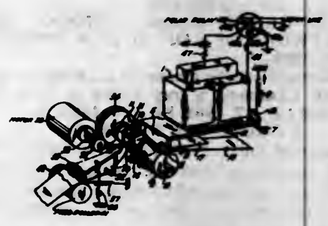
1. In an X–Y plotter, the combination comprising means defining a plotting surface having dimensions in the X and Y directions, a carriage, means supporting said carriage for movement in the X direction relative to said plotting surface, a lead screw extending in the X direction adjacent one side of said plotting surface, a nut threadably engaged with said lead screw and fixed to said carriage for moving the latter in the X direction in response to rotation of said lead screw, a cage including two end walls located on opposite sides of said carriage, means supporting said cage for movement relative to said plotting surface in the X direction only, and two bearings each fixed to a respective one of said end walls and rotatably engaging and supporting said lead screw.

3,293,652
SELECTIVE PIERCING OF SHEET MATERIAL
David D. Roshon, Jr., Binghamton, and Thomas Young, Apalachin, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 20, 1964, Ser. No. 346,215
4 Claims. (Cl. 346—76)



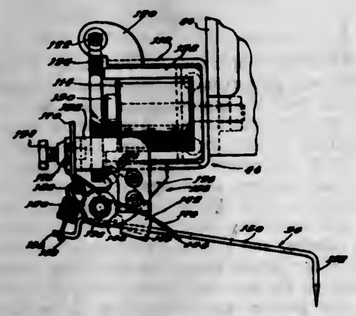
2. A piercing apparatus for piercing sheet material having relatively low energy absorption characteristics, said sheets bearing front and back patterns of coating material of relatively high energy absorption characteristics, said patterns having coded combinations for representing the presence or absence of information; and
means for directing across the front of the sheet a laser beam of such intensity that piercing results only in those areas on which appear a back pattern representing the presence of information.

3,293,653
TAPE RECORDING DEVICE
Sanae Amada, Tokyo, Japan, assignor to Rabbon Limited, Kawasaki, Japan, a corporation of Japan
Filed Dec. 21, 1964, Ser. No. 420,213
Claims priority, application Japan, Dec. 21, 1963, 38/68,899
5 Claims. (Cl. 346—101)



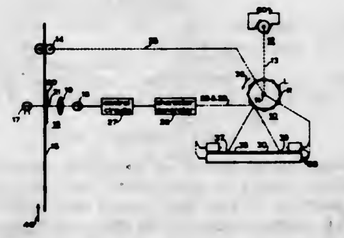
1. A tape recording device, comprising
a selector magnet adapted to be energized and deenergized by received electrical signals;
an armature positioned in operative proximity with said selector magnet and adapted to be attracted by the said selector magnet when the said selector magnet is energized;
an extending member affixed to said armature and having a projecting portion and a projecting hammer portion;
mounting means movably mounting said extending member in relation to said selector magnet so that attraction of said armature by the said selector magnet causes attraction of the said extending member;
a rotatably mounted drum positioned in operative proximity with the projecting portion and projecting hammer portion of said extending member, said drum having a cylindrical outer surface having a substantially spiral projection extending therefrom and adapted to be struck by said projecting hammer portion of said extending member upon abrupt deenergization of said selector magnet following energization of the said selector magnet;
driving means for rotating said drum at a determined rate; and
cam means affixed to said drum and rotatable with said drum and adapted to abut said projecting portion of said extending member at determined times to move the said extending member and said armature into contact with said selector magnet so that upon energization of the said selector magnet the said armature is already in contact with the said selector magnet and is not moved by the said selector magnet.

3,293,654
PRINTING TAPPER-HEAD FOR RADIOACTIVITY SCANNERS
Donald C. Hammer, Chicago, Ill., assignor to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,635
16 Claims. (Cl. 346—105)



1. A marking head for a radioactivity scanner comprising:
(a) a housing adapted to be mounted for scanning of a recording sheet,
(b) a pivotally mounted tapper having a stylus portion adapted to mark the recording sheet,
(c) an actuator member rotationally mounted on the pivotal axis of the tapper and abutting against the tapper in the direction away from the recording sheet, the actuator member being rotatable relative to the tapper in the direction of actuation after the tapper strikes the sheet,
(d) a first spring connecting the actuator member and the tapper and urging the actuator member and the tapper into such abutment,
(e) a second spring acting between the tapper and the housing and independent of the actuator member urging the tapper away from the sheet with force less than that of the first spring, the tapper thus following rotation of the actuator member toward the recording sheet against the force of the second spring, and
(f) pulse-responsive drive means engaging the actuator member to rotate the actuator member in the downward direction substantially beyond the striking point of the stylus portion of the tapper and thus increase the tension on the first spring,
(g) the second spring thus readily yielding to the drive means for motion of the tapper toward the striking point but being aided by the first spring in accelerating the tapper away from the striking point upon termination of a pulse.

3,293,655
SYSTEM FOR TRANSFERRING DATA FROM A STORAGE MEDIUM TO A RECORD MEDIUM
Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif. 92041
Filed Dec. 24, 1964, Ser. No. 420,996
6 Claims. (Cl. 346—108)

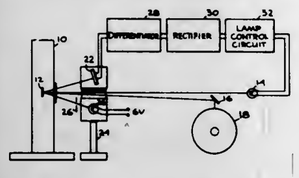


1. A system for transferring data from a storage medium to a record medium including:
(a) a storage medium containing first and second groups of recordations of coded data;
(b) detection means adjacent said storage medium for converting said groups to corresponding data display control signals upon the movement of said storage medium in relation to said detection means;
(c) a light generator with means for (1) converting signals of said first group into a first series of corresponding character shaped light beams and directing said first series along a first optical path, and (2) converting signals of said second group into a second series of corresponding character shaped light beams and directing said second series along a second optical path;
(d) a record medium presenting a light sensitive recording surface;
(e) first light reflective means for intercepting said first series and directing an initial beam thereof to a reference point adjacent, and to one side of, said recording surface;
(f) second light reflective means for intercepting said second series and directing an initial beam thereof to said reference point;
(g) means for (1) changing the angular position of said first reflective means in synchronism, and coincident, with said movement of the first group in relation to said detection means, and (2) redirecting said first series of beams along a line extending from said reference point to a predetermined point adjacent, and on an opposite side of, said recording surface;
(h) means for (1) changing the angular position of said second reflective means in synchronism, and coincident, with said movement of the second group in relation to said detection means, and (2) redirecting said second series of beams along said line and toward said predetermined point; and
(i) said first and second series of beams intersecting said line.

3,293,656
VELOCITY MODULATED RECORDING LIGHT INTENSIFIER
James L. Blayney, Pacoima, and Ralph Gilman, Altadena, Calif., assignors to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed Oct. 7, 1964, Ser. No. 402,079
8 Claims. (Cl. 346—109)

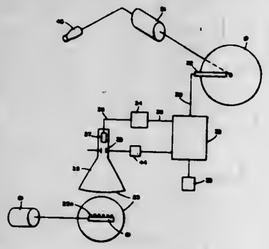
1. In apparatus of the type wherein light from a source of light is directed onto a movable mirror to be redirected onto a recording medium, said movable mirror being

moved responsive to signals whose wave form is desired to be recorded on said recording medium, the improvement comprising a light-to-electrical transducer, means for illuminating said light-to-electrical transducer with light reflected from said mirror for generating an



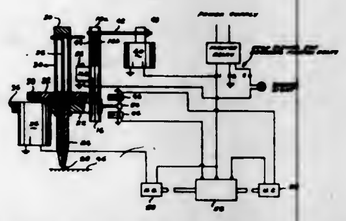
electrical signal having an amplitude increasing with the angular velocity of said mirror, and means for varying the intensity of said light source with said electrical signal for compensating for the effects of changes in velocity of said moving mirror on said recording medium.

3,293,657
DATA PLOTTING SYSTEM
Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,939
15 Claims. (Cl. 346—110)



1. Data plotting apparatus comprising:
(a) signal source means providing signals to be recorded, and including means to provide brief increments of said signal in timed sequence upon command;
(b) radiation means for forming at least one beam of radiation in accordance with the variations in the signal from said signal means;
(c) control means between said signal means and said radiation means for commanding said signal means;
(d) radiation sensitive sheet means;
(e) rotating means to relatively sweep said beam of radiation across said sheet means;
(f) synchronizing means responsive to incremental rotation of said rotating means for commanding said control means to cause the passage of one of said brief increments of said signals to said radiation means upon each incremental rotation of said rotating means.

3,293,658
AUTOMATIC FEED PENCIL APPARATUS
Robert H. Sicking, 5705 Itaska, St. Louis, Mo. 63109
Filed Dec. 23, 1964, Ser. No. 420,844
13 Claims. (Cl. 346—139)



1. A pencil apparatus for advancing a lead contained therein and comprising: a base member, a sliding support member movably supported for linear movement on said base member and having an extending support platform containing a bore therethrough substantially parallel to the linear movement of said sliding support member on said base member, an elongated lead holder joined to the platform on said sliding support member and having a first end extending through the bore in said sliding support member and a second end extending therefrom, said lead holder further having an axial bore therethrough for containing the lead and being internally threaded at the first end portion and terminating at the second end in chuck means for resisting the free axial protrusion of the lead, a lead advance screw having a first end in threaded engagement with the threaded end of said lead holder to be in abutment with the inner end of the lead and a second end extending from said lead holder, and actuating means joined to said apparatus and engaging the extending second end of said lead advance screw for rotating said lead advance screw in said lead holder and thereby advance the end of the lead protruding from the chuck means on the second end of said lead holder.

DESIGNS

DECEMBER 20, 1966

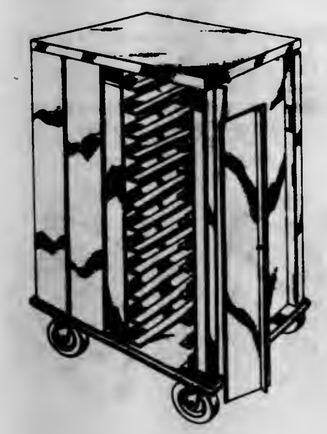
206,479
SAFETY HELMET
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif., a corporation of California
Filed Apr. 27, 1965, Ser. No. 84,982
Term of patent 14 years
(Cl. D3—13)



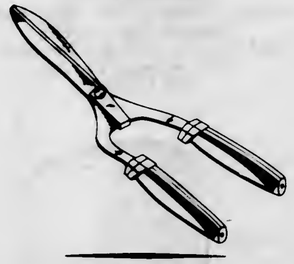
206,480
SAFETY HELMET
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif., a corporation of California
Filed Apr. 27, 1965, Ser. No. 84,984
Term of patent 14 years
(Cl. D3—13)



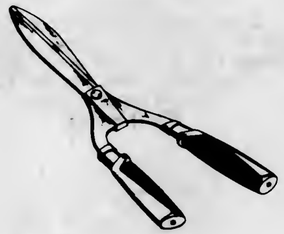
206,481
CART FOR TRANSPORTING FOOD TRAYS AND THE LIKE
Robert H. MacKay, 1917 Cherry Blossom Lane, Fort Wayne, Ind. 46805
Filed Aug. 18, 1965, Ser. No. 86,634
Term of patent 14 years
(Cl. D14—3)



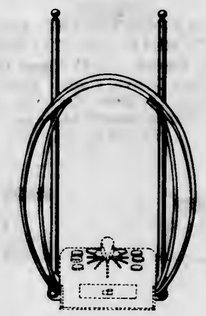
206,482
HEDGE SHEARS
Bernard C. Sharp, White Plains, N.Y., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York
Original design application Aug. 6, 1965, Ser. No. 86,478. Divided and this application May 13, 1966, Ser. No. 2,893
Term of patent 7 years
(Cl. D22—4)



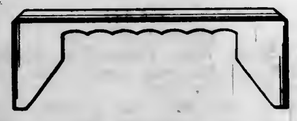
206,483
HEDGE SHEARS
Bernard C. Sharp, White Plains, N.Y., assignor to International Patent Research Corp., New York, N.Y., a corporation of New York
Filed Aug. 6, 1965, Ser. No. 86,478
Term of patent 7 years
(Cl. D22—4)



206,484
TELEVISION ANTENNA FOR INDOOR USE
Marvin P. Middlemark, 99—05 63rd Drive, Rego Park, N.Y. 10074
Filed Oct. 20, 1965, Ser. No. 87,617
Term of patent 14 years
(Cl. D26—14)



206,485
CARTRIDGE TRAY
Homer E. Clark, Jr., 1403 Liberty, Alton, Ill. 62002
Filed Oct. 23, 1965, Ser. No. 87,854
Term of patent 14 years
(Cl. D30—1)



206,486
FISHING LURE
William D. Storm, 1031 Canterbury, Norman, Okla. 73069
Filed Nov. 26, 1965, Ser. No. 88,236
Term of patent 14 years
(Cl. D31—4)





206,487
ANIMATED MUSIC BOX TOY
John W. Ryan, Bel-Air, Calif., assignor to Mattel, Inc., a corporation of California
Filed Feb. 1, 1966, Ser. No. 825
Term of patent 14 years
(Cl. D34—15)



206,488
SUPPORT FOR REINFORCING ROD USED IN CONCRETE STRUCTURES
Fred H. Easton, 11591 Capri Drive, Garden Grove, Calif. 92641
Filed Mar. 17, 1966, Ser. No. 1,517
Term of patent 14 years
(Cl. D54—1)



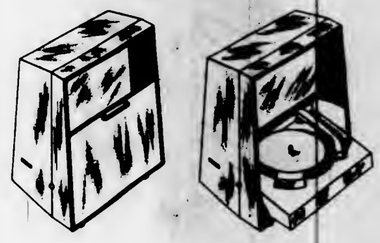
206,489
SHOCK ABSORBER TESTER
James A. Largay, Jr., Cheltenham Township, Montgomery County, Pa. (7444 New 2nd St., Philadelphia, Pa. 19126)
Filed Mar. 2, 1966, Ser. No. 1,257
Term of patent 14 years
(Cl. D54—13)



206,490
CAN OPENER
Claude A. Young, 126 N. Kensington St., La Grange, Ill. 60525
Filed Jan. 26, 1966, Ser. No. 773
Term of patent 14 years
(Cl. D55—1)

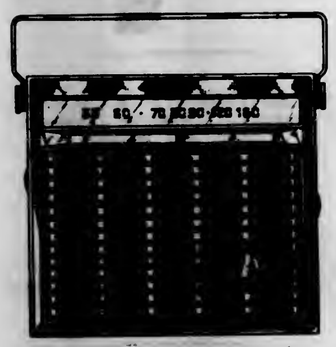


206,491
PHONOGRAPH VIEWER CABINET
Richard E. Lee, Cazenovia, N.Y., and Kurt F. Mizen, Chicago, Ill., assignors to General Electric Company, a corporation of New York
Filed July 1, 1965, Ser. No. 85,982
Term of patent 14 years
(Cl. D86—4)



206,492
PORTABLE RADIO
Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed July 14, 1966, Ser. No. 86,154
Term of patent 14 years
(Cl. D86—6)





206,493
BLISTER PACKAGE
Hugh Horner, Merrick, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 11, 1966, Ser. No. 83,788
Term of patent 14 years
(Cl. D58—2)



206,494
COMBINED DISPLAY AND MERCHANDISING PACKAGE
Richard M. Wiitt, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 87,346
Term of patent 14 years
(Cl. D58—2)



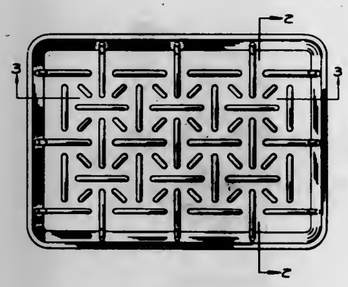
206,495
BOTTLE
George D. Utley, Woodside, N.Y., assignor to Lever Brothers Company, New York, N.Y., a corporation of Delaware
Filed May 10, 1965, Ser. No. 85,214
Claims priority, application Great Britain Dec. 16, 1964
Term of patent 14 years
(Cl. D58—6)



206,496
BOTTLE
Arthur E. Glessinger, 8216 49th Ave. N., New Hope, Minn. 56034
Filed Oct. 22, 1965, Ser. No. 87,762
Term of patent 14 years
(Cl. D58—9)



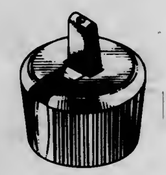
206,497
PACKAGING TRAY
Donald W. Donovan, 33 Cedar Ridge Drive, Glastonbury, Conn. 06033
Filed Oct. 14, 1965, Ser. No. 87,486
Term of patent 14 years
(Cl. D58—12.6)



206,498
LIQUID DISPENSING JAR
Louis E. Pastorius III, 2133 Brownsville Road, Pittsburgh, Pa. 15210
Filed Jan. 26, 1965, Ser. No. 83,576
Term of patent 14 years
(Cl. D58—25)



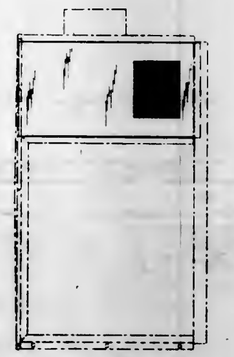
206,499
DISPENSING CLOSURE FOR A BOTTLE OR THE LIKE
Woodrow S. Wilson, Pasadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed Dec. 6, 1965, Ser. No. 64
Term of patent 14 years
(Cl. D58—26)



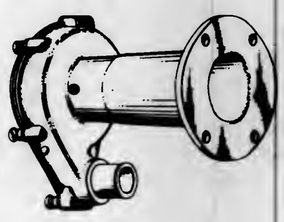
206,500
COMBINED CAN END AND TEAR STRIP OPENER
Charles S. Nixon and Robert P. Gatton, both of 202 Spring Beach, Rensselaer City, Ind. 46784
Continuation of design application Ser. No. 81,637, Sept. 8, 1964. This application July 22, 1965, Ser. No. 86,250
Term of patent 14 years
(Cl. D58—26)



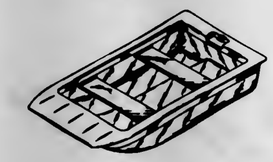
206,501
FRONT PANEL FOR AN AIR CONDITIONER UNIT
Ernest J. Prisbe, Hayward, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 87,841
Term of patent 14 years
(Cl. D62—4)



206,502
CENTRIFUGAL SUMP PUMP
Charles B. Wells, Feasterville, Pa., assignor to Hartell, Inc., Huntingdon Valley, Pa., a corporation of Pennsylvania
Filed May 26, 1964, Ser. No. 80,151
Term of patent 14 years
(Cl. D65—1)



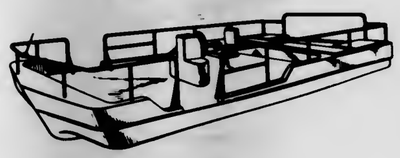
206,503
BOAT
Clinton L. Byrnes and Karl Aldrin, both of Charlotte, N.C., assignors to Submersensics, Ltd., Charlotte, N.C., a corporation of North Carolina
Filed Jan. 19, 1966, Ser. No. 673
Term of patent 14 years
(Cl. D71—1)



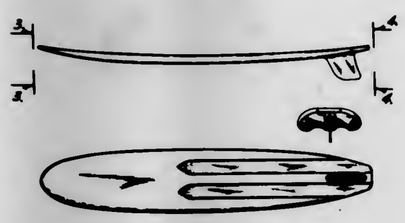
206,504
COMBINATION SWIMMING AID AND FLAG SUPPORT
Mary M. Winters, 3815 NW. 193rd Terrace, Miami, Fla. 33169
Filed May 6, 1966, Ser. No. 2,189
Term of patent 14 years
(Cl. D71—1)



206,505
PLATFORM DECK TYPE BOAT, OR THE LIKE
Raymond G. Schindler, 131 Harvard St., Houston, Tex. 77007
Filed May 23, 1966, Ser. No. 2,407
Term of patent 14 years
(Cl. D71—1)



206,506
SURFBOARD
Frederick A. Lambach, 1226 S. 109th St., Omaha, Nebr. 68144
Filed Oct. 7, 1965, Ser. No. 87,361
Term of patent 14 years
(Cl. D71—1)

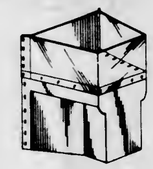


206,507
DOOR BURGLAR ALARM
Joseph J. Malespina, Waldwick, N.J., assignor to American District Telegraph Company, Jersey City, N.J., a corporation of New Jersey
Filed May 10, 1965, Ser. No. 85,193
Term of patent 14 years
(Cl. D72—1)





206,508
MERCHANDISE DISPLAY STAND, OR SIMILAR ARTICLE
Ronald H. Taub, Highland Park, Ill., assignor to Creative Displays, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Jan. 13, 1966, Ser. No. 587
Term of patent 14 years
(Cl. D80—9)



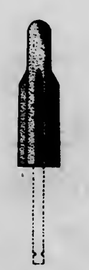
206,509
REFRIGERATED DISPLAY STAND
Gene M. Kimler, 7209 Gail Way, Fair Oaks, Calif. 95628, and Stanley Paul Edwards, 1630 Kathleen Ave., Sacramento, Calif. 95815
Filed Dec. 20, 1965, Ser. No. 235
Term of patent 14 years
(Cl. D80—11)



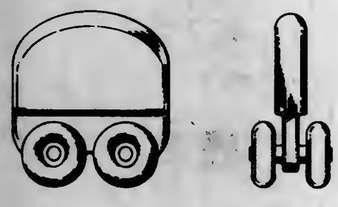
206,510
OIL HEATER
David E. Weis, Doraville, and Fred King, Decatur, Ga., assignors to The Atlanta Stove Works, Inc., Atlanta, Ga., a corporation of Georgia
Filed Sept. 27, 1965, Ser. No. 87,172
Term of patent 14 years
(Cl. D61—19)



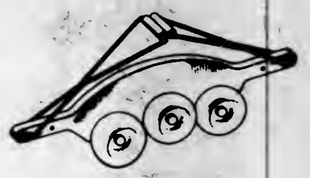
206,511
FROZEN CONFECTION OR SIMILAR ARTICLE
Roscoe T. Fowler, 254 N. St. John Lane, Ellicott City, Md. 21043
Filed Oct. 15, 1965, Ser. No. 87,500
Term of patent 14 years
(Cl. D62—2)



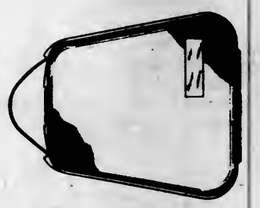
206,512
MASSAGING ROLLER
John Waldock, 2764 Faber Ave., Cincinnati, Ohio 45211
Filed Dec. 8, 1965, Ser. No. 118
Term of patent 14 years
(Cl. D83—1)



206,513
MASSAGING ROLLER
John Waldock, 2764 Faber Ave., Cincinnati, Ohio 45211
Filed Dec. 8, 1965, Ser. No. 119
Term of patent 14 years
(Cl. D83—1)



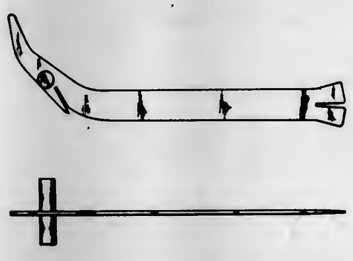
206,514
CAMERA CASE
Jay Doblin, Chicago, Ill., assignor to Whitehouse Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed Aug. 27, 1965, Ser. No. 86,753
Term of patent 14 years
(Cl. D87—5)



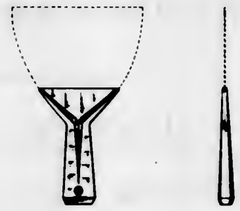
206,515
SPRAY HEAD
Oliver Isenberg, 1001 S. California Ave., Chicago, Ill. 60612
Filed Nov. 1, 1965, Ser. No. 87,975
Term of patent 14 years
(Cl. D91—3)



206,516
SHIPPING ROOM TOOL
Carl S. McKee, Pittsburgh, Pa., assignor to International Staple & Machine Company, Butler, Pa., a corporation of Pennsylvania
Filed Jan. 10, 1966, Ser. No. 543
Term of patent 14 years
(Cl. D93—4)



206,517
HANDLE FOR HAND TOOLS
Samuel D. Han, Leonia, N.J., assignor to Red Devil Inc., Union, N.J., a corporation of New Jersey
Filed Apr. 14, 1966, Ser. No. 1,896
Term of patent 14 years
(Cl. D93—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 20TH DAY OF DECEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Bartlett, Edwin S.: *See*—
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Bradley, Elihu F., Bartlett, Ogden, and Jaffee. 3,293-069.
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Barton, Oliver A., and H. Schwartz, to Allied Chemical Corp. Terpolymeric resins from bis-(β-hydroxyalkyl) benzenes. 3,293,213, 12–20–66, Cl. 260—47.
Bartz, Theodore J., to R. W. Bliss Co. Powdered copper metal part and method of manufacture thereof. 3,293,696, 12–20–66, Cl. 29—182.
Bascom, Frank C., and H. Mayer, to Boulevard Electronics, Inc. Device for agitating, swirling and aerating the water in a vessel, such as a bath tub or the like. 3,293,615, 12–20–66, Cl. 128—66.
Basic Products Corp.: *See*—
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Bassett, Louis F. Flash light holder. 3,292,890, 12–20–66, Cl. 248—214.
Bassiri, Fazli G.: *See*—
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Battelle Development Corp., The: *See*—
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Lawton, Emil A., and Levy. 3,293,502.
Stapleton, Paul. 3,293,749.
Battenfeld, Werner, and S. Bohndiek, to Gebruder Battenfeld, Firma. Die-casting machine with ball crank drive. 3,293,814, 12–20–66, Cl. 18—30.
Baude, John, to Allis-Chalmers Mfg. Co. A.C. standby power supply systems. 3,293,446, 12–20–66, Cl. 307—66.

Bande, John, to Allis-Chalmers Mfg. Co. Auxiliary electrical power system. 3,293,498, 12–20–66, Cl. 317—50.

Bande, John, to Allis-Chalmers Mfg. Co. Electrical power conversion system having output control means. 3,293,580, 12–20–66, Cl. 321—8.

Bauer, La Verne N., and P. L. De Benneville, to Rohm & Haas Co. Fuel and lubricant compositions. 3,293,182, 12–20–66, Cl. 252—51.5.

Bauger, Louis J., and P. J. V. Negre, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Ignition of jet engines. 3,292,367, 12–20–66, Cl. 60—39.14.

Baugh, Charles W., to Huck Mfg. Co. Cable clamping device. 3,292,221, 12–20–66, Cl. 24—123.

Baum, Henry H., to The National Cash Register Co. Heat sensitive coating composition and copy sheet coated therewith. 3,293,055, 12–20–66, Cl. 106—171.

Baum, Richard V., to Goodyear Aerospace Corp. Diffraction delay line for pulse expansion and compression. 3,293,574, 12–20–66, Cl. 333—30.

Baumann, Gunther: *See*—
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Baumer, Stig. Telephone index. 3,292,286, 12–20–66, Cl. 40—65.

Beach, John B. Trump indicator comprising rotatable, lockable member with radially projecting symbols. 3,292,927, 12–20–66, Cl. 273—148.

Beach, Milton L., and W. R. Fisher. Illuminable fishing device. 3,292,294, 12–20–66, Cl. 43—17.5.

Bearden, Charles M.: *See*—
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Beatenbough, Paul K., and E. F. Lewis, to General Motors Corp. Shaftless unbalanced thermostatic valve. 3,292,856, 12–20–66, Cl. 236—34.

Beattie, John R., to Pilkington Bros. Ltd. Methods and apparatus for producing toughened glass. 3,293,022, 12–20–66, Cl. 65—114.

Beck, Karl A., 45% to W. W. Lowrey. Stamp dispensing apparatus. 3,292,834, 12–20–66, Cl. 226—134.

Beck Engraving Co., Inc., The: *See*—
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Beck, John B., to Gold Crest Chemical Corp., Inc. Arterial embalming fluid and method for embalming therewith. 3,293,127, 12–20–66, Cl. 167—49.5.

Beckman Instruments, Inc.: *See*—
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Behr, Erich, and T. Schinnerer, to Dynamit Nobel Aktiengesellschaft. Small shot cartridge case. 3,292,539, 12–20–66, Cl. 102—43.

Behr, Erich: *See*—
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Beierle, John D., to Automatic Electric Laboratories, Inc. Miniature dry reed relay crosspoint matrix package. 3,293,592, 12–20–66, Cl. 317—112.

Belart, Juan, to Alfred Teves Maschinen- und Armaturenfabrik K.G. Master cylinder and brake system incorporating same. 3,292,371, 12–20–66, Cl. 60—54.6.

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Newhall, Edmunde E. 3,293,621.
Sullivan, Miles V. 3,293,162.
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Beltz, John P.: *See*—
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Bendix Corp., The: *See*—
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Dombeck, Edward K. 3,292,745.
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Bennett, Dale E., B. L. Famiglietti, and R. J. Meisch, to North American Aviation, Inc. Lateral maneuver indicator. 3,293,641, 12–20–66, Cl. 343—5.

Bennett, Raymond G., and W. H. Risse, to Novo Industrial Corp. Fluorescent tracer technique for detecting defects in air permeable bodies. 3,293,431, 12–20–66, Cl. 250—71.

Benner, Donald E. Windshield cleaning system. 3,292,966, 12–20–66, Cl. 239—284.

Bensinger, Wolf-Dieter, and H.-O. Deradinger, to Daimler-Benz Aktiengesellschaft. Rotary piston internal combustion engine. 3,292,601, 12–20–66, Cl. 123—8.

Bentley, Albert D., to General Electric Co. Drive mechanism for film strip. 3,292,444, 12–20–66, Cl. 74—206.

Bentley, William, and D. A. Cosens, to William Cotton Ltd. Straight bar knitting machines. 3,292,395, 12–20–66, Cl. 66—154.

Berchtold, Ludwig, and A. Schuster. Safety jaw for safety bindings. 3,292,941, 12–20–66, Cl. 280—11.35.

Berg Electronics, Inc.: *See*—
Gropp, Walter E., and Landman. 3,293,355.

Berg Mfg. & Sales Co.: *See*—
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Bergeim, Frank H.: *See*—
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Bergman, Richard I., and N. W. Frisch, to Princeton Chemical Research, Inc. Production of maleic anhydride by oxidation of n-butane. 3,293,268, 12–20–66, Cl. 260—346.8.

Berk, Irving, and C. M. Bearden, to J & C Carpet Co., Inc. Apparatus and method for printing designs on web materials. 3,292,532, 12–20–66, Cl. 101—115.

Berk, Milton. Self-service footwear merchandising device. 3,292,797, 12–20–66, Cl. 211—163.

Berkelhammer, Gerald, and F. A. Wagner, Jr., to American Cyanamid Co. Acylsulfamoylphenyl phosphates and method of preparing the same. 3,293,328, 12–20–66, Cl. 260—944.

Bernert, Bogdan W., and J. E. Haile. Vehicle emergency brake. 3,292,738, 12–20–66, Cl. 188—6.

Bernstein, Jack: *See*—
Fried, Josef, Bergeim, Yale, and Bernstein. 3,293,252.

Bernstein, Seymour: *See*—
Heller, Miton, Lenhard, and Bernstein. 3,293,271.

Berry, William B. Method and apparatus for sealing perforations in a well casing. 3,292,700, 12–20–66, Cl. 166—21.

Bessler, Edward T. Adjustable seat. 3,292,197, 12–20–66, Cl. 4—185.

Beucler, Oris W., 50% to S. Nester. Tobacco holding cartridge. 3,292,684, 12–20–66, Cl. 131—3.

Beyeler, Ernst. Grinding apparatus for paste-like or dough-like material. 3,292,869, 12–20–66, Cl. 241—37.

Beyner, André, and A. Schneiter, to Ebauches S.A. Mechanically controlled electrical switch, especially for an alarm timepiece. 3,293,386, 12–20–66, Cl. 200—38.

Biancardi, Frank R.: *See*—
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Bianchi, Ivan. Highway guard fence. 3,292,909, 12–20–66, Cl. 256—31.1.

Bianco, Ernest: *See*—
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Biard, James R., and G. E. Pittman, to Texas Instruments Inc. Semiconductor radiant diode. 3,293,513, 12–20–66, Cl. 317—237.

Biber, Albert, O. A. Davis, Sr., and B. R. Walsh, to Gulf Research & Development Co. Aspirating process. 3,292,858, 12–20–66, Cl. 239—8.

Bielak, Frank A., to Hoover Ball and Bearing Co. Spring assembly. 3,292,920, 12–20–66, Cl. 267—107.

Bien, Howard L., to Production Technologies, Inc. Method of making cutting dies. 3,292,461, 12–20–66, Cl. 76—107.

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Biland, Hans R., C. Luethi, and M. Duennenberger, to Ciba Ltd. Hydroxyphenyl-triazines and process for their manufacture. 3,293,249, 12–20–66, Cl. 260—248.

Biland, Hans R.: *See*—
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Bilek, Jan: *See*—
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Billen, Valentine J. Ball and club alignment attachment for golf putting device. 3,292,928, 12–20–66, Cl. 273—163.

Bindler, Jakob, and E. Model, to Geigy Chemical Corp. Antimicrobic compositions and process for protection of organic materials therewith. 3,293,124, 12–20–66, Cl. 167—33.

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Birmingham Small Arms Co. Ltd., The: *See*—
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Bittner, Donald L., and C. D. Murdoch; said Murdoch assignor to said Bittner. Precision fluid metering device. 3,292,667, 12–20–66, Cl. 141—25.

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Black, James G., Jr., and C. C. Rayburn, to Illinois Tool Works Inc. Method of assembling leads to wound capacitors. 3,292,233, 12–20–66, Cl. 29—25.42.

Blackadder, Alexander R., and M. L. Shelley, to Communications Patents Ltd. Flight training apparatus. 3,293,348, 12–20–66, Cl. 35—10.2.

Blackburn, Walter L. Ratchet connector. 3,292,567, 12–20–66, Cl. 114—235.

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Blayney, James L., and R. Gilman, to California Institute Research Foundation. Velocity modulated recording light intensifier. 3,293,656, 12–20–66, Cl. 346—109.

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Hendricks, George D. 3,293,901.

Blizard, Robert B., to Schlumberger Well Surveying Corp. Velocity logging apparatus. 3,292,729, 12–20–66, Cl. 181—.5.

Blomqvist, Abe H. P., to Aktiebolaget Bofors. Fire control system for use on board a ship. 3,293,643, 12–20–66, Cl. 343—7.4.

Blonder, Isaac S., to Blonder-Tongue Electronics. Electrical outlet locking cover. 3,293,588, 12–20–66, Cl. 339—37.

Blonder, Isaac S., to Blonder-Tongue Electronics. Electrical coaxial connector. 3,293,592, 12–20–66, Cl. 339—177.

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Blonder, Isaac S. 3,293,592.
Blonder, Isaac S. 3,293,588.

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Bludworth, Joseph E., to Coastal States Petrochemical Co. Separation of natural gas by liquefaction with an injected hydrate inhibitor. 3,292,381, 12–20–66, Cl. 62—20.

Bluish, Joseph A., and N. N. Moore, to The Bendix Corp. Means for controlling a signal modifier as a function of the magnitude of an unmodified A.C. signal input. 3,293,538, 12–20–66, Cl. 323—9.

Blume, Michael J. Reversible wall panel. 3,293,632, 12–20–66, Cl. 340—282.

Bobeck, Andrew H., to Bell Telephone Laboratories, Inc. Magnetic memory matrix assembly. 3,293,623, 12–20–66, Cl. 340—174.

Boberg, Thomas C., to Esso Production Research Co. Thermal well stimulation method. 3,292,702, 12–20–66, Cl. 166—40.

Bochan, John, to General Electric Co. Basket for a washing machine. 3,292,396, 12–20–66, Cl. 68—152.

Boden, Herbert, to E. I. du Pont de Nemours and Co. Process for making tetrakis(dimethylamino)ethylene. 3,293,-299, 12–20–66, Cl. 260—583.

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Boeke, Paul J., and R. J. Martinovich, to Phillips Petroleum Co. Heat treatment of hollow-shaped structures. 3,293,-341, 12–20–66, Cl. 264—94.

Boggess, Henry F., and J. C. Wrobleski, to Monsanto Co. Recovery of polymers from slurries. 3,293,227, 12–20–66, Cl. 260—93.2.

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Bosch, Robert G.m.b.H.: *See*—
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Boyajian, Hart J.: *See*—
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Boyajian, Myron J., to Allis Chalmers Mfg. Co. Motor control having means to prevent release of contactor during motor acceleration. 3,293,526, 12–20–66, Cl. 318—484.

Boyd, Dewey D. Tilto responsive switch. 3,293,396, 12–20–66, Cl. 200—182.

Boyd, Gil R.: *See*—
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Boydell, Timothy G. B., to Hawker Siddeley Dynamics Ltd. Screen for guided missiles to inhibit spurious response. 3,293,437, 12–20–66, Cl. 250—83.3.

Beyer, John L., to International Rectifier Corp. Compression connected semiconductor device. 3,293,506, 12–20–66, Cl. 317—234.

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Bowe, Thomas G. Navigation rule. 3,292,265, 12–20–66, Cl. 33—100.

Braden, Ralph S., and R. L. Mercer, to General Motors Corp. Reaction spray dishwasher having an improved water fill system. 3,292,645, 12–20–66, Cl. 134—57.

Bradley, Elihu F., E. S. Bartlett, H. R. Ogden, and R. I. Jaffee, to United Aircraft Corp. Coatings for columbium base alloys. 3,292,068, 12–20–66, Cl. 117—69.

Bradley, Elihu F., E. S. Bartlett, H. R. Ogden, and R. I. Jaffee, to United Aircraft Corp. Coatings for columbium base alloys. 3,292,069, 12–20–66, Cl. 117—69.

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Brandler, Abraham B., W. C. Broderick, and J. Salkay. Ground fault detector. 3,293,497, 12–20–66, Cl. 317—18.

Branson, Henry E., S. Salam, and R. O. Stromberg, to Stromberg Hydraulic Brake & Coupling Co. Hydraulic clutch dual control. 3,292,759, 12–20–66, Cl. 192—3.5.

Brauer, Hans, to The Kleserling & Albrecht. Hydraulically operated draw bench. 3,292,409, 12–20–66, Cl. 72—290.

Bray, Bruce G., and G. W. Swift, to Continental Oil Co. Low temperature separation of HS from hydrocarbon gas. 3,292,382, 12–20–66, Cl. 62—22.

Bredtschneider, Walter, to Siemens-Schuckertwerke Aktiengesellschaft. Partition for boiler firing chamber. 3,292,-597, 12–20–66, Cl. 122—240.

Brenneisen, Udo, G. Heyl, and H. Maruszyk, to Farbenfabriken Bayer Aktiengesellschaft. Developing device. 3,292,572, 12–20–66, Cl. 118—1.

Brequet, Louis, Societe Anonyme des Ateliers d'Aviation: *See*—
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Bridges, Emma C.: *See*—
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Bridges, Ervin R.: *See*—
Squillario, George F., and Bridges. 3,292,892.

Bridges, Harley, *See*—
Squillario, George F., and Bridges. 3,292,892.

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British Petroleum Co. Ltd., The: *See*—
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Brodbeck, John J., to Chevron Research Co. Equilibration of lower alkyl substituted aromatic hydrocarbons. 3,293,314, 12–20–66, Cl. 260—668.

Brodd, Ralph J., to Ling-Temco-Vought, Inc. Thermocell. 3,293,079, 12–20–66, Cl. 136—86.

Broderick, John P., D. P. Tansman, and F. T. Wishnie, to Eutectic Welding Alloys Corp. Wear-facing alloy. 3,293,-029, 12–20–66, Cl. 75—159.

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Broderick, Merrill S. Method and means for feeding animals. 3,292,584, 12–20–66, Cl. 119—51.

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Broske, William F., to AMP Inc. Explosive tool. 3,292,665, 12–20–66, Cl. 140—113.

Broughton, Douglas J., to Buxton, Inc. Buoyant key case. 3,292,680, 12–20–66, Cl. 150—40.

Bouwer, Gerrit P., and J. van der Wal, to North American Philips Co., Inc. Thermo-electric device for measuring thermal radiation energy. 3,293,062, 12–20–66, Cl. 136—206.

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Brown, Arthur G., W. W. Lee, and K. M. Sancier, to Proctor & Gamble Co. Preparation of dichlorocyanurate, sodium tripolyphosphate and sodium sulfate containing bleaching, sterilizing and disinfecting composition. 3,293,166, 12–20–66, Cl. 252—187.

Brown, Bernard, and H. R. Brandt, to A. B. Dick Co. Roller inspection gage with transparent rod as one of support members. 3,292,483, 12–20–66, Cl. 88—14.

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Pettersen, Johan. 3,292,900.

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Brown Co.: *See*—
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Brown, Grayden L., J. R. Cole, D. W. Fair, and D. S. Sullivan, to Continental Oil Co. Method and apparatus for minimizing effects of phase distortion in seismic prospecting. 3,293,598, 12–20–66, Cl. 340—15.5.

Brown, John I., Jr., to Wilcox Electric Co., Inc. Pulse time and amplitude comparing circuitry. 3,293,553, 12–20–66, Cl. 328—115.

Brown, Robley C.: *See*—
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Bruckmann, Helmut, to United States of America, Army. Ferrite-filled, coaxial-stub, antenna tuner. 3,293,646, 12–20–66, Cl. 343—750.

Brugger, Richard G., to Sperry Rand Corp. Gyroscopic compasses. 3,293,909, 12–20–66, Cl. 33—226.

Brundage, Clinton F.: *See*—
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Bruner, John S.: *See*—
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Bryngelfsson, Wilfred, and W. H. Bartlett, to Dur-O-Wal National, Inc. Reversible wall tie. 3,292,336, 12–20–66, Cl. 52—713.
Bucherr, Oskar, to Messerschmitt AG. High power sound generator for sonic fatigue testing. 3,292,727, 12–20–66, Cl. 181—.5.
Buchanan, Beverly J. Aquarium power supply. 3,292,579, 12–20–66, Cl. 119—5.
Buchi, Walter, and P. Janosda. Wiped falling film evaporator. 3,292,682, 12–20–66, Cl. 159—6.
Buchlin, Robert W., to Coastal States Gas Producing Co. Method and equipment for treating hydrocarbon gases for pressure reduction and condensate recovery. 3,292,880, 12–20–66, Cl. 62—20.
Bud, Hans, to English Numbering Machines Ltd. Looms for weaving carpets, especially axminster carpets. 3,292,663, 12–20–66, Cl. 139—10.
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Bullard, Martin B., to McCulloch Corp. Cutter elements for chain saws. 3,292,675, 12–20–66, Cl. 143—135.
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Butcosk, Richard A, to Mobil Oil Corp. Grease compositions. 3,293,179, 12–20–66, Cl. 252—18.
Butler, George B., and H. C. Allen, to United States of America, Army. Synthesising carboxy-terminated polymers. 3,293,289, 12–20–66, Cl. 260—533.
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Cavender, James V., Jr., to Monsanto Co. Recovery of polyolefins. 3,293,234, 12–20–66, Cl. 260—94.9.
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Chalk, Graeme O., to English Electric Valve Co. Ltd. Ultra low noise travelling wave tube having a grid voltage arrangement that includes pre-set potentiometer. 3,293,479, 12–20–66, Cl. 315—3.5.
Chambers, William W., to Robertshaw Controls Co. Variable full-wave power control circuit. 3,293,539, 12–20–66, Cl. 323—22.
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Charles, Pierre, C. Prevost, and O. Testard, to Commissariat a l'Energie Atomique. Phase separator. 3,293,383, 12–20–66, Cl. 62—50.
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Child, Henry C., and A. Dunlop, to The Birmingham Small Arms Co. Ltd. Nickel-base alloys. 3,293,030, 12–20–66, Cl. 75—171.
Chilowsky, Constantin, deceased, by W. S. Seward, executor, to Conrad Precision Industries, Inc. Projectile with stabilising surfaces. 3,292,879, 12–20–66, Cl. 244—3.30.
Chirico, Anthony N., to Chicago Bridge & Iron Co. Crystalliser with baffled recirculation flow. 3,292,999, 12–20–66, Cl. 23—273.
Chisholm, Hamilton C., and R. F. Hall, to Beckman Instruments, Inc. Data conversion for counter having electroluminescent readout. 3,293,416, 12–20–66, Cl. 235—92.
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Church, Joseph H., and G. J. Kessenich, to United States of America, Army. Shaped explosive charges. 3,292,536. 12–20–66, Cl. 102—24.
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Gordon, Richard O. 3,292,551.
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MacKenzie, Kenneth R. 3,293,490.
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Cowley, John J. Coin operated oxygen dispenser. 3,292,821, 12–20–66, Cl. 222—2.
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Cross, L. Allan, Jr., to Randomatic Data Systems, Inc. Data processing equipment. 3,292,631, 12–20–66, Cl. 129—16.1.
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Emblem, Harold G., and E. W. Fothergill, to Philadelphia Quartz Co. Method of making shell moulds. 3,292,220, 12–20–66, Cl. 22—196.
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Ernst, Earl A. Roller support for a potato grading device. 3,292,784, 12–20–66, Cl. 209—106.
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Evans, Fraser M., to C.A.V. Ltd. Apparatus for supplying fuel to internal combustion engines. 3,292,546, 12–20–66, Cl. 103—2.1.
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Everett, Wilhelm S. Fluid surge dampener. 3,292,661, 12–20–66, Cl. 138—26.
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Falkenberg, Douglass R., and E. L. Sharpe, said Sharpe assor. to said Falkenberg. Filter cartridge. 3,292,792, 12–20–66, Cl. 210—450.
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Feighner, George C., to Continental Oil Co. Process for preparation of high molecular weight aluminum alkyls. 3,293,274. 12–20–66, Cl. 260—448.

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Finkl, Charles W., to A. Finkl & Sons Co. Metal degassing apparatus. 3,292,916, 12–20–66, Cl. 266—39.

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Fleming, Richard P. Roller massaging device with means for spraying water between the rollers. 3,292,614, 12–20–66, Cl. 128—57.

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Pitzer, John C. 3,293,096.

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Forward, Frank A., and A. I. Vizsolyi, to Sherritt Gordon Mines Ltd. Tin purification process. 3,293,026, 12–20–66, Cl. 75—101.

Foss, Arne. Foot exercising apparatus. 3,292,612, 12–20–66, Cl. 128—25.

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Frost, James D. Orienting and packing apparatus. 3,292,341, 12–20–66, Cl. 53—61.

Fry, Bernard A. G., H. P. Jeal, J. S. Sanders, and F. A. Summerlin, to Avdel Ltd. Self-plugging blind fastening device. 3,292,482, 12–20–66, Cl. 85—78.

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Fryer, Edward R., to General Motors Corp. Steering and coupling mechanism for articulated vehicles. 3,292,724, 12–20–66, Cl. 180—79.2.

Fuchs, Otto, and F. Ische, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-soluble cationic quinophthalone dyestuffs and process for preparing them. 3,293,246, 12–20–66, Cl. 260—247.1.

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Goldberg, Benjamin S. Process of preserving grass seed. 3,292,308, 12–20–66, Cl. 47—58.
Golde, Erich. Tamper-proof closure. 3,292,807, 12–20–66, Cl. 215—7.
Goldfield, Jerry S., and M. J. Relis, to Curtiss-Wright Corp. Switch scanning system. 3,293,611, 12–20–66, Cl. 340—172.5.
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Goodwin, Robert J., and P. L. Terwilliger, to Gulf Research & Development Co. Method for consolidating incompetent subsurface formations. 3,292,701, 12–20–66, Cl. 166—25.
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Gordon, Richard O., to Clark Equipment Co. Gear pump or motor. 3,292,551, 12–20–66, Cl. 103—126.
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Gorike, Rudolf. Earphone. 3,293,379, 12–20–66, Cl. 179—115.5.
Goss, Frank A., Jr., to United States of America, Atomic Energy Commission. Multi-signal explosive detonator. 3,292,537, 12–20–66, Cl. 102—28.
Gottesman, Roy T., H. Sidi, and R. H. Barth, to Tenneco Chemicals, Inc. Polyacetal terpolymers containing randomly recurring groups derived from a methylene-bis-(4-oxymethyl-1,3-dioxolane). 3,293,219, 12–20–66, Cl. 260—67.
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Graham, Chester D., to Omark Industries, Inc. Pneumatic operated welding stud holder. 3,293,402, 12–20–66, Cl. 219—98.
Grate, Frank E., to The Williamson Co. Duct fittings connecting means. 3,292,953, 12–20–66, Cl. 285—189.
Green, Elden G., and L. T. Zitelli, to Varian Associates. Pole piece and collector assembly for high frequency electron discharge device with cooling ribs. 3,293,480, 12–20–66, Cl. 315—5.38.
Green, Milton, A. A. Sayigh, and H. Ulrich, to Polaroid Corp. Alkoxy hydroxylamines as photographic developers. 3,293,034, 12–20–66, Cl. 96—29.
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Greene, Howard M., Jr. Radiating energy detection system. 3,293,594, 12–20–66, Cl. 340—1.
Greenspan, Lawrence, to Engelhard Industries, Inc. Platinum bismuth coated alloy electrodes. 3,293,167, 12–20–66, Cl. 204—290.
Greer, Albert H., to Ritter Pfandler Corp. Ion exchange resins prepared from a mixed resin of vinyl pyridine copolymers and epihalohydrin-polyalkylene polyamines and methods of making and using same. 3,293,195, 12–20–66, Cl. 260—2.1.
Gregory, Benjamin F., to Frak Microwave Corp. Improved microwave oscillator turning means. 3,293,586, 12–20–66, Cl. 331—98.
Gregory, Edward G., to Rockwell Mfg. Co. Power operated portable hand saw. 3,292,678, 12–20–66, Cl. 143—43.
Gres, Willi H., to Jagenberg Werke Akt.-Ges. Apparatus for producing folded boxes or containers having adhered seams. 3,292,504, 12–20–66, Cl. 93—49.
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Mey, Hansjuerg. 3,292,486.
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Griffiths, Vivien, and J. C. McGowan, to Imperial Chemical Industries Ltd. Stabilised polyoxymethylenes containing zinc dialkyl dithiophosphate and 2-hydroxy-4-alkoxy benzophenone. 3,293,210, 12–20–66, Cl. 260—45.75.
Grimes, Willie H., and A. W. Medford. Gear driven wheel retainer nut wrench. 3,292,464, 12–20–66, Cl. 81—57.
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Gropp, Walter E., and D. Landman, to Berg Electronics, Inc. Electrical connector. 3,293,355, 12–20–66, Cl. 174—84.
Grove, Marvin H. Method for manufacture of valve sealing means. 3,293,342, 12–20–66, Cl. 264—157.
Gruber, Bernard A., and R. R. Kafesjian, to Monsanto Research Corp. Fuel cell having a tape coated with silver peroxide. 3,293,080, 12–20–66, Cl. 136—86.
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Gutswiller, Frank W., to General Electric Co. Solid state thyratron replacement. 3,293,449, 12–20–66, Cl. 307—88.5.
Hackley, Lloyd W., to Motorola, Inc. Passivated alloy diode. 3,293,010, 12–20–66, Cl. 29—195.
Haeber, John A., to Shell Oil Co. Method and apparatus for producing underwater oil fields. 3,292,695, 12–20–66, Cl. 166—.5.
Haensel, Vladimir, and J. Hoekstra, to Universal Oil Products Co. Catalytic dehydrogenation of paraffinic hydrocarbons. 3,293,319, 12–20–66, Cl. 260—683.3.
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Hahnlein, William, to Hamlin Mfg. Co. Church kneeler with folding legs. 3,292,975, 12–20–66, Cl. 297—426.
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Halibrand, Henry T., and N. E. Timbs. Race car chassis. 3,292,968, 12–20–66, Cl. 296—28.
Hall, Jesse E., Sr., to Trojan, Inc. Turbo-centralizer. 3,292,705, 12–20–66, Cl. 166—173.
Hall, Perry B., and J. W. Smyth, to Boyles Bros. Drilling Co. Ltd. Wire line core barrel and by-pass assembly. 3,292,717, 12–20–66, Cl. 175—46.
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Halliday, Kenneth C., Jr., to The Bendix Corp. Electrolytes for electrolytic level switches. 3,293,395, 12–20–66, Cl. 200—152.
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Hansel, Charles E. M. Teaching machines. 3,292,276, 12–20–66, Cl. 35—9.
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Buschbom, Floyd E., and Hansen. 3,292,587.
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Harbour, Don J., to General Electric Co. Air conditioning equipment including time delay control circuitry. 3,292,387, 12–20–66, Cl. 62—158.
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Harper, Ernest A., and L. G. Kitchen, to Phillips Petroleum Co. Centrifugal compressor operation. 3,292,846, 12–20–66, Cl. 230—115.
Harper, Jay A., to Acme Machine Works, Inc. Liquid level indicator incorporating permanent magnets. 3,293,579, 12–20–66, Cl. 335—207.
Harper, Leonard L., and H. J. Boyajian. Linear transport and placement device for a workpiece. 3,292,798, 12–20–66, Cl. 214—1.
Harris, Arthur M., to General Dynamics Corp. Nuclear reactor and method for refueling same. 3,293,136, 12–20–66, Cl. 176—30.
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Hayden, Ralph L., to Johns-Manville Corp. Method and apparatus for traversing strand material. 3,292,872, 12–20–66, Cl. 242—43.
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Heck, Richard F., to Hercules Inc. Preparation of (1(2,4)-(buteno-4-lactonyl)cobalt tricarbonyl compounds. 3,293,285, 12–20–66, Cl. 260—343.6.
Hederich, Volker, G. Gehrke, and K. Wedemeyer, to Farbenfabriken Bayer Aktiengesellschaft. 1-amino-4-hydroxy-2-(alkylthio- and hydroxyalkylthiophenoxy) - anthraquinones. 3,293,270, 12–20–66, Cl. 260—380.
Heer, Walter, to Escher Wyss Aktiengesellschaft. Lathe tailstock. 3,292,467, 12–20–66, Cl. 82—31.
Hegarty, James M., and D. S. Lord, to Rutherford Electronics Co. Frequency synthesizer. 3,293,561, 12–20–66, Cl. 331—38.
Heier, William, to Rudd-Melikian, Inc. Brewing apparatus. 3,292,526, 12–20–66, Cl. 99—280.
Heil, Edward K., and R. J. Chiabrandy, to North and Judd Mfg. Co. Stapling machine. 3,292,837, 12–20–66, Cl. 227—16.
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Heinrich, Hans-Joachim, to Balco Filtertechnik G.m.b.H. Printed circuit contact arrangement. 3,293,899, 12–20–66, Cl. 200—166.
Heise, Hermann. Movable house tent. 3,292,314, 12–20–66, Cl. 52—79.
Heisameier, Walter, to Siemens-Schuckertwerke Aktiengesellschaft. Travel-responsive control devices for regulation of translatory or rotary motion. 3,293,417, 12–20–66, Cl. 235—151.11.
Held, Gerhard, to Leonk Herbert Maschinenfabrik. Tyre-building up drum. 3,293,102, 12–20–66, Cl. 156—420.
Heller, Milton, R. H. Lenhard, and S. Bernstein, to American Cyanamid Co. 6-fluoroestra or androstapentaenes, intermediates and methods of preparing the same. 3,293,271, 12–20–66, Cl. 260—397.3.
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Henderson, Lionel A., to Standard Oil Co. Cellulose acetate-ammonium nitrate propellant containing a quaternary ammonium salt of a hexacylic ureide. 3,293,090, 12–20–66, Cl. 149—18.
Hendricks, George D., to E. W. Bliss Co. Traffic cycle offset selectors. 3,293,601, 12–20–66, Cl. 340—35.
Hendriks, Hendrik B., and J. D. Burch, to General Electric Co. Shielded interconnecting wiring medium. 3,293,353, 12–20–66, Cl. 174—36.
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Henning, Eugene W., and J. R. Nowell, to General Electric Co. Peak detector. 3,293,451, 12–20–66, Cl. 307—88.5.
Henry, Michel C. G. A., to Euroroga. Process for obtaining products rich in bifidus II factor. 3,293,140, 12–20–66, Cl. 195—4.
Henry-Baudot, Jacques, to Printed Motors Inc. Axial airgap electric rotary machines. 3,293,466. 12–20–66, Cl. 310—154.
Hens, Antonius M., J. A. Landstra, and H. C. Maris, to Shell Oil Co. Method for preventing surging of compressors. 3,292,845, 12–20–66, Cl. 203—116.
Hensley, James J. Abrasive wheels. 3,292,311, 12–20–66, Cl. 51—206.
Heppner, Elmore A., to Heppner Mfg. Co. Loudspeaker. 3,293,378, 12–20–66, Cl. 179—115.5.
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Herberger, Walter H. Method and apparatus for forming concrete box culvert foundation. 3,293,335, 12–20–66, Cl. 264—31.
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Herrick, James E. Machine for automatically making meatballs and the like. 3,292,207, 12–20–66, Cl. 17—32.
Hermann, John A., R. S. Davis, and W. C. Rauhauser, to I-T-E Circuit Breaker Co. Panelboard assembly with side mounted support means and line terminals accessible from rear. 3,293,503. 12–20–66, Cl. 317—119.
Hessler, Erwin. Hydraulik G.m.b.H. Axial piston device. 3,292,554, 12–20–66, Cl. 103—173.
Hester, Jackson B., Jr., to The Upjohn Co. 2',3',4',9'-tetrahydro-6'-alkoxy spiro-[piperidine-4,1'-[1H]pyrido [3,4-b] indoles]. 3,293,254, 12–20–66, Cl. 260—294.7.
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Hill, Gilman A., and W. A. Colburn, to Atomic Storage Corp. Method of storing toxic fluids and the like. 3,292,663, 12–20–66, Cl. 166—2.
Hill, John A., to E. R. Squibb & Sons Inc. Method of imparting color to pharmaceutical solutions. 3,293,133, 12–20–66, Cl. 167—82.
Hill, John R., to The Babcock & Wilcox Co. Method of forming internally ribbed tubes. 3,292,408, 12–20–66, Cl. 72—283.
Hill, Roger G., and G. A. Hoffman, to Gettys Mfg. Co., Inc. Tracer system for machine tools. 3,292,495, 12–20–66, Cl. 90—13.5.
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Himmelheber, Max. Process for improving particleboard. 3,293,336, 12–20–66, Cl. 264—37.
Hims, Herbert E. C., to Pametrada. Overspeed governor. 3,292,649, 12–20–66, Cl. 137—56.
Hinds, Ronald, to British Insulated Callender's Cables Ltd. Apparatus for the manufacture of transposed multiple strip conductor. 3,292,356, 12–20–66, Cl. 57—59.
Hintz, Ronald G., to Control Data Corp. Borrow pyramid having simultaneous borrow generation and normalize system. 3,293,422, 12–20–66, Cl. 235—168.
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Hoag, Yates M., to General Electric Co. Stabilizer arm for phonographs. 3,292,933, 12–20–66, Cl. 274—10.
Hodgkinson, Francis P., to Ametek, Inc. Dust and lint disposal apparatus. 3,292,347, 12–20–66, Cl. 55—257.
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Hodgman, Willis K., Jr., to Hodgman Mfg. Co., Inc. Automatic deluge valve for dry pipe sprinkler system. 3,292,709, 12–20–66, Cl. 169—21.
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Hofling, Erich, to Swiss Aluminium Ltd. Production of metal coils. 3,292,243, 12–20–66, Cl. 29—155.57.
Hogge, Charles R., Jr., to Radio Corp. of America. Transmit monitor. 3,293,550, 12–20–66, Cl. 325—188.
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Lohs, Willy, to Siemens & Halske Aktiengesellschaft. Telephone set. 3,293,372, 12–20–66, Cl. 179—100.

Lohs, Willy, to Siemens & Halske Aktiengesellschaft. Telephone set. 3,293,373, 12–20–66, Cl. 179—100.

Lohs, Willy, to Siemens & Halske Aktiengesellschaft. Telephone set. 3,293,374, 12–20–66, Cl. 179—100.

Lohs, Willy, to Siemens & Halske Aktiengesellschaft. Telephone set. 3,293,375, 12–20–66, Cl. 179—100.

Loos, Joseph, and R. J. Wanat, to Motorola, Inc. Wave trap system for duplex operation from a single antenna. 3,293,644, 12–20–66, Cl. 343—180.

Lord Corp.: *See*—
Peterson, Robert R. 3,292,711.
Schmidt, Warren E. 3,292,712.

Lord, Dwight S.: *See*—
Hegarty, James M., and Lord. 3,293,561.

Lorens, Karl H. Work holding device. 3,292,939, 12–20–66, Cl. 279—50.

Lorquet, Claude. Smoking pipe. 3,292,638, 12–20–66, Cl. 131—183.

Lourigan, George H.: *See*—
Goodman, Henry G., Jr., Lourigan, and Burke. 3,293,073.

Louvar, James J., A. J. Guarnaccio, and T. Symon, to Universal Oil Products Co. N-oxyalkylated-aminodiphenyl-oxo- and amino-compounds. 3,293,297, 12–20–66, Cl. 260—571.

Loveless, Marion W. Descrambler. 3,292,765, 12–20–66, Cl. 198—30.

Lovie, John C., and J. A. C. Watt, to Imperial Chemical Industries Ltd. Polymerization of disilacyclobutane in the presence of a platinum catalyst. 3,293,194, 12–20–66, Cl. 260—2.

Lowe, Claude K. Shoe racks. 3,292,794, 12–20–66, Cl. 211—34.

Lowrey, Wiley W.: *See*—
Beck, Earl A. 3,292,834.

Lubrisol Corp., The: *See*—
Craig, Willis G. 3,292,334.

Luce, Betty M., and M. L. Selker, to Clevite Corp. Conducting element having improved bonding characteristics and method. 3,293,100, 12–20–66, Cl. 161—166.

Luchi, Vinicio, to Solis Societa a Responsabilita Limitata. Device for tensioning tubular fabric whilst it is being knitted in a circular knitting machine for manufacture of socks and the like. 3,292,394, 12–20–66, Cl. 66—149.

Lucian, Arsene N. Bath mat shower means. 3,292,185, 12–20–66, Cl. 4—145.

Lucien, René, to Societe Recherches Etudes Production R.E.P. S.a.r.l. Device for controlling the hydraulic braking of the wheels of a vehicle. 3,292,978, 12–20–66, Cl. 303—21.

Lucken, Trygve C., to Riegel Paper Corp. Process for impregnating paper while partially dry with a quaternized resin polyelectrolyte and a clay coating. 3,293,115, 12–20–66, Cl. 162—194.

Luertzing, Paul R., to Leurtzing Corp. Apparatus for the centrifugal molding of articles in split molds. 3,293,024, 12–20–66, Cl. 65—302.

Luertzing Corp.: *See*—
Luertzing, Paul R. 3,293,024.

Luethi, Christian: *See*—
Biland, Hans E., Luethi, and Duennenberger. 3,293,249.

Luethi, Christian: *See*—
Duennenberger, Max, Biland, Luethi, and Schellenbaum. 3,293,247.

Luhn, Hans P., to International Business Machines Corp. Information retrieval. 3,293,619, 12–20–66, Cl. 340—172.5.

Lum, Robert L.: *See*—
Feinleib, Morris, and Lum. 3,293,476.

Lumoprint Zindler K.G.: *See*—
Jakobson Hans. 3,292,487.

Lustenader, Edward L., to General Electric Co. Method and apparatus for diffusion distillation. 3,293,153, 12–20–66, Cl. 203—11.

Luther, Roger R., to Anchor Coupling Co. Inc. Adjustable pressure line coupling. 3,292,955, 12–20–66, Cl. 285—261.

Luthi, Oscar: *See*—
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Luts, Irvin H.: *See*—
Lewis, John D., Sze, Bennett, Brooks, Luts, and Zasloff. 3,293,011.

Luvisi, Fred P.: *See*—
Hopkins, William J., Luvisi, and Filachione. 3,292,271.

Lweigart & Sawitzki: *See*—
Georgii, Walter and H. 3,293,103.

Lyman, Harold T., to United States of America, Army. 3 to 8 megahertz miniature tuner. 3,293,576, 12–20–66, Cl. 334—76.

Lynch, John R. to The Dow Chemical Co. Dispensing container. 3,292,811, 12–20–66, Cl. 220—4.

Lynch, Michael F. Portable tire lift. 3,292,902, 12–20–66, Cl. 254—122.

M & T Chemicals Inc.: *See*—
Gloskey, Carl R. 3,293,273.

M.T. & D. Co., The: *See*—
Musicnuk, Alexander B. 3,292,947.

Ma, John Y. *See*—
Karr, John W., and Ma. 3,292,440.

Maag, Robert V. Harvester. 3,292,806, 12–20–66, Cl. 214—519.

MacClarence, John, and S. B. Swenson. Incorporation of an inflated bag as a roof into a permanent structure. 3,292,-338, 12–20–66. Cl. 52—746.

MacDonald, Frederick J., and A. A. Cook, to Arkansas Co., Inc. Product and process for rendering pile fabrics soil resistant. 3,293,178, 12–20–66, Cl. 252—8.8.

MacGregor, Warren S., to Crown Zellerbach Corp. Humin material extended-thermosetting adhesive, and process of making the same. 3,293,200, 12–20–66, Cl. 260—17.2.

Machinery Electrification, Inc.: *See*—
Percival, Don R. 3,293,504.

Mack, Richard G. Hinge for folding backpaths. 3,292,830, 12–20–66, Cl. 224—9.

MacKensie, Kenneth R., to R. A. Cornog. Apparatus for obtaining controlled production of charged particles. 3,293,-490, 12–20–66, Cl. 315—111.

MacKenzie, Kenneth R., to R. A. Cornog. Vacuum pump. 3,292,844, 12–20–66, Cl. 230—69.

Mackiw, Vladimir N., D. J. I. Evans, and W. Kunda, to Sherritt Gordon Mines Ltd. Method of leaching high grade nickel matte. 3,293,027, 12–20–66, Cl. 75—119.

MacLeod, Donald A., to American Telephone and Telegraph Co. Make busy line circuit for key telephone systems. 3,293,370, 12–20–66, Cl. 179—18.

MacLeod, Norman A.: 36% to R. W. Whann, 18% to W. A. Selle, and 10% to F. F. Reed. Means and method for controlled pulsatory flow of blood to improve circulation. 3,292,613, 12–20–66, Cl. 128—40.

MacMillan, Melvin J.: *See*—
Ely, Charles M., De Luca, and MacMillan. 3,293,131.

Maeder, Erwin: *See*—
Siegrist, Acolf E., Maeder, Liechti, and Guglielmetti. 3,293,258.

Maddock, Ralph B., and R. E. Barbour, to Pako Corp. Method for controlling exposure in a photographic color printer. 3,293,033, 12–20–66, Cl. 96—23.

Magearl, William H., E. C. Fanguy, and B. R. Babin, to Esso Research and Engineering Co. Specific gravity analyzer and control in an alkylation process. 3,293,320, 12–20–66, Cl. 260—683.59.

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Kiss, Klara, and Magder. 3,292,994.

Magnetic, Inc.: *See*—
Covert, Paul W. 3,293,533.

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Magnuson, Robert: *See*—
Roth, Ellwood A. 3,292,679.

Maher, Charles A., Jr.: *See*—
Lewis, Ernest E., and Maher. 3,292,449.

Maher, Philip K., and C. V. McDaniel, to W. R. Grace & Co. Zeolite Z–14US and method of preparation thereof. 3,293,-192, 12–20–66, Cl. 252—430.

Mahler, Hugo, to Instro-Dynamics Corp. Electric desensitizer. 3,292,620, 12–20–66, Cl. 128—172.1.

Mahon, John V.: *See*—
Chidsey, Francis A., Jr., and Mahon. 3,292,843.

Mahon, Joseph J., to Sunbeam Corp. Alarm set indicator. 3,292,360, 12–20–66, Cl. 58—22.7.

Maier, Gunther, G. Baumann, and R. Babitzka, to Robert Bosch G.m.b.H. Electromagnetically driven pumps, particularly fuel pumps. 3,293,516, 12–20–66, Cl. 318—128.

Malting, Kurth Co.: *See*—
Kneen, Eric, Fleckenstein, and Beckord. 3,293,144.

Management Research Laboratories, Inc.: *See*—
Lawton, William R. 3,293,061.

Manasian, Arthur E., to Huyck Corp. Process for treating papermakers' felt and products obtained therefrom. 3,292,-992, 12–20–66, Cl. 8—127.6.

Mann, Robert L., to Eli Lilly and Co. Anthelmintic hygromycin B derivatives and process of using same. 3,293,128, 12–20–66, Cl. 167—65.

Mannheim, Guenther, E. D. Zeltwanger, and D. E. Kuska, to Oliver Corp. Spring cushion and release mechanism for ground-working tool. 3,292,713, 12–20–66, Cl. 172—269.

Mantovaara, Urpo, to W. Rosenlew & Co. Device in a cutter, particularly in a paper bag tube machine. 3,292,474, 12–20–66, Cl. 83—327.

Manzo, Eugene. Recording index. 3,292,284, 12–20–66, Cl. 40—62.

Marantette, Ruth B.: *See*—
Marantette, William F. and R. B. 3,293,439.
Marantette, William F. and R. B. 3,293,442.

Marantette, William F. and R. B. Two axid photoelectric positioning system including alternate axis activation of photocell. 3,293,439, 12–20–66, Cl. 250—203.

Marantette, William F. and R. B. Work position programming and recording system using symbols on a transparent medium. 3,293,442, 12–20–66, Cl. 250—219.

Marascia, Frank J.: *See*—
Krahler, Stanley E., and Marascia. 3,293,193.

Marc Wood International, Inc.: *See*—
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Marco, Gino J., and E. S. Erwin, to Monsanto Co. Ruminant feeds containing alkylated phenols. 3,293,038, 12–20–66, Cl. 99—2.

Marco, Gino J.: *See*—
Speziale, Angelo J., and Marco. 3,293,123.

Monsanto Co.: *See*—
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Marconi Co. Ltd., The: *See*—
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Crumpen, Mervyn J. 3,293,647.

Marietta, Michael T. Helmet. 3,292,180, 12–20–66, Cl. 2—3.

Marinai, Jori: *See*—
Chiasera, Carlo, Pochintesta, Ferri, and Marinai. 3,292,-293.

Mariol, James F., to Ward Mfg., Inc. Trailer kitchen. 3,292,-966, 12–20–66. Cl. 296—23.

Maris, Nicolaas C.: *See*—
Hens, Antonius M., Landstra, and Maris. 3,292,845.

Markoulis, Angelo. Block leveler apparatus. 3,292,496, 12–20–66, Cl. 90—15.

Markowitz, Meyer M., to Foote Mineral Co. Oxygen-generating product. 3,293,187, 12–20–66, Cl. 252—186.

Marn, Louis A., to Century Display Mfg. Corp. Display. 3,292,287, 12–20–66, Cl. 40—77.

Marsan, Arthur E., to Hollister, Inc. Post-surgical irrigation appliance. 3,292,625, 12–20–66, Cl. 128—283.

Marsee, Frederick J., and R. G. Lane, to Holley Carburetor Co. Carburetor fuel inlet valve. 3,292,894, 12–20–66, Cl. 251—122.

Marshall, Fornie H.: *See*—
McMasters, Oburt O., Marshall, and Farrah. 3,292,948.

Marshall, James C., and H. G. Smith, to United States of America, Atomic Energy Commission. Brazing alloys for tungsten and molybdenum. 3,292,255, 12–20–66, Cl. 29—494.

Marshall, Richard G., to The Ford Motor Co. Headlamp outage indicator. 3,293,489, 12–20–66, Cl. 315—83.

Martin, Charles S.: *See*—
Streb, Joseph E., and Martin. 3,293,067.

Martin, Fines F.: *See*—
Lacy, John E., and Martin. 3,292,694.

Martin, Frederick A., to The Black Clawson Co. Pneumatically pressurised paper wet press assembly. 3,293,121, 12–20–66. Cl. 162—358.

Martin, Frederick S.: *See*—
Lloyd, James E., and Martin. 3,293,070.

Martin, Heinz: *See*—
Pfaffenberger, Joachim, and Martin. 3,293,510.

Martin, Jacob H., to Sprague Electric Co. Ceramic with metal film via binder copper oxide containing glass. 3,293,-501, 12–20–66, Cl. 317—101.

Martin, Thomas B., to Radio Corp. of America. Information processing apparatus. 3,293,609, 12–20–66, Cl. 340—172.5.

Martin, Van C., to International Business Machines Corp. Print head controls causing overtravel of head at left end. 3,292,530, 12–20–66, Cl. 101—93.

Martinovich, Robert J.: *See*—
Boeke, Paul J., and Martinovich. 3,293,341.

Martner, John G., to Stanford Research Institute. Ultrasonic concentrator. 3,292,910, 12–20–66, Cl. 259—72.

Marquart, Gordon L.: *See*—
Jacklin, Roger L., and Marquart. 3,292,451.

Matsushita Electric Industrial Co., Ltd.: *See*—
Yasuoka, Shine, Aratani, Arimura, and Yano. 3,293,-359.

Marquette Corp.: *See*—
Moti, Daniel M. 3,292,428.

Marusczyk, Heinrich: *See*—
Brennelsen, Udo, Heyl, and Marusczyk. 3,292,572.

Marwill, Stanley J., to Phillips Petroleum Co. Withdrawal of solids from a flowing stream comprising a slurry of same. 3,293,000, 12–20–66, Cl. 23—285.

Maschinenfabrik Augsburg-Nurnberg A.G.: *See*—
Liebel, Julius. 3,292,600.

Maschinot, Howard R., to The Printing Machinery Co. Ink agitator. 3,292,534, 12–20–66. Cl. 101—364.

Massachusetts Institute of Technology: *See*—
Mateles, Richard I., and Lim. 3,293,141.

Mateles, Richard I., and P. G. Lim, to Massachusetts Institute of Technology. Fermentation process for producing l-tryptophan. 3,293,141, 12–20–66, Cl. 195—29.

Materyn, Jenny. Hot can handling implement. 3,292,963, 12–20–66, Cl. 294—29.

Mathey, Raymond, and J. L. Vernet, to CSF-Compagnie Generale de Telegraphie Sans Fil. Vibrating cord accelerometers. 3,292,487, 12–20–66, Cl. 73—517.

Matisa Material Industriel S.A.: *See*—
Oville, Eugene E. 3,292,568.

Matkan, Josef, to Research Laboratories of Australia Ltd. Developer for electrostatic images. 3,293,183, 12–20–66, Cl. 252—62.1.

Matsubara, Hideo, to Mitsubishi Jukogyo Kabushiki Kaisha. Propellant grain. 3,292,545, 12–20–66, Cl. 102—98.

Matsumoto, Yashuhiro: *See*—
Sunagawa, Genshun, Nakao, Nakaza, Soma, Sato, Watatani, Matsumoto, and Kobayashi. 3,293,260.

Matthews & Birkhamshaw Ltd.: *See*—
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Matthews, Denis, to Matthews & Birkhamshaw Ltd. Linking machines. 3,292,563, 12–20–66, Cl. 112—25.

Matthews, Rudolph, to Atlas Pacific Engineering Co. Apricot feeder. 3,292,768, 12–20–66, Cl. 198—34.

Mattimoe, Paul T., and H. E. Conner, to Libbey-Owens-Ford Glass Co. Method for making glare-reducing laminated glazing units. 3,293,343, 12–20–66, Cl. 264—291.

Mattson, Walfred S. Analysis apparatus. 3,292,427, 12–20–66, Cl. 73—118.

Matz, Samuel A., R. E. Duncan, and D. E. Mook, to The Borden Co. Unbaked bakery products for refrigerator storage coated with acetylated monoglycerides. 3,293,043, 12–20–66, Cl. 99—92.

Maurer, Edward E.: *See*—
Musgrove, Ralph E., and Maurer. 3,293,004.

Maxwell, Eustace, to 4-Minute Car Wash Co. Ltd. Vehicle cleaning appliance. 3,292,192, 12–20–66, Cl. 15—21.

Maxwell, Janey P., and R. M. Maxwell. Electric therapeutic glove. 3,292,623, 12–20–66, Cl. 128—402.

Maxwell, Russell M.: *See*—
Maxwell, Janey P., and R. M. 3,292,628.

Mayer, Clarence A., Jr., to General Motors Corp. Sub-miniature electrical plug. 3,293,591, 12–20–66, Cl. 339—107.

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Bascomb, Frank C., and Mayer. 3,292,615.

Mays, Rolland L., to Union Carbide Corp. Smoking tobacco preparation. 3,292,636, 12–20–66, Cl. 131—17.

Masure, Alexander, A. C. Ruocchio, L. L. Stickler, L. A. Tate, and W. D. Van Gieson, Jr., to International Business Machines Corp. System for controlling the sampling of serially received signal elements. 3,293,555, 12–20–66, Cl. 328—155.

Massuchelli, Charles A., and J. Samonides, to E. J. Lavino and Co. Electrolytic manufacture of manganates and/or permanganates. 3,293,160, 12–20–66, Cl. 204—62.

McAdam, Raymond L.: *See*—
Shaler, Richard G., Jr., and McAdam. 3,293,040.

McBride, Frederick W., Jr.: *See*—
McKay, Ferris L., and McBride. 3,292,751.

McCabe-Powers Body Co.: *See*—
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McCain, Jack L. Vehicle removal means. 3,292,905, 12–20–66, Cl. 254—166.

McCaldin, James O., to North American Aviation, Inc. Method of treating semiconductor bodies by ion bombardment. 3,293,084, 12–20–66, Cl. 148—1.5.

McCall Corp.: *See*—
Smith, Edwin K., Jr., Foster, Brundage, and Tremaine. 3,292,840.

McCall, Patrick P., to Esso Research and Engineering Co. Color improvement of petroleum lubricating oils. 3,293,-173, 12–20–66, Cl. 208—264.

McCall, Richard C., and A. C. Jasins, to Controls for Radiation, Inc. Large area scintillation detector having a plurality of light transmitting sheets. 3,293,432, 12–20–66, Cl. 250—71.5.

McCann, Joseph A., to United States of America, Atomic Energy Commission. Vibration detection device. 3,292,-426, 12–20–66, Cl. 73—71.4.

McCarthy, Henry J. Sea gull guard. 3,292,319, 12–20–66, Cl. 52—101.

McCartney, James S., and R. V. De Leo, to Aero Spray, Inc. Spray nozzle. 3,292,868, 12–20–66, Cl. 239—422.

McCasland, Leonard: *See*—
Grimmer, George G., and McCasland. 3,292,706.

McClelland, Howard, to The Bendix Corp. High pressure release valve. 3,292,897, 12–20–66, Cl. 251—175.

McCoin, Dan K. Power conversion apparatus and method utilizing gravitational and buoyant forces. 3,292,865, 12–20–66, Cl. 60—22.

McConnell, William R.: *See*—
Fenimore, Gerald E., McConnell, and Nave. 3,293,614.

McCord, Andrew T., to United States of America, Atomic Energy Commission. Process for chlorinating oxides. 3,293,005, 12–20–66, Cl. 23—351.

McCormick, George C., to Thiokol Chemical Corp. Coated polyolefin articles and process of making same. 3,293,111, 12–20–66, Cl. 161—184.

McCracken, John H., J. G. D. Schuls, and A. C. Whitaker, to Gulf Research & Development Co. Esters of diaryl carbinol carboxylic acids, diaryl carbinol carboxylic acids and anhydrides of said diaryl carbinol carboxylic acids. 3,293,-267, 12–20–66, Cl. 260—346.3.

McCulloch Corp.: *See*—
Bullard, Martin B. 3,292,875.

McDaniel, Carl V.: *See*—
Maher, Philip K., and McDaniel. 3,293,192.

McDaniel, Edgar L.: *See*—
Young, Howard S., and McDaniel. 3,293,279.
Young, Howard S. 3,293,280.

McDaniel, Paul H. Combination liquid level indicator and temperature gauge. 3,292,434, 12–20–66, Cl. 73—292.

McDonough, John B., to Mine Safety Appliances Co. Closed circuit breathing apparatus. 3,292,617, 12–20–66, Cl. 128—142.

McDougall, Robert L.: *See*—
Baldwin, Francis P., McDougall, Macsig, and Bartlett. 3,293,209, 12–20–66. Cl. 260—45.95.

McElvany, James L. Pipe laying apparatus. 3,292,379, 12–20–66, Cl. 260—851.

McEwan, Ian H., to Canadian Industries Ltd. Copolymers of vinyl acetate with monoallylesters of polycarboxylic or hydroxy carboxylic acids with an aminoplast resin. 3,293,-325, 12–20–66, Cl. 260—851.

McGowan, John Carswell: *See*—
Griffiths, Vivien, and McGowan. 3,293,210.

McGregory Electronics, Inc.: *See*—
Moskow, Harry J. 3,292,780.

McGuire, Gene S. Wadding cutter. 3,292,476, 12–20–66, Cl. 83—456.

McInroy, John, to Hymatic Engineering Co. Ltd. Gas pressure reducing device, more especially for hygrometers. 3,292,485, 12–20–66, Cl. 73—335.

McKaig, Arthur B. Transistorised monitoring circuit, 3,293,-630, 12–20–66, Cl. 340—248.

McKay Machine Co., The: *See*—
Williams, Arthur L., and Bodenheim. 3,293,401.

McKean, Boyd A., to Titan Tool Co. Wrench adapter. 3,292,-463, 12–20–66, Cl. 81—53.

McKelvey, Harold E.: *See*—
Stilley, George W., and McKelvey. 3,293,021.

McKenica, Edwin J., to Joseph F. McKenica & Son, Inc. Automobile tube cutoff apparatus. 3,292,472, 12–20–66, Cl. 83—294.

McKenica, Joseph F., & Son, Inc.: *See*—
McKenica, Edwin J. 3,292,472.

McMasters, Oburt O., F. H. Marshall, and H. O. Farrah. Mobile implement hitch. 3,292,948, 12–20–66, Cl. 280—412.

McMasters, Robert A., to Southeastern Metals Co. Tubular carrier for O-shaped objects and strand material. 3,292,-877, 12–20–66, Cl. 242—129.

McNally, Robert N.: *See*—
Alper, Allen M., and McNally. 3,293,063.

McNaney, Joseph T. System for transferring data from a storage medium to a record medium. 3,293,655, 12–20–66, Cl. 346—108.

McNelli, William, and L. L. Gruss, to United States of America, Army. Anodic spark reaction processes and articles. 3,293,158, 12–20–66, Cl. 204—56.

McNellis, Edward J., to Sun Oil Co. Preparation of substituted ethanes. 3,293,307, 12–20–66, Cl. 260—619.

McNutt, Robert D., E. M. Davis, Jr., and A. H. Mones, to International Business Machines Corp. Method of fabricating microminiature functional components. 3,292,240, 12–20–66, Cl. 29—155.5.

McRay, Ferris L., and F. W. McBride, Jr., to Allis-Chalmers Mfg. Co. Operating mechanism for fluid pressure master clutch and transmission clutches. 3,292,751, 12–20–66, Cl. 192—3.5.

Meckl, Heinz, and H. Haseler, to Agfa Aktiengesellschaft. Bleach-fix compositions and process for producing colored photographic images. 3,293,036, 12–20–66, Cl. 96—60.

Medford, Austin W.: *See*—
Grimes, Willie H., and Medford. 3,292,464.

Meisch, Rolland J.: *See*—
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Meixner, Edwin J., and C. J. Anderson, to The Seeburg Corp. Bonus award system for vending machines. 3,292,759, 12–20–66, Cl. 194—15.

Mekjean, Matthew, and C. A. Strack, to Hooker Chemical Corp. Process for producing a fused reducing bath for descaling. 3,293,159, 12–20–66, Cl. 204—61.

Melson, Charlie D. Bucking bronco bicycle. 3,292,946, 12–20–66, Cl. 280—229.

Meltzer, Henry E. Electric paint softener and blisterer. 3,293,413, 12–20–66. Cl. 219—533.

Mendenhall, Jesse W.: *See*—
Wilterdink, Meredity W., Alvey, and Mendenhall. 3,292,-267.

Mensel, Dieter: *See*—
Umbach, Hans, and Mensel. 3,292,538.

Mercer, Robert L.: *See*—
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Merck & Co., Inc.: *See*—
Stoyle, Lewis E., Jr., and Hanus. 3,293,132.

Merila, John B. Automobile ignition key holder. 3,292,400, 12–20–66, Cl. 70—414.

Merritt, Thomas W., Sr., C. A. Thomas, and R. J. Shulick, to Babson Bros. Co. Vacuum positioned milk transfer system. 3,292,580, 12–20–66, Cl. 119—14.46.

Messerschmitt AG.: *See*—
Bachorr, Oskar. 3,292,727.

Metger, Josef: *See*—
Welter, Josef, and Metger. 3,292,691.

Metrailer, William J., to Esso Research and Engineering Co. Fluidised bed operations. 3,293,171, 12–20–66, Cl. 208—163.

Mettler, Gordon E. Spring actuated fly swatter. 3,293,299, 12–20–66, Cl. 43—135.

Metz, Barry A.: *See*—
Bird, Paul G., and Metz. 3,292,650.

Mey, Hansjuerg, to Gretag Aktiengesellschaft. Photographic printing machine for at least two different sizes of negative and positive. 3,292,485, 12–20–66, Cl. 88—24.

Mey, Hansjuerg, to Gretag Aktiengesellschaft. Apparatus for reversing colour images. 3,292,486, 12–20–66, Cl. 88—24.

Meyer, Emilio G., to Mine Safety Appliances Italiana, S.p.A. Paramagnetic gas analyser. 3,292,421, 12–20–66, Cl. 73—27.

Meyer, Geo. J., Mfg. Co.: *See*—
Calhoun, Fredrick L. 3,292,785.

Meyer, Jerry A., to General Electric Co. Stabilizer arm for phonographs. 3,292,954, 12–20–66, Cl. 274—10.

Meyer, Luther W., and J. J. Van Gompel. Paper roll straightener. 3,292,903, 12–20–66, Cl. 254—124.

Michel, Rupprecht, to Siemens-Schuckertwerke Aktiengesellschaft. Steam power generating plant. 3,292,872, 12–20–66, Cl. 60—73.

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Rothery, John L., and J. W. Healy, to Dana Corp. Mechanical inhibitor for eliminating extraneous signals in a magnetic memory unit. 3,293,628, 12–20–66, Cl. 340—174.1.
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Rubinow, George A. Sheet file, whose sheets are vertically suspended. 3,292,803, 12–20–66, Cl. 312—194.
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Sato, Takayoshi, and T. Kikuchi, to Kabushiki Kaisha Copal. Photographic camera with automatic exposure control. 3,292,516, 12–20–66, Cl. 95—10.

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Scott, Paul R., to Shell Oil Co. Transporting wax-bearing oil in pipelines. 3,292,647, 12–20–66, Cl. 137—1.

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Senkewich, Ludmilla and A. M., 5% each to J. M. Hellman and M. Kingston. Lighted lipstick. 3,293,425, 12–20–66, Cl. 240—6.45.

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Service, Clifford R. Sink drawer. 3,292,983, 12–20–66, Cl. 312—228.

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Seulen, Gerhard, and H. Kuhlbars, to Deutsche Edelstahlwerke Aktiengesellschaft and Allgemeine Elektricitats-Gesellschaft. Method of hardening workpieces. 3,293,086, 12–20–66, Cl. 148—153.

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Shaler, Richard G., Jr., and R. L. McAdam, to American Tansul Co. Method for chill-proofing beer with water soluble alkyl cellulose ethers. 3,293,040, 12–20–66, Cl. 99—48.

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Shapiro, Joseph. Hydraulic fittings. 3,292,952, 12–20–66, Cl. 285—158.

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CLASSIFICATION OF PATENTS

ISSUED DECEMBER 20, 1966

NOTE.—First number, class; second number, subclass; third number, patent number

2– 2	3,292,179	29–195	3,293,010	52–516	3,292,334	72–335	3,292,412	90– 13.5	3,292,495	106–212	3,293,057
2.5	3,292,181	203	3,292,248	677	3,292,335	377	3,292,413	15	3,292,496	253	3,293,058
3	3,292,180	211	3,292,249	713	3,292,336	402	3,292,414	56	3,292,497	107– 7	3,292,560
173	3,292,182	227	3,292,250	738	3,292,337	453	3,292,415	91–308	3,292,498	108–118	3,292,561
200	3,292,183	416	3,292,252	746	3,292,338	73– 6	3,292,416	368	3,292,499	111– 7	3,292,562
221	3,292,184	421	3,292,253	53– 21	3,292,339	15	3,292,417	449	3,292,500	112– 25	3,292,563
4–145	3,292,185	494	3,292,254	54	3,292,340		3,292,418	92– 48	3,292,502	114– 16	3,292,564
159	3,292,186		3,292,255	61	3,292,341	17	3,292,419	144	3,292,501	208	3,292,565
185	3,292,187	497.5	3,292,256	101	3,292,342	23.1	3,292,420	93– 36	3,292,503	219	3,292,566
5– 13	3,292,188	30–301	3,292,257	387	3,292,343	27	3,292,421	49	3,292,504	235	3,292,567
327	3,292,189	346.51	3,292,251	390	3,292,344	59	3,292,422	58	3,292,513	115– .5	3,292,568
8–115.7	3,292,991	31– 7	3,292,258	55– 46	3,292,345	60	3,292,423	93	3,292,505	116– 63	3,292,569
127.6	3,292,992	48	3,292,259	180	3,292,346	61	3,292,424	94– 1.5	3,292,506	102	3,292,570
12–145	3,292,190	32– 14	3,292,260	257	3,292,347	67	3,292,425		3,292,507	137	3,292,571
	3,292,191	33– 2	3,292,261	379	3,292,348	71.4	3,292,426	4	3,292,508	117– 17.5	3,293,059
13– 9	3,293,346	27	3,292,262	511	3,292,349	118	3,292,427	39	3,292,509	.36.2	3,293,060
14	3,293,347	42	3,292,263	56– 1	3,292,350		3,292,428	40	3,292,510	36.8	3,293,061
15– 21	3,292,192	50	3,292,264	25.4	3,292,351	141	3,292,429	46	3,292,511	38	3,293,062
50	3,292,193	109	3,292,265	41	3,292,352		3,292,430	48	3,292,512	45	3,293,063
77	3,292,194	178	3,292,266	294	3,292,353	155	3,292,431	95– 10	3,292,514	46	3,293,064
87	3,292,195	185	3,292,267	57– 34	3,292,354	180	3,292,432		3,292,515		3,293,065
103	3,292,196	203.18	3,292,268	53	3,292,355	209	3,292,433		3,292,516	68	3,293,066
104.06	3,292,197	226	3,292,269	59	3,292,356	292	3,292,434	64	3,292,517		3,293,067
104.16	3,292,198	34– 1	3,292,270	77.45	3,292,357	335	3,292,435	94	3,292,518	69	3,293,068
193	3,292,199	9	3,292,271	89	3,292,358	379	3,292,436	99	3,292,519		3,293,069
250.35	3,292,200	57	3,292,272	125	3,292,359	517	3,292,437	100	3,292,520	100	3,293,070
308	3,292,201	155	3,292,273	58– 22.7	3,292,360	74– 1.5	3,292,438	96– 22	3,293,032	104	3,293,071
610	3,292,202		3,292,274	44	3,292,361	5.6	3,292,439	23	3,293,033	138.8	3,293,072
16– 66	3,292,203	171	3,292,275	91	3,292,362	10.5	3,292,440	29	3,293,034	139.4	3,293,073
153	3,292,204	35– 9	3,292,276	60– 13	3,292,364	17.5	3,292,441	35	3,293,035	201	3,293,074
17– 1	3,292,205	10.2	3,293,348	22	3,292,365	200	3,292,443	60	3,293,036	211	3,293,075
	3,292,206	36– 71	3,292,277	26.1	3,292,363	206	3,292,444	90	3,293,037	213	3,293,076
32	3,292,207	37– 8	3,292,278	36	3,292,366	230.17	3,292,445	98– 2	3,292,521	217	3,293,077
18– 2	3,292,208	129	3,292,279	39.14	3,292,367	333	3,292,446	40	3,292,522	118– 1	3,292,572
5	3,292,209	142	3,292,280	39.31	3,292,368	335	3,292,442	115	3,292,523	7	3,292,573
8	3,292,210		3,292,281	54.5	3,292,369	458	3,292,447		3,292,524	49.5	3,292,574
12	3,292,211	179	3,292,282		3,292,370	472	3,292,448		3,292,525	405	3,292,575
	3,292,212	38– 77	3,292,283		3,292,371		3,292,449	99– 2	3,293,038	429	3,292,576
14	3,292,213	40– 62	3,292,284	73	3,292,372	473	3,292,450	4	3,293,039	603	3,292,577
30	3,292,214	64	3,292,285	221	3,292,373	477	3,292,451	48	3,293,040	119– 1	3,292,578
21– 83	3,292,993	65	3,292,286	224	3,292,374	625	3,292,452	66	3,293,041	5	3,292,579
22– 57.2	3,292,215	77	3,292,287		3,292,375		3,292,453	77.1	3,293,042	14.46	3,292,580
	3,292,216	78	3,292,288	253	3,292,376	688	3,292,454	92	3,293,043	17	3,292,581
	3,292,217	96	3,292,289	61– .5	3,292,377		3,292,455	113	3,293,044		3,292,582
70	3,292,218	124.1	3,292,290	13	3,292,378	711	3,292,456	134	3,293,045	45	3,292,583
113.5	3,292,219	129	3,292,291	72.5	3,292,379	730	3,292,457	154	3,293,046	51	3,292,584
196	3,292,220	158	3,292,292	62– 20	3,292,380	763	3,292,458	171	3,293,047	52	3,292,585
23– 51	3,292,994	42– 49	3,292,293		3,292,381	798	3,292,459		3,293,048		3,292,586
108	3,292,995	43– 17.5	3,292,294	23	3,292,382	801	3,292,460	192	3,293,049	56	3,292,587
178	3,292,996	19	3,292,295	50	3,292,383	75– 66	3,293,025	289	3,292,526	74	3,292,588
209.2	3,292,997		3,292,296	63	3,292,384	101	3,293,026	295	3,292,527	77	3,292,589
213	3,292,998	36	3,292,297	101	3,292,385	119	3,293,027	446	3,292,528	103	3,292,590
273	3,292,999	43.15	3,292,298	123	3,292,386	123	3,293,028	101– 26	3,292,529	153	3,292,591
285	3,293,000	135	3,292,299	158	3,292,387	159	3,293,029	93	3,292,530	120– 42.03	3,292,592
301	3,293,001	46– 39	3,292,300	324	3,292,388	171	3,293,030		3,292,531		3,292,593
	3,293,002		3,292,301	64– 1	3,292,389	172	3,293,031	115	3,292,532	42.13	3,292,594
314	3,293,003	74	3,292,302	9	3,292,390	76–107	3,292,461	316	3,292,533	44	3,292,595
327	3,293,004	94	3,292,303	26	3,292,391	81– 9.51	3,292,462	364	3,292,534	50	3,292,596
351	3,293,005	244	3,292,304	65– 2	3,293,013	53	3,292,463	375	3,292,535	122–240	3,292,597
24– 68	3,292,222	47– 1.1	3,292,305	21	3,293,014	57	3,292,464	102– 24	3,292,536	406	3,292,598
123	3,292,221	2	3,292,306	25	3,293,015	90	3,292,465	28	3,292,537	510	3,292,599
137	3,292,223	58	3,292,307	30	3,293,016	82– 29	3,292,466	41	3,292,538	123– 8	3,292,600
205.14	3,292,224		3,292,308	72	3,293,017	31	3,292,467	43	3,292,539		3,292,601
217	3,292,225	48–190	3,293,011	109	3,293,018	101	3,292,468	45	3,292,540	11	3,292,602
239	3,292,226	49– 64	3,292,309	110	3,293,019	83– 80	3,292,469	46	3,292,541	43	3,292,603
25– 2	3,292,227	51–118	3,292,310	111	3,293,020	174	3,292,470	49	3,292,542	90	3,292,604
26– 2	3,292,228	206	3,292,311		3,293,021	203	3,292,471	66	3,292,543	148	3,292,605
28– 1	3,292,229	281	3,292,312	114	3,293,022	294	3,292,472	92.5	3,292,544	169	3,292,606
	3,292,230	293	3,293,012	158	3,293,023	318	3,292,473	98	3,292,545	124– 41	3,292,607
	3,292,231	52– 74	3,292,313	302	3,293,024	327	3,292,474	103– 2	3,292,546	126– 59.5	3,292,608
29– 24.5	3,292,232	79	3,292,314	66– 48	3,292,392	368	3,292,475	11	3,292,547	368	3,292,609
25.42	3,292,233	80	3,292,315	50	3,292,393	456	3,292,476	39	3,292,548	128– 1	3,292,610
	3,292,234	81	3,292,316	149	3,292,394	464	3,292,477	87	3,292,549		3,292,611
26	3,292,235		3,292,317	154	3,292,395	679	3,292,478	126	3,292,550	25	3,292,612
33.5	3,292,236	98	3,292,318	67– 7.1	3,292,396	85– 7	3,292,479		3,292,551	40	3,292,613
95	3,292,237	101	3,292,319	68– 19	3,292,397	8.1	3,292,480	155	3,292,552	57	3,292,614
96	3,292,238	119	3,292,320	152	3,292,398	13	3,292,481	162	3,292,553	66	3,292,615
155.5	3,292,239	122	3,292,321	70–100	3,292,399	78	3,292,482	173	3,292,554	78	3,292,616
	3,292,240		3,292,322	414	3,292,400	88– 14	3,292,483	221	3,292,555	142	3,292,617
	3,292,241	127	3,292,323	459	3,292,401		3,292,484	258	3,292,556		3,292,618
	3,292,242	197	3,292,324	72– 17	3,292,402	24	3,292,485	104– 8	3,292,557	156	3,292,619
155.57	3,292,243	227	3,292,325	81	3,292,403		3,292,486	10	3,292,558	172.1	3,292,620
156.5	3,292,244	232	3,292,326	150	3,292,404		3,292,487	246	3,292,559	173	3,292,621
156.8	3,292,245	236	3,292,327	216	3,292,405		3,292,488	106– 14	3,293,050		3,292,622
157	3,292,246	238	3,292,328	238	3,292,406		3,292,489	47	3,293,051	203	3,292,623
157.3	3,292,247	251	3,292,329	283	3,292,407		3,292,490	54	3,293,052	221	3,292,624
182	3,293,006	403	3,292,330		3,292,408		3,292,491	58	3,293,053	283	3,292,625
	3,293,007	405	3,292,331	290	3,292,409	89–128	3,292,492	123	3,293,054	295	3,292,626
183	3,293,008	484	3,292,332	297	3,292,410	90– 11	3,292,493	171	3,293,055	349	3,292,627
193	3,293,009	509	3,292,333	314	3,292,411	12	3,292,494	177	3,293,056	402	3,292,628

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43 : 3,292,633	152 : 3,292,690	79 : 3,292,741
131– 3 : 3,292,634	162 : 3,292,691	119 : 3,292,742
10.5 : 3,292,635	182 : 3,292,692	127 : 3,292,743
17 : 3,292,636	166– .5 : 3,292,694	135 : 3,292,744
56 : 3,292,637	3,292,695	152 : 3,292,745
183 : 3,292,638	2 : 3,292,693	218 : 3,292,746
204 : 3,292,639	9 : 3,292,696	190– 43 : 3,292,747
235 : 3,292,640	3,292,697	53 : 3,292,748
132– 7 : 3,292,641	3,292,698	56 : 3,292,749
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80 : 3,292,643	21 : 3,292,700	3,292,751
84 : 3,292,644	25 : 3,292,701	13 : 3,292,752
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136– 83 : 3,293,078	91 : 3,292,704	58 : 3,292,755
86 : 3,293,079	173 : 3,292,705	84 : 3,292,756
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178 : 3,293,081	3,292,707	113 : 3,292,758
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56 : 3,292,649	39 : 3,293,125	62 : 3,293,142
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143– 6 : 3,292,669	15 : 3,293,350	199– 18 : 3,292,764
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37 : 3,292,672	36 : 3,293,353	14 : 3,293,382
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79 : 3,293,094	6 : 3,293,365	181 : 3,293,151
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341 : 3,293,408	314 : 3,292,890	186 : 3,293,240
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94 : 3,292,815	83.3 : 3,293,435	268 : 3,293,251
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	3,292,463		3,293,094		3,293,640		3,292,589		3,293,443		3,292,872
	3,292,473		3,293,107		3,293,649		3,292,590		3,293,513	48	3,292,184
	3,292,498		3,293,108	38	3,292,179		3,292,608		3,293,523		3,292,187
	3,292,503		3,293,158		3,292,290		3,292,647		3,293,556		3,292,235
	3,292,526		3,293,178		3,292,354		3,292,695		3,293,597		3,292,264
	3,292,528		3,293,182		3,292,355		3,292,697	43	3,293,570		3,292,344
	3,292,529		3,293,187		3,292,357		3,292,698	45	3,292,233		3,292,349
	3,292,535		3,293,201		3,292,358		3,292,699		3,292,295		3,292,386
	3,292,560		3,293,214		3,292,917		3,292,702		3,292,338		3,292,418
	3,292,584		3,293,223	39	3,292,851		3,292,705		3,292,565		3,292,470
	3,292,604		3,293,238		3,292,871		3,292,706		3,292,623		3,292,495
	3,292,606		3,293,243		3,293,434		3,292,707		3,292,624		3,292,550
	3,292,617		3,293,259	41	3,292,277		3,292,708		3,292,795		3,292,551
	3,292,665		3,293,267		3,292,300		3,292,719		3,292,901		3,292,633
	3,292,701		3,293,281		3,292,311		3,292,728		3,292,946		3,292,672
	3,292,711		3,293,302		3,292,352		3,292,747		3,293,224		3,292,766
	3,292,712		3,293,307		3,292,816		3,292,794		3,293,334		3,292,825
	3,292,732		3,293,313		3,292,860		3,292,883		3,293,400		3,292,903
	3,292,737		3,293,322		3,292,937		3,292,892		3,293,558		3,292,972
	3,292,748		3,293,324		3,293,230		3,292,921		3,293,569		3,293,062
	3,292,761		3,293,326		3,293,279		3,292,938	46	3,292,413		3,293,067
	3,292,777		3,293,338		3,293,280		3,293,003		3,292,547		3,293,144
	3,292,839		3,293,355		3,293,583		3,293,064		3,292,570		3,293,275
	3,292,842		3,293,387	42	3,292,180		3,293,079		3,292,783		3,293,337
	3,292,843		3,293,409		3,292,278		3,293,126		3,292,802		3,293,413
	3,292,858		3,293,435		3,292,282		3,293,161		3,292,803		3,293,418
	3,292,866		3,293,471		3,292,348		3,293,164		3,292,862		3,293,446
	3,292,969		3,293,495		3,292,380		3,293,190		3,292,908		3,293,498
	3,292,979		3,293,512		3,292,381		3,293,206		3,292,912		3,293,518
	3,292,980		3,293,531		3,292,387		3,293,207		3,293,200		3,293,530
	3,293,013		3,293,533		3,292,422		3,293,227		3,293,590		3,293,593
	3,293,015		3,293,534		3,292,423		3,293,234		3,293,630	50	3,293,143
	3,293,020		3,293,551		3,292,431		3,293,235	47	3,292,226	53	3,292,445
	3,293,021		3,293,602		3,292,464		3,293,288		3,292,385		3,292,455
	3,293,050		3,293,604		3,292,555						

DESIGN PATENTS

4	206,479	6	206,497	12	206,514	29	206,507	31	206,493	37	206,489
	206,480	9	206,504		206,515		206,517		206,495		206,498
	206,487	10	206,510	13	206,481	31	206,482	32	206,503		206,502
	206,488	12	206,485		206,500		206,483	34	206,512		206,516
	206,499		206,490	19	206,511		206,484		206,513	42	206,505
	206,501		206,492	22	206,496		206,491	35	206,486	45	206,494
	206,509		206,508	26	206,506						

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 20, 1966 Volume 833 Number 3

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Adherence of Israel to the Lisbon 1958 revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Israel to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect on July 18, 1966.

EDWARD J. BRENNER,
Commissioner of Patents.

Nov. 28, 1966.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 4—FORMS FOR TRADEMARK CASES

Application for Renewal

In the April 1, 1966 edition of the Federal Register (31 F.R. 5261) the phrase reading:

Subscribed and sworn to before me this ---- day of ------, 19-----.

Notary Public (6)

was deleted from the illustrative form for a trademark application by an individual for registration on the Principal Register using an oath (§ 4.1). A substitute note was provided reading:

(The acknowledgment shall be in the form prescribed by the law of the jurisdiction where executed, and the notary's seal or stamp or other evidence or authority in the jurisdiction of execution must be affixed.)

This substitution was to be made in other forms using oaths, and a direction was included for the use of the substitute phrase in illustrative forms §§ 4.5, 4.6, 4.13, 4.17, 4.21, and 4.22.

In the same publication in the Federal Register (31 F.R. 5263), illustrative form § 4.13, application for renewal, as modified, was set forth. The substitute note was omitted in § 4.13 as published and, to avoid any misunderstanding, the form is set forth in its entirety, as follows:

§ 4.13 *Application for renewal.*

Mark ----------
(Identify the mark)
Reg. No. ----------
Class No. ----------

To the COMMISSIONER OF PATENTS:

(Insert appropriate identification of registrant in accordance with rule 4.1, 4.5, or 4.6.)

The above identified registrant requests that Registration No. ---------- granted to ----------
(Name of original registrant)
on ---------- which he now owns as shown by
(Date of issuance)
records in the Patent Office be renewed in accordance with the provisions of section 9 of the act of July 5, 1946.

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	27,254
Date of oldest new application	Sept. 13, 1965
Date of oldest amended application (filing date)	Sept. 11, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 6, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 38, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-13-65	3-8-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 26, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 108, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-21-65	9-11-62
Renewals (All Classes)	9-2-66	----------
Sec. 12(c) Publications (All Classes)	9-27-66	----------

Applications filed during the month of October—2,265

Registrations Issued ---------- 401—No. 820,537 to No. 820,937
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

The renewal fee is presented herewith. (1)

State of _____ } ss.
County of _____

_____
(Name of registrant or person authorized to sign for it)

being sworn, states that _____
(Insert "he" or name of registrant)

owns Registration No. _____; that the mark shown therein is in use in _____ (2)
(Type of commerce)

commerce on each of the following goods recited in the registration _____ the attached specimen (or facsimile) showing the mark as currently used. (4)

_____
(Signature, and if a corporation or other organization, the official title)

(The acknowledgment shall be in the form prescribed by the law of the jurisdiction where executed, and the notary's seal or stamp or other evidence or authority in the jurisdiction of execution must be affixed.)

POWER OF ATTORNEY OR AUTHORIZATION OF AGENT

(See rules 4.2 and 4.3) (3)

NOTE: (1) The fee for renewal sought prior to expiration is $25.00 for each class; and for delayed renewal filed within 3 months after expiration, an additional $5.00 for each class.

(2) Type of commerce should be specified as "interstate," "foreign," "territorial," or such other specified type of commerce as may be regulated by Congress. Foreign registrants must specify: "commerce with the United States."

(3) If applicant for renewal is not domiciled in the United States, a domestic representative must be designated. See rule 4.4.

(4) If the mark is not in use in commerce at the time of filing the application for renewal, but there is no intention to abandon the mark, sufficient facts must be recited to show that the nonuse is due to special circumstances which excuse the nonuse.

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6; sec. 1, 78 Stat. 171; 35 U.S.C. 25)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: October 14, 1966.

J. HERBERT HOLLOMAN,
Assistant Secretary for Science and Technology.

[F.R. Doc. 66-11519; Filed, Oct. 21, 1966; 8:45 a.m.]

Published in 31 F.R. 13648-9, Oct. 22, 1966

Publication of Material in "Notices" Sections of Patents and Trademarks Official Gazette

Effective Jan. 3, 1967, publication of material in the Patent and Trademark "Notices" sections of the OFFICIAL GAZETTE will occur only once.

Dec. 1, 1966.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 167,320. Randall's, Inc., Denver, Colo. Filed Apr. 22, 1963.

RANDALL'S

Class 39—Clothing

For Men's Formal Wear and Accessories—Namely, Tuxedos and Dinner Coats.

Class 100—Miscellaneous

For Rental of Men's Formal Wear and Accessories.

First use in or about August 1949.

SN 203,086. B. Green & Company, Inc., Baltimore, Md. Filed Oct. 1, 1964.

BIG VALUE

Owner of Reg. No. 561,563.

Class 6—Chemicals and Chemical Compositions

For Liquid Starch, Spray Starch, Fabric Softener, and Ammonia.

First use Jan. 15, 1951.

Class 20—Brooms, Brushes, and Dusters

For Brooms.

First use December 1945.

Class 46—Foods and Ingredients of Foods

For Mayonnaise, Margarine, and Vegetable Shortening.

First use Aug. 17, 1948.

SN 207,758. Triplex S.p.A., Milan, Italy. Filed Dec. 8, 1964.

TRIPLEX

Owner of Italian Reg. No. 17,425, dated May 21, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Room-Heating Boilers, Electric Cooking Stoves and Cooking Appliances, and Electric Mixers for Drinks.

Class 24—Laundry Appliances and Machines

For Washing Machines for Laundry.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Gas Room Heaters, and Gas Cooking Stoves and Cooking Appliances.

SN 206,052. Development Designers Company, Inc., Norristown, Pa. Filed Dec. 14, 1964.

De De Co

Class 100—Miscellaneous

For Providing Consultation and Design Services in the Fields of Engineering, Purchasing, Personnel, and Marketing.

Class 101—Advertising and Business

For Providing Temporary Technical and Clerical Help.

First use Aug. 15, 1957.

SN 221,517. James C. Price, d.b.a. The Hi-Fog Company. Montebello, Calif. Filed June 18, 1965.



Class 100—Miscellaneous

For Rental of Liquid Spray Equipment.

Class 103—Construction and Repair

For Repair of Liquid Spray Equipment.

First use Oct. 16, 1961.

SN 226,208. Micmac (S.A.R.L.), Saint Tropez, Var, France. Filed Aug. 25, 1965.

MICMAC

Priority claimed under Sec. 44(d) on French Reg. No. 92, dated Feb. 26, 1965 (Saint Tropez); Natl. Inst. No. 243,012.

Class 39—Clothing

For Dresses, Suits, Underwear, Shirts, Boots, Shoes and Slippers for Men, Women, and Children.

Class 51—Cosmetics and Toilet Preparations

For Cosmetics and Toilet Preparations—Namely, Perfumes, Hair Lotions, and Dentifrices for Men, Women, and Children.

SN 222,261. Western Felt Works, Chicago, Ill. Filed Nov. 8, 1965.

WESTFELT

Owner of Reg. No. 294,235.

Class 1—Raw or Partly Prepared Materials

For Industrial Felt.

First use July 1, 1960.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Wool Felt.

First use Oct. 15, 1925.

SN 235,807. Mack Trucks, Inc., Allentown, Pa. Filed Jan. 5, 1966.

PERFORMANCE COUNTS

Owner of Reg. No. 205,100.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Engine Bearings.
First use February 1957.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Piston Rings.
First use Aug. 19, 1964.

SN 236,267. The Jackmeyer Corporation, New York, N.Y. Filed Jan. 12, 1966.

JACKSPUN

Owner of Reg. Nos. 632,288 and 784,042.

Class 37—Paper and Stationery

For Label Blanks and Label Stock Material.

Class 38—Prints and Publications

For Printed Labels.

First use Sept. 15, 1964.

SN 236,337. Resistoflex Corporation, Roseland, N.J. Filed Jan. 13, 1966.

RESISTOFLEX

Owner of Reg. Nos. 403,630, 422,982, and others.

Class 1—Raw or Partly Prepared Materials

For Extruded and Molded Tubes, Sheets, and Special Shapes Made of Plastic Material; Pre-Stressed Plastic Tubing for Lining Pipe by Interfitting and Heat Relaxing.
First use June 25, 1945.

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Hose Fittings and Pipe Fittings and Parts Thereof; Pipe Lined With Plastic Material and Fittings Therefor; Solid Plastic Piping and Fittings Therefor; Bellows, Expansion Joints, and Flexible Couplings Made in Whole or in Part of Plastic Material; Reaction Vessel Components, Specifically Dip Pipes, Spargers, Thermowell Baffles, and Nozzle Liners Made in Whole or in Part of Plastic Material.
First use June 25, 1945.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stationary and Portable Hose Fitting Assembling Machines; Portable Tools for Assembling Solid Plastic Piping and Fittings; Cut-Off Machines for Metal and Non-Metallic Hose and Tubing; Saw Guides for Use in the Removal of Hose End Fittings; Article Feeding Components and Suction Cups of Molded Plastic for Use in Material Handling Equipment; Die Strippers, Wiper Dies, and Doctor Blades of Plastic Material.
First use Dec. 6, 1944.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Flexible Tubes; Hose; Hose Lengths With End Fittings Attached; Friction Power Transmission Rings, Sheets, Gaskets, Washers, and Packing Made in Whole or in Part of Flexible Plastic Material; Fire Resistant Jackets for Protecting Flexible Hose Lines.
First use Dec. 6, 1944.

SN 236,338. Resistoflex Corporation, Roseland, N.J. Filed Jan. 13, 1966.

RESISTOFLEX

Owner of Reg. Nos. 403,630, 422,982, and others.

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Hose Fittings and Pipe Fittings and Parts Thereof; Pipe Lined with Plastic Material and Fittings Therefor; Solid Plastic Piping and Fittings Therefor; Bellows, Expansion Joints, and Flexible Couplings Made in Whole or in Part of Plastic Material; Reaction Vessel Components, Specifically Dip Pipes, Spargers, Thermowell Baffles, and Nozzle Liners Made in Whole or in Part of Plastic Material.
First use Apr. 13, 1938.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stationary and Portable Hose Fitting Assembling Machines; Portable Tools for Assembling Solid Plastic Piping and Fittings; Cut-Off Machines for Metal and Non-Metallic Hose and Tubing; Saw Guides for Use in the Removal of Hose End Fittings; Article Feeding Components and Suction Cups of Molded Plastic for Use in Material Handling Equipment; Die Strippers, Wiper Dies, and Doctor Blades of Plastic Material.
First use Sept. 14, 1939.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Flexible Tubes; Hose; Hose Lengths With End Fittings Attached; Friction Power Transmission Rings, Sheets, Gaskets, Washers and Packing Made in Whole or in Part of Flexible Plastic Material; and Fire Resistant Jackets for Protecting Flexible Hose Lines.
First use Dec. 27, 1937.

SN 241,404. Laura M. Wright, d.b.a. De Witt Sales, East Liverpool, Ohio. Filed Mar. 21, 1966.

STERI-TOOL

Class 6—Chemicals and Chemical Compositions

For Germicidal Solution for Barber and Beauty Instruments.
First use Feb. 22, 1954.

Class 44—Dental, Medical, and Surgical Appliances

For Barber Tool Sterilizers.
First use Nov. 17, 1952.

Subj. to Intf. with SN 241,041.

SN 242,243. The House of Wrisley, Inc., Paris, Tenn. Filed Mar. 30, 1966.

DU PARC

Class 51—Cosmetics and Toilet Preparations

For Bath Oil.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Apr. 10, 1963.

SN 243,054. The Woodhill Chemical Sales Corporation, Cleveland, Ohio. Filed Apr. 8, 1966.

SPECIAL AGENT

Class 6—Chemicals and Chemical Compositions

For Belt Dressing Preparation.

Class 15—Oils and Greases

For Penetrating Lubricant.

Class 16—Protective and Decorative Coatings

For Undercoating Preparation for Vehicles and the Like.

Class 52—Detergents and Soaps

For Grease Removing Preparation and an Automatic Choke-Cleaning Preparation.

First use Jan. 24, 1966.

SN 243,287. American Textile Arts, Inc., Wilmington, Del. Filed Apr. 18, 1966.

ATATEX

Owner of Reg. No. 785,278.

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions for the Treatment of Textile Yarn and Fabrics in Order To Change the Properties Thereof, as for Example, To Improve Flexibility, Wrinkle-Resistance, Softness, Shape Retention, Bacterial Resistance, Water-Resistance or Dye Retention.
First use Mar. 28, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics Which Are Used in Making Clothing for Men, Women and Children, and Carpets, and Which Have Been Treated With Chemical Compositions To Change the Properties Thereof, as for Example, To Improve Flexibility, Wrinkle-Resistance, Softness, Shape Retention, Bacterial Resistance, Water-Resistance or Dye Retention.
First use Mar. 15, 1966.

Class 43—Thread and Yarn

For Yarn Treated With Chemical Compositions To Change the Properties Thereof, as for Example, To Improve Flexibility, Wrinkle-Resistance, Softness, Shape Retention, Bacterial Resistance, Water-Resistance or Dye Retention.
First use Feb. 18, 1966.

SN 243,288. American Textile Arts, Inc., Wilmington, Del. Filed Apr. 18, 1966.

ATAKON

Owner of Reg. No. 785,278.

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions for the Treatment of Textile Yarn and Fabrics in Order To Change the Properties Thereof, as for Example, To Improve Flexibility, Wrinkle-Resistance, Softness, Shape Retention, Bacterial Resistance, Water-Resistance or Dye Retention.
First use Mar. 28, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics Which Are Used in Making Clothing for Men, Women and Children, and Carpets, and Which Have Been Treated With Chemical Compositions To Change the Properties Thereof, as for Example, To Improve Flexibility, Wrinkle-Resistance, Softness, Shape Retention, Bacterial Resistance, Water-Resistance or Dye Retention.
First use Mar. 15, 1966.

Class 43—Thread and Yarn

For Yarn Treated With Chemical Compositions To Change the Properties Thereof, as for Example, To Improve Flexibility, Wrinkle-Resistance, Softness, Shape Retention, Bacterial Resistance, Water-Resistance or Dye Retention.
First use Feb. 18, 1966.

SN 245,040. Bristol-Myers Company, New York, N.Y. Filed May 6, 1966.

THAT LOOK

Class 51—Cosmetics and Toilet Preparations

For Hair Spray, and Hair Groom and Conditioner.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Feb. 1, 1966.

SN 251,678. Leslie Salt Co., San Francisco, Calif. Filed Aug. 4, 1966.

SALTUS

Owner of Reg. No. 701,176.

Class 6—Chemicals and Chemical Compositions

For Salt for Industrial Uses—Namely, Water Softening, Brining, and Refrigeration.
First use Nov. 30, 1948.

Class 46—Foods and Ingredients of Foods

For Salt for Animal Feed Mixes.
First use Jan. 1, 1950.

SN 254,085. The Andrew Jergens Company, Cincinnati, Ohio. Filed Sept. 9, 1966.

MARTINIQUE

Class 51—Cosmetics and Toilet Preparations

For Shaving Lather, Personal Deodorant, Hair Tonic, Cologne, Talc, and Aftershave Lotion.

Class 52—Detergents and Soaps

For Toilet Soap.

First use Aug. 12, 1966.

SN 255,945. Brisco Mountain Woodcrafters, Inc., Dingmans Ferry, Pa. Filed Oct. 7, 1966.

SPARKWOOD

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigarette Lighters and Cigarette Urns.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Combination Pepper Grinder and Salt Cellar.
First use July 29, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 231,514. Web Plastics Company, Richwood, Ohio. Filed Oct. 22, 1965.



For Plastic Extrusions for Further Fabrication.
First use on or before Aug. 30, 1957.

SN 232,063. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 3, 1965.

CROFON

For Plastic Fibers, Rods and Tubes and Jacketed Bundles Thereof, for Use in Transmitting Light or Images.
First use July 29, 1965.

SN 232,064. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 3, 1965.



Owner of Reg. Nos. 371,580, 736,664, and 796,817.
For Plastic Fibers, Rods and Tubes and Jacketed Bundles Thereof, for Use in Transmitting Light or Images.
First use July 29, 1965.

SN 240,988. United States Rubber Company, New York, N.Y. Filed Mar. 14, 1966.

VIBRIN-MIX

Owner of Reg. No. 429,017.
For Glass Reinforced Polyester for Use as a Molding Material.
First use Feb. 14, 1966.

SN 240,989. United States Rubber Company, New York, N.Y. Filed Mar. 14, 1966.

VIBRIN-MAT

Owner of Reg. No. 429,017.
For Glass Reinforced Polyester in Sheet Form for Use as a Molding Material.
First use Feb. 14, 1966.

SN 241,737. Bell Clay Company, Gleason, Tenn. Filed Mar. 24, 1966.



The words "Only" and "Certifies for Your Protection" are disclaimed apart from the mark as shown.
For Clay, Kaolin and Feldspar.
First use December 1964.

Class 2—Receptacles

SN 220,063. Aladdin Industries, Incorporated, Chicago, Ill. Filed June 1, 1965.

TWIN-TOTE

For Vacuum Insulated Containers Consisting of an Inner Frangible Container, an Outer Protective Jacket, and One or More Containers of Plastic.
First use on or about Mar. 18, 1965.

SN 231,934. Owens-Illinois, Inc., Toledo, Ohio. Filed Nov. 1, 1965.



For Reinforced Fibreboard Cartons.
First use Aug. 6, 1965.

SN 232,060. The Procter & Gamble Company, Cincinnati, Ohio. Filed Nov. 3, 1965.

FLEXI-TUBE

For Dentifrice Container.
First use Aug. 20, 1965.

SN 237,650. Bennett Industries, Inc., Peotone, Ill. Filed Feb. 1, 1966.



The drawing is lined for the color blue. The color blue is disclaimed as an integral part of the mark, and the representation of the pail is disclaimed apart from the mark as shown.
For Pails.
First use on or about Dec. 8, 1965.

SN 239,289. The Mid-Continent Wholesale Co., Denver, Colo. Filed Feb. 21, 1966.

EMBER

For Cigar Wrappers and Cigar Boxes.
First use Feb. 7, 1966.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 226,541. Julius V. Le Laurin and Julius V. Le Laurin, Jr. (partnership), d.b.a. Rawhide, El Cajon, Calif. Filed Aug. 26, 1965.

LITE-RIDER

For Saddles.
First use July 23, 1965.

Class 4—Abrasives and Polishing Materials

SN 237,837. Robert Hatcher, Tampa, Fla. Filed Feb. 2, 1966.

DAB

For Traction Additive for Slot Car Tires.
First use Aug. 1, 1965.

SN 238,663. Precision Diamond Tool Company, Elgin, Ill. Filed Feb. 11, 1966.

FORMALOY

For Grinding Wheels With Resinoid Bonded Grit.
First use June 23, 1965.

SN 238,664. Precision Diamond Tool Company, Elgin, Ill. Filed Feb. 11, 1966.

DHP

For Grinding Wheels With Resinoid Bonded Grit.
First use August 1965.

SN 238,838. Corn Products Company, New York, N.Y. Filed Feb. 15, 1966.

SCUFF ARMOR

For Shoe Polish.
First use at least as early as Aug. 7, 1961.

SN 239,220. The Butcher Polish Company, Malden, Mass. Filed Feb. 21, 1966.

CHECKMATE

For Self-Polishing Wax.
First use Jan. 24, 1966.

Class 5—Adhesives

SN 235,231. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Dec. 23, 1965.

PLYACIEN

Owner of Reg. No. 549,987.
For Protein Base Adhesives for Industrial Uses.
First use Apr. 14, 1950.

Class 6—Chemicals and Chemical Compositions

SN 190,606. Glyco Chemicals, Inc., New York, N.Y. Filed Apr. 8, 1964.

PEGOSPERSE

Owner of Reg. No. 500,963.
For Chemical Preparations Variously Useful as Anti-Foaming or Defoaming, Anti-Static, Anti-Tack, Dye Assistant and Penetrating, Leveling, Thickening, and Wetting Agents, as Plasticisers, as Emulsifying Base for Incorporation in Dry Cleaning Soaps, as a Lubricant in Metal Drawing and Stamping, in Paper Making and Penetrating Agents Used in the Working of Textiles, and as a Protective Enclosure for Hydroscopic Powders.
First use at least as early as June 4, 1963.

SN 213,331. Manuel Leames, New York, N.Y. Filed Mar. 4, 1965.

MEDURA

For Powder Preparation Which Will Prevent Runs in Women's Stockings.
First use April 1945.

SN 225,414. H.G. Enterprises, Kansas City, Mo. Filed Aug. 10, 1965.

DE-ODO RINSE

The word "Rinse" is disclaimed apart from the mark as shown.
For Anti-Bacterial Water Softening and Deodorant Preparation for Fabrics.
First use on or about July 6, 1965.

SN 226,546. Michiana Chemical Company, Niles, Mich. Filed Aug. 26, 1965.

BUGS-B-GONE

For Insect Killer.
First use about June 10, 1965.

SN 227,443. K. J. Quinn & Co., Inc., Malden, Mass. Filed Sept. 8, 1965.

MIRA-SHELL

For Scuff Resistant, Water-Repellent Dressing for Leather Shoes.
First use at least as early as Aug. 3, 1965.

SN 227,807. American Gas & Chemicals, Inc., New York, N.Y. Filed Sept. 15, 1965.

Gaz/Tec

For Chemically Impregnated Sheet of Paper for Detecting Oil Leaks in Fuel and Oil Lines.
First use Aug. 4, 1965.

SN 227,992. Avon Products, Inc., New York, N.Y. Filed Sept. 17, 1965.

JUNE IN JANUARY

Owner of Reg. No. 564,853.
For Air Freshener.
First use Aug. 27, 1965.

SN 228,206. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 20, 1965.

MALIX

For Metal Resinates of Rosin.
First use on or about Mar. 4, 1949.

SN 228,210. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 20, 1965.

SOLWYTE

For Tall Oil Rosins.
First use on or about July 1, 1955.

SN 228,317. Archer-Daniels-Midland Company, Minneapolis, Minn. Filed Sept. 22, 1965.

TEMPOL

For Oleoresinous Vehicle From Vegetable Oils or Synthetic Resins, for Tempering Hardboard.
First use on or about Mar. 31, 1954.

SN 234,906. Koninklijke Nederlandsche Gist- en Spiritusfabriek N.V., d.b.a. Royal Netherlands Distilleries Ltd., Delft, Netherlands. Filed Dec. 20, 1965.

MAXATASE

Priority claimed under Sec. 44(d) on Dutch application filed Aug. 18, 1965; Reg. No. 156,849, dated Sept. 27, 1965.
For Enzyme Preparation Sold to Manufacturers To Be Used as a Component of Their Prepared Cleaning Agents.

SN 239,662. Sandos, Inc., Hanover, N.J. Filed Feb. 25, 1966.

DRIMAFON

For Dyestuff for General Industrial Use.
First use Jan. 20, 1966.

SN 239,663. Sandos, Inc., Hanover, N.J. Filed Feb. 25, 1966.

VISCOFIL

For Dyestuff for General Industrial Use.
First use Aug. 8, 1951.

SN 241,041. Donald T. Duke, d.b.a. Duke Laboratories, Richmond, Ind. Filed Mar. 15, 1966.

STERI-TOOL

For Germicidal Preparation for Barber and Beauty Instruments.
First use Sept. 15, 1955.
Subj. to Intf. with SN 241,404.

SN 245,291. Chemical Packaging Corporation, Fort Lauderdale, Fla. Filed May 10, 1966.

HOSP-SEPTIC

The design of the caduceus is disclaimed apart from the mark as a whole.
For Spray-Dispensed Residual Bacteriostat.
First use Nov. 9, 1965.

SN 246,286. Dermik Pharmacal Co., Inc., Syosset, N.Y. Filed May 23, 1966.

POLYHYDROME-D

For Solubilized Polyvinylpyrrolidone for Use in Pharmaceutical and Cosmetic Creams, Lotions, and Gels.
First use Dec. 8, 1964.

SN 247,166. The Upjohn Company, Kalamazoo, Mich. Filed June 2, 1966.

ISONOL

For Polyols or Mixture of Polyols for Use in the Manufacture of Polyurethane Plastic Products.
First use May 19, 1966.

SN 247,203. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed June 3, 1966.

BACTURTEST

For Diagnostic Reagent for Laboratory Use To Detect Urinary Infections.
First use May 27, 1966.

SN 250,444. M. A. Bell Company, St. Louis, Mo. Filed July 18, 1966.

LADLETOP

For Chemical Preparation for Treatment of Slag.
First use Feb. 27, 1964.

SN 252,792. Roselawn Laboratories, Inc., Miami, Fla. Filed Aug. 22, 1966.

340—TEST

For Reagents—Namely, Serum Glutamic Oxaloacetic Transaminase, Serum Glutamic Pyruvic Transaminase, and Lactic Dehydrogenase Reagents.
First use May 1, 1966.

SN 254,216. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 12, 1966.

3M

Owner of Reg. No. 805,421.
For Liquid Non-Slip Coating.
First use Aug. 29, 1966.

SN 254,317. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 12, 1966.

ALBAGLOS

Owner of Reg. No. 776,385.
For Precipitated Calcium Carbonate.
First use Feb. 4, 1964.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 180,100. Bernhard Köllisch, d.b.a. Gebruder Kollisch, Nürnberg, Germany. Filed Oct. 30, 1963.

CONSUL royal

Owner of U.S. Reg. No. 695,512.
For Lighters.
First use February 1962; in commerce July 10, 1962.

SN 181,551. Bernhard Köllisch, d.b.a. Gebruder Kollisch, Nürnberg, Germany. Filed Nov. 20, 1963.

CONSUL ROYAL

Owner of U.S. Reg. No. 695,512.
For Lighters.
First use February 1962; in commerce July 10, 1962.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 181,201. Acme Specialties Corporation, River Grove, Ill. Filed Nov. 15, 1963.

LEADER

For Fireworks Sparklers.
First use Nov. 15, 1958.

Class 10—Fertilizers

SN 226,019. Nu-Gro Plant Foods Co., Federal Way, Wash. Filed Aug. 18, 1965.

NU-GRO

For Plant Foods/Fertilizers.
First use July 27, 1965.
Subj. to Intf. with SN 236,888.

SN 236,888. Glen J. Elliott, d.b.a. Clarel Laboratory, McHenry, Ill. Filed Jan. 20, 1966.

NU-GRO

For Plant Food.
First use Mar. 25, 1958.
Subj. to Intf. with SN 226,019.

Class 11—Inks and Inking Materials

SN 235,767. Anthony Ensink & Co., Chicago, Ill. Filed Jan. 4, 1966.

LITHO-SKETCH

For Lithographic Supplies—Namely, Plate Solutions, Gum Solutions, and Inks.
First use Sept. 6, 1957.

Class 12—Construction Materials

SN 226,742. Joe Hoots Construction, Inc., d.b.a. Joe Hoots Cabinet Shop, Gig Harbor, Wash. Filed Aug. 30, 1965.

For Cabinets That Are Built in and Attached to Kitchens and Bathrooms in New Houses and/or Remodeled Houses.
First use June 29, 1962.

SN 227,014. Denso-Chemie G.m.b.H., Leverkusen-Rheindorf, Germany. Filed Sept. 2, 1965.

TOKSTRIP

Owner of German Reg. No. 659,350, dated May 8, 1954.
For Flexible Sealing Compound for Concrete Structures, Tubes, and Pipes.

SN 238,698. Birdair Structures, Inc., Buffalo, N.Y. Filed Feb. 14, 1966.

For Air-Supported Shelters.
First use on or about Oct. 15, 1965.

SN 240,261. Contractors Chemical & Supply Co., San Leandro, Calif. Filed Mar. 7, 1966.

VINL-HESIVE

For Synthetic Resinous Adhesive Composition for Use as a Priming Coating for Cement, Concrete and Masonry Surfaces, for Use in the Bonding of Cement, Concrete and Masonry to Other Material, and for Use With Mortars, Plasters, and Cements for the Patching of Cement, Concrete and Masonry Surfaces.
First use on or about June 29, 1955.

SN 243,661. The Globe Brick Company, Newell, W. Va. Filed Apr. 18, 1966.



Owner of Reg. No. 779,310.
For Refractory Products—Namely, Bricks and Shapes for Use in the Construction of Heat Resistant Linings for Ladles.
First use May 14, 1964.

SN 243,887. Newberry Equipment Co., Inc., Memphis, Tenn. Filed Apr. 20, 1966.

SPIFFY

For Construction Materials — Namely, Permanent Steel Curbing Forms Used in Constructing Islands to Support Gasoline Pumps in Service Stations, Walk Ways, Sign and Light Pole Bases.
First use June 14, 1954.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 230,515. Crane Co., New York, N.Y. Filed Oct. 19, 1965.

MANOR

For Plumbing Fixtures, Plumbing Trim and Bath Accessories of All Types and Kinds.
First use Sept. 20, 1965.

SN 233,426. White Manufacturing Company of Missouri, Houston, Tex. Filed Nov. 26, 1965.

SUPER-FLOW

For Quick Release Couplings for Coupling Together Two Conduits.
First use Apr. 14, 1965.

SN 233,720. Markwell Manufacturing Company, Inc., New York, N.Y. Filed Dec. 1, 1965.

SABER-TOOTH

For Staples Used in Stapling Machines.
First use Oct. 21, 1965.

SN 236,929. Società Metallurgica Italiana, Florence, Italy. Filed Jan. 20, 1966.

TUBRACORD

Priority claimed under Sec. 44(d) on Italian application filed Nov. 18, 1965; Reg. No. 178,961, dated June 16, 1966.
For Ropes or Cables, Insulated or Not, of Copper Tubing.

SN 245,372. APL Corporation, Brooklyn, N.Y. Filed May 11, 1966.

INSTANT HANGING SPACE

For Peg Rack.
First use Sept. 10, 1965.

Class 14 — Metals and Metal Castings and Forgings

SN 237,492. Southwire Company, Carrollton, Ga. Filed Jan. 27, 1966.

SCR

For Metal Rod.
First use on or about Dec. 27, 1965.

Class 15 — Oils and Greases

SN 237,039. Saab Aktiebolag, d.b.a. Saab Motors, Inc., New Haven, Conn. Filed Jan. 21, 1966.

SAAB

Owner of Reg. Nos. 714,948, 717,857, and 794,388.
For Motor Oil.
First use Jan. 5, 1959.

SN 238,500. Consumers Cooperative Association, Kansas City Mo. Filed Feb. 10, 1966.

DOUBLE CIRCLE

Owner of Reg. No. 795,519.
For Motor Oils.
First use Nov. 30, 1965.

SN 238,501. Consumers Cooperative Association, Kansas City, Mo. Filed Feb. 10, 1966.

LITH-GARD

For Lithium Gun Grease.
First use Nov. 26, 1965.

SN 241,289. Tune Masters, Gardena, Calif. Filed Mar. 17, 1966.



For Compound for Use as a Motor Fuel Additive and as a Cleaner Useful in Removing Gums, Varnishes, etc., From Internal Combustion Engines.
First use Jan. 28, 1966.

SN 241,290. Tune Masters, Gardena, Calif. Filed Mar. 17, 1966.

TUNE MASTERS

For Compound for Use as a Motor Fuel Additive and as a Cleaner Useful in Removing Gums, Varnishes, etc., From Internal Combustion Engines.
First use Jan. 28, 1966.

Class 16 — Protective and Decorative Coatings

SN 232,936. The Savogran Company, Norwood, Mass. Filed Nov. 18, 1965.

DEGLOSSER

For Paint Bonder.
First use July 1957.

SN 242,612. Kelco Company, San Diego, Calif. Filed Apr. 4, 1966.

KELZAN

For Carbohydrate Gums for Use in Paints.
First use Dec. 26, 1961.

SN 242,894. Benjamin Moore & Co., New York, N.Y. Filed Apr. 6, 1966.

MOORWOOD

Owner of Reg. Nos. 85,668, 711,435, and others.
For Heavy Body and Penetrating Stains for Application to Wood Surfaces.
First use on or about Aug. 11, 1965.

SN 242,882. D. H. Cutler's Paint Industries, Inc., Philadelphia, Pa. Filed Apr. 7, 1966.

NU-TREND

For Interior House Paints.
First use Mar. 9, 1966.

Class 17 — Tobacco Products

SN 233,895. Liggett & Myers Tobacco Company, New York, N.Y. Filed Dec. 2, 1965.



The drawing is lined for the colors red and gold. Owner of Reg. Nos. 582,520, 594,798, and 741,520.
For Cigarettes.
First use February 1963.

Class 18 — Medicines and Pharmaceutical Preparations

SN 185,903. The Kendall Company, Walpole, Mass. Filed Feb. 3, 1964.

KENDALL

Owner of Reg. Nos. 112,986, 730,226, and others.
For Veterinary Preparation for the Treatment of Cuts, Bruises, Chapped and Swollen Udders.
First use Sept. 20, 1963.

SN 226,676. The Purdue Frederick Company, Yonkers, N.Y., by assignment and merger from International Latex Corporation, Dover, Del. Filed July 19, 1965.

ACTIVITE

For Multivitamin Capsules.
First use 1951.
Subj. to Intf. with SN 240,943.

SN 231,800. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. Filed Oct. 22, 1965.

ICEBERG

For Quick Chilling Local Anesthetic for Temporarily Relieving Pain and Swelling of Sprains, Contusions, Hemorrhages and Muscular Strain.
First use Aug. 25, 1964.

SN 236,298. Merck & Co., Inc., Rahway, N.J. Filed Jan. 13, 1966.

NosDECAGEL

Owner of Reg. No. 697,966.
For Dermatologic Preparations for Local External Application.
First use Dec. 28, 1965.

SN 237,291. American Home Products Corporation, New York, N.Y. Filed Jan. 26, 1966.

PREMPAK

For Package Containing a Dosage of a Hormone Medicament.
First use Dec. 17, 1965.

SN 237,488. Salsbury Laboratories, Charles City, Iowa. Filed Jan. 27, 1966.



The mark consists of the letter "S" and design. Owner of Reg. Nos. 520,225 and 725,254.
For Veterinary Preparations—Namely, Veterinary Biologicals, Tonics and Growth Promoting Agents for Animals, and Bacteriostats for Internal Use.
First use Dec. 30, 1965.

SN 238,860. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 15, 1966.

CAVADOL

Analgesic Preparations To Be Taken Internally.
First use Jan. 28, 1966.

SN 240,943. Nicholas Proprietary Limited, Chadstone, Victoria, Australia. Filed Mar. 14, 1966.

AKTA-VITE

Owner of Australian Reg. No. 76,883, dated Aug. 12, 1940.
For Pharmaceutical Preparation for the Treatment of Vitamin Deficiency Conditions.
Subj. to Intf. with SN 223,676.

SN 241,222. American Cyanamid Company, Wayne, N.J. Filed Mar. 17, 1966.

SOOVAC

For Veterinary Vaccine for Immunization of Healthy Swine Against Hog Cholera.
First use Mar. 3, 1966.

SN 241,437. Dr. August Wolff Chemische-Pharmazeutische Fabrik Kommanditgesellschaft, Bielefeld, Germany. Filed Mar. 21, 1966.

Bänatopan

Owner of German Reg. No. 92,630, dated Sept. 10, 1906.
For Vitamin-Mineral Supplement for Human Use.

SN 242,198. Armour Pharmaceutical Company, Chicago, Ill. Filed Mar. 30, 1966.

COPPER AID

For Protective Wound Treatment Preparation for Animals.
First use Oct. 26, 1965.

SN 242,302. Vita Plus Corporation, Madison, Wis. Filed Mar. 30, 1966.



Owner of Reg. No. 690,442.
For Mineral Additives and Vitamin Fortifications To Be Used in the Preparation of Poultry and Livestock Feeds.
First use Sept. 24, 1965.

SN 243,517. Acme Cotton Products Co., Inc., Valley Stream, N.Y. Filed Apr. 15, 1966.



The logo forming the trademark conceives of the formation of the letter "A" from a roll of absorbent cotton on a background triangle in contrasting colors.
For Preparations for the Treatment of Minor Skin Cuts, Abrasions, and Burns.
First use on or about Apr. 15, 1965.

SN 244,571. Commerce Drug Co., Inc., Farmingdale, N.Y. Filed Apr. 29, 1966.

BABY-EASE

Owner of Reg. No. 55,762.
For Diaper Rash and Skin Cream.
First use Apr. 3, 1963.

SN 248,350. Masti-Kure Products Co., Norwich, Conn. Filed June 17, 1966.

INSERTORY

For Suppositories for Animals.
First use as early as Apr. 1, 1966.

SN 252,784. American Home Products Corporation, New York, N.Y. Filed Aug. 22, 1966.

COUNTERATTACK

For Tablets for Symptomatic Relief of Pain and Minor Respiratory Ailments.
First use Aug. 11, 1966.

SN 252,998. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Aug. 24, 1966.

RhoGAM

For Diagnostics for Use in the Body.
First use June 21, 1966.

SN 254,095. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 9, 1966.

SINEQUAN

Owner of Reg. No. 759,086.
For Psychotherapeutic Agent.
First use Aug. 5, 1965.

SN 254,212. McKesson & Robbins, Incorporated, d.b.a. McKesson Laboratories, New York, N.Y. Filed Sept. 12, 1966.

AMPHICOL

For Sulfisoxasole.
First use at least as early as Aug. 3, 1966.

Class 19—Vehicles

SN 220,331. Teledex Incorporated, North Wales, Pa. Filed June 3, 1965.

DONZI MARINE

Applicant disclaims any right in the term "Marine" separate from its use in the entire mark "Donzi Marine."
For Boats.
First use May 7, 1964.

SN 235,538. Theodore Equipment Corporation, Wood Ridge, N.J. Filed Dec. 29, 1965.



For Food Service Equipment—Namely, Wheeled Food Compartment Units, Sliding and Portable Food Compartmented Conveyances, Wheeled Food Display Units, Wheeled Food Dispensing Units, Wheeled, Sliding and Portable Food Dispensing Conveyances, Dish Transporting Carts and Conveyances, Tray Transporting Carts and Conveyances, Tableware Transporting Carts and Conveyances, Food Transporting Carts and Conveyances, Bussing Carts and Conveyances, Hand Trucks, Hand Carts, Container Hand Trucks, Container Hand Carts, Tiered Hand Carts and Trucks, and Shelved Hand Carts and Trucks.
First use Jan. 15, 1964.

SN 237,375. Outboard Marine Corporation, Waukegan, Ill. Filed Jan. 26, 1966.

SURFER

For Boats.
First use on or about Jan. 2, 1965.

Class 20—Linoleum and Oiled Cloth

SN 239,034. Flexon Chemical Corporation, Trenton, N.J. Filed Feb. 17, 1966.

TERRALON

For Plastic Wall or Floor Covering, Sold in Tile or Sheet Form.
First use Feb. 11, 1966.

SN 243,528. Armstrong Cork Company, Lancaster, Pa. Filed Apr. 15, 1966.

ARTWOOD

For Resilient Hard Surface Type Vinyl Covering for Floors, Walls, and Other Surfaces.
First use Jan. 3, 1966.

SN 243,529. Armstrong Cork Company, Lancaster, Pa. Filed Apr. 15, 1966.

SABRIL

For Resilient Hard Surface Type Vinyl Covering for Floors, Walls, and Other Surfaces.
First use Mar. 28, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 206,315. C. Wayne True, d.b.a. True Service & Supply, Watertown, S. Dak. Filed Nov. 16, 1964.

TRUE THAW

For Flexible Electrical Heaters for Thawing of Frozen Pipes and to Prevent Freezing Thereof.
First use at least as early as February 1963.

SN 207,212. International Instruments, Incorporated, Orange, Conn. Filed Dec. 1, 1964.

ADAP-TROL

For Output Signal Converter Used as a Plug-In Module With a Non-Contact Electronic Control Meter in the Nature of a Meter Relay.
First use on or about Sept. 30, 1964.

SN 207,704. Benedict Productions, Incorporated, Schenectady, N.Y. Filed Dec. 8, 1964.



For Electronic Alarm Devices.
First use Nov. 7, 1963.

SN 216,049. Cerro Corporation, New York, N.Y. Filed Apr. 8, 1965.

ROCKCOTE

For Coating or Finish Sold as a Component of Electrical Wire or Cable.
First use Mar. 18, 1965.

SN 229,595. Sunbeam Corporation, Chicago, Ill. Filed Oct. 7, 1965.

SUNBEAM

Owner of Reg. No. 627,680.
For Electric Shoe Polishers, and Parts Therefor.
First use Aug. 3, 1965.

SN 233,416. Norbatrol Electronics Corporation, Pittsburgh, Pa. Filed Nov. 9, 1965.

NORBASINK

Owner of Reg. No. 754,024.
For Chassis and Enclosures for Electrical Power Control Units.
First use in or about October 1965.

SN 232,533. Defense Electronics, Inc., Rockville, Md. Filed Nov. 12, 1965.

DEI Defense Electronics, Inc.

For Advanced Electronic Equipment of the Type Used in the Fields of RF and Digital Ground Station Telemetry, Surveillance and Pre-Detection Recording, Including But Not Limited to Digital Equipments, VHF/UHF Telemetry Receivers, Computer Programmed Telemetry Receivers, Low Noise Preamplifiers, Multi-Couplers, Spectrum Display Units, UHF Transmitters, Surveillance Receivers, "Monopulse" Tracking Receivers, Pre-Digital Recording and Playback Equipment, Diversity Combiners, Boresight Sources, A/D and D/A Converters, PCM Bit Rate Synchronizers, PCM Demodulators, Synthesisers, Collimation Transmitters, and Complete Ground Station Systems Ranging From Antenna to Computer, as Well as Civilian and Commercial Adaptations Thereof.
First use Sept. 20, 1964.

SN 233,217. Jensen Industries, Inc., Estherville, Iowa. Filed Nov. 22, 1965.

JENSEN ALARM-KING

For Fire and Smoke Alarm Device Which Has a Temperature Sensor for Electrically Triggering an Audible Alarm, and Which Has an Electric Eye for Detecting Smoke and Triggering the Audible Alarm in Response to Said Detection.
First use Oct. 19, 1965.

SN 236,184. The Electric Storage Battery Company, Philadelphia, Pa. Filed Jan. 11, 1966.

SEAL KING

For Electric Batteries, and Parts Thereof.
First use at least as early as October 1965.

SN 236,301. Thomas Industries Inc., Louisville, Ky. Filed Jan. 12, 1966.

CAPELLA

For Electric Lighting Fixtures.
First use June 30, 1965.

SN 238,944. Fedtro, Inc., Rockville Centre, N.Y. Filed Feb. 16, 1966.

MICRO-MEG

For Transistorised Megaphones.
First use Feb. 4, 1966.

SN 242,744. New England Laminates Company, Inc., Stamford, Conn. Filed Apr. 5, 1966.

NELAM

For Reinforced Plastic Laminates Used as an Insulating Board in the Electrical Industry.
First use Dec. 20, 1965.

SN 251,108. The Electric Storage Battery Company, Philadelphia, Pa. Filed July 27, 1966.

TIGER POWER

For Batteries.
First use Feb. 22, 1966.
Subj. to Intf. with SN 242,421.

Class 22 — Games, Toys, and Sporting Goods

SN 225,364. Dale E. Steffey, d.b.a. Chula Vista Novelty Co., Chula Vista, Calif. Filed Aug. 9, 1965.

DERBY DICE

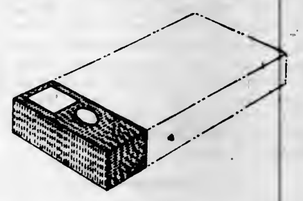
The word "Dice" is disclaimed, separate and apart from the mark as shown.
For Dice Game With Horse Race Markings on the Faces of the Die for Playing a Horse Race Game.
First use May 4, 1962.

SN 226,685. Strategic Merchandising Corp., New York, N.Y. Filed Aug. 27, 1965.

BONUS BINGO

The lining in the drawing is for shading purposes only. Applicant disclaims the word "Bingo" separate and apart from the mark as a whole.
For Printed Material Comprising Descriptive and Promotional Literature, Prize Slips and Pamphlets Wherein Printed Games Are Presented, Said Printed Material Being for Use and Distribution by Retail Stores as Equipment for Promoting and Playing a Promotional Game.
First use Jan. 12, 1965.

SN 229,054. Milton Bradley Company, Springfield, Mass. Filed Oct. 1, 1965.



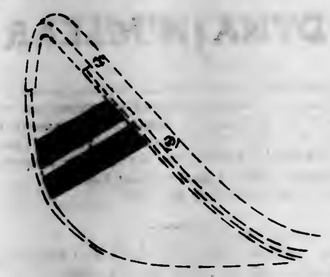
The drawing is lined for the color grey. Owner of Reg. No. 642,857.
For Games and Toys Including Board Games Played With Movable Playing Pieces, Card Games, Games Comprising Playing Members Carrying Indicia, Jig-Saw Games, Puzzles, Toy Animals, Dolls and Costumes Therefor, Toy Blocks, Toy Wheeled Vehicles, Pull Toys, Toy Houses and Furniture Therefor, Pegboards, Colored Sticks and Balls and Squares, Toy Beads, and Sewing Cards.
First use February 1952.

SN 229,619. The Wiffle Ball, Inc., Shelton, Conn. Filed Oct. 7, 1965.

WIFFLE

Owner of Reg. Nos. 643,895 and 802,992.
For Toy Flying Saucers and Equipment Sold as a Unit for Playing a Toy Golf Game.
First use Sept. 2, 1965.

SN 233,166. Ateliers Michal, Sillans, Isere, France. Filed Nov. 23, 1965.



Priority claimed under Sec. 44(d) on French Reg. No. 701,072, dated Oct. 4, 1965.
For Snow Skis.

SN 237,057. Veneko Corporation, Dunkirk, N.Y. Filed Jan. 21, 1966.



For Snow Skis.
First use Dec. 17, 1965.

SN 237,058. Veneko Corporation, Dunkirk, N.Y. Filed Jan. 21, 1966.

VENTURE

For Snow Skis.
First use Dec. 17, 1965.

SN 237,229. La Boule Obut, Saint-Etienne, Loire, France. Filed Jan. 25, 1966.

OBUT

For Bowling Balls.
First use 1962; in commerce 1962.

SN 237,231. La Boule Obut, Saint-Etienne, Loire, France. Filed Jan. 25, 1966.

LA LOG BOULE

The French words "La Boule" translated mean "the ball." No claim of exclusive right is made to "La Boule" for bowling balls.
For Bowling Balls.
First use 1964; in commerce 1964.

SN 237,464. Louis Marx & Co., Inc., New York, N.Y. Filed Jan. 27, 1966.

MIKE HAZARD DOUBLE AGENT

The name "Mike Hazard" is entirely fictional.
For Male Doll Figures, Toy Gun Sets and Toy Sleuth Sets, and Accessories.
First use Jan. 19, 1966.

SN 239,915. Lisbeth Whiting Company, Inc., Jamaica, N.Y. Filed Mar. 1, 1966.

APPLE PIE

For Toy Knitting Device.
First use Feb. 14, 1966.

SN 249,911. Brunswick Corporation, Chicago, Ill. Filed July 11, 1966.

ARMOR FRAME

For Kickbacks for Bowling Lanes.
First use May 5, 1966.

SN 250,895. James H. Dye, d.b.a. Dye-Matic Enterprises, Woodland Hills, Calif. Filed July 25, 1966.

McTavish Masters

Applicant knows no person having the name "McTavish."
For Golf Balls.
First use Aug. 1, 1965.

SN 255,565. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

FREEZY SLIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,569. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

LIZ LOCKET

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,570. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

LORNA LOCKET

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,571. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

LILAC LOCKET

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,572. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

LOU LOCKET

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,573. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

SURFY SKIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,574. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

SNIFFY-MINT

For Stuffed Animal Toys.
First use Sept. 12, 1966.

SN 255,577. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

LOIS LOCKET

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,578. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

LARKY LOCKET

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,579. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

LOLA LOCKET

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 255,951. Federal Employees' Distributing Company, d.b.a. Fedco, Inc., Los Angeles, Calif. Filed Oct. 7, 1966.

SAN MARINO

For Golf Balls and Tennis Racquets.
First use Jan. 14, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 216,946. Dyna-Nuclear Corporation, Atlantic Highlands, N.J. Filed Apr. 20, 1965.

DYN

For Automotive and Engine Parts—Namely, Blow-By Valves, Emission Valves, Smog-Prevention and Inhibiting Valves, and an Automotive Engine Replacement Parts Kit Comprising Blow-By Valves, Emission Valves, Smog-Prevention and Inhibiting Valves, and Gauges for Determining the Correct Type and Size of Replacement Valve.
First use on or about July 20, 1962.

SN 216,947. Dyna-Nuclear Corporation, Atlantic Highlands, N.J. Filed Apr. 20, 1965.

DYNA/NUCLEAR

For Automotive and Engine Parts—Namely, Blow-By Valves, Emission Valves, Smog-Prevention and Inhibiting Valves, and an Automotive Engine Replacement Parts Kit Comprising Blow-By Valves, Emission Valves, Smog-Prevention and Inhibiting Valves, and Gauges for Determining the Correct Type and Size of Replacement Valve.
First use on or about July 20, 1962.

SN 219,491. Wheel Estate, Inc., d.b.a. Old File Cutlery Company, Memphis, Tenn. Filed May 21, 1965.

OLD FILE

For Cutlery—Namely, Knives, Forks, Cleavers, Scrapers, Turners, Skinners, Stickers, Choppers, Skewers, and Spatulas.
First use Feb. 15, 1965.

SN 225,083. Weben Industries, Inc., Dallas, Tex. Filed Aug. 5, 1965.

VEND-A-VAC

For Coin-Operated Vacuum Stations Commonly Used in Connection With Car-Wash Operations.
First use June 28, 1965.

SN 227,006. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Sept. 2, 1965.

TWIN GRIP

For Grinding Machines.
First use in or about August 1964.

SN 227,564. Crane Co., New York, N.Y. Filed Sept. 10, 1965.

Silent - Flo

For Hot Water Circulating Pumps for Domestic Use, and Parts Therefor.
First use Aug. 25, 1965.

SN 229,635. Chicago Pneumatic Tool Company, New York, N.Y. Filed Oct. 8, 1965.

POWER-SCREW

For Gaseous Medium Compressors.
First use Sept. 9, 1965.

SN 232,774. Eversharp, Inc., Milford, Conn. Filed Nov. 16, 1965.

GLIDING CONVEX EDGE

Applicant disclaims the term "Convex Edge" apart from the mark as shown.
For Safety Razor Blades, and Dispensers Therefor.
First use Oct. 22, 1965.

SN 236,136. Powertrace Corporation, Chicago, Ill. Filed Jan. 10, 1966.

POWERTRACE

For Tracer Device for Grinding and Controlling Movements of Cutters of Lathes, etc.
First use Oct. 21, 1964.

SN 236,998. Harris-Intertype Corporation, Cleveland, Ohio. Filed Jan. 21, 1966.

INTERTYPESETTER

Owner of Reg. Nos. 91,876 and 607,941.
For Automatic Reed-Actuating Units for Tape-Operated, Typographical Composing Machines.
First use July 26, 1965.

SN 243,324. Kingsbury Machine Tool Corporation, Keene, N.H. Filed Apr. 13, 1966.

KINGSBURY

For Drilling and Tapping Machines.
First use 1918.

SN 243,741. Frank Wheatley Industries, Inc., Tulsa, Okla. Filed Apr. 18, 1966.

FWI

For Pumps, Spheres, and Pig Launchers and Receivers, Desanders and Tapping Machines.
First use Mar. 1, 1965.

SN 247,293. New Castle Products, Inc., New Castle, Ind. Filed June 6, 1966.

The lining in the drawing indicates shading as part of the mark and does not indicate color. Owner of Reg. Nos. 740,899, 808,320, and 811,395.
For Combination Clutch-Brake Drives and Drive Units for Industrial, Naval, Military, and Custom Applications.
First use Apr. 21, 1966; June 29, 1961, as to "F-C."

SN 249,363. Union Special Machine Company, Chicago, Ill. Filed June 30, 1966.

UnionSpecial

Owner of Reg. No. 49,361.
For Industrial Sewing Machines, Accessories Therefor and Parts Thereof, Including Needles.
First use March 1955; Nov. 18, 1885, in a different form.

Class 26—Measuring and Scientific Appliances

SN 179,643. Maintenance Engineering Company Incorporated, Claymont, Del. Filed Oct. 28, 1963.

ME

For Process Instrument Equipment—Namely, Pressure Gauges, Thermometers, Thermowells, Dead Weight Testers, and Viscometers.
First use on or about Jan. 9, 1963.

SN 221,183. Intransit Motion Pictures, Inc., New York, N.Y. Filed June 15, 1965.

INTRANSIT

The representation of the film reel appearing in the mark on the drawing is disclaimed. Owner of Reg. No. 813,685.
For Motion Picture and Audio Equipment—Namely, Projectors, Pallets, and Screens.
First use Dec. 1, 1964.

SN 234,552. Fairchild Camera and Instrument Corporation, Syosset, N.Y. Filed Dec. 14, 1965.

STAN

For Apparatus for Automatically Computing Aircraft Weight and Center of Gravity.
First use May 15, 1965.

SN 237,476. Peck's Products Company, St. Louis, Mo. Filed Jan. 27, 1966.

PEX-O-MATIC

For Apparatus for the Automatic Testing of the Concentration of Metal Treatment Solutions, and for Maintaining a Predetermined Concentration Thereof.
First use July 1, 1965.

SN 239,205. American Bosch Arma Corp., Garden City, N.Y. Filed Feb. 21, 1966.

DYNATUNE

For Gyroscopes.
First use Jan. 21, 1966.

SN 239,526. Lanchs Laboratories, Inc., Bellevue, Wash. Filed Feb. 24, 1966.

Guard

For Electronic Moisture Detection Apparatus for Measuring Moisture Level in Boards, and Marking the Boards in Response to Such Measurements.
First use May 21, 1965.

SN 240,061. Driaire Incorporated, East Norwalk, Conn. Filed Mar. 8, 1966.

AQUA-TECTOR

For Free Water Detector Pads To Be Wetted With Jet Fuel and Subjected to Ultra-Violet Light.
First use Dec. 17, 1965.

SN 244,451. Alina Corp., Plainview, N.Y. Filed Apr. 28, 1966.

VIDIMATIC

For Numerical Tape Control Devices for the Automatic Programmed Control of Machine Tools.
First use January 1966.

Class 27 — Horological Instruments

SN 236,806. Croton Watch Co., Inc., Croton-on-Hudson, N.Y. Filed Jan. 19, 1966.

WILDCAT

For Watches.
First use on or about Oct. 12, 1965.

SN 237,225. Lucien Piccard Watch Corp., New York, N.Y. Filed Jan. 25, 1966.

JEWELAMATIC

For Watches.
First use Nov. 13, 1965.

SN 237,226. Lucien Piccard Watch Corp., New York, N.Y. Filed Jan. 25, 1966.

JEWELTRONIC

For Watches.
First use Nov. 13, 1965.

SN 237,267. Lucien Piccard Watch Corp., New York, N.Y. Filed Jan. 25, 1966.

LUBRIMATIC

For Watches.
First use Nov. 13, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 234,277. Gemtone, Inc., New York, N.Y. Filed Dec. 9, 1965.



For Jewelry for Personal Adornment.
First use Jan. 25, 1964.

SN 234,888. Walter A. Dunn, d.b.a. Dunn Brothers, Providence, R.I. Filed Dec. 20, 1965.

Spruce

For Jewelry.
First use on or about Dec. 7, 1965.

SN 237,075. Axam, Inc., Brooklyn, N.Y. Filed Jan. 24, 1966.

TENS-A-MATIC

For Adjustable Clip for Ladies' Earrings.
First use Nov. 16, 1965.

SN 238,234. Kallman Diamond Corp., New York, N.Y. Filed Feb. 7, 1966.

K.D.C.

For Precious Metal Jewelry—Namely, Finger Rings.
First use Jan. 15, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 249,279. Simonis Company, Chicago, Ill. Filed June 30, 1966.

STA-SOFT

Owner of Reg. No. 734,727.
First use Mar. 1, 1961.
For Synthetic Sponges.

Class 30 — Crockery, Earthenware, and Porcelain

SN 235,697. Noritake Co., Inc., New York, N.Y. Filed Jan. 3, 1966.

MERIDIAN

For China Dinnerware and Tableware.
First use Nov. 10, 1964.

SN 236,505. Noritake Co., Inc., New York, N.Y. Filed Jan. 14, 1966.

PROGRESSION

For China Dinnerware and Cookware.
First use on or about Dec. 30, 1965.

Class 31 — Filters and Refrigerators

SN 176,768. American Dairy Queen Corporation, Minneapolis, Minn. Filed Sept. 12, 1963.



For Freezer-Type Machine for Preparing and Dispensing a Semi-Frozen Confection Drink.
First use Oct. 31, 1962.

SN 205,165. Enviroe, Inc., Albuquerque, N. Mex., by change of name from Comfort Air Service Company, Inc., Albuquerque, N. Mex. Filed Oct. 26, 1964.

ULTRACEL

For Supporting and Sealing Means for Air Filters for Filtering the Air of Rooms and Other Enclosed Spaces.
First use July 28, 1964.

SN 231,091. Fluid Dynamics, Incorporated, New York, N.Y. Filed Oct. 22, 1965.

DEEPSAFE

For Microonic Filters for the Filtration of Air, Nitrogen, Hydraulic Fluid, Fuel, and Water.
First use Sept. 30, 1965.

SN 245,022. Shamokin Filler Co., Inc., Shamokin, Pa. Filed May 5, 1966.

FILT-O-CITE

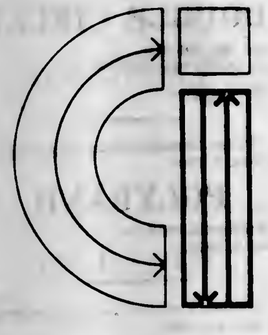
For Processed and Graded Anthracite Coal for Use in Filtration of Water, Industrial Sewage, and Chemicals.
First use Mar. 21, 1966.

SN 248,652. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 22, 1966.

PERMASEP

For Permeating Apparatus for Seperating Components of a Mixture.
First use May 5, 1966.

SN 250,541. Union Tank Car Company, Chicago, Ill. Filed July 18, 1966.



For Ion Exchange Equipment.
First use June 1966.

SN 251,022. Union Tank Car Company, Chicago, Ill. Filed July 25, 1966.

ROTO-SCOUR

Owner of Reg. Nos. 657,717 and 776,180.
For Liquid Filters.
First use on or about July 8, 1966.

Class 32 — Furniture and Upholstery

SN 235,450. Maynard M. Schlager, d.b.a. Schlager Wood & Metal Products, Revere, Mass. Filed Dec. 28, 1965.

PERM-A-PEDIC

For Mattresses and Box Springs.
First use June 22, 1950.

SN 240,210. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company, Chicago Heights, Ill. Filed Mar. 4, 1966.

HIGHLANDER

For Window Shades.
First use Feb. 1, 1966.

SN 240,507. Cook Paint & Varnish Company, Kansas City, Mo. Filed Mar. 9, 1966.

MARBL-MAGIC

For Man-Made Marble Products for Use as Tops for Tables, Dressers, and Other Furniture Pieces.
First use Apr. 30, 1965.

SN 240,650. Quaker Maid Kitchens, Inc., Leesport, Pa. Filed Mar. 10, 1966.

Conestoga Homestead

Owner of Reg. No. 777,892.
For Kitchen Cabinets.
First use Feb. 10, 1966.

SN 240,651. Quaker Maid Kitchens, Inc., Leesport, Pa. Filed Mar. 10, 1966.

Conestoga Mission

Owner of Reg. No. 777,892.
For Kitchen Cabinets.
First use Feb. 10, 1966.

SN 240,864. Deco House, Inc., Birmingham, Ala. Filed Mar. 14, 1966.

INTIMATE ISLAND

For Upholstered Seating Pieces Comprising Chairs, Love Seat, Sofa, and Table.
First use Jan. 3, 1966.

SN 241,717. Williams Mod-U-Plant Office Furniture Corporation, New York, N.Y. Filed Mar. 28, 1966.

STATUS

For Desks.
First use Mar. 3, 1966.

Class 33 — Glassware

SN 234,260. Vereinigte Farbenglaswerke A.G., Zwiesel, Lower Bavaria, Germany. Filed Dec. 8, 1965.



The word "Zwiesel" is disclaimed apart from the mark as shown. Owner of German Reg. No. 707,631, dated Jan. 28, 1957.
For Household, Hotel, and Restaurant Glassware.
First use 1955; in commerce June 5, 1959.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 194,518. Remco Manufacturing Company, Inc., Macon, Ga. Filed May 28, 1964.



The words "Ozone-Aire" are disclaimed apart from the mark as shown.
For Electronic Humidity, Bacteria, and Odor Control Units.
First use on or about Aug. 9, 1963.

SN 205,303. Lennox Industries Inc., Marshalltown, Iowa. Filed Nov. 2, 1964.

LENNOX
Duraglass

Owner of Reg. No. 710,628.
For Heat Exchanger Protective Surface Coatings Sold as a Part of or Applied to Heat Exchangers.
First use Mar. 30, 1964.

SN 216,120. Air Devices, Inc., New York, N.Y. Filed Apr. 8, 1965.

AGITAIR MARK II

Owner of Reg. Nos. 378,803, 651,484, and 736,424.
For Air-Conditioning Equipment.
First use Jan. 15, 1964.

SN 222,199. Pilgrim Tool & Die Co., Gardena, Calif. Filed June 28, 1965.

PILGRIM

For Sonic Generators, Sonic Welding Apparatus Employing Such Generators, and Parts Therefor—Namely, Step and Exponential Horns and Accoustical Supports Used in Connection With Sonic Welding.
First use Mar. 4, 1964.

SN 230,516. Crane Co., New York, N.Y. Filed Oct. 19, 1965.

MANOR

For Furnaces, Air Conditioning Units and Boilers of All Types and Kinds, and Parts Thereof.
First use Sept. 20, 1965.

SN 235,716. Ramco, Inc., d.b.a. Ramco Manufacturing & Engineering, Portland, Oreg. Filed Jan. 3, 1966.

CONSEL

For Electric Baseboard Heaters.
First use Sept. 8, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 231,607. United Equipment Sales, Inc., Atlanta, Ga. Filed Oct. 24, 1965.

SUPER KING

For Brake Lining.
First use Jan. 11, 1965.

SN 233,997. Consumers Cooperative Association, Kansas City, Mo. Filed Dec. 6, 1965.

DOUBLE CIRCLE

Owner of Reg. No. 795,519.
For Tires for Motor Vehicles.
First use Aug. 2, 1965.

SN 235,635. Dodge Manufacturing Corporation, Mishawaka, Ind. Filed Jan. 3, 1966.

POLYBAND

For Power Transmission Belts.
First use Dec. 8, 1965.

SN 236,479. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Jan. 14, 1966.

COSMOPOLITAN MAXPLY

Owner of Reg. Nos. 511,928 and 791,741.
For Tires.
First use Dec. 23, 1965.

SN 236,761. Jetson Tire and Rubber Corporation, Bridgeport, Conn. Filed Jan. 18, 1966.

707

For Tires for Vehicles.
First use Jan. 6, 1966.

Class 36 — Musical Instruments and Supplies

SN 238,551. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 10, 1966.

WOLLENSAK

Owner of Reg. No. 728,657.
For Accessories for Use in Connection With Magnetic Tape Recorders—Namely, Microphones, Speakers, Foot Controls, Earphones, Extension Cords, Power Cords, Extension Cables, Carrying Cases, Cabinets, and Brackets.
First use Nov. 20, 1965.

Class 37 — Paper and Stationery

SN 227,628. The Sun, Inc., Hartwell, Ga. Filed Sept. 10, 1965.



No registration rights are claimed for the pictorial representation of the goods, shown in the drawing by paper and carbon interleaved sheets, apart from the total mark shown in the drawing. However, the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Partially Printed Business Forms.
First use on or about Dec. 30, 1964.

Class 38 — Prints and Publications

SN 210,307. Harris Trust and Savings Bank, Chicago, Ill. Filed Jan. 21, 1965.



For Newsletter.
First use in or before December 1958.

SN 219,918. Michael Senich and Dorothee Senich (joint owners), Franklin Park, N.J. Filed May 27, 1965.

JIM DANDY

For Comic Strip.
First use Mar. 24, 1965.

SN 220,064. American Brake Shoe Company, New York, N.Y. Filed June 1, 1965.

Abex

Owner of Reg. Nos. 384,700, 801,204, and others.
For Publication Containing Periodical Reports for Applicant's Employees and Customers Presenting Information Regarding Applicant's Goods or Services.
First use Apr. 5, 1965.

SN 232,634. Computrend, Inc., New York, N.Y. Filed Nov. 4, 1965.

COMPUTREND

For Periodical Publication Which Contains a Report and Analysis of Stock Prices and Trends.
First use Apr. 3, 1962.

SN 234,055. National Campers and Hikers Association, Inc., Buffalo, N.Y. Filed Dec. 6, 1965.

TENT AND TRAIL

For Newsletter.
First use September 1963.

SN 235,605. Military Police Association, Inc., Augusta, Ga. Filed Dec. 10, 1965.

MILITARY POLICE
Journal

For Monthly Magazine.
First use Apr. 26, 1951.

SN 236,082. Freeman & Gossage, Inc., San Francisco, Calif. Filed Jan. 10, 1966.

INTRINSICS

For Printed Matter—Namely, Calendars, Reproductions of Pictorial Art, and Printed Posters.
First use about August 1963.

SN 237,660. Clarity Publishing, Inc., Albany, N.Y. Filed Feb. 1, 1966.

CRUX
OF THE NEWS

For Weekly Newsletter.
First use Dec. 3, 1965.

SN 239,124. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 18, 1966.

Bentara
Ilmupengetahuan
Kristen

The English translation of the Indonesian words "Bentara Ilmupengetahuan Kristen" is "The Herald of Christian Science." Owner of Reg. No. 415,009.
For Magazine Published in the Indonesian and Other Languages.
First use June 10, 1963.

SN 238,229. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 21, 1966.

キリスト教科学

さきがけ

The English translation of the Japanese characters is "The Herald of Christian Science." Owner of Reg. No. 415,009.
For Magazine Published in the Japanese and Other Languages.
First use Dec. 3, 1965.

SN 241,476. Kenmore Supply Company, Chicago, Ill. Filed Mar. 21, 1966.

CUSTOM CALS

For Decalcomanias.
First use Feb. 17, 1966.

SN 242,279. Ernest W. Peek, d.b.a. E. W. Peek & Company, Knoxville, Tenn. Filed Mar. 30, 1966.

PEEK'SIZE

For Booklets Containing Schedules of Sporting Events.
First use 1945.

SN 250,381. Lebhar-Friedman Publications, Inc., New York, N.Y. Filed July 15, 1966.



No claim is made to the wording "Great Retail Institutions Series" apart from the mark as shown.
For Series of Special Issues of a Magazine.
First use Dec. 1, 1965.

SN 250,809. Industrial Medical Association, Inc., Chicago, Ill. Filed July 22, 1966.

Journal of Occupational Medicine

For Periodical Magazine.
First use Jan. 15, 1959.

SN 251,358. The Hearst Corporation, New York, N.Y. Filed Aug. 1, 1966.

KING COMICS

Applicant disclaims the word "Comics" apart from the mark as shown.
For Comic Magazine Published Bi-Monthly and/or at Other Intervals.
First use June 2, 1966.

SN 252,323. Encyclopaedia Britannica, Inc., Chicago, Ill. Filed Aug. 15, 1966.

BRITANNICA BOOK OF THE YEAR

The words "Book of the Year" are disclaimed for registration purposes apart from the mark as shown, with reservation of applicant's common law rights in the premises.
For Reference Volumes Published Annually and Devoted to Current Events.
First use Apr. 22, 1938.

SN 253,818. National Spiritual Assembly of the Baha'is of the United States, Wilmette, Ill. Filed Sept. 6, 1966.

WORLD ORDER

For Magazine.
First use no later than Aug. 1, 1966.

Class 39—Clothing

SN 219,612. Puritan Mills, Inc., Roanoke, Va. Filed May 24, 1965.

PURITAN

For Nightwear—Namely, Gowns and Pajamas.
First use 1918.

SN 225,298. Dino Boutiques, Inc., Miami, Fla. Filed Aug. 9, 1965.

BELLE BUOYS

For Men's, Women's, and Children's Clothing—Namely, Slacks, Shorts, Shirts, Jackets, Sweaters, Blouses, Skirts, and Bathing Suits.
First use June 15, 1965.

SN 228,425. Whyson Distributors, Franklin, Ky. Filed Sept. 22, 1965.

SWAMP COATS

No claim is made to the word "Coats" apart from the mark as shown.
For Men's, Women's, and Children's Parka-Style Coats.
First use July 30, 1965.

SN 232,060. Furs by Bricker, Inc., Detroit, Mich. Filed Nov. 8, 1965.

BLACK EMERALD MINK

The word "Mink" is disclaimed apart from the mark as shown.
For Fur Coats, Jackets, Stoles, Boleros, and Scarves.
First use Oct. 14, 1965.
Subj. to Intf. with SN 240,871.

SN 232,067. Beitx Corporation, St. Louis, Mo. Filed Nov. 19, 1965.

POLY-KNIT

For Fabrics Made Into Finished Intimate Apparel Items—Namely, Items Such as Regular and Sanitary Ladies' Panties, Girdles, Sanitary Shields, Corsets, and Slips.
First use Oct. 7, 1965.

SN 233,288. Earle M. Turow, San Francisco, Calif. Filed Nov. 24, 1965.

THE SAMPLE TRUNK

For Women's Wearing Apparel—Namely, Dresses, Coats, Suits, Sweaters, Skirts, Blouses, and Swimsuits.
First use Nov. 2, 1965.

SN 234,511. Justin Charles Company, Inc., New York, N.Y. Filed Dec. 13, 1965.

JUSTIN CHARLES

The trademark "Justin Charles" is completely fanciful.
For Children's Sweaters, Bathing Suits, and Sportswear—Namely, Shirts, Jumpers, Blouses, Jackets, and T-Shirts.
First use May 24, 1965.

SN 235,205. Lor Limited, Mansfield, England. Filed Dec. 23, 1965.

L'OR

Owner of British Reg. No. B865,287, dated June 6, 1964.
For Complete Articles of Clothing—Namely, Men's Hose and Sports Shirts; and Men's, Women's, and Children's Knitted Pullovers, Cardigans, and Shirts.

SN 236,432. Tyson Shirt Company, Norristown, Pa. Filed Jan. 13, 1966.

TSC 100

For Men's and Boys' Shorts.
First use Nov. 15, 1965.

SN 237,048. Louis Barasch, Inc., Lindenhurst, N.Y. Filed Feb. 1, 1966.

LORD MONTCLAIR

The name "Lord Montclair" is fanciful.
For Handkerchiefs.
First use in or about October 1964.

SN 238,071. Foremost Knitting Mills, Inc., Atlanta, Ga. Filed Feb. 4, 1966.

GEPNER

For Sweaters and Knit Skirts.
First use in or about April 1935.

SN 238,114. Phil Rose of California, Inc., Los Angeles, Calif. Filed Feb. 4, 1966.

PHIL ROSE

The name "Phil Rose" is fanciful. Owner of Reg. No. 637,486.
For Women's Sportswear—Namely, Blouses, Skirts, Jumpers, Dresses, Pants, Suits, Sweaters, and Jackets.
First use Jan. 10, 1965.

SN 240,552. Stahl-Urban Company, Brookhaven, Miss. Filed Mar. 9, 1966.

SIR TEEN

Owner of Reg. Nos. 542,020 and 800,738.
For Men's and Boys' Coats, Suits, Jackets, Trousers, and Shirts.
First use Mar. 4, 1966.

SN 243,843. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Apr. 19, 1966.

THE LADY IN RED

For Ladies' Hosiery.
First use Dec. 2, 1965.

SN 243,949. Berkshire Apparel Corporation, Boston, Mass. Filed Apr. 21, 1966.

travel talk

For Dresses.
First use Mar. 29, 1966.

SN 244,545. Worthmore of Boston, Inc., Boston, Mass. Filed Apr. 28, 1966.

HAZEL GREER

The name "Hazel Greer" is fictitious.
For Ladies' Dresses.
First use on or about Jan. 1, 1966.

SN 250,215. Ben Cooper Inc., Brooklyn, N.Y. Filed July 14, 1966.

AMERICAN HERO

For Masquerade Costumes.
First use June 1, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 224,292. Bibb Manufacturing Company, Macon, Ga. Filed July 27, 1965.

BIBB
The first name in TEXTILES

No exclusive claim is made to the wording "The First Name in Textiles" apart from the mark as shown. Owner of Reg. Nos. 502,980, 502,981, and 503,343.

For Piece Goods for Making Into Upholstery, Wearing Apparel, Sheets, Draperies, and the Like, and Sheets and Pillow Cases.

First use 1939.

SN 239,003. Charles Bloom Inc., New York, N.Y. Filed Feb. 17, 1966.



For Drapery Fabrics.
First use Jan. 14, 1966.

SN 240,150. Burlington Industries, Inc., New York, N.Y. Filed Mar. 4, 1966.

BON VIVANT

For Textile Fabrics in the Piece Suitable for Use in the Manufacture of Men's and Boys' Suits, Coats, and Slacks.
First use Jan. 28, 1960.

SN 245,987. Stacy Fabrics Corp., New York, N.Y. Filed May 18, 1966.

SHAPE-FLEX

For Heat Fusible Fabric, Either Woven, Non-Woven or Needle Punched, Used as a Supporting Material, Interfacing, Interlining or Lining in Wearing Apparel and Industrial Applications.
First use May 11, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 208,770. Madge Romberger, Indianapolis, Ind. Filed Dec. 23, 1964.

PETITE BATH

The word "Bath" is disclaimed apart from the mark as shown.

For Basin-Like Object Designed To Fit Inside the Framework of the Ordinary Toilet Seat and Be Suspended Therebeneath for Use by Women in the Maintenance of Good Feminine Hygiene.
First use Nov. 10, 1964.

SN 237,125. Hollister-Stier Laboratories, Inc., Spokane, Wash. Filed Jan. 24, 1966.

ANAKIT

For Kit Containing Medication, Disposable Syringes, Swabs, and Tourniquet.
First use in or before July 1965.

SN 238,111. Rexall Drug and Chemical Company, d.b.a. The Absorbent Cotton Company, Los Angeles, Calif. Filed Feb. 4, 1966.

CRYSTAL

Owner of Reg. No. 666,942.
For Pharmaceutical Absorbent Cotton.
First use Nov. 5, 1965.

SN 240,349. Gustav Schumacher, Jr., d.b.a. Varsity Dental Mfg. & Supply Co., Lambertville, N.J. Filed Mar. 7, 1966.

VARSILITE

For Dental Instruments—Namely, Carvers, Plastic Instruments, Explorers, Scalers, Curettes, Excavators, Pluggers, Burnishers, and Cutting Instruments.
First use Jan. 17, 1966.

SN 240,382. Bird Space Technology, Inc., Palm Springs, Calif. Filed Mar. 7, 1966.

MARK 3

For Respirators for Cardiopulmonary Therapy Treatments and Topical Pulmonary Chemotherapy Procedures.
First use on or before Sept. 15, 1965.

SN 240,516. Health Products, Inc., Chicago, Ill. Filed Mar. 9, 1966.

SAUNDA

For Mechanical Vaporiser Appliances.
First use Feb. 16, 1966.

SN 240,720. The Electric Storage Battery Company, Philadelphia, Pa. Filed Mar. 11, 1966.

SPRAY-AWAY

For Respirators.
First use Feb. 9, 1966.

SN 240,998. Williams Gold Refining Co., Inc., Buffalo, N.Y. Filed Mar. 14, 1966.

PYROSTAIN

For Coloring Material Containing Plastic, Dye or Pigment, Used in Dentistry.
First use Feb. 16, 1966.

SN 240,999. Williams Gold Refining Co., Inc., Buffalo, N.Y. Filed Mar. 14, 1966.

PYROLIQUID

For Plastic Liquid Material for Dentistry.
First use Feb. 16, 1966.

SN 241,154. Harold B. Lloyd, d.b.a. Sow Jet Company, Sioux City, Iowa. Filed Mar. 16, 1966.

SOW-JET

For Appliance Used for Internal Treatment of Brood Sows and/or Other Animals, Vagina and Uterus Cleansing.
First use Mar. 9, 1966.

SN 241,269. Opotow Dental Manufacturing Corp., Brooklyn, N.Y. Filed Mar. 17, 1966.

EBA

For Dental Crown and Bridge Cement.
First use Dec. 2, 1965.

SN 241,271. The Pelton & Crane Company, Charlotte, N.C. Filed Mar. 17, 1966.

MAGNA-CLAVE

For Autoclaves.
First use Feb. 10, 1966.

SN 241,528. Sears, Roebuck and Co., Chicago, Ill. Filed Mar. 21, 1966.

ORTHO-COMFORT

For Garment Worn for Back Support.
First use on or about Nov. 26, 1965.

SN 241,595. John Luft Prescription Alloys, Inc., New York, N.Y. Filed Mar. 22, 1966.

JL
PORC-
ALLOY

For Dental Materials.
First use Dec. 15, 1965.

SN 241,691. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Mar. 23, 1966.

EKOLINE 10

Owner of Reg. No. 784,526.
For Ultrasonic Encephalograph.
First use Dec. 30, 1965.

SN 241,982. Cordis Corporation, Miami, Fla. Filed Mar. 28, 1966.

DUCOR

For Catheters.
First use Oct. 28, 1965.

SN 241,991. Deseret Pharmaceutical Company, Inc., Salt Lake City, Utah. Filed Mar. 28, 1966.

P-PAKIT

For Appliances for Administration of Paracervical and Pudenal Anesthetics.
First use at least as early as Mar. 14, 1966.

SN 242,261. Johnson & Johnson, d.b.a. Personal Products Company, New Brunswick, N.J. Filed Mar. 30, 1966.

TEEVA

For Sanitary Tampons.
First use Feb. 28, 1966.

SN 242,258. Johnson & Johnson, New Brunswick, N.J. Filed Mar. 30, 1966.

FLEXIFIBRE

For Dental Floss.
First use Mar. 3, 1966.

SN 242,383. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Mar. 31, 1966.

TAMPOSITORY

For Vaginal Suppositories.
First use Oct. 5, 1965.

SN 251,859. Kompac Industries, Inc., Canoga Park, Calif. Filed Aug. 1, 1966.

BEAUTERNA

For Electronic Facial Beauty Aid—Namely, a Short Wave Facial Skin Stimulator.
First use July 11, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 254,649. PepsiCo, Inc., New York, N.Y. Filed Sept. 19, 1966.

El Paso de los Toros

The Spanish expression "Paso de los Toros" may be translated as "path of the bulls."
For Quinine Water.
First use Aug. 4, 1966.

Class 46—Foods and Ingredients of Foods

SN 184,609. Crusty Pie Company, Inc., Washington, D.C. Filed Jan. 15, 1964.

Crusty

For Cakes, Pies, Doughnuts, and Pastries.
First use on or about Jan. 1, 1930.

SN 184,610. Crusty Pie Company, Inc., Washington, D.C. Filed Jan. 15, 1964.

CRUSTY

For Cake, Pies, Doughnuts, and Pastries.
First use on or about Jan. 1, 1930.

SN 196,946. Wasabröd Aktiebolag, Filipstad, Varmland, Sweden. Filed June 10, 1964.

WASA

Owner of Swedish Reg. No. 76,693, dated Oct. 1, 1954.
For Bread, Biscuits, Cakes, Cookies, and Crackers.

SN 202,262. Good Earth Natural Foods, Inc., New York, N.Y. Filed Sept. 21, 1964.

GOOD EARTH

For Natural Foods—Namely, Organic Fresh Eggs, Shelled and Unshelled Nuts, Nut Extracts, Hulled and Unhulled Edible Grains and Pignolias.
First use on or about May 15, 1964.

SN 204,766. Coastal Fruit Co., Inc., d.b.a. Coastal Institutional Distributors, Walterboro, S.C. Filed Oct. 26, 1964.

COASTAL OF CAROLINA

For Canned Corned Beef Hash, Canned Chile Con Carne, Salad Dressings, Vegetable Shortening, Animal Fat Shortening, Spices, Food Flavoring Extracts, Fruit and Chocolate Toppings for Frozen Confections, Cocoa, and Cake Mixes.
First use Apr. 8, 1964.

SN 214,307. Giovanna Teresa Melchiorre, d.b.a. M. Di Trani, Macomer, Nuoro, Italy. Filed Mar. 2, 1965.



The word "Nuraghe" is the name of an ancient tower-like structure of a type found on the island of Sardinia. The words "Cheese Made in Italy From Sheep's Milk—Over Six Months Old" and the word "Brand" are disclaimed apart from the mark as a whole. The drawing is lined for the colors gold, blue, red, and green. The words "Pecorino Romano" which means "of Roman sheep," are disclaimed apart from the mark as a whole and without waiving applicant's common law rights. Owner of Italian Reg. No. 138,697, dated May 17, 1957.
For Cheese.

SN 218,758. Fisher Cheese Company, Wapakoneta, Ohio. Filed May 13, 1965.



Owner of Reg. Nos. 606,510, 781,088, and others.
For Cheese.
First use Jan. 5, 1965.

SN 225,730. The Dietene Company, Minneapolis, Minn. Filed Aug. 16, 1965.

DELMARK

Quick

The word "Quick" is disclaimed apart from the mark as shown. Owner of Reg. No. 753,774.
For Powdered Egg Custard Mix.
First use July 13, 1965.

SN 226,676. W. B. Roddenbery Company, Incorporated, d.b.a. Roddenbery Bros., Cairo, Ga. Filed Aug. 27, 1965.

PURE GOLD

Applicant claims use for the entire United States and the District of Columbia, except the States of California, Indiana, Michigan, Ohio, West Virginia, Pennsylvania, and New York. Owner of Reg. Nos. 159,496, 438,589, and others.
For Pickled Foods—Namely, Dill Pickle Chips, Hot Garlic Dill Gherkins, Kosher Dill Pickle Midgets, Candied Sweet Dill Pickle Strips, Hot Mixed Pickled Foods Comprising Pickles, Cauliflower, Onions and Peppers, Candied Pickle Chips, Candied Pickle and Cherry Rings, Candied Pickle Halves, Sweet Gherkins, Sweet Mixed Pickles, Sweet Cubed Pickles, Sweet India Relish, Preserved Watermelon Rind, Sweet Onions, Sour Onions, Sweet Cauliflower, Mild Crisp Pickled Okra, Hot Crisp Pickled Okra, Sweet Pickles and Sweet Pickle Midgets.
First use Feb. 7, 1899.
Subj. to Concurrent Use Proceeding with Reg. Nos. 111,862, 249,346, and 792,675; and SN 245,575.

SN 227,351. Sunline, Inc., St. Louis, Mo. Filed Sept. 7, 1965.

PEPPER POPS!

For Candy in Tablet Form.
First use July 25, 1965.

SN 227,834. Euphrates Bakery, Inc., Watertown, Mass. Filed Sept. 15, 1965.

EUPHRATES

Owner of Reg. No. 653,158.
For Frozen Pizzas, Frozen Rice Pilaf, and Armenian Bread.
First use Aug. 25, 1956.

SN 228,775. Vitamin Products Company, Milwaukee, Wis. Filed Sept. 27, 1965.

CATAPLEX

For Food Concentrate To Be Used as a Dietary Supplement.
First use May 26, 1944.

SN 230,980. R.G.R. Laboratories, Inc., Kansas City, Mo. Filed Oct. 15, 1965.

dsertwhip

For Cream Replacement Product Consisting Essentially of a Pasteurized Blend of Water, Hydrogenated Vegetable Oil, Stabilizer, Sweetening and Flavoring, Sold in Liquid Form and Requiring Refrigeration, and Being Similar to the Consistency, Flavor, Whipping Character and Use of Fresh Dairy Whipping Cream, and for a Concentrate for Making the Same.
First use Sept. 15, 1965.

SN 231,290. Thompson's Dairy, Inc., d.b.a. Washington Dairy Foods, and Thompson's Manor Dairy, Washington, D.C. Filed Oct. 22, 1965.

SUNNY C

For Fresh Fruit Juice Drink.
First use Oct. 1, 1965.

SN 233,990. Brigham's, Inc., Cambridge, Mass. Filed Dec. 6, 1965.

Brigham's

Owner of Reg. Nos. 513,655 and 750,206.
For Coffee.
First use June 1962.

SN 234,318. Wayne Candies, Inc., Fort Wayne, Ind. Filed Dec. 9, 1965.

It's Fun to Eat a BUN

Owner of Reg. Nos. 371,667 and 535,447.
For Candy.
First use on or before Oct. 18, 1965.

SN 234,864. Agway, Inc., Syracuse, N.Y. Filed Dec. 20, 1965.



For Fresh Fruit—Namely, Apples, Peaches, Pears, Nectarines, and Plums; Potatoes; Fresh Eggs and Egg Products—Namely, Egg Whites and Egg Yolks in Liquid, Frozen, and Dried Form; Poultry and Poultry Products—Namely, Whole and Cut-Up Fowl in Fresh, Canned, and Frozen Forms; Dried Beans; Breakfast Cereals; and Flour.
First use Oct. 22, 1964.

SN 234,883. Agway, Inc., Syracuse, N.Y. Filed Dec. 20, 1965.

Country Best

Owner of Reg. Nos. 722,221, 722,169, and others.
For Fresh Fruit—Namely, Apples, Peaches, Pears, Nectarines, and Plums; Potatoes; Fresh Eggs and Egg Products—Namely, Egg Whites and Egg Yolks in Liquid, Frozen, and Dried Form; Poultry and Poultry Products—Namely, Whole and Cut-Up Fowl in Fresh, Canned, and Frozen Forms; Dried Beans; Breakfast Cereals; and Flour.
First use Apr. 12, 1960.

SN 234,883. Country Kitchen Incorporated, of Middletown, Ohio, Cincinnati, Ohio. Filed Dec. 20, 1965.



The representation of the goods is disclaimed apart from the mark as shown. Owner of Reg. No. 742,442.
For Hamburger Sandwiches, Prepared Ready To Be Eaten.
First use Nov. 27, 1960.

SN 234,921. Mead Johnson & Company, Evansville, Ind. Filed Dec. 20, 1965.

SHAPE

Owner of Reg. No. 806,615 and others.
For Nutritionally Complete Dietary Meals, Whose Caloric Content Is Controlled, and Is Composed Principally of One or More of the Following Natural Foods: Meats, Fish, Shellfish, Poultry, and Vegetables.
First use on or prior to Nov. 27, 1965.

SN 235,090. Bruce's Foods Corporation, New Iberia, La. Filed Dec. 22, 1965.

YAMBALAYA

For Canned Food Preparation Consisting of Yams, Corn Syrup, and Spices.
First use May 1965.

SN 235,693. Michigan Fruit Canners, Inc., Benton Harbor, Mich. Filed Jan. 3, 1966.

ROSE CROIX

The English equivalent of the French word "Croix" is "cross."
For Canned Fruits and Canned Vegetables.
First use Sept. 17, 1940.

SN 236,811. General Mills, Inc., Minneapolis, Minn. Filed Jan. 19, 1966.

POTATO TANGLES

The word "Potato" is disclaimed apart from the mark as shown.
For Dehydrated Hash Brown Potato.
First use Jan. 4, 1966.

SN 236,955. Ayrshire Breeders' Association, Brandon, Vt. Filed Jan. 21, 1966.



The words "Ayrshire," "Approved Milk," and "Nature's Finest Food" are disclaimed apart from the mark as shown.
For Fresh Milk.
First use Mar. 25, 1938.

SN 238,904. United Vintners, Inc., San Francisco, Calif. Filed Feb. 15, 1966.

WIKI WAKI

For Bottled Fruit Juice Punch.
First use Dec. 14, 1965.

SN 238,924. Cargill, Incorporated, Minneapolis, Minn. Filed Feb. 16, 1966.

SOW-38

Owner of Reg. Nos. 589,304 and 753,420.
For Feed for Female Swine Enriched With Vitamins and Antibiotics.
First use Jan. 20, 1966.

SN 238,979. Jean's Jells, Alton, N.Y. Filed Feb. 16, 1966.

AUNT JEAN'S

For Herb Jellies.
First use June 30, 1963.

SN 240,921. Kellogg Company, Battle Creek, Mich. Filed Mar. 14, 1966.

KEL-QUICK

For Freeze-Dried Salad Mixes—Namely, Shellfish, Fish, Egg, Meat, and Chicken.
First use Jan. 21, 1966.

SN 241,212. Witsell Bros.-Dean Lilly Company, d.b.a. Weathersby Brunner Company, Memphis, Tenn. Filed Mar. 17, 1966.

SUNNY BROOK

Owner of Reg. No. 210,106.
For Tea.
First use August 1941.

SN 241,794. The Nestlé Company, Inc., White Plains, N.Y. Filed Mar. 24, 1966.

Every Day

Owner of Reg. Nos. 70,413 and 70,414.
For Non-Dairy Product for Use as a Creaming Agent.
First use Feb. 14, 1966.

SN 250,652. Erie's Kitchens, Inc., Billings, Mont. Filed July 20, 1966.



The words "Lefse Chips" are disclaimed apart from the mark as shown. Owner of Reg. No. 792,887.
For Chip-Type Food Products, Comprising Reconstituted Potato Flakes and Farinaceous Flour.
First use at least as early as June 1, 1966.

SN 250,915. Santa Monica Dairy Company, d.b.a. Edgemar Farms, Venice, Calif. Filed July 25, 1966.

Edgemar

Owner of Reg. No. 807,865.
For Cream; Sour Cream; Half and Half; Fluid Milk; Whipping Cream; Flavored Ice Milk Mixes; Chocolate Drink; Buttermilk; Cottage Cheese; and Fresh Eggs.
First use during or about the year 1928.

SN 251,890. Central Sands Produce, Inc., Bancroft, Wis. Filed Aug. 8, 1966.



No registration rights are claimed for the word "Brand" apart from the mark as shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof.
For Potatoes in Natural State.
First use August 1965.

SN 253,828. Los Angeles Importing Co., Monterey Park, Calif. Filed Sept. 6, 1966.

LENORA

For Canned Vegetables, Canned Mushrooms, Canned Fish, Canned Tomato Paste, Canned Soup, Canned Garbanzo Beans, and Canned Ravioli.
First use in or about the year 1940.

Class 47—Wines

SN 184,189. Vinos de los Herederos del Marques de Riscal, S.A., Madrid, Spain. Filed Jan. 7, 1964.



HEREDEROS DEL
MARQUÉS DE RISCAL

The lining on the drawing represents the lining on the specimens and does not represent color. The words "Herederos del Marques de Riscal" mean in translation "the Heirs of the Marques of Riscal." Owner of Spanish Reg. No. 15,751, dated Oct. 30, 1940.
For Wines.

SN 234,062. Ottavio Riccadonna S.p.A., Turin, Italy. Filed Dec. 6, 1965.

RICCADONNA

For Wines.
First use Jan. 1, 1923; in commerce Jan. 30, 1937.

SN 234,948. The Stellenbosch Farmers' Winery Limited, Stellenbosch, Cape Province, Republic of South Africa. Filed Dec. 20, 1965.



The French words "La Gratitude" translated into English means "the gratitude." Owner of South African Reg. No. 63/3582, dated Oct. 25, 1963; and U.S. Reg. No. 789,133.
For Wines.

SN 238,880. Paul Masson, Inc., d.b.a. Paul Masson, and Paul Masson Vineyards, San Francisco, Calif. Filed Feb. 15, 1966.

RUBION

For Wines.
First use Jan. 6, 1966.

Class 49—Distilled Alcoholic Liquors

SN 213,202. The Cathay Corportaion, Jersey City, N.J. Filed Mar. 3, 1965.

APHRODITE

Owner of Reg. No. 793,031.
For Gin, Brandy, Liqueurs, Ouso, Vodka, and Mastikha.
First use Apr. 3, 1964.

SN 213,203. The Cathay Corporation, Jersey City, N.J. Filed Mar. 3, 1965.



The mark consists of the representation of the statue of Aphrodite or Venus. Owner of Reg. No. 793,031.
For Gin, Brandy, Liqueurs, Ouso, Vodka, and Mastikha.
First use Apr. 3, 1964.

SN 239,450. Schieffelin & Co., New York, N.Y. Filed Feb. 23, 1966.

CORDEY

For Brandy.
First use Jan. 31, 1966.

SN 241,458. Haas Brothers, d.b.a. Marlboro Company, San Francisco, Calif. Filed Mar. 21, 1966.

Hint o' Gin

The word "Gin" is disclaimed apart from the association shown.
For Compound Gin.
First use Feb. 17, 1966.

Class 50—Merchandise Not Otherwise Classified

SN 235,818. Chick Master Incubator Corporation, Cleveland, Ohio. Filed Jan. 5, 1966.

Poult Master

Owner of Reg. Nos. 113,736 and 703,031.
For Poultry Incubators.
First use Jan. 29, 1965.

SN 238,046. Calfonex, Inc., Englewood, N.J. Filed Feb. 4, 1966.

LIQUID TOOL BOX

No claim is made to the word "Liquid" apart from the mark as shown.
For Set of Assorted Aerosols for Industrial Use and Including Products Designed Individually as a moisture removing and Anti-Corrosion Compound, a Compound for Improving Electrical and Mechanical Contacts, a Moisture Absorber and Corrosion Inhibitor, a Graphic Arts Conditioning Compound, a Rust Preventive, a Hard Clear Permanent Coating, a Solvent Cleaner, a Penetrant, and a Lubricating Oil, or Any Selected Plurality of the Foregoing.
First use on or about Jan. 29, 1964.

SN 241,804. Rexall Drug and Chemical Company, d.b.a. Syroco, Los Angeles, Calif. Filed Mar. 24, 1966.

LADY SYROCO

Owner of Reg. Nos. 421,037, 598,176, and others.
For Accessories for Bath and Boudoir—Namely, Hampers, Waste Paper Baskets, Tissue Boxes, and Utility Boxes.
First use June 1965.

SN 241,806. Rexall Drug and Chemical Company, d.b.a. Crestyle Accessories, Los Angeles, Calif. Filed Mar. 24, 1966.

CRESTYLE

For Decorative Household Furnishings—Namely, Wall Plaques.
First use July 1961.

SN 244,171. Continental Imports Inc., Alexandria, Va. Filed Apr. 22, 1966.

FLAMENCO FLORALS

The word "Florals" is disclaimed apart from the mark as shown.
For Artificial Flowers.
First use Jan. 7, 1966.

SN 244,697. Jane J. Fullerton, d.b.a. Juan Jose, Hilo, Hawaii. Filed May 2, 1966.

ENAMELITOS

For Small, Matted and/or Framed Original Interior Decorations Which Are Hand Enameled by the Application of a Vitrous Composition to a Metal Surface.
First use Nov. 1, 1965.

Class 51—Cosmetics and Toilet Preparations

SN 226,086. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Aug. 19, 1965.

TOMAHAWK

For Medicated Hair Grooming Preparation.
First use July 13, 1965.

SN 236,124. Samuel Benat & Bro., Inc., West Paterson, N.J. Filed Aug. 20, 1965.

INFUSON

For Preparation for Use After Cold Permanent Waving To Condition the Hair and as a Temporary Setting Lotion.
First use July 15, 1965.

SN 239,133. Sales Affiliates, Inc., New York, N.Y. Filed Oct. 1, 1965.

VITACOLOR

For Hair Coloring.
First use Sept. 8, 1965.

SN 229,840. McLester McKee, d.b.a. W. & M. Products Co., Jersey City, N.J. Filed Oct. 11, 1965.

Lestors

Owner of Reg. Nos. 439,273 and 797,547.
For Hair and Scalp Conditioners; Pressing Oils and Creams; Hair Rinses, Wave Set Lotion and Cream; Hair Spray; and Facial Foundation Cream.
First use June 1, 1962.

SN 229,844. Merchandising Corporation of America, Universal City, Calif. Filed Oct. 11, 1965.

TRILOGY

For Cosmetic Kit Containing Skin Toner, Moisturiser, and Cleansing Lotion.
First use Aug. 12, 1965.

SN 229,845. Merchandising Corporation of America, Universal City, Calif. Filed Oct. 11, 1965.

SCENE

For Cosmetics—Namely, Toner, Moisturiser, and Cleansing Lotion.
First use Aug. 7, 1965.

SN 230,842. John D. Keys, d.b.a. The Yarnell Company, San Francisco, Calif. Filed Oct. 21, 1965.

MESQUITE

For After Shave Lotion.
First use Mar. 11, 1964.

SN 231,855. Sea & Ski Corporation, d.b.a. Avalon Products Company, Millbrae, Calif. Filed Oct. 29, 1965.

WILD SURF

For Suntan Lotion, Lip Balm, Cologne, and After Shave Lotion.
First use Oct. 20, 1965.

SN 232,324. Les Parfums Robert Piguet, Societe Anonyme, Paris, France. Filed Nov. 8, 1965.

LONGCILS BONCZA

Owner of French Reg. No. 931,222, dated May 13, 1965 (Seine); Natl. Inst. No. 248,353; and U.S. Reg. No. 713,646.
For Eye Make-Up.

SN 241,642. Cosmetics Manufacturing Company, d.b.a. Cosmeteo, Long Beach, Calif. Filed Mar. 23, 1966.

Royal Silver

Applicant disclaims the word "Royal" apart from the mark as shown.
For Men's Cologne and After Shave Lotion.
First use Feb. 23, 1966.

SN 246,450. Clairol Incorporated, New York, N.Y. Filed May 24, 1966.

A CUP OF KINDNESS

For Cosmetic and Toilet Preparations—Namely, a Hair Conditioner.
First use Dec. 22, 1965.

SN 246,660. Clairol Incorporated, New York, N.Y. Filed May 26, 1966.

SHAZAAM

For Cosmetic and Toilet Preparations—Namely, Bath Oil, Cologne for Men, Hand Lotion, and Moisture Cream.
First use Mar. 3, 1966.

SN 246,751. Clairol Incorporated, New York, N.Y. Filed May 27, 1966.

GREAT DAY

Owner of Reg. Nos. 707,289 and 792,707.
For Cosmetics and Toilet Preparations—Namely, a Cream Hair Dressing.
First use July 2, 1965.

SN 249,199. Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. Filed June 29, 1966.

LUSTRE COAT

For Dog Deodorant and Grooming Aid.
First use June 15, 1966.

SN 252,996. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 24, 1966.

AT YOUR BEST

For Mouthwash, and Personal Deodorant.
First use May 14, 1966.

SN 253,866. The Fleetwood Company, Chicago, Ill. Filed Sept. 6, 1966.

STAR BRIGHT

For Tooth Whitener Make-Up Cover.
First use Aug. 15, 1965.
Subj. to Intf. with SN 242,188.

SN 253,867. The Fleetwood Company, Chicago, Ill. Filed Sept. 6, 1966.

SPRING AGAIN

For Skin Moisturiser Lotion.
First use Aug. 15, 1965.

SN 254,903. Alberto-Culver Company, Melrose Park, Ill. Filed Sept. 22, 1966.

HI-UP

For Hair Spray, Dressing, and Conditioner Product.
First use Aug. 19, 1966.

SN 255,042. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

BRIFFAULT

For Perfume.
First use Sept. 12, 1966.

SN 255,043. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 26, 1966.

ZULETE

For Perfume.
First use Sept. 19, 1966.

SN 255,170. The Mitchum Company, d.b.a. Mitchum Distributors, Paris, Tenn. Filed Sept. 27, 1966.

FELICIA

For Cosmetic Skin Cream.
First use Sept. 15, 1966.

SN 255,684. The Andrew Jergens Company, Cincinnati, Ohio. Filed Oct. 4, 1966.

MEMORIES OF PARIS

Owner of Reg. No. 288,494.
For Perfume.
First use 1940; Apr. 23, 1931, in a different form.

Class 52—Detergents and Soaps

SN 214,112. Handi-Clean Products, Inc., Greensboro, N.C. Filed Mar. 15, 1965.

ODORCON

For Preparations for Germicidal Cleaning, Deodorizing, and Sanitising Rest Rooms and Toilets.
First use on or about July 1, 1963.

SN 227,288. Handi-Clean Products, Inc., Greensboro, N.C. Filed Sept. 7, 1965.

HANDI-CLEAN PRODUCTS

Applicant disclaims the exclusive right to the word "Products" apart from the mark as shown.
For All-Purpose Cleaner.
First use on or about Jan. 1, 1963.

SN 230,796. Pure Pharmacal Company, Houston, Tex. Filed Feb. 28, 1966.

DANDRATEX

For Anti-Dandruff Shampoo.
First use at least as early as Oct. 2, 1965.

SN 243,049. Walgreen Co., Chicago, Ill. Filed Apr. 8, 1966.

WALGREENS

Owner of Reg. Nos. 501,925, 541,201, and others.
For Hair Shampoos.
First use prior to Sept. 25, 1962.

SN 252,517. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

AZUREX

For Toilet Soap.
First use Aug. 8, 1966.

SN 252,518. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

AZURINE

For Toilet Soap.
First use Aug. 9, 1966.

SN 252,522. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Aug. 17, 1966.

BRIXEL

For Toilet Soap.
First use Aug. 9, 1966.

SN 253,707. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. Filed Sept. 2, 1966.

TALIXE

For Toilet Soap.
First use Aug. 15, 1966.

SN 255,683. Buty-Wave Products Co. Inc., Los Angeles, Calif. Filed Oct. 4, 1966.

FIRMÉ

Owner of Reg. No. 817,537.
For Hair Conditioning Shampoo.
First use Mar. 10, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 173,794. Taco Towne Franchises, Inc., Sioux Falls, S. Dak., assignee of Taco Towne, Inc., Sioux Falls, S. Dak. Filed July 25, 1963.



The words "Cocktails," "Pizza," "Tacos," and "Taco" are disclaimed as being apart from the mark as claimed. The drawing is lined for the colors blue, red, and yellow.
For Drive-In Restaurant Services.
First use Nov. 1, 1962.

SN 203,423. NUS Corporation, Washington, D.C., by change of name from Nuclear Utility Services, Inc., Washington, D.C. Filed Oct. 6, 1964.



For Consulting Engineering Services in the Nuclear Energy Field.
First use on or about Sept. 1, 1960.

SN 235,456. National Investigations Committee on Aerial Phenomena, Washington, D.C. Filed Nov. 26, 1965.

NICAP

For Association Services—Namely, the Investigation and Dissemination of Information Concerning Unidentified Flying Objects.
First use Apr. 4, 1958.

SN 236,957. Homemakers, Inc., Joliet, Ill. Filed Jan. 12, 1966.

HOMEMAKERS

For Health, Family, and Household Services—Namely, Nursing, Companionship, Visiting, Housekeeping, Domestic Help, Maids, Cooks, and Home Maintenance.
First use Mar. 31, 1965.

SN 238,782. Pizza Chef of America, Inc., Norfolk, Va. Filed Feb. 14, 1966.

PIZZA CHEF

No registration rights are claimed for the word "Pizza" apart from the mark as shown, but the applicant waives none of its common law rights in the mark shown nor any feature thereof.
For Restaurant Services.
First use Aug. 30, 1965.

SN 242,476. National Fluid Power Association, Thiensville, Wis. Filed Apr. 1, 1966.



For Association Services—Namely, Furthering the Application of Fluid Power to Machines of Industry for the Conservation of Effort, Improvement of Efficiency, and Lowering the Costs of Production for the Benefit of Both the User and Manufacturer, for the Fostering of Cooperation Among Both Users and Manufacturers in the Development of Standards and Practices, for the Presentation of an Entity To Represent Its Members to Government, Other Industries, and Education, and To Serve as a Meeting Ground for the Fluid Power Industry for the Consideration and Solution of Common Problems, Objectives, and Differences.
First use July 1, 1961.

SN 252,336. King Louie Bowling Corporation of Missouri, Kansas City, Mo. Filed Aug. 15, 1966.



For Restaurant and Cocktail Lounge Services.
First use in or about September 1955.

Class 101 — Advertising and Business

SN 190,564. Weyerhaeuser Company, Tacoma, Wash. Filed Apr. 7, 1964.

SHED-PAK

For Customer Service Which Consists in Packaging and Wrapping Lumber in Protective Paper to the Order of Others.
First use Aug. 15, 1962.

SN 193,844. Warren Kirk Braun, d.b.a. The American Face, Kenwood, Calif. Filed May 20, 1964.



For Promotion of Services and Sale of Goods by Others Through the Medium of Local, State, and National Contests To Select the Most Beautiful Face in the United States of America.
First use on or about Oct. 28, 1963.

SN 194,218. Pidgeon Vitrified China Company, Bridgeton, Mo. Filed May 25, 1964.



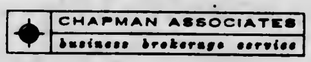
The pictorial representation of an individual is fanciful.
For Self-Service Discount Department Store Services.
First use Jan. 1, 1954.

SN 216,286. International Automotive Service Industries Show (joint venture), Chicago, Ill. Filed Apr. 12, 1965.

CREATIVITY UNLIMITED IDEA CENTER

For Conducting a Trade Show for Automotive Equipment Manufacturers and Automotive Servicemen and Disseminating Information to Them on Methods of Purchasing, Inventory Control, Automation, Credits and Collections, Accounting, Sales Training, Warehousing, Merchandising, Dealer Meetings, Store Lay-Outs, and Demonstrating Modern Methods of Displaying, Handling and Selling Automotive Products.
First use Oct. 8, 1964.

SN 234,695. Chapman Company, Inc., d.b.a. Chapman Associates, Atlanta, Ga. Filed Dec. 14, 1965.



Applicant disclaims the wording "Business Brokerage Service."
For Business Brokerage Services.
First use Nov. 15, 1965.

SN 238,108. Progress Heat Sealing Co., Inc., New York, N.Y. Filed Feb. 4, 1966.

THE FORWARD LINE

For Aiding the Business Operations of Others by Designing and Furnishing Advertising Specialties.
First use June 1959.

Class 102 — Insurance and Financial

SN 229,948. Consumers Life Insurance Company, Camden, N.J. Filed Oct. 12, 1965.



For Underwriting Life Insurance.
First use Apr. 28, 1965.

SN 230,877. Old Republic Life Insurance Company, Chicago, Ill. Filed Oct. 21, 1965.

CAREER EXPANDER

For Underwriting of Life Insurance for Members of the Armed Forces.
First use Sept. 1, 1963.

SN 234,091. Union Fidelity Life Insurance Company, Philadelphia, Pa. Filed Dec. 6, 1965.

"ELDER-CARE"

Owner of Reg. No. 808,699.
For Underwriting of Health Insurance.
First use June 18, 1965.

SN 237,549. Farmers and Merchants Bank and Trust Company of Tulsa, Tulsa, Okla. Filed Jan. 28, 1966.



For General Banking Services, Including Checking Accounts, Savings Accounts, Loans, and Trust Services.
First use at least as early as January 1948.

SN 239,396. The Exchange National Bank of Chicago, Chicago, Ill. Filed Feb. 23, 1966.



For Banking Services.
First use Dec. 19, 1965.

SN 240,799. South Suburban Federal Savings and Loan Association, Harvey, Ill. Filed Mar. 11, 1966.



For Savings and Loan Services.
First use Dec. 13, 1965.

Class 103 — Construction and Repair

SN 219,503. American Building Maintenance Industries, San Francisco, Calif. Filed May 24, 1965.

ABMI

Owner of Reg. No. 659,936.
For Building Janitorial and Maintenance Services.
First use on or about Oct. 9, 1961.

SN 225,047. J. Ray McDermott & Co., Inc., New Orleans, La. Filed Aug. 5, 1965.

MCDERMOTT

For Construction and Repair Services—Namely, the Construction of Ships, Barges, Tow Boats, Fishing Vessels, Dredges, Dry Dock Facilities, Wharves, Bulkheads, Piers, Bridges, Offshore Platforms (Including Platforms for the Exploration and Production of Oil, Lighthouses, and Platforms for Sulfur Mining), Mooring Systems, Loading Docks, Power Plants, and Industrial Plants; the Construction of Pipelines, Drainage Systems, Oil and Gas Production Facilities, Petroleum Processing Facilities, Instrumentation Systems, Lighting Systems, Roads, and Wellheads; the Repair of Vessels; and Dredging and the Stabilization of Rivers.
First use at least as early as 1925.

SN 229,891. Tidewater Oil Company, Los Angeles, Calif. Filed Oct. 11, 1965.



The drawing is lined for the colors red and gray. Owner of Reg. No. 702,925.
For Automotive Service Station Services.
First use Mar. 1, 1965.

SN 232,831. F. W. Means & Company, Chicago, Ill. Filed Nov. 8, 1965.



For Linen Rental Services, Including the Supply and Laundering of Towels.
First use June 16, 1965.

SN 232,832. F. W. Means & Company, Chicago, Ill. Filed Nov. 8, 1965.



For Linen Rental Services, Including the Supply and Laundering of Towels.
First use June 18, 1965.

SN 236,291. Clarence Schoonveld, d.b.a. Wolverine Damp-Proofing Service, Wyoming, Mich. Filed Jan. 12, 1966.



The words "Damp-Proofing Service" are disclaimed apart from the mark as shown.
For Waterproofing and Damp-Proofing Services for Others.
First use May 14, 1964.

SN 238,526. Hallmark Homes, Inc., Augusta, Ga. Filed Feb. 10, 1966.

HALLMARK HOMES

Applicant disclaims the word "Homes" apart from the mark as shown.
For Building and Construction Services.
First use Nov. 30, 1963.

Class 104 — Communication

SN 208,793. The Western Union Telegraph Company, New York, N.Y. Filed Dec. 28, 1964.



For Telegraphic Message Services—Namely, Delivery of Greeting Messages Written on Dolls.
First use Dec. 1, 1964.

Class 105 — Transportation and Storage

SN 197,820. Chesapeake Bay Bridge-Tunnel Commission, Norfolk, Va. Filed July 14, 1964.



No claim is made to the words "Chesapeake," "Bay," "Bridge," and "Tunnel," except in combination with each other.
For Toll Bridge and Tunnel Services, Including Services of Directing Vehicle Operators to a Bridge-Tunnel Facility.
First use Apr. 15, 1964.

SN 232,068. Fidelity Properties, Inc., Chicago, Ill. Filed Nov. 3, 1965.



Applicant disclaims the words "Lease-A-Plane Service" apart from the mark as shown in the drawing with the understanding that applicant does not disclaim any common law rights which it may have in these words.
For Leasing of Aircraft.
First use on or about Sept. 15, 1965.

SN 236,892. Interstate Trailer Corporation, Westfield, Mass. Filed Jan. 20, 1966.



MOV-ALL

The mark consists of the words "Mov-All" and a winged tire encircling the letters "Ma."
For Trailer Rental Service.
First use Nov. 1, 1965.

Class 106 — Material Treatment

SN 233,932. Northwestern Refining Co., St. Paul Park, Minn. Filed Dec. 8, 1965.

NORTHWESTERN

For Supplying Gasoline, Jet Fuel, Kerosene, Light and Heavy Fuel Oil, Diesel Fuel, Lubricants, and Asphalts to Service Station Operators, Wholesalers, Industrial Plants, Contractors, and Governmental Agencies.
First use as early as 1942.

Class 107 — Education and Entertainment

SN 191,797. Ritter Productions, Detroit, Mich. Filed Apr. 22, 1964.

WEEKEND

For Title of a Television Show.
First use June 14, 1961.

SN 228,884. National Food Conference Association, Chicago, Ill. Filed Feb. 15, 1966.

YOUTHPOWER

For Providing Educational and Informational Services Through Conferences and Seminars To Increase Public Understanding of Nutritional Importance of Food.
First use Nov. 20, 1958.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 235,606. Military Police Association, Inc., Augusta, Ga. Filed Dec. 10, 1965.

The letters SP, MP, and AP (which are intended to be representative of the Navy Shore Patrol, the Army Military Police and the Air Force Air Police) are disclaimed apart from the mark as shown.
For Indicating Membership in Applicant.
First use Apr. 26, 1951.

SN 243,008. National Fluid Power Association, Thiensville, Wis. Filed Apr. 8, 1966.

For Indicating Membership in Applicant.
First use July 1961.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

820,537. PRES-TOCK. Weyerhaeuser Company. SN 209,218. Pub. 10-4-66. Filed 8-19-64.

820,538. MISCELLANEOUS DESIGN. Rohm & Haas Company. SN 236,418. Pub. 10-4-66. Filed 1-13-66.

820,539. GENERAL TIRE AND DESIGN. The General Tire & Rubber Company. SN 247,760. Pub. 10-4-66. Filed 6-10-66.

820,540. M MARATHON AND DESIGN. Marathon Oil Company. SN 248,664. Pub. 10-4-66. Filed 6-22-66.

820,541. LANILE. Kroy Tanning Company, Incorporated. SN 248,758. Pub. 10-4-66. Filed 6-23-66.

Class 2 — Receptacles

820,542. CALLIGRAPHIC W (DESIGN). S. S. White Company, by change of name from The S. S. White Dental Manufacturing Company. MULTIPLE CLASS (Classes 2, 4, 18, 23, 26, 44, and 51). SN 208,418. Pub. 10-4-66. Filed 12-17-64.

820,543. TIDY BAGS. Standard International Corporation. SN 222,517. Pub. 10-4-66. Filed 6-30-65.

820,544. DON-L AND DESIGN. Don-L Plastics Co. SN 222,554. Pub. 10-4-66. Filed 7-2-65.

820,545. MEDICO RENTS AND DESIGN. Abbey Rents, d.b.a. Medico Rents. MULTIPLE CLASS (Classes 2, 4, 6, 13, 15, 19, 21, 22, 23, 26, 28, 30, 31, 32, 33, 34, 36, 41, 42, 44, 50, and 52). SN 228,862. Pub. 10-4-66. Filed 9-29-65.

820,546. PROOF PAK. Burron Medical Products, Inc. SN 230,772. Pub. 10-4-66. Filed 10-21-65.

820,547. FOAM-FOLDER. Republic Packaging Corporation. SN 238,449. Pub. 10-4-66. Filed 2-9-66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

820,548. STRAD OF IRIS. Iris H. Richards. SN 224,120. Pub. 10-4-66. Filed 7-23-65.

820,549. SIAMESE TWINS. A. J. Siris Products Corporation. SN 249,277. Pub. 10-4-66. Filed 6-30-66.

Class 4 — Abrasives and Polishing Materials

820,542. (See Class 2 for this trademark.)

820,545. (See Class 2 for this trademark.)

Class 5 — Adhesives

820,550. LENS BOND. Summers Laboratories, Inc. SN 220,799. Pub. 10-4-66. Filed 6-9-65.

820,551. KAYCOTE. Archer-Daniels-Midland Company. SN 228,505. Pub. 5-17-66. Filed 9-24-65.

820,552. CEMUNITE. Central Soya Company, Inc. SN 228,510. Pub. 10-4-66. Filed 9-24-65.

Class 6 — Chemicals and Chemical Compositions

820,545. (See Class 2 for this trademark.)

820,553. PENTAC. Hooker Chemical Corporation. SN 137,853. Pub. 10-4-66. Filed 2-13-62.

820,554. VATOSOL. General Aniline & Film Corporation. SN 201,410. Pub. 5-31-66. Filed 9-8-64.

820,555. LIQUIPANOL. Enzyme Development Corporation. SN 226,523. Pub. 10-4-66. Filed 8-26-65.

820,556. TROPIGASITO. Tropical Gas Company, Inc. SN 234,785. Pub. 10-4-66. Filed 12-16-65.

820,557. VIRCHEM AND DESIGN. Virginia Chemicals Inc. SN 235,541. Pub. 10-4-66. Filed 12-29-65.

820,558. EASY-HEAT. The Singer Company. MULTIPLE CLASS (Classes 6, 12, 21, and 26). SN 236,036. Pub. 10-4-66. Filed 1-10-66.

820,559. MUTUAL PRECISION AND DESIGN. Precision Papers, Inc. MULTIPLE CLASS (Classes 6 and 37). SN 236,541. Pub. 10-4-66. Filed 1-17-66.

820,560. HI-BOND. National Starch and Chemical Corporation. SN 237,730. Pub. 10-4-66. Filed 2-1-66.

820,561. 3EFFE AND DESIGN. Societa Italo Americana Prodotti Antiparassitari. SN 241,191. Pub. 10-4-66. Filed 3-16-66.

820,562. SAROLEX. Geigy Chemical Corporation. SN 241,657. Pub. 10-4-66. Filed 3-23-66.

820,563. PRAMITOL. Geigy Chemical Corporation. SN 241,658. Pub. 10-4-66. Filed 3-23-66.

820,564. MILLE MIST. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics. SN 241,683. Pub. 10-4-66. Filed 3-23-66.

820,565. V VALVOLINE. Ashland Oil & Refining Company. SN 241,732. Pub. 10-4-66. Filed 3-24-66.

820,566. VALVOLINE. Ashland Oil & Refining Company. SN 241,733. Pub. 10-4-66. Filed 3-24-66.

820,567. CHROMAFIX. Brunswick Corporation. SN 241,744. Pub. 10-4-66. Filed 3-24-66.

820,568. MEELIUM. Prentiss Drug & Chemical Co., Inc. SN 241,799. Pub. 10-4-66. Filed 3-24-66.

820,569. SUNPOWER. Lever Brothers Company. SN 247,291. Pub. 10-4-66. Filed 6-6-66.

820,570. RAINBOW. International Minerals & Chemical Corporation. SN 247,904. Pub. 10-4-66. Filed 6-14-66.

820,571. IMC AND DESIGN. International Minerals & Chemical Corporation. SN 247,905. Pub. 10-4-66. Filed 6-14-66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

820,572. AQUAFILTER. Aquafilter Corporation. SN 236,042. Pub. 10-4-66. Filed 1-10-66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

820,573. HANDI-PAK. Universal Match Corporation. SN 221,659. Pub. 10-4-66. Filed 6-21-65.

820,574. ARMALITE AND DESIGN. Armalite, Inc. SN 223,006. Pub. 10-4-66. Filed 7-9-65.

Class 11—Inks and Inking Materials

820,575. STENOMATE AND DESIGN. Modern Ribbon & Carbon Co. SN 226,768. Pub. 10–4–66. Filed 8–30–65.

820,576. CLIMATE CONTROLLED. Formulabs, Incorporated. SN 231,414. Pub. 10–4–66. Filed 10–23–65.

Class 12—Construction Materials

820,558. (See Class 6 for this trademark.)

820,577. WEATHERMATE. New Castle Products, Inc. SN 228,388. Pub. 10–4–66. Filed 9–22–65.

820,578. FIT-RITE. Certain-Teed Fiber Glass Corporation. SN 228,511. Pub. 10–4–66. Filed 9–24–65.

820,579. THERMACOR. Tejas Plastics Materials Supply Co. SN 230,455. Pub. 10–4–66. Filed 10–18–65.

820,580. ACRO MOULD. T. W. Sommer Co. SN 235,018. Pub. 10–4–66. Filed 12–21–65.

820,581. PABCOAT. Fibreboard Paper Products Corporation. SN 236,077. Pub. 10–4–66. Filed 1–10–66.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

820,545. (See Class 2 for this trademark.)

820,582. STAR. Star Heel Plate Co., Inc. SN 218,812. Pub. 10–4–66. Filed 5–13–65.

820,583. BOECLAD. The Boeing Company. SN 221,250. Pub. 10–4–66. Filed 6–16–65.

820,584. DURALUTENE. Compagnie Generale du Duralumin et du Cuivre, Cegedur. MULTIPLE CLASS (Classes 13, 14, and 16). SN 224,586. Pub. 10–4–66. Filed 7–30–65.

820,585. DURALUNYL. Compagnie Generale du Duralumin et du Cuivre, Cegedur. MULTIPLE CLASS (Classes 13, 14, and 16). SN 224,587. Pub. 10–4–66. Filed 7–30–65.

820,586. LOX-ALL STA-PIN. H. H. Willard, d.b.a. Willard Enterprises. SN 231,329. Pub. 10–4–66. Filed 10–22–65.

820,587. SLOAN. Sloan Valve Company, SN 233,952. Pub. 10–4–66. Filed 12–3–65.

820,588. SAFE-T-LOAD. Gateway Erectors, Inc. SN 239,611. Pub. 10–4–66. Filed 2–25–66.

820,589. CAPSTAN. Hartwell Corporation. SN 239,785. Pub. 10–4–66. Filed 2–28–66.

820,590. PIC-A-PATTERN. Rain Bird Sprinkler Manufacturing Corp. SN 239,799. Pub. 10–4–66. Filed 2–28–66.

820,591. QUALITY CRAFTS. Regal Ware, Inc. SN 240,022. Pub. 10–4–66. Filed 3–2–66.

820,592. AQUA MOVE AND DESIGN. Anderson - Miller Manufacturing Co. SN 240,403. Pub. 10–4–66. Filed 3–8–66.

820,593. INSTRAC. The General Tire & Rubber Company. SN 249,205. Pub. 10–4–66. Filed 6–29–66.

820,594. TUBE-TURN. Chemetron Corporation, d.b.a. Tube Turns. SN 249,704. Pub. 10–4–66. Filed 7–7–66.

Class 14—Metals and Metal Castings and Forgings

820,584. (See Class 13 for this trademark.)

820,585. (See Class 13 for this trademark.)

820,595. MICROCAST. Howmet Corporation, by change of name from Howe Sound Company. SN 225,870. Pub. 8–23–66. Filed 8–17–65.

820,596. LEE AND DESIGN. Glenn R. Lee Company, Inc. SN 227,161. Pub. 10–4–66. Filed 9–3–65.

820,597. LUKENS MH–3 CLAD. Lukens Steel Company. SN 228,545. Pub. 10–4–66. Filed 9–24–65.

820,598. DM ETC. AND DESIGN. Diversified Metals Corporation. SN 233,697. Pub. 10–4–66. Filed 12–1–65.

Class 15—Oils and Greases

820,545. (See Class 2 for this trademark.)

820,599. ULTRA LUBE. Southwest Grease & Oil Co. (Kansas City), Inc. SN 234,149. Pub. 10–4–66. Filed 12–7–65.

820,600. COMMANDER. Sinclair Refining Company. SN 235,722. Pub. 10–4–66. Filed 1–3–66.

820,601. CHEKER. Small Bros. Oil Company. SN 236,018. Pub. 10–4–66. Filed 1–7–66.

820,602. JET-O-SPACE AND DESIGN. Ralph R. Blank. SN 244,865. Pub. 10–4–66. Filed 5–4–66.

820,603. LITH-EASE. American Grease Stick Company. SN 249,618. Pub. 10–4–66. Filed 7–6–66.

Class 16—Protective and Decorative Coatings

820,584. (See Class 13 for this trademark.)

820,585. (See Class 13 for this trademark.)

820,604. KENDCOTE-60. Kendall Refining Company. SN 226,057. Pub. 10–4–66. Filed 8–19–65.

820,605. ARMORCLAD. John L. Armitage & Co. SN 227,384. Pub. 7–12–66. Filed 9–8–65.

820,606. CHIP GUARD. The Testor Corporation. SN 229,602. Pub. 10–4–66. Filed 10–7–65.

820,607. AMAZ'N! Foretell, Inc. SN 231,677. Pub. 10–4–66. Filed 10–27–65.

820,608. DONNY BOY. Albert Steinberg, d.b.a. Bernardsville Paint & Wallpaper Company. SN 233,410. Pub. 10–4–66. Filed 11–26–65.

820,609. PABCOAT. Fibreboard Paper Products Corporation. SN 236,078. Pub. 10–4–66. Filed 1–10–66.

820,610. DECROLON. The Sherwin-Williams Company. SN 239,942. Pub. 10–4–66. Filed 3–1–66.

820,611. HMS. Cowman-Campbell Paint Co., Inc. SN 240,414. Pub. 10–4–66. Filed 3–8–66.

820,612. MISOL. Sloan Marketing Corporation. SN 241,937. Pub. 10–4–66. Filed 3–25–66.

Class 17—Tobacco Products

820,613. FLOR DE A. VILLAAMIL AND DESIGN. Villaamil Tobacco Products, Inc. SN 214,806. Pub. 10–4–66. Filed 3–23–65.

820,614. CROWN (DESIGN). Carreras Limited. SN 232,902. Pub. 10–4–66. Filed 11–18–65.

820,615. JUPITER. R. J. Reynolds Tobacco Company. SN 237,033. Pub. 10–4–66. Filed 1–21–66.

820,616. CAPITAL. R. J. Reynolds Tobacco Company. SN 237,035. Pub. 10–4–66. Filed 1–21–66.

820,617. JUBILEE. R. J. Reynolds Tobacco Company. SN 237,036. Pub. 10–4–66. Filed 1–21–66.

820,618. PENNANT. R. J. Reynolds Tobacco Company. SN 237,037. Pub. 10–4–66. Filed 1–21–66.

820,619. FLOR DE A. VILLAAMIL. Villaamil Tobacco Products, Inc. SN 240,992. Pub. 10–4–66. Filed 3–14–66.

Class 18—Medicines and Pharmaceutical Preparations

820,542. (See Class 2 for this trademark.)

820,620. MAXDRIN. Warner-Lambert Pharmaceutical Company. SN 187,979. Pub. 8–4–64. Filed 3–4–64.

820,621. HOMAPIN LIQUITAB. Mission Pharmacal Co. SN 213,690. Pub. 10–4–66. Filed 3–9–65.

820,622. STABICOTE. Merck & Co., Inc. SN 220,952. Pub. 10–4–66. Filed 6–11–65.

820,623. ROTO-BIOTIC. Kent Feeds, Inc. SN 228,534. Pub. 10–4–66. Filed 9–24–65.

820,624. FOOT DELIGHT. Albert Edward Hieshetter, d.b.a. Foot Delight Products. SN 229,809. Pub. 10–4–66. Filed 10–11–65.

820,625. TASTY-VIMS. Key Pharmaceuticals, Inc. SN 248,283. Pub. 10–4–66. Filed 6–17–66.

820,626. QUIBRON-E. Mead Johnson & Company. SN 248,580. Pub. 10–4–66. Filed 6–21–66.

Class 19—Vehicles

820,545. (See Class 2 for this trademark.)

820,627. CONCEPT. Horizon Mobile Homes, Inc. SN 224,748. Pub. 7–26–66. Filed 8–2–65.

820,628. DOCK MAN. Morse-Hill Corporation. SN 231,624. Pub. 10–4–66. Filed 10–25–65.

820,629. VTO. Autohaus Pompano, Inc. SN 232,891. Pub. 10–4–66. Filed 11–18–65.

820,630. REVELLER. Outboard Marine Corporation. SN 232,929. Pub. 10–4–66. Filed 11–18–65.

820,631. CROWN AND V (DESIGN). White Motor Corporation. SN 233,029. Pub. 10–4–66. Filed 11–19–65.

820,632. BANNER. National Automotive Parts Association. SN 233,188. Pub. 10–4–66. Filed 11–23–65.

820,633. AW (DESIGN). Art's-Way Manufacturing Company, Incorporated. MULTIPLE CLASS (Classes 19 and 23). SN 235,450. Pub. 10–4–66. Filed 12–27–65.

Class 21—Electrical Apparatus, Machines, and Supplies

820,545. (See Class 2 for this trademark.)

820,558. (See Class 6 for this trademark.)

820,634. NAILHEAD. Electron Products. SN 217,316. Pub. 10–4–66. Filed 4–26–65.

820,635. DESIGN S. The Scionics Corporation. SN 218,810. Pub. 8–2–66. Filed 5–13–65.

820,636. PLYCON. Methode Electronics, Inc. SN 219,350. Pub. 10–4–66. Filed 5–20–65.

820,637. NELCO. Nelco Corporation. SN 219,900. Pub. 10–4–66. Filed 5–27–65.

820,638. CARD-O-TIMER. Taylor Instrument Companies. SN 223,177. Pub. 10–4–66. Filed 7–12–65.

820,639. FABULITE. Fabulite Lamp Company. SN 223,267. Pub. 10–4–66. Filed 7–13–65.

820,640. NATIONAL N AND DESIGN. Matsushita Electric Industrial Co., Ltd. SN 225,883. Pub. 10–4–66. Filed 8–17–65.

820,641. SLEEP GUARD AND DESIGN. General Electric Company. SN 229,520. Pub. 10–4–66. Filed 10–7–65.

820,642. Z AND DESIGN. Sealectro Corporation. SN 229,686. Pub. 10–4–66. Filed 10–8–65.

820,643. HOUSE WITH SUN OVERHEAD (DESIGN). The Goodyear Tire & Rubber Company. SN 229,797. Pub. 10–4–66. Filed 10–11–65.

820,644. METRO-MAGIC. Metropolitan Overseas Supply Corporation. SN 231,582. Pub. 10–4–66. Filed 10–24–65.

820,645. ARISTO. Aristo-Tone Electronics, Inc. SN 233,859. Pub. 10–4–66. Filed 12–3–65.

820,646. EDI AND DESIGN. Eastern Dynamics, Inc. SN 247,012. Pub. 10–4–66. Filed 6–1–66.

Class 22—Games, Toys, and Sporting Goods

820,545. (See Class 2 for this trademark.)

820,647. HIGHSKORE. Wa-Mac, Inc. SN 200,128. Pub. 10–4–66. Filed 8–18–64.

820,648. GRESVIG. Gresvig A.S. SN 207,389. Pub. 10–4–66. Filed 12–3–64.

820,649. BARBIE AND MIDGE. Mattel, Inc. SN 207,630. Pub. 10–4–66. Filed 12–7–64.

820,650. SPINMASTER ROD COMPANY INC. AND DESIGN. Spinmaster Rod Company, Inc. SN 210,163. Pub. 10–4–66. Filed 1–18–65.

820,651. CINDERELLA'S NECKLACE. Russell Manufacturing Co. SN 214,467. Pub. 10–4–66. Filed 3–18–65.

820,652. "MCGUFFEY-ANA." Alexander Doll Company, Inc., d.b.a. Madame Alexander. SN 216,466. Pub. 10–4–66. Filed 4–14–65.

820,653. C AND DESIGN. Cortland Industries, Inc. SN 220,619. Pub. 10–4–66. Filed 6–7–65.

820,654. THRILLER DILLER. Weatherford & Harber Enterprises. SN 221,319. Pub. 10–4–66. Filed 6–16–65.

820,655. TRACTIONIZED. Brunswick Corporation. SN 221,695. Pub. 10–4–66. Filed 6–22–65.

820,656. BONNIE B AND DESIGN. Helen S. Badger, d.b.a. Bonnie B Company. SN 222,104. Pub. 10–4–66. Filed 6–28–65.

820,657. DUPLI-KIT. Margaret Hill Epps. SN 223,220. Pub. 10–4–66. Filed 7–13–65.

820,658. MATT HELM'S SLAYGIRLS AND DESIGN. Columbia Pictures Corporation. SN 225,934. Pub. 10–4–66. Filed 8–17–65.

820,659. TIKI-BALL. Larry B. Nicholson, d.b.a. The Seven Seas Company. SN 229,274. Pub. 10–4–66. Filed 10–4–65.

820,660. CLOUD NINE. M. H. Manufacturing Corp. SN 229,365. Pub. 10–4–66. Filed 10–5–65.

820,661. KNUCK. Forest G. P. Hagin, d.b.a. P. Hagin. SN 229,428. Pub. 10–4–66. Filed 10–6–65.

820,662. FIGMENTS. Cadaco, Inc., assignee of Alex D. Palmer, d.b.a. Tek Method Co. SN 229,998. Pub. 8–30–66. Filed 10–12–65.

820,663. CLUSTER. Cadaco, Inc., assignee of Alex D. Palmer, d.b.a. Tek Method Co. SN 229,999. Pub. 7–26–66. Filed 10–12–65.

820,664. RED-I-JET. Styraplane Co. SN 230,452. Pub. 10–4–66. Filed 10–18–65.

820,665. JACK RABBIT SKI-SLED AND DESIGN. Air-Tite Company, Inc. SN 232,267. Pub. 10–4–66. Filed 11–8–65.

820,666. MERRY RIDER. Processed Plastic Company. SN 233,388. Pub. 10–4–66. Filed 11–26–65.

820,667. GALAXIE 300 AND DESIGN. S. S. Kresge Company. SN 234,124. Pub. 10–4–6. Filed 12–7–65.

820,668. CHEMTOY. Chemical Sundries Co., Inc. SN 234,334. Pub. 10–4–66. Filed 12–10–65.

820,669. TARCO AND DESIGN. Joseph D. Thompson, Jr. Enterprises, Ltd. SN 234,373. Pub. 10–4–66. Filed 12–10–65.

820,670. SHOOT OUT! Milton Bradley Company. SN 244,665. Pub. 10–4–66. Filed 5–2–66.

820,671. CHRIS. Mattel, Inc. SN 246,135. Pub. 10–4–66. Filed 5–20–66.

820,672. CASEY. Mattel, Inc. SN 246,136. Pub. 10–4–66. Filed 5–20–66.

820,673. LIGHTNIN' FIRE SET. Mattel, Inc. SN 247,180. Pub. 10–4–66. Filed 6–3–66.

820,674. MR. HOLIDAY SAYS. Mattel, Inc. SN 247,182. Pub. 10–4–66. Filed 6–3–66.

820,675. TIM-TIM. Mattel, Inc. SN 247,659. Pub. 10-4-66. Filed 6-9-66.

820,676. FLAME. Louis Marx & Co., Inc. SN 248,000. Pub. 10-4-66. Filed 6-14-66.

820,677. CODOPHONE. H. J. Heinz Company. SN 248,874. Pub. 10-4-66. Filed 6-24-66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

820,542. (See Class 2 for this trademark.)

820,545. (See Class 2 for this trademark.)

820,633. (See Class 19 for this trademark.)

820,678. VIKING NO-RIVET AND DESIGN. Viking Corporation. SN 196,082. Pub. 10-4-66. Filed 6-19-64.

820,679. AIRE-SCRUB. Aire-Scrub Corporation. SN 215,825. Pub. 10-4-66. Filed 4-6-65.

820,680. ACUMELT. Acu-Melt Corporation. SN 217,164. Pub. 10-4-66. Filed 4-23-65.

820,681. BEAR-LOC. American Machine & Foundry Company. SN 219,508. Pub. 6-14-66. Filed 5-24-65.

820,682. MILK-A-WAY. Rath Manufacturing Company. SN 220,552. Pub. 10-4-66. Filed 6-7-65.

820,683. VERSATILE. Versatile Manufacturing Ltd. SN 221,866. Pub. 10-4-66. Filed 6-23-65.

820,684. NYGARD. Federal-Mogul Corporation. SN 227,134. Pub. 10-4-66. Filed 9-3-65.

820,685. CLEARVUE. FMC Corporation. SN 227,278. Pub. 10-4-66. Filed 9-7-65.

820,686. PLASMAVAC. Consolidated Vacuum Corporation. SN 232,817. Pub. 10-4-66. Filed 11-17-65.

820,687. MIRON. Eversharp, Inc. SN 232,826. Pub. 10-4-66. Filed 11-17-65.

820,688. TIME-MASTER. The Auto-Soler Company. SN 233,054. Pub. 10-4-66. Filed 11-22-65.

820,689. VEND-A-GO-GO. W. Bennett Collett. SN 233,169. Pub. 10-4-66. Filed 11-23-65.

820,690. VEND-A-HIT. W. Bennett Collett. SN 233,171. Pub. 10-4-66. Filed 11-23-65.

820,691. VITAFREZE. Marlin B. Rasmusson. SN 233,394. Pub. 10-4-66. Filed 11-26-65.

820,692. CIRCLES AND SQUARES (DESIGN). Greenlee Bros. & Co. SN 234,638. Pub. 10-4-66. Filed 12-15-65.

820,693. SUPERLINOR. International Minerals & Chemical Corporation. SN 234,647. Pub. 10-4-66. Filed 12-15-65.

820,694. KWIK-CHANGE. Petersen Engineering Co., Inc. SN 234,839. Pub. 10-4-66. Filed 12-17-65.

820,695. STRONGHOLD. The Independent Nail Corporation. SN 235,307. Pub. 10-4-66. Filed 12-27-65.

820,696. ADVANCED. Troyer Manufacturing Co. SN 235,358. Pub. 10-4-66. Filed 12-27-65.

820,697. PAX-TER. Troyer Manufacturing Co. SN 235,359. Pub. 10-4-66. Filed 12-27-65.

820,698. CENTRIX. Allis-Chalmers Manufacturing Company. SN 235,544. Pub. 10-4-66. Filed 12-30-65.

820,699. BMB AND DESIGN. B-M-B Company, Inc. SN 235,545. Pub. 10-4-66. Filed 12-30-65.

820,700. DIESLTEMP. Horton Manufacturing Company, Inc. SN 239,269. Pub. 10-4-66. Filed 2-21-66.

820,701. LIVE-LEAF. Portable Elevator Manufacturing Company. SN 239,440. Pub. 10-4-66. Filed 2-23-66.

820,702. METZGER MINI-MILL. Charles A. Metzger. SN 239,922. Pub. 10-4-66. Filed 3-1-66.

820,703. HOOD AND DESIGN. R. H. Hood Company. SN 239,997. Pub. 10-4-66. Filed 3-2-66.

820,704. RIVETT. Rivett, Incorporated. SN 240,026. Pub. 10-4-66. Filed 3-2-66.

820,705. RIVETT. Rivett, Incorporated. SN 240,027. Pub. 10-4-66. Filed 3-2-66.

820,706. RICHLINE. The Richline Co., Inc. SN 240,117. Pub. 10-4-66. Filed 3-3-66.

820,707. ECONOMASTER. Pan American Trade Development Corp. SN 240,330. Pub. 10-4-66. Filed 3-7-66.

820,708. MOTORAM. Peter P. Dean, d.b.a. Payne Dean & Company. SN 240,416. Pub. 10-4-66. Filed 3-8-66.

820,709. ROYAL HARVEST. Oneida, Ltd. SN 240,466. Pub. 10-4-66. Filed 3-8-66.

820,710. GUSAG. Guhl & Scheibler A.G. MULTIPLE CLASS (Classes 23 and 37.) SN 244,548. Pub. 10-4-66. Filed 4-29-66.

820,711. ADDIGEST. Union Tank Car Company. SN 247,274. Pub. 10-4-66. Filed 6-3-66.

Class 25 — Locks and Safes

820,712. DUDLEY. Jackes-Evans Manufacturing Company. SN 208,827. Pub. 10-4-66. Filed 12-24-64.

Class 26 — Measuring and Scientific Appliances

820,542. (See Class 2 for this trademark.)

820,545. (See Class 2 for this trademark.)

820,568. (See Class 6 for this trademark.)

820,713. HH SUPER SPORT. Vermogensverwaltungs G.m.b.H., assignee of HH Special Optik GmbH. SN 181,546. Pub. 7-12-66. Filed 11-20-63.

820,714. GUILDESS. Kono Manufacturing Co. Inc. SN 207,218. Pub. 10-4-66. Filed 12-1-64.

820,715. CREATED BY "RIVIERA" JUNIOR DEB AND DESIGN. Riviera Trading Corp. MULTIPLE CLASS (Classes 26 and 40). SN 221,980. Pub. 10-4-66. Filed 6-25-65.

820,716. DRUMMOND. Drummond Scientific Company. MULTIPLE CLASS (Classes 26 and 44). SN 230,803. Pub. 10-4-66. Filed 10-21-65.

820,717. BEERMATIC. Ametek, Inc. SN 234,103. Pub. 10-4-66. Filed 12-7-65.

820,718. WELSH. Welsh Manufacturing Company MULTIPLE CLASS (Classes 26, 39, and 44). SN 234,265. Pub. 10-4-66. Filed 12-9-65.

820,719. WIDE EYE. The Spartan Works, Ltd. SN 245,537. Pub. 10-4-66. Filed 5-13-66.

Class 27 — Horological Instruments

820,720. EB EBAUCHES BETTLACH AND DESIGN. Ebauches-Fabrik Bettlach A.G. SN 211,717. Pub. 10-4-66. Filed 2-10-65.

820,721. JEANERET. Winton Watch Company, Inc. SN 231,331. Pub. 10-4-66. Filed 10-22-65.

820,722. ADANAC. Marathon Watch Co. Ltd. SN 234,285. Pub. 10-4-66. Filed 12-9-65.

820,723. ALLEGRO. Marathon Watch Co. Ltd. SN 234,286. Pub. 10-4-66. Filed 12-9-65.

820,724. LADY SURF. Movado Watch Agency, Inc. SN 234,572. Pub. 10-4-66. Filed 12-14-65.

Class 28 — Jewelry and Precious-Metal Ware

820,545. (See Class 2 for this trademark.)

820,725. F.M.S. F.M. Stamp Inc. SN 227,454. Pub. 10-4-66. Filed 9-8-65.

820,726. SORELLA. Saks & Company. SN 234,073. Pub. 10-4-66. Filed 12-6-65.

Class 29 — Brooms, Brushes, and Dusters

820,727. HI-LIGHTER. The Glidden Company. SN 229,345. Pub. 10-4-66. Filed 10-5-65.

820,728. "ISINIS" AND DESIGN. Societe de Brosserie et de Moulage. SN 229,377. Pub. 10-4-66. Filed 10-5-65.

Class 30 — Crockery, Earthenware, and Porcelain

820,545. (See Class 2 for this trademark.)

820,729. ROYAL WORCESTER CROWN WARE ENGLAND AND DESIGN. Royal Worcester Limited. SN 212,818. Pub. 10-4-66. Filed 2-25-65.

Class 31 — Filters and Refrigerators

820,545. (See Class 2 for this trademark.)

820,730. HYDRO-SAF AND DESIGN. International Telephone and Telegraph Corporation, assignee of ITT Bell & Gossett Inc. SN 200,572. Pub. 10-4-66. Filed 8-25-64.

820,731. SHRIVER. T. Shriver and Company, Inc. SN 235,129. Pub. 10-4-66. Filed 12-22-65.

820,732. MARVEL-R5. Marvel Engineering Company. SN 238,649. Pub. 10-4-66. Filed 2-11-66.

820,733. VIEW WRAP. Walker Manufacturing Company. SN 238,806. Pub. 10-4-66. Filed 2-14-66.

820,734. SIDE-CAP. Cambridge Filter Corporation. SN 239,374. Pub. 10-4-66. Filed 2-23-66.

820,735. SIDE-FLO. Cambridge Filter Corporation. SN 239,375. Pub. 10-4-66. Filed 2-23-66.

820,736. MIX-PAK. The Cornelius Company. SN 239,973. Pub. 10-4-66. Filed 3-2-66.

820,737. CARAVELLE. Beverage-Air Company. SN 240,149. Pub. 10-4-66. Filed 3-4-66.

820,738. STRATACLONE AND DESIGN. Donaldson Company, Inc. SN 240,277. Pub. 10-4-66. Filed 3-7-66.

Class 32 — Furniture and Upholstery

820,545. (See Class 2 for this trademark.)

820,739. DP. Design Products, Inc. SN 234,696. Pub. 10-4-66. Filed 12-14-65.

820,740. DOUBLE-O. The Pilliod Cabinet Co. SN 236,286. Pub. 10-4-66. Filed 1-12-66.

820,741. MODUFLEX. Reliance Engineering & Manufacturing Company Inc. SN 236,648. Pub. 10-4-66. Filed 1-17-66.

820,742. VITA-REST. Knight of Rest Products. SN 237,570. Pub. 10-4-66. Filed 1-28-66.

820,743. ULTRA-PEDIC. Knight of Rest Products. SN 237,571. Pub. 10-4-66. Filed 1-28-66.

820,744. CHILL-CHASER. Borg-Warner Corporation. SN 240,250. Pub. 10-4-66. Filed 3-7-66.

820,745. TOASTY-CUSHION. Borg-Warner Corporation. SN 240,251. Pub. 10-4-66. Filed 3-7-66.

Class 33 — Glassware

820,545. (See Class 2 for this trademark.)

820,746. 1818. Owens-Illinois, Inc. SN 232,715. Pub. 10-4-66. Filed 11-15-65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

820,545. (See Class 2 for this trademark.)

820,747. MAKE THE SEASONS COME TO YOU AND DESIGN. McQuay, Inc. SN 189,487. Pub. 11-9-65. Filed 3-24-64.

820,748. CERAMILAN. The Bettcher Manufacturing Corporation. SN 204,233. Pub. 10-4-66. Filed 10-19-64.

820,749. S and DESIGN. Snapp, Inc. SN 222,069. Pub. 10-4-66. Filed 6-25-65.

820,750. AEROVANE. Allied Thermal Corporation. SN 223,203. Pub. 2-15-66. Filed 7-13-65.

Class 36 — Musical Instruments and Supplies

820,545. (See Class 2 for this trademark.)

Class 37 — Paper and Stationery

820,559. (See Class 6 for this trademark.)

820,710. (See Class 23 for this trademark.)

820,751. MILLETEX AND DESIGN. Wilcox-Walter-Furlong Paper Co. of Harrisburg, Inc. SN 210,431. Pub. 6-21-66. Filed 1-22-65.

820,752. QUICKIT. Pel Corporation. SN 213,704. Pub. 10-4-66. Filed 3-9-65.

820,753. ENVO-SEAL. American Envelope Company. SN 218,522. Pub. 10-4-66. Filed 5-11-65.

820,754. REMTEX. National Starch and Chemical Corporation. SN 220,398. Pub. 12-21-65. Filed 6-4-65.

820,755. SOFT TOUCH. Paper Mate Manufacturing Company. SN 220,686. Pub. 3-1-66. Filed 6-8-65.

820,756. RANGER. The Northwest Paper Company. SN 226,766. Pub. 10-4-66. Filed 8-30-65.

820,757. KB. Kurts Bros. SN 227,038. Pub. 10-4-66. Filed 9-2-65.

820,758. SOFT-PLY. Georgia Pacific Corporation. SN 228,031. Pub. 10-4-66. Filed 9-17-65.

820,759. MICROLON. Micropoint, Inc. SN 228,683. Pub. 10-4-66. Filed 9-22-65.

820,760. DURATUFF. Hammermill Paper Company. SN 229,004. Pub. 10-4-66. Filed 9-30-65.

820,761. STYLIZED CP. Chart-Pak, Inc. SN 230,775. Pub. 10-4-66. Filed 10-21-65.

820,762. CLIK-STIK. A. W. Faber-Castell Pencil Co., Inc., d.b.a. A. W. Faber-Castell. SN 230,808. Pub. 10-4-66. Filed 10-21-65.

820,763. ASTROSETTE. Hammermill Paper Company. SN 231,417. Pub. 10-4-66. Filed 10-23-65.

820,764. LINEMASTER. Seaboard Systems, Inc. SN 231,494. Pub. 10-4-66. Filed 10-28-65.

820,765. BETTER LETTER. The Postagraph Corporation of Maryland. SN 233,632. Pub. 10-4-66. Filed 11-30-65.

820,766. STYLPOINT. Textron, Inc., assignee of W. A. Sheaffer Pen Company. SN 233,640. Pub. 10-4-66. Filed 11-30-65.

820,767. EASYFORM. The Northwest Paper Company. SN 235,789. Pub. 10-4-66. Filed 1-4-66.

820,768. SUPERFORM. The Northwest Paper Company. SN 235,791. Pub. 10-4-66. Filed 1-4-66.

820,769. NOVA. Consolidated Papers, Inc. SN 236,237. Pub. 10-4-66. Filed 1-12-66.

820,770. ANTIGUA. Consolidated Papers, Inc. SN 236,239. Pub. 10-4-66. Filed 1-12-66.

820,771. CENTURA. Consolidated Papers, Inc. SN 236,240. Pub. 10-4-66. Filed 1-12-66.

820,772. FIBERTONE. Hennepin Paper Company. SN 236,818. Pub. 10-4-66. Filed 1-19-66.

820,773. NIMBUS. The Sorg Paper Company. SN 241,278. Pub. 10-4-66. Filed 3-17-66.

Class 38 — Prints and Publications

820,774. BOUTIQUE. Norcross, Inc. SN 236,124. Pub. 10-4-66. Filed 1-10-66.

820,775. MISS INFORMAL. Norcross, Inc. SN 236,125. Pub. 10-4-66. Filed 1-10-66.

820,776. MR. INFORMAL. Norcross, Inc. SN 236,126. Pub. 10-4-66. Filed 1-10-66.

820,777. INFORMAL MASTERPIECE. Norcross, Inc. SN 236,129. Pub. 10-4-66. Filed 1-10-66.

820,778. OBSTETRICIAN'S GYNECOLOGIST'S MANAGEMENT. Byrum-Kissinger Publications, Inc. SN 238,397. Pub. 10-4-66. Filed 2-9-66.

820,779. SURGEON'S MANAGEMENT. Byrum-Kissinger Publications, Inc. SN 238,398. Pub. 10-4-66. Filed 2-9-66.

820,780. STATE OF AFFAIRS. Newsday, Inc. SN 238,962. Pub. 10-4-66. Filed 2-16-66.

820,781. THE TELEMAX WORLD AND DESIGN. Maxson Electronics Corporation. SN 239,285. Pub. 10-4-66. Filed 2-21-66.

820,782. TEN PENNY PUP. Norcross, Inc. SN 239,536. Pub. 10-4-66. Filed 2-24-66.

820,783. INFORMAL BOUTIQUE. Norcross, Inc. SN 240,110. Pub. 10-4-66. Filed 3-3-66.

820,784. JEWELED ELEGANCE. Norcross, Inc. SN 241,362. Pub. 10-4-66. Filed 3-18-66.

820,785. DIPPITY DOO. Norcross, Inc. SN 241,502. Pub. 10-4-66. Filed 3-21-66.

820,786. THE FEENY FARM. Newspaper Enterprise Association, Inc. SN 241,676. Pub. 10-4-66. Filed 3-23-66.

820,787. FIESTA. American Greetings Corporation. SN 242,536. Pub. 10-4-66. Filed 4-4-66.

820,788. SISTER JESSIE. Norcross, Inc. SN. 244,015. Pub. 10-4-66. Filed 4-21-66.

820,789. MAN TO MAN. General Features Corporation. SN 245,398. Pub. 10-4-66. Filed 5-11-66.

820,790. QUEENIE. The Hearst Corporation. SN 246,565. Pub. 10-4-66. Filed 5-25-66.

820,791. ZOO-ILLOGICALS. Norcross, Inc. SN 247,617. Pub. 10-4-66. Filed 6-7-66.

Class 39 — Clothing

820,718. (See Class 26 for this trademark.)

820,792. INLAY-DEPTH AND DESIGN. The Satisfactory Shoe Co. SN 220,559. Pub. 3-1-66. Filed 6-7-65.

820,793. THE UNCRUSHABLES. Jean E. McLean, d.b.a. Promenade. SN 221,836. Pub. 10-4-66. Filed 6-23-65.

820,794. LA PIUMA AND DESIGN. La Piuma, Inc. SN 222,165. Pub. 10-4-66. Filed 6-28-65.

820,795. BO-MAN. La Piuma, Inc. SN 222,166. Pub. 10-4-66. Filed 6-28-65.

820,796. SUN N SKI AND DESIGN. Sea & Ski Corporation, assignee of Maro Industries, Inc. SN 223,692. Pub. 10-4-66. Filed 7-19-65.

820,797. MATT HELM'S SLAYGIRLS AND DESIGN. Columbia Pictures Corporation. SN 225,983. Pub. 10-4-66. Filed 8-17-65.

820,798. ORIGINALS BY DARYL OF DEARBORN. Wallace A. and Daryl R. A. Justus (joint venture), d.b.a. Daryl of Dearborn. SN 226,922. Pub. 10-4-66. Filed 9-1-65.

820,799. GREY CROWN MINK. Radley Furs, Inc. SN 231,613. Pub. 10-4-66. Filed 10-24-65.

820,800. BLACK CROWN MINK. Radley Furs, Inc. SN 231,614. Pub. 10-4-66. Filed 10-24-65.

820,801. BLUE CROWN MINK. Radley Furs, Inc. SN 231,615. Pub. 10-4-66. Filed 10-24-65.

820,802. GUILDSTREAM. Wembley, Inc. SN 231,956. Pub. 10-4-66. Filed 11-1-65.

820,803. F/2. Chadbourn Gotham, Inc. SN 231,982. Pub. 10-4-66. Filed 11-2-65.

820,804. STYLE QUEEN. Aldens, Inc. SN 233,043. Pub. 10-4-66. Filed 11-22-65.

820,805. WITCH WAY. Lady Marlene Brassiere Corporation. SN 234,125. Pub. 10-4-66. Filed 12-7-65.

820,806. MR. MAJESTY. Her Majesty Underwear Company. SN 234,279. Pub. 10-4-66. Filed 12-9-65.

820,807. DAWN TO DUSK. Retail Store Management, Inc. SN 237,156. Pub. 10-4-66. Filed 1-24-66.

820,808. BOOT-STER. Boot-Ster Mfg. Co., Inc. SN 237,199. Pub. 10-4-66. Filed 1-25-66.

820,809. AQUALENE. Aquascutum, Limited. SN 237,796. Pub. 10-4-66. Filed 2-2-66.

820,810. ZERENE. Glenader Corporation. SN 238,520. Pub. 10-4-66. Filed 2-10-66.

820,811. VANITY BARE. Vanity Fair Mills, Inc. SN 247,086. Pub. 10-4-66. Filed 6-1-66.

820,812. CAJOLER. Vanity Fair Mills, Inc. SN 247,742. Pub. 10-4-66. Filed 6-9-66.

820,813. WHIRLIGIGS. Maidenform, Inc. SN 250,079. Pub. 10-4-66. Filed 7-12-66.

820,814. WISE GUISE. Maidenform, Inc. SN 250,080. Pub. 10-4-66. Filed 7-12-66.

Class 40 — Fancy Goods, Furnishings, and Notions

820,715. (See Class 26 for this trademark.)

820,815. NEEDLE MASTER AND DESIGN. The Boye Needle Company. SN 221,691. Pub. 10-4-66. Filed 6-22-65.

Class 41 — Canes, Parasols, and Umbrellas

820,545. (See Class 2 for this trademark.)

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

820,545. (See Class 2 for this trademark.)

820,816. ANTHONIZED. Roller Process Corp. SN 221,756. Pub. 8-2-66. Filed 6-22-65.

820,817. MIRACLE STITCH. Beacon Manufacturing Company. SN 231,663. Pub. 10-4-66. Filed 10-27-65.

820,818. BULGOMME. Etablissements Pennel & Flipo. SN 233,208. Pub. 10-4-66. Filed 11-23-65.

820,819. C-IC. Huyck Corporation. SN 239,048. Pub. 10-4-66. Filed 2-17-66.

820,820. BEAU-MONDE. Lawtex Corporation. SN 239,159. Pub. 10-4-66. Filed 2-18-66.

820,821. CLEARWATER PRINTS. United Merchants and Manufacturers, Inc. SN 239,468. Pub. 10-4-66. Filed 2-23-66.

820,822. HEIRLOOM. Bates Manufacturing Company, Incorporated. SN 239,484. Pub. 10-4-66. Filed 2-24-66.

820,823. FAILLETRIQUE. Webco Mills, Inc. SN 239,560. Pub. 10-4-66. Filed 2-24-66.

820,824. BUCKS CONTE. The Wool "O" Company. SN 239,685. Pub. 10-4-66. Filed 2-25-66.

820,825. GENTLEMEN OF THE PRESS. J. P. Stevens & Co., Inc. SN 239,820. Pub. 10-4-66. Filed 2-28-66.

820,826. ADIOS. Deering Milliken, Inc. SN 239,976. Pub. 10-4-66. Filed 3-2-66.

820,827. PLAYSUEDE. Cone Mills Corporation. SN 240,155. Pub. 10-4-66. Filed 3-4-66.

820,828. KING EDWARD. Baltic Linen Co., Inc. SN 240,241. Pub. 10-4-66. Filed 3-7-66.

820,829. KING FRANK. Baltic Linen Co., Inc. SN 240,242. Pub. 10-4-66. Filed 3-7-66.

820,830. MILLITRON. Deering Milliken, Inc. SN 240,266. Pub. 10-4-66. Filed 3-7-66.

820,831. SLANTELL. Deering Milliken, Inc. SN 240,267. Pub. 10-4-66. Filed 3-7-66.

820,832. TOP TALK. Deering Milliken, Inc. SN 240,268. Pub. 10-4-66. Filed 3-7-66.

820,833. CHARGER. Deering Milliken, Inc. SN 240,270. Pub. 10-4-66. Filed 3-7-66.

820,834. CANTATA. Deering Milliken, Inc. SN 240,271. Pub. 10-4-66. Filed 3-7-66.

820,835. CLEARTONE. Deering Milliken, Inc. SN 240,272. Pub. 10-4-66. Filed 3-7-66.

820,836. JETAWAY. Deering Milliken, Inc. SN 240,275. Pub. 10-4-66. Filed 3-7-66.

820,837. MILLENCIA. Deering Milliken, Inc. SN 240,276. Pub. 10-4-66. Filed 3-7-66.

Class 44 — Dental, Medical, and Surgical Appliances

820,542. (See Class 2 for this trademark.)

820,545. (See Class 2 for this trademark.)

820,716. (See Class 26 for this trademark.)

820,718. (See Class 26 for this trademark.)

820,838. VUE-PAK. McGaw Laboratories, Inc. SN 226,458. Pub. 10-4-66. Filed 8-25-65.

820,839. PRO-TEMP-O. B & R Electronics Corp. SN 232,812. Pub. 10-4-66. Filed 11-17-65.

820,840. FLEXITE. The Northern Dental Laboratory. SN 232,849. Pub. 10-4-66. Filed 11-17-65.

820,841. THE BUNNY LINE AND DESIGN. Dillon Manufacturing Company. SN 234,736. Pub. 7-12-66. Filed 12-16-65.

820,842. SIGMA SWABS. Acme Cotton Products Co., Inc. SN 235,612. Pub. 10-4-66. Filed 1-3-66.

820,843. CRYOPHAKE. Alcon Laboratories, Inc. SN 236,547. Pub. 10-4-66. Filed 1-17-66.

820,844. SOFDENT. National Patent Development Corporation. SN 236,627. Pub. 10-4-66. Filed 1-17-66.

820,845. VEGA. Ritter Pfaudler Corporation. SN 236,650. Pub. 10-4-66. Filed 1-17-66.

820,846. HANDY. Stanton Scientific Equipment Co., Inc. SN 241,281. Pub. 10-4-66. Filed 3-17-66.

820,847. ACCELOMATIC. Turner Hall Corporation. SN 247,739. Pub. 10-4-66. Filed 6-9-66.

Class 46 — Foods and Ingredients of Foods

820,848. PRE-PARED. Consolidated Foods Corporation, d.b.a. Gentry or Gentry Division. SN 189,149. Pub. 10-4-66. Filed 3-20-64.

820,849. KICKAPOO CHIEF. Tillman Produce Co., Inc. SN 195,340. Pub. 10-4-66. Filed 6-10-64.

820,850. MEADOW COOL. Meadow Cool Franchises Limited. SN 197,810. Pub. 10-4-66. Filed 8-3-64.

820,851. SPACE-SICLE. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, assignee of Joe Lowe Corporation. SN 206,633. Pub. 10-4-66. Filed 11-20-64.

820,852. CONFIGURATION OF AN ELF. Scott Lowery. SN 213,719. Pub. 10-4-66. Filed 3-9-65.

820,853. BISKOCHITO. Midwest Biscuit Company. SN 215,425. Pub. 5-24-66. Filed 3-31-65.

820,854. SIR CHIPS. Sir Chips, Inc. SN 217,946. Pub. 10-4-66. Filed 5-3-65.

820,855. TOP CRISP. Big Bear Stores Company. SN 220,196. Pub. 10-4-66. Filed 6-2-65.

820,856. SNOW WHITE. Puerto Rican American Sugar Refinery, Inc. SN 222,509. Pub. 10-4-66. Filed 7-1-65.

820,857. SNOW WHITE AND DESIGN. Puerto Rican American Sugar Refinery, Inc. SN 222,510. Pub. 10-4-66. Filed 7-1-65.

820,858. POPINS. Williamson Candy Co. SN 222,639. Pub. 7-19-66. Filed 7-2-65.

820,859. MORRISON'S BIS-KITS. The Morrison Milling Company. SN 224,318. Pub. 10-4-66. Filed 7-27-65.

820,860. "INDI-PAKS." Edward M. Levy, d.b.a. Convenient Living. SN 226,062. Pub. 10-4-66. Filed 8-19-65.

820,861. MAKES COFFEE RIGHT AND DESIGN. Baker's Whip Top Products Co., Inc. SN 226,119. Pub. 10-4-66. Filed 8-20-65.

820,862. HOUSE ETC. (DESIGN). Burgers' Ozark Country Cured Hams, Inc. SN 226,218. Pub. 10-4-66. Filed 8-23-65.

820,863. MISCELLANEOUS DESIGN. Kent Feeds, Inc. SN 228,700. Pub. 10-4-66. Filed 9-27-65.

820,864. DR. PEPPER. Dr. Pepper Company. SN 230,037. Pub. 10-4-66. Filed 10-13-65.

820,865. TEA TIDY. Richard E. Burns. SN 232,114. Pub. 10-4-66. Filed 11-4-65.

820,866. RAZZLES AND DESIGN. Frank H. Fleer Corporation. SN 232,539. Pub. 10-4-66. Filed 11-12-65.

820,867. PINK PANTHER AND DESIGN. Myron Cox, d.b.a. General Products Company. SN 233,693. Pub. 10-4-66. Filed 12-1-65.

820,868. SHAPE. Mead Johnson & Company. SN 234,046. Pub. 10-4-66. Filed 12-6-65.

820,869. BEAN BAG. Topps Chewing Gum, Incorporated. SN 234,089. Pub. 10-4-66. Filed 12-6-65.

820,870. SHAPE. Mead Johnson & Company. SN 234,918. Pub. 10-4-66. Filed 12-20-65.

820,871. SHAPE. Mead Johnson & Company. SN 234,919. Pub. 10-4-66. Filed 12-20-65.

820,872. SHAPE. Mead Johnson & Company. SN 234,920. Pub. 10-4-66. Filed 12-20-65.

820,873. H.E.B. H. E. Butt Grocery Company, d.b.a. H. E. Butt Co., H.E.B. Food Stores, and Harlingen Canning Company. SN 249,473. Pub. 10-4-66. Filed 7-5-66.

Class 48 — Malt Beverages and Liquors

820,874. MOLSON CANADIAN AND DESIGN. Molson Breweries Limited. SN 227,604. Pub. 9-27-66. Filed 9-10-65.

820,875. SCHLITZ AND DESIGN. Jos. Schlitz Brewing Company. SN 236,925. Pub. 10-4-66. Filed 1-20-66.

Class 50 — Merchandise Not Otherwise Classified

820,545. (See Class 2 for this trademark.)

820,876. GRO-WELL AND DESIGN. Aquariums Incorporated. SN 229,627. Pub. 10-4-66. Filed 10-8-65.

820,877. METAFRAME AND DESIGN. Aquariums Incorporated. SN 229,730. Pub. 10-4-66. Filed 10-11-65.

820,878. WIL-NES. Aquariums Incorporated. SN 230,756. Pub. 10-4-66. Filed 10-21-65.

820,879. ANCHOR FLEX. Anchor Hocking Glass Corporation. SN 232,179. Pub. 10-4-66. Filed 11-5-65.

820,880. EVERGRASS. Pegasus International Corporation. SN 234,765. Pub. 10-4-66. Filed 12-16-65.

820,881. PERMABOND. Rock of Ages Corporation. SN 241,081. Pub. 10–4–66. Filed 3–15–66.

820,882. THE ARISTOCRAT. Best Stamp & Manufacturing Company. SN 241,425. Pub. 10–4–66. Filed 3–21–66.

820,883. SECURWAL. Securwal Products Co. SN 241,529. Pub. 10–4–66. Filed 3–21–66.

820,884. PRESSWELL. The Setwell Company. SN 241,532. Pub. 10–4–66. Filed 3–21–66.

820,885. NPD. National Paint Distributors, Inc. SN 242,142. Pub. 10–4–66. Filed 3–29–66.

820,886. POLYGUARD. Rowland Products, Incorporated. SN 242,668. Pub. 10–4–66. Filed 4–4–66.

820,887. MEDOGRASS. Carl J. Bishop Display Company. SN 242,793. Pub. 10–4–66. Filed 4–6–66.

820,888. SOLAS. A. B. Morch & Co. SN 242,835. Pub. 10–4–66. Filed 4–6–66.

820,889. BATH GARD. The Brearley Company. SN 244,075. Pub. 10–4–66. Filed 4–22–66.

820,890. COUNSELOR CLING. The Brearley Company. SN 244,076. Pub. 10–4–66. Filed 4–22–66.

820,891. FLAT-TOP. Minnesota Mining and Manufacturing Company. SN 248,083. Pub. 10–4–66. Filed 6–15–66.

Class 51 — Cosmetics and Toilet Preparations

820,542. (See Class 2 for this trademark.)

820,892. ODORONO AND DESIGN. Chesebrough-Pond's Inc. SN 239,723. Pub. 10–4–66. Filed 2–28–66.

820,893. LITTLE KING AND DESIGN. King Kullen Grocery Co., Inc. SN 248,481. Pub. 10–4–66. Filed 6–20–66.

Class 52 — Detergents and Soaps

820,545. (See Class 2 for this trademark.)

820,894. CASHMERE. Colgate-Palmolive Company. SN 179,818. Pub. 10–4–66. Filed 10–18–63.

820,895. BACTOHEX. Hudson National, Inc., d.b.a. Hudson Vitamin Products. SN 235,464. Pub. 10–4–66. Filed 12–20–65.

820,896. ZINZIN. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,154. Pub. 10–4–66. Filed 6–2–66.

820,897. ZORRO. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,155. Pub. 10–4–66. Filed 6–2–66.

820,898. JUMPENG BEAN. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,156. Pub. 10–4–66. Filed 6–2–66.

820,899. ZARIS. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,630. Pub. 10–4–66. Filed 6–8–66.

820,900. ZANZAN. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,631. Pub. 10–4–66. Filed 6–8–66.

820,901. LIM'PIO AND DESIGN. Andrew A. Williams, d.b.a. A. A. Williams & Sons. SN 249,469. Pub. 10–4–66. Filed 7–5–66.

Service Marks

Class 100 — Miscellaneous

820,902. MAIRFAX SYSTEMS. Francis E. Madd, d.b.a. Mairfax Systems. SN 222,284. Pub. 10–4–66. Filed 6–29–65.

820,903. SEATED AND STANDING FIGURES (DESIGN). American Rehabilitation Foundation, Inc. SN 229,624. Pub. 10–4–66. Filed 10–8–65.

820,904. CSI AND DESIGN. Communications Services Inc. SN 234,115. Pub. 10–4–66. Filed 12–7–65.

Class 101 — Advertising and Business

820,905. SCOTTIE STORES AND DOG DESIGN. Scottie Stores, Inc. SN 217,989. Pub. 10–4–66. Filed 5–3–65.

820,906. CHEM TECH AND DESIGN. Chem Tech Laboratories, Inc. SN 225,634. Pub. 10–4–66. Filed 8–13–65.

820,907. COVER GIRLS. Faye Stephen, d.b.a. Cover Girls Answering Service. SN 226,683. Pub. 10–4–66. Filed 8–27–65.

820,908. FSI. Fund Raising Services, Inc. SN 228,674. Pub. 10–4–66. Filed 9–27–65.

820,909. VALUES SAVINGS CONSISTENTLY AND DESIGN. Variety Supply Company. SN 229,616. Pub. 10–4–66. Filed 10–7–65.

820,910. CHECK-OUT-RAMA!! Robert G. Graves. SN 231,114. Pub. 10–4–66. Filed 10–22–65.

Class 105 — Transportation and Storage

820,911. THE "EXTRA SERVICE" FORWARDER ETC. AND DESIGN. Shulman, Inc. SN 219,148. Pub. 10–4–66. Filed 5–18–65.

Class 107 — Education and Entertainment

820,912. FOL-DE-ROL. The Hearst Corporation. SN 232,313. Pub. 10–4–66. Filed 11–8–65.

Collective Membership Marks

Class 200

820,913. NAREIF ETC. AND DESIGN. National Association of Real Estate Investment Funds. SN 237,727. Pub. 10–4–66. Filed 2–1–66.

820,914. GREEK LETTER PI AND DESIGN. National Education Association of the United States. SN 247,714. Pub. 10–4–66. Filed 6–9–66.

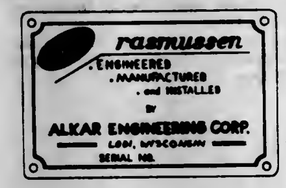
SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

820,915. Alkar Engineering Corporation, Lodi, Wis. SN 220,343. Filed P.R. 6–4–65; Am. S.R. 10–17–66.



Class 2—Receptacles

For Tanks.

Class 12—Construction Materials

For Smokehouses.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stick Washers Which Are Cabinets in Which Sticks Are Washed, Sticks Being the Objects on Which Meat Products Are Hung.

Class 26—Measuring and Scientific Appliances

For Electric Control Panels Used To Regulate the Temperature and Other Functions of the Smokehouse.

Class 31—Filters and Refrigerators

For Quick Chill Cabinets.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Sausage Process Cookers.

First use Apr. 18, 1962.

SECTION 2

Class 2 — Receptacles

820,915. (See Section 1 for this trademark.)

Class 8 — Smokers' Articles, Not Including Tobacco Products

820,916. Lane Limited, New York, N.Y. SN 207,133. Filed P.R. 11–30–64; Am. S.R. 10–28–66.

BENTLEY

For Pipes.
First use before 1941.

Class 12 — Construction Materials

820,915. (See Section 1 for this trademark.)

820,917. Alside, Inc., Akron, Ohio. SN 218,251. Filed P.R. 5–7–65; Am. S.R. 10–14–66.

cape Cod-5

For Aluminum Siding.
First use Oct. 14, 1964.

820,918. American Chemco, Inc., Decatur, Ga. SN 240,235. Filed P.R. 8–7–66; Am. S.R. 10–20–66.

SEAL N' SHINE

For Ceramic Tile Sealer.
First use in or about September 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

820,919. Best Valve Co., Cleveland, Ohio. SN 219,814. Filed P.R. 5–20–65; Am. S.R. 10–27–66.

BEST

For Valves.
First use Apr. 14, 1965.

Class 17 — Tobacco Products

820,920. Freeman & Gossage, Inc., San Francisco, Calif. SN 192,702. Filed P.R. 5–5–64; Am. S.R. 10–19–66.

MRS. SIDDON'S NO. 3 & 4

Mrs. Siddons is a well-known historical character in English history.
For Snuff.
First use Apr. 1, 1964.

820,921. Lane Limited, New York, N.Y. SN 207,134. Filed P.R. 11–30–64; Am. S.R. 10–28–66.

BENTLEY

For Smoking Tobacco.
First use August 1968.

820,922. The American Tobacco Company, New York, N.Y. SN 248,096. Filed 6-15-66.



For Cigarettes.
First use May 16, 1966.

Class 19—Vehicles

820,923. Pike Trailer Co., Los Angeles, Calif. SN 222,615. Filed P.R. 7-2-65; Am. S.R. 10-10-66.

MOD-U-LATOR

For Vehicle Wheel Suspension Units for Vehicles—Namely, Trucks, Trailers, Vans, and the Like.
First use Feb. 28, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

820,924. General Electric Company, East Cleveland, Ohio. SN 205,278. Filed P.R. 11-2-64; Am. S.R. 10-24-66.

MULTI-VAPOR

For Electric Lamps.
First use Mar. 17, 1964.

820,925. Channel Master Corporation, Ellenville, N.Y. SN 225,280. Filed P.R. 8-9-65; Am. S.R. 10-14-66.

FOUR-SETTER

For Multi-Receiver Television Signal Couplers.
First use Dec. 15, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

820,915. (See Section 1 for this trademark.)

820,926. William H. Kaiser, d.b.a. Kaiser Tool Company, Fort Wayne, Ind. SN 196,165. Filed P.R. 6-22-64; Am. S.R. 10-19-66.

THINBIT

For Grooving Tool for Use in Connection With Metal-Working Machine Tools.
First use June 9, 1964.

820,927. Rex Chainbelt Inc., Milwaukee, Wis. SN 218,796. Filed P.R. 5-13-65; Am. S.R. 10-13-66.

LOAD STOP

For Hydraulic Shock Absorbers for Machinery.
First use Apr. 8, 1964.

820,928. Lloyd A. Hall, Altadena, Calif., assignee of W. P. Fuller Paint Company, Fullerton, Calif. SN 221,038. Filed P.R. 6-14-65; Am. S.R. 10-14-66.

KWENCH

For Fire Extinguishers.
First use Mar. 16, 1965.

Class 26—Measuring and Scientific Appliances

820,915. (See Section 1 for this trademark.)

820,929. Spiratone, Inc., Flushing, N.Y. SN 230,577. Filed P.R. 10-19-65; Am. S.R. 10-17-66.

SIGHT 'N SOUND

For Slide Projector.
First use Oct. 8, 1965.

Class 31—Filters and Refrigerators

820,915. (See Section 1 for this trademark.)

Class 32—Furniture and Upholstery

820,930. Douglas I. Holberg, Fullerton, Calif. SN 197,122. Filed P.R. 7-6-64; Am. S.R. 10-12-66.

FOAMART

For Domestic Products of Expanded Material—Namely, Foam Cushions.
First use on or about June 15, 1964.

820,931. Fidelity File Box, Inc., Minneapolis, Minn. SN 231,557. Filed P.R. 10-24-65; Am. S.R. 10-10-66.

FLATFILE

For Filing Cabinet Units Constructed of Corrugated Fiber Board With Steel Reinforcement.
First use Oct. 1, 1964.

Class 34—Heating, Lighting, and Ventilating Apparatus

820,915. (See Section 1 for this trademark.)

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

820,932. Monkey Grip Rubber Company, d.b.a. Better Products Company, Dallas, Tex. SN 217,046. Filed P.R. 4-21-65; Am. S.R. 4-13-66.



The drawing is lined for the color red but no claim is made to color.
For Automobile Tire and Tube Repair Materials and Equipment—Namely, Cold Patches, Vulcanising Patches, and Patching Plugs.
First use Feb. 1, 1922.

Class 37—Paper and Stationery

820,933. Carl H. Nutter, Newark, Ohio. SN 198,762. Filed P.R. 7-29-64; Am. S.R. 10-18-66.

PULTIP

For Envelope and Insert for Mail Advertising.
First use Apr. 1, 1961.

820,934. American Greetings Corporation, Cleveland, Ohio. SN 231,799. Filed P.R. 10-29-65; Am. S.R. 10-21-66.

"OP"

For Decorative Wrapping Paper for Gifts and the Like.
First use Oct. 7, 1965.

Class 39—Clothing

820,935. Record Industrial Company, Philadelphia, Pa. SN 210,476. Filed P.R. 1-22-65; Am. S.R. 10-24-66.



For Flame Retardant Work Clothes—Namely, Work Shirts, Work Trousers, Coveralls, Overalls, Welding Caps, and Work Jackets.
First use December 1961.

820,936. Rugby Knitting Mills Inc., Buffalo, N.Y. SN 226,862. Filed P.R. 8-31-65; Am. S.R. 10-6-66.

Super Sport

By RUGBY

For Outerwear Jackets.
First use July 1, 1965.

Class 44—Dental, Medical, and Surgical Appliances

820,937. Marlen Manufacturing and Development Co., Bedford, Ohio. SN 229,588. Filed P.R. 10-7-65; Am. S.R. 10-24-66.

WEIGHT-LESS

For Ileostomy Appliances.
First use at least as early as July 2, 1965.

TRADEMARK REGISTRATIONS RENEWED

51,291. LA CAROLINA AND DESIGN. Cl. 17. 4-10-06.
55,254. BUDS. Cl. 46. 8-7-06.
56,809. NON-FLUID OIL AND DESIGN. Cl. 15. 10-16-06.
56,915. UNIVERSAL. Cl. 13. 10-23-06.
57,064. DENTALUXE. Cl. 51. 10-30-06.
57,157. SALVITAE. Cl. 18. 11-6-06.
57,528. WIL KIN SON AND DESIGN. Cl. 23. 11-13-06.
58,269. CHRONOS. Cl. 27. 12-11-06.
58,572. UNITED STATES U.S. Cl. 22. 12-18-06.
59,404. COLLEGIATE. Cl. 39. 1-8-07.
61,328. CRYSTAL BLUE. Cl. 6. 3-12-07.
61,356. JOHN TAYLOR'S PORK ROLL AND DESIGN. Cl. 46. 3-19-07.
216,592. THREE STAR AND DESIGN. Cl. 1. 8-17-26.
216,854. PLEE-ZING. Cl. 46. 8-24-26.
217,023. ROSE. Cl. 1. 8-24-26.
218,052. JAYSON. Cl. 39. 9-21-26.
218,377. WEX. Cl. 18. 9-28-26.
218,958. DONA. Cl. 52. 10-5-26.
219,694. CARGEL. Cl. 18. 10-19-26.
219,696. CIROBAIN. Cl. 51. 10-19-26.
219,813. ZYLOID. Cl. 36. 10-26-26.
219,850. TJ. Cl. 23. 10-26-26.
220,069. TWO RED LINES (DESIGN). Cl. 37. 11-2-26.
220,427. GRAFILD. Cl. 35. 11-9-26.
220,661. HORROCKSES. Cl. 42. 11-16-26.
221,150. ROUNDUP. Cl. 46. 11-23-26.
221,430. EVERY MEAL. Cl. 46. 11-30-26.
221,658. MARIE DE MEDICIS AND DESIGN. Cl. 51. 12-7-26.
222,155. ALL-WEAR. Cl. 39. 12-21-26.
222,335. HYCO. Cl. 23. 12-28-26.
222,992. LOU Z ANA. Cl. 46. 1-11-27.
223,110. WHITE LILAC AND DESIGN. Cl. 46. 1-18-27.
223,187. PRO PELLE CUTEM AND SHIELD DESIGN. Cl. 42. 1-18-27.
223,332. CREAM-PAK. Cl. 46. 2-1-27.
223,369. HERMOSA. Cl. 12. 2-1-27.
223,697. CAPTAX. Cl. 6. 2-8-27.
223,903. PETER PUMPKIN SHOE. Cl. 39. 2-15-27.
223,962. INTERWOVEN TOE AND HEEL AND DESIGN. Cl. 39. 2-15-27.
223,969. INTER WOVEN AND SOCK DESIGN. Cl. 39. 2-15-27.
224,610. HOUSEHOLD. Cl. 46. 3-1-27.
225,033. GAME COCK. Cl. 46. 3-8-27.
225,123. WESTERN. Cl. 46. 3-15-27.
225,454. RUST-O-LENE. Cl. 15. 3-22-27.
225,460. UMBRA. Cl. 15. 3-22-27.
225,461. CRYSTEX. Cl. 15. 3-22-27.
225,487. OSAGE. Cl. 15. 3-22-27.
225,493. STOD-SOL. Cl. 52. 3-22-27.

225,591. THE WONDER MOTOR FUEL. Cl. 15. 3-22-27.
225,761. WM. M. SCHOLL M.D. Cl. 39. 3-22-27.
226,111. DAWN O' GOLD. Cl. 46. 3-29-27.
420,676. HEIRLOOM PEARLS. Cl. 28. 4-30-46.
421,524. L'AIR DU TEMPS. Cl. 51. 6-4-46.
421,697. PREPTON. Cl. 39. 6-11-46.
422,096. THRIFTER. Cl. 32. 7-2-46.
423,911. DETERGEX. Cl. 52. 9-17-46.
424,014. BASALITE. Cl. 12. 9-17-46.
424,290. TRI-SAN. Cl. 52. 10-1-46.
424,380. EATONITE. Cl. 14. 10-1-46.
424,731. DARTHRONOL. Cl. 18. 10-22-46.
424,902. PICTRONIC. Cl. 21. 10-29-46.
425,200. BUFFATE. Cl. 18. 11-5-46.
425,838. RESTYME AND DESIGN. Cl. 39. 12-3-46.
426,545. PRIDE OF PORTUGAL. Cl. 47. 12-31-46.
426,546. PRIDE OF SPAIN. Cl. 47. 12-31-46.
426,798. PHOS TRODE AND DESIGN. Cl. 34. 1-14-47.
426,942. AMPCO AND DESIGN. Cl. 21. 1-21-47.
427,180. PALMETTO PYRAMID. Cl. 35. 1-28-47.
427,277. SKILLTEXT. Cl. 38. 2-4-47.
428,006. BOMBER. Cl. 22. 3-4-47.
428,904. CCH. Cl. 38. 4-8-47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

343,256. DOUBLE DUTY. Cl. 39. 2-16-37.
380,703. BRILLO SOAP PADS AND DESIGN. Cl. 4. 8-27-40.
380,704. SUPREME AND LABEL DESIGN. Cl. 4. 8-27-40.
380,705. BRILLO CLEANSER AND DESIGN. Cl. 4. 8-27-40.
380,706. BRILLO AND LABEL DESIGN. Cl. 4. 8-27-40.
380,707. BRILLO AND LABEL DESIGN. Cl. 4. 8-27-40.
383,177. ESSFREE. Cl. 46. 11-26-40.
402,670. HENRI. Cl. 46. 8-10-43.
408,740. TANBRO. Cl. 42. 8-29-44.
415,338. SPEED-EEZ. Cl. 13. 8-7-45.

The following registrations issued Nov. 1, 1960

706,446. VISOLYTE. Cl. 1.
706,451. NYMAN ETC. AND DESIGN. Cl. 2.
706,452. WONDERWALL. Cl. 2.
706,454. TRASH-O-MATIC. Cl. 2.
706,459. STYLE-ART BY HOLZMAN AND DESIGN. Cl. 3.
706,467. RUB-ER-EGE. Cl. 5.
706,472. DEDORAN. Cl. 6.
706,474. SILOFERM. Cl. 6.
706,480. TTT AND DESIGN. Cl. 7.
706,484. IMATREX AND DESIGN. Cl. 9.
706,485. MIRACLE MULCH. Cl. 10.
706,488. FANCIFUL REPRESENTATION OF STEER. Cl. 10.
706,489. CHEMANURE. Cl. 10.
706,490. PEL STAR AND DESIGN. Cl. 10.
706,499. SHAD-O-WALL. Cl. 12.
706,501. MOBILE TAPE. Cl. 12.
706,508. OXIBRIK. Cl. 12.
706,514. JO-LI-ET GUTTER GARD. Cl. 13.
706,518. DUCHESS. Cl. 13.
706,520. WALLRAMANT. Cl. 14.
706,521. C AND REPRESENTATION OF CROSS. Cl. 14.
706,524. RUST MASTER. Cl. 15.
706,531. VETICEUTICAL. Cl. 18.
706,535. MEBINOL. Cl. 18.
706,536. DR. PETER FAHRNEY'S LAXITOL. Cl. 18.
706,537. KIMTAB. Cl. 18.
706,538. FULVIDERM. Cl. 18.
706,543. VISBEL. Cl. 18.
706,545. MONOPHOS. Cl. 18.
706,548. HESOTIN. Cl. 18.
706,549. DACTAZIDE. Cl. 18.
706,553. LENOMET. Cl. 18.
706,558. CAMINOIDS. Cl. 18.
706,564. PERFORMER. Cl. 19.
706,565. HOMELITE SPITFIRE. Cl. 19.
706,566. ADLER AND DESIGN. Cl. 19.
706,575. ISOKRAFT. Cl. 21.
706,576. ROBOTUNER. Cl. 21.
706,584. BASKERVILLE. Cl. 21.
706,585. SPOOLY AND DESIGN. Cl. 21.
706,589. KODIAK. Cl. 22.
706,590. TOODLES SUPER KART. Cl. 22.
706,591. SHUF-L-BOWL. Cl. 22.
706,594. "FLOAT-O-BALL." Cl. 22.
706,597. HEB AND DESIGN. Cl. 23.
706,602. Q-AIR. Cl. 23.
706,604. CONNER AND DESIGN. Cl. 23.
706,609. WINCHDOZER. Cl. 23.
706,610. MOBY. Cl. 23.
706,611. DEBORA. Cl. 23.
706,612. MACARONI. Cl. 23.
706,617. SEA DOG. Cl. 23.
706,622. SOUND SEALD. Cl. 23.
706,628. APTI. Cl. 26.
706,638. LUCK-E-LINK. Cl. 28.
706,643. VISO-FILTER. Cl. 31.
706,648. SHEERLINE. Cl. 32.
706,665. DIAL-O-MUSIC. Cl. 36.
706,668. TREBLE RECORDS INC. AND DESIGN. Cl. 36.
706,669. PEDALVOX. Cl. 36.
706,671. BUDGET BOND. Cl. 37.
706,675. "AD-A-BIB." Cl. 37.
706,676. CARTOPLEX. Cl. 37.
706,679. DESIGN OF HELMSMAN AT WHEEL OF SHIP. Cl. 38.
706,686. ZERO-GLO. Cl. 39.
706,687. BARACRON. Cl. 39.
706,690. DAY DREAMS. Cl. 39.
706,692. ROCK PORT. Cl. 39.
706,693. MY FAIR BABY. Cl. 39.
706,697. GLAY-SHEER. Cl. 42.
706,698. DURE-A-FRESH. Cl. 42.
706,708. HEARTH 'N HOME. Cl. 42.
706,709. SUPREL. Cl. 42.
706,710. SOFT-EASE. Cl. 42.
706,711. DOC. Cl. 42.
706,722. FE-CATH. Cl. 44.
706,723. STYLE LINE. Cl. 45.
706,730. FRANKIE'S—THE SECRET IS THE SAUCE AND DESIGN. Cl. 46.
706,731. PAK LAO AND REPRESENTATION OF HORSE. Cl. 46.
706,736. VAL-KIST. Cl. 46.
706,737. PACESETTER. Cl. 46.
706,740. L. C. ANTLES POLLEN AND DESIGN. Cl. 46.
706,744. FLAMENCO. Cl. 46.
706,745. PARK AVENUE AND DESIGN. Cl. 46.
706,749. IRISH MOLLY. Cl. 46.
706,750. CONDE DE LA CORTINA. Cl. 48.
706,752. GINOMETRY. Cl. 49.
706,753. PUSH BUTTON. Cl. 50.
706,756. FUZZY MIRROR-MUFF. Cl. 50.
706,757. P-F-B-CO. Cl. 50.
706,759. ESPERE AND DESIGN. Cl. 51.
706,762. SABRINA ROSE. Cl. 51.
706,767. PINKY DINK. Cl. 52.
706,770. TRI-PLAN. Cl. 100.
706,774. ELECTRO DAY AND DESIGN. Cl. 101.
706,775. ELECTRICAL TUESDAY. Cl. 101.
706,776. TEL. Cl. 101.
706,778. CRAC. Cl. 103.
706,782. FIRESTART AND DESIGN. Cl. 1.
706,783. LEATHER CARE. Cl. 4.
706,791. DAY TO DAY MARK-IT LIST AND DESIGN. Cl. 38.
706,796. LOMPOC. Cl. 46.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

109,874. SHAW. Cl. 49. 4-4-16. Alex. D. Shaw & Co. National Distillers and Chemical Corporation, doing business as National Distillers Products Co., New York, N.Y. Amended: In the statement, column 1, lines 14 and 15, "imported and sold by us in the United States of America" is deleted, in the statement, column 2, line 5, "26, 1886" is deleted and *27, 1896* is inserted, and the drawing is amended to appear:

SHAW

123,890. SHAW AND DESIGN. Cl. 47. 10-29-18. Alex D. Shaw & Co. National Distillers and Chemical Corporation, doing business as National Distillers Products Co., New York, N.Y. Amended: In the statement, column 1, line 13, "shipped by Duff Gordon" is deleted, lines 14 and 15 are deleted and in line 16 "ica" is deleted, and the drawing is amended to appear:

SHAW

342,784. TEA & COFFEE TRADE JOURNAL. Cl. 38. 1-26-37. The Tea and Coffee Trade Journal Co., New York, N.Y. Amended to appear:

TEA & COFFEE
TRADE JOURNAL

371,249. CHAMPAGNE VELVET, ETC. AND DESIGN. Cl. 48. 9-19-39. Terre Haute Brewing Company, Inc., Terre Haute, Ind. Restricted under the provisions of Section 18 of the Trademark Act of 1946 to that area of the United States excluding the States of Colorado, Arizona, Kansas and Nebraska, by order of the First Assistant Commissioner dated November 15, 1966, following decision on Concurrent Use Proceeding No. 288, *The Walter Brewing Company* v. *Atlantic Brewing Company*.

589,062. CHAMPAGNE VELVET BRAND GOLD LABEL, ETC. AND DESIGN. Cl. 48. 4-27-54. Terre Haute Brewing Company, Inc., Terre Haute, Ind. Restricted under the provisions of Section 18 of the Trademark Act of 1946 to that area of the United States excluding the States of Colorado, Arizona, Kansas and Nebraska, by order of the First Assistant Commissioner dated November 15, 1966, following decision on Concurrent Use Proceeding No. 288, *The Walter Brewing Company* v. *Atlantic Brewing Company*.

618,752. CHAMPAGNE VELVET BRAND GOLD LABEL BEER, ETC. AND DESIGN. Cl. 48. 1-3-56. Terre Haute Brewing Company, Inc., Terre Haute, Ind. Restricted under the provisions of Section 18 of the Trademark Act of 1946 to that area of the United States excluding the States of Colorado, Arizona, Kansas and Nebraska, by order of the First Assistant Commissioner dated November 15, 1966, following decision on Concurrent Use Proceeding No. 288, *The Walter Brewing Company* v. *Atlantic Brewing Company*.

626,674. EARLY TIMES AND DESIGN. Cl. 49. 5-8-56. Brown-Forman Distillers Corporation, doing business as Early Times Distillery Company, Louisville, Ky. Corrected: In the statement, column 1, line 1, "Kentucky" should be deleted and *Delaware* should be inserted.

686,448. "SCOOPY" ETC. AND DESIGN. Cl. 50. 10-6-59. Safe-T-Pacific Baking Co. Safe-T Pacific Company, Redwood City, Calif. Restricted under the provisions of Section 18 of the Trademark Act of 1946 to that area of the United States including Alaska, Hawaii, Washington, Oregon, California, Nevada, Arizona, New Mexico, Utah, Idaho, Montana and Wyoming, by order of the First Assistant Commissioner dated November 14, 1966, following decision on Concurrent Use Proceeding No. 284, *National Soda Straw Company* v. *Safe-T Pacific Company by change of name from Safe-T-Pacific Baking Co.*

702,700. LA HOLANDESA AND DESIGN. Cl. 52. 8-9-60. Purex Corporation, Ltd., South Gate, Calif. Amended to appear:

Holandesa

711,396. AM-PAK. Cl. 8. 2-21-61. Amberg File and Index Company, Kankakee, Ill. Corrected: In the statement, column 1, line 1, "Amber" should be deleted and *Amberg* should be inserted.

721,669. SARA BROWN. Cl. 46. 9-19-61. Bake-Line Products, Inc., Chicago, Ill. Corrected: In the statement, column 1, line 1, after "Products", *Inc.* should be inserted.

755,543. HI-MINE. Cl. 38. 8-27-63. Youth Associates Company, Minneapolis, Minn. Amended to appear:

HI MINE

809,780. PCI PLYMOUTH CORDAGE INDUSTRIES, INC. AND DESIGN. Cl. 13. 6-14-66. Plymouth Cordage Industries, Inc., Boston, Mass. Amended to appear:

PLYMOUTH PCI DIV. OF EMHART CORPORATION

812,639. PEEL-A-WAY. Cl. 44. 8-9-66. W. Glenn Wunderly Co., Pasadena, Calif. Corrected: In the statement, column 2, line 3, "samples" should be deleted and *samplers* should be inserted.

815,291. TEX-O-KOTE. Cl. 12. 9-20-66. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

INDEX OF REGISTRANTS

DECEMBER 20, 1966

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Abbey Rents, d.b.a. Medico Rents, Los Angeles, Calif. 820,545, pub. 10–4–66. Multiple Class (Classes 2, 4, 6, 13, 15, 19, 21, 22, 23, 26, 28, 30, 31, 32, 33, 34, 36, 41, 42, 44, 50, and 52).

Abbott, Ernest J., d.b.a. Physicists Research Co. The Bendix Corp., Detroit, Mich. 421,734, new cert. Cl. 26.

Abraham & Straus, New York, and Brooklyn, N.Y., to Federated Department Stores, Inc., Brooklyn, N.Y. 58,269, ren. 12–20–66. Cl. 27.

Acme Cotton Products Co., Inc., Valley Stream, N.Y. 820,842, pub. 10–4–66. Cl. 44.

Acme Wire Co., The, to Cardinal Control Co., Inc., Kensington, Conn. 687,495, new cert. Cl. 21.

Acorn Chemical Co., Cleveland, Ohio. 815,291, cor. Cl. 12.

Acu-Melt Corp., Newton Lower Falls, Mass. 820,680, pub. 10–4–66. Cl. 23.

Adlerwerke vorm. Heinrich Kleyer A.G., Frankfurt am Main, Germany. 706,566, canc. Cl. 19.

Aeronca Mfg. Corp., Middletown, Ohio. 706,518, canc. Cl. 13.

Aire-Scrub Corp., Minneapolis, Minn. 820,679, pub. 10–4–66. Cl. 23.

Air-Tite Co., Inc., Middletown, Pa. 820,665, pub. 10–4–66. Cl. 22.

Alcon Laboratories, Inc., Fort Worth, Tex. 820,843, pub. 10–4–66. Cl. 44.

Aldens, Inc., Chicago, Ill. 820,804, pub. 10–4–66. Cl. 39.

Alert Shoe Corp., Milroy, Pa. 706,690, canc. Cl. 39.

Alexander Doll Co., Inc., d.b.a. Madame Alexander, New York, N.Y. 820,652, pub. 10–4–66. Cl. 22.

Alkar Engineering Corp., Lodi, Wis. 820,915. Multiple Class (Classes 2, 12, 23, 26, 31, and 34).

Allied Thermal Corp., New Britain, Conn. 820,750, pub. 2–15–66. Cl. 34.

Allis-Chalmers Mfg. Co., Milwaukee, Wis. 820,698, pub. 10–4–66. Cl. 23.

Alside, Inc., Akron, Ohio. 820,917. Cl. 12.

Alvear S.A., Cordoba, Spain. 706,750, canc. Cl. 48.

Amberg File and Index Co., Kankakee, Ill. 711,896, cor. Cl. 3.

American Apothecaries Co., Long Island City, N.Y. 57,167, ren. 12–20–66. Cl. 18.

American Character Doll Corp., Brooklyn, N.Y. 706,590, canc. Cl. 22.

American Chemsec, Inc., Decatur, Ga. 820,918. Cl. 12.

American Cigar Corp.: *See*—
Havana Commercial Co.

American Encaustic Tiling Co., Ltd., Zanesville, Ohio, to International Pipe and Ceramics Corp., Los Angeles, Calif. 223,869, ren. 12–20–66. Cl. 12.

American Envelop Co., Chicago, Ill. 820,753, pub. 10–4–66. Cl. 37.

American Grease Stick Co., Muskegon Heights, Mich. 820,603, pub. 10–4–66. Cl. 15.

American Greetings Corp., Cleveland, Ohio. 820,787, pub. 10–4–66. Cl. 38.

American Greetings Corp., Cleveland, Ohio. 820,934. Cl. 37.

American Machine & Foundry Co., New York, N.Y. 820,681, pub. 6–14–66. Cl. 23.

American-Marietta Co., Chicago, Ill. 706,501, canc. Cl. 12.

American Rehabilitation Foundation, Inc., Minneapolis, Minn. 820,903, pub. 10–4–66. Cl. 100.

American Super-Temperature Wires, Inc., Wilmington, Del. 706,585, canc. Cl. 21.

American Tobacco Co., The, New York, N.Y. 820,922. Cl. 17.

Ametek, Inc., East Moline, Ill. 820,717, pub. 10–4–66. Cl. 26.

Ampco Metal, Inc., Milwaukee, Wis. 426,798, ren. 12–20–66. Cl. 34.

Ampco Metal, Inc., Milwaukee, Wis. 426,942, ren. 12–20–66. Cl. 21.

Anchor Hocking Glass Corp., Lancaster, Ohio. 820,879, pub. 10–4–66. Cl. 50.

Andalusian Trading Corp., New York, N.Y. 706,744, canc. Cl. 46.

Anderson-Miller Mfg. Co., Spokane, Wash. 820,592, pub. 10–4–66. Cl. 13.

Anderson-Prichard Oil Corp., to Apco Oil Corp., Oklahoma City, Okla. 225,493, ren. 12–20–66. Cl. 52.

Angeller, James E., Santa Monica, Calif. 706,591, canc. Cl. 22.

Antles, Leo C., d.b.a. L. C. Antles Pollen Supplies Co., Wenatchee, Wash. 706,740, canc. Cl. 46.

Apco Oil Corp.: *See*—
Anderson-Prichard Oil Corp.

Aquafilter Corp., Miami Beach, Fla. 820,572, pub. 10–4–66. Cl. 8.

Aquariums Inc., Maywood, N.J. 820,876, pub. 10–4–66. Cl. 50.

Aquariums Inc., Maywood, N.J. 820,877, pub. 10–4–66. Cl. 50.

Aquariums Inc., Maywood, N.J. 820,878, pub. 10–4–66. Cl. 50.

Aquascutum, Ltd., London, England. 820,809, pub. 10–4–66. Cl. 39.

Archer-Daniels-Midland Co., Minneapolis, Minn. 820,551, pub. 5–17–66. Cl. 6.

Aristo-Tone Electronics, Inc., New York, N.Y. 820,645, pub. 10–4–66. Cl. 21.

Armalite, Inc., Costa Mesa, Calif. 820,574, pub. 10–4–66. Cl. 9.

Armitage, John L., & Co., Newark, N.J. 820,605, pub. 7–12–66. Cl. 16.

Armour and Co., to Armour and Co., Chicago, Ill. 218,958, ren. 12–20–66. Cl. 52.

Art Metal Construction Co., New York, N.Y. 706,648, canc. Cl. 32.

Artex-Green Corp., Brooklyn, N.Y. 422,096, ren. 12–20–66. Cl. 32.

Art's Way Mfg. Co., Inc., Armstrong, Iowa. 820,632, pub. 10–4–66. Multiple Class (Classes 19 and 26).

Arvin Industries, Inc., Columbus, Ind. 706,622, canc. Cl. 23.

Ashland Oil & Refining Co., Ashland, Ky. 820,565, pub. 10–4–66. Cl. 6.

Ashland Oil & Refining Co., Ashland, Ky. 820,566, pub. 10–4–66. Cl. 6.

Austin, Nichols & Co., Inc., Maspeth, N.Y. 426,545, ren. 12–20–66. Cl. 47.

Austin, Nichols & Co., Inc., Maspeth, N.Y. 426,546, ren. 12–20–66. Cl. 47.

Autobaus Pompano, Inc., Pompano Beach, Fla. 820,629, pub. 10–4–66. Cl. 19.

Auto-Soler Co., The, Atlanta, Ga. 820,688, pub. 10–4–66. Cl. 23.

B-M-B Co., Inc., Holton, Kans. 820,699, pub. 10–4–66. Cl. 23.

B & R Electronics Corp., New York, N.Y. 820,839, pub. 10–4–66. Cl. 44.

Badger, Helen S., d.b.a. Bonnie B Co., Norwood, Mass. 820,656, pub. 10–4–66. Cl. 22.

Bake-Line Products, Inc., Chicago, Ill. 721,669, cor. Cl. 46.

Baker's Whip Top Products Co., Inc., Glendale, N.Y. 820,861, pub. 10–4–66. Cl. 46.

Baltic Linen Co., Inc., New York, N.Y. 820,828, pub. 10–4–66. Cl. 42.

Baltic Linen Co., Inc., New York, N.Y. 820,829, pub. 10–4–66. Cl. 42.

Basalt Rock Co., Inc., Napa, Calif. 424,014, ren. 12–20–66. Cl. 12.

Bates Mfg. Co., Inc., Lewiston, Maine. 820,822, pub. 10–4–66. Cl. 42.

Baxter, Don, Inc., to Phamaseal Laboratories, Glendale, Calif. 423,911, ren. 12–20–66. Cl. 52.

Beacon Mfg. Co., Swannanoa, N.C. 820,817, pub. 10–4–66. Cl. 42.

Bear Archery Co., Grayling, Mich., to E. L. Blair & Son, Williamsport, Pa. 706,589, canc. Cl. 22.

Beaver, Clayton J., d.b.a. Beaver Enterprises, Portland, Oreg. 706,770, canc. Cl. 100.

Beaver Enterprises: *See*—
Beaver, Clayton J.

Bernardsville Paint & Wallpaper Co.: *See*—
Steinberg, Albert.

Best Stamp & Mfg. Co., Kansas City, Mo. 820,882, pub. 10–4–66. Cl. 50.

Best Valve Co., Cleveland, Ohio. 820,919. Cl. 13.

Bettcher Mfg. Corp., The, Cleveland, Ohio. 820,748, pub. 10–4–66. Cl. 34.

Bettendorf Co., The, Bettendorf, Iowa. 706,584, canc. Cl. 21.

Better Products Co.: *See*—
Monkey Grip Rubber Co.

Beverage-Air Co., Spartanburg, S.C. 820,737, pub. 10–4–66. Cl. 31.

Beverages of Billings, Inc., Billings, Mont. 706,723, canc. Cl. 45.

Big Bear Stores Co., Columbus, Ohio. 820,855, pub. 10–4–66. Cl. 46.

Bishop, Carl J., Display Co., Chicago, Ill. 820,887, pub. 10–4–66. Cl. 50.

Blair, E. L., & Son: *See*—
Bear Archery Co.

Blank, Ralph R., Omaha, Nebr. 820,602, pub. 10–4–66. Cl. 15.

Blum, C., d.b.a. Chase Industrial Refrigerator Equipment & Engineering Co., Norwood, to Chase Industries, Inc., Reading, Ohio. 415,338, canc. Cl. 13.

Boeing Co., The, Seattle, Wash. 820,583, pub. 10–4–66. Cl. 13.

Bomber Bait Co., Gainesville, Tex. 423,006, ren. 12–20–66. Cl. 22.

Bonnie B Co.: *See*—
Badger, Helen S.

Boot-Ster Mfg. Co., Inc., Clarksville, Tenn. 820,908, pub. 10–4–66. Cl. 39.

Borg-Warner Corp., Chicago, Ill. 820,744, pub. 10–4–66. Cl. 32.

Borg-Warner Corp., Chicago, Ill. 820,745, pub. 10–4–66. Cl. 32.

Bove Needle Co., The, Chicago, Ill. 820,815, pub. 10–4–66. Cl. 40.

Bradley, Milton, Co., Springfield, Mass. 820,670, pub. 10–4–66. Cl. 22.

Brearley Co., The, Rockford, Ill. 820,889, pub. 10–4–66. Cl. 50.

Brearley Co., The Rockford, Ill. 820,890, pub. 10–4–66. Cl. 50.
Brillo Mfg. Co., Inc., Brooklyn, N.Y. 380,703, canc. Cl. 4.
Brillo Mfg. Co., Inc., Brooklyn, N.Y. 380,704, canc. Cl. 4.
Brillo Mfg. Co., Inc., Brooklyn, N.Y. 380,705, canc. Cl. 4.
Brillo Mfg. Co., Inc., Brooklyn, N.Y. 380,706, canc. Cl. 4.
Brillo Mfg. Co., Inc., Brooklyn, N.Y. 380,707, canc. Cl. 4.
Brown-Forman Distillers Corp., d.b.a. Early Times Distillery Co., Louisville, Ky. 626,674, cor. Cl. 49.
Brunswick Corp., Chicago, Ill. 820,567, pub. 10–4–66. Cl. 6.
Brunswick Corp., Chicago, Ill. 820,655, pub. 10–4–66. Cl. 22.
Burgers' Ozark Country Cured Hams, Inc., California, Mo. 820,862, pub. 10–4–66. Cl. 46.
Burgon & Ball, Ltd., Sheffield, England. 57,528, ren. 12–20–66. Cl. 23.
Burns, Richard E., New York, N.Y. 820,865, pub. 10–4–66. Cl. 46.
Burron Medical Products, Inc., Bethlehem, Pa. 820,546, pub. 10–4–66. Cl. 2.
Butt, H. E., Co.: *See*—
Butt, H. E., Grocery Co.
Butt, H. E., Grocery Co., d.b.a. H. E. Butt Co., H.E.B. Food Stores, and Harlingen Canning Co., Corpus Christi, Tex. 820,873, pub. 10–4–66. Cl. 46.
Byrum-Kissinger Publications, Inc., Evanston, Ill. 820,778, pub. 10–4–66. Cl. 38.
Byrum-Kissinger Publications, Inc., Evanston, Ill. 820,779, pub. 10–4–66. Cl. 38.
Cadaco, Inc., from Alex D. Palmer, d.b.a. Tek Method Co., Chicago, Ill. 820,662, pub. 8–30–66. Cl. 22.
Cadaco, Inc., from Alex D. Palmer, d.b.a. Tek Method Co., Chicago, Ill. 820,663, pub. 7–26–66. Cl. 22.
California Custom Accessories Mfg. Co.: *See*—
Kraus Accessories Co., The.
California Vegetable Growers, Inc., Lompoc, Calif. 706,796, canc. Cl. 46.
Cal-zona Co., also d.b.a. Cal-zona, Inc., Phoenix, Ariz. 706,745, canc. Cl. 46.
Cal-zona, Inc.: *See*—
Cal-zona Co.
Cambridge Filter Corp., Syracuse, N.Y. 820,734, pub. 10–4–66. Cl. 31.
Cambridge Filter Corp., Syracuse, N.Y. 820,735, pub. 10–4–66. Cl. 31.
Campe Corp., The, New York, N.Y., to Genesco Inc., Nashville, Tenn. 421,697, ren. 12–20–66. Cl. 39.
Carlo Erba S.p.A., Milan, Italy. 706,535, canc. Cl. 18.
Carney, William A., Cassville, Mo. 706,757, canc. Cl. 50.
Carreras Ltd., Basildon, Essex, England. 820,614, pub. 10–4–66. Cl. 17.
Central Foundry Co., to The Central Foundry Co., New York, N.Y. 56,915, ren. 12–20–66. Cl. 13.
Central Foundry Co., The: *See*—
Central Foundry Co.
Central Soya Co., Inc., Fort Wayne, Ind. 820,552, pub. 10–4–66. Cl. 5.
Certain-Teed Fiber Glass Corp., Ardmore, Pa. 820,578, pub. 10–4–66. Cl. 12.
Certified Refrigeration & Air Conditioning Foundation, Los Angeles, Calif. 706,778, canc. Cl. 103.
Chadbourn Gotham, Inc., Charlotte, N.C. 820,803, pub. 10–4–66. Cl. 39.
Channel Master Corp., Ellenville, N.Y. 820,925. Cl. 21.
Chart-Pak, Inc., Leeds, Mass. 820,761, pub. 10–4–66. Cl. 37.
Chase Industrial: *See*—
Blum, C.
Chase Industries, Inc.: *See*—
Blum, C.
Chem Tech Laboratories, Inc., Fort Wayne, Ind. 820,906, pub. 10–4–66. Cl. 101.
Chemetron Corp., d.b.a. Tube Turns, Louisville, Ky. 820,594, pub. 10–4–66. Cl. 13.
Chemical Sundries Co., Inc., Chicago, Ill. 820,668, pub. 10–4–66. Cl. 22.
Chesebrough-Pond's Inc., New York, N.Y. 820,892, pub. 10–4–66. Cl. 51.
Coates & Co. (Plymouth) Ltd., Plymouth, England. 706,752, canc. Cl. 49.
Colgate-Palmolive Co., New York, N.Y. 820,894, pub. 10–4–66. Cl. 52.
Collett, W. Bennett, Atlanta, Ga. 820,689, pub. 10–4–66. Cl. 23.
Collett, W. Bennett, Atlanta, Ga. 820,690, pub. 10–4–66. Cl. 23.
Columbia Pictures Corp., New York, N.Y. 820,658, pub. 10–4–66. Cl. 22.
Columbia Pictures Corp., New York, N.Y. 820,797, pub. 10–4–66. Cl. 39.
Commerce Clearing House, Inc., Chicago, Ill. 428,904, ren. 12–20–66. Cl. 38.
Commercial Solvents Corp., New York, N.Y. 706,474, canc. Cl. 6.
Communications Services Inc., Falls Church, Va. 820,904, pub. 10–4–66. Cl. 100.
Compagnie des Thes de Djiring (S.A.R.L.), Biao, Vietnam. 706,731, canc. Cl. 46.
Compagnie Generale du Duralumin et du Cuivre, Paris, France. 820,584, pub. 10–4–66. Multiple Class (Classes 13, 14, and 16).
Compagnie Generale du Duralumin et du Cuivre, Paris, France. 820,585, pub. 10–4–66. Multiple Class (Classes 13, 14, and 16).
Cone Mills Corp., Greensboro, N.C. 820,827, pub. 10–4–66. Cl. 42.
Conn, C. G., Ltd.: *See*—
Pan-American Band Instrument & Case Co., The.
Conner Tool and Mfg. Co., Phoenix, Ariz. 706,604, canc. Cl. 23.
Consolidated Foods Corp., d.b.a. Gentry or Gentry Division, Glendale, Calif. 820,848, pub. 10–4–66. Cl. 46.
Consolidated Foods Corp., d.b.a. Joe Lowe Co., Chicago, Ill., from Joe Lowe Corp., Englewood, N.J. 820,851, pub. 10–4–66. Cl. 46.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 820,769, pub. 10–4–66. Cl. 37.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 820,770, pub. 10–4–66. Cl. 37.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 820,771, pub. 10–4–66. Cl. 37.
Consolidated Tea Co. Inc., New York, N.Y. 223,110, ren. 12–20–66. Cl. 46.
Consolidated Vacuum Corp., Rochester, N.Y. 820,686, pub. 10–4–66. Cl. 23.
Convenient Living: *See*—
Levy, Edward M.
Cornelius Co., The, Anoka, Minn. 820,736, pub. 10–4–66. Cl. 31.
Cortland Industries, Inc., Cortland, N.Y. 820,653, pub. 10–4–66. Cl. 22.
Cover Girls Answering Service: *See*—
Stephen, Faye.
Cowman-Campbell Paint Co., Inc., Seattle, Wash. 820,611, pub. 10–4–66. Cl. 16.
Cox, Myron, d.b.a. General Products Co., Oklahoma City, Okla. 820,867, pub. 10–4–66. Cl. 46.
Crystal, David, Inc., New York, N.Y. 706,711, canc. Cl. 42.
Daryl of Dearborn: *See*—
Wallace A. and Daryl R. A. Justus.
Dean, Payne, & Co.: *See*—
Dean, Peter P.
Dean, Peter P., d.b.a. Payne Dean & Co., North Canton, Conn. 820,708, pub. 10–4–66. Cl. 23.
Deering Milliken, Inc., New York, N.Y. 820,826, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,830, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,831, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,832, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,833, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,834, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,835, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,836, pub. 10–4–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 820,837, pub. 10–4–66. Cl. 42.
Delphi Products Co., Delphi, Ind. 706,753, canc. Cl. 50.
De Medicis, Marie, Co.: *See*—
Lerner, Michael M.
Design Products, Inc., Boulder, Colo. 820,739, pub. 10–4–66. Cl. 32.
Di Noc Chemical Arts, Inc., Cleveland, Ohio. 706,676, canc. Cl. 37.
Dillon Mfg. Co., Atlanta, Ga. 820,841, pub. 7–12–66. Cl. 44.
Diversified Metals Corp., Hazelwood, Mo. 820,598, pub. 10–4–66. Cl. 14.
Dr. Pepper Co., Dallas, Tex. 820,864, pub. 10–4–66. Cl. 46.
Donaldson Co., Inc., Minneapolis, Minn. 820,738, pub. 10–4–66. Cl. 31.
Don-L Plastics Co., Fort Worth, Tex. 820,544, pub. 10–4–66. Cl. 2.
Drew, E. F., & Co., Inc., New York, N.Y. 706,737, canc. Cl. 46.
Drummond Scientific Co., Broomall, Pa. 820,716, pub. 10–4–66. Multiple Class (Classes 26 and 44).
Early Times Distillery Co.: *See*—
Brown-Forman Distillers Corp.
Eastern Dynamics, Inc., Hartford, Conn. 820,646, pub. 10–4–66. Cl. 21.
Eaton Mfg. Co., to Eaton Yale & Towne Inc., Cleveland, Ohio. 424,380, ren. 12–20–66. Cl. 14.
Eaton Yale & Towne Inc.: *See*—
Eaton Mfg. Co.
Ebauches-Fabrik Bettlach A.G., Bettlach, Switzerland. 820,720, pub. 10–4–66. Cl. 27.
Edinburg Improvement Association, Edinburg, Tex. 706,736, canc. Cl. 46.
Einiger Mills, Inc., New York, N.Y. 706,697, canc. Cl. 42.
Elba-Werk, Ettlinger Baumaschinen- und Hebezeugfabrik G.m.b.H., Baden, Germany. 706,609, canc. Cl. 23.
Elba-Werk, Ettlinger Baumaschinen- und Hebezeugfabrik G.m.b.H., Baden, Germany. 706,610, canc. Cl. 23.
Electron Products, Monrovia, Calif. 820,634, pub. 10–4–66. Cl. 21.
English Sewing Ltd.: *See*—
Winterbottom Book Cloth Co. Ltd., The.
Enzyme Development Corp., New York, N.Y. 820,555, pub. 10–4–66. Cl. 6.
Epps, Margaret H., Richmond, Va. 820,657, pub. 10–4–66. Cl. 22.
Ernaut-Batignolles, H., S.A., Paris, France. 706,597, canc. Cl. 23.
Esselman, Joseph C., Mather, Pa. 706,722, canc. Cl. 44.
Etablissements Pennel & Flipo, Roubaix (Nord), France. 820,818, pub. 10–4–66. Cl. 42.
Eversharp, Inc., Milford, Conn. 820,687, pub. 10–4–66. Cl. 23.
Excelsior Baking Co., Minneapolis, Minn. 706,749, canc. Cl. 46.
Exportaktiebolaget Norden, Stockholm, Sweden. 706,484, canc. Cl. 9.
FMC Corp., San Jose, Calif. 820,685, pub. 10–4–66. Cl. 23.
F.M. Stamp Inc., Cranston, R.I. 820,726, pub. 10–4–66. Cl. 28.
Faber-Castell, A. W.: *See*—
Faber-Castell, A. W., Pencil Co., Inc.
Faber-Castell, A. W., Pencil Co., Inc., d.b.a. A. W. Faber-Castell, Newark, N.J. 820,762, pub. 10–4–66. Cl. 37.

Fabulite Lamp Co., New York, N.Y. 820,639, pub. 10–4–66. Cl. 21.
Fahrney, Dr. Peter, & Sons Co., Chicago, Ill. 706,536, canc. Cl. 18.
Farrell, Morton B., Co., Detroit, Mich., to Jack Kellmer Co., Philadelphia, Pa. 420,676, ren. 12–20–66. Cl. 28.
Federal-Mogul Corp., Detroit, Mich. 820,684, pub. 10–4–66. Cl. 23.
Federated Department Stores, Inc.: *See*—
Abraham & Straus.
Fenestra Inc., Detroit, Mich. 706,499, canc. Cl. 12.
Fibreboard Paper Products Corp., San Francisco, Calif. 820,581, pub. 10–4–66. Cl. 12.
Fibreboard Paper Products Corp., San Francisco, Calif. 820,609, pub. 10–4–66. Cl. 16.
Fidelity File Box, Inc., Minneapolis, Minn. 820,931. Cl. 32.
Firestart Mfg. Co., Inc., The, Republic, Mo. 706,782, canc. Cl. 1.
Firestone Tire & Rubber Co., The: *See*—
World Bestos Corp.
Fleer, Frank H., Corp., Philadelphia, Pa. 820,866, pub. 10–4–66. Cl. 46.
Foot Delight Products: *See*—
Hieshetter, Albert E.
Foretell, Inc., Houston, Tex. 820,607, pub. 10–4–66. Cl. 16.
Formulabs, Inc., Escondido, Calif. 820,576, pub. 10–4–66. Cl. 11.
Frankie's Prepared Foods, Inc., Youngstown, Ohio. 706,730, canc. Cl. 46.
Freeman & Gossage, Inc., San Francisco, Calif. 820,920. Cl. 17.
Fuller, W. P., Paint Co.: *See*—
Hall, Lloyd A.
Fund Raising Services, Inc., Columbus, Ohio. 820,908, pub. 10–4–66. Cl. 101.
Garrett, Vita A., d.b.a. Vita of Hollywood, Hollywood, Calif. 706,762, canc. Cl. 51.
Gateway Erectors, Inc., Chicago, Ill. 820,588, pub. 10–4–66. Cl. 13.
Geigy Chemical Corp., Ardsley, N.Y. 820,562, pub. 10–4–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 820,563, pub. 10–4–66. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 820,554, pub. 5–31–66. Cl. 6.
General Electric Co., Hudson Falls, N.Y. 706,575, canc. Cl. 21.
General Electric Co., Schenectady, N.Y. 820,641, pub. 10–4–66. Cl. 21.
General Electric Co., East Cleveland, Ohio. 820,924. Cl. 21.
General Features Corp., New York, N.Y. 820,789, pub. 10–4–66. Cl. 38.
General Tire & Rubber Co., The, Akron, Ohio. 820,539, pub. 10–4–66. Cl. 1.
General Tire & Rubber Co., The, Akron, Ohio. 820,593, pub. 10–4–66. Cl. 13.
Genesco Inc.: *See*—
Campe Corp., The.
Gentry or Gentry Division: *See*—
Consolidated Foods Corp.
Georgia Pacific Corp., Stamford, Conn. 820,758, pub. 10–4–66. Cl. 37.
Gibson, Guy T., Inc., New York, N.Y., to Parfums Ciro, Inc., Morris Plains, N.J. 219,696, ren. 12–20–66. Cl. 51.
Ginsburg, Ralph, d.b.a. The Helmsman Press, New York, N.Y. 706,679, canc. Cl. 38.
Glensder Corp., New York, N.Y. 820,810, pub. 10–4–66. Cl. 39.
Glidden Co., The, Cleveland, Ohio. 820,727, pub. 10–4–66. Cl. 29.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 223,697, ren. 12–20–66. Cl. 6.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 820,643, pub. 10–4–66. Cl. 21.
Gorchov, Nathan N., d.b.a. Zero-Glo Co., Philadelphia, Pa. 706,686, canc. Cl. 39.
Governor and Co. of Adventurers of England Trading into Hudson's Bay, The, d.b.a. Hudson's Bay Co., London, England, and Winnipeg, Canada. 223,137, ren. 12–20–66. Cl. 42.
Grand Caillou Packing Co. Inc., Houma, La. 222,992, ren. 12–20–66. Cl. 46.
Graves, Robert G., Indianapolis, Ind. 820,910, pub. 10–4–66. Cl. 101.
Greene, Tweed & Co., New York, N.Y., to Greene, Tweed & Co., Inc., North Wales, Pa. 427,180, ren. 12–20–66. Cl. 35.
Greene, Tweed & Co., Inc.: *See*—
Greene, Tweed & Co.
Greenebaum Brothers, to I. Jablow & Co., Inc., Philadelphia, Pa. 59,404, ren. 12–20–66. Cl. 39.
Greenlee Bros. & Co., Rockford, Ill. 820,692, pub. 10–4–66. Cl. 23.
Gresvig A.S., Oslo, Norway. 820,648, pub. 10–4–66. Cl. 22.
Guhl & Schaebler A.G., Basel, Switzerland. 820,710, pub. 10–4–66. Multiple Class (Classes 23 and 37).
H.E.B. Food Stores: *See*—
Butt, H. E., Grocery Co.
HH Spezial Optik G.m.b.H.: *See*—
Vermogensverwaltungs G.m.b.H.
Hagin, Forest G. P., d.b.a. P. Hagin, Garland, Tex. 820,661, pub. 10–4–66. Cl. 22.
Hagin, P.: *See*—
Hagin, Forest G. P.
Hall, Lloyd A., Altadena, Calif., from W. P. Fuller Paint Co., Fullerton, Calif. 820,928. Cl. 23.
Hammermill Paper Co., Erie, Pa. 820,760, pub. 10–4–66. Cl. 37.
Hammermill Paper Co., Erie, Pa. 820,763, pub. 10–4–66. Cl. 37.
Hammond Organ Co., Chicago, Ill. 706,669, canc. Cl. 36.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 706,508, canc. Cl. 12.
Harlingen Canning Co.: *See*—
Butt, H. E., Grocery Co.
Hartwell Corp., Los Angeles, Calif. 820,589, pub. 10–4–66. Cl. 13.
Harvey, G. F., Co., Inc., The, New York, N.Y. 706,545, canc. Cl. 18.
Havana Commercial Co., New York, N.Y., and Jersey City, N.J., to American Cigar Corp., New York, N.Y. 51,291, ren. 12–20–66. Cl. 17.
Hearst Corp., The, New York, N.Y. 820,790, pub. 10–4–66. Cl. 38.
Hearst Corp., The, New York, N.Y. 820,912, pub. 10–4–66. Cl. 107.
Heins, H. J., Co., Pittsburgh, Pa. 820,677, pub. 10–4–66. Cl. 22.
Helmsman Press, The: *See*—
Ginsburg, Ralph.
Hennepin Paper Co., Little Falls, Minn. 820,772, pub. 10–4–66. Cl. 37.
Henri Foods, Inc., Long Island City, N.Y., to Henri's Food Products Co., Inc., Milwaukee, Wis. 402,670, canc. Cl. 46.
Henri's Food Products Co., Inc.: *See*—
Henri Foods, Inc.
Her Majesty Underwear Co., Mauldin, S.C. 820,806, pub. 10–4–66. Cl. 39.
Hieshetter, Albert E., d.b.a. Foot Delight Products, San Diego, Calif. 820,624, pub. 10–4–66. Cl. 18.
Hoiberg, Douglas I., Fullerton, Calif. 820,930. Cl. 32.
Holzman, Max, d.b.a. Style-Art Handbags, New York, N.Y. 706,459, canc. Cl. 3.
Hood, R. H., Co., Philadelphia, Pa. 820,703, pub. 10–4–66. Cl. 23.
Hooker Chemical Corp., Niagara Falls, N.Y. 820,553, pub. 10–4–66. Cl. 6.
Horizon Mobile Homes, Inc., Portland, Ind. 820,627, pub. 7–26–66. Cl. 19.
Horrockses, Crewdson & Co., Ltd., Preston, and Manchester, England, to Horrockses (Sales) Ltd., Preston, England. 220,661, ren. 12–20–66. Cl. 42.
Horrockses (Sales) Ltd.: *See*—
Horrockses, Crewdson & Co., Ltd.
Horst, E. Clemens, Co., to E. Clemens Horst Co., San Francisco, Calif. 216,592, ren. 12–20–66. Cl. 1.
Horst, E. Clemens, Co., to E. Clemens Horst Co., San Francisco, Calif. 217,023, ren. 12–20–66. Cl. 1.
Horton Mfg. Co., Inc., Minneapolis, Minn. 820,700, pub. 10–4–66. Cl. 23.
Howe Sound Co.: *See*—
Howmet Corp.
Howmet Corp., from Howe Sound Co., New York, N.Y. 820,595, pub. 8–23–66. Cl. 14.
Hudnut's, R., Pharmacy, New York, N.Y., to Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 57,044, ren. 12–20–66. Cl. 51.
Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. 820,895, pub. 10–4–66. Cl. 52.
Hudson Vitamin Products: *See*—
Hudson National, Inc.
Hudson's Bay Co.: *See*—
Governor and Co. of Adventurers of England Trading into Hudson's Bay, The.
Hughes, E. Griffiths, Ltd., Manchester, England, to The Purdue Frederick Co., Yonkers, N.Y. 218,377, ren. 12–20–66. Cl. 18.
Huyck Corp., Rensselaer, N.Y. 820,619, pub. 10–4–66. Cl. 42.
Hyde Mfg. Co., Southbridge, Mass. 222,835, ren. 12–20–66. Cl. 23.
ITT Bell & Gossett Inc.: *See*—
International Telephone and Telegraph Corp.
Independent Nail Corp., The, Bridgewater, Mass. 820,695, pub. 10–4–66. Cl. 23.
International Minerals & Chemical Corp., Skokie, Ill. 820,570, pub. 10–4–66. Cl. 6.
International Minerals & Chemical Corp., Skokie, Ill. 820,571, pub. 10–4–66. Cl. 6.
International Minerals & Chemical Corp., Skokie, Ill. 820,693, pub. 10–4–66. Cl. 23.
International Pipe and Ceramics Corp.: *See*—
American Encaustic Tiling Co., Ltd.
International Telephone and Telegraph Corp., New York, N.Y., from ITT Bell & Gossett Inc., Morton Grove, Ill. 820,730, pub. 10–4–66. Cl. 31.
Interwoven Stocking Co., New Brunswick, N.J., to Powerhouse, Inc., Tallahassee, Fla. 223,962, ren. 12–20–66. Cl. 39.
Interwoven Stocking Co., New Brunswick, N.J., to Powerhouse, Inc., Tallahassee, Fla. 223,969, ren. 12–20–66. Cl. 39.
Jablow, I., & Co., Inc.: *See*—
Greenebaum Bros.
Jackes-Evans Mfg. Co., St. Louis, Mo. 820,712, pub. 10–4–66. Cl. 25.
Jenkins, James, d.b.a. Jenkins "Troy-Toy" Co., Troy, Ohio. 706,594, canc. Cl. 22.
Jenkins "Troy-Toy" Co.: *See*—
Jenkins, James.
Jo-Li-Et Gutter Gard, Inc., Glenbrook, Conn. 706,514, canc. Cl. 18.
Justus, Wallace A. and Daryl R. A., d.b.a. Daryl of Dearborn, Dearborn, Mich. 820,798, pub. 10–4–66. Cl. 39.
Kaiser Tool Co.: *See*—
Kaiser, William H.
Kaiser, William H., d.b.a. Kaiser Tool Co., Fort Wayne, Ind. 820,926. Cl. 23.
Kellmer, Jack, Co.: *See*—
Farrell, Morton B.

Kendall Refining Co., Bradford, Pa. 820,604, pub. 10–4–66. Cl. 16.
Kent Feeds, Inc., Muscatine, Iowa. 820,623, pub. 10–4–66. Cl. 18.
Kent Feeds, Inc., Muscatine, Iowa. 820,863, pub. 10–4–66. Cl. 46.
Key Pharmaceuticals, Inc., Miami, Fla. 820,625, pub. 10–4–66. Cl. 18.
Kimborg Product Research Corp., Englewood, N.J. 706,537, canc. Cl. 18.
King Kullen Grocery Co., Inc., Westbury, N.Y. 820,893, pub. 10–4–66. Cl. 51.
Knight of Rest Products, Newark, N.J. 820,742, pub. 10–4–66. Cl. 32.
Knight of Rest Products, Newark, N.J. 820,743, pub. 10–4–66. Cl. 32.
Kono Mfg. Co., Inc., Woodside, N.Y. 820,714, pub. 10–4–66. Cl. 26.
Kraus Accessories Co., The, d.b.a. California Custom Accessories Mfg. Co., Los Angeles, Calif. 706,756, canc. Cl. 50.
Kresge, S. S., Co., Detroit, Mich. 820,667, pub. 10–4–66. Cl. 22.
Kroy Tanning Co., Inc., Salem, Mass. 820,541, pub. 10–4–66. Cl. 1.
Kurz Bros., Clearfield, Pa. 820,757, pub. 10–4–66. Cl. 37.
Kwik-Kover Mfg. Co., Chicago, Ill. 706,675, canc. Cl. 37.
Lady Barlene Brassiere Corp., New York, N.Y. 820,805, pub. 10–4–66. Cl. 39.
Lane Bros. Co., Boston, Mass. 223,903, ren. 12–20–66. Cl. 39.
Lane Ltd., New York, N.Y. 820,916. Cl. 8.
Lane Ltd., New York, N.Y. 820,921. Cl. 17.
La Pluma, Inc., New York, N.Y. 820,794, pub. 10–4–66. Cl. 39.
La Pluma, Inc., New York, N.Y. 820,795, pub. 10–4–66. Cl. 39.
Lapp, E., & Co. A.G., Zurich, Switzerland. 706,611, canc. Cl. 23.
Lawtex Corp., New York, N.Y. 820,820, pub. 10–4–66. Cl. 42.
Leathercare Corp., Hemstead, N.Y. 706,783, canc. Cl. 4.
Lee, Glenn R., Co., Inc., Kokomo, Ind. 820,596, pub. 10–4–66. Cl. 14.
Leonard, Robert, Corp., Lowell, Mass. 706,687, canc. Cl. 39.
Lerner, Michael M., d.b.a. Marie de Medicis Co., to R. Lerner, d.b.a. Marie de Medicis Co., Philadelphia, Pa. 221,658, ren. 12–20–66. Cl. 51.
Lerner, Rose: *See*—
Lerner, Michael M.
Lever Brothers Co., New York, N.Y. 820,569, pub. 10–4–66. Cl. 6.
Levey, Arthur V., Associates, Inc., New York, N.Y. 706,709, canc. Cl. 42.
Levinsohn Bros. & Co., Inc., New York, N.Y. 218,052, ren. 12–20–66. Cl. 39.
Levy, Edward M., d.b.a. Convenient Living, Evanston, Ill. 820,860, pub. 10–4–66. Cl. 46.
Lowe, Joe, Co.: *See*—
Consolidated Foods Corp.
Lowery, Scott, New Castle, Pa. 820,852, pub. 10–4–66. Cl. 46.
Lukens Steel Co., Coatesville, Pa. 820,597, pub. 10–4–66. Cl. 14.
Luv-Lee Frocks, Inc., New York, N.Y. 706,692, canc. Cl. 39.
M.H. Mfg. Corp., Pelahatchie, Miss. 820,660, pub. 10–4–66. Cl. 22.
Madame Alexander: *See*—
Alexander Doll Co., Inc.
Madeleine de Martel Cosmetics: *See*—
Sherman, Robert M.
Madd, Francis E., d.b.a. Marifax Systems, Kansas City, Mo. 820,902, pub. 10–4–66. Cl. 100.
Maidenform, Inc., New York, N.Y. 820,813, pub. 10–4–66. Cl. 39.
Maidenform, Inc., New York, N.Y. 820,814, pub. 10–4–66. Cl. 39.
Maltine Co., The, New York, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 425,200, ren. 12–20–66. Cl. 18.
Marathon Oil Co., Findlay, Ohio. 820,540, pub. 10–4–66. Cl. 1.
Marathon Watch Co. Ltd., New York, N.Y. 820,722, pub. 10–4–66. Cl. 27.
Marathon Watch Co. Ltd., New York, N.Y. 820,723, pub. 10–4–66. Cl. 27.
Marifax Systems: *See*—
Madd, Francis E.
Marlen Mfg. and Development Co., Bedford, Ohio. 820,937. Cl. 44.
Maro Industries, Inc.: *See*—
Sea & Ski Corp.
Marvel Engineering Co., Chicago, Ill. 820,732, pub. 10–4–66. Cl. 31.
Marx, Louis, & Co., Inc., New York, N.Y. 820,676, pub. 10–4–66. Cl. 22.
Matsushita Electric Industrial Co., Ltd., Osaka Prefecture, Japan. 820,640, pub. 10–4–66. Cl. 21.
Mattel, Inc., Hawthorne, Calif. 820,649, pub. 10–4–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 820,671, pub. 10–4–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 820,672, pub. 10–4–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 820,673, pub. 10–4–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 820,674, pub. 10–4–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 820,675, pub. 10–4–66. Cl. 22.
Maxson Electronics Corp., Great River, N.Y. 820,781, pub. 10–4–66. Cl. 38.
McGaw Laboratories, Inc., Milledgeville, Ga. 820,838, pub. 10–4–66. Cl. 44.
McLean, Jean E., d.b.a. Promenade, Costa Mesa, Calif. 820,793, pub. 10–4–66. Cl. 39.
Mcquay, Inc., Minneapolis, Minn. 820,747, pub. 11–9–65. Cl. 34.
Mead Johnson & Co., Evansville, Ind. 820,626, pub. 10–4–66. Cl. 18.
Mead Johnson & Co., Evansville, Ind. 820,868, pub. 10–4–66. Cl. 46.
Mead Johnson & Co., Evanston, Ind. 820,870, pub. 10–4–66. Cl. 46.
Mead Johnson & Co., Evanston, Ill. 820,871, pub. 12–20–66. Cl. 46.
Mead Johnson & Co., Evanston, Ind. 820,872, pub. 10–4–66. Cl. 46.
Meadow Cool Franchises Ltd., Toronoto, Ontario, Canada. 820,850, pub. 10–4–66. Cl. 46.
Merck & Co., Inc.: *See*—
Mulford, H. K., Co.
Merck & Co., Inc., Rahway, N.J. 820,622, pub. 10–4–66. Cl. 18.
Merrill, Charles E., Co., Inc., Columbus, Ohio, to Charles E. Merrill Books, Inc., Columbus, Ohio. 427,277, ren. 12–20–66. Cl. 38.
Methode Electronics, Inc., Chicago, Ill. 820,636, pub. 10–4–66. Cl. 21.
Metropolitan Overseas Supply Corp., New York, N.Y. 820,644, pub. 10–4–66. Cl. 21.
Metsger, Charles A., Mahaska, Kans. 820,702, pub. 10–4–66. Cl. 23.
Meyer, Fred, Inc.: *See*—
Roundup Grocery Co.
Micropoint, Inc., Sunnyvale, Calif. 820,759, pub. 10–4–66. Cl. 37.
Midwest Biscuit Co., Burlington, Iowa. 820,853, pub. 5–24–66. Cl. 46.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 820,891, pub. 10–4–66. Cl. 50.
Mission Pharmacal Co., San Antonio, Tex. 820,621, pub. 10–4–66. Cl. 18.
Modern Ribbon & Carbon Co., Philadelphia, Pa. 820,575, pub. 10–4–66. Cl. 11.
Molson Breweries Ltd., Montreal, Quebec, Canada. 820,874, pub. 9–27–66. Cl. 48.
Monkey Grip Rubber Co., d.b.a. Better Products Co., Dallas, Tex. 820,932. Cl. 35.
Montana Power Co., The, Butte, Mont. 706,774, canc. Cl. 101.
Montana Power Co., The, Butte, Mont. 706,775, canc. Cl. 101.
Morch, A. B., & Co., Oslo, Norway. 820,888, pub. 10–4–66. Cl. 50.
Morrison Milling Co., The, Denton, Tex. 820,859, pub. 10–4–66. Cl. 46.
Morse-Hill Corp., Cleveland, Ohio. 820,623, pub. 10–4–66. Cl. 19.
Movado Watch Agency, Inc., New York, N.Y. 820,724, pub. 10–4–66. Cl. 27.
Moyle, Edward J., d.b.a. Pinky Dink Sales Co., Carbondale, Pa. 706,767, canc. Cl. 52.
Mulford, H. K., Co. Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 219,694, ren. 12–20–66. Cl. 18.
Mustex, Inc., Graham, Tex. 706,454, canc. Cl. 2.
Mutual Buying Syndicate, Inc., New York, N.Y. 706,708, canc. Cl. 42.
National Association of Real Estate Investment Funds, Darien, Conn. 820,913, pub. 10–4–66. Cl. 200.
National Automotive Parts Association, Chicago, Ill. 820,632, pub. 10–4–66. Cl. 19.
National Distillers Products Co.: *See*—
Shaw, Alex D., & Co.
National Distillers and Chemical Corp.
National Education Association of the United States, Washington, D.C. 820,914, pub. 10–4–66. Cl. 200.
National Paint Distributors, Inc., Chicago, Ill. 820,885, pub. 10–4–66. Cl. 50.
National Patent Development Corp., New York, N.Y. 820,844, pub. 10–4–66. Cl. 44.
National-Standard Co. Niles, Mich. 706,521, canc. Cl. 14.
National Starch and Chemical Corp., New York, N.Y. 820,560, pub. 10–4–66. Cl. 6.
National Starch and Chemical Corp., New York, N.Y. 820,754, pub. 12–21–65. Cl. 37.
Nelco Corp., Kent, Wash. 820,637, pub. 10–4–66. Cl. 21.
New Castle Products, Inc, New Castle, Ind. 820,577, pub. 10–4–66. Cl. 12.
New York & New Jersey Lubricant Co., Plainfield, N.J., and New York, N.Y., to Non-Fluid Oil Corp., New York, N.Y. 56,809, ren. 12–20–66. Cl. 15.
Newsday, Inc., Garden City, N.Y. 820,780, pub. 10–4–66. Cl. 38.
Newspaper Enterprise Association, Inc., Cleveland, Ohio. 820,786, pub. 10–4–66. Cl. 38.
Nicholson, Larry B., d.b.a. The Seven Seas Co., Independence, Mo. 820,659, pub. 10–4–66. Cl. 22.
Non-Fluid Oil Corp.: *See*—
New York & New Jersey Lubricant Co.
Norcross, Inc., New York, N.Y. 820,774, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,775, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,776, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,777, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,782, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,783, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,784, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,785, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,788, pub. 10–4–66. Cl. 38.
Norcross, Inc., New York, N.Y. 820,791, pub. 10–4–66. Cl. 38.
Nordson Pharmaceutical Laboratories, Inc., Irvington, N.J. 706,553, canc. Cl. 18.

Northern Dental Laboratory, The, Flushing, N.Y. 820,840, pub. 10–4–66. Cl. 44.
Northwest Paper Co., The, Cloquet, Minn. 820,756, pub. 10–4–66. Cl. 37.
Northwest Paper Co., The, Cloquet, Minn. 820,767, pub. 10–4–66. Cl. 37.
Northwest Paper Co., The, Cloquet, Minn. 820,768, pub. 10–4–66. Cl. 37.
Nutter, Carl H., Newark, Ohio. 820,933. Cl. 37.
Nyman Mfg. Co., Providence, R.I. 706,451, canc. Cl. 2.
Oakite Products, Inc., New York, N.Y. 424,290, ren. 12–20–66. Cl. 52.
Oneida Ltd., Oneida, N.Y. 820,709, pub. 10–4–66. Cl. 28.
Outboard Marine Corp., Waukegan, Ill. 820,630, pub. 10–4–66. Cl. 19.
Owens-Illinois, Inc., Toledo, Ohio. 820,746, pub. 10–4–66. Cl. 38.
Palmer, Alex D.: *See*—
Cadaco, Inc.
Pan-American Band Instrument & Case Co., The, to C. G. Conn, Ltd., Elkhart, Ind. 219,813, ren. 12–20–66. Cl. 36.
Pan American Trade Development Corp., New York, N.Y. 820,707, pub. 10–4–66. Cl. 23.
Paper Mate Mfg. Co., Santa Monica, Calif. 820,755, pub. 3–1–66. Cl. 37.
Parfums Ciro, Inc.: *See*—
Gibson, Guy T., Inc.
Parke, L. H., Co., Philadelphia, Pa. 383,177, canc. Cl. 46.
Patton Engineering Corp., North Hampton, N.H. 706,617, canc. Cl. 23.
Pegasus International Corp., New York, N.Y. 820,880, pub. 10–4–66. Cl. 50.
Pel Corp., Los Angeles, Calif. 820,752, pub. 10–4–66. Cl. 37.
Pel-Star Fertilizer Co., Inc., Los Fresnos, Tex. 706,488, canc. Cl. 10.
Pel-Star Fertilizer Co., Inc., Los Fresnos, Tex. 706,489, canc. Cl. 10.
Pel-Star Fertilizer Co., Inc., Los Fresnos, Tex. 706,490, canc. Cl. 10.
Penco Fabrics, Inc., New York, N.Y. 706,698, canc. Cl. 42.
Petersen Engineering Co., Inc., Sunnyvale, Calif. 820,694, pub. 10–4–66. Cl. 23.
Peyron, Francois A., Paris, France. 706,472, canc. Cl. 6.
Pfeiffer, Carl F. H., Quincy, Ill. 706,643, canc. Cl. 31.
Pfizer, Chas., & Co., Inc.: *See*—
Roerig, J. B., and Co.
Pharmaseal Laboratories: *See*—
Baxter, Don, Inc.
Picker X-Ray Corp., Waite Mfg. Division, Inc., Cleveland, Ohio. 424,902, ren. 12–20–66. Cl. 21.
Pierce Petroleum Corp., Wilmington, Del., and St. Louis, Mo., to Sinclair Refining Co., New York, N.Y. 225,454, ren. 12–20–66. Cl. 15.
Pierce Petroleum Corp., Wilmington, Del., and St. Louis, Mo., to Sinclair Refining Co., New York, N.Y. 225,460, ren. 12–20–66. Cl. 15.
Pierce Petroleum Corp., Wilmington, Del., and St. Louis, Mo., to Sinclair Refining Co., New York, N.Y. 225,461, ren. 12–20–66. Cl. 15.
Pierce Petroleum Corp., Wilmington, Del., and St. Louis, Mo., to Sinclair Refining Co., New York, N.Y. 225,487, ren. 12–20–66. Cl. 15.
Pike Trailer Co., Los Angeles, Calif. 820,923. Cl. 19.
Pilliod Cabinet Co., The, Swanton, Ohio. 820,740, pub. 10–4–66. Cl. 32.
Pinky Dink Sales: *See*—
Moyle, Edward J.
Plee-Zing Corp., The, New York, N.Y., and Savannah, Ga., to Plee-Zing, Inc., Evanston, Ill. 216,854, ren. 12–20–66. Cl. 46.
Plee-Zing, Inc.: *See*—
Plee-Zing Corp., The.
Plymouth Cordage Industries, Inc., Boston, Mass. 809,780. Am. 7(d). Cl. 13.
Portable Elevator Mfg. Co., Bloomington, Ill. 820,701, pub. 10–4–66. Cl. 23.
Porterville Citrus Association, The: *See*—
Tule River Citrus Association.
Postagraph Corp. of Maryland, The, Baltimore, Md. 820,765, pub. 10–4–66. Cl. 37.
Powerhouse, Inc.: *See*—
Interwoven Stocking Co.
Precision Papers, Inc., Brooklyn, N.Y. 820,559, pub. 10–4–66. Multiple Class (Classes 6 and 37).
Prentiss Drug & Chemical Co., Inc., New York, N.Y. 820,566, pub. 10–4–66. Cl. 6.
Princeton Silk Co., New York, N.Y., to Tanbro Fabrics Corp., New York, N.Y. 408,740, canc. Cl. 42.
Processed Plastic Co., Montgomery, Ill. 820,666, pub. 10–4–66. Cl. 22.
Promenade: *See*—
McLean, Jean E.
Pro-Phy-Lac-Tic Brush Co.: *See*—
Hudnut's R., Pharmacy.
Puerto Rican American Sugar Refinery, Inc., Mercedita, Puerto Rico. 820,856, pub. 10–4–66. Cl. 46.
Puerto Rican American Sugar Refinery, Inc., Mercedita, Puerto Rico. 820,857, pub. 10–4–66. Cl. 46.
Purdue Frederick Co., The: *See*—
Hughes, E. Griffiths, Ltd.
Purex Corp., Ltd., South Gate, Calif. 702,700. Am. 7(d). Cl. 52.
Radley Furs, Inc., New York, N.Y. 820,799, pub. 10–4–66. Cl. 39.
Radley Furs, Inc., New York, N.Y. 820,800, pub. 10–4–66. Cl. 39.
Radley Furs, Inc., New York, N.Y. 820,801, pub. 10–4–66. Cl. 39.
Rain Bird Sprinkler Mfg. Corp., Glendora, Calif. 820,590, pub. 10–4–66. Cl. 13.
Rasmusson, Marlin B., Sacramento, Calif. 820,691, pub. 10–4–66. Cl. 23.
Rath Mfg. Co., Janesville, Wis. 820,682, pub. 10–4–66. Cl. 23.
Record Industrial Co., Philadelphia, Pa. 820,935. Cl. 39.
Regal Ware, Inc., Kewaskum, Wis. 820,591, pub. 10–4–66. Cl. 13.
Reliance Engineering & Mfg. Co., Inc., San Antonio, Tex. 820,741, pub. 10–4–66. Cl. 32.
Republic Packaging Corp., Chicago, Ill. 820,547, pub. 10–4–66. Cl. 2.
Retail Store Management, Inc., Newton, Mass. 820,807, pub. 10–4–66. Cl. 39.
Rex Chainbelt Inc., Milwaukee, Wis. 820,927. Cl. 23.
Rexall Drug and Chemical Co., d.b.a. Vanda Cosmetics, Los Angeles, Calif. 820,564, pub. 10–4–66. Cl. 6.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 820,615, pub. 10–4–66. Cl. 17.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 820,616, pub. 10–4–66. Cl. 17.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 820,617, pub. 10–4–66. Cl. 17.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 820,618, pub. 10–4–66. Cl. 17.
Ricci, Nina, S.A.R.L.: *See*—
S.A.R.L., Nina Ricci.
Richards, Iris H., Boulder, Colo. 820,548, pub. 10–4–66. Cl. 3.
Richline Co., Inc., The, St. Paul, Minn. 820,706, pub. 10–4–66. Cl. 23.
Ritter Pfaudler Corp., Rochester, N.Y. 820,845, pub. 10–4–66. Cl. 44.
Rivett, Inc., Boston, Mass. 820,704, pub. 10–4–66. Cl. 23.
Rivett, Inc., Boston, Mass. 820,705, pub. 10–4–66. Cl. 23.
Riviera Trading Corp., New York, N.Y. 820,715, pub. 10–4–66. Multiple Class (Classes 26 and 40).
Roberts Co., The, to Roberts Mfg. Co., City of Industry, Calif. 706,467, canc. Cl. 5.
Roberts Mfg. Co.: *See*—
Roberts Co., The.
Rock of Ages Corp., Barre, Vt. 820,881, pub. 10–4–66. Cl. 50.
Roddenbery Bros., to W. B. Roddenbery Co., Inc., Cairo, Ga. 225,033, ren. 12–20–66. Cl. 46.
Roddenbery, W. B., Co., Inc.: *See*—
Roddenbery Bros.
Roerig, J. B., and Co., Chicago, Ill., to Chas. Pfizer & Co., Inc., New York, N.Y. 424,731, ren. 12–20–66. Cl. 18.
Rohm & Haas Co., Philadelphia, Pa. 820,538, pub. 10–4–66. Cl. 1.
Roller Process Corp., New York, N.Y. 820,816, pub. 8–2–66. Cl. 42.
Rosenblatt & Kahn, to Rosenblatt & Kahn, Inc., New York, N.Y. 343,256, canc. Cl. 39.
Rosenblatt & Kahn, Inc.: *See*—
Rosenblatt & Kahn.
Roundup Grocery Co., Spokane, Wash., to Fred Meyer, Inc., Portland, Oreg. 221,150, ren. 12–20–66. Cl. 46.
Rowland Products, Inc., Kensington, Conn. 820,886, pub. 10–4–66. Cl. 50.
Royal Worcester Ltd., Worcester, England. 820,729, pub. 10–4–66. Cl. 30.
Rugby Knitting Mills Inc., Buffalo, N.Y. 820,936. Cl. 39.
Rust Master Chemical Corp., Worcester, Mass. 706,524, canc. Cl. 15.
Russell Mfg. Co., Leicester, Mass. 820,651, pub. 10–4–66. Cl. 22.
S.A.R.L. Nina Ricci, Paris, France. 421,524, ren. 12–20–66. Cl. 51.
S & S Cosmetic Distributors: *See*—
Saute, Norman C.
S & R Infants Wear Co., Inc., New York, N.Y. 706,693, canc. Cl. 39.
Safe-T-Pacific Baking Co. Safe-T-Pacific Co., Redwood City, Calif. 686,443. Am. 7(d). Cl. 50.
Saks & Co., New York, N.Y. 820,726, pub. 10–4–66. Cl. 28.
Satisfactory Shoe Co., The, Chicago, Ill. 820,792, pub. 3–1–66. Cl. 39.
Saute, Norman C., d.b.a. S & S Cosmetic Distributors, Providence, R.I. 706,759, canc. Cl. 51.
Sawyer Crystal Blue Co., The, Boston, to Standard International Corp., Andover, Mass. 61,328, ren. 12–20–66. Cl. 6.
Schering Corp., Bloomfield, N.J. 706,538, canc. Cl. 18.
Schlitz, Jos., Brewing Co., Milwaukee, Wis. 820,875, pub. 10–4–66. Cl. 48.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 225,761, ren. 12–20–66. Cl. 39.
Scionics Corp., The, Northridge, Calif. 820,635, pub. 8–2–66. Cl. 21.
Scottie Stores, Inc., Jacksonville, Fla. 820,905, pub. 10–4–66. Cl. 101.
Sea & Ski Corp., Millbrae, Calif., from Maro Industries, Inc., New York, N.Y. 820,796, pub. 10–4–66. Cl. 39.
Seaboard Systems, Inc., New York, N.Y. 820,764, pub. 10–4–66. Cl. 37.
Sealectro Corp., Mamaroneck, N.Y. 820,642, pub. 10–4–66. Cl. 21.
Searle, G. D., & Co., Skokie, Ill. 706,549, canc. Cl. 18.
Securwal Products Co., Saginaw, Mich. 820,883, pub. 10–4–66. Cl. 50.
Setwell Co., The, Traverse City, Mich. 820,884, pub. 10–4–66. Cl. 50.
Seven Seas Co., The: *See*—
Nicholson, Larry B.
Shaw, Alex D., & Co. National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 109,374. Am. 7(d). Cl. 49.

Shaw, Alex D., & Co. National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 123,890. Am. 7(d). Cl. 47.
Sheaffer, W. A., Pen Co.: *See*—
Textron, Inc.
Sheaffer, W. A., Pen Co., Fort Madison, Iowa. 820,766, pub. 10–4–66. Cl. 37.
Shell Chemical Corp., to Shell Oil Co., New York, N.Y. 433,760, new cert. Cl. 6.
Shell Oil Co., Inc., to Shell Oil Co., New York, N.Y. 426,761, new cert. Cl. 6.
Shell Oil Co., Inc., to Shell Oil Co., New York, N.Y. 428,234, new cert. Cl. 6.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 820,896, pub. 10–4–66. Cl. 52.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 820,897, pub. 10–4–66. Cl. 52.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 820,898, pub. 10–4–66. Cl. 52.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 820,899, pub. 10–4–66. Cl. 52.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 820,900, pub. 10–4–66. Cl. 52.
Sherwin-Williams Co., The, Cleveland, Ohio. 820,610, pub. 10–4–66. Cl. 16.
Sherwood Bros., Inc., Baltimore, Md., to Sinclair Refining Co., New York, N.Y. 225,591, ren. 12–20–66. Cl. 15.
Shriver, T., and Co., Inc., Harrison, N.J. 820,731, pub. 10–4–66. Cl. 31.
Shulman, Inc., Philadelphia, Pa. 820,911, pub. 10–4–66. Cl. 105.
Siegler Corp., The, Long Island City, N.Y. 706,576, canc. Cl. 21.
Sinclair Refining Co.: *See*—
Pierce Petroleum Corp.
Sherwood Bros., Inc.
Sinclair Refining Co., New York, N.Y. 820,600, pub. 10–4–66. Cl. 15.
Singer Co., The, New York, N.Y. 820,558, pub. 10–4–66. Multiple Class (Classes 6, 12, 21, and 26).
Sir Chips, Inc., Indianapolis, Ind. 820,854, pub. 10–4–66. Cl. 46.
Siris, A. J., Products Corp., New York, N.Y. 820,549, pub. 10–4–66. Cl. 3.
Sleepwear, Inc., New York, N.Y. 425,838, ren. 12–20–66. Cl. 39.
Sloan Marketing Corp., Ardmore, Pa. 820,612, pub. 10–4–66. Cl. 16.
Sloan Valve Co., Chicago, Ill. 820,587, pub. 10–4–66. Cl. 13.
Small Bros. Oil Co., South Chicago Heights, Ill. 820,601, pub. 10–4–66. Cl. 15.
Smith, J. Hungerford, Co., Rochester, N.Y., to United Fruit Co., Boston, Mass. 223,332, ren. 12–20–66. Cl. 46.
Smucker, J. M., Co., The, Orrville, Ohio. 221,430, ren. 12–20–66. Cl. 46.
Snappy, Inc., Detroit Lakes, Minn. 820,749, pub. 10–4–66. Cl. 34.
Societa Italo American Prodotti Antiparassitari, Rome, Italy. 820,561, pub. 10–4–66. Cl. 6.
Societe de Brosserie et de Moulage, Paris, France. 820,728, pub. 10–4–66. Cl. 29.
Soft-Ease Pads Corp., Watertown, N.Y. 706,710, canc. Cl. 42.
Sommer, T. W., Co., St. Paul, Minn. 820,580, pub. 10–4–66. Cl. 12.
Sorg Paper Co., The, Middletown, Ohio. 820,773, pub. 10–4–66. Cl. 37.
Southern Utilities Co., Washington, D.C. 706,602, canc. Cl. 23.
Southwest Grease & Oil Co. (Kansas City), Inc., Kansas City, Mo. 820,599, pub. 10–4–66. Cl. 15.
Spartan Works, Ltd., The, New York, N.Y. 820,719, pub. 10–4–66. Cl. 26.
Spinmaster Rod Co., Inc., Miami, Fla. 820,650, pub. 10–4–66. Cl. 22.
Spiratone, Inc., Flushing, N.Y. 820,929. Cl. 26.
Standard International Corp.: *See*—
Sawyer Crystal Blue Co., The.
Standard International Corp., Andover, Mass. 820,543, pub. 10–4–66. Cl. 2.
Stanton Scientific Equipment Co., Inc., Los Angeles, Calif. 820,846, pub. 10–4–66. Cl. 44.
Star Heel Plate Co., Inc., Newark, N.J. 820,582, pub. 10–4–66. Cl. 13.
Steinberg, Albert, d.b.a. Bernardsville Paint & Wallpaper Co., Bernardsville, N.J. 820,608, pub. 10–4–66. Cl. 16.
Stephen, Faye, d.b.a. Cover Girls Answering Service, Washington, D.C. 820,907, pub. 10–4–66. Cl. 101.
Sterling Drug Inc., New York, N.Y. 706,543, canc. Cl. 18.
Stern's Nurseries, Inc., Geneva, N.Y. 706,485, canc. Cl. 10.
Stevens, J. P., & Co., Inc., New York, N.Y. 820,825, pub. 10–4–66. Cl. 42.
Strong Cobb Arner, Inc., Cleveland, Ohio. 706,548, canc. Cl. 18.
Stuart Hall Co., Inc., Kansas City, Mo. 706,671, canc. Cl. 37.
Style-Art Handbags: *See*—
Holsman, Max.
Styraplane Co., Inglewood, Calif. 820,664, pub. 10–4–66. Cl. 22.
Summers Laboratories, Inc., Fort Washington, Pa. 820,550, pub. 10–4–66. Cl. 5.
Super Mark-It List, Inc., d.b.a. Super Mark-It List Publication, New York, N.Y. 706,791, canc. Cl. 38.
Super Mark-It List Publication: *See*—
Super Mark-It List, Inc.
Swanson, Alvin L., Jr., Elmwood Park, Ill. 706,665, canc. Cl. 36.
Tambro Fabrics Corp.: *See*—
Princeton Silk Co.
Taylor Instrument Co., Rochester, N.Y. 820,638, pub. 10–4–66. Cl. 21.
Taylor Provisions Co., The, Trenton, N.J. 61,356, ren. 12–20–66. Cl. 46.
Tea and Coffee Trade Journal Co., The, New York, N.Y. 342,784. Am. 7(d). Cl. 38.
Tejas Plastics Materials Supply Co., Fort Worth, Tex. 820,579, pub. 10–4–66. Cl. 12.
Tek Method Co.: *See*—
Cadaco, Inc.
Terre Haute Brewing Co., Inc., Terre Haute, Ind. 371,249. Am. 7(d). Cl. 48.
Terre Haute Brewing Co., Inc., Terre Haute, Ind. 589,062. Am. 7(d). Cl. 48.
Terre Haute Brewing Co., Inc., Terre Haute, Ind. 618,752. Am. 7(d). Cl. 48.
Testor Corp., The, Rockford, Ill. 820,606, pub. 10–4–66. Cl. 16.
Textron Inc., Providence, R.I. 706,565, canc. Cl. 19.
Thompson, Joseph D., Jr., Enterprises, Ltd., Owings Mills, Md. 820,669, pub. 10–4–66. Cl. 22.
Thorn, W. G., & Co.: *See*—
Thorn, William G.
Thorn, William G., d.b.a. W. G. Thorn & Co., San Francisco, Calif. 706,480, canc. Cl. 7.
Tillman Products Co., Inc., Wilton, Wis. 820,849, pub. 10–4–66. Cl. 46.
Tishman Equipment Leasing Inc., New York, N.Y. 706,776, canc. Cl. 101.
Tomkins-Johnson Co., The, Jackson, Mich. 219,850, ren. 12–20–66. Cl. 23.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 820,869, pub. 10–4–66. Cl. 46.
Transistor Specialties, Inc., Plainview, N.Y. 706,628, canc. Cl. 26.
Treble Records, Inc., Chicago, Ill. 706,668, canc. Cl. 36.
Tropical Gas Co., Inc., Coral Gables, Fla. 820,556, pub. 10–4–66. Cl. 6.
Troyer Mfg. Co., Smithville, Ohio. 820,696, pub. 10–4–66. Cl. 23.
Troyer Mfg. Co., Smithville, Ohio. 820,697, pub. 10–4–66. Cl. 23.
Tube Turns: *See*—
Chemetron Corp.
Tulare County Lemon Association: *See*—
Tulare County Lemon & Grapefruit Association.
Tulare County Lemon & Grapefruit Association, to Tulare County Lemon Association, Porterville, Calif. 224,610, ren. 12–20–66. Cl. 46.
Tule River Citrus Association, Success, Calif., to The Porterville Citrus Association, Porterville, Calif. 226,111, ren. 12–20–66. Cl. 46.
Turner Hall Corp., New York, N.Y. 820,847, pub. 10–4–66. Cl. 44.
Union Carbide Corp., New York, N.Y. 706,446, canc. Cl. 1.
Union Tank Car Co., Chicago, Ill. 820,711, pub. 10–4–66. Cl. 23.
United Fruit Co.: *See*—
Smith, J. Hungerford, Co.
United Merchants and Mfg. New York, N.Y. 820,821, pub. 10–4–66. Cl. 42.
U.S. Fiberglass Products, Inc., Compton, Calif. 706,564, canc. Cl. 19.
United States Playing Card Co., The, East Norwood, Cincinnati, Ohio, to The United States Playing Card Co., Cincinnati, Ohio. 58,572, ren. 12–20–66. Cl. 22.
U.S. Vitamin Pharmaceutical Corp., New York, N.Y. 706,558, canc. Cl. 18.
Universal Match Corp., St. Louis, Mo. 820,573, pub. 10–4–66. Cl. 9.
Vanda Cosmetics: *See*—
Rexall Drug and Chemical Co.
Vanity Fair Mills, Inc., Reading, Pa. 820,811, pub. 10–4–66. Cl. 39.
Vanity Fair Mills, Inc., Reading, Pa. 820,812, pub. 10–4–66. Cl. 39.
Variety Supply Co., Clara City, Minn. 820,909, pub. 10–4–66. Cl. 101.
Vermogensverwaltungs G.m.b.H., Schulstrasse, Germany, from HH Spezial Optik G.m.b.H., Wetzlar, Germany. 820,713, pub. 7–12–66. Cl. 26.
Versatile Mfg. Ltd., Manitoba, Canada. 820,683, pub. 10–4–66. Cl. 23.
Viking Corp., Minneapolis, Minn. 820,678, pub. 10–4–66. Cl. 23.
Villaamil Tobacco Products, Inc., Miami, Fla. 820,613, pub. 10–4–66. Cl. 17.
Villaamil Tobacco Products, Inc., Miami, Fla. 820,619, pub. 10–4–66. Cl. 17.
Vinson Supply Co., Tulsa, Okla. 706,612, canc. Cl. 23.
Virginia Chemicals Inc., West Norfolk, Va. 820,557, pub. 10–4–66. Cl. 6.
Vita of Hollywood Co.: *See*—
Garrett, Vita A.
Walker Mfg. Co., Racine, Wis. 820,733, pub. 10–4–66. Cl. 31.
Wallram Harmetallwerk und Hartmetallwerk-Zerspahrik Meutsch, Voigtlander & Co., Essen, Germany. 706,520, canc. Cl. 14.
Wa-Mac, Inc., Paterson, N.J. 820,647, pub. 10–4–66. Cl. 22.
Warner-Lambert Pharmaceutical Co.: *See*—
Maltine Co., The.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 820,620, pub. 8–4–64. Cl. 18.
Washington Mfg. Co., Nashville, Tenn. 222,155, ren. 12–20–66. Cl. 39.
Weatherford & Harbor Enterprises, Washington, D.C. 820,654, pub. 10–4–66. Cl. 22.
Web Novelty Co., Philadelphia, Pa. 706,638, canc. Cl. 28.

Webco Mills, Inc., Burlington, N.C. 820,823, pub. 10–4–66. Cl. 42.
Welsh Mfg. Co., Providence, R.I. 820,718, pub. 10–4–66. Multiple Class (Classes 26, 39, and 44).
Wembley, Inc., New Orleans, La. 820,802, pub. 10–4–66. Cl. 39.
West Virginia Pulp and Paper Co., New York, N.Y. 706,452, canc. Cl. 2.
Western Salt Co., San Diego, Calif. 225,123, ren. 12–20–66. Cl. 46.
Weyerhaeuser Co., Tacoma, Wash. 820,537, pub. 10–4–66. Cl. 1.
White Motor Corp., Cleveland, Ohio. 820,631, pub. 10–4–66. Cl. 19.
White, S. S., Co., from The S. S. White Dental Mfg. Co., Philadelphia, Pa. 820,542, pub. 10–4–66. Multiple Class (Classes 2, 4, 18, 23, 26, 44, and 51).
White, S. S., Dental Mfg. Co.: *See*—
White, S. S., Co.
Wilbur Chocolate Co.: *See*—
Wilbur, H. O., & Sons.
Wilbur, H. O., & Sons, Philadelphia, to Wilbur Chocolate Co., Lititz, Pa. 55,254, ren. 12–20–66. Cl. 46.
Wilcox-Walter-Furlong Paper Co. of Harrisburg, Inc., Harrisburg, Pa. 820,751, pub. 6–21–66. Cl. 37.
Willard Enterprises: *See*—
Willard, H. H.
Willard, H. H., d.b.a. Willard Enterprises, Logansport, Ind. 820,586, pub. 10–4–66. Cl. 13.
Williams, A. A., & Sons: *See*—
Williams, Andrew A.
Williams, Andrew A., d.b.a. A. A. Williams & Sons, Camden, N.J. 820,901, pub. 10–4–66. Cl. 52.
Williamson Candy Co., Chicago, Ill. 820,858, pub. 7–19–66. Cl. 46.
Winterbottom Book Cloth Co. Ltd., The, Manchester, to English Sewing Ltd., Piccadilly, Manchester, England. 220,069, ren. 12–20–66. Cl. 37.
Winton Watch Co., Inc., New York, N.Y. 820,721, pub. 10–4–66. Cl. 27.
Wool "O" Co., The, Philadelphia, Pa. 820,824, pub. 10–4–66. Cl. 42.
World Bestos Corp., Paterson, N.J., to The Firestone Tire & Rubber Co., Akron, Ohio. 220,427, ren. 12–20–66. Cl. 35.
Wunderly, W. Glenn, Co., Pasadena, Calif. 812,639, cor. Cl. 44.
Youth Associates Co., Minneapolis, Minn. 755,543. Am. 7(d). Cl. 38.
Zero-Glo Co.: *See*—
Gorchov, Nathan N.
Zirin Veticeuticaks, Inc., Hialeah, Fla. 706,531, canc. Cl. 18.

U.S. GOVERNMENT PRINTING OFFICE: 0——1996

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 27, 1966 Volume 833 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1966

Examiner affirmed	160
Examiner affirmed in part	32
Examiner reversed	49
Total	241

Notice of Tentative Recordation of a Trade Name

[T.D. 66-268]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., Nov. 29, 1966

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

"GIAN DEL VALENTINO" is a trade name used by Gian Del Valentino, an Italian knitting company, located at Via Vittoria Colonna 8, Milan, Italy, and Via Circonvallazione 97, Broni (Pavia), Italy. The trade name is used in connection with ladies' knitted suits (three pieces and two pieces), ladies' knitted dresses, and ladies' knitted coats. The merchandise is manufactured in Italy.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after December 30, 1966, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after December 30, 1966, of any opposition proceedings.

Until 45 days after December 30, 1966, all articles of foreign manufacture of the descriptions above stated, bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seised. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

(Signed) EDWIN F. RAINS,
Acting Commissioner of Customs.

Foreign Patents Received in the Scientific Library as of November 30, 1966

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Nov. 23, 1966	7,130/66
(*Patents*)	Nov. 28, 1966	261,205
Austria	Oct. 17, 1966	249,650
Belgium	Oct. 18, 1966	643,000
Canada	Nov. 25, 1966	747,085
Czechoslovakia	Nov. 28, 1966	118,200
Denmark	Nov. 21, 1966	104,870
East Germany	Nov. 2, 1966	60,522
Egypt	Dec. 14, 1965	5,226
Finland	Nov. 1, 1966	35,480
France:		
(*Patents*)	Nov. 14, 1966	1,445,000
(*Additions*)	Nov. 14, 1966	87,300
(*Medicaments*)	Sept. 2, 1966	3,600 M
(*Additions*)	Apr. 18, 1966	86 CAM
Germany:		
(*Auslegeschriften*)	Oct. 18, 1966	1,220,800
(*Patents*)	Oct. 18, 1966	1,208,628
Great Britain	Nov. 28, 1966	1,048,170
India	Oct. 27, 1966	96,993
Ireland	Nov. 4, 1966	26,048
Italy	Dec. 27, 1965	650,000
Japan	Nov. 29, 1966	18,560/66
Netherlands:		
(*Octrooiaanvragen*)	Nov. 1, 1966	10,467/66
(*Patents*)	Nov. 1, 1966	121,292
Norway	Nov. 17, 1966	109,448
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Nov. 22, 1966	52,078
Rumania	Oct. 26, 1966	43,699
Sweden	Nov. 7, 1966	207,088
Switzerland	Nov. 28, 1966	411,125
U.S.S.R.	Nov. 28, 1966	184,688

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

New Applications Received During October 1966

Patents	7539
Designs	381
Plant Patents	7
Reissues	17
Total	7944

Issue—December 27, 1966

Patents	1484	No. 3,293,659 to No.	3,295,142, incl.
Designs	49	No. 206,518 to No.	206,566, incl.
Plant Patents	5	No. 2,694 to No.	2,698, incl.
Reissues	2	No. 26,130 to No.	26,131, incl.
Total	1540		

Disclaimers

2,858,442.—*Davis R. Dewey II*, Lincoln, Mass. APPARATUS FOR INCREASING THE UNIFORMITY OF DOSE DISTRIBUTION PRODUCED BY ELECTRON IRRADIATION. Patent dated Oct. 28, 1958. Disclaimer filed Nov. 15, 1966, by the assignee, *Electronized Chemicals Corporation*.

Hereby enters this disclaimer as to claims 1, 2 and 3 of said patent.

3,029,414.—*Henry W. Schrimpf*, Waltham, Mass. INFORMATION HANDLING APPARATUS. Patent dated Apr. 10, 1962. Disclaimer filed Nov. 16, 1966, by the assignee, *Honeywell Inc.*

Hereby enters this disclaimer as to claims 18, 20 and 21 of said patent.

3,083,130.—*Ernst Clements Strandquist*, Trelleborg, Sweden. PROCESS OF MANUFACTURING FIBRE-REINFORCED HOSES OF VULCANIZED ELASTOMER, AND APPARATUS THEREFOR. Patent dated Mar. 26, 1963. Disclaimer filed Nov. 17, 1966, by the assignee, *Trelleborgs Gummifabriks Aktiebolag*.

Hereby enters this disclaimer as to claims 1, 2, 4 and 5 of said patent.

Patents Available for Licensing or Sale

2,882,211. METHOD OF MINERAL BENEFICATION. Evert A. Autrey, 490 Merida Drive, Santa Barbara, Calif., 93105.

3,067,310. MICROFILM ELECTRIC HEATERS. Frank C. Wals et al. Correspondence to: Anderson, Spangler & Wymore, Suite 2114, 1700 Broadway, Denver, Colo., 80202.

3,066,768. AUTOMATIC WIRE STRIPPING DEVICE. Leslie R. Walstrom. Correspondence to: Joseph D. Costello, vice president-administration, Fabri-Tek, Inc., 5901 S. County Road #18, Minneapolis, Minn., 55436.

3,109,255. DEVICE FOR PRODUCING BUBBLES. Rolf Hein, Tuebingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,130,924. NON-GLARE LAMP. Alma Gish. Correspondence to: John T. Diederich, 500 Price Building, Ashland, Ky., 41101.

3,157,144. MARINE FLOAT. A. B. DeJarnett, 1807 Deerwood Circle, West Sacramento, Calif., 95691.

3,273,864. STRAIGHTENING MACHINE. Th. Kieserling & Albrecht, Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,273,846. DRAFTSMAN'S PENCIL HOLDER. B. Leo DeMare, 627 W. Belair Ave., Aberdeen, Md., 21001.

3,283,142. LIGHT REFLECTORS. Miller L. Freeman, 513 S. Pacific Ave., Glendale, Calif., 91204.

3,283,215. ELECTRICAL FUSE-DISCONNECT SWITCH BOXES. Walter H. Lohmeyer. Correspondence to: Arthur F. Robert, 1517 Kentucky Home Life Bldg., Louisville, Ky., 40202.

The following 4 patents are offered by the Vitro Corporation of America.

Applications for license may be addressed to: Patent Coordinator, Vitro Laboratories, 14000 Georgia Ave., Silver Spring, Md., 20910.

2,861,768. VIBRATION ISOLATION SYSTEM AND INSTRUMENT MOUNT.

2,983,556. LOW FRICTION BEARING.

2,985,499. AUTOMATIC DATA PLOTTER.

3,043,189. APPARATUS FOR PRODUCING TEMPLATE USED IN AUTOMATIC DATA PLOTTER.

General Electric Company is prepared to grant non-exclusive license under the following patent upon reasonable terms to domestic manufacturers.

Applications for license may be addressed to: Patent Counsel, Specialty Control Department, General Electric Company, Waynesboro, Va., 22980.

3,253,208. STATIC INVERTER WITH OVERLOAD PROTECTION AND UTILIZING PULSE WIDTH MODULATION FOR VOLTAGE PROTECTION.

Dedications

3,119,622.—*Frank R. Weigert*, Warwick, R.I. GOLF BALLS. Patent dated Jan. 28, 1964. Dedication filed Sept. 1, 1966, by the asignee, *William R. Hulbert, trustee for United Elastic Corporation and Corr-Fulton, Incorporated*.

Hereby dedicates to the Public the entire term of said patent subsequent to Apr. 11, 1966.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 24, 1966

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-3-63	10-10-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager. Heterocyclic; Amides; Alkaloids; Aso; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-4-63	8-31-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	5-1-63	8-21-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-5-63	2-2-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-1-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-2-63	8-3-62
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-5-64	4-25-62
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager. Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	2-12-63	6-12-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-13-63	7-31-61
PHYSICS, GROUP 260—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	10-25-62
DESIGNS, GROUP 280—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	6-15-65	2-6-65

Total number of pending applications (excluding Designs)	195,508
Total number of Design applications pending	4,290
Total number of applications awaiting action (excluding Designs)	143,916
Total number of Design applications awaiting action	2,461
Date of oldest new application awaiting action	Feb. 5, 1963
Date of oldest amended application awaiting action	June 12, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1966, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1962*.

Patents ..... Numbers 3,460,011 to 3,462,943, inclusive

Plant Patents ..... Numbers 994 to 910, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	8-6-64	5-22-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7-1-64	3-26-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-2-64	3-22-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-7-65	10-31-63
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-10-64	8-20-62
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	7-6-64	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office
Commissioner's Decision

MOORE ET AL. *v.* HIGNETT ET AL.

Interference No. 93,904. Decided August 4, 1966

1. INTERFERENCE—PATENT AND APPLICATION—MOTION TO DISSOLVE BY PATENTEE—PRACTICE UNDER RULE 233.

This interference, involving a patent granted in 1961 and an application which has been held to have an effective filing date in 1957 was declared November 6, 1963 and has thus been pending for two years and nine months. The motion to dissolve by Hignett et al., questioning the right of Moore et al. to make the counts, was filed October 4, 1965 and although the motion was not heard until May 11, 1966 and was decided on June 8, 1966, Moore et al. made no motion proposing the addition or substitution of other counts. Under the provisions of Rule 233 such a motion could have been made as a matter of right at any time up to thirty days after Moore et al. had been apprised by the motion of Hignett et al. that their right to make the counts was in question.

2. SAME—SAME—SAME—SAME—REDECLARATION BY EXAMINER SUA SPONTE IMPROPER.

Notwithsanding the fact that Moore et al. made no request for an interference on modified counts, the Examiner, after granting the Hignett et al. motion to dissolve, proposed such counts on his own motion. It is not considered that such action was in order. It is incumbent on any party who desires to continue an interference on a modified basis in the event that a motion to dissolve is granted to bring a timely motion seeking such action, and Rule 233 is worded to permit this. In the absence of any such motion it is to be assumed that all parties are willing to stand or fall on the original issue and it is not the duty of the Examiner to supply such a lack by sua sponte action. This is particularly true in a case such as the present one. In any interference involving a patent it is clearly in the public interest that proceedings be terminated as soon as possible, not only because of the uncertainty as to the validity of the patent but also because, if the applicant is finally successful, a second patent will be issued and the total monopoly against the public will thus be extended.

3. SAME—SAME—SAME—SAME—SAME.

It is considered that Moore et al. have waived any right to proceed herein on a modified issue and that the Examiner's holding that they are not entitled to proceed on the present one should terminate the interference. The Examiner's action in substituting proposed new counts for the present ones is accordingly vacated and the interference stands dissolved.

ON PETITION.

GRANTED.

REYNOLDS, *First Assistant Commissioner.*

The party Hignett et al. has filed a petition seeking review of various holdings made by the Examiner in a decision in which he granted a motion to dissolve by Hignett et al. on the ground that Moore et al. could not make the counts for the reason that their application does not disclose the use of a "horizontally inclined rotating drum," granted a motion by Moore et al. to shift the burden of proof and, of his own motion, held that the interference should be redeclared on the basis of counts omitting the above-quoted limitation.

[1] This interference, involving a patent granted in 1961 and an application which has been held to have an effective filing date in 1957 was declared November 6, 1963 and has thus been pending for two years and nine months. The motion to dissolve by Hignett et al., questioning the right of Moore et al. to make the counts, was filed

October 4, 1965 and although the motion was not heard until May 11, 1966 and was decided on June 8, 1966, Moore et al. made no motion proposing the addition or substitution of other counts. Under the provisions of Rule 233 such a motion could have been made as a matter of right at any time up to thirty days after Moore et al. had been apprised by the motion of Hignett et al. that their right to make the counts was in question.

[2] Notwithstanding the fact that Moore et al. made no request for an interference on modified counts, the Examiner, after granting the Hignett et al. motion to dissolve, proposed such counts on his own motion. It is not considered that such action was in order. It is incumbent on any party who desires to continue an interference on a modified basis in the event that a motion to dissolve is granted to bring a timely motion seeking such action, and Rule 233 is worded to permit this. In the absence of any such motion it is to be assumed that all parties are willing to stand or fall on the original issue and it is not the duty of the Examiner to supply such a lack by sua sponte action. This is particularly true in a case such as the present one. In any interference involving a patent it is clearly in the public interest that proceedings be terminated as soon as possible, not only because of the uncertainty as to the validity of the patent but also because, if the applicant is finally successful, a second patent will be issued and the total monopoly against the public will thus be extended.

The action of the Examiner in the present case would inject into the proceeding at this late date a new issue as to whether the limitation of the counts which Moore et al. cannot make is a material one. The interference could not properly be redeclared on the modified counts without affording Hignett et al. an opportunity to be heard on that issue.

[3] It is considered that Moore et al. have waived any right to proceed herein on a modified issue and that the Examiner's holding that they are not entitled to proceed on the present one should terminate the interference. The Examiner's action in substituting proposed new counts for the present ones is accordingly vacated and the interference stands dissolved.

In view of this holding the questions as to whether the motion to dissolve by Hignett et al. should have been further granted on additional grounds, and whether the burden of proof should be shifted are moot and need not be decided.

The petition is granted to the extent indicated.

In the United States Patent Office Before the Board of Appeals

EX PARTE COTTRELL

Appeal No. 665—18. Decided July 27, 1966

1. NATIONAL AERONAUTICS AND SPACE ACT OF 1958 [42 U.S.C. 2457(c)]—FAILURE TO FILE REQUIRED STATEMENT UNDER SECTION 305(c) THEREOF—SUBSTITUTE APPLICATION FOR SAME INVENTION.

Where an applicant files a substitute application, presenting the same claims as those found allowable in a prior application, subject to the timely filing of a statement as required by the Commissioner under the provisions of section 305(c) of the National Aeronautics and Space Act of 1958, which application is now abandoned for failure to file such statement, and where the Examiner's rejection of the appealed claims is that the provisions of the act "preclude the grant of a patent on any application to *the applicant* who has not filed the required statement within the specified time concerning the involved *invention*," *Held* that, "We have reviewed the record of this application, and the prior application now abandoned, in connection with the cited statutory provisions and share the Examiner's view that appellant has not avoided the prohibition against a patent issuing on the 'invention' by the filing of a further application covering the same subject matter and presenting the same claims. The factual situation and the reasoning applied in connection with development of the rejection are clearly applied by the Examiner in his answer. We consider such record to adequately answer appellant's arguments both as presented by the brief and reiterated by the reply brief. We affirm the Examiner's decision and adopt the Examiner's answer as a statement of our views in so holding."

APPEAL from the Examiner (C. R. Croyle) of Group 370. Ser. No. 482,023.

AFFIRMED.

Edward O. Ansell for appellant.

Before BAILEY and BREWRINK, *Examiners-in-Chief*, and HORTON, *Acting Examiner-in-Chief*

BREWRINK, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 1, 2 and 3 which are the only claims in the application.

The only record material involved in connection with the rejection is the abandoned file of Serial No. 202,357, filed June 11, 1962.

The present application, which is described as a substitute application for Serial No. 202,357, presents claims which were found allowable in the prior application subject to the timely filing of a statement as required by the Commissioner under the provisions of section 305(c) of the National Aeronautics and Space Act of 1958 (Public Law 568, 85th Congress); 42 U.S.C. 2457(c).

Rejection of the appealed claims is based on the above cited act and as fully applied in the answer, it is the Examiner's position that the provisions thereof preclude the grant of a patent on any application to *the applicant* who has not filed the required statement within the specified time concerning the involved *invention*.

[1] We have reviewed the record of this application, and the prior application now abandoned, in connection with the cited statutory provisions and share the Examiner's view that appellant has not avoided the prohibition against a patent issuing on the "invention" by the filing of a further application covering the same subject matter and presenting the same claims. The factual situation and the reasoning applied in connection with development of the rejection are clearly applied by the Examiner in his answer. We consider such record to adequately answer appellant's arguments both as presented by the brief and reiterated by the reply brief. We affirm the Examiner's decision and adopt the Examiner's answer as a statement of our views in so holding.

The decision of the Examiner is affirmed.

AFFIRMED.

In the United States Patent Office Before the Board of Appeals

EX PARTE PARKER

Appeal No. 604—25. Decided July 29, 1966

1. PATENTABILITY—DOUBLE PATENTING—DISCLAIMER OF ALL PATENT CLAIMS UNDER 35 U.S.C. 253—TERMINAL DISCLAIMER IN APPLICATION.

While 35 U.S.C. 253, second paragraph, provides that "any patentee or applicant may disclaim or dedicate to the public the entire term, or any ter-

minal part of the term, of the patent granted or to be granted," here appellant, the patentee Parker, has not disclaimed or dedicated his patent or any portion thereof to the public but has only transferred all the patent claims to the pending application to have the same life in the form of a new patent. In reality, he has not disclaimed or dedicated anything. He is seeking to have precisely the same protection for the same term of the patent in a patent to issue on the application with all the claims of the patent and also additional protection for the remaining term of the patent for a species not disclosed in the patent and conceded to be a variant made obvious by the prior art. We do not believe that it was the intent of Congress to permit by the second paragraph of section 253 obtaining greater benefits than those of the disclaimed patent, or to sanction proliferation of patents for the same or for patentably indistinct inventions, noting, also, as has the Examiner, that such practice would also further add to the already heavy burdens in the administration and examination of patent application in the Patent Office.

2. SAME—SAME—SAME—SAME—COMPARISON WITH REISSUES UNDER 35 U.S.C. 251, 252.

We point out that, if the present application should issue as a patent, it would be the second patent issued for the subject matter of appellant's patent [which was disclaimed for its entire term]. In other words, the patent would be reissued, but not in conformance to the provisions of 35 U.S.C. 251, 252, the reissue sections of statute. None of the limitations on the right to reissue would have been met. Appellant makes no attempt to show errors in the issuance of the patent that warrants reissue. In fact, he makes it evident that there were none. That this is the case is shown by the following facts. He does not amend specification or drawing insofar as they pertain to the subject matter of the issued patent, showing that these parts of the patent are not defective. He makes no change in patent claims, showing that he did not believe that he claimed either more or less than he had a right to claim in the patent. The only thing he has done is add disclosure that would have been refused in a reissue application as being new matter and has claimed the same. We are of the opinion that the disclaimer section of the Statute does not provide for *reissue* of a *non-defective* patent for the purpose of adding and claiming new matter when such is prohibited by the reissue sections.

3. SAME—SAME—SAME—SAME.

It is to be noted by reference to the above-arranged sequence of dates that the earlier application was allowed or passed to issue on September 1, 1964, that on October 2, 1964 the Examiner rejected the claims in the instant application as unpatentable over the allowed claims in the allowed application and that the patent did not issue until April 27, 1965. Thus, appellant had the opportunity and could have placed the claims of the patent in the present case while the two applications were pending in the Patent Office. Instead, he first elected to accept the patent and take his chances, so to speak, as to the allowance of the later application, and later changed his mind just piror to patent issue.

4. SAME—SAME—SAME—SAME.

We point out also that the decisions in *In re Bridgeford*, 149 USPQ 55; *Sterling Varnish Co.* v. *Louis Allen Co.*, 1957 C.D. 76, 723 O.G. 431, 149 F. Supp. 826, 113 USPQ 26 and *Hays et al.* v. *Brenner*, 823 O.G. 1210, involving terminal disclaimers, reiterated and followed the same doctrine of one patent for one patentable invention. More important, we refer to the reaffirmance of this basic doctrine by the U.S. Supreme Court in the recent case of *Hazeltine Research, Inc., et al.* v. *Brenner*, 382 U.S. 252, 824 O.G. 8 (at 10); 86 S. Ct. 335, 147 USPQ 429, wherein they held:

> "To adopt the result contended for by petitioners would create an area where patents are awarded for unpatentable advances in the art. We see no reason to read into § 103 a restricted definition of 'prior art' which would lower standards of patentability to such an extent that there might exist two patents where the Congress has plainly directed that there should be only one."

The fact that the species of the instant case is an unpatentable advance over the patented species is conceded.

In the same vein with respect to 35 U.S.C. 103, the U.S. Supreme Court stated in the other recent cases of *Graham et al.* v. *Deere Co., Calmar, Inc.* v. *Cook Chemical Co.*, and *Colgate-Palmolive Co.* v. *Cook Chemical Company*, at 825 O.G. 28,

> "We have concluded that the 1952 Act was intended to codify judicial precedents embracing the principle long ago announced by this Court in *Hotchkiss* v. *Greenwood*, 11 How. 248 (1850), and that, while the clear language of § 103 places emphasis on an inquiry into obviousness, the general level of innovation necessary to sustain patentability remains the same."

and at 825 O.G. 35,

> "Although we conclude here that the inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of § 103, it bears repeating that we find no change in the general strictness with which the overall test is to be applied. We have been urged to find in § 103 a relaxed standard, supposedly a congressional reaction to the 'increased standard' applied by this Court in its decisions over the last 20 or 30 years. The standard has remained invariable in this Court."

5. SAME—SAME—SAME—SAME—ONE PATENT FOR ONE INVENTION.

In light of the preceding we see no valid basis for allowing a second patent, whatever its term might be, based on an improvement over appellant's granted patent, which is made obvious by the prior art under 35 U.S.C. 103, which fact, we repeat, is not denied by the appellant. Manifestly, the Supreme Court in the *Hazeltine* and their other cases noted above emphasized that, consonant with 103, different patents must be supported by *patentably distinct* inventions and not merely by different inventions, where the second is but a variant made obvious by the prior art.

APPEAL from the Examiner (Zalenski) of Group 420. Serial No. 351,432.

AFFIRMED.

Young and *Quigg* for appellant.

Before ASP, DRACOPOULOS and BAILEY, *Examiners-in-Chief*

DRACOPOULOS, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 2 to 26, all the claims in the case.

The references relied upon are:

Dixon, 2,862,558, December 2, 1958.
Habermann, 3,139,929, July 7, 1964.
Parker, 3,180,414, April 27, 1965.
Great Britain, 726,712, March 23, 1955.

As set forth on page 2 of the Examiner's answer,

> "Claims 2 through 8 stand rejected on the grounds of double patenting in view of the claimed subject matter in the Parker patent taken with the teachings of various other patents while claims 9 through 26 stand finally rejected on the grounds of double patenting as being exact duplicates of the allowed claims in said patent."

The Parker patent is appellant's earlier filed copending patent, maturing from application, Serial No. 98,351, filed March 27, 1961, of which the present application is a continuation-in-part. Hereinafter the former will be referred to as the patent and the latter as the application.

The following sequence of dates are deemed pertinent to our decision:

3/27/61. Patent application filed.
3/12/64. Present application filed.
9/1/64. Patent application passed to issue.
10/2/64. First Office Action in present application rejecting claims as unpatentable over allowed claims in earlier application in view of certain prior art references.
4/1/65. Disclaimer filed in patent application, noting that it will issue as patent No. 3,180,414, on April 27, 1965 and disclaiming "all the claims in the

patent for the entire term thereof, without disclaiming the invention therein," further asserting that said claims had been inserted in the present application.

4/1/65. Amendment inserting said claims in present application.

4/27/65. Said Patent No. 3,180,414 issued.

6/9/65. Terminal disclaimer filed in present application disclaiming and dedicating to the public the terminal part of the patent to be granted on this application beginning on April 26, 1982. (The patent, if not disclaimed, would have expired April 27, 1982.)

Appellant does not dispute the propriety of the rejection of any one of the claims, save the availability of the Parker patent as a reference which he considers to have overcome by the filing of said disclaimers and the transfer of the patent claims to the application. He considers this to be in keeping with *In re Robeson*, 51 CCPA 1271, 1964 C.D. 561, 806 O.G. 929, 331 F.2d 610, 141 USPQ 485 and *In re Kaye*, 51 CCPA 1465, 1964 C.D. 630, 807 O.G. 15, 332 F.2d 816, 141 USPQ 829, rather than with *Ex parte Williams*, 1917 C.D. 73, 245 O.G. 277, relied upon by the Examiner, on the basis that no termination of monopoly to the end of the statutory term of the patent was involved in *Ex parte Williams*. Thus, the sole question before us is one of law.

Upon a careful review of the authorities and the reasons relied upon by the Examiner and the appellant, as well as of other authorities known to us, we are not convinced as to reversible error in the double patenting rejection of the claims at bar.

[1] While 35 U.S.C. 253, second paragraph, provides that "any patentee or applicant may disclaim or dedicate to the public the entire term, or any terminal part of the term, of the patent granted or to be granted," here appellant, the patentee Parker, has not disclaimed or dedicated his patent or any portion thereof to the public but has only transferred all the patent claims to the pending application to have the same life in the form of a new patent. In reality, he has not disclaimed or dedicated anything. He is seeking to have precisely the same protection for the same term of the patent in a patent to issue on the application with all the claims of the patent and also additional protection for the remaining term of the patent for a species not disclosed in the patent and conceded to be a variant made obvious by the prior art. We do not believe that it was the intent of Congress to permit by the second paragraph of section 253 obtaining greater benefits than those of the disclaimed patent, or to sanction proliferation of patents for the same or for patentably indistinct inventions, noting, also, as has the Examiner, that such practice would also further add to the already heavy burdens in the administration and examination of patent application in the Patent Office.

[2] We point out that, if the present application should issue as a patent, it would be the second patent issued for the subject matter of appellant's patent. In other words, the patent would be reissued, but not in conformance to the provisions of 35 U.S.C. 251, 252, the reissue sections of statute. None of the limitations on the right to reissue would have been met. Appellant makes no attempt to show errors in the issuance of the patent that warrants reissue. In fact, he makes it evident that there were none. That this is the case is shown by the following facts. He does not amend specification or drawing insofar as they pertain to the subject matter of the issued patent, showing that these parts of the patent are not defective. He makes no change in patent claims, showing that he did not believe that he claimed either more or less than he had a right to claim in the patent.

The only thing he has done is add disclosure that would have been refused in a reissue application as being new matter and has claimed the same. We are of the opinion that the disclaimer section of the Statute does not provide for *reissue* of a *non-defective* patent for the purpose of adding and claiming new matter when such is prohibited by the reissue sections.

[3] It is to be noted by reference to the above-arranged sequence of dates that the earlier application was allowed or passed to issue on September 1, 1964, that on October 2, 1964 the Examiner rejected the claims in the instant application as unpatentable over the allowed claims in the allowed application and that the patent did not issue until April 27, 1965. Thus, appellant had the opportunity and could have placed the claims of the patent in the present case while the two applications were pending in the Patent Office. Instead, he first elected to accept the patent and take his chances, so to speak, as to the allowance of the later application, and later changed his mind just prior to patent issue.

Turning now to the *Robeson* and *Kaye* decisions, supra, only a terminal disclaimer in the pending application was involved there. Thus, the facts are not apposite to those here before us. We note, moreover, the court's statement in *In re Robeson*, at 141 USPQ 489, that "Siu [105 USPQ 428] continues the basic rule of only one patent for one invention," after quoting, at 141 USPQ 489, from their decision in *In re Siu* the following:

"'However, while the disclaimer has the effect of permitting less close scrutiny of the distinctions between claims issuing to an applicant in separate patents, it was not, and could not have been the legislative intent to permit indiscriminate issuance of numerous patents directed to *mere colorable variations of the same idea*. Nothing in the statute or its legislative history suggests abandonment of the settled rule of *Underwood* v. *Gerber*, 149 U.S. 224, forbidding more than one patent for what is obviously only one invention, whether or not the grants expire on the same day.'" (Emphasis supplied.)

We again point out that it is *conceded* that the species herein not disclosed in appellant's patent is but a variant made obvious by prior art, i.e., a mere colorable variation.

[4] We point out also that the decisions in *In re Bridgeford*, 149 USPQ 55; *Sterling Varnish Co.* v. *Louis Allen Co.*, 1957 C.D. 76, 723 O.G. 431, 149 F. Supp. 826, 113 USPQ 26 and *Hays et al.* v. *Brenner*, 823 O.G. 1210, involving terminal disclaimers, reiterated and followed the same doctrine of one patent for one patentable invention. More important, we refer to the reaffirmance of this basic doctrine by the U.S. Supreme Court in the recent case of *Haseltine Research, Inc., et al.* v. *Brenner*, 382 U.S. 252, 824 O.G. 8 (at 10); 86 S. Ct. 335, 147 USPQ 429, wherein they held:

"To adopt the result contended for by petitioners would create an area where patents are awarded for unpatentable advances in the art. We see no reason to read into § 103 a restricted definition of 'prior art' which would lower standards of patentability to such an extent that there might exist two patents where the Congress has plainly directed that there should be only one."

The fact that the species of the instant case is an unpatentable advance over the patented species is conceded.

In the same vein with respect to 35 U.S.C. 103, the U.S. Supreme Court stated in the other recent cases of *Graham et al.* v. *Deere Co.*, *Calmar, Inc.* v. *Cook Chemical Co.*, and *Colgate-Palmolive Co.* v. *Cook Chemical Company*, at 825 O.G. 28,

"We have concluded that the 1952 Act was intended to codify judicial precedents embracing the principle long ago announced by this Court in *Hotchkiss*

v. *Greenwood*, 11 How. 248 (1850), and that, while the clear language of § 103 places emphasis on an inquiry into obviousness, the general level of innovation necessary to sustain patentability remains the same."

and at 825 O.G. 35,

"Although we conclude here that the inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of § 103, it bears repeating that we find no change in the general strictness with which the overall test is to be applied. We have been urged to find in § 103 a relaxed standard, supposedly a congressional reaction to the 'increased standard' applied by this Court in its decisions over the last 20 or 30 years. The standard has remained invariable in this Court."

[5] In light of the preceding we see no valid basis for allowing a second patent, whatever its term might be, based on an improvement over appellant's granted patent, which is made obvious by the prior art under 35 U.S.C. 103, which fact, we repeat, is not denied by the appellant. Manifestly, the Supreme Court in the *Hazeltine* and their other cases noted above emphasized that, consonant with 103, different patents must be supported by *patentably distinct* inventions and not merely by different inventions, where the second is but a variant made obvious by the prior art.

In our review of the authorities, we have noted the dicta in *In re Heinle*, 52 CCPA 1164, 1965 C.D. 406, 816 O.G. 1215, 342 F.2d 1001, 145 USPQ 131, at 1965 C.D. 415, pertaining to a disclaimer of a patent and a terminal disclaimer in a copending application of the same inventor. However, in view of our preceding reasons, we do not believe that such dicta should be taken as controlling here.

The decision of the Examiner is affirmed.

AFFIRMED.

United States Court of Appeals Seventh Circuit

LEWIS A. PALEY

v.

EDWARD L. BRENNER, JOHN T. CONNOR, STEVE BABYAR, AND ANGELA B. BERG

No. 15749. November 14, 1966

APPEAL from the United States District Court for the Northern District of Illinois, Eastern Division.

Before JOHN S. HASTINGS, *Chief Judge*, J. EARL MAJOR, *Senior Circuit Judge*, and ELMER J. SCHNACKENBERG, *Circuit Judge*

Lewis A. Paley, plaintiff-appellant, appeals from an order of the district court denying his motion for a change of venue and dismissing his amended complaint. He also petitions this court for injunctive relief and for a writ of mandamus. He has acted *pro se* throughout these proceedings in the district court and on appeal. His amended complaint names the Secretary of Commerce, the Commissioner of Patents and two members of the staff of the United States District Attorney for the Northern District of Illinois as defendants. His attempted litigation apparently arises out of problems encountered in the United States Patent Office. He failed to cause process to be served on the Secretary and Commissioner as required by law. His amended complaint fails to state grounds upon which the district court's jurisdiction depended and of the claim showing that plaintiff was entitled to relief. His pleadings, briefs and oral argument in this court are replete with redundant, impertinent, irrelevant and scandalous allegations against the district court, the defendants, the United States Attorney and members of his staff, together with members of

the staff of the Secretary and of the Commissioner, to such an extent as to grossly violate the fundamental standards of decency and fair play in the orderly process of the administration of justice.

Therefore, this court having considered the record in this case transmitted by the district court to this court, as well as the briefs and pleadings filed by the respective parties herein, and having heard oral argument in open court by plaintiff-appellant, *pro se*, and by counsel for defendants-appellees, and having taken the case under advisement for decision; the court having conferred thereon and is now of the opinion and holds and adjudges that the dismissal of the amended complaint from which this appeal was taken is supported by the record herein and by the law appertaining thereto; the court further holds and adjudges that the petition of plaintiff-appellant for injunction and mandamus should be denied; and that the pleadings and briefs filed in this court should be stricken as impertinent and scandalous.

WHEREFORE, IT IS ORDERED by the court, that the order from which this appeal is taken be and the same is now affirmed; that the petition of plaintiff-appellant for injunction and mandamus be and the same is now denied; that the pleadings and briefs filed in this court by plaintiff-appellant be and the same are now striken and ordered impounded by the clerk of this court; and that plaintiff-appellant pay the costs of this appeal.

Supreme Court of the United States

BRENNER *v.* MANSON

No. 58. Decided March 21, 1966

[— U.S. —; 148 USPQ 689]

1. SUPREME COURT JURISDICTION—CERTIORARI—REVIEW OF CASES IN THE COURT OF CUSTOMS AND PATENT APPEALS—28 U.S.C. 1256 CONSTRUED.

"Section 1256 of Title 28 U.S.C. (1964 ed.), enacted in 1948, provides that 'Cases in the Court of Customs and Patent Appeals may be reviewed by the Supreme Court by writ of certiorari.' This unqualified language would seem to foreclose any challenge to our jurisdiction in the present case."

2. PATENTABILITY—CHEMICAL PROCESS—UTILITY—CLAIMS COPIED FROM PATENT.

In connection with the contention that the issue of patentability is not properly before the Court, because applicant has presented claims from a patent for the purpose of interference with the patent, *Held*, that issue of patentability cannot be foreclosed by circumstance that Patent Office had already issued a patent which asserted that their process yielded useful products.

3. SAME—SAME—SAME—SAME—INTERFERENCE.

"The question as to patentability of claims to an applicant must be determined before any question of interference arises and claims otherwise unpatentable to an applicant cannot be allowed merely in order to set up an interference."

4. SAME—UTILITY.

"Our starting point is the proposition, neither disputed nor disputable, that one may patent only that which is 'useful.' In *Graham v. John Deere Co.*, 382 U.S. —, 148 USPQ 459, we have reviewed the history of the requisites of patentability, and it need not be repeated here. Suffice it to say that the concept of utility has maintained a central place in all of our patent legislation, beginning with the first patent law in 1790 and culminating in the present law's provision * * *."

5. SAME—PROCESS—UTILITY—PRODUCING COMPOUND OF POTENTIAL USEFULNESS—35 U.S.C. 101 CONSTRUED.

"Respondent does not—at least, in the first instance—rest upon the extreme proposition, advanced by the court below, that a novel chemical process is patentable so long as it yields the intended product and so long as the product is not itself 'detrimental.' Nor does he commit the outcome of his claim to

the slightly more conventional proposition that any process is 'useful' within the meaning of § 101 if it produces a compound whose potential usefulness is under investigation by serious scientific researchers, although he urges this position, too, as an alternative basis for affirming the decision of the CCPA."

6. SAME—SAME—SAME—ADJACENT HOMOLOGUE USEFUL—PRESUMPTION INAPPLICABLE IN STEROID FIELD.

"Even on the assumption that the process would be patentable were respondent to show that the steroid produced had a tumor-inhibiting effect in mice, we would not overrule the Patent Office finding that respondent has not made such a showing. The Patent Office held that, despite the reference to the adjacent homologue, respondent's papers did not disclose a sufficient likelihood that the steroid yielded by his process would have similar tumor-inhibiting characteristics. Indeed, respondent himself recognized that the presumption that adjacent homologues have the same utility has been challenged in the steroid field because of 'a greater known unpredictability of compounds in that field.' In these circumstances and in this technical area, we would not overturn the finding of the Primary Examiner, affirmed by the Board of Appeals and not challenged by the CCPA."

7. SAME—CHEMICAL PROCESS—PRODUCT PRODUCED MUST BE SHOWN TO BE USEFUL IN CURRENTLY AVAILABLE FORM.

"We believe a more compelling consideration is that a process patent in the chemical field, which has not been developed and pointed to the degree of specific utility, creates a monopoly of knowledge which should be granted only if clearly commanded by the statute. Until the process claim has been reduced to production of a product shown to be useful, the metes and bounds of that monopoly are not capable of precise delineation. It may engross a vast, unknown, and perhaps unknowable area. Such a patent may confer power to block off whole areas of scientific development, without compensating benefit to the public. The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility. Unless and until a process is refined and developed to this point—where specific benefit exists in currently available form—there is insufficient justification for permitting an applicant to engross what may prove to be a broad field."

8. SAME—SAME—SAME—"USE-TESTING" INSUFFICIENT.

"These arguments for and against the patentability of a process which either has no known use or is useful only in the sense that it may be an object of scientific research would apply equally to the patenting of the product produced by the process. Respondent appears to concede that with respect to a product, as opposed to a process, Congress has struck the balance on the side of nonpatentability unless 'utility' is shown. Indeed, the decisions of the CCPA are in accord with the view that a product may not be patented absent a showing of utility greater than any adduced in the present case. We find absolutely no warrant for the proposition that although Congress intended that no patent be granted on a chemical compound whose sole 'utility' consists of its potential role as an object of use-testing, a different set of rules was meant to apply to the process which yielded the unpatentable product. That proposition seems to us little more than an attempt to evade the impact of the rules which concededly govern patentability of the product itself."

9. SAME—SAME.

"This is not to say that we mean to disparage the importance of contributions to the fund of scientific information short of the invention of something 'useful,' or that we are blind to the prospect that what now seems without 'use' may tomorrow command the grateful attention of the public. But a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion. '[A] patent system must be related to the world of commerce rather than to the realm of philosophy. * * *'"

ON WRIT of certiorari to Court of Customs and Patent Appeals.

AFFIRMED.

Paul Bender (*Thurgood Marshall*, *John W. Douglas*, *Sherman L. Cohn* and *Edward Berlin*) for petitioner.

Dean Laurence (*Herbert I. Sherman* and *John L. White*) for respondent.

Herbert P. Kenway, *W. Brown Morton, Jr.*, and *Ellsworth H. Mosher*, filed brief for the American Patent Law Association, as amicus curiae.

MR. JUSTICE FORTAS delivered the opinion of the Court.

This case presents two questions of importance to the administration of the patent laws: First, whether this Court has certiorari jurisdiction, upon petition of the Commissioner of Patents, to review decisions of the Court of Customs and Patent Appeals; and, second, whether the practical utility of the compound produced by a chemical process is an essential element in establishing a prima facie case for the patentability of the process. The facts are as follows:

In December 1957, Howard Ringold and George Rosenkranz applied for a patent on an allegedly novel process for making certain known steroids.[1] They claimed priority as of December 17, 1956, the date on which they had filed for a Mexican patent. United States Patent No. 2,908,693 issued late in 1959.

In January 1960, respondent Manson, a chemist engaged in steroid research, filed an application to patent precisely the same process described by Ringold and Rosenkranz. He asserted that it was he who had discovered the process, and that he had done so before December 17, 1956. Accordingly, he requested that an "interference" be declared in order to try out the issue of priority between his claim and that of Ringold and Rosenkranz.[2]

A Patent Office examiner denied Manson's application, and the denial was affirmed by the Board of Appeals within the Patent Office. The ground for rejection was the failure "to disclose any utility for" the chemical compound produced by the process. Letter of examiner, dated May 24, 1960. This omission was not cured, in the opinion of the Patent Office, by Manson's reference to an article in the November 1956 issue of the Journal of Organic Chemistry, 21 J. Org. Chem. 1333–1335, which revealed that steroids of a class which included the compound in question were undergoing screening for possible tumor-inhibiting effects in mice, and that a homologue[3] adjacent to Manson's steroid, had proven effective in that role. Said the Board of Appeals, "It is our view that the statutory requirement of usefulness of a product cannot be presumed merely because it happends to be closely related to another compound which is shown to be useful."

The Court of Customs and Patent Appeals (hereinafter CCPA) reversed, Chief Judge Worley, dissenting. 52 CCPA 739, 333 F.2d

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[1] The applicants described the products of their process as "2-methyl dihydrotestosterone derivatives and esters thereof as well as 2-methyl dihydrotestosterone derivatives having a C-17 lower alkyl goup. The products of the pocess of the present invention have a useful high anabolic-androgenic ratio and are especially valuable for treatment of those ailments where an anabolic or antiestrogenic effect together with a lesser androgenic effect is desired."

[2] 35 U.S.C. § 135 (1964 ed.) provides: "Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with any unexpired patent, he shall give notice thereof * * *. The question of priority of invention shall be determined by a board of patent interferences * * * whose decision, if adverse to the claim of an applicant, shall constitute the final refusal by the Patent Office of the claims involved, and the Commissioner may issue a patent to the applicant who is adjudged the prior inventor * * *."

Patent Office Rule 204(b), 37 CFR § 1.204(b), provides: "When the filing date or effective filing date of an applicant is subsequent to the filing date of a patentee, the applicant, before an interference will be declared, shall file an affidavit that he made the invention in controversy in this country, before the filing date of the patentee * * * and, when required the applicant shall file an affidavit * * * setting forth facts which would prima facie entitle him to an award of priority relative to the filing date of the patentee."

Judge Thurman Arnold has provided an irreverent description of the way patent claims, including "interferences," are presented to the Patent Office. See *Monsanto Chemical Co. v. Coe*, 145 F.2d 18, 62 USPQ 37 (C.A. D.C. Cir.).

[3] "A homologous series is a family of chemically related compounds, the composition of which varies from member to member by CH_2 (one atom of carbon and two atoms of hydrogen) * * *. Chemists knowing the properties of one member of a series would in general know what to expect in adjacent members." Application of Henze, 37 CCPA 1009, 1014, 181 F.2d 196, 200–201, 85 USPQ 261, 264. See also *In re Hass*, 31 CCPA 903, 907, 141 F.2d 122, 125, 60 USPQ 54, 547; Application of Norris, 37 CCPA 876, 179 F.2d 970, 84 USPQ 458; Application of Jones, 32 CCPA 1029, 149 F.2d 501, 65 USPQ 480. With respect to the inferior predictability of steroid homologues, see, infra.

234, 237–238, 142 USPQ 35, 37–38. The court held that Manson was entitled to a declaration of interference since "where a claimed process produces a known product it is not necessary to show utility for the product," so long as the product "is not alleged to be detrimental to the public interest." Certiorari was granted, 380 U.S. 971, 145 USPQ 743, to resolve this running dispute over what constitutes "utility" in chemical process claims,[4] as well as to answer the question concerning our certiorari jurisdiction.

I.

[1] Section 1256 of Title 28 U.S.C. (1964 ed.), enacted in 1948, provides that "Cases in the Court of Customs and Patent Appeals may be reviewed by the Supreme Court by writ of certiorari." This unqualified language would seem to foreclose any challenge to our jurisdiction in the present case. Both the Government[5] and the respondent urge that we have certiorari jurisdiction over patent decisions of the CCPA, although the latter would confine our jurisdiction to those petitions filed by dissatisfied applicants and would deny the Commissioner of Patents the right to seek certiorari.[6] This concert of opinion does not settle the basic question because jurisdiction cannot be conferred by consent of the parties. The doubt that does exist stems from a decision of this Court, rendered in January 1927, in *Postum Cereal Co.* v. *California Fig Nut Co.*, 272 U.S. 693, which has been widely interpreted as precluding jurisdiction over patent and trademark decisions of the CCPA.

Postum, however, was based upon a statutory scheme materially different from the present one. Postum involved a proceeding in the Patent Office to cancel a trademark. The Commissioner of Patents rejected the application. An appeal was taken to the then Court of Appeals for the District of Columbia, which in 1927 exercised the jurisdiction later transferred to the CCPA. Under the statutory arrangements in effect at the time, the judgment of the Court of Appeals was not definitive because it was not an order to the Patent Office determinative of the controversy. A subsequent bill in equity could be brought in the District Court and it was possible that a conflicting adjudication could thus be obtained. On this basis, the Court held that it could not review the decision of the Court of Appeals. It held that the conclusion of the Court of Appeals was an "administrative decision" rather than a "judical judgment": "merely an instruction to the Commissioner of Patents by a court which is made part of the machinery of the Patent Office for administrative purposes." 272 U.S., at 698–699. Therefore, this Court concluded, the proceeding in the Court of Appeals—essentially administrative in nature—was neither case nor controversy within the meaning of

[4] In addition to the clear conflict between the Patent Office and the CCPA, there arguably exists one between the CCPA and the Court of Appeals for the District of Columbia. See *Petrocarbon Limited* v. *Watson*, 101 U.S. App. 214, 247 F.2d 800, 114 USPQ 94, cert. denied, 355 U.S. 955, 116 USPQ 602. But see Application of Eswarc, 50 CCPA 1571, 1576–1583, 319 F.2d 277, 282–286, 138 USPQ 208, 211–216.

[5] The present case is the first in which the Government has taken the position that § 1256 confers jurisdiction upon this Court to review patent decisions in the CCPA. Prior to *Glidden Co.* v. *Zdanok*, 370 U.S. 530, the Government was of the view that the Court lacked jurisdiction. See, e.g., the Brief in Opposition in *Dalton* v. *Marsall*, No. 87, O.T. 1951, cert. denied, 342 U.S. 818, 91 USPQ 382. After the decision in *Glidden*, discussed infra, the Government conceded the issue was a close one. See, e.g., Brief in Opposition *In re Gruschwitz*, No. 579, O.T. 1963, cert. denied, 375 U.S. 967, 140 USPQ 694.

[6] We find no warrant for this curious limitation either in the statutory language or in the legislative history of § 1256. Nor do we find persuasive the circumstance that the Commissioner may not appeal adverse decisions of the Board of Appeals. 35 U.S.C. §§ 141, 142, and 145 (1964 ed.). As a member of the Board and the official responsible for selecting the membership of its panels, 35 U.S.C. § 7 (1964 ed.), it may be considered appropriate that the Commissioner be bound by Board determinations. No such consideration operates to prevent his seeking review of adverse decisions rendered by the CCPA.

Article III of the Constitution. Congress might confer such "administrative" tasks upon the courts of the District of Columbia, wrote Chief Justice Taft, but it could not empower this Court to participate therein.

Congress soon amended the statutory scheme. In March of 1927 it provided that an action in the District Court was to be alternative and not cumulative to appellate review, that it could not be maintained to overcome an adjudication in the Court of Appeals.[7] In 1929 Congress transferred appellate jurisdiction over the Commissioner's decisions from the Court of Appeals to what had been the Court of Customs Appeals and was now styled the Court of Customs and Patent Appeals.[8] Whereas the Court of Appeals had been empowered to take additional evidence and to substitute its judgment for that of the Commissioner, the CCPA was confined to the record made in the Patent Office.[9] Compare *Federal Communications Comm'n* v. *Pottsville Broadcasting Co.*, 309 U.S. 134, 144–145. Despite these changes, however, Postum had acquired a life of its own. It continued to stand in the way of attempts to secure review here of CCPA decisions respecting the Commissioner of Patents. See, e.g., *McBride* v. *Teeple*, 311 U.S. 649, 47 USPQ 531, denying certiorari for "want of jurisdiction" on the authority of Postum.[10]

This was the background against which Congress, in its 1948 codification of statutes pertaining to the judiciary, enacted § 1256, blandly providing in unqualified language for review on certiorari of "cases in the Court of Customs and Patent Appeals." Nothing in the legislative materials relating to the statute, except its language, is of assistance to us in the resolution of the present problem: Did the statutory changes which followed Postum mean that a patent decision by the CCPA was a "judicial" determination reviewable by this Court under Article III? And, if so, was § 1256 intended to create such jurisdiction?

Assistance came with the 1958 revision of the Judicial Code. Congress there declared the CCPA "a court established under Article III * * *," that is, a constitutional court exercising judicial rather than administrative power. 28 U.S.C. § 211 (1964 ed.). In 1962 this Court addressed itself to the nature and status of the CCPA. *Glidden Co.* v. *Zdanok*, 370 U.S. 530, raised the question whether a judge of the CCPA was an Article III judge, capable of exercising federal judicial power. In answering that question in the affirmative, MR. JUSTICE HARLAN's opinion, for three of the seven Justices participating, expressly left open the question whether § 1256 conferred certiorari jurisdiction over patent and trademark cases decided in the CCPA, 379 U.S., at 578 n. 49. It suggested, however, that Postum might be nothing more than a museum piece. The opinion noted that Postum "must be taken to be limited to the statutory scheme in existence before" 1929. 370 U.S., at 579. The concurring opinion of MR. JUSTICE CLARK, in which the Chief Justice joined, did not reflect any difference on this point.

Thus, the decision sought to be reviewed is that of an Article III court. It is "judicial" in character. It is not merely an instruction

[7] Act of March 2, 1927, c. 273, § 11, 44 Stat. 1335, 1336. See *Glidden Co.* v. *Zdanok*, supra, at 572–579; Kurland and Wolfson, Supreme Court Review of the Court of Customs and Patent Appeals, 18 Geo. Wash. L. Rev. 192 (1950). This remains the law. 35 U.S.C. §§ 141, 145.

[8] Act of March 2, 1929, c. 488, 4 Stat. 1475.

[9] See Kurland and Wolfson, op. cit. supra, n. 7, at 196.

[10] Apart from Postum, until enactment of § 1256 in 1948 there existed no statutory basis for jurisdiction in these cases. See Robertson and Kirkham, Jurisdiction of the Supreme Court of the United States, § 251 (Wolfson and Kurland ed. 1951).

to the Commissioner or part of the "administrative machinery" of the Patent Office. It is final and binding in the usual sense.[11] In sum, Postum has no vitality in the present setting, and there remains no constitutional bar to our jurisdiction.

Having arrived at this conclusion, we have no difficulty in giving full force and effect to the generality of the language in § 1256. It would be entirely arbitrary for us to assume, despite the statutory language, that Congress in 1948 intended to enshrine Postum—dependent as it was upon a statutory scheme fundamentally altered in 1927 and 1929—into a hidden exception to the sweep of § 1256. The contrary is more plausible: that by using broad and unqualified language, Congress intended our certiorari jurisdiction over CCPA cases to be as broad as the Constitution permits.

This conclusion is reinforced by reference to the anomalous consequences which would result were we to adopt a contrary view of § 1256. Determinations of the Patent Office may be challenged either by appeal to the CCPA or by suit instituted in the United States District Court for the District of Columbia. 35 U.S.C. § 145, 28 U.S.C. § 1542 (1964 ed.). Where the latter route is elected, the decision obtained may be reviewed in the Court of Appeals for the District of Columbia Circuit, and ultimately in this Court upon writ of certiorari. *Hoover Co.* v. *Coe*, 325 U.S. 79, 65 USPQ 180. It would be strange indeed if corresponding certiorari jurisdiction did not exist where the alternative route was elected. Were that so, in the event of conflict between the CCPA and the courts of the District of Columbia, resolution by this Court would be achievable only if the litigants chose to proceed through the latter. Obviously, the orderly administration both of our certiorari jurisdiction and of the patent laws requires that ultimate review be available in this Court, regardless of the route chosen by the litigants.

We therefore conclude that § 1256 authorizes the grant of certiorari in the present case. We now turn to the merits.[12]

II.

[4] Our starting point is the proposition, neither disputed nor disputable, that one may patent only that which is "useful." In *Graham* v. *John Deere Co.*, 382 U.S. —, 148 USPQ 459, we have

[11] This is not to say that a CCPA determination that an applicant is entitled to a patent precludes a contrary result in a subsequent infringement suit, any more than issuance of a patent by the Patent Office or the decision in an earlier infringement action against a different "infringer" has that effect. See, e.g., *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459. We review decisions of the District Court under 35 U.S.C. § 145 although these are subject to the same measure of readjudication in infringement suits. See *Hoover Co.* v. *Coe*, 325 U.S. 79, 65 USPQ 180.

[2] [12] Respondent and the amicus curiae take a different view than does the Government of precisely what the issue on the merits is. They argue that the issue of "patentability" is not properly before us, that the issue actually presented is whether the Primary examiner in the Patent Office has authority under Rule 204(b) himself to evaluate the sufficiency of affidavits sumbitted under that Rule.

Both the Board of Appeals and the CCPA rejected this view and focused instead on the question of what averment satisfy the statutory requirement that a claimed chemical process be "useful." We agree. First, the issue of "patentability" cannot be foreclosed by the circumstance that the Patent Office—which, according to counsel for respondent, processes some 1,800 claims and issues 700 patents each week—has already issued a patent to Ringold and Rosenkrans who asserted in their claim that their process yielded useful products. See note 1, supra.

Second, there is no basis for the proposition that even where an applicant for an interference presents a claim which on its face is unpatentable, a complicated and frequently lengthy factual inquiry into priority of invention must inexorably take place. On the contrary, Rule 201(a), 37 CFR § 1.201(a), defines an interference proceeding as one involving "two or more parties claiming substantially the same *patentable* invention and may be instituted as soon as it is determined that common *patentable* subject matter is claimed * * *." [Emphasis supplied.] See Application of Rogoff, 46 CCPA 738, 739, 261 F.2d 601, 606, 120 USPQ 185, 188: [3] "The question as to patentability of claims to an applicant must be determined before any question of interference arises and claims otherwise unpatentable to an applicant cannot be allowed merely in order to set up an interference." See also *Wirkler* v. *Perkins*, 44 CCPA 1005, 1008, 245 F.2d 502, 504, 114 USPQ 284, 286. Cf. *Glass* v. *De Reo*, 44 CCPA 723, 239 F.2d 402, 112 USPQ 62.

The current version of Rule 203(a), 37 CFR § 1.203(a), makes it explicit that the examiner, "before the declaration of an interference," must determine the patentability of the claim as to each party. See also Rule 237, 37 CFR § 1.237.

reviewed the history of the requisites of patentability, and it need not be repeated here. Suffice it to say that the concept of utility has maintained a central place in all of our patent legislation, beginning with the first patent law in 1790[13] and culminating in the present law's provision that

> "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."[14]

As is so often the case, however, a simple, everyday word can be pregnant with ambiguity when applied to the facts of life. That this is so is demonstrated by the present conflict between the Patent Office and the CCPA over how the test is to be applied to a chemical process which yields an already known product whose utility—other than as a possible object of scientific inquiry—has not yet been evidenced. It was not long ago that agency and court seemed of one mind on the question. In application of Bremner, 37 CPA 1032, 1034, 182 F.2d 216, 217, 86 USPQ 74, 75, the court affirmed rejection by the Patent Office of both process and product claims. It noted that "no use for the products claimed to be developed by the processes had been shown in the specification." It held that "It was never intended that a patent be granted upon a product, or a process producing a product, unless such product be useful." Nor was this new doctrine in the court. See *Thomas* v. *Michael*, 35 CCPA 1036, 1038–1039, 166 F.2d 944, 946–947, 77 USPQ 216, 217–218.

The Patent Office has remained steadfast in this view. The CCPA, however, has moved sharply away from Bremner. The trend began in Application of Nelson, 47 CCPA 1031, 280 F.2d 172, 126 USPQ 242. There, the court reversed the Patent Office's rejection of a claim on a process yielding chemical intermediates "useful to chemists doing research on steroids," despite the absence of evidence that any of the steroids thus ultimately produced were themselves "useful." The trend has accelerated,[15] culminating the present case where the court held it sufficient that a process produces the result intended and is not "detrimental to the public interest." 52 CCPA, at —, 333 F.2d, at 238, 142 USPQ at 38.

It is not remarkable that differences arise as to how the test of usefulness is to be applied to chemical processes. Even if we knew precisely what Congress meant in 1790 when it devised the "new and useful" phraseology and in subsequent re-enactments of the test, we should have difficulty in applying it in the context of contemporary chemistry where research is as comprehensive as man's grasp and where little or nothing is wholly beyond the pale of "utility"—if that word is given its broadest reach.

[5] Respondent does not—at least, in the first instance—rest upon the extreme proposition, advanced by the court below, that a novel chemical process is patentable so long as it yields the intended prod-

[13] See Act of April 10, 1790, c. 7, 1 Stat. 109; Act of Feb. 21, 1793, c. 11, 1 Stat. 318; Act of July 4, 1836, c. 357, 5 Stat. 117; Act of July 8, 1870, c. 230, 16 Stat. 198; Rev. Stat. (1874) § 4886.

[14] 35 U.S.C. § 101 (1964 ed.).

[15] Thus, in Application of Wilke, 50 CCPA 964, 314 F.2d 558, 136 USPQ 485, the court reversed a Patent Office denial of a process claim, holding that 35 U.S.C. § 112 (1964 ed.) was satisfied even though the specification recited only the manner in which the process was to be used and not any use for the products thereby yielded. See also Application of Adams, 50 CCPA 1185, 316 F.2d 476, 137 USPQ 333.

In Application of Szwarc, 50 CCPA 1571, 319 F.2d 277, 138 USPQ 208, the court acknowledged that its view of the law respecting utility of chemical processes had changed since Bremner. See generally, Note, The Utility Requirement in the Patent Law, 53 Geo. L.J. 154, 175–181 (1964).

uct[16] and so long as the product is not itself "detrimental." Nor does he commit the outcome of his claim to the slightly more conventional proposition that any process is "useful" within the meaning of § 101 if it produces a compound whose potential usefulness is under investigation by serious scientific researchers, although he urges this position, too, as an alternative basis for affirming the decision of the CCPA. Rather, he begins with the much more orthodox argument that his process has a specific utility which would entitle him to a declaration of interference even under the Patent Office's reading of § 101. The claim is that the supporting affidavits filed pursuant to Rule 204(b), by reference to Ringold's 1956 article, reveal that an adjacent homologue of the steroid yielded by his process has been demonstrated to have tumor-inhibiting effects in mice, and that this discloses the requisite utility. We do not accept any of these theories as an adequate basis for overriding the determination of the Patent Office that the "utility" requirement has not been met.

[6] Even on the assumption that the process would be patentable were respondent to show that the steroid produced had a tumor-inhibiting effect in mice,[17] we would not overrule the Patent Office finding that respondent has not made such a showing. The Patent Office held that, despite the reference to the adjacent homologue, respondent's papers did not disclose a sufficient likelihood that the steroid yielded by his process would have similar tumor-inhibiting characteristics. Indeed, respondent himself recognized that the presumption that adjacent homologues have the same utility[18] has been challenged in the steroid field because of "a greater known unpredictability of compounds in that field."[19] In these circumstances and in this technical area, we would not overturn the finding of the Primary Examiner, affirmed by the Board of Appeals and not challenged by the CCPA.

The second and third points of respondent's argument present issues of much importance. Is a chemical process "useful" within the meaning of § 101 either (1) because it works—i.e., produces the intended product? or (2) because the compound yielded belongs to a class of compounds now the subject of serious scientific investigation? These contentions present the basic problem for our adjudication. Since we find no specific assistance in the legislative materials underlying § 101, we are remitted to an analysis of the problem in light of the general intent of Congress, the purposes of the patent system, and the implications of a decision one way or the other.

In support of his plea that we attenuate the requirement of "utility," respondent relies upon Justice Story's well-known statement that a "useful" invention is one "which may be applied to a beneficial use in society, in contradistinction to an invention injurious to the morals, health, or good order of society, or frivolous and insignificant"[20]—and upon the assertion that to do so would encourage inventors of new processes to publicize the event for the benefit of the entire scientific community, thus widening the search for uses and increasing the fund of scientific knowledge. Justice Story's language sheds little light on our subject. Narrowly read, it does no more than compel us to decide whether the invention in question is "frivolous and insignificant"—a query no easier of application than the one built into the statute. Read more broadly, so as to allow the patenting of any invention not positively harmful to society, it places such a special meaning on the word "useful" that we cannot accept it in the absence of evidence that Congress so intended. There are, after all, many things in this world which may not be considered "useful" but which, nevertheless, are totally without a capacity for harm.

It is true, of course, that one of the purposes of the patent system is to encourage dissemination of information concerning discoveries and inventions.[21] And it may be that inability to patent a process to some extent discourages disclosure and leads to greater secrecy than would otherwise be the case. The inventor of the process, or the corporate organization by which he is employed, has some incentive to keep the invention secret while uses for the product are searched out. However, in light of the highly developed art of drafting patent claims so that they disclose as little useful information as possible—while broadening the scope of the claim as widely as possible—the argument based upon the virtue of disclosure must be warily evaluated. Moreover, the pressure for secrecy is easily exaggerated, for if the inventor of a process cannot himself ascertain a "use" for that which his process yields, he has every incentive to make his invention known to those able to do so. Finally, how likely is disclosure of a patented process to spur research by others into the uses to which the product may be put? To the extent that the patentee has power to enforce his patent, there is little incentive for others to undertake a search for uses.

[7] Whatever weight is attached to the value of encouraging disclosure and of inhibiting secrecy, we believe a more compelling consideration is that a process patent in the chemical field, which has not been developed and pointed to the degree of specific utility, creates a monopoly of knowledge which should be granted only if clearly commanded by the statute. Until the process claim has been reduced to production of a product shown to be useful, the metes and bounds of that monopoly are not capable of precise delineation. It may engross a vast, unknown, and perhaps unknowable area. Such a patent may confer power to block off whole areas of scientific development,[22] without compensating benefit to the public. The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility. Unless and until a process is refined and developed to this point—where specific benefit exists in currently available form—there is insufficient justification for permitting an applicant to engross what may prove to be a broad field.

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[16] Respondent couches the issue in terms of whether the process yields a "known" product. We fail to see the relevance of the fact that the product is "known," save to the extent that references to a compound in scientific literature suggest that it might be a subject of interest and possible investigation.

[17] In light of our disposition of the case, we express no view as to the patentability of a process whose sole demonstrated utility is to yield a product shown to inhibit the growth of tumors in laboratory animals. See Application of Hitchings, 52 CCPA 1141, 342 F.2d 80, 144 USPQ 637; Application of Bergel, 48 CCPA 1102, 292 F.2d 955, 130 USPQ 206; cf. Application of Dodson, 48 CCPA 1125, 292 F.2d 943, 130 USPQ 224; Application of Krimmel, 48 CCPA 1116, 292 F.2d 948, 130 USPQ 215. For a Patent Office view, see Marcus, The Patent Office and Pharmaceutical Invention, 47 J.P.O.S. 669, 673–676 (1965).

[18] See n. 3, supra.

[19] See respondent's letter requesting amendment, dated July 21, 1960, Record, pp. 20–28. See also Application of Adams, 50 CCPA 1185, 1190, 316 F.2d 476, 479–480, 137 USPQ 333, 335–336 (dissenting opinion). In the present case, the Board of Appeals found support in the Ringold article itself for the view that "minor changes in the structure of a steroid may produce profound changes in its biological activity." Record, p. 52.

[20] Appendix, Note on the Patent Laws, 3 Wheat. 13, 24. See also Justice Story's decisions on circuit in *Lowell* v. *Lewis*, 15 Fed. Cas. 1018 (No. 8568) (C.C.D. Mass.), and *Bedford* v. *Hunt*, 3 Fed. Cas. 37 (No. 1217) (C.C.D. Mass.).

[21] "As a reward for inventions and to encourage their disclosure, the United States offers a seventeen-year monopoly to an inventor who refrains from keeping his invention a trade secret." *Universal Oil Prods. Co.* v. *Globe Oil & Ref. Co.*, 322 U.S. 471, 484, 61 USPQ 382, 388.

[22] See *Monsanto Chemical Co.* v. *Coe*, 145 F.2d 18, 21–24, 62 USPQ 37, 43–44 (C.A. D.C. Cir.).

[8] These arguments for and against the patentability of a process which either has no known use or is useful only in the sense that it may be an object of scientific research would apply equally to the patenting of the product produced by the process. Respondent appears to concede that with respect to a product, as opposed to a process, Congress has struck the balance on the side of nonpatentability unless "utility" is shown. Indeed, the decisions of the CCPA are in accord with the view that a product may not be patented absent a showing of utility greater than any adduced in the present case.[23] We find absolutely no warrant for the proposition that although Congress intended that no patent be granted on a chemical compound whose sole "utility" consists of its potential role as an object of use-testing, a different set of rules was meant to apply to the process which yielded the unpatentable product.[24] That proposition seems to us little more than an attempt to evade the impact of the rules which concededly govern patentability of the product itself.

[9] This is not to say that we mean to disparage the importance of contributions to the fund of scientific information short of the invention of something "useful," or that we are blind to the prospect that what now seems without "use" may tomorrow command the grateful attention of the public. But a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion. "[A] patent system must be related to the world of commerce rather than to the realm of philosophy. * * *"[25]

The judgment of the CCPA is reversed.

MR. JUSTICE DOUGLAS, while acquiescing in Part I of the Court's opinion, dissents on the merits of the controversy for substantially the reasons stated by MR. JUSTICE HARLAN.

MR. JUSTICE HARLAN, concurring in part and dissenting in part.

While I join the Court's opinion on the issue of certiorari jurisdiction, I cannot agree with its resolution of the important question of patentability.

Respondent has contended that a workable chemical process, which is both new and sufficiently nonobvious to satisfy the patent statute, is by its existence alone a contribution to chemistry and "useful" as the statute employs that term.[26] Certainly this reading of "useful" in the statute is within the scope of the constitutional grant, which states only that "[t]o promote the Progress of Science and useful Arts," the exclusive right to "Writings and Discoveries" may be secured for limited times to those who produce them. Art. I, § 8. Yet the patent statute is somewhat differently worded and is on its face open both to respondent's construction and to the contrary reading given it by the Court. In the absence of legislative history on this issue, we are thrown back on policy and practice. Because I believe that the Court's policy arguments are not convincing and that

[23] See, e.g., the decision below, 52 CCPA at —, 333 F.2d at 237, 142 USPQ at 3739. See also Application of Bergel, 48 CCPA at 1105, 292 F.2d at 958, 130 USPQ at 208. Cf. Application of Nelson, 47 CCPA at 1043–1044, 280 F.2d at 160–161, 126 USPQ at 249–251; Application of Folkers, 52 CCPA 1269, 344 F.2d 970, 145 USPQ 390.

[24] The committee reports which preceded enactment of the 1952 revision of the patent laws disclose no intention to create such a dichotomy, and in fact provide some evidence that the contrary was assumed. Sen. Rep. No. 1979, Committee on the Judiciary, 82d Cong., 2d Sess., 5, 17; H.R. Rep. No. 1923, Committee of the Judiciary, 82d Cong., 2d Sess., 6,17. Cf. Horle, A Patent Attorney's View, 47 J.P.O.S. 630, 636 (1965).

[25] Application of Ruschig, 52 CCPA 1238, —, 343 F.2d 965, 970, 145 USPQ 274. (Rich, J.). See also, *Katz v. Hermi Signal Mfg. Corp.*, 145 F.2d 961, 63 USPQ 190 (C.A. 2d Cir.).

[26] The statute in pertinent part is set out in the Court's opinion.

past practice favors the respondent, I would reject the narrow definition of "useful" and uphold the judgment of the Court of Customs and Patent Appeals (hereafter CCPA).

The Court's opinion sets out about half a dozen reasons in support of its interpretation. Several of these arguments seem to me to have almost no force. For instance, it is suggested that "[u]ntil the process claim has been reduced to production of a product shown to be useful, the metes and bounds of that monopoly are not capable of precise delineation" and "[i]t may engross a vast, unknown, and perhaps unknowable area." I fail to see the relevance of these assertions; process claims are not disallowed because the products they produce may be of "vast" importance nor, in any event, does advance knowledge of a specific product use provide much safeguard on this score or fix "metes and bounds" precisely since a hundred more uses may be found after a patent is granted and greatly enhance its value.

The further argument that an established product use is part of "[t]he basic quid pro quo" for the patent or is the requisite "successful conclusion" of the inventor's search appears to beg the very question whether the process is "useful" simply because it facilitates further research into possible product uses. The same infirmity seems to inhere in the Court's argument that chemical products lacking immediate utility cannot be distinguished for present purposes from the processes which create them, that respondent appears to concede and the CCPA holds that the products are nonpatentable, and that therefore the processes are nonpatentable. Assuming that the two classes cannot be distinguished, a point not adequately considered in the briefs, and assuming further that the CCPA has firmly held such products nonpatentable,[27] this permits us to conclude only that the CCPA is wrong either as to the products or as to the processes and affords no basis for deciding whether both or neither should be patentable absent a specific product use.

More to the point, I think, are the Court's remaining, prudential arguments against patentability: namely, that disclosure induced by allowing a patent is partly undercut by patent-application drafting techniques, that disclosure may occur without granting a patent, and that a patent will discourage others from inventing uses for the product. How far opaque drafting may lessen the public benefits resulting from the issuance of a patent is not shown by any evidence in this case but, more important, the argument operates against all patents and gives no reason for singling out the class involved here. The thought that these inventions may be more likely than most to be disclosed even if patents are not allowed may have more force; but while empirical study of the industry might reveal that chemical researchers would behave in this fashion, the abstractly logical choice for them seems to me to maintain secrecy until a product use can be discovered. As to discouraging the search by others for product uses, there is no doubt this risk exists but the price paid for any patent is that research on other uses or improvements may be hampered because the original patentee will reap much of the reward. From the standpoint of the public interest the Constitution seems to have resolved that choice in favor of patentability.

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[27] Any concession by respondent would hardly be controlling on an issue of this general importance, but I am less clear than the Court that such a concession exists. See, e.g., Brief for Respondent, p. 53. As to the CCPA, it is quite true that court purports in the very case under review and in others to distinguish product patents, although its actual practice may be somewhat less firm. See Application of Adams, 50 CCPA 1185, 316 F.2d 476, 137 USPQ 333. Application of Nelson, 47 CCPA 1031, 280 F.2d 172, 126 USPQ 242.

What I find most troubling about the result reached by the Court is the impact it may have on chemical research. Chemistry is a highly interrelated field and a tangible benefit for society may be the outcome of a number of different discoveries, one discovery building upon the next. To encourage one chemist or research facility to invent and disseminate new processes and products may be vital to progress, although the product or process be without "utility" as the Court defines the term, because that discovery permits someone else to take a further but perhaps less difficult step leading to a commercially useful item. In my view, our awareness in this age of the importance of achieving and publicizing basic research should lead this Court to resolve uncertainties in its favor and uphold the respondent's position in this case.

This position is strengthened, I think, by what appears to have been the practice of the Patent Office during most of this century. While available proof is not conclusive, the commentators seem to be in agreement that until Application of Bremner, 37 CCPA 1032, 182 F.2d 216, 86 USPQ 74, in 1950, chemical patent applications were commonly granted although no resulting end use was stated or the statement was in extremely broad terms.[28] Taking this to be true, Bremner represented a deviation from established practice which the CCPA has now sought to remedy in part only to find that the Patent Office does not want to return to the beaten track. If usefulness was typically regarded as inherent during a long and prolific period of chemical research and development in this country, surely this is added reason why the Court's result should not be adopted until Congress expressly mandates it, presumably on the basis of empirical data which this Court does not possess.

Fully recognizing that there is ample room for disagreement on this problem when, as here, it is reviewed in the abstract, I believe the decision below should be affirmed.

[28] See, e.g., the statement of a Patent Office Examiner-in-Chief: "Until recently it was also rather common to get patents on chemical compounds in cases where no use was indicated for the claimed compounds or in which a very broad indication or suggestion as to use was included in the application. [Bremner and another later ruling] * * * have put an end to this practice." Wolffe, Adequacy of Disclosure as Regards Specific Embodiment and Use of Invention, XLI J.P.O.S. 61, 66 (1959). The Government's brief in this case is in accord: "[I]t was apparently assumed by the Patent Office [prior to 1950] * * * that chemical compounds were necessarily useful * * * and that specific inquiry beyond the success of the process was therefore unnecessary * * *." Brief for the United States, p. 25. See also Cohen & Schwartz, Do Chemical Intermediates Have Patentable Utility? 29 Geo. Wash. L. Rev. 87, 91 (1960); Note, Geo. L.J. 154, 183 (1964); 14 Am. U.L. Rev. 78 (1964).

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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2,545,620, G. Lamoureux, TAPPING DEVICE FOR LIQUID-CONTAINING VESSELS; **2,279,493**, Zurit and Parisi, VALVE ASSEMBLY FOR KEGS, filed Oct. 26, 1966, D.C.N.J. (Newark), Doc. 1083–66, *Vending Components, Inc.* v. *Krouse-Doremus Foundry Co., Inc.*

2,546,354, Bacon and Kent, NAILING MACHINE, filed Aug. 2, 1966, D.C., S.D. Calif. (Los Angeles), Doc. 66–1244–WPG, *Richard Grosten et al.* v. *Lee Epps.* Stipulation and consent judgment—claims 1 to 5 of Patent No. 2,546,354 held valid and infringed; defendant enjoined Aug. 16, 1966. Same, filed Aug. 18, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66–1333–WPG, *Richard Grosten et al.* v. *Jack Queen.* Stipulation and consent judgment; defendant enjoined Oct. 7, 1966. Same, filed Aug. 24, 1962, D.C., S.D. Calif. (Los Angeles), Doc. 62–1184–HW, *Nu-Matic Nailer Int'l Corp.* v. *Clarence R. Finney et al.* Stipulation and order dismissing action without prejudice as to defendant William Finney. Consent judgment in favor of plaintiff and against defendant Clarence R. Finney, said defendant enjoined Oct. 24, 1966. Same, filed Nov. 8, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66–1788–FW, *GBC Designs* v. *Robert Salmon.* Same, filed Nov. 16, 1966, D.C., N.D. Calif. (San Francisco), Doc. 46003, *GBC Designs* v. *Robert Danner.* Same, Doc. 46004, *GBC Designs* v. *Earl Smith.* Same, filed Nov. 23, 1966, D.C., N.D. Calif. (San Francisco), Doc. 46042, *GBC Designs* v. *Harold Sontag.*

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2,599,218, F. J. Wenger, TOOL, filed Oct. 21, 1966, Ct. Cls., Doc. 363–66, *AMP, Inc.* v. *The United States.*

2,585,174, J. W. Rosendahl, SERVING DISH FOR CORN ON THE COB, filed Sept. 10, 1965, D.C.N.J. (Newark), Doc. 977–65, *Cardinal China Company* v. *Jean W. Rosendahl.* Plaintiff's motion for summary judgment granted Nov. 10, 1966.

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2,622,733. (See 2,540,345.)

2,643,463. (See 2,604,313.)

2,649,730. (See 2,540,345.)

2,654,848, E. J. Schaefer, SUBMERGIBLE MOTOR CONSTRUCTION; **2,779,637**, same, THRUST BEARING; **2,829,288**, same, SUBMERSIBLE MOTOR CONSTRUCTION, filed Feb. 18, 1963, D.C., E.D. Ark. (Little Rock), Doc. LR63C–11, *The Emerson Electric Manufacturing Co.* v. *Franklin Electric Co., Inc.* Final consent judgment—claims 1–6, inclusive, of Patent No. 2,654,848, claims 1, 2, 17 and 19 of Patent No. 2,779,637, and claims 1, 4, 5 and 6 of Patent No. 2,829,288 held valid; claims of Patent Nos. 2,654,848 and 2,829,288 held infringed by plaintiff; no determination made as to infringement of Patent No. 2,779,637; plaintiff enjoined and claim for declaratory judgment dismissed Oct. 25, 1966.

2,670,143, H. Jordan, GARBAGE DISPOSER WITH PROTECTIVE INLET; **2,858,969**, same, STAINLESS STEEL SINK DRAINAGE SLEEVE WITH STOPPER AND MOUNTING MEANS; **2,860,836**, same, MOUNTING SLEEVE AND CLAMP MEANS FOR DISPOSAL DEVICES; **2,879,940**, same, GARBAGE DISPOSAL APPARATUS; **2,925,225**, same, CUSHIONED HANGING DEVICE FOR GARBAGE GRINDERS; **2,965,313**, C. H. Jay, SHOWER HEAD CONTROL VALVE, filed June 21, 1962, D.C., S.D. Calif. (Los Angeles), Doc. 62–850–WB, *Waste King Corporation* v. *W. T. Hedlund Co. et al.* Stipulation and consent judgment in favor of plaintiff; defendant W. T. Hedlund Co. enjoined from further infringement; no injunction against Whirl-A-Way Sales Co.; defendants' counterclaim dismissed with prejudice Aug. 30, 1966.

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2,779,637. (See 2,654,848.)

2,780,968. (See 2,540,345.)

2,829,288. (See 2,654,848.)

2,858,969. (See 2,670,143.)

2,860,836. (See 2,670,143.)

2,879,940. (See 2,670,143.)

2,925,225. (See 2,670,143.)

2,965,313. (See 2,670,143.)

3,067,986. (See 2,604,313.)

3,109,537, D. C. Larkin, REFUSE CONTAINER FOR MOTOR VEHICLE BODY, filed May 10, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c729, *The Crest Manufacturing Co. et al.* v. *General Wholesale Auto Supply Co.* Final consent judgment—patent held valid and infringed Nov. 18, 1966.

3,117,152, E. B. Michaels, SUBSTANTIALLY NEUTRAL MAGNESIUM SALT OF A PHOSPHORIC ACID ESTER OF OXETHYLATED NONYL PHENOL; **3,162,604**, same, DRY CLEANING SOLVENT COMPOSITIONS, filed Apr. 20, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–429, *Stanford Chemicals Industries, Inc.* v. *Mortimer Simon and National Cleaners.* Action dismissed against defendant Mortimer Simon; consent judgment for injunction against defendant National Cleaners Chemical Mfg. Co. Nov. 9, 1966.

3,125,147, E. J. Hakka, ANTI-SKID DEVICE, filed Nov. 4, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1831, *Studebaker Corporation* v. *Chicago Rivet & Machinery Company.* Stipulation and order of dismissal; settlement of all issues Nov. 22, 1966.

3,131,492, C. F. Speicher et al., WEIGHT DISTRIBUTING AND DITCHING CONTROL MECHANISM, filed Nov. 10, 1966, D.C., N.D. Ohio (Toledo), Doc. C66–245, *Speicher Bros., Inc.* v. *Gar Wood Industries, Inc.*

3,143,940, Brown and Jacobs, RECORDER; **3,144,332**, same, RAPID LATENSIFICATION OF PRINTOUT MATERIAL, filed Jan. 12, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–48–S, *Scantlin Electronics, Inc.* v. *Consolidated Electrodynamics Corp.* Stipulation and order dismissing action without prejudice Oct. 3, 1966.

3,144,332. (See 3,143,940.)

3,148,686, H. S. Cournoyer, HAIR STYLING IMPLEMENT WITH RESILIENT PRONG TEETH, filed Nov. 14, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2066, *Grooming Developers, Inc.* v. *Arrow Beauty, Inc.*

3,151,297, H. Toomin, HIGH GAIN SUPERREGENERATIVE DETECTORS, filed Apr. 3, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65522, *Electrosolids Corporation* v. *The May Dept. Stores et al.* Stipulation and order dismissing this complaint without prejudice Oct. 14, 1966.

3,162,604. (See 3,117,152.)

3,165,731, C. P. Spaulding, DIGITAL CODING AND TRANSLATING SYSTEM, filed Nov. 1, 1966, D.C., C.D. Calif. (Los Angeles), Doc. 66–1752–FW, *Giannini Controls Corporation* v. *Litton Industries, Incorporated.*

3,279,493. (See 2,545,620.)

REISSUES

DECEMBER 27, 1966

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,130
SOLUTION AND METHOD FOR BRIGHTENING CADMIUM

Kenneth P. Bellinger, Ellington, and Eugene G. Chapdelaine, Hazardville, Conn., assignors to Conversion Chemical Corporation, Rockville, Conn., a corporation of Connecticut

No Drawing. Original No. 3,072,516, dated Jan. 8, 1963, Ser. No. 97,164, Mar. 21, 1961. Application for reissue Jan. 9, 1964, Ser. No. 348,311

7 Claims. (Cl. 156—20)

1. An acid bath for the brightening of cadmium surfaces comprising a dilute aqueous solution containing essentially 0.08–1.0 gram per liter of trivalent chromium ions, 0.1–18.0 grams per liter of nitrate ions and 0.4–5.2 grams per liter of *the combination of fluoride and sulfate* ions [selected from the group consisting of fluoride, sulfate and the combination thereof], said solution having a pH of about 1.0–3.5 and containing *at least 0.1 gram per liter of fluoride ion and 0.25 gram per liter of sulfate ion, said solution containing* less than about 0.3 gram per liter of hexavalent chromium ions.

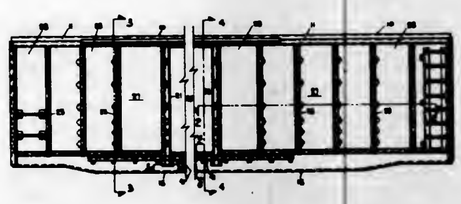
26,131
RAILWAY CAR SIDES

Carl E. Johansson, South Euclid, Cleveland, and Donald F. Leonhart, Youngstown, Ohio, assignors to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio

Original No. 3,161,152, dated Dec. 15, 1964, Ser. No. 93,191, Mar. 3, 1961. Application for reissue Nov. 22, 1965, Ser. No. 512,819

3 Claims. (Cl. 105—409)

1. In a railway car having a side plate extending substantially the length of the car, a side sill extending substantially the length of the car, metallic sheathing extending between and secured to said side plate and side sill, said sheathing being exposed to view on the outside and the inside of the car, a door opening provided in said sheathing, the top and bottom of said door opening being defined by said side plate and sill, respectively, spaced door posts and intermediate posts extending between said side plate and side sill on the outside of said sheathing,



said sheathing extending from said door posts to the ends of said car, means securing said door posts and intermediate posts to said side plate, sill and sheathing, said door posts defining the width of the door opening, a member secured to said side plate across the door opening, said member being alined with said sheathing, and means directly securing said member to said sheathing on opposite sides of the door opening and making said sheathing a mechanically continuous stress-carrying column member along said side plate.

PLANT PATENTS

GRANTED DECEMBER 27, 1966

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,694
PEACH TREE

Grant Merrill, 416 N. Anderson Road, Exeter, Calif. 25680

Filed June 11, 1965, Ser. No. 463,412

1 Claim. (Cl. Plt.—43)

A new and distinct variety of peach tree substantially as illustrated and described and which is characterized by its vigorous growth, its early blooming about the same time as the July Elberta of U.S. Plant Patent No. 15; and its regular and heavy bearing of freestone, red-skinned, firm textured, yellow fleshed peaches which ripen a few days earlier than the Merrill Gemfree of U.S. Plant Patent No 1,409 which it most nearly resembles but from which it is distinguished in its fruit having a more brilliant yellow colored flesh firm ripe which frees from the stone when soft ripe after being permitted to ripen off the tree, has superior flavor, softens into a more melting consistency when soft ripe and has greater resistance to oxidation when exposed to air.

2,695
ALMOND TREE

Frederic W. Anderson, Merced, Calif., assignor to Arthur Bright, Le Grand, Calif.

Filed Sept. 7, 1965, Ser. No. 485,659

1 Claim. (Cl. Plt.—30)

A new and distinct variety of almond tree, as illustrated and described, characterized by a tree which blooms two to five days after the Mission and is in harvest between the Nonpareil and Mission; the tree being a regular and productive bearer of small, well sealed nuts having thin, flat kernels of confectionery type.

2,696
ROSE PLANT

Arthur P. Howard, Sierra Madre, Calif., assignor to Paul J. Howard Co., Inc., Los Angeles, Calif., a corporation of California

Filed Sept. 27, 1965, Ser. No. 490,755

1 Claim. (Cl. Plt.—19)

The new and distinct variety of rose plant of the class designated as hybrid tea roses, substantially as herein shown and described, characterized particularly as to novelty by its Phlox Pink blooms that are very large and borne at the end of very long stems, the small number of prickles and thorns, the longevity of the flowers after they have been cut, the tall, vigorous, upright, well branched growth of the plant, and its large, attractive foliage.

2,697
ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Oct. 7, 1965, Ser. No. 493,944

1 Claim. (Cl. Plt.—6)

A new and distinct variety of rose plant of the climber class, substantially as herein shown and described, characterized particularly as to novelty by being substantially identical to its parent variety "El Capitan" (Plant Patent No. 1796), except for its climbing habit of growth, the production of few or no flowers on current season canes, and the repetition of blooms heavily or in mass several times a year on previous season canes, with these periods of heavy bloom being separated by intervals of little or no bloom.

2,698
WATER LILY PLANT

George L. Thomas, Jr., Lilypons, Md. 52560

Filed Oct. 14, 1965, Ser. No. 496,208

1 Claim. (Cl. Plt.—68)

A new and distinct variety of water lily plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a miniature plant and flower size, good hardiness, and the ability to readily thrive when grown in indoor aquariums under either artificial or natural light, as well as outdoors.

PATENTS

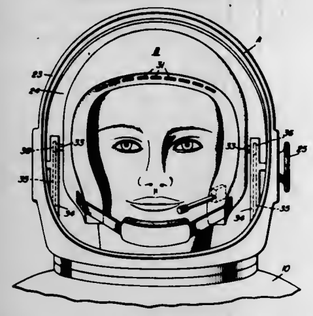
GRANTED DECEMBER 27, 1966

GENERAL AND MECHANICAL

3,293,659
HIGH ALTITUDE HELMET

Leonard F. Shepard, Dover, Del., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware

Filed May 1, 1964, Ser. No. 364,259
20 Claims. (Cl. 2—6)

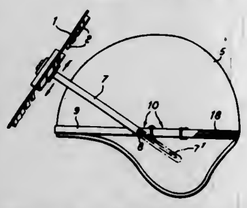


1. A helmet comprising an inner helmet for encasing the head of the wearer and an outer helmet covering said inner helmet, said inner helmet having an ear covering portion at each side thereof, each of said ear covering portions having pivot means affixed thereon, said outer helmet having corresponding pivot receiving means affixed thereon, said pivot receiving means respectively accepting said pivot means, whereby said inner helmet pivots within said outer helmet about an axis connecting said pivot means.

3,293,660
PROTECTIVE VISORS OR FACE SHIELDS FOR THE DRIVERS AND OTHER OCCUPANTS OF VEHICLES

Lance Macklin, 52 Gloucester Place, London, England

Filed Sept. 28, 1964, Ser. No. 399,721
Claims priority, application Great Britain, Sept. 26, 1963, 37,990/63; Nov. 20, 1963, 45,813/63
2 Claims. (Cl. 2—9)



1. A protective visor for drivers, comprising, in combination, band means adapted to be worn on the head of the driver and having a pair of side portions; U-shaped frame means pivotally mounted at the end portions thereof on said side portions movable between an active and an inactive position; shaft means carried by and projecting forwardly from a center portion of said frame means; securing means to secure said frame means in at least one of said positions; pivot means carried by and projecting forwardly from a center portion of said frame means; a nylon bearing means rotatably mounted on said shaft means and including a flange member at one end face thereof; a disc of transparent material mounted on said flange member for rotation therewith, and being arranged in the active position of said frame means to cover at least the eyes of the driver with its inner portion, the outer portions of said disc being backardly inclined to form a convex shape; and a plurality of vanes on said outer portions cooperating with the airstream produced during forward movement of the driver to turn said disc about its axis, whereby rain impinging on the front of said disc will be removed by centrifugal force caused by the turning movement of said disc.

3,293,661
LAPEL CONSTRUCTION

Robert Servadio, 3721 Park View Ave., Pittsburgh, Pa. 15213

Filed May 25, 1964, Ser. No. 369,921
1 Claim. (Cl. 2—93)



In combination with a garment having a lapel having front and rear panels and provided with a button hole extending through said panels through which the stem of a flower may be passed, a slit underneath said button hole and formed only on said rear panel for providing an opening for receiving and anchoring the end portion of such stem and for holding it firmly against the rear panel.

3,293,662
DOUBLE OR TURNDOWN COLLAR

Fritz Seller, Corcelles, Neuchatel, Switzerland, assignor to Edouard Dubied et Cie (Societe Anonyme), Couvet, Neuchatel, Switzerland

Filed Mar. 11, 1963, Ser. No. 264,197
Claims priority, application Switzerland, Apr. 17, 1962, 4,761/62
10 Claims. (Cl. 2—131)



5. A knitted turndown collar comprising an outer portion; an inner portion; a fold line portion joining said outer and inner portions and which defines a predetermined curved fold line, said outer and inner portions being asymmetrical with respect to each other and with respect to the curved fold line; and, in at least one of said two first-named portions, including supplementary stitch rows of different lengths, the reversal points of said supplementary stitches being joined by a through-going row of simple stitches thereby defining said predetermined curved fold line.

3,293,663
SURGICALLY IMPLANTABLE HUMAN BREAST PROSTHESIS

Thomas D. Cronin, Houston, Tex., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Aug. 12, 1963, Ser. No. 301,267
5 Claims. (Cl. 3—36)

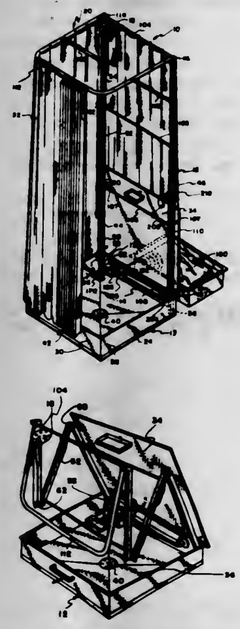


5. A surgically implantable human breast prosthesis comprising (1) a flexible container having a substantially tissue impermeable front section approximating the shape of a human breast and a tissue impermeable rear section adapted to fit against the human chest wall, (2) a soft gel filling said container, and (3) tissue permeable anchoring means of sponge-like material attached solely to said rear section for allowing human tissue to grow into said sponge-like material and thereby anchor said material to the chest wall.

3,293,664
PORTABLE SHOWER

Woodrow Coons, 4343 W. 17th Terrace, Topeka, Kans. 66604

Filed July 20, 1964, Ser. No. 383,658
17 Claims. (Cl. 4—155)
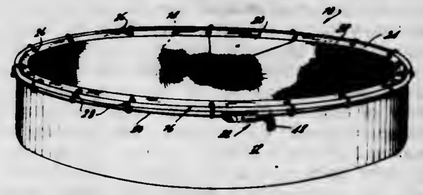


8. In a portable shower, the improvement comprising a generally rectangular base constituting a shower platform, said base being provided with peripheral upstanding front, rear, and opposed side walls, a pair of vertical standards having their lower ends disposed to overlie the base adjacent the junctures of the rear wall with the opposed side walls, means pivotally connecting the lower ends of the standards for swinging downwardly to a horizontal position toward the front wall, each of the standards being comprised of joints each of which is shorter than the spacing of the front and rear walls, hinged means connecting the joints of each standard for folding the joints in a zigzag relation to each other whereby the standards can be disposed in a folded condition within the space surrounded by the walls, means interconnecting the joints of the standards whereby the standards can be folded in unison, a movable cover carried by the walls for closing the top of the space surrounded by the walls when the standards are folded within such space and to constitute with the base and walls a carrying case, and means for releasably securing the standards in vertical positions.

3,293,665
POOL COVER LOCKING MECHANISM

Sol Langer, Scotch Plains, N.J., assignor to Andray Products Inc., East Orange, N.J., a corporation of New Jersey

Filed Mar. 30, 1966, Ser. No. 538,621
6 Claims. (Cl. 4—172)

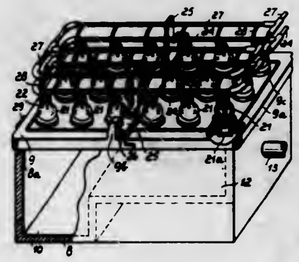


1. A protective cover for a pool comprising a cover body, a marginal area on said cover body disposed about said pool, a cable-like structure supported from said cover body marginal area and a cable-length control means including a rotatable crank operatively connected to said cable-like structure for tightening the same about said pool to secure said cover body against removal from the pool.

3,293,666
STEAM PRODUCING SYSTEM, PARTICULARLY ADAPTED FOR SAUNA BATHS

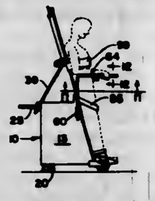
Carlo Casalini, Via Zamboni 2, Bologna, Italy

Filed Jan. 7, 1964, Ser. No. 336,313
5 Claims. (Cl. 4—175)



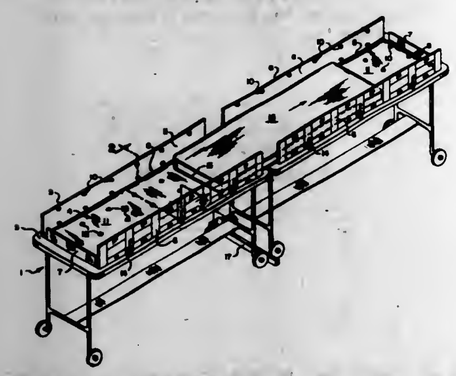
1. In a sauna bath cabin a steam generator comprising a plate member a plurality of lodgements in said plate member a plurality of hollow bodies fitted in said lodgements, duct means conveying evaporation fluids within the interior of said hollow bodies, openings in said hollow bodies providing communications between the interior of said hollow bodies and the outside and heating means for heating said plate member and said hollow bodies.

3,293,667
ADJUSTABLE, AMBULATING, TILTING AND RECLINING BED
John F. Ohrberg, 316 5th Ave., Moline, Ill. 61610
Filed Oct. 20, 1965, Ser. No. 496,717
15 Claims. (Cl. 5—62)



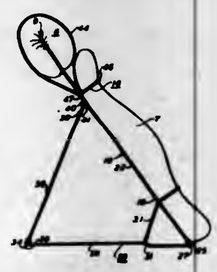
1. An invalid supporting structure comprising: a cabinet supported for transport on wheel elements and including a base, table top, a forward inclined side between the base and top, and a pair of fore and aft extending upright side walls joining the respective edges of the base, top and inclined side; a transverse horizontal hinge supported on the cabinet adjacent the juncture of the top and inclined side; an elongated body supporting platform supported at a midportion on the hinge to swing vertically thereon between an inclined upright position alongside and substantially at the angle of the inclined side, and a horizontal position above the top of the cabinet; means between the cabinet and platform for locking the platform in the aforesaid positions; rod means disposed outwardly of the edges of the platform and lengthwise thereof; means supporting the rod means spacedly outwardly of and on the platform; and body supporting members supported on and for movement along the rod means and extending over the platform for engaging and supporting parts of a body lying on the platform and means on the respective upright side walls adapted to project forwardly of the platform when in its inclined position and outwardly of the respective edges of the platform for supporting a horizontally disposed member forwardly of the platform.

3,293,668
ARTICLE TRANSFER
Otis N. Auer, % Docona Associates, P.O. Box 123, Glen Ridge, N.J. 07028
Filed Sept. 1, 1964, Ser. No. 393,565
4 Claims. (Cl. 5—81)



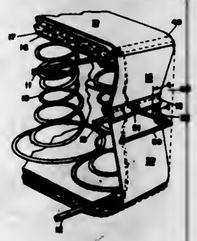
1. Apparatus for transferring an object from a non-sterile location within a first zone of common use to a clean location within a second clean zone with a minimum transfer of infectious organisms and with a minimum disturbance of the object comprising:
(a) means for supporting the object in a predetermined plane;
(b) a first carriage and transfer means for holding said object supporting means at a predetermined elevation in said plane and movable within said first zone extending from said non-sterile location to a point adjacent said second zone;
(c) a second clean carriage and transfer means movable within said second zone for receiving said supporting means from said first carriage in said predetermined plane when said carriages are positioned adjacent each other; and
(d) a fixed barrier positioned between said two zones in the path of movement of said carriages for preventing movement of said carriages beyond their respective zones.

3,293,669
BACK REST
William M. Emery, 44 Flittsford Way, New Providence, N.J. 07974
Filed Sept. 24, 1965, Ser. No. 489,895
7 Claims. (Cl. 5—327)



1. A back rest, comprising an inclined back-supporting member, a brace member, said members having normally upper and lower ends when erect, a wire bail journaled to both of said members at fixed points near said lower ends and providing constant spacing therebetween, positioning means providing loose optional contact points between said upper end of the brace member and the upper area of the rear side of the back-supporting member intermediate of the ends thereof and a substantially horizontal elastic loop around said lower end of the back-supporting member and the adjacent end of said bail acting to hold together said loose optional contact points between said upper end of the brace member and the upper rear area of the back-supporting member.

3,293,670
INNERSPRING MATTRESS
Michael D. Anson, 2311 Raleigh Lane, Louisville, Ky. 40003
Filed Sept. 7, 1965, Ser. No. 485,447
6 Claims. (Cl. 5—345)



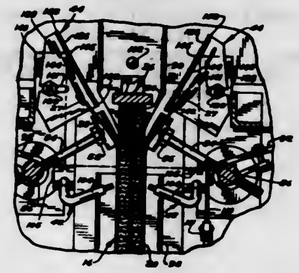
1. An innerspring mattress comprising
a plurality of helical support springs,
a top border wire, a bottom border wire, and an intermediate border wire each formed into the shape of a two dimensional geometric figure,
said border wires surrounding said helical springs,
one turn of one said support spring engaging said top border wire,
one turn of said helical spring engaging said bottom border wire,
one turn of some of said helical springs engaging said intermediate border wire,
wire clip means attaching said border wires to said spring,
a first cover part attached to said mattress adjacent the top thereof and attached to said intermediate border wire,
an outside cover attached to said mattress adjacent said top border wire and said bottom border wire and extending therebetween,
a handle,
said handle having a hand engaging portion extending generally parallel to said border wires,
spaced legs fixed to the ends of said hand engaging portion,
said legs being made of resilient material,
eyelets in said outside cover,
said legs extending through said eyelets,
and a hook on the distal end of each said leg,
each said hook having a mouth portion and a clip portion,
said hooks being adapted to receive said intermediate border wire in said mouth portion and to deflect, allowing said intermediate border wire to move into said clip whereby said handle is held in place.

3,293,671
CUSHIONS, AND THE LIKE
Victor R. Grillin, 304 Oakwood Drive, Geneva, Ill. 61404
Filed June 14, 1965, Ser. No. 463,821
6 Claims. (Cl. 5—355)



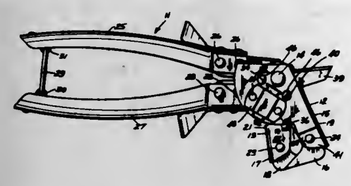
1. As a new article of manufacture, a flexible and foldable cushion comprising in combination a first defined sheet of flexible foldable tough material and a second defined companion sheet of flexible foldable tough material; the first defined sheet being provided with recesses all extending outwardly from one face of said sheet; said recesses being located in longitudinally extending parallel columns, and also being located in crosswise extending rows to produce a regular pattern of the locations of such recesses, and the recesses being separated from each other by longitudinally extending aisles between the columns and by cross-wise extending aisles between the rows, and the sheet elements which comprise the floors of all such aisles lying substantially in a common plane when said sheet is in flattened condition; the second defined sheet being in facial engagement with the sheet aisle portions of the first defined sheet; blocks of non-permeable porous elastic material in the recesses of the first defined sheet, said blocks being of size and contour to substantially fill the corresponding recesses with the faces of all of the blocks lying substantially in the plane of the aisles of the first defined sheet and in facial engagement with the proximate surface areas of the second defined sheet; together with means to secure the aisle areas of the surface of the first defined sheet to the proximate surface areas of the second defined sheet, wherein the recesses comprising each column and the blocks in such recesses, are of progressively decreasing height when progressing along the corresponding aisle in a given direction, from a maximum height at one end of the column and decreasing in height to a centrally located cross-wise extending aisle, and wherein the blocks comprising such column and beginning at such cross-wise extending aisle and progressing in said given direction, are of progressively decreasing height to a minimum height at the end of the column removed from the beginning of the column; whereby when the cushion is folded along such cross-wise extending aisle to bring the blocks at the area of such column which is above the cross-wise extending aisle, into facial engagement with the blocks of such column which are below such cross-wise extending aisle, the blocks of such two column areas are successively engaged with each other commencing at the cross-wise extending aisle, and with the blocks of the first mentioned area, of progressively increasing height when progressing away from the cross-wise extending aisle, in contact with blocks of the second mentioned area which are of progressively decreasing height when progressing away from such aisle.

3,293,672
MACHINE FOR STRIPPING HONEY-COMBS
Jerome P. Gregersen, 7152 Medicine Lake Road, Minneapolis, Minn. 55912
Filed Jan. 14, 1965, Ser. No. 425,386
2 Claims. (Cl. 6—12)



1. A machine for uncapping the cells of honeycomb sections having an outer wood frame encasing the marginal portions thereof, said machine comprising:
(a) a stationary frame;
(b) a movable sub-frame;
(c) means defining a cutting station including a pair of spaced reciprocating cutter blades mounted on said movable frame and power drive means for imparting high frequency reciprocating motion to said cutter blades;
(d) conveyor means comprising a substantially continuous U-shaped tray adapted to receive and progressively advance said honeycomb sections by gravity along a predetermined path;
(e) actuation means for imparting partial rotation of said movable sub-frame and thereby move said reciprocating blades into and out of cutting engagement with the cells of said honeycomb sections, said actuation means being controlled by the movement of said honeycomb sections through said cutting station; and
(f) discharge means disposed adjacent said cutting station for directing the waste clipping away from said reciprocating blades, said discharge means comprising a pair of diverging flange members situated adjacent said cutting station and being mounted on said movable sub-frame.

3,293,673
CARTON OPENING DEVICE
Nathaniel M. Olney, New York, N.Y., assignor to Swingline, Inc., Long Island City, N.Y., a corporation of New York
Filed July 31, 1964, Ser. No. 386,721
4 Claims. (Cl. 7—5.4)



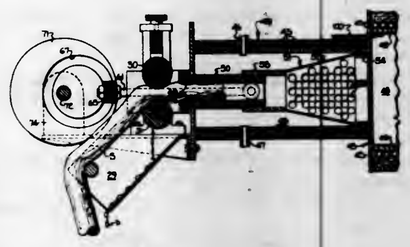
1. A carton opening device adapted to unseal both staple and tape closures comprising a first jaw and a second jaw, said jaws being inwardly and pivotally movable and selectively disposable beneath the crown portion of a staple, each jaw carrying a support portion and a pair of spaced prong members thereupon, the support portion of said first jaw having a front portion and a side portion, a shield member upon said side portion, and a retractable blade member pivotally carried between said shield portion and said side portion, said blade member adapted to cut a tape closure of a carton when in extended position.

3,293,674
COMBINATION SICKLE AND WEED PULLING TOOL
James Sapia, 1070 Terrace Blvd., Trenton, N.J. 08618
Filed Apr. 2, 1965, Ser. No. 444,978
5 Claims. (Cl. 7—14.1)



1. A combination sickle and weed pulling tool comprising an elongated flat blade having a forwardly tapered end portion divided into two prongs by a central, rearwardly convergent, V-shaped slot, said blade having sharp longitudinal cutting edges extending along its entire length including that of said tapered portion, a goose-neck type of handle connection including an elongated straight portion rigidly attached to the top of said blade in central longitudinal relation therewith and extending rearwardly almost to the end of said blade where it is return bent into a forwardly extending, upwardly diverging portion terminating in a short rearwardly bent angular portion beginning at a point in approximate vertical alignment with the geometrical center of the blade; and an elongated handle attached to said angular portion of said connection in axial relation therewith.

3,293,675
APPARATUS AND METHOD FOR DYEING AND AGING TEXTILE MATERIALS
David M. Willis, Spartanburg, S.C., assignor to Butte Knitting Mills, Spartanburg, S.C., a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,777
13 Claims. (Cl. 8—149.1)



9. A method of aging strands of textile fibers in sliver form comprising
(a) conveying the strands of textile fibers into a reciprocating feeding means while arranging the strands therein a randomly sinuous configuration,
(b) intermittently forcing the randomly sinuously arranged strands into an elongate aging chamber while continuing to convey the strands into the reciprocating feeding means,
(c) aging the strands of textile fibers in said aging chamber by subjecting the strands to desired conditions of heat and moisture within said chamber, and
(d) pulling the strands of textile fibers from said aging chamber in timed relationship to said feeding means so that the strands are maintained within said chamber for a desired predetermined period of time.

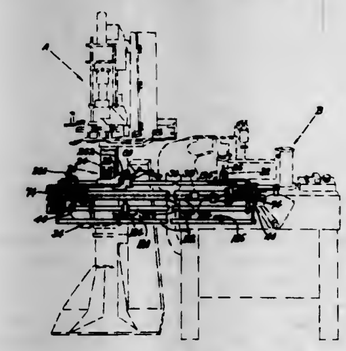
3,293,676
INSTRUMENT CAPSULE
Edwin A. Link, Binghamton, N.Y., assignor, by mesne assignments, to Ocean Systems, Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,212
3 Claims. (Cl. 9—8)



1. An instrument capsule for obtaining measurements at extreme depths in a body of water, said extreme depths including at least 30,000 feet, comprising,

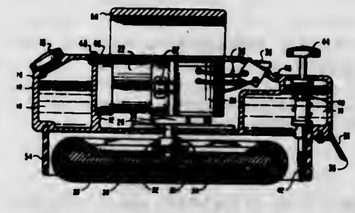
(a) an inflatable flexible molded container, for retaining within the interior volume thereof a number of selected instruments each operable to monitor data at said extreme depths, the lower portion of said container allowing surrounding water to enter within and completely fill said interior volume;
(b) at least one water-proof hydrogen generator containing a reactant selected form the group consisting of lithium hydrid and sodium operable to provide a supply of gaseous hydrogen when placed in contact with water;
(c) said at least one hydrogen generator including a seal member selectively removable in response to a control signal;
(d) means positioning said at least one hydrogen generator in gas delivering relationship with said container; and
(e) said container further including detection means operable in response to a frequency encoded sonic signal to generate said control signal, whereby said supply of gaseous hydrogen generated by said reactant now in contact with water is effective to inflate said container, said detection means comprising a magnetostrictive detector responsive to said frequency encoded sonic signal to provide a frequency encoded electrical signal; an amplifier coupled to said detector to increase said electrical signal; a plurality of frequency selective filters each constructed to transmit only a particular frequency different from the other filters and to attenuate all other frequencies; circuit means for coupling the amplified electrical signal to all of said filters in parallel relation; a plurality of amplifier-rectifiers; circuit means for coupling each filter to separate amplifier-rectifier so as to transmit the particular electrical frequency thereto; a multiplicity of electrical relays each being coupled to one of said amplifier-rectifiers being normally open but actuable by said particular electrical frequency; a power source; an explosive device adapted to remove said seal member of said hydrogen generator on ignition; and circuit means coupling said power source through each of said electrical relays in series relation to said explosive device for detonation of same on receiving a frequency encoded signal through the circuit means.

3,293,677
SHOE TRANSFER MECHANISM
Leo F. Stanton, Newburyport, James R. Stewart, Salem, and Donald E. Ripley, Peabody, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 14, 1963, Ser. No. 280,236
13 Claims. (Cl. 12—1)



1. Automatic mechanism for demounting a last-mounted shoe from the movable last support of one shoe-making machine which has separate and complete control of the last mounted shoe during a manufacturing operation performed thereon and releasably mounting said shoe on a similar movable last support of a second shoemaking machine for further operation, said mechanism comprising a carrier having movably mounted thereon releasable last-gripping jaws, power means for moving the carrier from its last demounting position adjacent the one shoemaking machine to its last mounting position adjacent the second shoemaking machine and return, and means adjacent each of the machines and cooperative with the carrier for moving its jaws into a last-engaging position wherein they and one of the last supports can relatively move to transfer control over the last-mounted shoe between the jaws and the one last support.

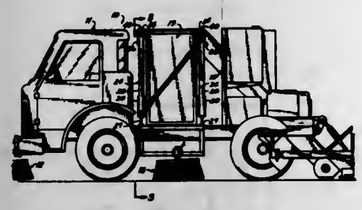
3,293,678
POWER-DRIVEN HAND-HELD POLISHING AND CLEANING DEVICE
Howard D. South, 18209 Marilla St., Northridge, Calif. 91324
Filed Oct. 19, 1964, Ser. No. 404,876
1 Claim. (Cl. 15—29)



A power-driven hand-held polishing and cleaning device comprising:
a fluid-tight outer casing adapted to be held in the hand;
a fluid-tight inner casing within said outer casing and spaced therefrom, said outer and inner casings defining a fluid-tight liquid containing cavity therebetween;
a sealable inlet in said outer casing for filling said cavity with fluid;
an air inlet including a pressure valve through said outer casing for introducing air under pressure into said cavity;
an electrically driven motor mounted in said inner casing;
a rechargeable storage battery mounted in said inner casing;
a battery recharger electrically connected with said battery and having electrical contact means accessible through said outer casing for connecting said recharger to an external source of electrical current;
an electrical circuit connecting said battery and said motor, said circuit containing and electrical switch positioned on the outside of said outer casing;
a drive shaft journalled by fluid-tight means through said inner and outer casings for rotary movement only and adapted to be driven by said motor, one end of said shaft extending outwardly of said outer casing;
a buffer wheel having a substantially flat lower surface;
connecting means for drivably connecting said buffer wheel to the outwardly extending end of said shaft;
a flexible skirt mounted on said outer casing and surrounding said buffer wheel;
needle valve means having a spray-producing orifice positioned outside of said outer casing and directed to spray liquid adjacent said buffer wheel, said valve means being in fluid communication with said cavity; and

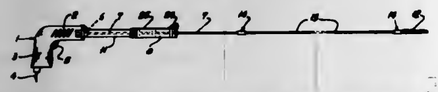
valve operating means operatively connected to said needle valve and actuated by valve actuating means positioned on the outside of said outer casing.

3,293,679
STREET SWEEPER
Thomas F. Murphy, 1625 Terrace Road, Homewood, Ill. 60541
Filed Aug. 10, 1965, Ser. No. 478,555
11 Claims. (Cl. 15—84)



1. A street sweeper comprising, in combination: a chassis; a hopper mounted on said chassis for storing debris; a conveyor means mounted on said chassis for conveying debris to said hopper; a broom means operably associated with said conveyor means; a pivot frame extending upwardly to substantially the top of said hopper, a pivot at the upper end thereof and means for pivoting said hopper about said pivot to dump said hopper to one side of said street sweeper.

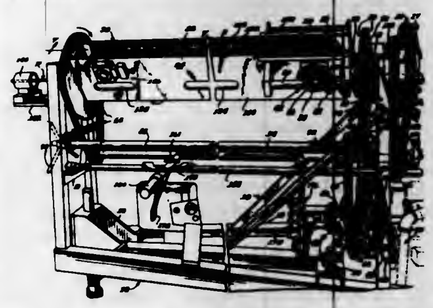
3,293,680
TOOL FOR CLEANING HEAT EXCHANGING SURFACES AND THE LIKE
Paul Wilson, Longueuil, Quebec, Canada, and Walter Wilson, Ville Jacques Cartier, Quebec, Canada
Filed Feb. 17, 1966, Ser. No. 528,125
3 Claims. (Cl. 15—104.1)



1. A portable tool for cleaning heat exchanging surfaces in furnaces and the like, comprising a pistol-shaped body providing an elongated main body portion and a hand grip body portion, said body housing an electric motor and speed reducer, a chuck rotatably carried by one end of said main body portion and driven by said motor and speed reducer, a long shaft having one end engaging and gripped by said chuck, a rotary cleaning tool detachably connected to the other end of said shaft, a hand grip in the form of an elongated block having an axial bore surrounding said shaft intermediate the ends of said shaft with said shaft extending through said bore, bearings mounted in said bore and in which said shaft is journalled, elongated support members extending along said shaft between said body and said hand grip and rigidly secured to the latter and to said body and supporting said hand grip at a distance from said chuck at least equal to the length of said body main portion.

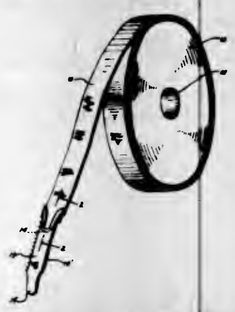
3,293,681
SEWER CLEANING MACHINE
Burton L. Siegal, Chicago, Ill., assignor to O'Brien Manufacturing Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 2, 1966, Ser. No. 524,383
10 Claims. (Cl. 15—104.3)

1. In a sewer cleaning machine for selectively feeding in opposite directions to and from a sewer or the like an elongated composite sectional rod in the form of a series of alternately arranged rod sections and couplers, in combination, a rod-storage basket adapted to receiving the rod in a coiled condition, having a forward feed aperture for the rod, and rotatable about a horizontal axis passing through the feed aperture, a rod drive unit positioned forwardly of the basket and comprising a reversible chain and sprocket conveyor having its chain provided with a reach section disposed in coextensive horizontal register with the feed aperture, and adapted to receive the rod coextensively therealong for rod-impelling purposes, a series of pusher blocks mounted on said chain and selectively engageable with the leading and trailing end faces



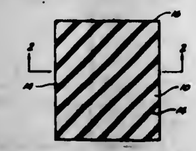
of the couplers for impelling the rod to and from the feed aperture, said rod drive unit being mounted for side-over-side rotation bodily about the horizontal axis of said reach section whereby said pusher blocks are constrained to revolve in orbital fashion about the rod in substantial contiguity therewith, a motor for effecting rotation of said drive unit and basket, a first power train operatively connecting the motor and basket, a second power train operatively connecting the motor and drive unit, and a third power train having a reversible output operatively connecting the motor and conveyor for driving the latter in opposite directions.

3,293,682
REPRODUCING TAPE
Aquila C. Giles, Southampton, N.Y., assignor to Trans-Lux Corporation, New York, N.Y., a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,771
2 Claims. (Cl. 15—210)



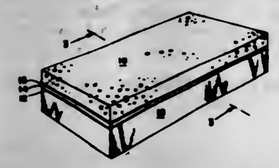
1. A leader end for a tape element adapted for carrying information and for being wound into a multi-turn roll which, when unwound to display the information, is adapted to be transported for display through a slotted guide means comprising a leader strip of a width approximating that of the tape roll, the said leader strip having its lateral edges serrated to form a scarifying medium for cleaning the guide means prior to the movement of the remaining tape of the roll therethrough and means to secure said leader strip to one end of the tape roll.

3,293,683
PAPER TOWEL
Gerald W. Wyant, Montreal, Quebec, Canada, assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Jan. 4, 1965, Ser. No. 423,120
6 Claims. (Cl. 15—506)



1. A cleaning towel comprising first and second adherent sheets superimposed to form a two-ply structure, said first sheet being substantially imperforate and composed of a fibrous material which tends to undergo physical deterioration upon contact with a wet surface and having a detergent material applied to the outer surface thereof, and said second sheet being substantially free of detergent material and consisting of a fibrous material having high water absorption capacity and being substantially resistant to physical deterioration upon contact with a wet surface.

3,293,684
INTEGRAL DETERGENT-SPONGE STRUCTURE
Werner Otto Tundermann, Colonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed June 24, 1964, Ser. No. 377,702
6 Claims. (Cl. 15—685)



4. Means for attaching a layer of synthetic sponge material and a layer of detergent comprising a first coating on said layer of sponge material, said first coating comprising a water insoluble adhesive; a flexible, water impermeable lamina fastened to said layer of sponge material by said first coating of water insoluble adhesive; and a second coating on said lamina, said second coating comprising a water insoluble adhesive; said layer of detergent being fastened to said water impermeable barrier by said second coating; and said layer of detergent comprising a detergent material selected from the group consisting of normally solid water soluble soaps of higher fatty acids having an average of 8 to 20 carbon atoms, normally solid water soluble synthetic organic detergents having an average of 8 to 20 carbon atoms, and mixtures thereof.

3,293,685
DRAPERY CARRIER
Harry S. Rosenbaum, Baltimore, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed Nov. 17, 1964, Ser. No. 411,797
13 Claims. (Cl. 16—87.6)

1. A carrier for hollow drapery rods and the like having a pair of elongated parallel track members forming a wall of said rod and being disposed in a common plane and being spaced apart to provide an elongated slot communicating with the interior of said rod, said carrier comprising:

(a) an annular outer race member having an outer surface and having an inner surface;

(b) an inner race member having a hub portion disposed substantially within said outer race member, a hanger leg extending downwardly beneath said hub portion and a rear wall integrally joined to said hub portion and said hanger leg, said outer surface of said hub portion and said inner surface of said outer race member having cooperating configurations for retaining said hub portion within said outer race member and defining a raceway;

(c) a plurality of bearing balls in said raceway arranged in contact with said inner surface of said outer race member and said outer surface of said hub portion to support said outer race member for free rotation about said hub portion, said race members being adapted to be disposed partially within said rod and with said outer surface of said outer race member in alignment with and in rollable contact with at least one of said track members for movably supporting said carrier thereon with said hanger leg extending beneath said rod for attachment thereto of a drapery or the like; and



(d) means substantially to prevent twisting of said carrier thereby to maintain said outer race member substantially in alignment with said one track member, said last mentioned means comprising a flange projection on said inner race member arranged, upon any substantial twisting of said carrier, to contact said wall of said rod at a point spaced from said outer surface of said outer race member.

3,293,686
HANGER FOR WINDOW SASH BALANCE
Herbert K. Landgren, 815 N. Washburn St., Oshkosh, Wis. 53212
Filed Oct. 22, 1965, Ser. No. 501,075
2 Claims. (Cl. 16—197)



1. A hanger for use in a window sash assembly for interconnecting a supported sash and a supporting sash balancing means which is disposed within a housing formed by a sash guide unit, said sash including hanger engaging means projecting from opposite side edges thereof, said hanger comprising a part adapted to be slidably received within the housing in the sash guide for vertical movement relative thereto, said part being formed from an elongated plastic element which is folded across its midsection to provide a pair of generally similar, spaced-apart facing wall portions having a narrow opening therebetween along two side edges and the top, said wall portions being formed to provide a notch therein transversely of the walls and extending from an intermediate portion of the walls to the upper edges thereof, one of

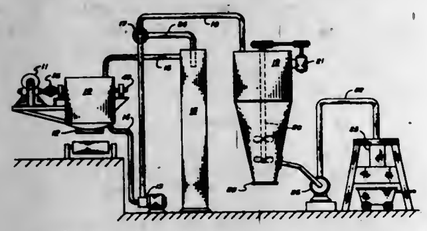
said wall portions including an arcuate groove formed in its inner surface, a locking element supported intermediate its ends on said hanger part of guided sliding movement between said walls by means including an arcuate flange on said element which is seated in said arcuate groove, said arcuate flange and said arcuate groove extending in a vertical direction toward the back of sash balance housing, said locking element also including an elongated slot which extends in a vertical direction toward the back of said sash balance housing, said locking element including adjacent one end means for connection with the sash balancing means and pointed section for penetrating engagement with the wall of the housing for the sash balancing means, and said locking element also including adjacent its other end means accessible through said transverse notch and providing supporting engagement by said hanger engaging means on the window sash, said sash balance connection means, pointed section and sash support means of said locking element being arranged so that when a sash is supported by said hanger said pointed section is drawn out of engagement with the balance housing wall, and when the weight of the sash is removed from the hanger said pointed section is caused to move into engagement with the housing by the tension of the sash balancing means, the relative movement of said locking element being guided by said arcuate groove.

3,293,687

ENZYMATIC REMOVAL OF MEAT FROM BONES

Arnold E. Denton, Moorestown, N.J., John M. Hogan, Orono, Maine, and William J. McBrady, Hazelcrest, and Jack F. Beuk, Hinsdale, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed May 5, 1965, Ser. No. 453,462
3 Claims. (Cl. 17—1)



1. Apparatus for removing meat from bones having meat attached thereto including, in combination: a container equipped with heating and agitating means and adapted to hold meat-containing bones and liquid, a settling tank communicating with said container whereby liquid-containing meat and bones may be transported from the bottom of said container into the top of said settling tank, a separating means communicating with said container, said separating means being adapted to effect separation of bone particles from liquid-containing meat, a valve connected between said container and both said settling tank and said separating means, said valve being positionable to first recycle liquid-containing meat through said container and settling tank, and then to deliver liquid-containing meat from said container to said separating means, and centrifuge means connected with said separating means to permit separation of liquid from solid meat particles.

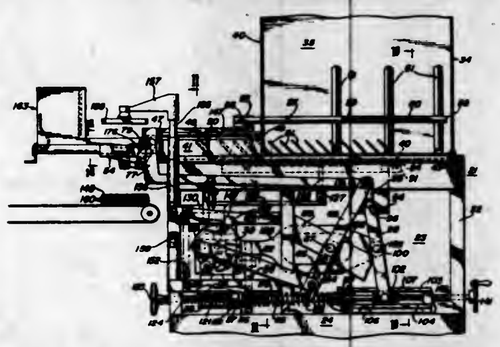
3,293,688

MOLDING APPARATUS FOR PLASTIC MATERIAL

Harry H. Holly, Olympia Fields, Ill., assignor to Hollymatic Corporation, a corporation of Illinois

Filed Dec. 31, 1964, Ser. No. 422,672
21 Claims. (Cl. 17—32)

9. Molding apparatus, comprising: a hopper for retaining a supply of moldable material; a mold having a mold opening therein; access passage means between said hopper and said mold opening; urging means adjacent said passage means and said hopper movable in repeating loop-like cycles for urging said material into said passage means and toward said opening on said cyclical move-



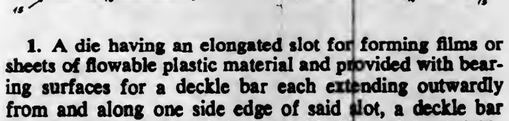
ment of said urging means; feeder means at said passage means movable in repeating loop-like cycles for forcing said material therein into said opening on said cyclical movement of said feeder means; mounting means joining said urging means and said feeder means together as a unit; and means for thusly cyclically moving said unit.

3,293,689

EXTRUSION DIE DECKLE

John J. Chiselko, Martinsville, James A. Gibbons, Somerville, George N. Helmstetter, Belle Mead, and George Robert Perkins, Bound Brook, N.J., assignors to Frank W. Egan & Company, Somerville, N.J., a corporation of New Jersey

Filed May 4, 1964, Ser. No. 364,368
2 Claims. (Cl. 18—12)



1. A die having an elongated slot for forming films or sheets of flowable plastic material and provided with bearing surfaces for a deckle bar each extending outwardly from and along one side edge of said slot, a deckle bar having a sealing face bridging said slot and in slidable sealing contact with said bearing surfaces of the die, and means mounting said deckle bar on said die for movement longitudinally of said slot including a track on the die at each side of and parallel to said slot, a U-shaped deckle bar carrier having a base portion supporting the deckle bar and its arms provided with inturned hanger flanges each of which is slidable on one of said tracks, a rack on each of said flanges, and two pinions journaled on a common shaft on said die and each meshing with one of said racks.

3,293,690

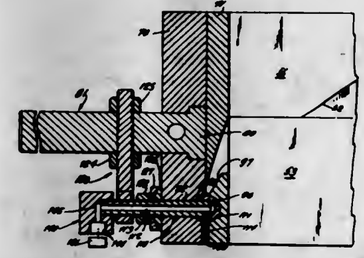
INFLATED EDGE BEAD FOR THERMOPLASTIC FILMS AND APPARATUS FOR THE PRODUCTION THEREOF

Herbert O. Corbett, Bridgeport, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed June 28, 1965, Ser. No. 467,608
3 Claims. (Cl. 18—12)

1. An extrusion die for extruding a flat web of thermoplastic material; said extrusion die comprising a pair of elongated opposed die lips defining a narrow discharge orifice, first and second end plate means extending across the respective opposite ends of said die

lips to terminate the ends of said discharge orifice, passage means extending through said die to convey molten thermoplastic material to said discharge orifice, first and second bead forming orifices in said first and second end plates extending from said passage means to the respective opposite ends of said discharge orifice, first and second air conduits positioned within said first and second bead forming orifices, and a source of gas connected to said first and second gas conduits thereby to discharge a gas stream into the edge regions of said web extruded from said discharge orifice to form inflated beads in the side edges of said web; adjustable support means connected to said first and second end plate means and connected to said first and second gas conduits; said



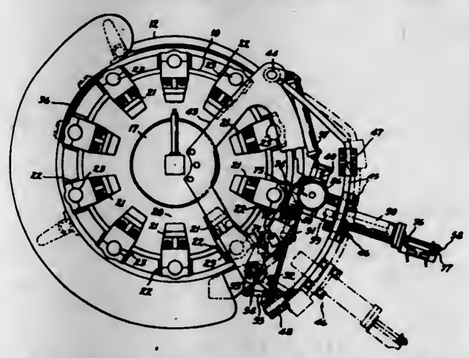
adjustable support means permitting adjustment of the location of the discharge end of said first and second gas conduits with respect to the side edges of the web extruded from said discharge orifice; said adjustable support means including a ball and socket connection; said first and second gas conduits having respective ball bead sections having their tubes extending therefrom and into said edges of said discharge orifice; said first and second end plate means containing generally spherically shaped cavities receiving said ball bead sections of said first and second gas conduits; rotation of said ball bead sections in said spherically shaped cavities adjusting the position of the discharge ends of said thin tubes in said discharge orifice.

3,293,691

ROTARY TRANSFER INJECTION MOLDING MACHINE

Robert W. Osgood, Warren, Pa., assignor to El-Tronics, Inc., Warren, Pa., a corporation of Pennsylvania

Filed May 15, 1964, Ser. No. 367,712
4 Claims. (Cl. 18—20)



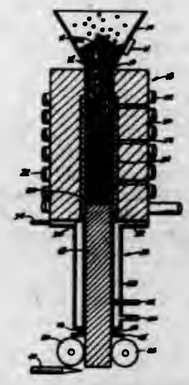
1. In a molding machine having a turret rotatable at a constant rate, a plurality of molding units carried by the turret, each of the molding units comprising relatively movable cooperative elements defining therebetween a sprue, said sprue communicating with mold-cavity spaces defined between the mold elements, a fly feeder for the succession of sprues of the molding units, said fly feeder comprising an extrusion cylinder having a discharge orifice facing said succession of sprues and having a stroke displacement not exceeding a low multiple of the volume-capacity of each of the molding units, means mounting said extrusion cylinder for movement along an arc having the same center as said turret, means synchronized with the turning of said turret for shifting said cylinder to clamp its discharge orifice against each passing sprue and to thereafter release said clamping engagement after travel of the cylinder along said arc in synchronism with the passing sprue, said cylinder and each passing sprue being arcuately movable as a unitary assembly while maintaining said clamping engagement, injection means for performing injection operations by commencing and then terminating the application of extrusion pressure to said cylinder during successive clamping engagements and arcuate movements of said orifice together with successively passing sprues, and means for demand refilling of said cylinder when it approaches exhaustion.

3,293,692

APPARATUS FOR FORMING RIGID POROUS METAL BODY

Seymour Rosenbaum, Dumont, N.J., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Feb. 26, 1964, Ser. No. 347,579
10 Claims. (Cl. 18—26)



1. Apparatus for continuously forming a rigid porous metal body from raw material comprising loose metal pellets or fine particles, said apparatus comprising:

A. means for storing and continuously discharging said raw material,

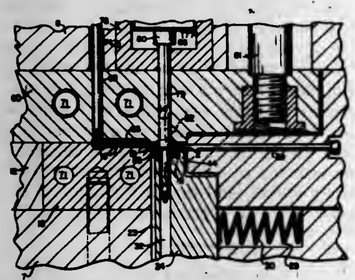
B. an elongate substantially tubular mold having opposite open ends constituting inlet and outlet openings respectively, said inlet end being operatively connected to said storing and discharging means whereby said mold continuously receives said raw material from said storing and discharging means,

C. heating means surrounding said mold and extending substantially the length thereof for heating said raw material within said mold to a predetermined temperature whereby said raw material is continuously formed into a rigid porous metal body,

D. an elongate substantially tubular cooling jacket having a cooling medium circulating chamber therein, said jacket being operatively connected to said mold outlet opening whereby said rigid body passes directly from said mold into said cooling jacket and is cooled therein, and

E. means for introducing a protective non-oxidizing atmosphere through said cooling jacket and into said mold.

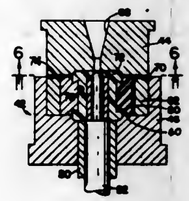
3,293,693
APPARATUS FOR FORMING PLASTIC LOCKING INSERTS IN NUTS
David Obi, Rochester, N.Y., and Charles C. Davis, Jr., Princeton, N.J., assignors, by mesne assignments, to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1963, Ser. No. 272,625
33 Claims. (Cl. 18—30)



1. A machine for molding a plastic insert in a recess in a nut about the bolt receiving aperture therein through an injection aperture in a side of said nut, comprising a mold formed of stationary and movable sections, means for moving said movable section between open and closed positions relative to said stationary section, said stationary mold section comprising a runner block, having a side wall forming one side of a guideway formed with a plurality of spaced injection nozzles opening in longitudinal relation along said side wall, and a locating member movable transversely relative to said runner block forming an adjacent side of said guideway along said side wall, said mold sections being formed with registering channel portions in opposed faces thereof closed in the closed position of said mold sections for passage of plastic material therethrough, said movable mold section forming a portion of said guideway opposed to said locating member, means for feeding a plurality of nuts equal in number to the number of injection nozzles into said guideway along said locating member and mold side wall while said movable mold section is in open position, said movable mold section engaging said nuts in said guideway in closed position and cooperating with said locating member in locating said injection aperture in said nuts in aligned relation with said injection nozzles, means carried by said mold sections engaging and moving said nuts along said side wall and locating member to register said injection apertures with said injection nozzles, holding means operated by said movable mold section in closed position to engage and hold the nuts in said guideway with the surface portions adjacent said injection apertures in tight engagement with said side wall about said injection nozzles, and means for injecting plastic material through said channel portions and injection nozzles into said injection aperture, and recesses in said nuts.

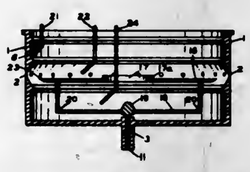
3,293,694
MOLD APPARATUS FOR MAKING SUB-FLUSH COMMUTATORS
Thomas G. Taylor, Jr., North Canton, Ohio, assignor to Dayton Precision Corporation, Dayton, Ohio, a corporation of Ohio
Original application Mar. 5, 1962, Ser. No. 177,387, now Patent No. 3,253,172, dated May 24, 1966. Divided and this application Mar. 12, 1965, Ser. No. 439,142
4 Claims. (Cl. 18—36)

1. Apparatus for manufacturing a sub-flush commutator comprising a mold assembly which includes a lower mold member and an upper mold member, said lower mold member having a cavity in the top side thereof, a squeeze ring positioned in said cavity and having an internal diameter corresponding to the desired diameter of said commutator, an upwardly projecting shutoff ring formed integral with said lower mold member and pro-



jected upwardly into said cavity at a position radially inwardly of said squeeze ring, said upper mold member having its lower end positioned above said cavity and having passage means for mold material therein which communicates with said cavity.

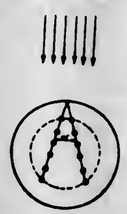
3,293,695
ENCAPSULATING APPARATUS
John W. Baymiller, Manheim Township, Lancaster County, Pa. (1708 Lititz Pike, Lancaster, Pa. 18504); Walter J. Bohrn, Manor Township, Lancaster County, Pa. (2107A Plymouth Road, Lancaster, Pa. 18504); and William A. Moggio, 433 Spring Drive, Millersville, Pa. 18508
Filed June 9, 1964, Ser. No. 373,816
3 Claims. (Cl. 18—2.6)



1. In a centrifugal encapsulating apparatus for encapsulating a filler material in an encapsulating medium, the apparatus comprising a rotatable cylinder having a plurality of spaced encapsulating orifices, means for delivering an encapsulating medium to said orifices, impinging means rotatably mounted in said cylinder to impel a filler material into said orifices, means for delivering a filler material to said impinging means, and means for rotating said impinging means and said cylinder at desired speeds, the improved impinging means comprising an impelling disk in the shape of an annulus, a plurality of spokes supporting said disk and mounted on said rotating means for said disk at a position below said disk, and means for delivering said encapsulating medium to the bottom of said cylinder through the center opening in said annular impelling disk.

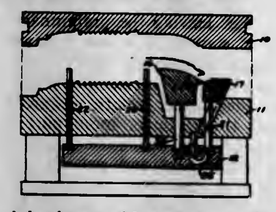
3,293,696
SPECIAL SPINNERETS FOR OBTAINING YARNS OF SYNTHETIC LINEAR POLYMERS HAVING HIGH REGULARITY OF COUNT AND OF DYABILITY
Gaetano Bruni, Milan, Italy, assignor to SNIA Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy
Filed July 1, 1964, Ser. No. 379,545
Claims priority, application Italy, July 24, 1963, Patent 702,112
2 Claims. (Cl. 18—8)

1. A spinneret for melt-spinning synthetic linear polymers in a process in which individual substantially parallel filaments are drawn from a plurality of spinning orifices of the spinneret in a given spinning direction through a stream of gaseous cooling medium which impinges on said filaments in a direction essentially transverse to said spinning direction, said orifices being arranged in two converging rows which include an angle therebetween, the distance between any two adjacent



orifices in either of said rows being such that the projections of the centers of these two orifices to a line perpendicular to the direction of said stream is at least one millimeter, the rows are so disposed that a line bisecting said angle is parallel to the direction of the stream.

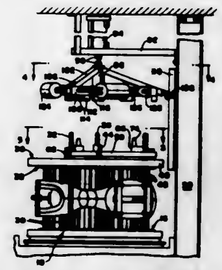
3,293,697
APPARATUS FOR STRIPPING INJECTION MOLDED ARTICLES FROM A MOLD
Rudolph D. Balint, Windsor, Ontario, Canada, assignor to International Tools Ltd., Windsor, Ontario, Canada, a corporation of Ontario, Canada
Filed May 28, 1964, Ser. No. 370,927
10 Claims. (Cl. 18—42)



1. In an injection mold apparatus, the combination comprising
a mold half having a main body portion,
a first movable part of said mold half including a peripheral nose portion,
a second movable part of said mold half including a complementary surface to said nose portion which co-operates therewith and with another mold half to form a re-entrant portion on a plastic article,
means for guiding said first part and said second part in generally diverging paths relative to said main body portion,
means for moving said first and second mold parts in said divergent paths away from said main body portion at a rate in a direction axially of the main mold portion which is substantially equal until said second part clears the periphery of said nose portion of said first part,
and means for thereafter accelerating said second part in said divergent path and at a velocity such that the second part moves axially a greater distance than said first part to thereby strip the plastic article from the nose of said first part.

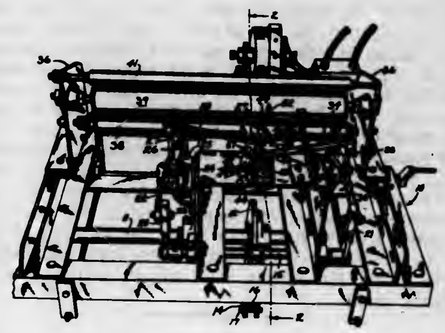
3,293,698
ROTATIONAL MOLDING APPARATUS FOR THERMOPLASTIC ARTICLES
Elliott Bavers, 2321 Ave. I, Brooklyn, N.Y. 11800
Filed Jan. 3, 1964, Ser. No. 335,594
19 Claims. (Cl. 18—43)

1. A mold and frame assembly, comprising a first mold section including a base portion, said base portion having a plurality of upright mold part supporting elements mounted thereon, at least one mold part supported on said element, and a plurality of spaced upright guide-and-lock posts mounted thereon, and a second frame section comprising a base portion having a plurality of dependent supporting elements for complementary mold parts mounted thereon, and at least one mold part supported on said last-named element, and a plurality of guide-and-lock



posts admitting openings formed therein, said openings arranged to dispose said mold parts and said complementary mold parts in register when said openings are fitted over said guide-and-lock posts, and cooperating means connected to said second frame section and on said guide-and-lock posts for releasably interlocking said second frame section and said guide-and-lock posts, with said mold parts engaged on one another.

3,293,699
APPARATUS FOR FORMING AND INSERTING LOOPED THREADS IN SURGICAL SPONGES
Herbert E. Nicol, Milwaukee, Wis., assignor to Pratt Manufacturing Corp., Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 23, 1963, Ser. No. 310,655
10 Claims. (Cl. 19—145)

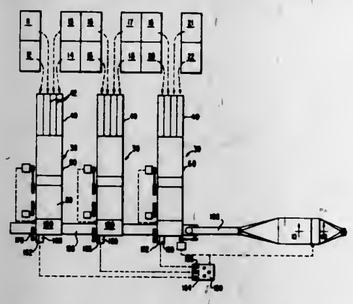


10. Apparatus for laying looped thread on a flexible web comprising means for advancing said web from a source of supply, means for guiding thread from a source to said moving web, means including movable flat blades between which the thread passes for periodically causing rotational twisting of the thread between the blades and for producing slack in the thread between the blades and web to flip the thread into a loop just prior to the merger of said looped portion of the thread with the web and for periodically releasing the thread to permit untwisting thereof, and means for pressing the web against the looped thread.

3,293,700
CHARGING, CLEANING AND METERING APPARATUS

Lofton H. Smith, 2164 Collins Drive NW., Atlanta, Ga. 04490

Filed May 27, 1964, Ser. No. 370,500
20 Claims. (Cl. 19—204)



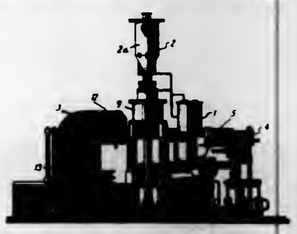
1. A charging, cleaning and metering equipment for feeding and blending fibers, comprising a laterally compartmented charger defined by vertical partitions and having a substantially horizontal, belt driven conveyor below the partitions, a feeder disposed at the output end of said conveyor, a substantially horizontal second conveyor and a substantially vertical elevator apron in said feeder, a vertically disposed and pivoted level gate in said feeder, linkage connecting said gate to a belt shifter for stopping and starting said first conveyor at predetermined levels of fiber in the feeder, a plurality of cleaner grates of semicylindrical shape arranged in an upwardly inclined direction, each grate having a rotatable cleaner cylinder disposed coaxially with the axis of the grate, a vertically disposed cleaning chamber above each cylinder, said chambers communicating with each other at the inclined plane of said cylinders, a refuse chamber below said grates having an air exhaust opening, said elevator apron being arranged to feed a mixture of fibers from the compartments of said charger to the first of said vertically disposed cleaning chambers, first means for simultaneously driving said elevator apron and horizontal conveyors, second means for driving said cleaner cylinders, the last of said vertical cleaning chambers feeding into the upper part of a metering chamber, a pair of fluted delivery rolls in the bottom of the metering chamber, third means for driving said delivery rolls, manually controllable potentiometer means for varying the speed of said delivery roll drive means, a level control assembly in said metering chamber above the delivery rolls, switch means operated by tilting of said level control assembly to start and stop said first drive means at predetermined levels of cleaned fiber in the metering chamber, a delivery conveyor below said metering chamber to receive fiber from said delivery rolls, and fourth drive means for moving said delivery conveyor at a selected speed.

3,293,701
AUTOMATON FOR MANUFACTURING SHELL HALF-MOLDS FROM SAND AND RESIN COMPOSITIONS

Afraim Markovich Neimark, Alexandr Mikhailovich Derbasov, Vitaly Sergeevich Zakalinsky, Victor Leonidovich Levitan, Jury Vladimirovich Kamensky, and Victor Maximovich Korolev, all of Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky i Proektno-Tekhnologicheshy Institute Ugolnogo Mashinostroenija

Filed July 22, 1963, Ser. No. 296,735
4 Claims. (Cl. 22—20)

1. An automatic machine for making shell half molds from a dry molding mixture of sand and a hardenable thermosetting resin, comprising a base adapted to have intermittent movement imparted thereto, a plurality of spaced arms carried by the base with each arm supporting a pattern upon which the molding mixture is adapted to be deposited to provide the shell half mold, means for applying a separating liquid to each pattern, a preshaping station located in the path of movement of the arms including a hopper located above the arms and containing the molding mixture, a head carried by the hopper for depositing the mixture on the pattern, means for raising a pattern from the arm when the arm is located below the hopper into operative relationship respecting the head, conduit means within the head through which the mixture can pass, means for introducing compressed air into the head for compacting the mixture about the pattern, and means for lowering the pattern to the arm after the mixture has been compacted

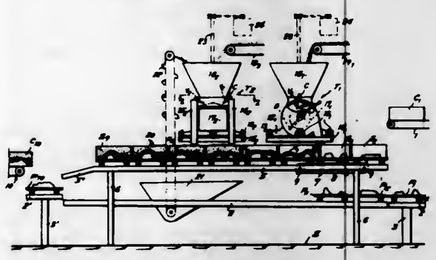


thereabout, a final shaping station located in the path of movement of the arms to which the pre-shaped pattern is moved after leaving the preliminary station, said final pre-shaping station including a lower mold part for the pre-shaped pattern, an upper mold part, and a fluid piston and cylinder means for moving the lower mold part and pre-shaped pattern upwardly into operative relationship to the upper mold part for imparting the desired shape to the unsolidified shell and for moving the lower mold part and pattern away from the upper mold part to the arm, an oven in the path of movement of said arms through which the thus shaped shell and pattern pass for baking the same, and means in the path of movement of the arm operative to remove the baked shell from the pattern after the same leaves the oven.

3,293,702
MACHINE FOR THE PREPARATION OF FOUNDRY MOLDS FROM MATCH-PLATES

André Denis Lucien Malgret, 4 Ave. de la Grange, Saint-Maur-des-Fosses, France

Filed Apr. 13, 1964, Ser. No. 359,248
Claims priority, application France, June 12, 1963, 937,839
2 Claims. (Cl. 22—20)



1. Apparatus for placing mold sand in open-topped foundry flasks having match-plates therein and supporting means for the match-plates and flasks, the combination comprising:

a support for said supporting means located at a loading station;

sand discharging means including two upright impellers, each impeller having an inlet opening for receiving sand and a generally downwardly directed discharge spout;

drive means connected to rotate said impellers;

means supporting said sand discharging means for rotation about an upright axis with said discharge spouts being located over said support at said loading station, the downwardly directed discharge spouts of the impellers being positioned eccentrically to the upright axis of rotation of said sand discharging means and being arranged at angles to the vertical and on opposite sides of the upright axis of rotation of said sand discharging means;

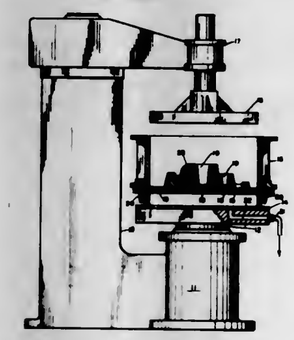
means arranged to rotate said sand discharging means about its upright axis of rotation, said last-named means comprising means for delivering sand at different rates to said inlet openings to said impellers whereby the reaction forces of sand discharged from said impellers are different and create a rotating force on said sand discharging means;

said means for delivering sand to said impellers comprising a common sand receiving chamber with openings to the impellers opening therefrom and valve means positioned to selectively vary the relative effective size of said openings to said impellers.

3,293,703
VACUUM MOLDING APPARATUS

Arthur R. Taccone, 4217 E. Lake Road, Erie, Pa. 16511

Filed Nov. 13, 1962, Ser. No. 236,936
1 Claim. (Cl. 22—26)



A molding machine comprising

a base,

means to support a pattern plate on said base,

means to support a flask on said pattern plate,

a pattern on said pattern plate,

said pattern having relatively deep cavities therein,

orifices in the bottoms of said cavities,

means connecting a source of vacuum to said orifices whereby sand is induced to flow to the bottoms of said cavities,

means above said pattern plate to pack molding sand around said pattern,

said means to support said pattern plate comprising a member on said base having upwardly extending members thereon defining a chamber,

said pattern plate resting on said upwardly extending members,

sealing means providing a seal between said members and said pattern plate,

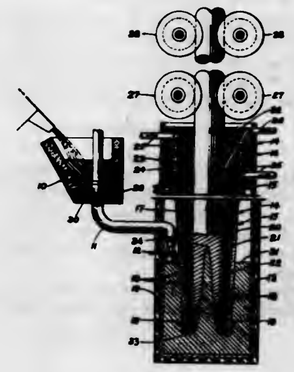
said means connecting said source of vacuum comprising a channel through said member connected to said source of vacuum,

and means selectively connecting said source of vacuum and a source of air under pressure to said chamber.

3,293,704
METHOD AND APPARATUS FOR THE CASTING OF FUSIBLE MATERIALS

Howard A. Fromson, Rognes Ridge Road, Weston, Conn. 06880

Continuation of application Ser. No. 401,732, Oct. 5, 1964. This application Feb. 18, 1966, Ser. No. 534,592
15 Claims. (Cl. 22—57.2)



1. Apparatus adapted for the continuous upwardly casting of a fusible material which comprises:

(a) a refractory container for a fusible material in its fused state;

(b) an elongated mold extending in an upwardly direction which comprises a backing material having a high thermal conductivity and an internal channel having the cross-sectional shape and slightly larger dimensions than the cross-section of an elongated casting which is to be produced by the use of the apparatus;

(c) a means for cooling the said backing material which provides means for contacting a surface thereof other than its inner surface with a circulating cooling fluid; and

(d) a solid layer on the inner surface of the backing material which forms the internal channel of a retaining material which has a thermal conductivity substantially lower than that of the said backing material and a melting point lower than that of the material to be cast in the mold;

(e) a container for a fused body of the retaining material positioned above the said mold with an orifice in its bottom of the same shape and dimensions as the upper end of the channel formed by the backing material of the mold;

(f) a means above the said container for the fused body of retaining material for continuously withdrawing upwardly a casting from the channel of the said mold formed by its internal layer of solidified retaining material, through the said upper container; and

(g) a means for introducing the fused material from the refractory container for the fused material into the lower end of the mold channel with sufficient hydraulic energy to cause the fused material to flow upwardly into said mold channel.

11. A method for the continuous casting of steel in an upwardly direction which comprises

(a) continuously flowing a stream of molten steel into the lower end of an internal channel of a mold which extends generally in an upwardly direction and which comprises

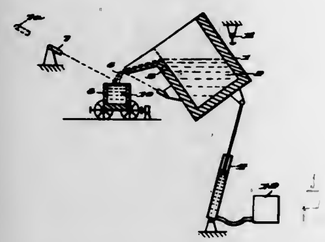
(b) a lining layer of barium chloride supported by a backing material selected from the group consisting

of copper and copper alloys having a cross-sectional shape which forms an internal channel which has the same cross-sectional shape but slightly larger dimensions than desired in the elongated casting being produced;

(c) passing the molten steel upwardly through the mold channel formed by the layer of the barium chloride on the said backing material while withdrawing heat from the molten steel as it passes upwardly to cause its solidification;

(d) at a rate which keeps a layer of barium chloride adjacent the backing material in the solid state while permitting a layer thereof adjacent the molten steel to melt, while continuously pulling the solidified casting from the upper end of the mold channel.

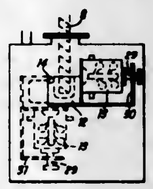
3,293,705
APPARATUS FOR AUTOMATICALLY POURING MOLTEN METAL
Rudolf Lenz and Siegfried Meyer zu Hoberge, Herdecke (Ruhr), Germany, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Nov. 14, 1963, Ser. No. 323,751
Claims priority, application Germany, Nov. 14, 1962, B 69,625
1 Claim. (Cl. 22—79)



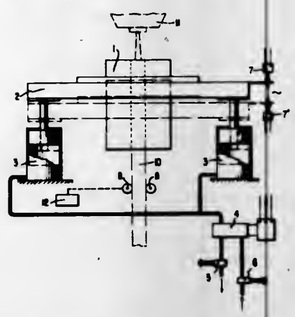
Apparatus for automatically pouring fused metal from a tiltable crucible into a transportable ladle or mold comprising a tiltable crucible, a transportable ladle or mold, tilting mechanism for said crucible, means for automatically switching on said tilting mechanism when said ladle or mold attains a predetermined position underneath the pouring spout of said crucibles to cause a first forward tilting movement of said crucible and effect a flow of metal from said crucible into said ladle or mold, a first feeler element comprising a photo-electric cell which is directed toward the path to be taken by the flow of metal from said crucible to said mold and which is responsive to said metal flow to initiate a second forward tilting movement of said crucible at a speed which is lower than the speed of said first tilting movement, and a second feeler element which is responsive to a predetermined amount of molten metal in said ladle or mold to cause a backward tilting movement of said crucible, said first feeler element causing the backward tilting movement of said crucible to stop when the flow of metal from said crucible ceases.

3,293,706
APPARATUS FOR MELTING AND CASTING METALS
Adam Dunlop, Rotherham, England, assignor to The Birmingham Small Arms Company Limited, Birmingham, England, a British company
Filed Mar. 18, 1964, Ser. No. 352,815
7 Claims. (Cl. 22—82)

1. An apparatus for skull melting metal electrodes and for casting the molten electrode metal, said apparatus comprising housing means defining a melting chamber, a crucible disposed within said chamber, a mould detachably mounted on said crucible within said chamber and being disposed to one side of and normal to said crucible, means arranged on a stationary axis for mounting the assembly of said crucible and said mould for selective pivotal movement between angularly spaced apart melting and casting positions in said chamber, said crucible being upright in said melting position and being tilted substantially 90° in said casting position for pouring molten metal with said mould being upright and below said crucible in said casting position to receive molten metal dispensed therefrom, feed means for axially advancing the tip of an electrode to be melted into said chamber and substantially coaxially into said crucible when in its upright melting position, and means for melting the electrode tip as it is axially advanced into said crucible, said stationary axis being so arranged with respect to the axis of electrode advancement that said crucible clears the portions of the electrode therein as said assembly is swung toward said casting position, whereby pouring of the molten metal may be effected without retracting the advanced electrode.

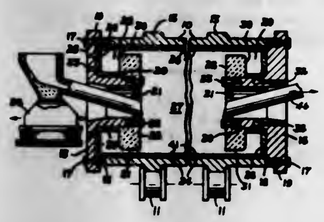


3,293,707
METHODS IN CONTINUOUS CASTING
Erik Allan Olsson, Zurichstrasse 66, Kusnacht, Zurich, Switzerland
Filed Nov. 15, 1963, Ser. No. 324,005
Claims priority, application Sweden, Sept. 7, 1960, 8,557
4 Claims. (Cl. 22—200.1)



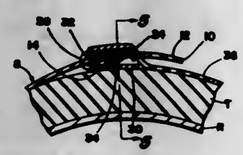
1. A method of continuous casting with a reciprocating mold, comprising the steps of continuously pouring molten metal into one end of a mold open at opposite ends, and continuously withdrawing a partly solidified casting from the opposite end of the mold while applying opposite sequential forces to reciprocate the mold back and forth in the line of casting withdrawal, the reciprocating force applied in the advancing direction of casting during each cycle of reciprocation being of such strength that the mold in absence of friction and sticking resistance should attain a greater velocity than the casting but due to said resistance is braked to an extent that the casting and the mold have substantially the same velocity, whereby during simultaneous movements of the mold and casting in the same direction the mold exerts a longitudinal pressure on the casting to compress any fissures in the skin of the casting.

3,293,708
METHOD OF CENTRIFUGALLY CASTING FLANGED TUBULAR MEMBERS
Frank W. Fruitman, Arlington, Va., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Mar. 4, 1964, Ser. No. 349,798
14 Claims. (Cl. 22—200.5)



1. A method of casting a tubular member having at least one internal flange, comprising the steps of pouring a predetermined quantity of molten metal into a tubular mold having the interior thereof separated by baffles into pressure and flange forming chambers interconnected only by an annular passage between the outer periphery of the baffles and inner side walls of said mold, rotating said mold about its axis at a speed sufficient to cause said molten metal to assume a uniform thickness over the inner side walls of said mold, pouring a predetermined volume of fluid material having a specific gravity not greater than that of said metal in said pressure chamber to force a predetermined volume of said molten metal from said pressure chamber through said passage into said flange forming chamber, correlating said speed of rotation and the volume of said material so that the thickness of said metal on said inner surface is at least equal to the radial dimension of said passage, and maintaining said rotation until said metal solidifies so that said metal in said pressure chamber forms a tubular member having an integral internal flange thereon in each said flange forming chamber.

3,293,709
CLAMP DEVICE
Robert J. Holton, Rocky River, Ohio, assignor to Thanerman Products, Inc., a corporation of Ohio
Filed Oct. 23, 1964, Ser. No. 406,118
7 Claims. (Cl. 24—20)



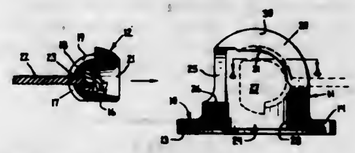
7. A clamp device comprising, a strip of resilient material having a tongue at one end with teeth projecting therefrom, a bridge at the other end of said strip adapted to receive the tongue therethrough, said bridge including a resilient pawl means adapted to pivotally coact with selective of said teeth upon tightening of said device, said pawl means including a reversely bent arm spaced beneath said bridge, and the free end of said arm being bent upwardly to provide a flange for interlocking coacting engagement with selective of said teeth.

3,293,710
EMERGENCY BUTTON
Elvira Ammirati, 98 Union Ave., Amityville, N.Y. 11701
Filed Dec. 16, 1964, Ser. No. 418,927
1 Claim. (Cl. 24—103)



A fastening device comprising an enlarged portion of button-like configuration having a fabric piercing flexible portion of needle and thread-like qualities secured thereto and a portion of spool-like configuration having an enlarged slot therein dimensioned to receive the free end of the fabric piercing portion after it has been passed through an associated fabric and adapted to be rotated about its longitudinal axis to wind the fabric piercing portion thereabout to snugly secure the fastener to said fabric.

3,293,711
HITCH
Parfitt S. Emery, Jr., 200 N. 3rd St., Elwood, Ind. 46036
Filed Aug. 18, 1965, Ser. No. 480,727
4 Claims. (Cl. 24—128)



1. A cable anchor, comprising

a keeper element having an axis of substantial symmetry and having a socket therein for holding an end of a cable perpendicular to said axis of substantial symmetry,

a mounting base, and

a shell extending from said mounting base,

said shell being provided with a cavity extending thereinto adapted to receive said keeper element and to allow it to rotate about its axis of substantial symmetry through approximately 180° and

said shell being further provided with a diametral slot communicating with said cavity for passage of a cable therethrough,

said diametral slot being provided with an inwardly disposed rib adjacent each side thereof, and

said keeper element being provided with a diametral groove adapted to receive said inwardly disposed ribs with the lateral walls of said groove snugly embracing the remote side walls of said ribs when said keeper element is introduced into said cavity.

3,293,712
SAFETY PIN CONSTRUCTION
Emil H. Mark, 3 Ocean Ave., Milford, Conn. 06460
Filed Jan. 21, 1965, Ser. No. 426,853
1 Claim. (Cl. 24—161)

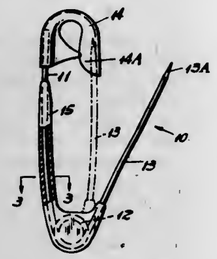
A safety pin of wire construction comprising,

(a) a wire pin leg portion provided with a point at one end thereof,

(b) a wire back leg portion having an upper and a lower end,

(c) a resilient wire spring coil portion integrally connected to the adjacent ends of said wire pin leg and wire back leg portions,

(d) said coil normally biasing said wire pin leg portion toward open position of said pin,
(e) a head connected to the upper end of said back leg portion,
(f) said head defining a catch for receiving the pointed end of said pin in the closed position thereof,



(g) and a resilient plastic coating covering substantially the entire length of said wire back portion and said connected coil with said coating being in intimate encompassing relation with the wire back portion and defining a tubular covering therefor having an unobstructed outer frictional gripping and cushioning surface so as to facilitate grasping thte wire back leg portion.

3,293,713
ADJUSTABLE STRAP CONNECTOR
John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons Inc., Corte Madera, Calif., a corporation of California
Filed Nov. 18, 1964, Ser. No. 411,982
5 Claims. (Cl. 24—196)



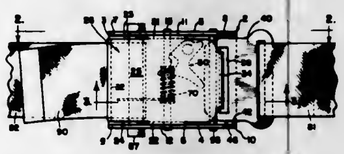
3. An adjustable connector for webbing and the like, comprising,
(a) a frame,
(b) sides and ends of the frame defining a web receiving opening in said frame,
(c) a web gripping member extending across said frame parallel with the adjacent end of the frame and being slideably held on said sides,
(d) said web gripping member being of generally U-shaped cross section, the space between the side walls thereof being wider than the thickness of said adjacent end of the frame, and the recess formed in said space between the side walls of said U-shaped member facing toward said adjacent end of the frame,
(e) one side wall of said U-shaped member being higher than the other, whereby when the captive side of said web is played around the outside of the higher side wall and under said gripping member and around the other side wall, and the free side of said web is inserted over said other side wall and across said recess between said gripping member and said adjacent end of the frame, and finally out along said captive side of the web, then the pull on the captive side of the web tilts said gripping member thereby to tilt said higher side wall to grip the web against said adjacent end.

3,293,714
SAFETY BUCKLE
Philip W. Shafer, 9417 S. 77th Court, Hickory Hills, Ill.
Filed June 25, 1964, Ser. No. 377,948
6 Claims. (Cl. 24—201)



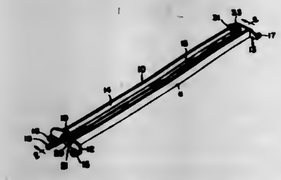
1. A magnetic buckle for a seat belt comprising an open ended channel, a belt fastener connected to the open ended channel and being adapted for attachment to a portion of a seat belt, a magnet connected to the open ended channel, a second magnet engageable with the first mentioned magnet, a second open ended channel connected to the second magnet and being engageable with the first mentioned open ended channel for locking therewith, a second belt fastener connected to the second open ended channel and being adapted for attachment to a second portion of the seat belt, whereby the attraction of the magnets holds the channels aligned and in position for firm engagement upon the application of a load to the seat belt.

3,293,715
SAFETY BELT BUCKLE
Stanley J. Wisniewski, Chicago, Ill. (730 Oriole Drive, Streamwood, Ill. 60103)
Filed Mar. 16, 1965, Ser. No. 440,268
12 Claims. (Cl. 24—230)



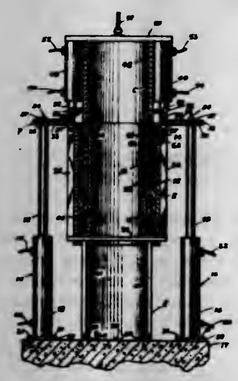
1. A belt buckle comprising a body portion having a base wall and a pair of upstanding flanges, a latch element having a top wall and a pair of ears extending between the flanges, a pintle extending through coaxial openings in the flanges and ears, said latch having a catch portion extending from one end of the top wall toward said bottom wall, said bottom wall having a catch-receiving slot, an ejector pivoted to the bottom wall, said ejector having a portion positionable beneath the catch in bridging relation to said slot in the released position of the buckle, and spring means reactively disposed between the latch element in a position biasing said catch portion toward the bottom wall and said ejector to a position beneath the catch, said spring means oriented to become more highly stressed pursuant to movement of said ejector into said body portion out of the path of movement of the catch portion whereby to increase the force exerted by said catch portion to locking position including entry into said slot.

3,293,716
FABRIC HOLDING CLAMP
Katherine B. Sanders, 1236 SE. 4th Ave., Fort Lauderdale, Fla. 33316, and Norman S. McEwen, Fort Lauderdale, Fla.; said McEwen assignor to said Sanders
Filed Sept. 28, 1964, Ser. No. 399,692
6 Claims. (Cl. 24—243)



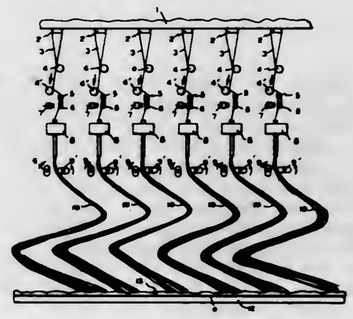
1. A fabric holding clamp comprising
(a) an elongated bed,
(b) a frame enclosing three sides of said bed,
(c) end pieces at each end of said frame,
(d) a straight clamp bar running parallel to and disposed above said elongated bed,
(e) transverse pivot means between the sides of said frame and spaced inwardly but contiguous to a first end piece,
(f) a pin attached to said pivot means and extending vertically through said clamp bar,
(g) the second end piece having a sloping slot therein for receiving said clamp bar, and
(h) spring means beneath said bed and pivotally urging said clamp bar in a direction away from said second end piece.

3,293,717
PIPE MOLDING MACHINE
Paul R. Helms, Rte. 1, Jones Road, Roswell, Ga. 30075
Filed Dec. 16, 1963, Ser. No. 330,711
4 Claims. (Cl. 25—30)



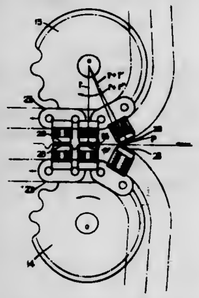
1. A pipe moulding machine including a base, a cylindrical upright support fixedly mounted on said base, said support extending vertically from said base a distance substantially equal to the length of pipe to be moulded by said machine, a united inner and outer pair of coaxial mould shells substantially equal in length to the vertical extent of said support, defining therebetween a cylindrical mould space adapted to receive said support, a support ring on the upper end of said support, extending between said inner and outer shells, a compressing ring axially spaced from said support ring extending between said inner and outer shells, means for moving said shells downwardly to cause compression of material in the lower end of said mould space by said support ring, means for moving said compression ring downwardly with respect to said shells to cause compression of material in the upper end of said mould space and means for moving said shells independently of both of said rings beyond the plane of both of said rings to expose a finished pipe section.

3,293,718
APPARATUS FOR FORMING NON-WOVEN WEB STRUCTURES
Thomas Melvin Sheets, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,945
3 Claims. (Cl. 28—1)



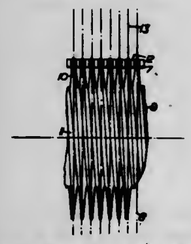
3. In an arrangement for combining, in an elastic fluid atmosphere, a plurality of laterally spaced and aligned parallel moving streams of an elastic fluid having a plurality of fibrous elements dispersed therein and collecting the fibrous elements from the combined streams in the form of a unitary coherent non-woven web structure having uniform thickness, density, and directional properties, the improvement comprising stream combining and controlling apparatus, said apparatus comprising means for aerodynamically rapidly diverting each stream in an oscillating manner along a general lateral line of direction transverse to the path of stream movement, said general lateral line substantially coinciding with the plane defined by said parallel moving streams to cause the diverted streams to merge and form a single combined evenly blended continuous laterally extending moving stream of fluid and fibrous elements, said means comprising a set of movable members positioned in opposed positions adjacent each stream, said members constructed and arranged with respect to each stream to alternately check at opposed sides of said stream the flow of the elastic fluid atmosphere induced by said stream, each set of movable members comprising a pair of diametrically opposed elements each having a curved surface movable into position closely adjacent said stream to check said induced flow while its diametrically opposed element is further from said stream and inoperative to check said induced flow, said elements operated in predetermined phase relationship so that each in turn presents a curved surface adjacent to a side of the fluid stream whereby said induced flow is substantially instantaneously alternately checked by each element at opposite sides of said stream to rapidly divert said stream in said oscillating manner.

3,293,719
APPARATUS FOR PRODUCING HIGH BULK FIBROUS MATERIAL
Kaichi Hitomi, Kachio Takagi, and Seisosuke Nomura, Tokyo, and Sadayuki Okada, Odawara-shi, Japan, assignors to Mitsubishi Reiyon Kabushiki Kaisha and Daido Keori Kabushiki Kaisha, both of Tokyo, Japan
Original application Oct. 3, 1961, Ser. No. 142,546, now Patent No. 3,248,771, dated May 3, 1966. Divided and this application Oct. 22, 1965, Ser. No. 500,600
8 Claims. (Cl. 28—1)



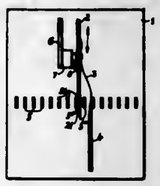
1. A machine for treating fibrous material, said machine comprising, in combination, means for feeding said fibrous material through a treating zone, means for bringing a relaxing medium into contact with said fibrous material in said treating zone and means to isolate spaced longitudinal portions of said fibrous material from said contact with said relaxing medium, said means for isolating comprising gripping means for gripping said spaced longitudinal portions of said fibrous material and thereby to isolate said portions from said contact with said relaxing medium and said means for feeding said fibrous material including means for over-feeding said fibrous material as it is gripped so that the longitudinal portions of said fibrous material between the gripped portions are initially slack and therefore free to shrink.

3,293,720
APPARATUS AND METHOD FOR SPACING OF THREADLINES IN A WARP SHEET
David Charles Cumbers, Pontypool, England, assignor to British Nylon Spinners Limited, Pontypool, England
Filed Oct. 12, 1964, Ser. No. 403,236
Claims priority, application Great Britain, Oct. 16, 1963, 40,787/63
4 Claims. (Cl. 28—32)



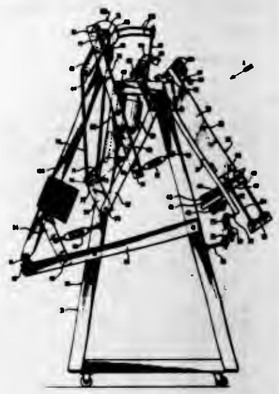
2. A device for winding a warp sheet onto a beam comprising a reed between the dents of which individual yarns may be located, a screw-threaded rod having a double helical pitch of such fineness that the peaks of the screw thread may pass into the spaces between the dents of the reed, and guide means to allow said screw-threaded rod to be moved into a first position such that the peaks of the thread pass into the said spaces and thence along the spaces towards the outer ends of the dents into a second position such that individual yarns may be located in the troughs of the screw thread.

3,293,721
LUBRICATING MEANS IN A REEDING MACHINE
August Baumgartner, Uster, Switzerland, assignor to Zellweger AG Apparate- und Maschinenfabriken Uster, Uster, Switzerland
Filed Dec. 1, 1964, Ser. No. 415,000
Claims priority, application Switzerland, Feb. 12, 1964, 1,696/64
8 Claims. (Cl. 28—45)



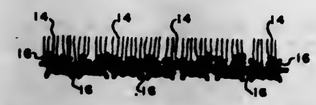
1. In a reeding machine for reeding warp threads preparatory to weaving and of the type including a reed having spaced teeth and a drawing element, such as a heald, for penetrating between the teeth to reed the warp threads, the heald, during such penetration, having frictional contact with the reed teeth: the improvement comprising lubricant means in the path of movement of the heald toward the reed effective to contact the heald surface to lubricate the same.

3,293,722
LOOM DROP WIRE STRINGING MACHINE AND METHOD
Samuel L. Huffman and Everett K. Duckett, Greenville, S.C., assignors to Carolina Plating & Stamping Company, Greenville, S.C., a corporation of South Carolina
Filed Dec. 4, 1964, Ser. No. 416,019
19 Claims. (Cl. 28—46)



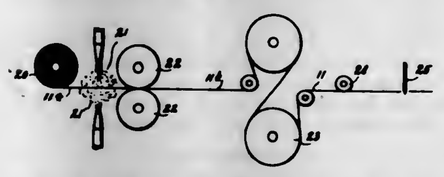
3. A machine for stringing drop wires comprising a supporting frame, a magazine device for stacks of "up" and "down" drop wires on said frame, means to gradually feed said stacks upwardly in said magazine device, rockable means on the frame to lift uppermost pairs of "up" and "down" drop wires from the tops of said stacks and to convey each lifted pair away from said magazine device, a drop wire stringing bar on said frame in spaced relation to the magazine device and in the path of movement of the rockable means, relatively stationary drop wire engaging guide means on the frame to shift each pair of drop wires into overlapping relation during movement thereof by said rockable means toward said stringing bar, and moving means on said frame adjacent the guide means and stringing bar to effect transfer of each pair of drop wires from the rockable means onto said stringing bar.

3,293,723
METHOD OF MAKING PILE FABRIC
Cyril G. Evans, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,721
2 Claims. (Cl. 28—72)



1. The method of making a pile fabric which includes forming pile loops from a continuous elasticized thermoplastic intermittently crimped monofilament yarn having nonuniform latent shrinkage characteristics, cutting the loops and then developing the latent shrinkage characteristics by subjecting said pile fabric to a heat treatment whereby the crimped portion of the yarn shrinks extensively to provide a fur-like appearance.

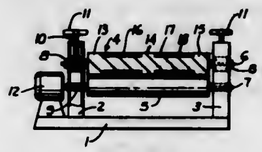
3,293,724
METHOD OF FINISHING A KNITTED PAPER FABRIC
Benjamin Kimball, Gilman, Vt., assignor to Gilman Paper Company, New York, N.Y., a corporation of New Hampshire
Filed Apr. 17, 1964, Ser. No. 360,656
1 Claim. (Cl. 28—76)



In the art of textile manufacturing, the method of making knitted paper bags which comprises:
(a) knitting twisted wet-strength paper yarn into a tubular fabric on a tubular knitting machine,
(b) removing said knitted tube from said machine and flattening said tube,
(c) applying steam to both sides of the flattened tube,
(d) passing the steamed flattened tube between calendering rolls under a pressure of approximately 25 tons, thus increasing the interlock of yarns, substantially closing the needle holes to reduce the sand sift loss, effectively decreasing the stretch of the fabric, and substantially increasing the strength thereof,
(e) drying the flattened tube to insure the removal of moisture and effectively set the fabric in its calendered condition, and
(f) then cutting the flattened tube into suitable lengths for sandbag formation.

3,293,725
ROLLED SHEETS HAVING OPENINGS THERETHROUGH AND PROCESS FOR THEIR MANUFACTURE
Addison Y. Gunter and Thomas E. Owen, Houston, Tex., assignors to Hudson Engineering Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 24, 1964, Ser. No. 346,804
6 Claims. (Cl. 29—6.1)

1. In a process of manufacturing a sheet of malleable material having a series of openings therethrough, the step of applying rolling stress to laterally spaced apart longitudinal areas of the sheet which is sufficiently greater than that simultaneously applied to an unslit longitudinal area therebetween that the elongation of the laterally spaced apart areas relative to the unslit area will stretch

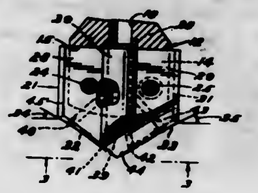


said unslit area to cause it to tear at longitudinally spaced apart locations therealong.

3,293,726
ELECTROLYTIC CAPACITORS
Ronald John Everitt, East Cote, England, assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,364
9 Claims. (Cl. 29—25.31)

9. A method of producing an electrolytic capacitor including the steps of assembling a capacitor element from a pair of electrodes before formation of a dielectric layer on either one or both of the electrodes, together with chemically reducible compound; inserting the capacitor element together with an electrolyte in a capacitor container, said capacitor container having terminal elements projecting therefrom that are connected within the container to the electrodes of the capacitor element; sealing the container completely; and forming a dielectric layer by anodic oxidation on an electrode of said capacitor element, said chemically reducible compound absorbing the hydrogen gas generated within said sealed container during said electrolytic oxidation process.

3,293,727
CUTTING TOOL
James B. Simms, Taylor, Mich., assignor to Bilt Rite Tool & Machine Co., Roseville, Mich., a corporation of Michigan
Filed Apr. 12, 1961, Ser. No. 102,498
5 Claims. (Cl. 29—106)



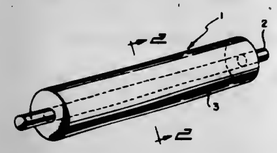


1. A cutting tool comprising: a body; a shank formed on one end of said body for mounting the tool in a support for a cutting operation; a head on the other end of said body; a cutting tip releasably secured in said head; said cutting tip having a plurality of outwardly extended blade portions having cutting edges on the forward ends thereof; said cutting tip having an axial longitudinally disposed rib which projects outwardly beyond the sides of said blade portions; a passage formed through said tool and terminating at said cutting tip in said head for conducting a coolant to said cutting tip; said rib having a

coolant chamber formed therein for the reception of pressurized coolant from the passage in said tool; and a plurality of laterally spaced apart, forwardly outward divergent fluid passages formed in said blade portions for conducting coolant from the chamber in said rib and into engagement with a workpiece being cut and the tool at the cutting area for cooling the same and for carrying away chips from the work area.

3,293,728
INK APPLYING ROLLER AND PROCESS OF PREPARATION THEREOF

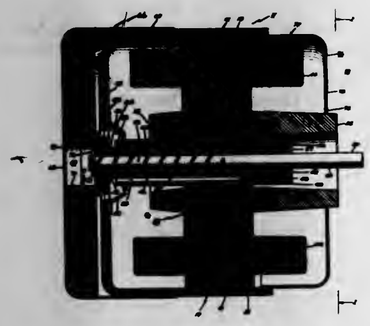
Edward D. Hill, 11212 Edgewater Drive, Cleveland, Ohio 44102
Filed Apr. 14, 1965, Ser. No. 448,107
16 Claims. (Cl. 29—132)



1. An ink applying roller comprising a substantially central shaft and a surrounding ink applying layer consisting essentially of the reaction product of castor oil and tolylene diisocyanate.

3,293,729
METHOD OF MAKING A DYNAMO-ELECTRIC MACHINE

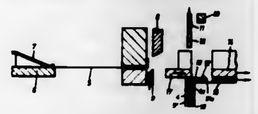
Wayne J. Morrill, 3448 S. Washington Road, Fort Wayne, Ind. 46804
Filed July 25, 1962, Ser. No. 216,699
8 Claims. (Cl. 29—155.5)



1. The method of making a dynamoelectric machine having a combined magnetic yoke and housing member comprising the steps of: forming a blank of at least two superposed, abutting, unbonded sheets of relatively thin magnetic material; unitarily drawing said blank into a cup-shaped member having side and bottom walls defining a cavity thereby to render an unbonded press fit between the thus deformed sheets; securing an elongated bearing to said bottom wall, said bearing extending into said cavity; forming a laminated pole piece member of at least two superposed, laminations of relatively thin magnetic material with a central bore and spaced ends conforming to the interior surface of said side walls; assembling at least one field coil on said pole piece member; pressing said pole piece member with said coil thereon entirely into said cup-shaped member cavity to extend across the same end spaced from said bottom wall with said ends intimately engaging said side wall and with said bore concentric with said bearing whereby said cup-shaped member forms a combined housing and magnetic yoke for said pole piece member; providing a rotor member having a shaft; and positioning said shaft in said bearing with said rotor member positioned in said bore.

3,293,730
METHOD FOR WINDING INSULATING COMBS FOR USE AS PLUG-IN CONNECTIONS WITH CONTACT STRIPS

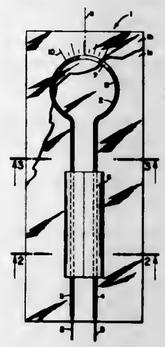
Roland Klotz, Steinheim an der Murr, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,553
Claims priority, application Germany, Oct. 26, 1963, St 21,234
6 Claims. (Cl. 29—155.5)



1. A method for wrapping insulating combs for plug-in connections, comprising:
the step of bending the end of a contact strip at a right angle;
advancing said contact strip into a cutting position;
cutting said contact strip to a certain length;
placing an insulating comb in contact with said certain length of contact strip;
bending said contact strip to enclose the sides of said comb, leaving two trailing edges of said contact strip including the edge with the bend; and
bending the trailing edges of said contact strip at a sharp angle to more tightly enclose the comb.

3,293,731
METHOD OF MAKING A COULOMETRIC DEVICE

Curtis C. Beusman, Chappequa, N.Y., assignor to Curtis Instruments, Inc., Mount Kisco, N.Y., a corporation of New York
Original application June 4, 1962, Ser. No. 199,795, now Patent No. 3,193,763, dated July 6, 1965. Divided and this application Feb. 10, 1965, Ser. No. 438,456
10 Claims. (Cl. 29—155.5)

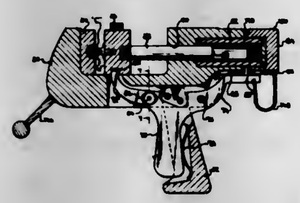


1. A method of forming a coulometric device, which method comprises the steps of forming a filamentary body to a predetermined curvilinear configuration, positioning a body of porous material in spanning relation between spaced positions along said filamentary body with said porous body embracing at least a portion of the periphery of said filamentary body at each of said spaced locations,

positioning said filamentary and porous bodies between superposed layers of non-conductive material which is deformable under pressure and which will retain a permanent set upon release of deforming pressure, applying pressure to said superposed layers to cause said filamentary and porous bodies to be impressed into said layers and to cause said filamentary body to form a channel in said layers and through said porous body, withdrawing said filamentary body from said channel, and injecting into said channel two columns of liquid metal such that their adjacent ends are spaced apart at a position intermediate the positions where the channel penetrates said porous body.

3,293,732
HAND TOOL FOR CRIMPING ELECTRICAL CONNECTORS

William F. Broske, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 13, 1959, Ser. No. 806,093
16 Claims. (Cl. 29—155.5)



1. The method of exploding a cartridge having a hollow bore therein, which includes a primer located centrally of the cartridge including the steps of providing a die means with a rod secured to the non-working surface, securing the cartridge in place so that the bore is aligned with a workpiece, driving the rod into the cartridge to detonate the cartridge and then permitting the die means to be actuated by the explosive charge toward the workpiece.

3. A tool of the character described including dies operable into and out of crimping position, said tool adapted to receive an explosive charge, and means on one of said dies for detonating said explosive charge.

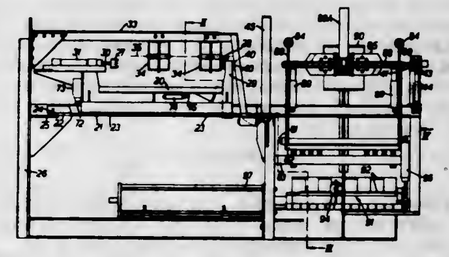
3,293,733
COMPOSITE ALUMINUM ARTICLE AND METHOD FOR OBTAINING SAME

Irwin Broverman, Cheshire, and George Jagaciak, Milford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Oct. 23, 1963, Ser. No. 318,157
5 Claims. (Cl. 29—157.3)

4. A process of fabricating a sheet metal panel having a smooth hard component layer and distensions raised from the opposite softer component layer to form hollow portions in said panel, said panel comprising, as the hard component, a sheet of aluminum containing from 0.20% to 0.40% vanadium uniformly dispersed therein in a finely divided form, and a sheet of said aluminum as the softer component, comprising the steps of:
(A) forming a blank by positioning said sheets adjacent one another, one of said sheet having applied to a confronting surface thereof a pattern of weld inhibiting material,
(B) heating said blank to a temperature within the range of 800° to 1000° F.,
(C) pressure welding said sheets together in the areas not covered by said weld inhibiting material,
(D) cooling and cold working said blank to develop a high strength level in said sheets,
(E) partially annealing said blank in a critical temperature range in which said softer aluminum component undergoes considerable loss of strength by recovery and recrystallization but in which said aluminum with vanadium component undergoes only slight loss of strength by recovery relative to said softer aluminum component thereby developing a differential in yield strength between the component layers thereof while preserving the finely divided vanadium dispersion,
(F) and inflating the blank in the unwelded areas by the application of fluid pressure therein.

3,293,734
MACHINES FOR REMOVING SPLITTER BLADES FROM NUCLEAR REACTOR FUEL CANS

Frank H. Buckley, Heston, England, assignor to Fairey Engineering Limited, Heston, England, a company of Great Britain
Filed Dec. 13, 1963, Ser. No. 330,354
10 Claims. (Cl. 29—200)



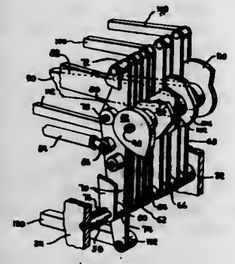
1. A machine for stripping splitter blades from a nuclear reactor fuel can assembly, said blades extending longitudinally of the can and generally radially outwardly therefrom, and secured to the can by at least one strap which extends substantially circumferentially around said can and blade assembly, and which has end portions extending radially of the can, said machine comprising: a can assembly support carriage; means for angularly orienting said can assembly about its longitudinal axis relative to said carriage; power operated cutting means adjacent said carriage adapted to sever the radial portions of said strap to free at least one splitter blade; power-operated blade withdrawal means adapted to grip the freed splitter blade and withdraw it radially from said can assembly; and means to relatively position said can assembly, said cutting means and said blade withdrawal means; and remote control means for sequentially controlling the operation of the machine whereby the splitter blades may be removed by a remotely controlled sequence of operations.

3,293,735
INSERTING APPARATUS

Charles Michael Lovendusky, Enola, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed June 9, 1965, Ser. No. 462,705
8 Claims. (Cl. 29—203)

1. Apparatus for removing an individual contact element from a strip of such elements and inserting the removed element into a printed circuit board or the like comprising, means for supporting said board, means for shearing said individual element from said strip, means for feeding said strip, and inserting means for moving said individual element into said board, said supporting, shearing, feeding, and inserting means being disposed in cooperative relationship in an operating zone, a plurality

of actuator levers pivotally mounted on a common axis, a power shaft extending parallel to and spaced from said common axis, a plurality of actuated levers pivotally mounted on said power shaft, cam means effective between said power shaft and said actuator levers for os-



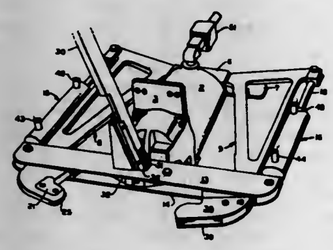
cillating said actuator levers about said common axis, linkage means effective between said actuator levers and said actuated levers for oscillating said actuated levers about said power shaft, said actuated levers having pin-slot connections with said inserting means and said actuator levers being operatively connected to said feeding means and said shearing means.

3,293,736

CLIPPING APPARATUS FOR APPLYING A CLIP AROUND A BAG END INCLUDING GATE MEANS FOR POSITIONING THE BAG END

Maynard J. G. Tipper, Oakland, Calif., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California

Filed June 28, 1965, Ser. No. 467,258
7 Claims. (Cl. 29—243.57)



1. In a clipping apparatus adapted to secure a clip about an article,

means for urging a clip along a path of travel toward a clipping point,

a die at said point adapted to be engaged by said clip for deforming said clip about such article,

a die holder supporting said die at a point in said path,

a gate cooperatively associated with said die holder for defining an article receiving space between said gate and said die holder,

means supporting said gate for movement in a direction laterally away from said path in one direction, and

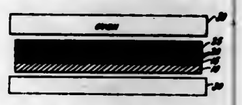
means supporting said die holder for lateral movement away from said path in the opposite direction, whereby a relatively large space is provided between said gate and said die holder for receiving such article therein.

3,293,737

PROCESS FOR MAKING MOLD FOR VACUUM-FORMING MATERIALS

Vernon A. Falkenau and Carl W. Church, Mishawaka, Ind., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

Original application May 22, 1963, Ser. No. 282,443. Divided and this application Aug. 31, 1965, Ser. No. 484,043
3 Claims. (Cl. 29—423)



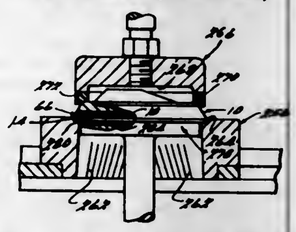
1. The method of making a shape-imparting device comprising: fashioning a shape-imparting surface on a layer of porous metal; depositing a plurality of fibers on a surface other than said shape-imparting surface of said layer of porous metal: depositing a supporting layer upon the same surface of said layer of porous metal whereby said supporting layer becomes substantially bonded to said layer of porous metal; rendering all exterior surfaces of said device except said shape-imparting surface air-impervious: and heating said device to disintegrate said fibers, leaving a network of passage where said fibers had been.

3,293,738

PLASTIC RETAINER ASSEMBLY MACHINE AND METHOD

Washington J. Caldwell, Garden City, and James G. Holt, Dearborn, Mich., assignors to C. M. Hall Lamp Company, Detroit, Mich., a corporation of Michigan

Filed Jan. 10, 1962, Ser. No. 165,454
37 Claims. (Cl. 29—451)



1. A method for assembling a resilient plastic retainer between a fragile element and the inner surface of a housing having an opening therein which is larger than the element and smaller than the resilient retainer, comprising the steps of locating a length of resilient retainer on the periphery of an element, aligning the element and the resilient retainer with respect to the opening in the housing, uniformly peripherally compressing the resilient retainer against the element until it is smaller than the opening in the housing by applying axial force directly on the resilient retainer and moving the compressed resilient retainer through the opening and into the housing by translational motion, and simultaneously carrying the element with the resilient retainer through the opening and into the housing.

11. A machine for assembling a resilient plastic retainer between a fragile element and the inner surface of a housing having an opening therein which is larger than the element and smaller than the resilient retainer comprising, means for locating a length of resilient retainer on the periphery of an element, fixture means for uniformly confining the periphery of said retainer, means for aligning the element and the resilient retainer with respect to an opening in a housing tool, means for forcing said retainer and said element into said fixture means and compressing the resilient retainer against the element in said fixture means until it is smaller than the opening

in the housing, and means for applying force directly on the compressed resilient retainer to move the element and the compressed resilient retainer through the opening and into the housing where the resilient retainer will expand to engage the inner surface of the housing for resiliently supporting and retaining the element in the housing.

3,293,739

METHOD OF HOLDING DEFORMABLE OBJECTS

Carl W. Hoglund, Toledo, and Arthur G. Coy, Salem, Ohio, assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Continuation of application Ser. No. 842,442, Sept. 25, 1959. This application Jan. 28, 1965, Ser. No. 431,759
8 Claims. (Cl. 29—471.1)



1. The method of supporting a large workpiece characterized in that it tends to be non-form sustaining under its own weight and pressure comprising the steps of

molding a support surface to the configuration of a master pattern corresponding to the intended shape of said workpiece,

engaging a surface of the workpiece with the support surface,

conforming the workpiece to the shape of the support surface, and

performing work on the workpiece while held in the conformed state.

5. The method of supporting a plurality of workpiece sheets to form a single surface of larger total area than any one of said sheets each of which is so thin as to be non-form sustaining under its own weight and pressure comprising the steps of

molding a plurality of support members which when assembled provide a substantially continuous support surface of the configuration of a master pattern corresponding to the intended shape of said surface,

engaging each workpiece sheet with an assembled support member to construct the general outline of said surface,

conforming the workpiece sheets to the shape of said support surface, and

performing work on each workpiece sheet while held in the conformed state.

3,293,740

METHOD OF PRODUCING A HOLE SAW MANDREL

Sherwood G. Enders, Bowley's Quarters, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed June 16, 1964, Ser. No. 375,616
6 Claims. (Cl. 29—475)

1. The method of producing a hole saw mandrel, which comprises the steps of:

(a) providing a mandrel shank from ordinary bar stock having a polygonal cross-section;

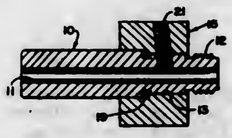
(b) forming an axial bore in the shank, whereby a pilot drill may be inserted in the completed mandrel;

(c) forming a cylindrical portion of reduced diameter on the shank;

(d) forming a mandrel body with a bore and a counterbore therein, whereby an internal annular shoulder is formed between the bore and counterbore, and whereby the diameter of the counterbore is less than the greater width of the shank measured across its longitudinal edges;

(e) placing braze ring on the shank between the round diameter and the remaining portion of the polygonal shank;

(f) press-fitting the shank into the mandrel body, whereby the cylindrical portion of the shank is received in the bore of the mandrel body, the braze ring is disposed against the internal annular shoulder on the body, and the longitudinal edges of the shank score the wall of the counterbore in the mandrel body and form respective longitudinal ridges therein;



(g) drilling and tapping a transverse hole through the mandrel body and shank, whereby a set screw may be received therein in the completed assembly for holding the pilot drill in place; and

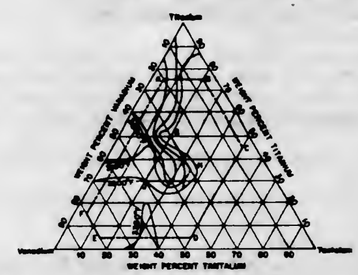
(h) brazing and simultaneously heat-treating the assembly, whereby the braze runs along the longitudinal ridges in the counterbore in the mandrel body, and whereby the assembly is hardened to a desired degree.

3,293,741

BRAZING ALLOYS FOR REFRACTORY METALS

Ralph G. Gilliland, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 20, 1964, Ser. No. 361,635
3 Claims. (Cl. 29—494)



2. The method of joining tungsten, tantalum, niobium, molybdenum and alloys containing a predominant proportion of said metals to themselves and to one another which comprises disposing surfaces of the parts to be joined in abutting relationship with a brazing alloy disposed adjacent said abutting surface, said brazing alloy consisting of 5 to 80 weight percent vanadium, 5 to 50 weight percent tantalum, 5 to 75 weight percent titanium, heating the resulting assembly to brazing temperature in the range of about 3000° F. to 3400° F. under non-oxidizing conditions and cooling the resulting brazed joint.

3,293,742

METHOD OF PERCUSSIVE WELDING

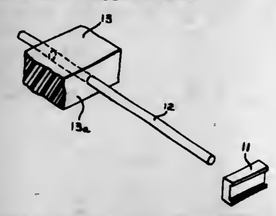
George F. Chanelik, Downers Grove, and John Daneczko, Jr., Oak Park, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 3, 1964, Ser. No. 415,683
5 Claims. (Cl. 29—495)

1. A method of percussively welding an article to an object which comprises the steps of:

applying at least to a selected conductive surface area of the object a welding flux which consists essential-

ly of a liquid polyoxyethylated-nonylphenol and a suitable agent for adjusting the viscosity of the flux to a range wherein the flux provides a thick, uniform coating over the surfaces of the object to which the flux is applied; and



percussively welding a selected conductive surface area of the article to the selected conductive surface area of the object having the flux thereon.

3,293,743
MACHINE FOR WELDING ARTICLES OF MANUFACTURE
Dale Barnard, Cochranton, Pa., assignor to Glass-Tite Industries, Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 22, 1965, Ser. No. 427,447
7 Claims. (Cl. 29—563)



1. A machine for attaching small pieces of strip to small disks comprising

a welding station adapted to direct a strip of material from which said disks are to be formed therethrough,

means to direct a supply of said ribbon to said strip,

welding means to weld an end of said ribbon to said strip,

reference means for providing a reference indicia on said strip,

means to sever the welded end of said ribbon from said supply,

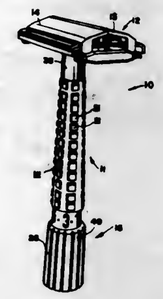
a punching station,

blanking means at said punching station for blanking out said disks of said material from said strip having said end welded thereto,

and means at said punching station cooperating with said reference indicia on said strip for positively locating said ribbon relative to said punching station whereby said disks are punched out with said material welded thereto at a predetermined position thereon.

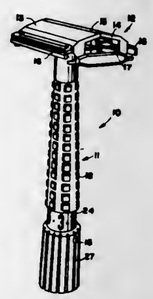
3,293,744
SINGLE RAZOR CAP OPENING AND BLADE ADJUSTING MEANS FOR SECTIONAL CAP TYPE RAZORS
Leopold Karl Kuhnl, Stratford, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,927
1 Claim. (Cl. 30—60.5)

In a safety razor having a handle means, guard means, a cap means carried on said handle means for opening and closing movement relative to said guard means, and spring means acting on said cap means to afford movement thereof, the improvement which comprises the provision of a single adjustment means forming a part of said handle means to provide for said opening and closing movement of said cap means and to incrementally vary the relative positions of said guard and cap means in the closed position of said cap means, said adjustment means including a cam follower and a cam means urged into mutual engagement by said spring means, said cam means having a series of notch-like formations disposed at different elevations and said



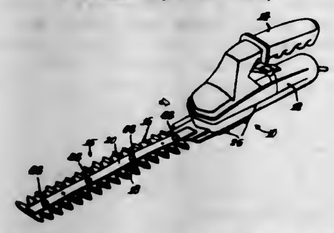
cam follower being adapted to be selectively moved along said notch-like formations to permit relative incremental adjustment between said guard and cap means in the closed position of said cap means, said cam means further including a sharp rise to receive said cam follower to obtain said opening and closing movement.

3,293,745
SINGLE CAP OPENING AND BLADE ADJUSTING MEANS FOR RAZORS HAVING SECTIONAL CAPS
Clarence O. Schrader, Sherman Oaks, Calif., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,686
2 Claims. (Cl. 30—60.5)



1. An adjustable safety razor comprising a guard, an elongated generally tubular handle member joined to said guard, a spider stem received in said tubular handle member and having one end thereof extending through said guard for joining to a spider, a pair of cap sections pivotally supported on said spider and engageable with said guard for opening and closing movement on shifting of said spider to clamp and release a razor blade, spring means urging said spider stem in a direction to open said cap sections, first and second cam surfaces concentrically disposed on said tubular handle member, an adjustment knob having first and second cam followers disposed in axial opposition for co-operation with said first and second cam surfaces, each of said first and second cam surfaces including a series of undulations on which is received an associated cam follower to permit incremental shifting of said spider stem, and a steep rise portion on each of said first and second cam surfaces for opening said cap sections.

3,293,746
HEDGE TRIMMER
Ralph C. Maxson, Skokie, Ill., assignor to Vermont American Corporation, Louisville, Ky., a corporation of Kentucky
Filed Mar. 22, 1965, Ser. No. 441,763
5 Claims. (Cl. 30—223)



1. In a hedge trimmer or the like of the type having drive means for reciprocating one cutting blade relative to another to perform a cutting operation, the improvement comprising a blade assembly including, in combination, a first cutting blade having a first set of cutting teeth spaced along one longitudinal edge thereof and a second set of cutting teeth spaced along an opposite longitudinal edge thereof, the cutting teeth of said second set being in oppositely disposed relation to the cutting teeth of said first set, a second cutting blade having a third set of cutting teeth spaced along one longitudinal edge thereof and a fourth set of cutting teeth spaced along an opposite longitudinal edge thereof, the cutting teeth of said fourth set being in offset relation to the cutting teeth of said third set, and means for mounting said first and second blades in overlying relation for relative longitudinal movement to effect a cutting operation.

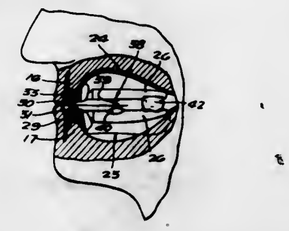
3,293,747
MUSCLE ANCHORAGE APPLIANCE
Melvin Denholtz, 114 W. Mount Pleasant Ave., Livingston, N.J. 07039
Filed Sept. 30, 1963, Ser. No. 312,559
7 Claims. (Cl. 32—14)



1. An orthodontic appliance which comprises a pressure member of plastic-like material and arch-shaped to conform to part of a patient's mouth arch, said member being adapted for disposition in front of the alveolar tissue of the patient's mouth, means to maintain the arch shape of said pressure member comprising a connector element attached to said pressure member and having end sections extending from either side of the pressure member, buccal located attachment means for slidably and loosely connecting the respective end sections of the connector element to a posterior tooth on either side of a patient's dental arch, and coil spring means mounted on the respective end sections of the connector element on either side of the pressure member between the pressure member and said attachment means for receiving and transmitting pressure created by the patient's lip engaging the pressure member.
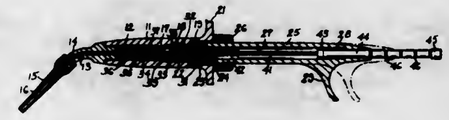
3,293,748
PHYSIOLOGIC METHOD AND APPARATUS FOR DETERMINING MANDIBULAR RELATIONS
Clawson N. Skinner, 2018 El Rey Drive, Whittier, Calif. 90606
Filed Feb. 24, 1959, Ser. No. 802,589
9 Claims. (Cl. 32—19)

5. In combination, a pair of base plates adapted to be supported on the upper and lower alveolar ridges of a patient being measured for the fabrication of dentures, a resilient height indicator including a spring, means anchoring one end of said spring to one of said base plates with its other end extending vertically toward the other of said base plates, said spring and the anchorage therefor having a combined vertical height corresponding to the



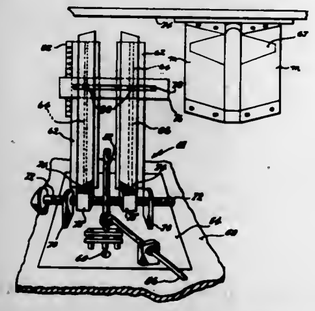
vertical distance between said base plates whereby when the jaws on which the same are to be mounted are closed in normal masticating position, said indicator is then under slight compression and effective to provide a sensory signal to the patient that the jaw is closing in a comfortable and equitable manner.

3,293,749
AMALGAM GUN
Edward T. George and Irving Allen, Hamden, Conn., assignors, by direct and mesne assignments, of one-half to Connecticut Scientific Center, Inc., New Haven, Conn., a corporation of Delaware, and of one-half to John Mauro, Jr., Hamden, Conn.
Filed Feb. 3, 1964, Ser. No. 342,033
6 Claims. (Cl. 32—60)



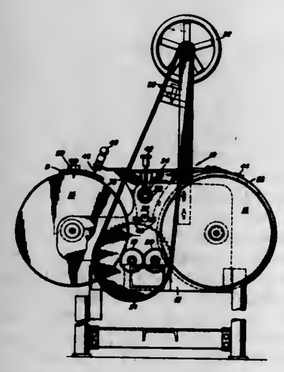
1. An amalgam gun comprising a tubular body, a tip mounted on the forward end thereof for delivery of amalgam therefrom, a tubular trigger barrel having a portion thereof slidably mounted within said body from the rearward end of said body, a sleeve secured to said trigger barrel within said body, a collet slidably mounted within said body, the rearward end of said collet adapted to mate with the forward end of said sleeve, said collet being provided with a plurality of circumferentially spaced, inwardly extending teeth adapted to be inwardly deflected during engagement of said collet with said sleeve, and a plunger slidably mounted through said body, said trigger barrel, said sleeve and said collet and extending into said tip, said plunger being provided with a plurality of outwardly extending teeth along a portion of the peripheral surface thereof, said teeth adapted to be engaged by the teeth on said collet during inward deflection thereof, whereby forward movement of said trigger barrel causes engagement of said sleeve with said collet effecting a gripping of said plunger by said collet through the mating teeth to effect forward movement of said plunger during forward movement of said trigger barrel and whereby rearward movement of said trigger barrel effects a release of said collet to permit rearward movement of said trigger barrel and collet without affecting the position of said plunger.

3,293,750
STEREONEPHOGRAPH
Wallace E. Howell, Lexington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 4, 1964, Ser. No. 342,576
3 Claims. (Cl. 33—20)



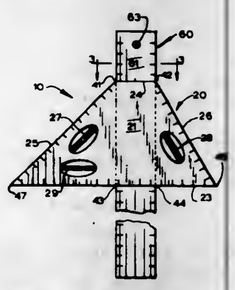
1. In a device for mapping a stereoscopically produced cloudscape image, a unit movable in a mapping area, a stylus attached to said unit and movable therewith for recording movements thereof in said mapping area, means mounted on said unit for providing a pair of illuminated vertical slits, masking means for reducing said slits to a pair of illuminated points, each of said points being presented simultaneously to an eye of an operator to form a single point virtual image, means for moving said unit about in said mapping area in such a manner that the point virtual image follows the contour of said cloudscape virtual image, and a recorded map is thus made of the cloudscape contours.

3,293,751
DIE-LAYOUT MACHINE
William F. Ward, Hampstead, and Charles E. Smith, Lutherville, Md., assignors to The Ward Die-Vise Company, Baltimore, Md., a corporation of Maryland
Filed Nov. 16, 1965, Ser. No. 508,120
10 Claims. (Cl. 33—22)



1. A die layout machine, comprising, a pair of drums mounted parallel and horizontally spaced from each other and arranged for rotation in opposite directions, means coupled to said drums for rotating said drums at a predetermined speed ratio with respect to each other, one of said drums having a smooth surface to receive a layout drawing adjacent to the surface thereto, means including a pair of parallel spaced members mounted one above the other and positioned intermediate said horizontally spaced drums, means including a translating arm extending from a point above the top surface of said one drum to a point above the top surface of said other drum, sliding means embracing said topmost member, said translating arm being secured intermediate its opposite ends to said sliding means, with said sliding means permitting said translating arm to be shifted back and forth parallel to the axis of said drums, said sliding means having a steady rest consisting of a pair of opposing elements which lightly bear against the lowermost member, means including a lens and reticule fastened to one end of said translating arm in position to view said layout drawing on said one drum, and means including a scriber mounted on the other end of said translating arm positioned above said other drum, with said scriber being arranged to be depressed and detented to a lowered position as desired to contact said other drum.

3,293,752
GEOMETRICAL INSTRUMENT
Harry A. Shuman, Hastings, Nebr., assignor to Harriet Shuman Davis and Anne Shuman Mercier, both of Hastings, Nebr.
Filed July 29, 1965, Ser. No. 475,783
1 Claim. (Cl. 33—27)



A geometrical instrument comprising:
(A) A generally trapezoidal stock comprising a pair of parallel planar conterminous trapezoidal faces having mirror image congruency, a pair of parallel planar bases including a shorter upper base and a longer lower base, a pair of planar lateral sides one of said lateral sides being at an angle that is a multiple of 7½ degrees with respect to the longer lower base and another of said lateral sides being at an acute angle with respect to the longer lower base that is a multiple of 7½ degrees, said planar bases and lateral sides being perpendicular to the conterminous trapezoidal faces, said trapezoidal stock having a slot therethrough of rectangular cross-sectional shape, said slot being centered between the trapezoidal faces and intersecting both planar bases at a 90 degree angle, the width of said slot being coextensive with the length of the shorter upper base, the respective trapezoidal faces being provided with graduated length measuring indicia along the bases and the lateral sides, and
(B) An elongated bar of rectangular cross-sectional shape passing through said slot so that the trapezoidal stock completely obscures from view that portion of the elongate bar located within the slot, the width of the elongate bar being substantially equal to the width of the slot so that the elongate bar is slidably journalled by the trapezoidal stock, a leaf spring attached to the interior of the stock along one lengthwise surface of the slot so that one elongate surface of the bar is resiliently urged against the second lengthwise surface of the slot, both sides of the elongate bar being provided with graduated length measuring indicia along the elongate edges of the bar and a pair of colinear sharp points attached perpendicularly to either side of the elongate bar central axis at the zero point of the graduated measuring indicia of the elongate bar.

3,293,753
DESIGN CREATING TOOL
Harold M. Gage, 4836 Crown Ave., and Edward E. Headrick, 4960 Crown Ave., both of La Canada, Calif. 91001
Filed Jan. 3, 1966, Ser. No. 518,375
4 Claims. (Cl. 33—27)



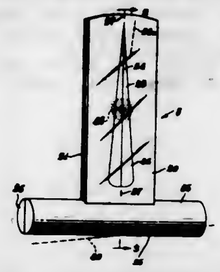
1. A design creating tool, comprising:
a sealed container having a translucent top wall, a bottom wall spaced from said top wall, and a dust material in said container capable of clinging to said top wall and being scraped off by a mechanical device;
a fixed central hub extending through said bottom wall, bearing means supporting said container for rotary motion around said hub, a cantilever beam in said container mounted on said hub and extending to a position a distance from the hub, a support arm pivotally mounted on said cantilever beam a distance from said hub and swingable through a semi-circular path, a stylus mounted on said support arm in marking relationship to said translucent top wall for scraping away a path of said dust material;
a cam operated drive means having a rotating cam and a cam follower, and drive transmission means operating through said hub for swinging said support arm in said path as a function of drive imparted from said cam to said follower; and
a power drive means for driving said sealed container and cam at a fixed speed ratio which prevents retracing of the stylus in the same path on the said top wall.

3,293,754
SCRIBING TOOL
Albert Joseph Lauzial, 928 Diamond St., San Francisco, Calif. 94114, and Max A. Holzwarth, 120 Ravenwood Way, South San Francisco, Calif. 94133
Filed Feb. 15, 1965, Ser. No. 432,633
5 Claims. (Cl. 33—42)



1. A scribing tool comprising in combination:
an elongated beam-like member having a marking element fixed near one end;
an adjustable guide block having a transverse passage through which said beam-like member extends;
a locking means within said guide block including a gripping member having a pair of jaws between which said beam-like member extends;
a locking bar slidably retained within said guide block and engaging said gripping member for closing said jaws to grip said beam-like member in response to axial movement of said locking bar within the guide block.

3,293,755
PUTT DIRECTION FINDING METHOD
Ralph H. Cromwell, 964 W. Villa Drive, Des Plaines, Ill. 60018
Filed Apr. 20, 1964, Ser. No. 360,885
3 Claims. (Cl. 33—46)



1. A method of facilitating putting a golf ball into a cup on sloped greens comprising the steps of providing a pendulum with flat-sided support having a green surface contacting edge, providing the support and pendulum with reference indicia at a 90° angle with respect to said edge, laying the support in a first position of repose on the flat side thereof on the green with the pendulum indicia in registry with the support indicia and with the indicia pointed toward the cup in the green, rotating the pendulum to vertical position around the edge of the support permitting the pendulum to move by gravity to a second position of repose indicative of the slope of the green, rotating the support back around said edge to the first position of repose on the green while preventing relative movement of the pendulum with respect to the support, and putting a golf ball in the direction then indicated by the second position of repose of the pendulum whereby to compensate for lateral roll of the golf ball due to slope of the green.

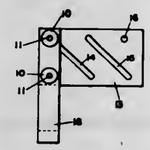
3,293,756
DRAFTING APPARATUS
William Picken, 10232 Peoria Ave., Sun City, Ariz. 85251
Filed Dec. 11, 1964, Ser. No. 417,690
5 Claims. (Cl. 33—80)



1. In a drafting machine, which when in use is mounted on a board having a planar drafting surface and at least two opposite and parallel straight sides, comprising two roller means to roll along the opposite sides of the board as a track, one roller on each side, and an elongated straightedge means extending between and connected at each end to one of said roller means, whereby said straightedge means is mounted in sliding contact with the drafting surface of such a board for movement thereover in a direction normal to the long axis of the straightedge means, the improvement which comprises an auxiliary straight track means mounted on the board spaced from and parallel to each of said opposite sides, and wherein said roller means each include a main roller and at least one auxiliary roller spaced therefrom, said roller means being moveably mounted on the board by clamping engagement between

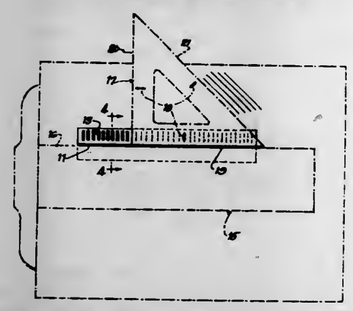
said main roller disposed in rolling contact with one of the opposite sides of the board and an auxiliary roller disposed in rolling contact with said auxiliary track.

3,293,757
MEASURING INSTRUMENT
Ove O. Hanson, Johnson City, Tenn., assignor to Mayes Brothers Tool Manufacturing Company, Johnson City, Tenn., a corporation of Michigan
Filed July 28, 1965, Ser. No. 475,411
2 Claims. (Cl. 33—94)



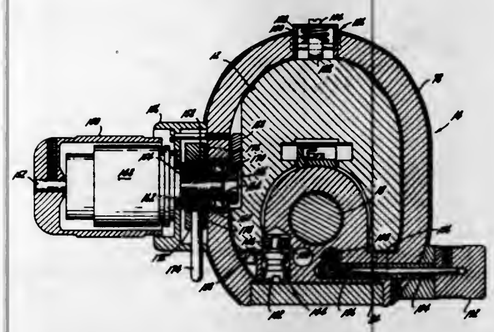
1. A carpenter's tool comprising a generally rectangular shaped, plate like blade,
two spaced slots in said blade, said slots being disposed generally parallel to each other,
said slots being disposed at an angle of approximately forty-five degrees to each side of said rectangular shaped, plate like blade,
a handle,
said handle being made of an elongated member having two generally parallel sides,
two longitudinally spaced holes in said handle,
said holes each being disposed approximately midway between said parallel sides of said handle,
a first and a second bolt,
and an adjusting nut on each said bolt,
said bolts being disposed in said holes in said handle and being adapted to be disposed in said slots.

3,293,758
DRAFTING DEVICE
Lawrence H. Chanoch, 7641 Kilbourn Ave., Skokie, Ill. 60076
Filed Sept. 18, 1964, Ser. No. 397,408
5 Claims. (Cl. 33—110)



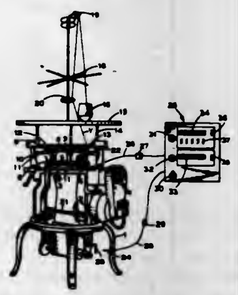
1. A drafting device for uniform spacing comprising an elongate strip having an upright rib extending longitudinally substantially throughout the length of the strip intermediate the lateral edges to subdivide the strip into a stabilizing portion and a grooved portion, anti-slip means on the surface of the stabilizing portion and crosswise extending grooves in the grooved portion with the grooves having a predetermined spaced relationship therebetween and a member having at least two straight edges with one of the straight edges adapted to be positioned on the grooved portion of the strip in abutting relationship with the rib, and a rib adjacent the straight edge of the member in position to cooperate with the grooves of the strip.

3,293,759
LINEAR DISTANCE MEASURING INSTRUMENT
James E. Moe and Hans W. Trechsel, Wayzata, Minn., assignors to Minnetech Labs, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 6, 1964, Ser. No. 387,953
17 Claims. (Cl. 33—125)



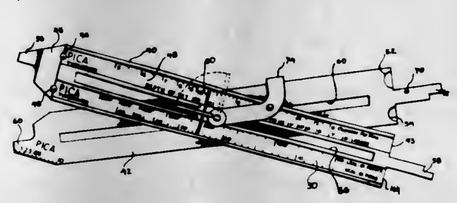
6. In a device for measuring linear distance, a meter bar having areas of different magnetic flux density arranged in a predetermined pattern along its length, a frame for supporting said meter bar, a base for said frame, a slide movable linearly on the frame for use in measuring a linear distance, a rack extending along said frame, a pinion in engagement with said rack and mounted on said slide, means on the slide for rotating the pinion to move the slide relative to the frame and meter bar, means, carried by the slide, and rotatable relative to the meter bar for cooperating with the magnetic pattern on the meter bar in generating an electric signal, a variable of which represents a distance through which said slide has moved, and indicating means mounted on the frame for utilizing the electric signal to provide a visual representation of the distance measured in units of measurement.

3,293,760
YARN FEED CALCULATOR
Robert Oswald Weller, Reinsfeld, Germany, assignor to Uniwave Inc., Farmingdale, N.Y., a corporation of New York
Filed June 19, 1964, Ser. No. 376,349
4 Claims. (Cl. 33—129)



1. Apparatus for indicating the length of yarn fed from a source of yarn to the knitting mechanism of a knitting machine during a predetermined number of knitting courses of the knitting machine, comprising a yarn-driven electrical switch means for closing an electrical circuit in response to the movement of a predetermined length of yarn from said source to said knitting mechanism, a source of electrical energy, a first electrical impulse counter, first means for serially interconnecting said source of electrical energy, said yarn-driven electrical switch means and said first electrical impulse counter, said serially interconnecting means including a latchable electrical switch means including a control means which is energized to close an electrical circuit from said source of electrical energy to said first electrical impulse counter only after the receipt of a pulse of electrical energy at said control means, a mechanically operated switch means which is operatively coupled to the knitting machine to close at least once during each knitting course, second means for serially interconnecting said mechanically operated switch means, said source of electrical energy and the control means of said latchable electrical switch means so that electrical energy is transmitted to said control means at least the first time said mechanically operated switch means closes while said latchable electrical switch means is deenergized, a second electrical impulse counter, third means for serially interconnecting said source of electrical energy, said mechanically operated switch means and said second electrical impulse counter whereby each time said mechanically operated switch means closes a pulse of electrical energy is received by said second electrical impulse counter, and deenergizing means connected to said second electrical impulse counter for deenergizing said latchable switch means when said second electrical impulse counter counts a number of electrical pulses related to the predetermined number of knitting courses.

3,293,761
COPY-FITTING DEVICE
Robert J. Curry, 1 Richard Road, Metuchen, N.J. 08840
Filed Sept. 20, 1965, Ser. No. 488,580
19 Claims. (Cl. 33—150)



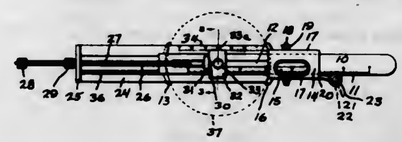
1. In a copy-fitting device having a general form of a pair of proportional dividers and having a first and a second leg member each having ends of a substantially pointed nature, each leg having through-going and longitudinal slots, and a shiftable pivot assembly joining the first and second leg members and movable in the slot to vary the length of leg portion extending from the pivot assembly, the improvement comprising (*a*) a slide means selectively movable in the slot of the first leg member; (*b*) a pivot pin carried by said slide means; (*c*) means for securing the pivot pin in relation to a first leg member so that said pivot pin is held in a non-rotatable relationship to the first leg member while simultaneously being held from axially longitudinal movement to the first leg member, (*d*) means for urging the leg members into frictional engagement with each other so as to control the ease of movement of the legs in relationship to each other, (*e*) a stop arm adjacent the first leg and rotatably carried by the pivot pin and movable as said pin and pivot assembly is moved in the slots, said arm having a stop tab adapted to engage the side of the second arm and at a predetermined relationship to the pivot pin regardless of the selected disposition of the pivot assembly in the slot, and (*f*) means for releasably locking the stop arm on the pivot pin.

3,293,762
GAUGE AND MEASURING DEVICE FOR GOLF CLUBS
Karsten Solheim, 10412 N. 37th St., Phoenix, Ariz. 85251
Filed June 22, 1964, Ser. No. 376,923
9 Claims. (Cl. 33—174)



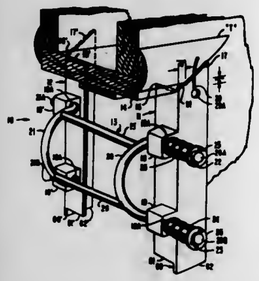
1. In a gauge and measuring device for golf clubs the combination of: a frame; a lie angle measuring member pivoted and adjustably mounted on said frame and adapted to be fixed thereon in various angular dispositions relative thereto; a club head bottom engaging portion of said lie angle measuring member having a straight portion adapted to be engaged by a normally bottom portion of a golf club head; and a length measuring means comprising a bar element having a scale thereon in fixed use position on said frame in spaced relation to said lie angle measuring member and disposed at an obtuse angle to a golf club handle said scale registering with the end of the club to indicate club length when the head of said club is engaged and aligned at its normally bottom portion with said bottom engaging portion of said lie angle measuring member.

3,293,763
CENTER PUNCH MICROMETER
Edward J. Stell, 5613 W. 12th St., Sioux Falls, S. Dak. 57001
Filed Aug. 27, 1964, Ser. No. 392,549
3 Claims. (Cl. 33—191)



1. A center punch micrometer comprising a fixed bar, a further movable bar slidably engaged with said fixed bar, an arcuate member attached to said fixed bar, a further arcuate member attached to said further movable bar, means for moving said further movable bar with respect to said fixed bar, said further movable bar having diameter indicating markings on one edge thereof, said fixed bar having center punch indicating markings thereon, a punch guide member slidably engaged with said further movable bar and having a pointer adapted to register with any of the markings on said fixed bar, means for moving said punch guide member along said further movable bar.

3,293,764
CONSTRUCTION GAGE
Albert William Born, 440 Pine St., Brea, Calif. 91502
Filed Mar. 16, 1964, Ser. No. 352,264
4 Claims. (Cl. 33—194)



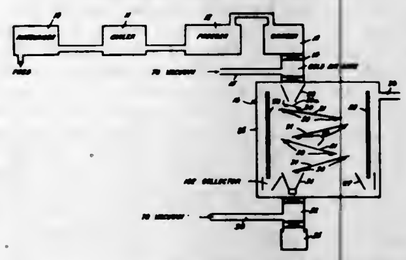
2. A construction gage for positioning trim on a partially finished doorway opening comprising:
- a first and second rectilinear spaced rail members having an L-shaped cross section,
- bridging bars fixedly mounted to the first rail member and slidably mounted on the second rail member,
- means for resiliently retaining the bridging bars in engagement with the second rail member,
- a first gaging means for locating the gage within the corner of the doorway disposed on at least one of the rail members,
- a second gaging means for locating the trim vertically with relation to the doorway and the means being disposed on the first rail,
- a third gaging means for locating the trim horizontally with relation to the doorway and the means being disposed on the first rail, and
- the third gaging means including a surface angularly disposed with relation to the doorway opening, and
- the second gaging means and third gaging means each including a surface thereon which intersect each other.

3,293,765
METHOD AND APPARATUS FOR DRYING THE ADHESIVE ON CLOSING FLAPS OF FLAT-BAGS AND ENVELOPES AND THE LIKE
Richard Winkler, Bürgermeister-Winkl Strasse, Rengsdorf uber Neuwied am Rhein, Germany, and Kurt Dünnebier, Am Birkenhang, Gladbach, Germany
Filed Aug. 4, 1964, Ser. No. 387,415
Claims priority, application Germany, Aug. 17, 1963, W 35,112
14 Claims. (Cl. 34—1)



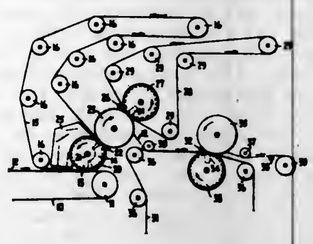
1. A method of drying moist gum on the closure flaps of flat-bags, envelopes or the like during their passage through a machine for making the same, comprising advancing the gummed flaps along a path adjacent to at least two spaced, electrodes which extend substantially in the conveying direction and between which there is produced a high-frequency electric field, and applying suction to the gummed flaps to maintain them in flat condition against a surface on which they are being advanced along said path.

3,293,766
FREEZE DRIED PRODUCT AND METHOD
Hachiro J. Toyoshi, Chicago, and James L. Mercer, Arlington Heights, Ill., assignors to Cryo-Maid, Inc., West Palatine, Ill., a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 450,260
12 Claims. (Cl. 34—5)



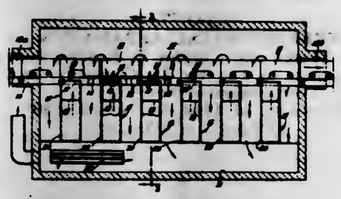
1. A continuous method of drying a frozen, water-laden, heat-sensitive material in the form of discrete individual pieces which comprises advancing the frozen material along a pathway in an evacuated substantially air-free system in proximity to a cryoplate condenser while supplying radiant energy to said particles to cause sublimation of the ice crystals contained therein to water vapor, at least about 20% of the area of said pathway being cooled to a temperature below about 32° F.; flowing said water vapor to said cryoplate condenser, the flow path through which said water vapor flows to said condenser being such that the maximum flow velocity of the flowing vapor does not exceed about 20% of the arithmetic average molecular velocity of the vapor at the conditions which exist in said flow path; and condensing said water vapor on said cryoplate condenser; the pressure in said system being maintained sufficiently low to prevent thawing in any part of said particles; said material being advanced along said pathway in a manner such that the individual pieces present changing surfaces for the absorption of said radiant energy; the average dynamic water load for said pathway being at least about 0.25 lb./hr. ft.^{2}.

3,293,767
FELT DRIERS FOR PAPER-MAKING MACHINERY
John A. Means, South Norwalk, Conn., assignor to Time, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 24, 1964, Ser. No. 354,314
12 Claims. (Cl. 34—9)



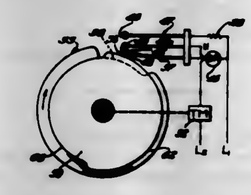
1. In a method of extracting water from a wet web of paper, the steps comprising transporting said web, by means including a paper-making-machine felt provided with a finish comprising a polymer of a vinyl perfluoro acid ester and imparting to said felt oil and water repellency, into association with water-extraction means for extracting water from said web, at least a part of said water being transferred through said felt to said water-extraction means.

3,293,768
TREATING FLUIDIZED MATERIAL
Albert G. Blank, Huntingdon Valley, and John F. Scott, Oreland, Pa., assignors to Procter & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 13, 1964, Ser. No. 351,810
21 Claims. (Cl. 34—10)



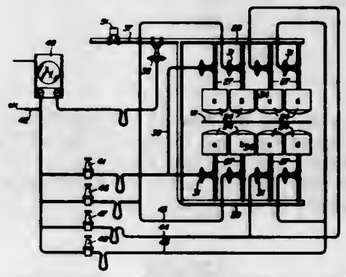
1. The method of treating fluent solid material, which comprises: moving the material along continuously in a bed on a travelling perforate bottom support, forcing conditioned gas upwardly through the material in a series of longitudinally spaced parallel streams along the length of travel of the support to lift and fluidize the material in each upwardly flowing stream of gas, and abruptly returning at least a part of the gas down through the bed of material in a plurality of downflowing streams intermediate the upflowing streams to redeposit material on the bed with a kind of rolling or tumbling of the fluidized material within the bed.

3,293,769
ADJUSTABLE COOL-DOWN CONTROL FOR DRYER CYCLE
Dale W. Graham, Benton Harbor, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,021
3 Claims. (Cl. 34—45)



1. In a control for a clothes dryer having a drying chamber,
- motor-driven means for tumbling clothes in the drying chamber and for translating air thereover and a heater for heating the air,
- the combination of a rotatable sequence timer manually movable from an inactive position to selective active positions and controlling operation of the heater and the motor driven means,
- a multiple parts cam rotatable with said timer,
  - and said multiple parts together with one another forming a single cam profile having a peripheral cam high portion, a peripheral cam raised portion, and a peripheral cam low portion,
- and multiple switch means actuatingly operated by said cam profile and engaging a corresponding multiple of cam followers disposed in operative register with high portion, said raised portion, and said low portion to operate the dryer automatically under the control of said rotatable sequence timer through a drying cycle including
  - (1) a heat-on period, and
  - (2) a cool-down period and an
  - (3) off position,
  - said heat-on period and said cool-down period corresponding to said high and raised portions on said cam profile,
- and adjustment means to selectively modify the heat-on period and the cool-down period by selectively adjusting said multiple parts of said cam to modify the profile of the cam by changing the effective circumferential lenth of said com high portion and said cam raised portion.

3,293,770
WEB DRYING PERMITTING WIDTH-WISE MOISTURE CONTROL
Fred W. Ramkolb, Warminster, Pa., assignor to Solar Corporation of America, a corporation of Pennsylvania
Filed June 17, 1963, Ser. No. 288,335
4 Claims. (Cl. 34—48)

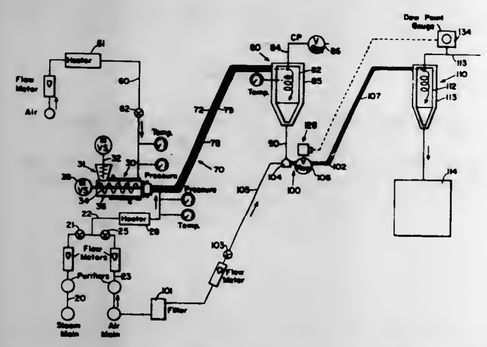


1. A web dryer panel comprising a frame facing a web to be dried, a plurality of spaced and parallel manifolds attached to said frame, burner units mounted end to end on and supported by each manifold to form in effect a continuous burner on each manifold all of said burner units facing in the same direction toward the web whereby there are parallel rows of burners spaced from each other, the space between rows of burners being open to atmosphere to permit escape of moisture, a main fuel supply pipe, individual supply pipes extending between said main supply pipe and each of said manifolds, valve means in each of said individual supply pipes, a valve in said main fuel supply pipe, remotely located means connected to operate said valve to adjust simultaneously the supply of fuel to all of said burners, and remotely located means connected individually to adjust each of said valve means whereby the burners on each manifold can be regulated separately.

3,293,771
APPARATUS FOR TREATMENT OF FLOUR TO REDUCE MICROBIOLOGICAL CONTAMINATION
Benjamin Lawrence, Springfield Township, Hamilton County, and Alexander L. Liepa, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Original application Dec. 31, 1962, Ser. No. 248,620, now Patent No. 3,159,494, dated Dec. 1, 1964. Divided and this application May 1, 1964, Ser. No. 381,277
3 Claims. (Cl. 34—57)

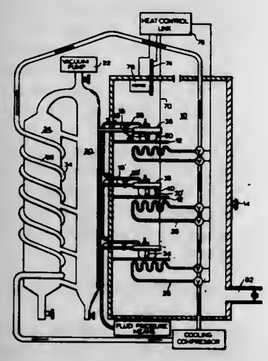
1. A multi-stage fluidization apparatus for contacting a pulverulent solid with a plurality of gaseous atmospheres in continuous succession without substantial mixing of said atmospheres, said apparatus comprising a first fluidization tube, means for introducing said solid at a controlled rate in admixture with a first fluidizing gas into one end of said first tube, a second fluidizing tube, means at the other end of said first tube for separating said solid from said first fluidizing gas while exhausting the latter to the atmosphere, and for continu-

ously delivering said separated solid to one end of said second tube, said last-named means establishing a closed path between the respective ends of said tubes, means for introducing into said one end of said second tube a second fluidizing gas incompatible with said first fluidizing gas, means for regulating the pressure in said sec-



ond tube to prevent the flow of said first fluidizing gas into said second tube and to prevent the flow of said second fluidizing gas into said separating means at the end of said first tube and means for collecting the solid at the other end of said second tube.

3,293,772
TRAY LYOPHILIZATION APPARATUS
Herbert Gottfried, 3441 5th St., Oceanside, Long Island, N.Y. 11572, and Samuel Natelson, 5508 Hyde Park Blvd., Chicago, Ill. 60615
Filed Oct. 4, 1965, Ser. No. 492,730
10 Claims. (Cl. 34—92)



1. An arrangement of lyophilization of a volatile constituent in a container having a stopper, comprising in combination;

a cabinet having shelves therefor supporting a vessel into which said container can be placed with at least one suction line passing into the cabinet;

cooling coils, in said cabinet disposed so as to cool said vessel;

at least one cover device in said cabinet designed to be disposed over said vessel made of an inert medium having a lower, at least partly flat resilient, sealing section, an aperture in said cover device and an outlet duct sealed thereto for coupling to said suction line, a bleeder line, and a bleeder valve communicating with said cover device aperture for differential pressure release; and,

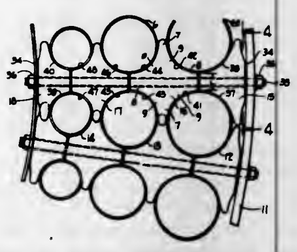
a piston chamber, piston rod and piston plate disposed in said aperture said piston plate being disposed to rest on said container stoppers, a fluid feed line to said piston chamber, so that the feeding of fluid thereto will act on said piston rod pressing said plate on said stopper sealing the container.

3,293,773
FREEZE DRYING APPARATUS
Douglas S. Frazer and Charles E. Bender, New Paltz, N.Y., assignors to The Vir Tis Company, Inc., Gardiner, N.Y., a corporation of New York
Filed Aug. 24, 1964, Ser. No. 391,600
2 Claims. (Cl. 34—92)



1. A freeze drying apparatus comprising a container having a threaded circular top, a cover threadedly secured to said container provided with a circular vacuum connecting opening therewithin, a removable circular material impermeable filter of at least equal diameter to said vacuum connecting opening disposed thereupon, a vacuum release valve member within said cover and above said filter means, a cap above said cover and threadedly secured thereto provided with a circular opening in registration with said opening within said cover, a tube member within the openings within said cover and said cap, and sealing means intervening said tube member and said cover and cap.

3,293,774
CERAMIC SUPPORTS
David Martin Baker, Barberton, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed June 27, 1963, Ser. No. 291,157
13 Claims. (Cl. 34—134)



11. A spacer for engaging and retaining spaced pipes in spaced rows, comprising in combination:

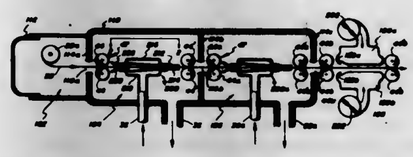
(a) at least one bell portion formed on a longitudinal axis for rotation about a shaft lying in a plane normal to the longitudinal axis of the pipes and extending between the rows of pipes, said bell portion including:

(b) a shoulder portion for extending at least partially between a pair of opposing pipes in adjacent rows;

(c) a pair of opposing lip portions for extending at least partially between said pair of opposing pipes and an adjacent pair of opposing pipes in said adjacent rows, the lip portions terminating substantially in the plane of the mouth of said bell portion;

(d) a waist portion between the shoulder portion and each lip portion for matingly engaging an adjacent pipe wall, said bell portion being dimensioned such that when it is rotated about its longitudinal axis 90° from its pipe engaging and retaining position, a pipe engaged by the bell portion can be axially moved.

3,293,775
DATA PROCESSING APPARATUS
Samuel Kitrosser, Lexington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,326
3 Claims. (Cl. 34—156)



1. Apparatus particularly well adapted for the drying of photographic sheet material comprising:

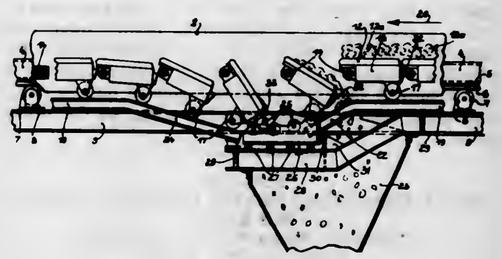
(a) drying structure having a photographic sheet conduit passageway formed therein, said conduit passageway having an inlet portion for receiving said sheets to be dried and an outlet portion for discharging said sheets;

(b) drive means positioned adjacent said first inlet portion of said conduit passageway for causing photographic sheet material driven by said drive means to be introduced into the inlet portion of said conduit passageway;

(c) applicator means situated in the vicinity of the inlet portion of said conduit passageway for applying drying gas to the upper and lower surfaces of said sheets at a velocity low enough to produce continuous laminar flow of drying gas throughout substantially the entire length of said conduit passageway in substantially the same direction as the direction of travel of said sheets and at a velocity high enough to simultaneously support said sheet material on said drying gas both in the vicinity of said inlet portion of said conduit passageway and throughout substantially the entire length of said passageway to cause the dryer to be self-threading and to eliminate sheet flutter.

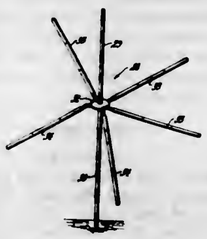
3,293,776
CONVEYOR
Walter Stanke, Essen, Germany, assignor to Heinrich Koppers G.m.b.H., Essen, Germany
Filed July 29, 1964, Ser. No. 385,983
Claims priority, application Germany, July 31, 1963, K 50,392
5 Claims. (Cl. 34—194)

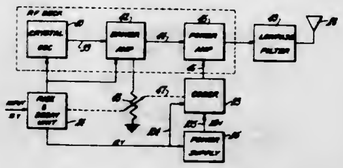
1. A conveyor, particularly for cooling granular, pulverulent and similar particulate material, comprising an endless series of material transporting members each having a leading portion rockable about a horizontal axis which is substantially perpendicular to the direction of movement and a trailing portion movable between a normal raised position and a lower position; drive means for advancing said members along an endless path; feeding means for delivering loads of particulate material onto consecutive members while said members advance along a first portion of said path; tilting means located past said feeding means for rocking said members consecutively about the respective axes so that the trailing portions descend to said lower positions and the respective members dump their loads; lifting means provided intermediate said tilting means and said feeding means for returning said trailing portions to said normal positions; and a shaking device extending into the pathway of lowered trailing



portions to jar the corresponding members and to shake loose any such particles of conveyed material which tend to adhere to said members, said shaking device comprising a carrier disposed intermediate said tilting means and said lifting means and at least one protuberance provided on said carrier and positioned in the pathway of said trailing portions in the lower positions thereof.

3,293,777
RADIATION SURVEY TRAINING APPARATUS
Benjamin Chandler Shaw, 17350 Firma Court, and Howard B. Morrow, Jr., 11936 Cameo Place, both of Granada Hills, Calif. 91344
Filed July 27, 1964, Ser. No. 385,109
11 Claims. (Cl. 35—1)





1. In a radiation survey training apparatus: means for transmitting radio signals simulating the emission from a nuclear blast fallout, comprising an antenna including a vertical radiator, a plurality of angularly spaced horizontal radials disposed in a plane at right angles to said radiator; and a plurality of radials disposed in a sector diametrically opposite said horizontal radials and inclined downwardly so as to subtend an obtuse angle with said radiator, whereby to radiate said signals over an area having an oval configuration simulating a nuclear fallout pattern.

2. Radiation survey training apparatus comprising: a radio transmitter including means to generate a continuous succession of radio frequency oscillations for development into transmitted radio signals; means for amplifying said oscillations; a rise and decay control unit operable to vary the signal strength of said oscillations in respective stages of rising and decaying signal strength simulating the rise and decay of nuclear fallout emission; selector for selectively operating said rise and decay unit so as to confine the operation of the apparatus to either a rise stage or a decay stage of operation; said apparatus further including, in said selector, means for effecting successive stages of rise and decay operation; and means in said rise and decay control unit to effect automatic transition from the rise stage to the decay stage.

3,293,778
MAUL IMPACTING DEVICE FOR EXCAVATING BUCKETS
William H. McAuliff, R.D. 4, Box 159, Johnstown, Pa. 15905
Filed Mar. 5, 1964, Ser. No. 349,643
8 Claims. (Cl. 37—141)



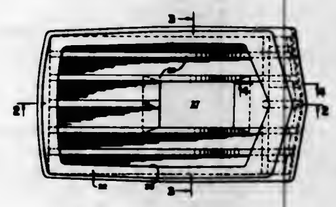
4. A material shoveling apparatus comprising a shovel having a bottom wall with a forward cutting edge, digging elements reciprocatingly mounted upon said bottom wall and having impact surfaces projecting forwardly beyond said cutting edge, operating means connected to said shovel and effecting a digging movement thereof, operating means including an impact member engageable with said elements and effecting reciprocation of the latter independently of the operation of said shovel operating means, said impact member including means yieldingly urging it into contact with said elements and intermittently operable actuating means withdrawing said impact members out of contact with said elements.

3,293,779
REGISTRATION CARD HOLDER
James C. Vogell, Sr., 6413 Clara Way, North Highlands, Calif. 54450
Filed Aug. 25, 1964, Ser. No. 391,949
1 Claim. (Cl. 40—10)



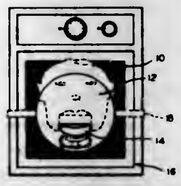
A license holder comprising a sheet of material having its bottom edge reverted upwardly and its side edges reverted inwardly to define bottom and side license receiving slots, the adjacent ends of the reverted portions being cut away to define mitered joints, the top of said holder being open to facilitate insertion and removal of the license, a pair of inwardly flanged U-shaped members defining coin receiving elements fixedly secured to the rear of said sheet, and a permanent magnet fixedly secured to the rear of said sheet transversely between the bights of said U-shaped members for securing the holder to a metallic surface.

3,293,780
CARD INDEX CASE
Robert H. Cook, 339 S. Maryland, Mason City, Iowa 50401, and Harry J. Collins, Jr., Bayside, Wis.; said Collins assignor to said Cook
Continuation of application Ser. No. 286,861, June 10, 1963. This application Mar. 3, 1965, Ser. No. 438,827
13 Claims. (Cl. 40—10)



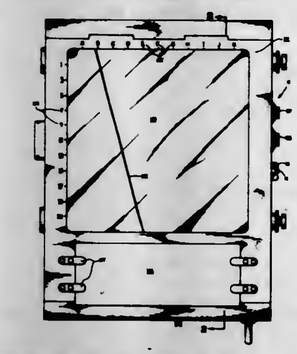
1. For use with a pack of resilient cards, a case containing the cards comprising
(a) an end portion to which ends of the resilient cards are presented curved to guide the cards from the top to the bottom of the pack and simultaneously to stress the cards,
(b) said curved end portion having an outwardly offset entering section into which trailing end portions of the stressed curved cards forcefully snap to impart an initial impetus to the stressed card in its direction of movement about the end portion,
(c) so that the inherent resiliency of the card acting expansively to straighten the card will react with the curved end portion to drive the card completely around said curved end portion in a fast snapping action to the bottom of the pack, and
(d) an open section extending at least adjacent to the offset section for giving access to the cards for supplying motion to the cards in a direction to push the cards initially around the curved end portion.

3,293,781
SOUND-WAVE OPERATED MIMICKING DEVICE
Joseph S. Kampe, 4937 Tonti St., New Orleans, La. 70125
Filed Dec. 29, 1964, Ser. No. 421,968
12 Claims. (Cl. 40—28.3)



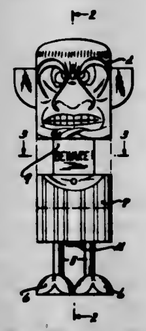
1. An independent sound-wave operated mechanism to be associated with a device for generating sound waves, comprising: a flexible diaphragm juxtaposed with said device for generating said sound waves, a pin member disposed for actuation by said diaphragm in order to move in sympathy with the vibration of said diaphragm caused by said sound waves, an arm rotatably mounted on an axle at its center of gravity and a projecting member extending from said arm and being disposed to contact said pin member for actuation when said diaphragm vibrates, whereby said diaphragm causes said arm to move sympathetically with said sound generating device by urging said pin in contact with said projecting member, and said arm returns to a balanced horizontal position after being urged.

3,293,782
SPEECH DISPLAYER
Raymon S. Drexler, 496 NE. 108th St., Miami, Fla. 33161
Filed Feb. 7, 1963, Ser. No. 256,870
4 Claims. (Cl. 40—31)



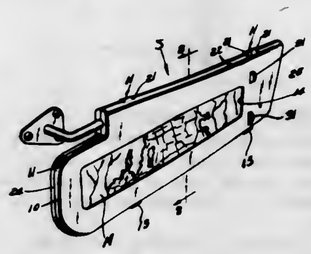
1. A speech displayer comprising:
a case;
first and second roller means inside said case;
reversible driving means;
means coupling said first and second roller means to said driving means and including a one-way clutch coupled between each of said roller means and said driving means, whereby only one of said roller means is driven by said driving means at any one time; and
tensioning means including a coil spring in each roller with one end of the spring supported by a circular indentation in said roller, and said tensioning means including first and second abrasive discs inside each roller, and said tensioning means including a shaft affixed to and extending from the end of a screw threadedly received in the case, with the said first disc secured to the inner end of the said shaft, and a knurled knob on the end of said screw outside said case whereby said screw is adjustable inwardly to force said first disc into said second disc and thereby force said second disc against said spring to adjustably increase resistance of said rollers to rotation in said case.

3,293,783
GREETING DISPLAY DEVICE
Henry Rosenfeld, New York, N.Y., assignor to Pride Creations, Inc., a corporation of New York
Filed Sept. 22, 1964, Ser. No. 398,319
2 Claims. (Cl. 40—61)



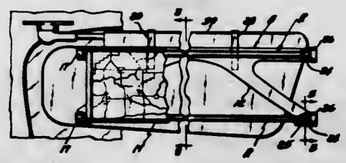
1. A greeting card display device consisting of a head member having an aperture within it, a skirt member having an upwardly projected greeting card adapted to enter said aperture, the skirt member being formed with a cavity, a spring engaged abutment member in the skirt cavity, a spring within the cavity and imposing a force from said abutment to the skirt, legs carried by the abutment and at least one supporting member for the legs carried at the lower ends thereof, and a rod fixed in the head and projected through the latter and into the skirt, said rod carrying the spring abutment.

3,293,784
COMBINATION AUTOMOBILE VISOR AND MAP HOLDER
Adalbert Krel, 843 Boutell Road, Essexville, Mich. 48732
Filed July 9, 1964, Ser. No. 381,387
3 Claims. (Cl. 40—86)



1. A combination interior automobile visor and map holder comprising: a pair of hingedly connected front and rear panels, the front panel having an enlarged window opening therein; an inwardly pressed section in the back panel of substantially the same size and shape as the window opening in the front panel and extending thereinto when the panels are secured together; said inwardly pressed section forming a backing for a map traveled thereover vertically disposed supports secured to the rear panel; longitudinally extending rollers journaled in said supports and on which a map is wound, and turning knobs mounted on said rollers and projecting through said hingedly connected panels for travel and winding the map on the rollers.

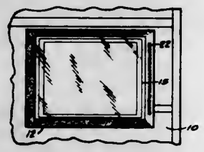
3,293,785
ROAD MAP MOUNTING MEANS FOR AN AUTOMOBILE
Adalbert Krel, 843 Boutell Road, Essexville, Mich. 48732
Filed Sept. 18, 1964, Ser. No. 397,417
2 Claims. (Cl. 40—86)



1. A device of the character described comprising: in combination with a sun visor, a one-piece frame formed with diverging leg sections; bearing seats on the ends of the frame and legs, respectively; elongated sectional rollers revolvably mounted in said bearing seats and provided with a knob on one end of each roller, each roller being formed of opposed, spaced apart, elongated sections which, when assembled, provide an elongated, substantially V-shaped, slit therebetween to facilitate connection

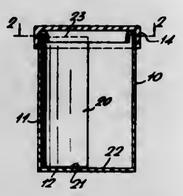
of a road map for rolling adjustment thereon; and ribs in said bearing seats to accommodate the ends of the spaced apart sections to space and secure them in position.

3,293,786
APERTURE CARD
Thomas P. Anderson, Hubbard Woods, Ill., assignor to Microseal Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 3, 1964, Ser. No. 394,195
16 Claims. (Cl. 40—159)



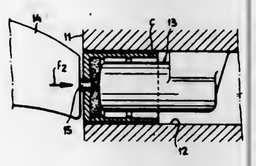
1. An aperture card comprising:
a flat card having an aperture formed therein,
transparent enveloping members overlying said aperture on opposite sides of said card and cooperating therewith and with one another to define a film pocket,
means bonding said eveloping members to said card on opposite sides thereof to form a permanent, secure, dust-proof bond therebetween,
an access opening formed intermediate one of said enveloping members and said card for permitting insertion and removal of a film strip into and out of the pocket, and
means releasably closing said access opening
whereby to maintain said pocket closed to retain a film strip therein.

3,293,787
LABEL RETAINING MEANS FOR CAPSULES, BOTTLES, CONTAINERS AND THE LIKE
Dennis P. McMahon, Box 40, MacGregor, Manitoba, Canada
Filed Apr. 12, 1965, Ser. No. 447,471
1 Claim. (Cl. 40—306)



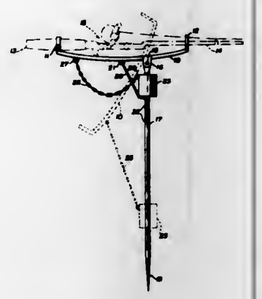
Means to retain labels against displacement within cylindrical containers, comprising in combination with said container, label engaging means formed within the upper end of said container, the upper edge of said label being engageable within said label engaging means, said label engaging means comprises an inwardly down-turned flange formed integrally with the upper open end of said container, said flange lying in spaced and parallel relationship with the cylindrical wall of said container, the height of said label being substantially equal to the height of said container whereby said label engages around the inner wall surface of said container with the lower edge of said label engaging the base of said container and the upper edge of said label engaging between said flange and the inner wall surface of said container.

3,293,788
TOY WEAPON FOR EXPLOSION OF PLASTIC MATERIAL PERCUSSION CAPS AND THEIR EXTRACTION
Giampiero Ferri, Via Stoppani 38, Florence, Italy, and Jori Marinai, Via Stoppani 29, Florence, Italy
Filed Mar. 3, 1965, Ser. No. 436,872
Claims priority, application Italy, Mar. 5, 1964, 1,406/64
1 Claim. (Cl. 42—54)



In a toy weapon for exploding plastic caps having a cup-like configuration, wherein said weapon comprises a body portion having a chamber therein for receiving a cap and has a striking hammer cooperably associated with said body portion for firing said cap, the improvement comprising, a cap-receiving rearwardly extending plug mounted axially in said chamber, said plug having a flat end face for extending into and bearing against the bottom of said cap, and a firing pin extending from the face of said hammer adapted to penetrate a portion of said cap, said firing pin having a substantially constant and smaller cross-section than the transverse cross-section of the bottom outside face of said cap, said firing pin having means integral therewith in the form of an expanded head for holding the cap after penetration thereof by said pin, whereby said cap can be withdrawn from the chamber upon the retraction of the hammer and pin.

3,293,789
FISHING ROD HOLDER
John D. Pack, 365 Halton Road, Fort Worth, Tex. 76100
Filed May 9, 1966, Ser. No. 548,738
1 Claim. (Cl. 43—15)



A fishing rod holder comprised of: a post, a lever having forward and rear ends, pivot means connecting said lever to said post at a location on said lever nearer the forward end of said lever than the rear end thereof, handle engaging means on the rear end of said lever and rod engaging means on the forward end of said lever, an elongate trigger pivotally connected at one end to said lever rearwardly of said pivot means, at least one hole in the rear surface of said post and located to receive the extending end of said trigger when said lever

is in a generally horizontal position, a weight slidably mounted on said post and supported by said trigger when the latter is engaged in said hole, and a flexible connection connecting said weight with the rear portion of said lever.

3,293,790
FISHING LURE
Dean A. Konomos, Raytown, Mo., assignor to Patricia J. Konomos, Raytown, Mo.
Filed Nov. 27, 1964, Ser. No. 415,569
3 Claims. (Cl. 43—44.2)



1. In a fishing lure, a bait holder comprising a straight rigid rod-like bait impaling member tapered at one end thereof to provide bait penetrating means thereon at said end of said impaling member, said rod-like member having an externally threaded portion adjacent said tapered end thereof, means on the other end of said rod-like member for attaching a line thereto extending endwise beyond said rod-like member, an internally threaded member engaging with said threaded portion of said rod-like member and extending endwise therefrom, hook means mounted on said internally threaded member, and a spring bait gripping member mounted on said rod-like member adjacent said other end thereof and extending toward said hook means from said other end of said rod-like member, said gripping member having portions directed toward each other and provided with tapered ends in position to penetrate the bait mounted on said rod-like member.

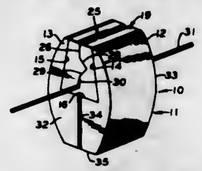
3,293,791
FISHING GEAR
Clair L. Hinkson, Rte. 5, Box 389–C, Olympia, Wash. 98501
Filed Oct. 12, 1964, Ser. No. 403,032
10 Claims. (Cl. 43—44.4)



1. Gear for use with small bait fish, comprising:
a head member adapted to be disposed in the mouth region of a bait fish and having a through passage;
a line guide carried by said head member for disposition in advance of the head of a bait fish;
an elongated pin insertable through said passage to extend oppositely from the head of a bait fish; and
a snood to be wrapped around and anchored to the extending ends of said pin and pass forwardly through the line guide; and
hook means on said snood rearward of its attachment to said pin to be engaged in and carried by bait fish.

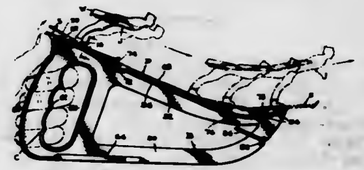
3,293,792
FISHING LINE ACCESSORY
Charles E. Bittaker, Jr., Akron, Ohio, assignor to Pflueger Corporation, Akron, Ohio, a corporation of Ohio
Filed Nov. 4, 1964, Ser. No. 408,999
4 Claims. (Cl. 43—44.89)

3. A fishing line accessory comprising, a body portion, arms extending outwardly therefrom, said arms being spaced apart, a resilient core element fixedly received between said arms, said core element having a slit extending longitudinally of said core element and accessible



generally medially of said arms oppositely of said body portion to receive and anchor a fishing line extending longitudinally, the transverse cross section of said slit being serpentine.

3,293,793
TOY SKI SHOOT
Fred G. Thomas, Jr., 134 Mountain Ave., Somerville, N.J. 08876
Filed Dec. 9, 1964, Ser. No. 417,122
10 Claims. (Cl. 46—81)

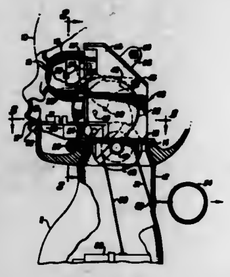


9. In a toy for simulating a dynamic ski jumper, the combination comprising
(a) a ski chute means having a downwardly inclined runway;
(b) a ski jumper-glider assembly including a relatively flat body member of a forwardly leaning figure of a skier mounted upon ski means adapted to slide down the runway;
(c) catapult means attachable to said ski chute and to the ski jumper-glider assembly;
(d) said ski jumper having a generally horizontally slotted midriff area with a combined orienting and anchoring lug means;
(e) aerodynamic lift imparting wing means including a wing member frictionally engageable in said slotted midriff area and having complementally formed slot means engageable with the flat body figure and an aperture spaced from said latter slot for selective engagement with said lug means aforesaid, said wing means and flat body member serving to effect a graceful jump and aerodynamically extended flight responsive to being catapulted from said ski chute.

3,293,794
ANIMATED TALKING DOLL
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Continuation of application Ser. No. 198,084, May 28, 1962. This application May 28, 1965, Ser. No. 472,380
4 Claims. (Cl. 46—118)

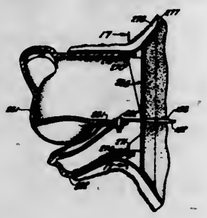
1. In a toy figure including a head simulating the head of a living being and sound emitting means, having a moving element, for simulating sounds emitted by said being, the combination comprising:
a lip member mounted in said head for simulating a portion of the mouth of said being;
lip actuating means connected to said lip member for imparting movement thereto to simulate talking movement of said lip; and

connecting means connecting said lip actuating means to said moving element of said sound emitting means for imparting movement to said lip member in synchronism with sound emitting operations of said



sound emitting means, said connecting means including asymmetrically shaped cam means for driving said lip actuating means through an irregular cycle, and drive means for moving said moving element at a uniform rate.

3,293,795
ANIMATED SPEAKING FIGURE TOY
John W. Ryan, Bel-Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Original application Feb. 8, 1963, Ser. No. 257,123, now Patent No. 3,230,665, dated Jan. 25, 1966. Divided and this application Nov. 1, 1965, Ser. No. 505,812
7 Claims. (Cl. 46—118)



1. An animated figure toy, comprising:
a body portion;
a movable snout connected to said body portion, said snout including upper and lower snout parts connected together by an inward fold extending inwardly toward said body portion and defining a mouth, said upper and lower snout parts being made of a flexible material and said inward fold being of flexible material free of stiffening means, whereby said snout parts will be drawn closer together when the inner end of said inward fold is moved inwardly of said mouth and will be released to spread apart when said inward fold is moved outwardly; and
actuating means connected directly to said inner end of said inward fold for moving the same inwardly and outwardly of said mouth.

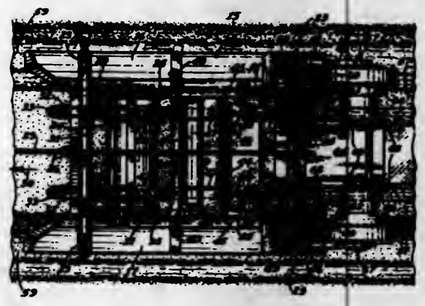
3,293,796
FORMABLE SHEET HAVING PILE FABRIC SECURED TO BOTH SURFACES
George C. Strader, San Dimas, Calif., assignor to Wham-O Manufacturing Company, San Gabriel, Calif., a corporation of California
Filed Apr. 19, 1965, Ser. No. 449,104
2 Claims. (Cl. 46—156)

1. A reversible blank for forming a toy animal, comprising first and second flexible, simulated animal hides, each hide having a front surface of a pile material with the appearance of fur, the hides being initially flat and having an initial shape corresponding substantially to a spread hide of an animal being simulated, shape-retaining means disposed between the backs of the hides, and means



for securing together the shape-retaining means and the hides, the shape-retaining; means having the properties of shape retention and flexibility, permitting the toy to be repeatedly formed into a variety of amusing shapes which will be retained upon removal of a forming force.

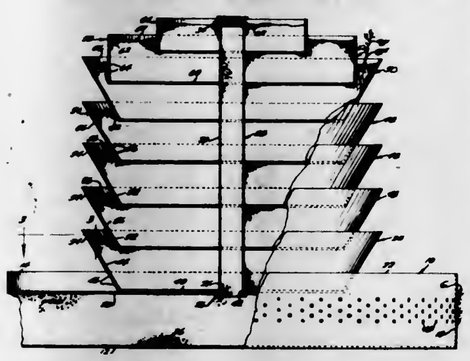
3,293,797
SHEET LAYING METHOD AND APPARATUS
Benjamin Oscar Kappelmann, Tempe, and David L. Duncan, Scottsdale, Ariz., assignors to Precision Agricultural Machinery Company, Phoenix, Ariz., a corporation of Arizona
Filed Apr. 1, 1965, Ser. No. 444,653
4 Claims. (Cl. 47—9)



3. A sheet laying apparatus for a plant row comprising in combination:
(A) a frame,
(B) a pair of laterally spaced sled runners fixed to said frame adapted to slide along and be guided by the sloping sides of the plant row,
(C) hitch means on said frame adapted to be connected to a towing tractor,
(D) digger spikes fixed to the front end of said frame arranged to rough out a pair of laterally spaced parallel longitudinally extending locking slots in the top surface of the plant row,
(E) a compacting roller journaled for rotation on a horizontal transverse axis on said frame having a cylindrical portion and laterally spaced pair of slot forming discs adapted to roll along said plant row surface to compact and form said plant row surface and the locking slots therein,
(F) means on said frame for holding a roll of sheet material in unrolling contact with said plant row surface,

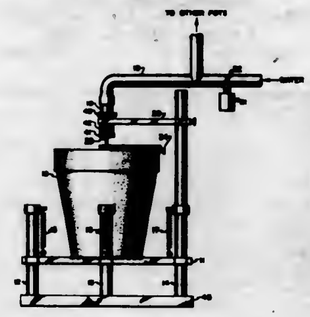
(G) means on said frame located under and extending rearwardly of said roll of sheet material sliding along in said locking slots behind said compacting roller to finally clean out and size said locking slot as said sheet of material is rolled out and spread longitudinally on said plant row surface and over said finally prepared locking slots,
(H) locking wheels journaled on said frame behind said last mentioned means rolling along the edges of said sheet to press said edges into said locking slots,
(I) means on said frame behind said locking wheels to scoop up and lift soil from adjacent the sides of said plant row and deposit the same on said depressed edges of said sheet in said locking slots to secure said sheet to the plant row,
(J) and compacting rollers journaled on said frame to the rear of said soil scooping and lifting means for compacting and forming the soil surface above said locking trenches and over the edges of said sheet and sizing and compacting the sloping sides of the plant row.

3,293,798
PLANTER
Hugh A. Johnson, Sr., 114 3rd St., Box 125, Lakeview, Mich. 48850
Filed June 4, 1965, Ser. No. 461,322
6 Claims. (Cl. 47—34.12)



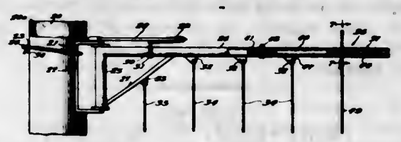
1. A planter comprising a pan-shaped base adapted to be inset in porous ground, said base having an imperforate bottom wall and a sidewall formed with limited perforations, a bed of porous material in the base, a screen extending across the base above said bed, said screen being formed with a central opening, an upstanding tubular standard having an open lower end secured in said opening, means closing the upper end of the standard, the sidewall of the standard being perforated, a pan-shaped bottom section surrounding the standard and having a bottom wall resting upon said screen, and an upwardly-flaring sidewall, the bottom section sidewall being formed with limited perforations, a plurality of at least two intermediate sections similar to and positioned above the bottom section, the bottom section containing a bed of porous material in which the lower part of the lower intermediate section is embedded, the flared sidewalls of the bottom section and the intermediate sections being radially-spaced from each other, a bed of porous material in each intermediate section, the spacing of the sidewalls of the bottom and intermediate sections exposing peripheral areas of the beds in which plants are adapted to be planted and the perforations in said standard open to each of said beds.

3,293,799
AUTOMATIC IRRIGATION OF POT CULTURES IN PLANT GROWTH ROOMS AND GREENHOUSES
George F. Keller, Ridgefield, Kamil Ser, Linden, Harlan M. Smith, Fanwood, and Jack D. De Ment, Springfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 342,442
8 Claims. (Cl. 47—38)



1. An apparatus for holding a container suitable for holding soil, a culture, and fluid and for automatically supplying fluid to said container comprising: a base plate; a plurality of posts extending upwardly from said base plate, including at least one elongated post that is longer than the other posts; a support plate for holding said container, said support plate slidably mounted to said posts to be guided in the vertical plane as the support plate moves in vertical relative movement to said base plate; spring bias means attached to at least a majority of said posts and to said support plate to initiate upward vertical movement in response to a decrease in the weight of a predetermined amount of fluid to be placed in said container; a valve positioned above said support plate to permit flow of fluid into said container when fluid is passing through said valve, said valve being suitable for connection to a fluid supply conduit; actuating means adapted to open said valve in response to said upward vertical movement of said support plate; and an elongated member supporting said valve and slidably mounted to said elongated post to permit coarse adjustment of the distance between said valve and said base plate.

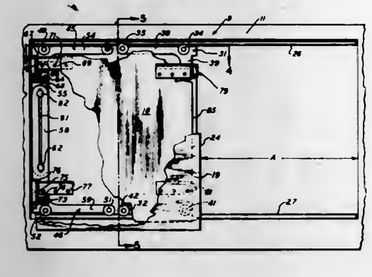
3,293,800
STOCK-PROOF GATEWAY
Werner W. Martinmaas, Watertown, S. Dak., assignor to Arthur E. Thompson and Eugene B. Kochn, Watertown, S. Dak.
Filed Dec. 20, 1963, Ser. No. 331,993
12 Claims. (Cl. 49—59)



6. In a stock-proof gateway, in combination: a post defining a side of the gateway; a metal pipe pivoted on the post and having a generally horizontal end portion; a dielectric tube supported on said end portion in alignment therewith and detachable therefrom by endwise movement; means for delivering a pulsating electric current to the pipe; and electrical conductor wire extending longitudinally within the tube, said wire having an end portion electrically connected with the pipe and detachable therefrom by said endwise movement of the tube;

and a plurality of pliable, electrically conductive stock-repelling cables freely suspended from the tube, said cables being electrically connected to the conductor wire in the tube.

3,293,801
APPARATUS FOR MOUNTING SLIDING DOORS
Lawrence M. Henning, 10051 Turner Ave., Ontario, Calif. 91761
Filed Jan. 20, 1964, Ser. No. 338,817
1 Claim. (Cl. 49—130)



Mounting apparatus for a first and a second sliding door movable within a framed opening and comprising a first track fixed at the bottom of the framed opening, a second track fixed at the top of the framed opening and extending parallel to the first track, a first upper wheeled carriage adapted to move longitudinally on the upper track, a first lower wheeled carriage adapted to move longitudinally on the lower track, each of said second carriages extending along the tracks approximately one-half the width of a door, vertical means connecting the first upper and the first lower carriages, first support means extending between the first sliding door and the first wheeled carriages, said support means being adapted selectively to displace the first sliding door outwardly from the wheeled carriages and the framed opening so as to pass the second sliding door when the second door is in static position within the framed opening, a second upper wheeled carriage adapted to move longitudinally on the upper track, a second lower wheeled carriage adapted to move longitudinally on the lower track, each of said second carriages extending along the tracks approximately one-half the width of a door, vertical means connecting the second upper and lower carriages, and second support means extending between the second sliding door and the second upper and lower carriages, said second support means being adapted selectively to displace the second sliding door outwardly beyond the first sliding door when the first sliding door is in static position within the framed opening the first and second carriage pairs being linked by the support means to their respective doors so as to be positioned at the remote ends of the doors whereby the carriages of the one door do not meet the carriages of the other door when one door passes another.

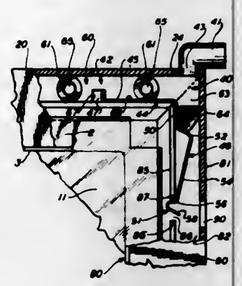
3,293,802
LIGHTWEIGHT WINDOW UNIT
George H. Fletcher, Orlando, Fla., assignor of one-third to Julian C. Renfro, Winter Park, Fla.
Filed July 9, 1964, Ser. No. 381,343
4 Claims. (Cl. 49—421)

1. A window construction comprising frame and sash, said frame having opposite sides in which channels of essentially U-shaped cross section are formed, said sash having opposite side edges slidably disposed in said channels, at least one guide-bearing secured to at least one of said side edges of said sash, said guide-bearing having a portion parallel to and normally spaced from the plane of said sash, said portion being flexible and having a shoulder thereon normally engaging an edge of the respective U-shaped channel to prevent sidewise sash movement, the latter channel being of comparatively deep construction, the latter edge being disposed generally toward the center of said sash, said shoulder cooperating with said latter edge to normally serve as a window sash guide means, said parallel portion of said guide-bearing being



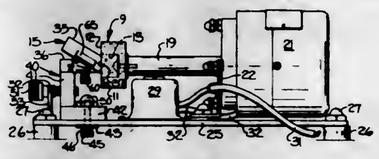
movable toward the plane of said sash to move said shoulder out of contact with the aforementioned latter edge, thereby to enable said side edge of said window sash to enter more deeply into its respective U-shaped channel of the window frame, and thereby to enable removal of the opposite side edge of said window sash from said frame.

3,293,803
JUNCTURES, FRAMES AND WINDOWS
Emil J. Boassy, 376 Timber Drive, Berkeley Heights, N.J. 07922, and Leonard M. Lipman, 218 N. Walnut St., East Orange, N.J. 07017; William Furst, administrator of said Leonard M. Lipman, deceased
Filed Dec. 21, 1964, Ser. No. 419,989
6 Claims. (Cl. 49—503)



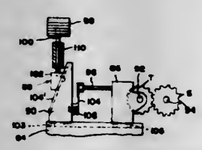
1. A corner juncture of:
a first channel having a bevelled end and a second channel having a bevelled end, with said ends being close to each other and a detent secured to said first channel and disposed between the inside faces of the flanges thereof and spaced from the inside face of the web thereof comprising:
resilient first means comprising a first arm and a second arm angularly disposed with respect to each other;
said first arm extending into said second channel and said second arm extending outside of said second channel;
means comprising a first part and a second part secured to each other an angularly disposed with respect to each other;
said first part extending into said second channel and along said first arm;
third means maintaining said first arm in said second channel;
said second arm and said second part extending into said first channel, with one extending along the other, and said second arm engaging said detent to maintain said bevelled ends in position with respect to each other.

3,293,804
APPARATUS FOR SHARPENING OBLIQUELY BEVELED TOOL EDGES
Richard B. Smith, P.O. Box 713, Hickory, N.C. 28601
Filed May 27, 1964, Ser. No. 370,415
9 Claims. (Cl. 51—128)



6. A blade sharpening apparatus comprising a base, a motor on said base and having a substantially horizontal rotary shaft thereon, a cup-shaped grinding wheel fixed on the end of said shaft remote from said motor, said wheel having an outer end face lying in a plane substantially perpendicular to said shaft, a cavity in said wheel extending generally axially of said shaft from said outer end face, a blade rest support bracket guided on said base for movement substantially parallel to said shaft and having an arm thereon movable partially into and out of said cavity, a substantially channel-shaped blade rest having a blade guiding surface, said surface being convexly curved about a line intersecting said plane at an acute angle, said rest having side flanges depending from said surface, said rest being adapted to straddle said arm and to be moved partially into and out of said cavity with said arm, means pivotally connecting said flanges to said arm and adjacent said wheel for pivotal adjustment of said rest about a substantially horizontal and lateral axis relative to said wheel, manually operable means for angularly adjusting said rest about said axis to vary said acute angle, and manually operble means for adjusting said bracket substantially parallel to said shaft to thereby enable positioning the upper surface of said rest, when angularly adjusted, close to the end of said wheel with the lower end of said rest within said cavity.

3,293,805
METHOD OF HONING A GEAR
Kenneth J. Davis, Grosse Pointe, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 24, 1963, Ser. No. 333,065
2 Claims. (Cl. 51—287)

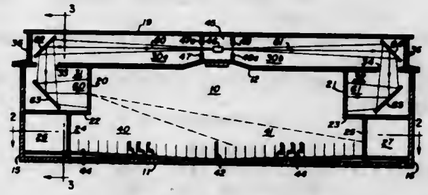


1. The method of honing a gear with correction of eccentricity which comprises mounting a work gear member for rotation in tight mesh at crossed axes with a rotary gear-like tool member having at least its tooth portion formed of an abrasive material, driving one of the members in rotation and thereby driving the other member in rotation through the meshed engagement between said members, relatively traversing said members in a direction occupying a plane parallel to the axes of both of said members, establishing a substantially constant predetermined minimum force acting substantially radially between said members to establish a predetermined minimum pressure contact between the teeth of said members and applying an additional eccentricity-correcting force acting between said members variably in accordance with variations in the center distance between the work gear member and the toothed portion of the tool member of a few one-thousandths of an inch occasioned by eccentricity of the work gear of corresponding amount of a magnitude sufficient to provide an increased stock removal effective to produce a useful correction in eccentricity of the work gear.

3,293,806
PRODUCTION OF BURR FREE ALUMINUM PARTS
John B. Holland, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
No Drawing. Filed Aug. 12, 1964, Ser. No. 389,186
2 Claims. (Cl. 51—320)

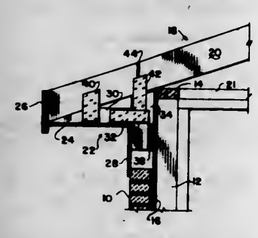
2. The process of producing a burr free machined aluminum part comprising cleaning the stock from which the part is to be produced, anodizing the stock to produce a brittle surface at least in the areas to be subsequently machined, machining the stock to the final shape of the part whereby fragile burrs are produced, again anodizing the part containing the fragile burrs to further enhance the fragility of the burrs and finally removing the fragile burrs.

3,293,807
DUAL PROJECTION THEATER AND CONSOLE
William H. Russell, 1682 Hamilton Ave., Palo Alto, Calif. 94303
Filed May 13, 1963, Ser. No. 280,040
14 Claims. (Cl. 52—6)



1. A theater for the viewing of projected images comprising:
an auditorium transversely divided into first and second sections;
a first viewing screen disposed in said first section;
a second viewing screen disposed in said second section;
a first plurality of seats arranged in said first section and oriented for viewing the front surface of said second viewing screen;
a second plurality of seats arranged in said second section and oriented for viewing the front surface of said first viewing screen;
picture projection means disposed between the planes defined by said first and second viewing screens for deriving and projecting a first and a second projection beam, derived from a single projection image, in the direction of and laterally displaced from said first and said second viewing screens, respectively;
projection beam bending means behind the screens disposed to intercept said first and said second projection beams and arranged to bend said first and second projection beams, respectively, upon the rear surface of said first and second projection screens; and
a projection beam barrier extending between the projection bending means with the seats of said sections disposed on one side of said barrier and the projection means disposed on the other side of said barrier, whereby the projection beams are not visible from said sections until they intercept said screens.

3,293,808
PREFABRICATED CORNICE FOR ROOF CONSTRUCTION
Joseph R. Duncan, P.O. Box 693, Abilene, Tex. 79604
Filed July 13, 1964, Ser. No. 382,243
8 Claims. (Cl. 52—92)



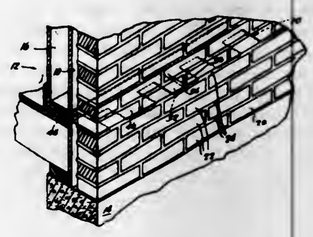
1. In a building structure having
(a) walls,
(b) a roof frame on the walls with
(c) wood rafters which
(d) extend over the walls to form eaves, and
(e) a facia attached to the ends of the rafters; the improved cornice comprising in combination:
(f) a plurality of composite blocks, each having
(i) a vertical wall member and
(ii) a horizontal soffit support,
(iii) at least one first scab attaching the vertical wall member and horizontal soffit support together,
(iv) at least one second scab attaching the horizontal soffit support to the eave portion of one of the rafters,
(g) one of said composite blocks so attached to each rafter, and
(h) a soffit attached to the underside of the soffit supports.

3,293,809
EASILY INSTALLABLE POST FOR FENCES, DOCKS AND THE LIKE
Gordon Daline, 3548 Colfax Ave. S., Minneapolis, Minn. 55408
Filed Feb. 10, 1964, Ser. No. 343,745
2 Claims. (Cl. 52—157)



1. A readily installable post for fences, docks and the like comprising,
an elongated hollow body having an axial bore therethrough providing cylindrical slide-bearing surface area therein,
external ground penetrating means at the lower end of said body for initially setting said body in upright position when said body is slightly driven from its upper end,
an elongated anchoring stake having a tapered lower end provided with an external coarse thread to facilitate screw-driving of said stake into the ground,
said stake having an upper end initially extending beyond the upper end of said defined body and provided with means for attachment of a radially extending torque arm,
and a torque arm removably attachable to said upper end for applying torque to said stake.

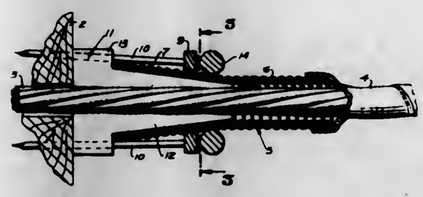
3,293,810
COMBINATION WALL TIE, DRAFT STOP AND DRAINAGE MEANS FOR WALL CONSTRUCTIONS
Monroe J. Cox, 2191 Berringer Ave., Louisville, Ky. 40204, and William J. Steler, Jr., 2212 Sleger Ville, Louisville, Ky. 40218
Filed May 22, 1964, Ser. No. 369,381
6 Claims. (Cl. 52—303)



1. In a wall construction which includes an inner wall with a vertically disposed outer member, and an outer wall of masonry construction with rows of blocks and mortar between the rows, a wall tie assembly comprising:
a plurality of tie members, each having an elongated, substantially L-shaped main body portion;
each main body portion including an elongated, substantially rectangular back member and a substantially perpendicularly related, outward foot member;
the back members being secured to the vertically disposed outer member;
the foot member including an outer edge;
a plurality of connection plates projecting outwardly from the outer edge of each foot member at spaced apart locations;
each connection plate having a series of longitudinally extending ridges and grooves therein and being embedded in the mortar between a row of the blocks;
drainage plates projecting outwardly from the outer edge of the foot members at spaced locations and being embedded in the mortar;
the drainage plates having a laterally extending trough therein, and the mortar having a weep hole formed therein over the trough; and
the tie members having reverted flange means on the ends thereof interfitting together for connection of a series thereof.

3,293,811
ANCHORAGE FOR CONCRETE STRESSING TENDONS
Edward K. Rice, 2077 Linda Flora, Los Angeles, Calif. 90024
Filed June 1, 1965, Ser. No. 460,234
9 Claims. (Cl. 52—223)

8. In a stressed concrete structure having stressed tendons of essentially circular cross-section mounted in and extending between the anchorage zones at the ends of said concrete structure, the combination of an anchorage means confined to at least one anchorage zone of said concrete structure, said means comprising:
(a) a wedge receiving element formed of metal and disposed within at least one zone of said concrete structure, said wedge receiving element having a conical bore of circular cross-section;
(b) and a conical wedge fitting the bore of said wedge receiving element for gripping said tendon;
(c) a cylindrical element rigidly connected to the smaller end of said wedge receiving element and continuing coaxially therewith to receive said tendon;
(d) said cylindrical element including a series of axially spaced external interlocking elements directly bonded to the surrounding concrete for transferring axial loads from said tendon to said concrete;



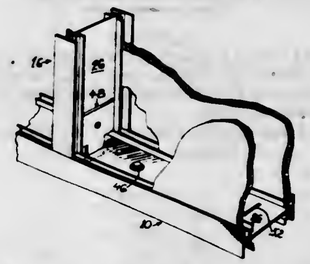
(e) said wedge receiving and cylindrical elements being formed of a continuous helically coiled wire dimensioned to loosely receive said stressing tendon to define therewith an annular grout-receiving cavity;
(f) and a vent tube extending from the axially inner end of said grout-receiving cavity to the exterior of said concrete structure, the axial length of said grout-receiving cavity being sufficient, when filled with grout, to effect transfer by the grout of the axial load of said stressing tendon to said elements independently of said wedge means.

3,293,812
PARTITION CONSTRUCTION
Andrew B. Hammitt, 909 W. State St., Trenton, N.J. 08618
Filed May 8, 1963, Ser. No. 278,825
1 Claim. (Cl. 52—238)



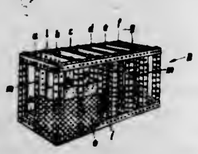
An assembly for partition panels and the like, comprising:
(a) a vertical post of H-shaped cross-section having
(1) parallel face portions, and
(2) a web connecting said face portions intermediate the opposite free longitudinal edges of said face portions to define channels at opposite sides of the web opening outwardly therefrom, said edges being formed with inwardly projecting locking ribs extending longitudinally of the post at the opposite sides of each channel, the ribs at the sides of each channel having guide surfaces converging toward the web and terminating in locking surfaces disposed approximately normally to the face portions;
(b) a vertical channel member for mounting in either of said channels including
(1) a flat base portion disposed parallel to said web and having a longitudinally and centrally extending groove opening away from said web, and
(2) a pair of longitudinal wing portions extending toward said web from the respective, opposite longitudinal edges of said base portion, said wing portions having outwardly extending shoulders intermediate the ends of the wing portions, said shoulders terminating in convergent offset portions providing guide surfaces, said guide surfaces of the wing portions being slidable along the guide surfaces of the ribs to interlock said shoulders with the locking surfaces of the ribs responsive to movement of the channel member toward the web; and
(c) a vertical partition panel member extending from the post normally to said web and having an edge portion engaged in said groove of the channel member.

3,293,813
PARTITION WALL HAVING I-SECTION FRAME
James W. Emmons, 417 Allison Road, Bellefontaine, Ohio 43311, and Lorin B. Robinson, 450 E. Dale Drive, Dayton, Ohio 45415
Filed Feb. 12, 1964, Ser. No. 344,353
10 Claims. (Cl. 52—238)



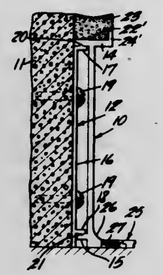
1. A wall support element adapted to receive wall board of two differentt thicknesses, said element including a base, said base having an outwardly projecting member at each end of its width, each of said outwardly projecting members being substantially normal to said base, each of said outwardly projecting members extending from each side of said base, a pair of ribs extending outwardly from each side of said base, each of said ribs cooperating with said outwardly projecting member adjacent thereto, each of said ribs including a first portion substantially normal to said base and connected thereto, each of said ribs including a second portion substantially parallel to said base and connected to said first portion, each of said ribs including a third portion substantially normal to said second portion and connected thereto, one edge of said second portion of each of said ribs being closer to said adjacent outwardly projecting member than said third portion whereby only the wall board of smaller thickness is adapted to be received between said first portion and said adjacent projecting member for resting on said base while the wall board of larger thickness is adapted to be received between said third portion and said adjacent outwardly projecting member for resting on said second portion, the other edge of said second portion of each of said ribs being disposed further from said adjacent outwardly projecting member than said first portion whereby said first portions of said ribs on one side of said base, said second portions of said ribs on said one side of said base, and said base cooperate to form a slideway therebetween adapted to receive a connecting clip or the like.

3,293,814
BOX-SHAPED SHELTER
Alexander Zugehor, 7 Am Fort Elisabeth, Mainz, Germany
Filed Oct. 26, 1962, Ser. No. 233,251
5 Claims. (Cl. 52—251)



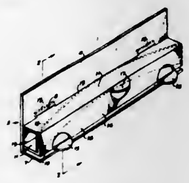
1. A box-shaped shelter adapted to be positioned within a room comprising a plurality of rectangular vertically extending frame panels, each panel comprising vertical posts and horizontal ties, each said post and tie comprising an angle member having a right angle cross-section, each leg of each said angle member having longitudinally spaced openings throughout the length thereof, and horizontal bars joining the corners of said frame panels, said horizontal bars having longitudinally spaced openings through their lengths, at least some of said posts comprising a pair of angle members assembled with one leg of one angle member overlapping one leg of the other angle member, and the other legs of said angle members extending inwardly of the respective panel.

3,293,815
RECESSED WALL BASE PANEL AND ASSEMBLY
John W. Waldron, Williamsport, Pa., assignor to Extruded Louver Corporation, Williamsport, Pa., a corporation of New Jersey
Filed Sept. 5, 1963, Ser. No. 306,901
7 Claims. (Cl. 52—287)



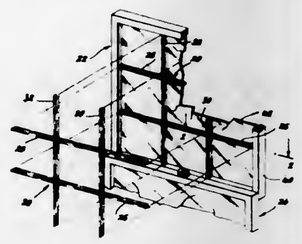
6. A recessed wall base assembly comprising a wall base panel and a companion mounting fixture, the mounting fixture including a mounting plate adapted to be affixed to a backing, upper and lower coupling elements projecting from and extending continuously along the front face of said mounting plate, said wall base panel including a panel plate, flanges integrally formed with and extending forwardly and rearwardly from and continuously along the top of said panel plate to provide a footing for the wall material above it, and a coupling element integrally formed with the panel plate and projecting from and extending continuously along the back of said panel plate below the rearwardly extending flange, said rearwardly extending flange and the coupling element of the panel plate cooperating to receive the coupling element of the mounting fixture between them, said mounting fixture and said wall base panel both including means integrally formed on the coupling elements and the rearwardly extending flange to provide a snap-lock coupling between the wall base panel and the mounting fixture.

3,293,816
TILE TIGHTENER
Garfield F. Miller, 114 Bradwell Road, Barrington, Ill. 60010
Filed June 5, 1964, Ser. No. 373,003
3 Claims. (Cl. 52—393)



1. A tile tightener, comprising, a wall plate, a floor plate projecting normally from the lower edge of the wall plate, a channel member, upturned lips depending from the outer edges of the channel member, said wall plate having slots formed therein to releasably receive the lips, a spring disposed between the wall plate and the channel member urging the same away from the wall plate, and tabs projecting outwardly from the channel in a parallel spaced relationship, said tabs adapted to guide and receive a floor tile edge therebetween.

3,293,817
MUNTIN BARS
James G. MacGregor, Stamford, Conn., assignor to AMS Corporation, South Norwalk, Conn.
Filed Sept. 28, 1964, Ser. No. 399,565
11 Claims. (Cl. 52—456)



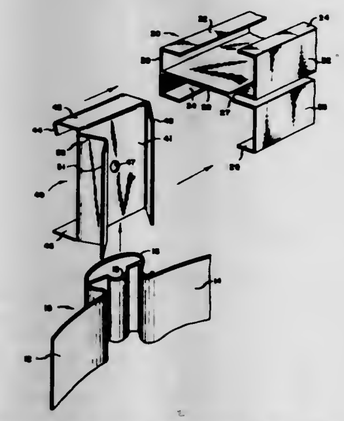
1. In a muntin bar adapted to be removably installed in a window frame against the pane thereof to give the appearance of a multi-pane window, means for detachably securing said muntin bar to the frame, comprising, in combination:
(A) a hollowed out portion at at least one end of said muntin bar;
(B) an opening through the underside of said bar communicating with said hollowed out portion;
(C) a first fastener element received within said hollowed out portion; and,
(D) a fastener member adapted to be secured to the frame comprising a second fastener element dimensioned to releasably interlock with said first fastener element and disposed, when said member is secured to a frame, in a position overlying said pane inwardly of the frame, whereby upon movement of said bar toward or away from said pane said second fastener element passes through said opening into and out of said hollowed out portion to respectively interlock with or disengage from said first fastener element.

3,293,818
PANEL SEAL AND LOCK
Resta S. Gregoire, Dillsburg, Pa., assignor to Gregoire Engineering and Development Company, a corporation of Maryland
Filed Apr. 18, 1963, Ser. No. 273,949
4 Claims. (Cl. 52—468)



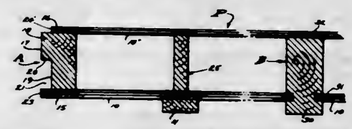
1. A cover strip disposed in a panel wall joint having abutting panel edges of hard sheet material, said cover strip comprising
a strip of spring sheet material having at least one of its sides folded back behind the strip and having
a series of axially spaced projecting pointed portions extending from the edge of this folded side rearwardly into the wall joint between the abutting panel edges,
said pointed portions having angularly bent triangular ear portions extending from their side edges,
said locking ears extending from the opposite side edges of said pointed projecting portions substantially out of axial alignment with said portions to opposite sides thereof, so as to spring behind both of said abutting panel edges of the joint after being passed through the joint and to lock the cover strip over said joint,
said ears having swept-back leading edges to facilitate springing them into substantial axial alignment while passing them through said joint during installation of said strip.

3,293,819
WALL PANELING CLIP
William C. Heinrich, P.O. Box 829, Muskogee, Okla. 74401
Filed Jan. 6, 1966, Ser. No. 519,149
8 Claims. (Cl. 52—478)



6. A paneling system for forming a wall or covering an existing building front, comprising:
(A) a plurality of generally vertical panel elements having side portions lying adjacent each other, said side portions of adjacent panels including adjacent locking flanges permitting said panel elements to be assembled as a substantially vertical wall;
(B) at least one generally horizontally disposed supporting frame; and
(C) a plurality of clips securing said adjacent locking flanges of certain adjacent panels to said supporting frame, said clips each including a back plate having first and second sets of locks located on the opposite side of said back plate, said first set of locks including a first generally converging flange assembly securing one side of one of said adjacent locking flanges and a second flange assembly including a generally converging portion adjacent said back plate and a generally diverging portion adjacent said one of said adjacent locking flanges, said converging and diverging portions securing the other side of said one of said adjacent locking flanges to said clip, said second set of locks including a generally curvilinear flange encompassing a portion of said supporting frame so as to permit said clip to slide freely along said supporting frame.

3,293,820
PREFABRICATED HOLLOW BUILDING PANEL
Wayburn S. Smith, 2415 W. Slauson Ave., Los Angeles, Calif. 90043
Filed Sept. 10, 1963, Ser. No. 307,922
4 Claims. (Cl. 52—589)



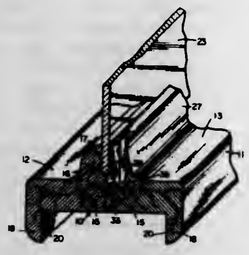
1. A prefabricated panel for erection, without modification, into a bearing wall of a building, and including:
(a) identical oppositely faced end studs vertically disposed at opposite ends of the panel and each having opposite faces spaced to receive outside and inside sheets of material and each having raised and depressed portions separated by the central shoulder and disposed normally between the said faces,
(b) outside and inside sheets of material engaged with said opposite faces respectively and extending between the two studs,
(c) the outer sheet having a marginal portion of material extending beyond the depressed portion of one stud and terminating in an edge substantially coincidental with the raised portion at said one stud, and the inner sheet having an opposite marginal portion of material extending beyond the depressed portion at the other stud and terminating in an edge substantially coincidental with the raised portion at said other stud, with channels formed at the opposite end studs of one panel for the reception of raised portions of the next adjacent panels and with both outer and inner sheets of material in edge abutment with each other.

3,293,821
WINDOW SASH FASTENING MEANS
Luard E. Gilmore, 520 Glenn Road, Spokane, Wash. 99206
Filed Oct. 2, 1964, Ser. No. 401,062
3 Claims. (Cl. 52—656)

1. In a window construction of the peripheral frame variety described, having a peripheral frame adapted to maintain said window in a planar structure upon establishment and being divided into inner and outer members to permit installation, a semi-concealed releasable means of connecting said two frame members comprising, in combination:
a plurality of peripherally spaced rigid first fastening means comprising flat-headed screws structurally communicating with the inner surface of the outer frame member and extending inwardly therefrom,

said inward extensions having means for attachment of the inner frame thereto;

a plurality of corresponding chambers in the outer portion of the inner frame, adjacent aforesaid fastening means, allowing projection of the inward extensions of said first fastening means into said chambers; and,



a plurality of second removable fastening means comprising flat clips having central channels adapted to fit over the shanks of said flat headed screws, said flat clips extending from the inside periphery of the inner frame normally outward to releasably engage the inward extension of said flat headed screws to provide structural communication between the inner and outer members of said window frame.

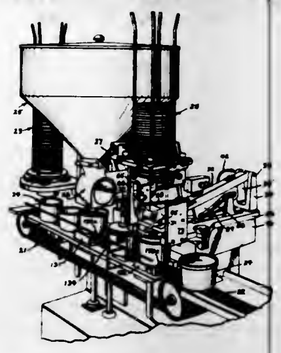
3,293,822
ELONGATED RIGID STRUCTURAL MEMBER
Alfred L. Neuhoff and Claude M. Frisbee, Burlington, Iowa, assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Dec. 18, 1963, Ser. No. 331,586
1 Claim. (Cl. 52—726)



A structural member of pieces of metal mated and welded together comprising a U-shaped and two-legged first metal piece with an oblique edge disposed along a plane oblique to a central axis of said piece, a U-shaped and two-legged second metal piece with an oblique edge at a right-angle complement to the angle of said oblique edge on said first piece, said two pieces being mated and welded together along the respective legs with the foremost points of said edges being aligned together, and an additional piece mated and welded to said two pieces along said oblique edges.

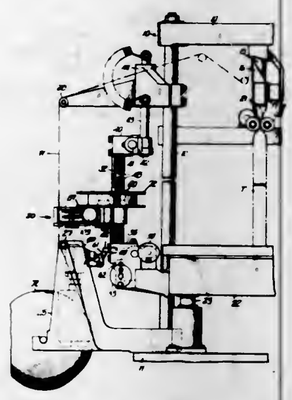
3,293,823
CAPPING APPARATUS
Ralph F. Anderson, 332 Calvin Park Blvd., Rockford, Ill. 61107
Filed Nov. 14, 1963, Ser. No. 323,652
14 Claims. (Cl. 53—131)

13. In a machine for applying covers to containers, a cover magazine adapted for retaining covers in an inverted position, a cover transfer head, means supporting the cover transfer head for movement between a raised generally upwardly facing position engaging and seizing the lowermost cover in the magazine and a lowered downwardly facing position to reverse the lowermost cover and apply it to a container, head operating means for moving said head from said raised position to said lowered position, indicia applying means including a printing head mounted for movement into and out of engagement with the lowermost cover in the magazine for printing code indicia on the downwardly facing surface of the lowermost cover in the magazine, and means for operating said indica applying means to move the printing head into engagement with the lowermost cover in the magazine as the



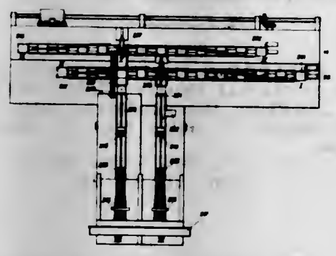
cover transfer head is moved to said lowered position and to move the printing head out of engagement with the lowermost cover in the magazine as the cover transfer head is moved to said raised position.

3,293,824
PRINTING APPARATUS FOR PACKAGING MACHINES
Robert O. Dorr, Mount Prospect, Ill., assignor to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1964, Ser. No. 351,718
10 Claims. (Cl. 53—131)



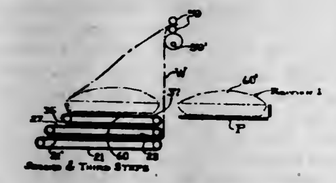
4. A package forming machine comprising an upright supporting frame, a hollow tube forming mandrel, means for forming a web of packaging material around the mandrel, means for sealing the same to provide a continuous tube, means for delivering a product to be packaged through the hollow mandrel and into the tube, means for advancing the tube, a tube constricting and sealing head mounted for reciprocating movement in a vertical path at the end of the filling mandrel, means for operating the head so as to divide the filled tube into packages of uniform length, means on the supporting frame for supplying a web of packaging material, means for guiding the packaging material in a vertical path parallel with the path of the tube constricting and sealing head, a printing apparatus adjustably mounted on said head, said printing apparatus including a reciprocably mounted type holder and an anvil spaced on opposite sides of the vertical path of the web, and means operative to reciprocate the type holder in timed relation to the movement of the head and the web of packaging material.

3,293,825
PACKING MACHINES
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed June 16, 1964, Ser. No. 375,586
Claims priority, application Great Britain, Sept. 23, 1963, 37,303/63
9 Claims. (Cl. 53—186)



1. A packing machine for packing articles in packets, comprising means defining a first feed path for articles to be packed, means defining a second feed path for articles to be packed, said first article-feed path being at a higher level than said second article-feed path, means defining a first transverse feed path, means defining a second transverse feed path, said first article-feed path being intersected by said first transverse feed path and said second article-feed path being intersected by said second transverse feed path, one of said transverse feed paths crossing one of said article-feed paths without intersecting the same, means for feeding articles along said first and second article-feed paths, and means for feeding packing material along said first and second transverse feed paths.

3,293,826
PAPER FEED AND TENSIONING DEVICE FOR USE IN ARTICLE WRAPPING MACHINES
Warren T. Hansen, East Moline, and Milton A. Wertheimer, Rock Island, Ill., assignors to Gellman Manufacturing Co., Rock Island, Ill., a corporation of Illinois
Filed Feb. 21, 1964, Ser. No. 346,566
7 Claims. (Cl. 53—228)



1. A tensioning and paper smoothing device for use in an article wrapping machine comprising

(a) a substantially flat plate-like support on which an article is supported with a paper web extending over the top of said article and therebeneath between the article and the support,

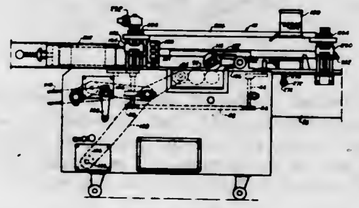
(b) means for releasably holding an end of the web extending over the top of said article,

(c) movable means carried by the support in contact with the portion of the web disposed beneath the article and movable in the same plane as that of the article when moved from said support,

(d) means for moving said article from said support,

(e) and means for moving said movable means in said plane and in the direction of movement of the article from said support and at a speed faster than the movement oft he article from said support so as to draw said paper web tightly about said article as said article is moved from said support.

3,293,827
PACKAGE END FLAP FOLDING AND SEALING MACHINE
Arthur D. Farnow, Verona, N.J., assignor to Superior Packaging Equipment Corp., Carlstadt, N.J.
Filed July 3, 1963, Ser. No. 292,574
22 Claims. (Cl. 53—374)



4. A package end flap folding and sealing machine comprising a pair of spaced upright frame elements, a chain conveyor supported on each of said frame elements, each chain in conveyor including longitudinally spaced infeed and discharge sprocket wheels mounted for rotation about a substantially horizontal axis and an endless chain trained to run around said sprockets and trained to run with an upper reach extending along adjacent the top of said frame, a plurality of pusher elements connected to said chain at uniformly spaced locations with respective pusher elements of each chain being laterally aligned for pushing a container in position therebetween, guide rail means on said frame elements for supporting a container for movement along said frame elements by said pusher elements, means disposed along said frame for folding and sealing the end flaps of said container, means to move said chains and rotate said sprockets, connected between said frame elements for moving said elements in lateral directions toward and away from each other for adjusting said frame elements in respect to the containers being fed, a compressor conveyor disposed in alignment with said chain conveyor comprising a pair of endless belts, first and second longitudinally spaced pulleys for guiding each of said belts with the opposed faces of said belts disposed vertically and in opposite relationship for compressing a container therebetween for holding during drying, and a plurality of rollers disposed adjacent the interior of the opposed faces of the opposed portions of said belts forming a guide for said belts, at least some of said rollers being removable for varying the spacing between said belts at various locations along the length thereof.

3,293,828
SADDLETREE CONSTRUCTION AND METHOD
Albert Heesler, 3985 Cook St., Denver, Colo. 80205
Filed Apr. 21, 1965, Ser. No. 449,803
7 Claims. (Cl. 54—44)

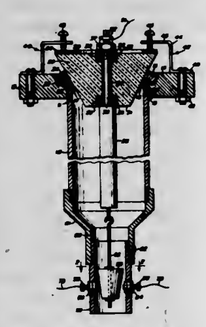
1. A process for the manufacture of saddletrees in molded plastics materials which comprises unitarily forming a top component of said saddletree having outermost contours characteristic of conventional cantle and saddle bows inclusive of lateral overhanging projections in a two part mold having a match line coinciding with the longitudinal axis of said saddletree, curing said plastics materials, removing said top component from said top

molds by parting the mold, forming a bottom component of said saddletree having lower contours characteristic of conventional side bar-stirrup supports in a one piece bottom mold, positioning said completed and cured top component in matching position above said formed and



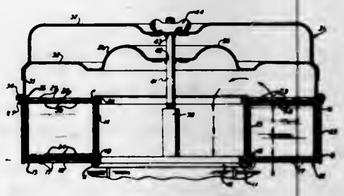
uncured bottom component, pressing said components together, and allowing said bottom component to cure while in forced contact with the top component whereby said bottom and top components will be bonded together to provide a unitary hollow saddletree construction.

3,293,829
TOP CLOSURE FOR HIGH TEMPERATURE ELECTROSTATIC PRECIPITATOR
Leo Mafrica, Pittsburgh, Pa., assignor to the United States of America as represented by the Secretary of the Interior
Filed Aug. 27, 1963, Ser. No. 305,014
5 Claims. (Cl. 55—104)



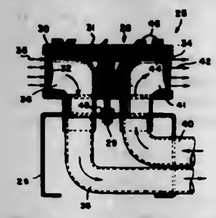
1. In combination with a casing forming an enclosure providing an electrode surface therein of an electrostatic precipitator in which gases and vapor are treated, a closure arrangement for an end opening in said precipitator comprising insulator means including a frustum of electrical insulator material, said frustum having parallel upper and lower substantially flat circular faces in each of which is formed a central cylindrical cavity, and an axial passage connecting the respective cylindrical cavities, a high voltage electrode component of said precipitator having a threaded reduced end portion thereof extending through said cavities and connecting passage, flexible packing material filling said cylindrical cavities, and a means for engaging said threaded portion of said electrode component and covering said packing in the upper cavity to draw said electrode component into a tight and compressed contact with said flexible packing whereby said electrode component is fixed to said frustum and said axial passage is sealed, a flange element fixed to said enclosure at said end opening thereof supporting said insulator means, said flange element having an inclined surface thereof bearing said insulator means, further flexible packing material maintained between and in contact with said insulator means and said inclined bearing surface, and means clamping said insulator means to said support element including a plurality of devices adjustably attached to said support element at separate, uniformly spaced apart locations thereon, and arranged to bear on said insulator means to position said insulator means and the electrode component fixed thereto with respect to said enclosure electrode surface, and to cause said further packing material to effectuate a seal for said end opening in said enclosure.

3,293,830
FLAME RETARDING INDUCTION SYSTEM FOR AN INTERNAL COMBUSTION ENGINE
Robert C. McKinlay, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 14, 1964, Ser. No. 382,581
1 Claim. (Cl. 55—276)



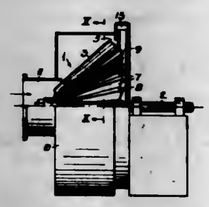
An air induction system for an internal combustion engine comprising a carburetor having an air inlet surrounded by a flange, a replaceable air filter cartridge comprising a cylindrical imperforate inner shell, a cylindrical imperforate outer shell and an air filtration media confined between said inner and outer shells, said air filter cartridge being positioned with said inner shell around said air inlet and extending in the same direction therewith to provide an air outlet for said air filter cartridge in registry with said air inlet, said air filter cartridge being supported upon said flange, said flange terminating a substantial radial distance inwardly of said outer shell to confine the support of said air filter cartridge to a point contiguous to said inner shell, a cover plate forming a closure for the surface of said air filter cartridge remote from said carburetor to direct the air flowing axially through said filter media in a radial direction toward the air outlet provided by said inner shell, said cover plate comprising a top and a baffle defining a resonant chamber, said baffle including an arched flame shield portion formed adjacent the inner shell and being capable of redirecting flames discharged from the engine induction system back toward the induction system, said arched flame shield portion having openings therein communicating said resonant chamber with said filter cartridge air outlet, said cover plate being supported by said air filter cartridge in the area of said outer shell, an air filter attaching device affixed to said carburetor and extending through said air outlet and terminating adjacent said cover plate, and fastening means engaging said air filter attaching device and said cover plate for urging said cover plate into axial engagement with said air filter cartridge and exerting a bending force upon said air filter cartridge about its point of support upon said flange, said air filter cartridge being sufficiently rigid to resist any substantial deflection under the influence of the bending force exerted by said fastening means for generating a sealing pressure between said air filter cartridge and said flange.

3,293,831
AIR CLEANER
James H. Hollyday, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed June 20, 1963, Ser. No. 289,289
5 Claims. (Cl. 55—290)



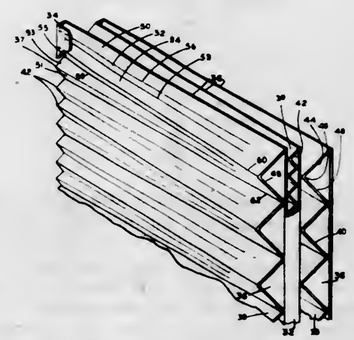
1. An air cleaner for a combustion engine comprising a support, a rotor carried on said support, a screen carried on said rotor, said screen having an inside and an outside surface, an air inlet duct having an end adjacent one location along the inside of said screen to receive air passed through the screen from the outside and conduct the air to an opposite end communicating with the engine, an exhaust duct having one end receiving gases from the engine and conducting them to an opposite end adjacent another location along the inside of said screen to eject the gases through the screen to the outside, said rotor having vanes thereon, and said exhaust duct having a port through which a portion of the engine gases pass, said port and vanes being so located relative to each other that the gases moving through the port pass over said vanes and rotate said rotor whereby successive portions of said screen pass the opposite end of said exhaust duct to have material cleaned therefrom after which such portions pass said inlet duct.

3,293,832
APPARATUS FOR REMOVING DUST AND OTHER IMPURITIES FROM AIR AND OTHER GASES
Tor Björn Leftheim, Uranienborgveien 12, Oslo, Norway
Filed Nov. 24, 1964, Ser. No. 413,482
Claims priority, application Norway, Nov. 28, 1963, 151,032
2 Claims. (Cl. 55—407)



1. Apparatus for separation of dust and other impurities from air and other gases, comprising a stationary housing, a rotary separating member situated in said housing and having a predetermined axis of rotation, said separating member having a substantially conical configuration and having an inner end adjacent to said axis of rotation and an outer end situated at a greater distance from said axis of rotation than said inner end, and said separating member including a plurality of outer separating blades distributed about said axis of rotation and each having a pair of opposed longitudinally extending side edges forming an outer side edge and an inner side edge for each blade, said outer and inner side edges of said blades extending from said inner to said outer ends of said separating member, said blades defining between themselves primary passages and primary outlets through which a substantial quantity of substantially clean gases are emitted, said blades respectively having inner plate portions extending from their inner side edges in a direction opposite to the direction of rotation of said separating member and substantially tangentially with respect to a cone whose axis coincides with said axis of rotation, said inner plate portions of said blades being spaced from and at least partly overlapping each other to define between themselves extensions of said primary passages, respectively, for receiving particles greater than those which flow along said primary passages.

3,293,833
PLEATED FILTER
George Barany, Syracuse, N.Y., assignor to Cambridge Filter Corporation, a corporation of New York
Filed Feb. 28, 1963, Ser. No. 261,632
5 Claims. (Cl. 55—500)

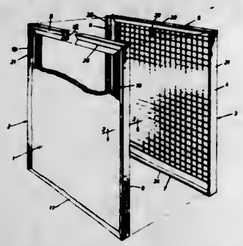


1. In filter construction adapted to filter solid and liquid particles from gases and vapors, the combination of frame work forming a passage for gaseous or vapor medium, filter material arranged in pleat formation across the passage to filter said gaseous or vapor medium passing along the passage, corrugated spacing members separating the pleats of said material, the corrugations of each member forming channels through which medium flows contiguous to the pleats of the filter material, at least a wall of the channels being formed by the filter material, said corrugations being of V configuration and transforming from large V section corrugations along one edge with flat sides into a greater number of smaller corrugations along the other edge, the apices of the large corrugations extending continuously across the members to form apices of certain of the smaller corrugations, and the apices of the remaining smaller corrugations extending to a point short of the large corrugation edge.

3,293,834
FILTER PANEL AND FRAME THEREFOR
James Peter Donachine, Lorne Park, Ontario, Canada, assignor to Bay Distributors Limited, Toronto, Ontario, Canada
Continuation of application Ser. No. 446,473, Mar. 29, 1965, which is a continuation of application Ser. No. 141,095, Sept. 27, 1961. This application Sept. 13, 1965, Ser. No. 491,489
3 Claims. (Cl. 55—501)

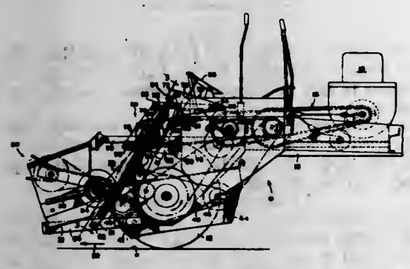
1. In combination a frame comprising a plurality of hollow frame members connected in end to end relation to form said frame, said frame having first and second opposed substantially planar faces, each of said frame members comprising a bottom wall lying in said first face spaced apart side walls projecting substantially normally from the lateral edges of said bottom wall, the tops of said side walls lying substantially in said second face,

wall members each having a free edge and extending from said tops convergently into the space between said side walls and at an angle to each other so that said free edges define a relatively narrow mouth of a slot opening to said second face and extending continuously from one end of each of said frame members to the other, and a flat batt of flexible resiliently compressible filter material substantially thicker in its uncompressed state than the widths of the mouths of said slots disposed as a layer across said second face of said frame and having perimeter portions thereof extending in a direction perpendicular to the plane of said layer and tucked into said hollow frame members through said slot mouth, said perimeter filter material portions being compressed and gripped in a plane parallel to the plane of said layer between said slot mouth defining free edges of said wall members and



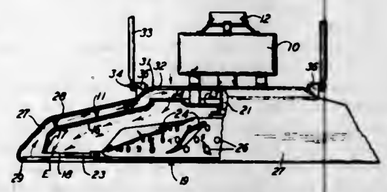
being relatively uncompressed and of a thickness greater than the width of said slot mouth within said hollow frame members whereby said filter material is releasably secured to said frame, said hollow frame members being substantially rigid with said wall members of each of said frame members having sufficient resilience to resiliently displace relative to each other to open the mouth of the slot formed between the free edges thereof under inward tucking pressure applied to a perimeter portion of said filter batt in a direction substantially perpendicular to said layer to receive said perimeter portion and to displace under a force acting to withdraw such perimeter portion to reduce the mouth of such slot to resist withdrawal of such perimeter portion whereby said batt of filter material may be tensioned across said frame by tucking said perimeter portions into said hollow frame members.

3,293,835
LIFT SYSTEM FOR THE HEADER AND CONDITIONER OF A WINDROWER
Roland P. Gehman, Stevens, Earl E. Koch, Mohnton, and Horace G. McCarty, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,815
20 Claims. (Cl. 56—23)



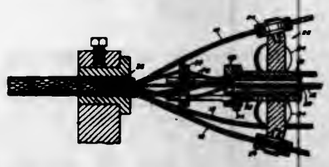
1. An agricultural machine comprising a wheeled frame adapted for ground travel forwardly, a header in front of said frame and extending transversely, said header having crop gathering means thereon, a support structure for raising and lowering said header relative to said frame, said structure comprising a lower lift leg having one end pivotally connected to said frame and an opposite end pivotally connected to said header, a lift arm and a rocker coextensive therewith, means pivotally connecting said lift arm and rocker to said frame, a lift rod having one end connected to said lift leg, lost-motion connection means between an opposite end of said lift rod and said lift arm, spring means connecting said rocker to said lift leg, a stop on said frame limiting pivotal movement of said rocker in one direction, and an element on said rocker with which said lift arm is engageable when pivoted in one direction whereby the rocker may be pivoted with the lift arm.

3,293,836
AIR-SUPPORTED LAWN MOWER
Sherman C. Heth, Racine, Wis., assignor to Jacobsen Manufacturing Co., Racine, Wis., a corporation of Wisconsin
Filed July 29, 1964, Ser. No. 385,928
7 Claims. (Cl. 56—25.4)



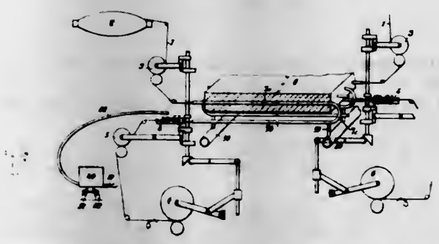
1. An air-supported lawn mower comprising a wheelless housing having a skirt extending around the lower edge thereof and having an air-inlet opening in the upper portion thereof, a motor disposed above said housing and including a rotatable shaft extending therethrough, a grass cutter mounted on said shaft and including grass-cutting blades, air-blowing blades mounted on said grass cutter and disposed above said grass-cutting blades and being oriented toward said skirt for blowing air toward said skirt and air-supporting said mower off the ground, and a shroud mounted on said mower and extending over said housing and being spaced thereabove and with said shroud extending from adjacent said skirt to adjacent said air-inlet opening for receiving air passing said skirt and directing it to said air-inlet opening.

3,293,837
METHOD AND APPARATUS FOR MAKING WIRE ROPE
Michael R. Vennett, Guilford, Conn., assignor to United States Steel Corporation, a corporation of Delaware
Filed July 24, 1964, Ser. No. 384,878
7 Claims. (Cl. 57—13)



1. Apparatus for making a wire rope having an independent wire rope core, including a plurality of strands surrounding a core, and a plurality of outer strands surrounding the independent wire rope core, which apparatus comprises a rotatable member, a plurality of rotatable spools one for each of said outer strands mounted on said rotatable member, a closing die spaced from one end of said rotatable member in axial alignment therewith, a main twister head for said outer strands between said rotatable member and said closing die, means for rotating said main twister head with said rotatable member, an auxiliary twister head adjacent the entry end of said closing die, means for rotating said auxiliary twister head at the same angular velocity as said main twister head, means for guiding said independent wire rope core to the entry end of said auxiliary twister head, said independent wire rope core strands being separated by said auxiliary twister head, said rotatable member and said main twister head having axial openings through which said independent wire rope core passes, said auxiliary twister head having an axial opening through which the core of said independent wire rope core passes, said outer strands and said strands of said independent wire rope core being stranded around the core of said independent wire rope core in said closing die, and means for pulling said core and all of said strands through said closing die.

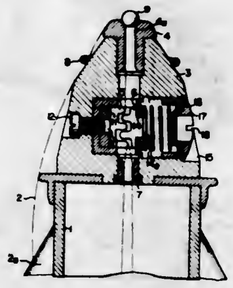
3,293,838
THERMAL TREATMENT OF TEXTILE YARNS
Guy Batsch, Le Parc, Saint-Pierre-sous-Aubenas, Ardeche, France
Filed Dec. 3, 1963, Ser. No. 327,723
Claims priority, application France, Dec. 6, 1962, 917,811; June 19, 1963, 938,652
7 Claims. (Cl. 57—34)



1. A yarn thermal treatment machine which comprises, in combination, a yarn guiding conduit for circulation of the yarn therein, said conduit forming at least one loop having two substantially parallel elongated branches, an upstream one and a downstream one, and a bend between said branches, said guiding conduit downstream branch having its outlet at a distance from the inlet of the upstream branch small enough to place both said inlet and said outlet within easy reach of a normal operator, the length of said branches being substantially greater than the scope of reaching of said normal operator, means for heating the upstream branch of said loop, said downstream branch being in a cool medium, and a false twist spindle for said yarn located at the outlet of the downstream branch.

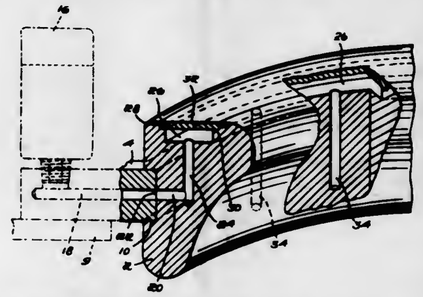
3,293,839
YARN TENSIONING DEVICE FOR DOUBLE TWIST SPINDLES
Hideo Yasobu, Kyoto-shi, Kyoto-fu, Japan, assignor to Murata Kikai Kabushiki Kaisha, Kyoto-shi, Kyoto-fu, Japan, a joint-stock company of Japan
Filed Nov. 23, 1965, Ser. No. 509,268
Claims priority, application Japan, June 4, 1965, 40/45,040
5 Claims. (Cl. 57—58.86)

1. A yarn tensioning device for double twist spindles comprising a pair of mutually opposed and cooperatively operating yarn tensioning members for resistively clamping therebetween yarn thereby to impart tension to the yarn as it travels therebetween, each of said tensioning members having a given number of tooth-like projections and recesses in alternate arrangement in the direction of yarn travel which are loosely enmeshable with corresponding like recesses and projections of the other said tensioning member, whereby the yarn is caused to pass through a zig-zag path in contact with and around the extremities of the projections, said projections and recesses progressively increasing in length and depth, respectively, in their dispositional sequence in the direction of yarn travel thereby to impart a required tension to the yarn in



a stepwise, progressively increasing manner, and tension regulating means to vary adjustably the distance between the two tensioning members and thereby the degree of mutual enmeshment of their projections and recesses thereby to vary the tension applied to the yarn.

3,293,840
WICKLESS VERTICAL TYPE SPINNING RING
Andrew J. Wayson, Needham, Mass., assignor to Merriman, Inc., a corporation of Massachusetts
Filed Oct. 22, 1965, Ser. No. 501,826
4 Claims. (Cl. 57—120)

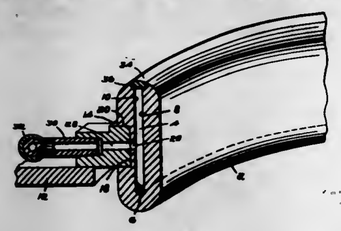


2. A vertical type spinning ring made of porous metal, said ring having a groove extending about its upper surface, a cover for said groove thereby to provide a closed oil channel thereunder, a passage through said ring leading to said channel whereby oil can be delivered to said channel, and a plurality of holes closed at their lower ends extending downwardly from said channel at spaced intervals about said ring, the depth of said holes being more than half the distance from said channel to the bottom of said ring, said holes acting to distribute oil in a controlled manner through said ring to the surfaces thereof to provide lubrication for a traveler mounted thereon.

3,293,841
WICKLESS VERTICAL TYPE SPINNING RING OF POROUS METAL
Andrew J. Wayson, Needham, and John T. O'Connell, Medfield, Mass., assignors to Merriman, Inc., a corporation of Massachusetts
Filed Oct. 22, 1965, Ser. No. 500,533
6 Claims. (Cl. 57—120)

1. A vertical type spinning ring made of porous metal, said ring having upper and lower end surfaces, said ring having a deep cylindrical groove extending thereabout,

said groove running from one end surface of the ring to an interior position close to the other end of the ring, means closing the open end of said groove, a passageway leading



into said groove through the outer side of said ring whereby a lubricant can be introduced into said ring under pressure to completely fill said groove.

3,293,842
SPINDLE MOUNTED AUTOMATICALLY DOFFABLE WARP BOBBIN
Morris M. Bryan, Jr., Jefferson, Ga., assignor to The Jefferson Mills, Inc., Jefferson, Ga., a corporation of Georgia
Filed May 26, 1965, Ser. No. 459,066
1 Claim. (Cl. 57—130)



In a winding apparatus of the type having bobbins mounted on spindles and wherein said bobbins may be doffed from said spindles by an arcuate plow-type doffer, the improvement therein comprising at least one spindle having an upper frusto-conical portion for receiving a bobbin and a flange at the lower extremity of said portion, a frusto-conical bobbin mounted on said spindle having a longitudinal central bore therein for receiving the upper frusto-conical portion of the spindle, said bobbin being formed from paper, a metal reinforcing ferrule secured to the base of the bobbin, the upper portion of said central bore of said bobbin being of such a diameter that the inner wall is in engagement with the upper end of the frusto-conical portion of said spindle, the lower portion of said central bore of said bobbin being of larger diameter than any portion of said spindle above said flange, said lower portion having a hollow insert positioned near the base of said bobbin for reducing the inner diameter thereof and thereby maintaining said mounted bobbin in such a position on said spindle that said ferrule is spaced above said flange a sufficient distance to permit the leading edge of the arcuate plow-type doffer to pass between the ferrule on the base of said bobbin and the flange of said spindle.

3,293,843
DRAWING AND CRIMPING SYNTHETIC POLYMER FILAMENTS
Norman William Bibby, Llan-yr-Avon, Cwmbran, John Llewellyn Burgess, Pontypool, Peter John Crabbe, Llanfoist, Abergavenny, and Geoffrey Hugh Jones, Abergavenny, England, assignors to British Nylon Spinners Limited, Pontypool, England
Filed Jan. 20, 1964, Ser. No. 338,997
Claims priority, application Great Britain, Feb. 2, 1963, 4,354/63
6 Claims. (Cl. 57—157)

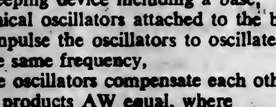


1. A process for drawing and crimping synthetic polymer filaments comprising the steps of
(a) positively advancing undrawn synthetic polymer filaments from a supply thereof,
(b) heating said filaments.
(c) subjecting said heated undrawn filaments to a drawing tension,
(d) imparting a crimp to said heated filaments whilst they are hot and whilst they are under the drawing tension by passing them once only between means causing the filaments to follow a sharply zig-zag path, said means having a compoennt of motion in the mean direction of travel of the filaments at the points of contact therewith, and
(e) pulling the crimped and drawn filaments under tension away from said means.

4. A process for drawing and crimping synthetic polymer filaments comprising the steps of
(a) imparting a regular planar crimp to said filaments whilst they are heated and whilst they are undergoing drawing, by passing them once only between means causing the filaments to follow a sharply zig-zag path, said means having a component of motion in the mean direction of travel of the filaments at the points of contact therewith,
(b) pulling the crimped and drawn filaments under tension away from said means, and
(c) de-phasing said regular planar crimp by imparting a false twist to said crimped and drawn filaments.

3,293,844
PROCESS OF INCOMPLETELY LONGITUDINALLY SPLITTING AN ORIENTED POLYMERIC FILM
John M. Wininger, Jr., and Richard F. Dyer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 24, 1965, Ser. No. 458,357
6 Claims. (Cl. 57—157)

1. A process for producing a furcated non-bulked film product that can be used as a tying material having superior knot holding properties which comprises the steps of:
(a) providing a sheeting of polymeric composition of sufficient thickness to produce a non-bulked film product when the sheeting is subjected to a drafting orientation followed by a longitudinal fluid fracturing operation;
(b) subjecting at least a portion of the polymeric sheeting to a drafting orientation whereby the longitudinal tensile strength thereof is increased while the lateral strength is diminished and the sheeting section is thereby rendered susceptible of fluid fracturing;
(c) feeding the orientated polymeric sheeting to a longitudinal splitting zone;
(d) subjecting both sides of the orientated polymeric sheeting to substantially equal high velocity forces within the longitudinal splitting zone to an extent



that a major portion of the fracturability is consumed thereby producing a plurality of elongated interconnected flat ribbons;
(e) withdrawing from the splitting zone the non-bulked furcated network of flat ribbons;
(f) and further forming the network of flat ribbons into a film product which is characterized in that the product possesses additional and inherent fracturability within the range of from about 20 to 50 percent and has substantially no individual fibers or free ends so that upon the product being knotted at least a part of the additional fracturability is brought into operation thereby providing a more secure knot with less tendency to slip.

3,293,845
VIBRATORY FREQUENCY STANDARD FOR A TIMEKEEPING DEVICE
Klaus Sparing, Pforzheim, and Wilhelm Tilse, Pforzheim-Birkenfeld, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Original application July 10, 1964, Ser. No. 382,440, now Patent No. 3,201,932, dated Aug. 25, 1965. Divided and this application June 24, 1965, Ser. No. 476,775
Claims priority, application Germany, Mar. 16, 1963, U 9,647
The portion of the term of the patent subsequent to Aug. 24, 1982, has been disclaimed
2 Claims. (Cl. 58—23)



1. A timekeeping device including a base,
two mechanical oscillators attached to the base,
means to impulse the oscillators to oscillate uniformly and at the same frequency,
in which the oscillators compensate each other by having their products AW equal, where
A is the moment of inertia of the oscillator, and
W is its amplitude of oscillation,
and the reaction moments of the oscillators in-phase are in opposite directions,

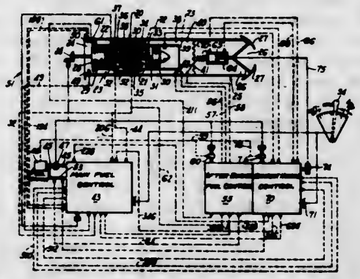
characterized in that each of the oscillators are closed strips having two bending portions of spring material and said bending portions of one oscillator are proximate the said bending portions of the other oscillator.

3,293,846
BRACELET TIMEPIECE
Heinz Pauli, Granges, Switzerland, assignor to Atlantic Fabrique d'Horlogerie S.A., Soleure, Switzerland
Filed Dec. 10, 1964, Ser. No. 417,372
Claims priority, application Switzerland, Dec. 20, 1963, 15,801/63
3 Claims. (Cl. 58—57)



1. In a jewelry piece for wearing on the wrist of a wearer, a double-faced bracelet, a pair of watches mounted on said bracelet to face in opposite ways from one another, with one of the faces of said bracelet being in contact with the wrist and the face of one of said watches being visible and with the other face of said bracelet being in contact with the wrist and the face of the other of said watches being visible, a double clasp device for allowing either face of said bracelet to be in contact with the wrist.

3,293,847
COORDINATED MAIN AND AFTERBURNER FUEL CONTROLS FOR GAS TURBINE ENGINES
Francis R. Rogers, Howard L. McCombs, Jr., and Mike Snider, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Original application Sept. 13, 1963, Ser. No. 308,799, now Patent No. 3,232,053, dated Feb. 1, 1966. Divided and this application Oct. 22, 1965, Ser. No. 500,786
14 Claims. (Cl. 60—39.28)



1. Fuel flow control apparatus for a gas turbine engine provided with a combustion chamber, an afterburner and a control lever for controlling the operation of the engine, said fuel flow control apparatus comprising:
a source of fuel;
a first conduit including fuel pressurizing means connected to deliver fuel from said source to the combustion chamber;
first valve means operatively connected to said first conduit for controlling fuel flow therethrough;

governor means responsive to engine speed and the position of the control lever operatively connected to said first valve means for controlling the operation thereof and thus fuel flow to the engine to maintain a predetermined speed corresponding to the position of the control lever;

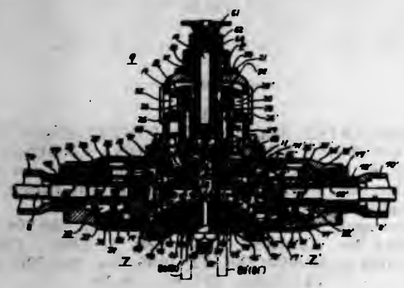
a second conduit including fuel pressurizing means connected to deliver fuel from said source to the afterburner;

second valve means operatively connected to said second conduit for controlling fuel flow therethrough;

control means responsive to the ratio of fluid pressures upstream and downstream of the gas turbine and the position of the control lever operatively connected to said second valve means for controlling the operation thereof and thus the fuel flow to the afterburner as a function of control lever position and said fluid pressure ratio, and

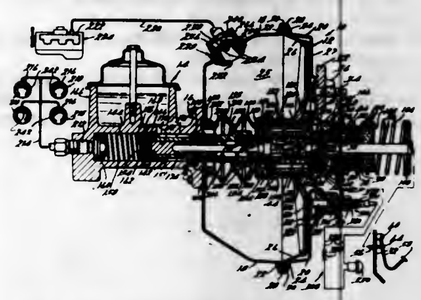
governor reset means, operatively connected to said governor means and said control means for modifying the governor setting corresponding to the position of the control lever in accordance with a predetermined variation in said fluid pressure ratio.

3,293,848
HYDROSTATIC POWER TRANSMISSION
Yoshikazu Kuze, 64 Chidori-cho, Chofu, Ota-ku, Tokyo, Japan
Filed Sept. 9, 1965, Ser. No. 486,081
Claims priority, application Japan, Sept. 24, 1964, 39/54,638
8 Claims. (Cl. 60—53)



1. A hydrostatic transmission comprising a substantially T-shaped housing having a crossbar portion, a pair of reversible oil motors having aligned output shafts mounted symmetrically in opposing relationship within the crossbar portion of said housing, a variable displacement oil pump having an input shaft, input and discharge sides and being mounted in a depending portion of said housing intermediate to and perpendicular to said oil motors, said oil motors being in fluid communication with said pump through an oil passage connecting means, said means comprising: a stationary manifold, a motor valve block supporting manifold inserted into said stationary manifold, colinear with the axis of said oil motors, a rotatable valve block rotatably mounted inside and at opposing ends of said supporting manifold, a pump stationary valve block manifold defining therein a passage perpendicularly crossing the stationary manifold and said supporting manifold colinear with the axis of said input shaft, a central passage in a stationary valve block manifold and in communication with a central passage in a supporting manifold, said passage communicating a discharge side of the oil motors with said intake side of the oil pump, and a space being formed between a portion of the outer periphery of said motor valve block supporting manifold and the inner periphery of said stationary manifold, said space communicating a discharge side of the oil pump with an intake side of the oil motors.

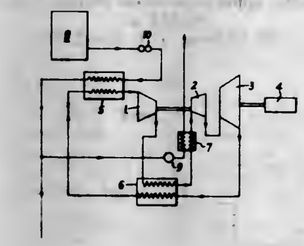
3,293,849
VEHICLE BRAKING SYSTEM
Robert H. Smith, Royal Oak, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Oct. 11, 1963, Ser. No. 315,640
10 Claims. (Cl. 60—54.5)



1. In a power brake unit having a fluid pressure differential responsive power piston, a master cylinder bore for the containment of a hydraulic brake fluid, a master cylinder piston received by said bore, a reaction piston received by said master cylinder piston valve means openable for creating said pressude differential across said power piston for actuation thereof, and manual means for at times opening said valve means for the creation of said pressure differential, means for connecting said master cylinder piston to said power piston, said connecting means comprising an adjustable member secured to said power piston for movement therewith, a first abutment surface formed on said adjustable member near one end thereof, an abutment member carried by said master cylinder piston at one end thereof, a second abutment surface formed on said abutment member abuttably engaging said first abutment surface, said first abutment surface comprising a conical seat-like portion and said second abutment surface comprising a spherical portion received by said conical seat-like portion for universal pivotal rotation therein, an annular groove formed generally internally of said adjustable member, an axially directed tubular extension formed on said abutment member so as to be generally loosely received within said adjustable member, an annular groove formed in said extension externally thereof, said external groove being axially positioned so that said external groove is slightly out of juxtaposition with said internal groove when said respective abutment surfaces are in engagement with each other, and an annular resilient member partly received within each of said grooves so as to be generally interposed between said adjustable member and said extension for resiliently connecting said adjustable member and said extension to each other and to continually urge said respective abutment surfaces into engagement with each other.

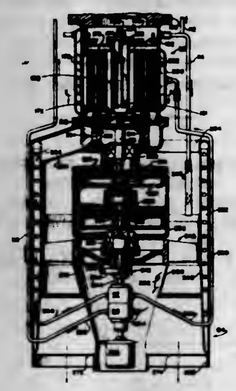
3,293,850
THERMAL POWER INSTALLATIONS UTILIZING LIQUEFIED NATURAL GAS
William Morrison, Newcastle-upon-Tyne, England, assignor to International Research & Development Company Limited, Newcastle-upon-Tyne, England
Filed May 5, 1965, Ser. No. 453,317
Claims priority, application Great Britain, May 20, 1964, 20,866/64
5 Claims. (Cl. 60—59)

1. A thermal power installation comprising: a closed cycle gas turbine plant including a compressor driven by a turbine; a first heat exchanger at the inlet to said compressor; a second heat exchanger at the inlet to the turbine; said first heat exchanger, compressor, second heat exchanger, and turbine being connected in sequence in a closed circuit; a moisture-free fluid in a single phase state filling the said circuit; a reservoir of liquefied natural gas; pump means connected to said reservoir and said first heat exchanger to pass liquefied natural gas from said



reservoir through said first heat exchanger to cool said fluid before it enters said compressor; a combustion chamber; and means for conveying the products of combustion from said combustion chamber through said second heat exchanger to heat the fluid entering said turbine.

3,293,851
UNDERWATER PROPULSION DEVICES
John K. Hulbert, Grand Island, and Frank D. Bond, Buffalo, N.Y., assignors to Bell Aerospace Corporation
Continuation of application Ser. No. 269,016, Mar. 29, 1963. This application June 20, 1966, Ser. No. 563,009
6 Claims. (Cl. 60—64)



1. A self-contained power unit comprising,

a tubular body having spaced inner and outer wall portions defining a condensing chamber, said body having an intake mouth and a discharge passage,

a boiler mounted adjacent the intake mouth of said body,

a turbine mounted adjacent said boiler and having an intake connected thereto and having exhaust connection to said condensing chamber,

a bladed member rotatably mounted within said body for pumping ambient fluid therethrough,

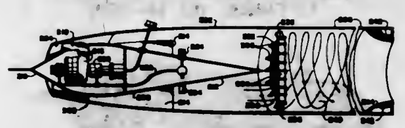
gear reduction means connecting said bladed member to said turbine,

pump means driven by said turbine and having an intake connected to said condensing chamber and a discharge connected to said boiler,

fuel supply means,

catalyst means connected to said fuel supply means to supply heat for said boiler.

3,293,852
PLASMA PROPULSION METHOD AND MEANS
Joseph R. Galli and George I. Wheeler, Wichita, Kans., assignors to The Boeing Company, Wichita, Kans.
Filed Mar. 19, 1963, Ser. No. 266,263
29 Claims. (Cl. 60—202)



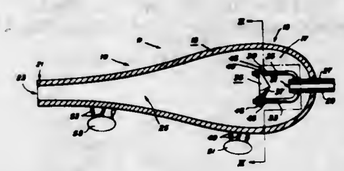
28. The method of producing thrust comprising, the steps of, providing a fuel and an oxidizer to a combustion chamber, igniting the fuel and oxidizer, introducing and passing a fluid spirally around and into contact with resulting combustion products and constricting said resulting combustion products, establishing a magnetic field and further constricting the resulting combustion products by passing the combustion products through said magnetic field, and discharging the resulting combustion products.

3,293,853
EUTECTICS OF TRIAMINOGUANIDINE PERCHLORATE WITH LITHIUM PERCHLORATE AND PROPULSIVE METHOD
Stanley F. Bedell, Andover, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,463
9 Claims. (Cl. 60—219)

1. A eutectic consisting essentially of triaminoguanidine perchlorate and lithium perchlorate, in which the weight ratio of said perchlorates is selected from about 35:65 and about 65:35.

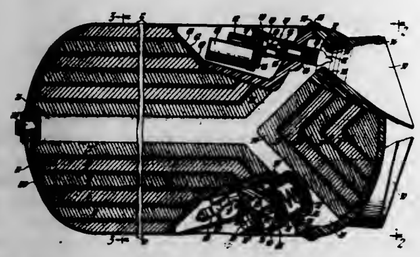
3. The method of propelling a rocket which comprises burning a propellant material comprising a eutectic as defined in claim 1 in the combustion chamber of a rocket.

3,293,854
STEAM PROPULSION BOILER
Charles A. Walker, 1533 Riverdale Road, Germantown, Tenn. 38038
Filed Nov. 8, 1962, Ser. No. 236,242
6 Claims. (Cl. 60—227)



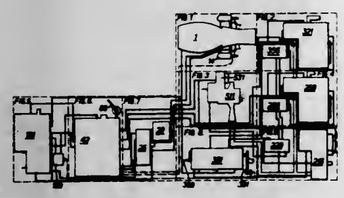
1. A steam propulsion means for providing the primary means of propulsion for a craft comprising a hollow teardrop-shaped body including an enlarged end providing an enlarged area in the interior thereof, means communicating with said enlarged area for introducing water in a continuously flowing stream into said enlarged area, means for providing a heating medium for heating said body to a temperature sufficient for continuously vaporizing the water in said body into steam and producing a continuous explosion, said body being tapered for a portion from said enlarged end to its termination in a restricted exit to provide a tapering restricted area for the steam to pass through before passing through said exit, said heating medium being kept separate from said steam.

3,293,855
REIGNITABLE ROCKET
William E. Cuttill, Fenton, Mich., Cyril M. Hawkins, James P. Kern, and Charles W. Schade, Indianapolis, Ind., and Albert J. Sobey, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 16, 1963, Ser. No. 319,089
15 Claims. (Cl. 60—229)



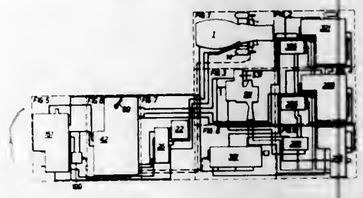
1. A reignitable, solid propellant rocket engine including means for thrust vector control and thrust level control, said engine comprising:
an outer casing;
a cluster of exhaust nozzles attached to said casing at the lower extremity thereof;
a plug means for each of said exhaust nozzles to control the flow of exhaust gases through each said nozzle;
thrust cancellation means positioned in said rocket engine casing and being operable to bleed exhaust gases from said rocket engine;
a plurality of layers of solid propellant disposed within said casing;
a plurality of layers of combustion inhibitor between said layers of solid propellant;
a plurality of ignition means positioned between said layers of solid propellant;
and means to actuate said ignition means.

3,293,856
AIRCRAFT GAS TURBINE ENGINE CONTROL SYSTEM
Stanley R. Tyler, Cheltenham, England, assignor to Dowty Fuel Systems Limited, Cheltenham, England, a British company
Filed May 18, 1964, Ser. No. 368,167
Claims priority, application Great Britain, May 24, 1963, 20,767/63
8 Claims. (Cl. 60—237)



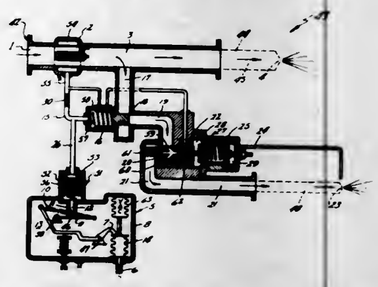
1. A control system for an aircraft gas turbine engine having reheat burners and an adjustable area jet nozzle comprising latch means capable of locking the jet nozzle against enlargement, means responsive to nozzle area to control reheat fuel flow to the burners to maintain flow small prior to lightup, and means responsive to lightup of the reheat burners to unlatch the adjustable jet nozzle to permit jet nozzle enlargement.

3,293,857
GAS TURBINE ENGINE
David K. Andrews, Cheltenham, England, assignor to Dowty Fuel Systems Limited, Arle Court, near Cheltenham, England, a British company
Filed July 28, 1964, Ser. No. 385,671
Claims priority, application Great Britain, July 30, 1963, 30,212/63
10 Claims. (Cl. 60—237)



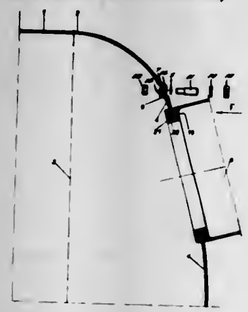
1. A control system for a gas turbine engine having a variable area jet efflux nozzle and at least two reheat burner assemblies located downstream of the turbine to supply reheat fuel to gas flowing through the nozzle, comprising in combination: a manually-operable control member; control means responsive to said member for selecting the total fuel flow for the reheat burner assemblies; nozzle area control means responsive to an engine operating condition to adjust nozzle area in the sense to tend to maintain said condition constant; selector valve means feeding fuel successively to the burner assemblies in response to total fuel flow and shutting off fuel flow successively from the assemblies in response to a reduction in total fuel flow; and hysteresis means included in said control means maintaining the position of the manually-operable control member at which fuel starts to flow to a burner assembly during increase of total fuel flow different from the position of the control member at which fuel is shut off from the burner assembly during reduction of total fuel flow.

3,293,858
FLOW DIVISION APPARATUS FOR FUEL SUPPLY SYSTEM
John M. Maljanian, Newington, Conn., assignor to Chandler Evans, Inc., West Hartford, Conn., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,261
7 Claims. (Cl. 60—241)



1. In a turbine engine afterburner control fluid flow division apparatus comprising, in combination, a source of regulated fluid flow, a plurality of fluid passages, said source connected to a first of said fluid passages, signal actuated triggering means responsive to an engine operating parameter, means responsive to said triggering means for diverting a portion of said regulated fluid flow from said first passage to a second of said passages, discharge flow rate measuring means, regulating means placed in flow series with and downstream of said diverting means, said regulating means being responsive to the magnitude of the discharge flow from said second passage limiting the flow through said second fluid passage only until a preselected flow level through said second fluid passage has been reached.

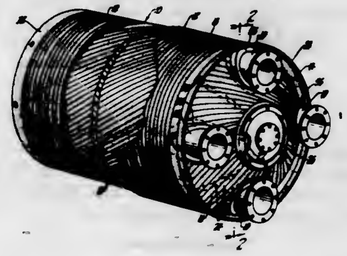
3,293,859
MEANS FOR SECURING AN END-PORTION OF A CONTAINER UNDER PRESSURE, IN PARTICULAR OF A ROCKET BODY
André Emile Derangeon, Deuzzario-les-Lys, and André Adolphe Lapprince, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Mar. 29, 1963, Ser. No. 268,958
Claims priority, application France, Apr. 4, 1962, 893,306
7 Claims. (Cl. 60—263)



1. In a vessel-like pressure-resisting structure including a casing, an end portion fast therewith and a removable central portion adaptable to said end portion, said portions having a common longitudinal axis, fastening means securing said portions to each other, said fastening means comprising mating surfaces formed on the respective portions generally perpendicular to and coaxial with said axis, said surfaces being integral respectively with said portions and having formed therethrough a plurality of arcuately spaced, relatively registering holes generally parallel to said axis, and bolt means extending through said holes for clamping together said mating surfaces and opposing separation thereof in a direction parallel to said axis, mating indentations being formed on said mating surfaces along closed curves coaxial with each other and with said axis and having mating radially outwardly facing inclined faces and mating radially inwardly facing inclined faces.

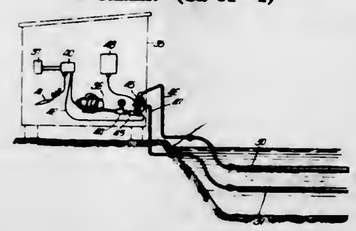
3,293,860
FILAMENT WOUND CONTAINER HAVING REINFORCED OPENING
Rowland L. Stedfeld, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1964, Ser. No. 368,831
6 Claims. (Cl. 60—263)

1. A container comprising a generally cylindrical body portion and dome-shaped end portions, said container being formed by a plurality of layers of plastic impregnated, helically wound, filament wrappings and having at least one opening extending through at least one of said dome-shaped end portions of said container, and at least one preformed, plastic impregnated, filament wound reinforcement subassembly having the general contour of at least a portion of said dome-shaped end portions of said container, said subassembly including a secondary reinforcement member and two generally annular primary reinforcement members, said secondary reinforcement member having an opening extending therethrough conforming generally to the shape and size of said opening in said dome-shaped end portion of said container and the openings defined by said generally annular members, said secondary reinforcement member being positioned between and integrally bonded to said generally annular members so that said openings defined by said generally annular members are coaxially aligned with said opening in said secondary reinforcement member, said



reinforcement subassembly being alternately positioned between successive layers of said wrappings so that said opening in said reinforcement subassembly and said opening in said dome-shaped end portion of said container are coaxially aligned, said subassembly being integrally bonded to said successive layers of said wrappings to provide an integrally reinforced laminated container structure.

3,293,861
METHOD OF DISTRIBUTING FLUIDS IN BODIES OF LIQUID AND APPARATUS THEREFOR
James Nelson Hinde, 224 Linden Park Place, Highland Park, Ill. 60035
Filed Nov. 13, 1961, Ser. No. 151,819
2 Claims. (Cl. 61—1)



1. Flexible weighted tubing for distributing air in liquids comprising, semi-rigid, non-collapsible flexible tubing formed of resilient rubber-like material having an orienting weight in the form of at least one lead wire carried along the underside of said tubing so as to extend in substantially a straight line when said tubing is straightened out, said tubing and said lead wire being secured together in a thin outer sheath of flexible coating material, said tubing having a plurality of fluid outlet valves formed in the upper path thereof and said valves being in the form of self-closing slits.

3,293,862
OVERFLOW FISHWAY
Charles M. Harding, 15310 64th Ave. S., Tukwila, Wash. 98067
Filed Aug. 21, 1963, Ser. No. 303,490
7 Claims. (Cl. 61—21)

1. In improvements to fishlocks for high dams, a covered enclosure extending along the face of the dam from the crest to the base thereof and downstream from said base, a bottom inner surface of said enclosure comprising

a spillway therefor, an upper stream opening of said enclosure in fluid communication with the waters impounded by the dam, a gated downstream opening of said covered enclosure in fluid communication with the waters in the stream below the dam and downstream from the



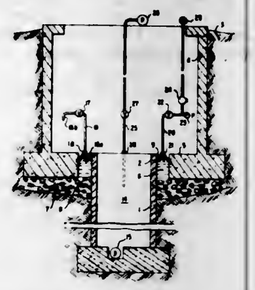
base, a conduit entering said covered enclosure extending downstream from said base, a valve in said conduit, an outlet end of said conduit directed to deliver water into the stream below the dam and to one side of the downstream extension of the enclosure.

3,293,863
APPARATUS AND METHOD FOR THAWING FROZEN GROUND
James H. Cox, 5232 Ewing Ave., S., Minneapolis, Minn. 55410, William T. Hoch, 4332 Fremont Ave., S., Minneapolis, Minn. 55409, and Woodrow S. Schilling, 1941 N. Snelling Ave., St. Paul, Minn. 55404
Filed Sept. 23, 1963, Ser. No. 310,688
2 Claims. (Cl. 61—36)



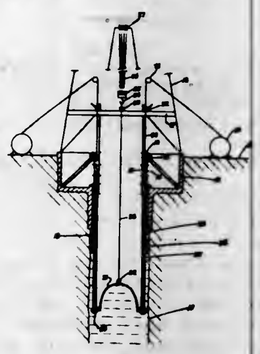
1. A combustive, gas heated unit for thawing frozen ground below the surface, having in combination:
an elongated heat-conductive tubular casing dimensioned for embedment longitudinally into the ground for some distance,
said casing having an open, generally tubular upper end,
a housing having a wall portion covering said open upper end and having a depending skirt closely fitting said open upper end,
said housing having a longitudinal passage for conveying a mixture of gaseous fuel and air,
a mixing head connected with an end portion of said passage and comprising an axial, relatively small gas conduit; and air intake means disposed outwardly and substantially concentrically of said gas conduit,
a fitting connecting the outer end of said gas conduit with a source of gas supply under pressure,
an elongated burner pipe rigidly secured at its upper end to said first mentioned wall of the housing and communicating with said passage in said housing, and extending downwardly axially in use within said conductive casing,
said burner pipe being of substantially smaller diameter than the internal diameter of said casing and having a burner tip at its lower end,
and venting means adjacent the upper end of said conductive casing for communicating said casing and said skirt with atmosphere outside of said housing.

3,293,864
METHOD AND APPARATUS FOR IMPREGNATING MASSES OF MATERIAL
Homer H. Hagins, Price, Utah, and William W. Brown, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,591
7 Claims. (Cl. 61—36)



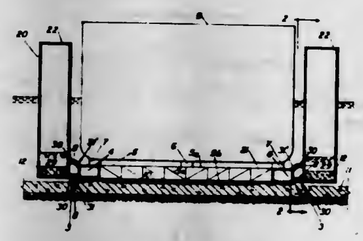
1. A method of grouting water impregnated, earthen material, said method comprising:
transporting at least a portion of water, standing above an exposed surface of an earthen mass, away from said mass;
releasing pressurized air into an enclosed space above said exposed surface of said earthen mass away from which water has been transported so as to apply pressurized air directly to said surface, said air being under sufficient pressure to drive water within said earthen mass away from said surface and into the interior of said earthen mass; and
injecting grouting fluid into said mass to impregnate at least a portion of said mass formerly occupied by said water.

3,293,865
SYSTEM FOR LINING LARGE DIAMETER BORE HOLES
Robert L. Loofbourow, 4032 Queen Ave., S., Minneapolis, Minn. 55410, and John Henry Schipke, 5324 Lyndale Ave., S., Minneapolis, Minn. 55419
Filed May 27, 1963, Ser. No. 283,405
8 Claims. (Cl. 61—41)



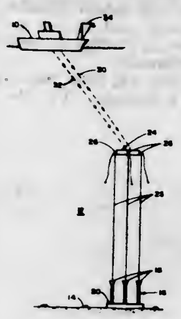
1. A system for lining a deep large diameter vertical hole bored into the surface of the earth which comprises casting a reinforced tubular casing in situ over said hole at the mouth thereof and progressively lowering said casing as formed into said hole until said hole is lined to the desired depth, said system comprising the steps of:
(A) supporting over the mouth of the hole to be lined tubular vertical uniformly spaced apart stationary forms defining the wall thickness of said casing,
(B) inserting the ends of a plurality of strong continuous metal strand vertical reinforcing elements between said forms uniformly spaced about the periphery of the forms from supply sources above the mouth of the hole and anchoring the strands in a removable ring at the bottom of said forms,
(C) placing concrete mix between said forms about said reinforcing elements to embed the same,
(D) leaving said concrete mix undisturbed between said forms until set up and hardened into a tubular casing,
(E) lowering said ring from the bottom of said forms a distance less than the length of the thusly formed casing segment, at least part of the suspended weight of said casing segment being supported by said reinforcing element to progressively insert further lengths of reinforcing elements and to maintain the strands thereof under constant substantially uniform tension to stress the same, and
(F) progressively placing further concrete into the top of said forms and progressively discharging tubular casing from the bottom thereof at a rate to permit the concrete mix to become set and hardened in the course of its passage through the forms.

3,293,866
DRY DOCKING METHOD
Christopher Jerome Foster, Sands Point, N.Y. (44 Whitehall St., New York, N.Y. 10004)
Filed Dec. 24, 1963, Ser. No. 333,218)
5 Claims. (Cl. 61—65)



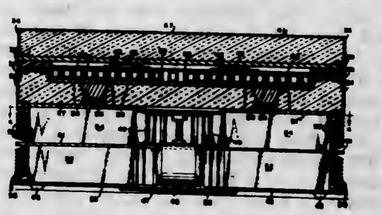
3. The method of launching a deep-draft ship into a waterway from a dry dock in which said ship is incapable of floating when said dry dock is flooded by reason of said dry dock having a ship-supporting floor disposed at an elevation which is lower than the water level of said waterway but higher than that of the underbottom of the ship in its floating condition, comprising the steps of providing a bottom support under said ship, said bottom support being detached from said floor of the dry dock, flooding said dry dock, positioning a floating sidewall tank in adjacent relation with each of the respective opposite sides of said bottom support, then lowering the respective draft elevations of said sidewall tanks to a depth whereat their respective undersides are substantially at the elevation of the underside of said bottom support, and rigidly attaching said bottom support to each of said tanks to thereby form a floatable cradle for supporting said ship, altering the draft elevation of said cradle to float the same clear of said dry dock floor with said ship supported therein, then moving said cradle and ship out of said dry dock into said waterway, lowering the draft elevation of said cradle to permit said ship to float free and clear of said bottom support, and providing relative movement between said ship and said cradle whereby said ship floats in said waterway outside of said cradle.

3,293,867
METHOD AND APPARATUS FOR MARKING, RELOCATING, AND RE-ESTABLISHING CONTACT WITH A SUBMARINE WELLHEAD
James T. Dean, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,773
16 Claims. (Cl. 61—72.3)



1. In a method of marking, relocating, and re-establishing contact with a submarine wellhead, said wellhead being associated with at least one guide line secured adjacent thereto and of a sufficient length to extend to the surface of the water in which the wellhead is submerged, said method comprising the steps of:
(a) engaging a buoyant buoy with said guideline near the upper end thereof;
(b) submerging said buoy along said guideline to a predetermined depth;
(c) securing said buoy on said guideline with the portion of said guideline between said buoy and said wellhead being maintained in a taut state;
(d) thereafter, relocating said buoy in said water;
(e) releasing the connection between said buoy and said guideline; and
(f) raising said buoy along said guideline to the surface of said water whereby the upper end of said guideline is raised to the surface.

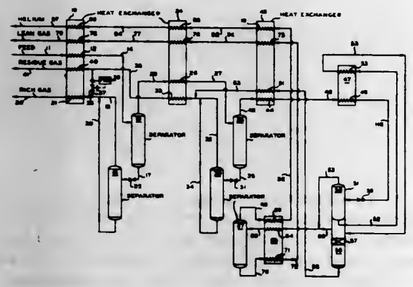
3,293,868
FLUID COOLING APPARATUS
Frank A. Gonzalez, New York, N.Y., assignor, by direct and mesne assignments, to Medical Electroscience, Inc.
Filed Feb. 16, 1965, Ser. No. 432,944
17 Claims. (Cl. 62—3)



1. Fluid cooling apparatus comprising a base, a collector plate mounted in said base, guide fin means on said collector plate in predetermined spaced relation and arranged to form a circuitous fluid passageway over

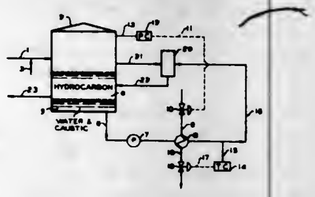
the collector plate, inlet and outlet means in communication with the fluid passageway, plate means superjacent said collector plate engageable with the upper terminals of said guide fins to enclose the passageway between the inlet and outlet means, at least one thermocouple below and in heat-conducting engagement with said collector plate, and a heat-dissipating assembly engageable with the lower extremity of said base, said assembly including fan means for dispersing the heat gathered by said collector plate upon actuation of said thermocouple.

3,293,869
GAS LIQUEFACTION WITH RECOMBINING OF SEPARATED GAS-LIQUID FRACTIONS
Joseph T. Karbosky and Ernest A. Harper, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,688
6 Claims. (Cl. 62—23)



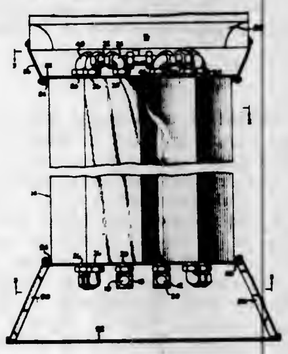
1. In a process which comprises passing a feed gas stream to a first indirect heat exchange zone to partially liquefy said feed gas stream in said first indirect heat exchange zone, passing the resulting vapor-liquid mixture from said first indirect heat exchange zone to a first separation zone, passing a first vaporous stream from said first separation zone to a second indirect heat exchange zone to partially liquefy said first vaporous stream, passing the resulting vapor-liquid mixture from said second indirect heat exchange zone to a second separation zone, withdrawing a second vaporous stream from said second separation zone, passing a liquid from said second separation zone to a first vaporization zone, withdrawing a vapor from said first vaporization zone, withdrawing a liquid from said first vaporization zone, passing said vapor and liquid withdrawn from said first vaporization zone in admixture through said second indirect heat exchange zone in indirect heat exchange with said first vaporous stream passed from said first separation zone to said second separation zone, vaporizing in said second indirect heat exchange zone said liquid contained in said vapor-liquid mixture passed to said second indirect heat exchange zone from said first vaporization zone, passing a portion of the resultant vapor from said second indirect heat exchange zone through said first indirect heat exchange zone in direct heat exchange with said feed gas stream, passing a liquid from said first separation zone to a second vaporization zone, withdrawing a vapor from said second vaporization zone, withdrawing a liquid from said second vaporization zone, combining said vapor and liquid withdrawn from said second vaporization zone and passing said combined liquid-vapor mixture withdrawn from said second vaporization zone in admixture with the remainder of said resultant vapor through said first indirect heat exchange zone in indirect heat exchange with said feed gas stream, and vaporizing within said first indirect heat exchange zone at least a portion of said liquid withdrawn from said second vaporization zone.

3,293,870
LOW PRESSURE STORAGE
John M. Folz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 25, 1965, Ser. No. 442,594
9 Claims. (Cl. 62—45)



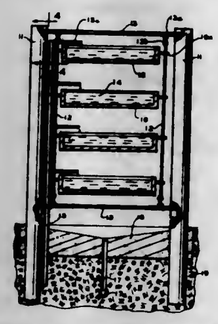
1. A method for low pressure-low temperature storage of a first liquid that contains a substantial amount of a second liquid that tends to at least become viscous at the storage temperature and pressure of said first liquid which comprises storing said liquids at a low pressure of less than about 1 p.s.i.g. and at a temperature that prevents substantial vaporization of said first liquid, adding to said liquids a material which preferentially combines with said second liquid and in an amount which lowers the solidifying temperature of said second liquid at least to the storage temperature, removing a part of at least said second liquid and combined material from the stored liquids, cooling said removed part to a temperature substantially below the storage temperature, utilizing said cooled removed part to condense vapors of at least said first liquid and to cool said stored liquids.

3,293,871
CRYOGENIC VAPORIZER
Lewis Tyree, Jr., Chicago, Ill., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,448
6 Claims. (Cl. 62—52)



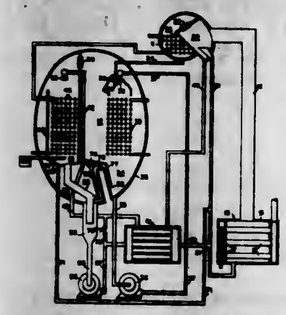
1. An improved cryogenic vaporizer including a vaporizer tube, an inlet, and an outlet, said tube, said inlet, and said outlet being interconnected, comprising a plurality of fins secured to said tube in thermal communication therewith, said fins being formed of a single sheet of preselected material of substantially uniform thickness and being disposed in spaced, parallel relationship to the axis of said tube.

3,293,872
LADDER-TYPE TRAYS FOR DESALTING SEA WATER
Richard J. Rowekamp, 440 Hilltop Lane, Cincinnati, Ohio 45215
Filed Feb. 28, 1966, Ser. No. 530,736
3 Claims. (Cl. 62—123)



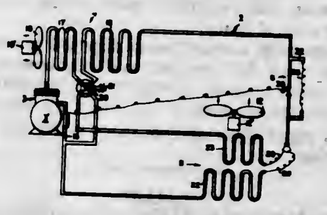
1. A group of solar trays for desalting sea water by freezing through exposure to the extreme cold air of the atmosphere, which comprises a number of shallow corrosion-resistant metal trays hung, one above the other, so that each is completely surrounded by the cold air of the atmosphere; said metal comprising said trays being aluminum alloyed with titanium; said trays having a base and walls extending upwardly from said base, and having an upper portion that is uncovered; means for suspending the trays high in the air, one above the other; said suspending means being a combination of long upright poles, swivel rods, and ropes which are fastened one to the other; said suspending means also providing the means for tilting said trays so that they can be emptied of their contents of frozen ice crystals and brine solution; said means for tilting said trays being accomplished by pulling said ropes up or down; means for filling each of said trays with sea water; and means for collecting the ice crystals and draining away the brine solution.

3,293,873
REFRIGERANT CONTROL FOR ABSORPTION REFRIGERATION SYSTEMS
Joseph R. Bourne, Dewitt, and Keith V. Elsberg, Camillus, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,132
8 Claims. (Cl. 62—141)



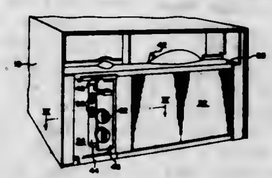
1. In an absorption refirgeration system, the combination of: a shell; baffle means separating said shell into an absorber section including a solution collecting chamber and an evaporator section; said shell including a partition member cooperable with said baffle means to separate said shell into a sump for liquid refrigerant from said evaporator section and a sump for solution from said absorber section; a generator; pump means for passing solution to said generator; conduit means communicating said solution collecting chamber and said solution sump with said pump means; and means operable at a predetermined refrigerant level in said refrigerant sump to pass refrigerant into the stream of solution flowing through said conduit means.

3,293,874
AIR CONDITIONING SYSTEM WITH REHEATING MEANS
Karl M. Gertels, Cazenovia, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Sept. 29, 1965, Ser. No. 491,175
7 Claims. (Cl. 62—173)



1. In a conditioning apparatus, the combination of a compressor, a condenser, expansion means, and an evaporator arranged in a closed refrigeration system; fan means for bringing air to be conditioned into heat exchange relation with said evaporator for discharge into the space being conditioned whereby upon actuation of said compressor said apparatus cools said air; said condenser comprising first and second serially connected heat exchange coil parts; said evaporator comprising first and second heat exchange coil parts arranged to provide parallel refrigerant flow paths; valve means adapted when actuated to connect said condenser first coil part in series with said evaporator first coil part and said condenser second coil part with the suction side of said compressor whereby said evaporator first coil part functions as a condenser and said apparatus cools and heats said air, and control means for said apparatus including means responsive to a predetermined humidity condition in said space to actuate said valve means.

3,293,875
ROOM AIR CONDITIONER WITH CONTROLS THEREFOR
Anthony H. Kelly, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 9, 1965, Ser. No. 438,269
6 Claims. (Cl. 62—180)



1. In a self-contained room air conditioner of the type adapted for window mounting:

an outer housing containing a bulkhead therein dividing said housing into a room-side space and an outdoors-side space;

an evaporator plenum in said room-side space containing a refrigerant evaporator at the face of said room-side space, and a room air fan in said room-side space for drawing room air through said evaporator and then forcing it back into the room;

an electrical components chamber in said room-side space adjacent said evaporator plenum but separated therefrom by a partition;

means defining a separate, temperature control space in said electrical components chamber;

a temperature responsive bimetallic element in said temperature control space for actuating electrical switch means controlling the operation of said air conditioner;

a front panel for said temperature control space including means defining an inlet opening in communication with the air in said room;

means defining an air outlet opening in said partition between said evaporator plenum and said temperature control space;

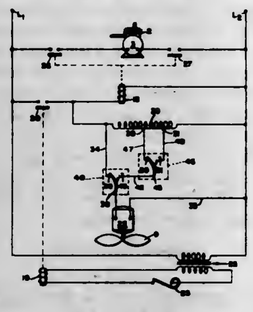
said bimetallic element being disposed generally in the path of air flow between said inlet opening and said air outlet opening to subject said bimetallic element to the temperature of the room air drawn through said temperature control space when said fan is operating.

3,293,876

REFRIGERATION SYSTEM INCLUDING CONTROL ARRANGEMENT FOR MAINTAINING HEAD PRESSURE

Richard H. Golsler, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,116
3 Claims. (Cl. 62—184)



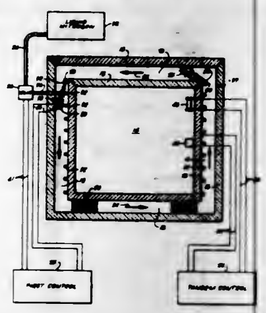
1. In a refrigeration system including compression means having suction and discharge sides, expansion means, first heat exchange means connecting the compression means discharge side with the expansion means, second heat exchange means connecting the expansion means with the compression means suction side, and a fan for bringing air into heat exchange relationship with said first heat exchange means, the combination of a drive motor for said fan; a circuit for energizing said drive motor; an inductance across said drive motor circuit having at least one reduced voltage tap; a switch in said drive motor circuit between said drive motor and said inductance, said switch being adapted when moved to connect said drive motor with said reduced voltage tap to reduce power input to said fan drive motor; and means for moving said switch in response to a predetermined condition of the refrigerant leaving said first heat exchange means to energize said fan drive motor through said reduced voltage tap.

3,293,877

REFRIGERANT FLOW CONTROL MEANS

Loyd A. Barnes, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,265
12 Claims. (Cl. 62—223)



1. Apparatus for maintaining a chamber at a predetermined low temperature with a minimum of variations in such temperature, comprising:

a first insulated housing forming the chamber;

a second insulated housing enclosing the first housing with space between the first and second housings surrounding the first housing;

a conduit means formed as a coil having multiple turns and disposed to surround the first housing in close proximity thereto, said final turn of said coil disposed to have two series of gas exhaust holes on opposite sides of the first housing with all of said holes in each series being oriented to dispense a spray of coolant in the same circumferential direction;

a supply of coolant;

valve means connecting the coolant supply to said conduit means;

a temperature sensor positioned in said space in proximity with said conduit means; and

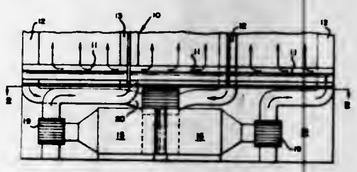
control means connected to said valve means and said sensor for stopping the flow of the coolant into said conduit means at a first low temperature below said predetermined temperature and starting the flow of coolant into said conduit means at a second, higher, low temperature below said pre-determined temperature.

3,293,878

REFRIGERATED DISPLAY CASE HAVING SELF-CONTAINED REFRIGERATION UNIT

Louis F. Barroero, 1585 Daniels Drive, San Leandro, Calif. 94577

Filed Dec. 23, 1965, Ser. No. 515,945
5 Claims. (Cl. 62—255)



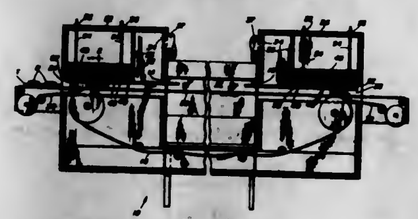
1. In a refrigerated display case having a base compartment for housing refrigeration apparatus, the combination comprising: a plurality of first and second vertical air ducts mounted in horizontally spaced relation longitudinally of said case; a pair of coil housings disposed centrally within said base compartment, each housing having a refrigeration coil mounted therein; means including a blower fluidly communicating the inlet end of each coil housing with the lower ends of said first vertical air ducts; a pair of first and second blowers disposed within said base compartment; and means fluidly connecting said first and second blowers, respectively, between the discharge end of one coil housing and the lower end of a second vertical air duct.

3,293,879

GAS BARRIERS FOR AN ARTICLE CONVEYOR

Hans Von Elberg, Lincolnwood, Ill., assignor to Kitchens of Sara Lee, Inc., Chicago, Ill., a corporation of Maryland

Filed Jan. 11, 1965, Ser. No. 424,477
5 Claims. (Cl. 62—266)



1. A freezer system comprising

an elongated freezing chamber having input and exit openings at the ends thereof,

a conveyor associated with said freezing chamber and including a substantially horizontal belt span passing therethrough, a gaseous cooling medium in said freezing chamber,

an input ante-chamber connected to the input end of said freezing chamber and communicating with said input opening,

said input ante-chamber being formed with an inlet opening in alignment with said input opening,

an exit ante-chamber connected to the exit end of said freezer chamber and communicating with said exit opening,

said exit ante-chamber being formed with an outlet opening in alignment with said exit opening,

a honeycomb structure mounted in each of said ante-chambers and positioned respectively behind said inlet and outlet openings,

each of said structures comprising a plurality of contiguous elongated cells, and

means sealing off the top end of each of said cells,

said structures being mounted with the longitudinal axes of said cells in substantially vertical relationship and the open ends of said cells facing downwardly toward said belt span and having no physical contact therewith so that articles on said conveyor pass freely therebeneath, whereby said structures function to create a gas barrier which prevents movement of gases from said freezer chamber into the ambient atmosphere and from the ambient atmosphere into said freezer chamber through said inlet and outlet openings.

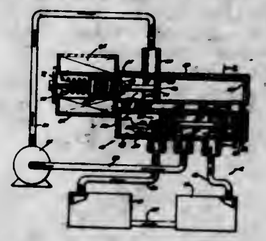
3,293,880

REVERSING VALVE FOR REFRIGERATION SYSTEMS AND AIR CONDITIONING SYSTEMS

Fred A. Greenawalt, Pompano Beach, Fla., assignor to Lyle A. Trolz, Fort Lauderdale, Fla.

Filed Sept. 16, 1965, Ser. No. 487,777
9 Claims. (Cl. 62—324)

1. In a reversible cycle refrigerant system having a compressor, and a pair of heat exchangers connected in a circuit, a reversing valve for selectively reversing the order of flow of refrigerant through said heat exchangers, said valve comprising a hollow valve body having a first port intermediate the ends thereof connected to the intake of said compressor, said valve body having a pair of ports on opposite sides of said first port connected to said pair of heat exchangers, said valve body having a pair of inlet openings spaced longitudinally thereof on opposite sides of said ports, means for selectively connecting the discharge side of said compressor to one or the other of said inlet openings, a piston mounted for free sliding movement in said valve body between a pair of limit positions said piston cooperating with said valve body to form a chamber intermediate the ends of said piston shaped so



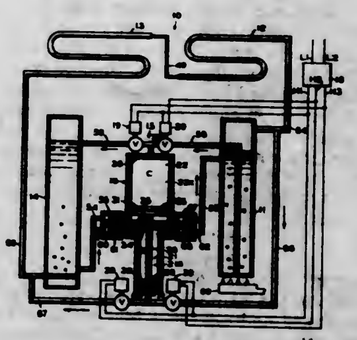
that forces applied to said piston by fluid in said chamber are substantially balanced, said piston in one of said limit positions being located so that said chamber communicates said first port with one of said pair of ports and in the other one of said limit positions communicates said first port with the other one of said pair of ports, said piston in each of said limit positions being located to one side of one of said inlet openings and providing for communication of said one inlet opening with one of said pair of ports.

3,293,881

MEANS FOR TRANSFERRING FLUIDS IN AN ABSORPTION REFRIGERATION SYSTEM

Frank M. Walker, 3633 NW. 46th, Oklahoma City, Okla. 73112

Filed May 21, 1964, Ser. No. 458,841
9 Claims. (Cl. 62—476)



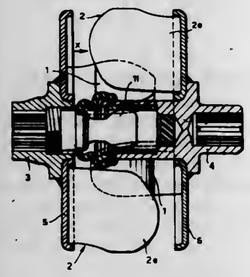
3. The combination with an absorption refrigeration system of the differential pressure type wherein a solution of refrigerant and an absorbent circulate, a generator disposed in the high pressure side of the system, an absorber disposed in the low pressure side of the system, conduits forming a circuit for flow of refrigerant and absorbent through and between the generator and absorber, of a pump interposed in said circuit for forcing circulation of fluids through the circuit, comprising a first solution displacement means, a second solution displacement means, a power piston interconnecting the said first and second solution displacement means and having one end thereof exposed to existing pressures in the first solution displacement means and the opposite end thereof exposed to

existing pressures in the second solution displacement means, and means for alternately communicating one solution displacement means to the high pressure side of the system while simultaneously communicating the other solution displacement means to the low pressure side of the system to actuate the piston and solution displacement means by system forces acting on opposite ends of the piston.

3,293,882
ELASTIC UNIVERSAL JOINTS FOR THE TRANSMISSION OF TORQUE

Antonio Boschi and Mario Rubietti, Milan, Italy, assignors to Societa Applicazioni Gomma Antivibranti "SAGA" S.p.A., Milan, Italy

Filed Sept. 29, 1964, Ser. No. 399,980
Claims priority, application Italy, Jan. 24, 1964, 1,581/64
1 Claim. (Cl. 64—14)



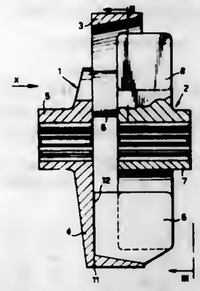
An elastic universal joint for transmission of torque comprising; a pair of coaxially disposed and spaced spiders, each spider comprising a hub, a circular cap member secured coaxially to said hub and extending in an outwardly direction of said hub, spaced cylindrical flanges on said cap member defining an annular channel therebetween, the bottom of said channel having spaced pairs of bosses extending axially inwardly of said joint; a plurality of rectilinear rubber dowels; rigid plate-like connectors on opposite ends of each of said dowels; the dowels being arranged in a polygonal ring configuration in end-to-end relationship with the connectors of adjacent dowels being disposed juxtapositioned and secured to each other and located on radial planes; each connector having a wing disposed in said channel; and each wing having a recess receiving a respective one of said bosses for securing a respective connector to said flanges with the wings of alternate pairs of connectors secured to the flange of a respective spider.

3,293,883
TORQUE TRANSMITTING RESILIENT JOINT AND MANUFACTURING METHOD

Antonio Boschi and Giovanni Martorana, Milan, Italy, assignors to Societa Applicazioni Gomma Antivibranti "SAGA" S.p.A., Milan, Italy

Filed Sept. 29, 1964, Ser. No. 399,981
Claims priority, application Italy, Jan. 24, 1964, 1,582/64
4 Claims. (Cl. 64—14)

1. A torque transmitting resilient joint comprising: a rigid spider having a plurality of radial fins directed outwardly in axial planes, a circular rigid rim of malleable metal integrally formed with a plurality of radial fins inwardly extending therefrom in axial planes alternating with the fins on the spider, said rim having a cylindrical outer surface and a substantially frusto-conical inner surface, a plurality of in situ vulcanized, pre-compressed rubber blocks, each of said blocks resiliently interconnecting a respective one of the fins on the rim and a respective one of the fins on the spider and being directly bonded to said fins, and separately formed means rigidly connected to the rim at the side of the rim cor-

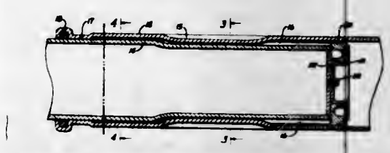


responding to the small end of said frusto-conical surface and providing together with said spider torque-applying means in the joint.

3,293,884
POWER TRANSMITTING ELEMENT

Benjamin Grob, Grafton, Wis., assignor to Grob Inc., Grafton, Wis., a corporation of Wisconsin

Original application Aug. 3, 1961, Ser. No. 129,073. Divided and this application Sept. 1, 1965, Ser. No. 484,269
2 Claims. (Cl. 64—23)



1. A power transmitting coupling, comprising a tubular housing member having a substantially uniform wall thickness throughout its length and having an internal and external spline, a tubular housed member having a substantially uniform wall thickness throughout its length and having an internal and external spline, the inner end of the housed member being telescopically disposed within the inner end of the housing member and the internal spline of said housing member matching and engaging the external spline of said housed member, the spline of said housing member having a substantially shorter axial length than the spline of said housed member, and universal joint means secured to the outer end of each of said tubular members, the inner end portion of the housing member being deformed radially inward to define an annular bearing spaced axially from the spline on said housing member, said housing member and housed member being in contact with each other at the location of the matching splines and at the location of the bearing and spaced out of contact between the location of said matching splines and said bearing.

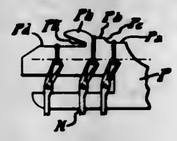
3,293,885
APPARATUS FOR KNITTING RUN-RESISTANT FABRIC

Max Nebel, Wiesbaden, Germany, assignor to Hanes Corporation, a corporation of North Carolina

Original application Jan. 31, 1962, Ser. No. 170,029. Divided and this application Jan. 5, 1966, Ser. No. 518,906
2 Claims. (Cl. 66—107)

1. A sinker for a circular knitting machine having
(a) a neb,
(b) a yarn drawing ledge behind the neb,

(c) a second yarn drawing ledge behind the neb at a different height than the first ledge and
(d) a yarn sinking ledge in front of the neb,



(e) both yarn ledges behind the neb being at a different height than the ledge in front of the neb, and the two ledges behind the neb being interconnected by an inclined edge.

3,293,886
APPARATUS AND METHOD FOR PRODUCING PLUSH KNITTED FABRIC

Max B. Nebel, Wiesbaden, Germany, assignor to Hanes Corporation, a corporation of North Carolina

Filed Aug. 13, 1964, Ser. No. 389,339
7 Claims. (Cl. 66—108)

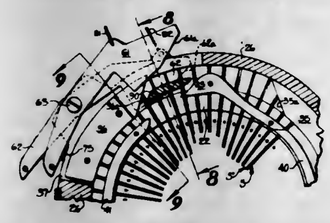


1. A method of knitting plush fabric of at least two threads on a circular knitting machine having a set of needles and sinkers, which includes
(a) feeding the threads to the needles at a thread feeding station,
(b) advancing the sinkers, as the threads are fed to the needles, to position the sinker hooks above one thread and below the other thread,
(c) drawing the thread below the sinker hooks in a substantially vertical direction by the needles, to form relatively short thread loops and
(d) drawing the thread above the sinker hooks in an oblique direction by the needles, to form relatively long thread loops.

3,293,887
SINKER ARRANGEMENT AND CONTROL MEANS FOR CIRCULAR KNITTING MACHINE

Herman E. Crawford, Kernersville, N.C., assignor to H. E. Crawford Co., Inc., Kernersville, N.C., a corporation of North Carolina

Filed Mar. 1, 1963, Ser. No. 262,160
7 Claims. (Cl. 66—108)



1. In a circular knitting machine of the type having a circle of needles, and a sinker bed surounding the circle of needles, said sinker bed having radially extending sinker grooves therein which are alined with the spaces between said needles, an improved sinker arrangement therein comprising
(a) a pair of sinkers supported for collective and independent longitudinal movement in each of the grooves of said sinker bed, each of said sinkers including
(1) an upstanding neb positioned intermediate opposite ends thereof,
(2) a normal stitch drawing ledge positioned inwardly of said neb, and
(3) an upstanding operating butt positioned outwardly of said neb,
(b) one of said sinkers in each of the sinker grooves having an elongate stitch drawing ledge on the upper edge of said neb,
(c) the other of said sinkers in each of the sinker grooves having a downwardly and outwardly extending inclined reverse plating surface on said neb and a reverse plate stitch drawing ledge positioned at the lower end of said reverse plating surface and outwardly of said neb, and
(d) the operating butt of one sinker in each of the sinker grooves being longer than the operating butt of the other sinker in each of the sinker grooves, and the outer portion of the lower edge of each longer butt sinker being undercut to position the outer lower edge of the sinker in spaced relationship above the bottom of the corresponding groove of said sinker bed.

3,293,888
ALCOHOL BURNERS

Clifford H. Fry, 2031 W. Calle Placida, Tucson, Ariz. 85705

Filed May 5, 1965, Ser. No. 453,259
10 Claims. (Cl. 67—53)



1. An alcohol burner comprising a fuel container having a removable lid, a vertically disposed cylindrical combustion chamber having at its lower end a bottom supported on and secured to said lid, and having an open upper end, a cup within said combustion chamber supported on and secured to said bottom, said lid, combustion chamber and cup being assembled co-axially, said assembly having a central opening, and a wick passing through said opening and extending upwardly from said container into said cup, said combustion chamber having air inlet openings adjacent its lower end surrounding said cup.

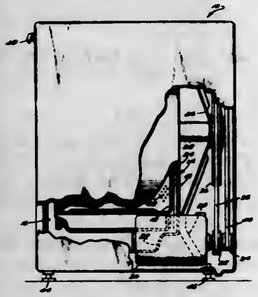
3,293,889
CONTROL FOR CONTINUALLY VARYING TUMBLE SPEED

Clifton A. Cobb, St. Joseph, and Glen R. Severance, Benton Harbor, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,572
5 Claims. (Cl. 68—12)

1. In a laundry machine,
a rotatable receptacle for tumbling clothes,
a motor for driving said receptacle having a control winding circuit,
plural resistors for introducing selected values of resistance into said control winding circuit,
sequential control means including switch means regulating the selection of said resistors and automatically operating the machine through a programmed sequence of washing, rinsing and drying periods and controlling the operation of said motor at correspondingly different speeds during different cycles in said sequence,

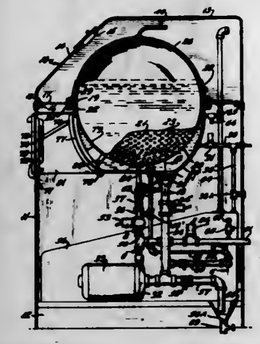
continuously adjustable resistance means in circuit with one of said plural resistances and including a motor driven movable control member to continually vary



the rotational speed of said receptacle during operation of said movable control member,

thereby to produce said continually varying rotational speed during the washing period of the programmed sequence.

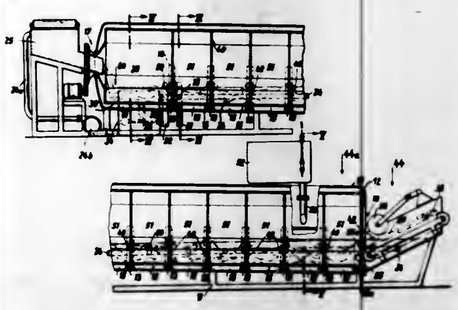
3,293,890
ASPIR-JET WASHER
Joe M. Valdespino, Orlando, Fla., Clifford B. Cox, Chicago, Ill., and Floyd Groo, Orlando, Fla., assignors to Valcox Corporation, Orlando, Fla.
Filed May 14, 1965, Ser. No. 455,686
8 Claims. (Cl. 68—21)



4. An automatic washing machine comprising an imperforate tub, a perforated tub located within said imperforate tub, a flexible bladder mounted on said tubs forming an airtight container, means for introducing fluid into said container, a venturi-type aspirator extending into said container, pump means connected to said container and said aspirator for circulating fluid from said container through said aspirator and injecting the same into said perforated tub under pressure, and means for draining said machine.

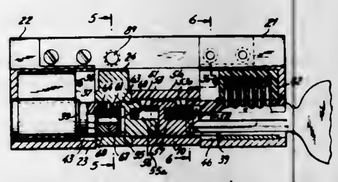
3,293,891
TUBULAR DOUBLE DRUM TYPE COUNTERFLOW WASHING MACHINE FOR TEXTILES, ESPECIALLY LAUNDRY
Erich Joseph Sulzmann, Camplone d'Italia, Prov. di Como, Italy
Filed Apr. 30, 1964, Ser. No. 363,966
8 Claims. (Cl. 68—58)

1. A tubular double drum type counterflow washing machine for textiles, especially laundry, comprising a stationary tubular outer drum, an inner washing drum rotatable in said outer drum, a plurality of axially spaced bearing rails arranged between the outer drum and the inner washing drum and defining individual liquor compartments in the outer drum, annular partition means subdividing the interior of the inner washing drum into at least one soaking or pre-washing compartment and a plurality of washing compartments, the bearing rail be-



tween the liquor compartment of the soaking or pre-washing compartment and the adjacent liquor compartment and the annuular partition means between the soaking or pre-washing compartment and the adjacent washing compartment extending beyond the bath level.

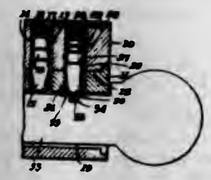
3,293,892
LOCK ADAPTER
Myron P. Falk, Leominster, Mass., assignor to Independent Lock Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Oct. 9, 1964, Ser. No. 402,712
3 Claims. (Cl. 70—364)



1. A lock assembly comprising first and second housings, a cam driver in each said housing, the driver of said first housing including a lock plug, a latch operator cam rotatably mounted between said housings, a spacer ferrule interposed between said cam and said second housing, said ferrule having an inner bore, a support bar fixed to said housings and maintaining said housings in abutting relation, respectively, with said cam and said ferrule, a pair of independently rotatable abutting link means for connecting said cam drivers selectively and alternatively to said cam, one said link means being longitudinally extensible, and including at least two relatively longitudinally movable cylindrical segments rotatably mounted in said ferrule, one said segment including a drive portion slidably extending from one segment to the other segment and locking said segments against relative rotation, each said link means having at its inner end a generally cylindrical wafer member, said wafer members being relatively rotatable and disposed in end-to-end abutting position, each said wafer member including a radially extending drive portion, a complemental drive portion on said cam adjacent said drive portions of said wafers, said wafers being axially reciprocable with respect to said cam to engage one only of said wafers in driving connection with said cam, spring

means interposed between said second housing and said one link means for biasing said one link means toward said cam, normally to engage the wafer of said one link means with said cam, and clear the wafer member of said other link means from said cam, said other link means including portions positioned to be engaged and inwardly shifted by a key inserted into said plug, thereby to connect said wafer of said other link means with said cam and clear said wafer of said one link means therefrom.

3,293,893
PIN TUMBLER LOCK
Abraham Chesler, 357 Midwood Road, Woodmere, N.Y. 11598
Filed Apr. 8, 1965, Ser. No. 446,610
7 Claims. (Cl. 70—385)



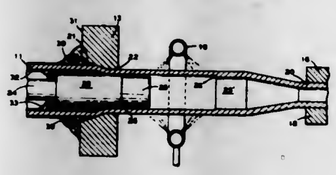
4. In a pin tumbler lock having a cylinder body and a plug having a key slot and rotationally fitted in said body, a plurality of radial bores extending from said key slot in the plug and into the cylinder body past a break line that coincides with the area of rotational interfit of the plug and cylinder of said body, a spring-biased pin tumbler in at least one of said bores comprising:

(a) a change pin provided with a break-off extension, the latter being provided on the end of the change pin that is directed toward the key slot,

(b) and a hardened key-like tool insertable in the key slot of the plug and having a notch into which the extension is directed under the bias on the tumbler, said extension being disposed entirely within said key slot,

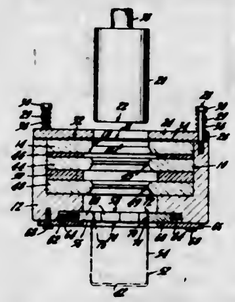
(c) said tool, upon retraction from the plug, removing the extension from the change pin.

3,293,894
HOT DRAWING TUBES
David A. Edgecombe, Howard W. Marshall, and Sidley O. Evans, all of Beaver Falls, Pa., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 28, 1964, Ser. No. 370,851
6 Claims. (Cl. 72—42)



1. The method of drawing a ferrous metal workpiece through a die to change the cross-section of the workpiece which comprises the steps of heating the workpiece to a temperature in the range of 1500 to 2200° F., applying a layer of glass-like lubricant to the surface of said hot workpiece, said glass-like lubricant being viscous at the heated temperature, and drawing said hot lubricated workpiece to change the cross-section thereof with the viscous glass-like lubricant protecting the surfaces of the workpiece during drawing.

3,293,895
METHOD OF FORMING A COATED METAL CONTAINER
Leonard Raymond Kahan, Hyattsville, Md., and John Anthony Storace, Barrington, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 23, 1962, Ser. No. 232,559
5 Claims. (Cl. 72—46)



1. A method of forming an anodized porous aluminum oxide coated aluminum blank into a cup-shaped article and then elongating the side wall thereof without complete separation of the aluminum oxide from the basic aluminum metal which provides an improved surface for the subsequent adherence of an organic coating, the steps comprising:

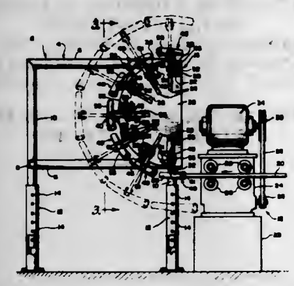
drawing said blank into a shallow cup without thinning the end and side wall of said cup while said oxide coating remains adhered to the aluminum surface;

and thereafter simultaneously subjecting the internal side wall of said cup and its oxide coating to an elongational force and the external side wall of said cup and its oxide coating to a compressive force by forcing the side wall through a reducing die thus stretching the internal coating while extruding the external coating to thereby fracture said coatings into microscopic discontinuous particles which adhere to said basic metal, although the aluminum oxide coatings appear continuous to the naked eye.

3,293,896
COATED METAL ARTICLE AND METHOD OF MAKING SAME
Andrew J. Kompanek, Jr., Lansdale, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
No Drawing. Filed June 28, 1963, Ser. No. 291,267
5 Claims. (Cl. 72—47)

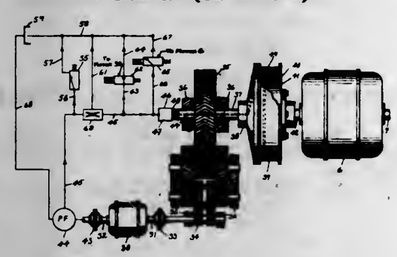
1. A method for forming a metal article of predetermined shape with a corrosion resistant coating thereon including the steps of coating a metal billet with a mixture of a solid particulate material and an aqueous solution, the solute of said aqueous solution consisting essentially of a combination of inorganic compounds selected from the group consisting of phosphoric acid, chromic acid, molybdic acid, and the metal salts of said acids, the combination of compounds in said aqueous solution being such as will provide at least .5 mol per liter dissolved phosphate, at least .3 mol per liter dissolved material from the group consisting of chromate and molybdate, and at least .2 mol per liter dissolved metal, and subsequently cold forming the coated billet to the desired predetermined shape.

3,293,897
MECHANICAL BENDING APPARATUS FOR MAKING COILED TUBING
Fred L. Holter, 9668B Lois Drive, Des Plaines, Ill. 60016
Filed Mar. 18, 1964, Ser. No. 352,821
18 Claims. (Cl. 72—135)



1. A bending apparatus for coiling an elongated tube-like member into a spiral coil pattern of the general helical type for use as a spiral staircase rail and the like comprising a pair of diametrically opposed radially extending spacers, axially extending guide carrying members disposed between the spacers and extending radially outward from the central axis of the apparatus, and means coupling the guide carrying members and the spacers in angular positioning of one guide carrying member relative to the other, said guide carrying members each having an outer portion collectively presenting with another a general circumferential zone adapted to determine the general diametric extent of the spiral coil pattern, and guide means disposed on the outer portion of each guide carrying means in the circumferential zone and adapted for the reception of the tube-like member in coiled circumscribing and axial travel above the apparatus from one guide means to another.

3,293,898
AUXILIARY DRIVE SYSTEM FOR STEEL ROLLING MILLS
Richard J. Thomas, Fox Point, and Ronald A. Witt, Brown Deer, Wis., assignors to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 16, 1964, Ser. No. 352,044
9 Claims. (Cl. 72—249)



1. In a rolling mill of the type including (a) work rolls, (b) a main drive system for normally operating the work rolls comprising a main motor, pinions driven by the main motor, and couplings connecting the pinions to the work rolls, and (c) an auxiliary drive system for operating the rolling mill when the main motor is off to slowly turn the pinions and align the couplings in a suitable position to facilitate change of the work rolls, an improved auxiliary drive system comprising, in combination:

(1) an auxiliary drive motor;

(2) a hydraulic clutch including a first rotatable member, a second rotatable member connected to the main motor, and an expandable gland attached to one of said members and adapted to expand when filled with fluid to form a driving connection between the first and second members;

(3) speed reduction gearing connecting the auxiliary drive motor to the first rotatable member of the clutch;

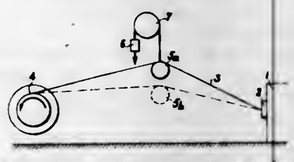
(4) a hydraulic pump driven by the auxiliary drive motor;

(5) a high pressure fluid supply line leading from the pump to the expandable gland of the clutch so that fluid can be supplied to expand the gland to form the aforesaid driving connection;

(6) a fluid reservoir; and

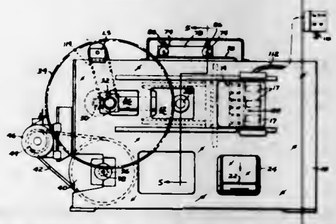
(7) a fluid return line for supplying fluid to the hydraulic pump from the reservoir.

3,293,899
METHODS OF EXTRUSION AND WIREDRAWING OF METALLIC PRODUCTS AND DEVICES FOR THE PRACTICAL APPLICATION OF SAID IMPROVED METHODS
Yves Terras, Les Pavillons-sous-Bois, France, assignor to Comptoir Lyon-Alemand, Louyot & Cie, Paris, France
Filed Oct. 17, 1963, Ser. No. 317,021
Claims priority, application France, Oct. 26, 1962, 913,640
5 Claims. (Cl. 72—364)



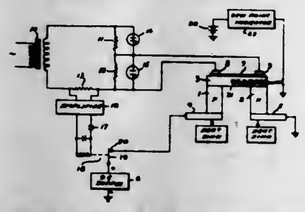
1. A method of extruding and wiredrawing a metallic product for controlled elongation thereof to produce a corresponding controlled reduction in the diameter thereof, said method comprising the steps of extruding said product, applying a tractive force to said product at a point spaced from the point of extrusion, applying heat to said products between said points, and selectively applying cold thereto to interrupt said elongation.

3,293,900
HORIZONTAL PRESS AND METHOD OF OPERATION, ESPECIALLY FOR FORMING CAN BODIES
Albert Clements, Hamilton, Ohio, assignor to The Minster Machine Company, Minster, Ohio, a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 335,096
9 Claims. (Cl. 72—456)



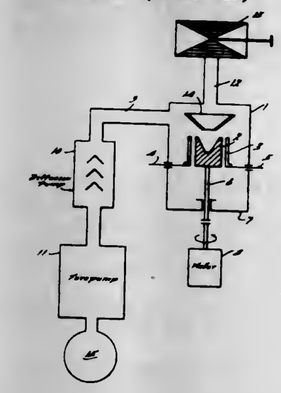
1. In a horizontal press, the improvement comprising: a press frame, a press slide in the frame, guide means in the frame for guiding and supporting the press slide, and counter-balancing means connected between the frame and the press slide for supportably counter-balancing at least a portion of the weight of said slide.

3,293,901
DEW POINT INDICATOR
James N. Van Scoyoc, Oak Park, and Donald C. Reukauf, Park Ridge, Ill., assignors to the United States of America as represented by the Secretary of the Air Force
Filed July 13, 1964, Ser. No. 382,425
2 Claims. (Cl. 73—17)



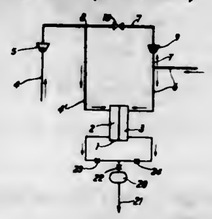
1. A dew point indicator comprising: means providing an insulating surface; a pair of spaced electrodes on said insulating surface; normally operative means for cooling said insulating surface; a substantially constant voltage alternating current source; a current sensing device and a pair of substantially equal resistors connected in series across said source, each resistor having a resistance value comparable to the resistance between said electrodes when there is a film of condensed moisture on said insulating surface; means directly connecting said electrodes to the ends of one of said resistors; a gaseous discharge device connected in shunt to one of said resistors and a similar gaseous discharge device connected in shunt to the other of said resistors, said discharge devices having firing voltages somewhat higher than the alternating voltages across said resistors when said insulating surface is dry; means including said current sensing device responsive to the alternating current supplied by said source for rendering said cooling means inoperative when said current is above a predetermined value; and means for indicating the average temperature of said insulating surface.

3,293,902
APPARATUS FOR DETERMINING THE GAS CONTENT OF METAL SAMPLES
Thaddaus Kraus, Vaduz, Liechtenstein, assignor, by mesne assignments, to Bendix Balzers Vacuum, Inc., Rochester, N.Y., a corporation of Delaware
Filed Apr. 22, 1964, Ser. No. 361,765
1 Claim. (Cl. 73—19)



Apparatus for determining the gas content of metal samples comprising: a housing, pump means connected to said housing for evacuating said housing, gas analysis means connected to said pump means, a vertical drive shaft in said housing, a crucible in said housing mounted on said shaft for rotation about the vertical axis of said crucible, said crucible having an open depression formed therein for receiving a metal sample, means for introducing a metal sample into said crucible, a cylindrical heating element concentric with said crucible for heating said metal sample to a viscous condition releasing gases contained therein, and means for selectively driving said shaft at a predetermined speed whereby said crucible will be rotated at a sufficiently high speed to cause sample residue to be removed from said crucible by centrifugal force.

3,293,903
APPARATUS FOR ANALYSIS OF GAS MIXTURES
Philippe Germain and Marcel Nicolas, Paris, France, assignors to L. Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed Feb. 24, 1964, Ser. No. 346,594
Claims priority, application France, Mar. 6, 1963, 926,983, Patent 1,361,936
6 Claims. (Cl. 73—27)



1. An apparatus for the analysis of gas mixtures, comprising a first chamber, first conduit means for connecting a source of the gas to be analyzed to said first chamber, a second chamber, second conduit means for connecting a source of reference gas to said second chamber, measuring means sensitive to the difference in characteristics of the gases in said chambers, a first check valve in said first conduit means for allowing the passage of gas from the source of gas to be analyzed into said first chamber, by-pass conduit means from said second conduit means to a point in said first conduit means between said first check valve and said first chamber, and a second check valve in said by-pass conduit means for allowing the passage of reference gas from the source thereof into said first conduit means, said first check valve preventing the passage of reference gas therethrough and said second check valve preventing the flow of gas to be analysed therethrough said analysed gas being of greater pressure than said reference gas during at least one portion of said analysis.

3,293,904
FLASH-POINT DETECTOR FOR OPERATION AT PIPELINE TEMPERATURE
Michael Ratway and Robert S. Wood, O'Hara Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,753
9 Claims. (Cl. 73—36)

3. Apparatus for monitoring at a fixed location along a pipeline passing of an interface between two liquids of different flash-points flowing conterminously in the pipeline which comprises

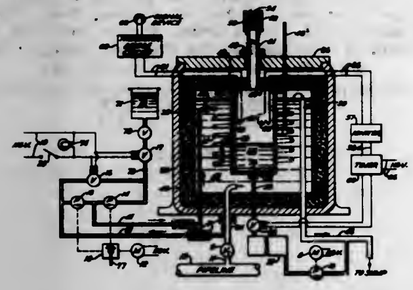
means for sampling at a constant volume rate the liquid flowing past the fixed location in the pipeline,

a source of liquid having a known flash-point,

mixing means connected to said source and to said sampling means continuously mixing said liquid with said sample in a predetermined volumetric ratio,

a flash-cup having an inlet connection and a drain connection,

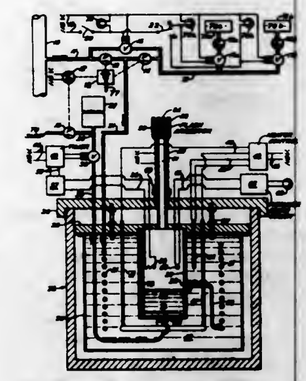
flow means connecting said mixing means to said inlet connection,
a bath substantially surrounding said flash-cup,
flow means connecting the pipeline with said bath circulating pipeline liquid through said bath whereby said flash-cup is maintained at substantially pipeline temperature,
flash-ignition means in sai flash-cup located above the level of the liquid sample in said flash-cup and adapted to be periodically energized,
flash-detection means in said flash-cup located above the level of the liquid sample in said flash-cup,



means connected to said flash-detection means indicating occurrence of a flash,
withdrawal means connected to said drain connection and periodically energized to withdraw the liquid and vapor contents of said flash-cup through said drain connection, and
a timer connected to said flash-ignition means and to said withdrawal means and adapted to respectively energize said flash-ignition means and said withdrawal means at predetermined time intervals.

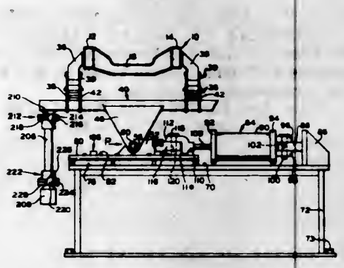
3,293,905
FLASH-POINT DETECTOR FOR PIPELINE OPERATION
Michael Ratway and Robert S. Wood, O'Hara Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,721
3 Claims. (Cl. 73—36)

1. Apparatus for monitoring at a fixed location passing of an interface between two liquids of different flash-points flowing conterminously in a pipeline which comprises
means for sampling at a constant volume rate the liquid flowing past the fixed location in the pipeline,
a source of known liquid having a flash-point higher than that of the two pipeline liquids with the lower flash-point,
mixing means connected to said source and to said sampling means continuously mixing said known liquid with said sample in a predetermined volumetric ratio,
a flash-cup having an inlet connection and a drain connection,
flow means connecting said mixing means to said inlet connection and including means to heat the liquid mixture to a predetermined temperature intermediate the flash-points of the pipeline liquids,
flash-ignition means in said flash-cup located above the level of the liquid sample in said flash-cup and adapted to be periodically energized,
flash-detection means in said flash-cup located above the level of the liquid sample in said flash-cup,



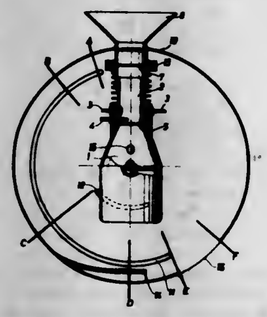
means connected to said flash-detection means indicating occurrence of a flash,
withdrawal means connected to said drain connection and periodically energized to withdraw the liquid and vapor contents of said flash-cup through said drain connection, and
a timer connected to said flash-ignition means and to said withdrawal means and adapted to respectively energize said flash-ignition means and said withdrawl means at predetermined time intervals.

3,293,906
TESTING MACHINE
James W. Holzman, Muhlenberg Park, Pa., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Nov. 27, 1963, Ser. No. 326,629
14 Claims. (Cl. 73—71.6)



1. A testing machine for introducing complex loads to a device to be tested and wherein the device has a longitudinal axis comprising in combination
(a) an element having an elongated axis and being disposed with its axis transversely to the longitudinal axis of said device,
(b) a first and a second connecting means disposed on opposed sides of said longitudinal axis and fixed to said element,
(c) and means for oscillating said element transversely with respect to said longitudinal axis about a pivot point intermediate said first and second connecting means and simultaneously reciprocating said pivot point laterally with respect to said longitudinal axis whereby complex loads are imposed on said device by said element.

3,293,907
APPARATUS FOR DETERMINING THE MOISTURE CONTENT OF GRAIN, OR THE LIKE
Gustav Schmutz, 11 Schone Aussicht, Maschen, Harburg, Germany, and Lothar Richter, 19 Wiesener Landstrasse, Fleestedt, Harburg, Germany
Filed Feb. 28, 1963, Ser. No. 261,738
Claims priority, application Germany, Feb. 28, 1962, Sch 31,058
6 Claims. (Cl. 73—73)
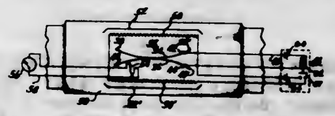


1. Grain testing apparatus of the class described, comprising: a stationary drum; grinding means disposed within said drum for rotation about a horizontal axis coaxial with said drum; sample receiving means carried by said drum and extending outwardly thereof for receiving a sample of the grain to be tested; means defining a radially extending axially compressible elongated measurement chamber communicating with said grinding means and connected for rotation therewith, said measurement chamber being positioned eccentrically with respect to the rotational axis of said grinding means for gravitational filling and discharge of the sample therefrom, an outer end portion of said measurement chamber being brought into register with said sample receiving means when said chamber is in an upwardly directed position, said drum having an outlet aperture formed therein wherewith said outer end portion of said measurement chamber in register when said chamber is in a downwardly directed position; temperature measurement means within said chamber; electrical resistivity measurement electrode means within said chamber; first cam-actuated slide means for selectively shutting off communication between said measurement chamber and said grinding means; second cam-actuated slide means for selectively shutting off communication between said outer end portion of said chamber and the interior thereof; resilient means biasing said chamber to elongate the same; fixedly positioned first cam means within said drum, said first cam means operating to open both of said slide means when said outer end portion of said measurement chamber is in register with said sample receiving means for delivery of said sample to said grinding means through said measurement chamber and to close said second slide means when said outer end portion moves out of register with said receiving means, said cam means closing both of said slide means when said measurement chamber has arrived at a downwardly directed position and said grinding means has gravitationally discharged the sample in ground condition into said chamber; second cam means acting on the outer end portion of said means defining said measurement chamber when both of said slide means are closed to compress said chamber whereby a predetermined pressure is applied to said sample, rotational movement of said chamber being interrupted with said pressure applied to permit measurement of the temperature and electrical conductivity of said sample, said pressure being released by said second cam means after said rotational movement has been resumed; said first cam means opening both of said slide means after release of pressure by said second cam means and with said outer end portion of said chamber in register with said outlet aperture.

3,293,908
PHOTOELASTIC MACHINE
Everett Chapman, P.O. Box 287, West Chester, Pa. 19383
Continuation of application Ser. No. 184,827, Apr. 3, 1962. This application Aug. 21, 1964, Ser. No. 392,078
19 Claims. (Cl. 73—88)



18. A photoelastic machine comprising:
a platform;
mechanism adjacent said platform rotatably mounting a polarizer;
mechanism adjacent said platform rotatably mounting an analyzer, said mechanisms physically separating the polarizer and analyzer to provide an access space between the same and above said platform;
a scanning frame for supporting a specimen, the frame being disposed in said access space and mounted for reciprocating movement on said platform;
a source of light;
an image viewing station adjacent said platform;
means to project light from said source to said image viewing station including mechanism projecting the light along an axis through said polarizer and analyzer and thence to a focusing lens and to a mirror adjacent said viewing station, the mirror being oriented to reflect the light to the viewing station at an angle which is acute to said axis in a direction toward said platform; and
opaque housing means supporting and surrounding said focusing lens, said mirror and said viewing station, the housing means being for use in blocking incident light when the viewing station is provided with means carrying a photographic emulsion.

3,293,909
HIGH TEMPERATURE STRAIN GAGE
Alvin F. Gledhill, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed June 10, 1964, Ser. No. 373,927
2 Claims. (Cl. 73—88.5)



1. A strain measuring apparatus for test material subjected to stress comprising in combination:
(a) a pair of electrically conductive flexible leaves made out of the same material as the test material, each of said leaves having their end portions mounted on the test material at spaced apart locations and in such a way that said leaves are located parallel with one another and their middle

portions are oppositely curved and in contact with one another, said leaves flexing away from one another when a tensile force is applied to said test material thus effecting a separation of said middle portions;

(b) electrical heater elements installed adjacent to said leaves for selectively heating said leaves;

(c) electrical power and control means electrically connecting said leaves and said heater elements for energizing said electrical heater elements upon separation of said middle portions to effect a temperature rise in said leaves causing them to expand and flex toward one another until said middle portions reestablish contact with one another and deenergize said heater elements;

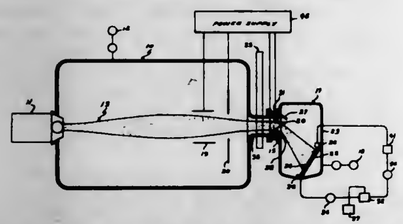
(d) combined thermal sensing means and strain indicator means connected to said leaves and the test material for sensing the temperature difference between said leaves and the material and for converting said difference into a strain indication.

3,293,910

PARTICLE COLLECTOR SYSTEM FOR ELECTRICAL PROPULSION SYSTEM TESTING

Andrew E. Leonert, 10001 Pickett Drive, Tullahoma, Tenn. 37201

Filed June 8, 1964, Ser. No. 373,427
2 Claims. (Cl. 73—116)



1. In combination with a vacuum test chamber adapted to have a test engine directing a stream of charged particles into said vacuum test chamber, a device for continuously removing exhaust products from said test chamber comprising: a collector chamber attached to said test chamber at the downstream end thereof and connected to said test chamber by a passage; means for focusing said charged particles through said passage into said collector chamber; a plate member within said collector chamber, displaced from the axis of said passage; means for providing a flow of liquid getter material across said plate member; means for deflecting said exhaust products toward said getter material; means within said collector chamber adjacent said passage for impeding the migration of sputtered particles into said test chamber; means for removing said getter material with the absorbed particles from said collector chamber; means for degassing said getter material and means for returning said gettering material to said plate member in said collector chamber.

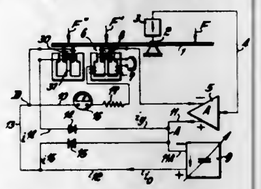
3,293,911

CURRENT-VARIATION TRANSDUCER FOR MEASUREMENT OF FORCE AND THE LIKE

Horst Ziegler, Berlin, Germany, assignor to Continental Elektroindustrie A.G. Askania-Werke, Berlin-Mariendorf, Germany, a corporation of Germany

Filed June 30, 1964, Ser. No. 379,176
Claims priority, application Germany, July 2, 1963, C 30,343
13 Claims. (Cl. 73—141)

1. In a transducer for producing an electrical current varying with an applied mechanical force, of the type having a member urged in one direction by the applied force, means responsive to displacement of the member by the applied force to produce a current of corresponding magnitude, and means responsive to the magnitude of the current to produce a restoring force urging the member in the direction to restore its position, so that the equilibrium current corresponds to the applied force, the improved construction comprising a first source of direct current of predetermined constant magnitude, a second source of direct current of magnitude varying with the displacement, each of said sources and said restoring force means having terminals, a direct connection between oppositely polarized terminals of the respective sources to form a junction point supplied with net current of magnitude and polarity constituting the



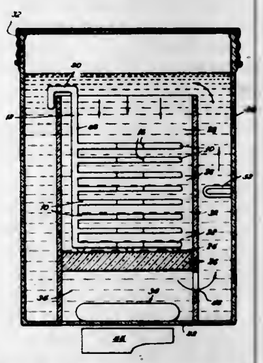
difference of the outputs of the sources, a unidirectional current-flow path shunting the first source but of polarity opposed to the polarity of current from the first source, a unidirectional current flow path of the polarity of current from the first source connecting the junction point to a terminal of the restoring-force means, the opposite terminal of the latter being connected directly to the opposite terminal of the first source, and means for connecting the opposite terminal of the second source to the restoring-force means, so that as the current from the second source is increased from zero, the current fed to the restoring-force means is constant until the current from the second source reaches a threshold value beyond which it increases the restoring force.

3,293,912

APPARATUS FOR ANALYZING PLASTIC COATING MATERIAL

Eugene E. Kochaney, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 8, 1964, Ser. No. 358,247
3 Claims. (Cl. 73—150)



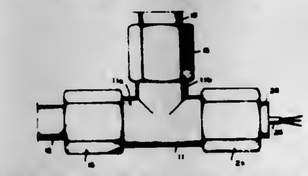
1. Apparatus for analyzing plastic coating material comprising a closed chamber, an inner open-ended tubular chamber within said closed chamber and provided with a porous plate intermediate its ends, a stacked array of plates secured to a common support bar contained within said inner chamber above said porous plate, said closed chamber being provided with means to uniformly agitate a solvent containing mixture over said plates, whereby coating material previously applied to said plates is at least partially lost to said solvent containing mixture.

3,293,913

JET REACTION FLOWMETER

Bruce M. Hannon, Ivesdale, Ill., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed June 24, 1964, Ser. No. 377,735
5 Claims. (Cl. 73—228)



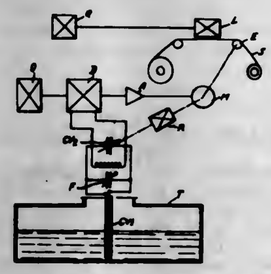
1. A jet reaction flowmeter comprising a hollow housing providing a fluid chamber including inlet and outlet passages, inlet means for connecting said housing to a source of fluid under pressure, a substantially L-shaped metering tube of reduced diameter mounted within said fluid chamber for changing the direction of fluid flow, said metering tube having an inlet extremity and being provided with a 90° bend adjacent the remote extremity thereof to provide an angularly directed outlet extremity, means for mounting the inlet extremity in sealed relationship with respect to the inlet passage of said hollow housing, strain gages mounted upon opposite exterior surfaces of said metering tube intermediate the inlet extremity thereof and said 90° bend for sensing tube deflection occasioned by the change in direction of fluid flow and indicating any deviation in fluid pressure, said strain gages being provided with electrical wiring for conveying electrical impulses occasioned by metering tube deflection to recording apparatus, said flowmeter housing being provided with a threaded outlet passage including a threaded sleeve through which said electrical wiring exists, a threaded collar having an annular recess mounted upon said threaded sleeve, a deformable sealing ring through which said electrical wiring passes in sealed relationship, and a threaded nut for forcing opposed surfaces of said sleeve and housing against opposite faces of said deformable sealing ring to provide a fluid tight connection.

3,293,914

MAGNITUDE MEASURING AND INDICATING APPARATUS

Marius Renoult, Paris, France, assignor, by mesne assignments, to Societe Noza, Societe Anonyme de droit francais, Montreuil, France

Filed Dec. 27, 1963, Ser. No. 333,977
Claims priority, application France, Dec. 29, 1962, 920,166; Oct. 2, 1963, 949,351
11 Claims. (Cl. 73—304)



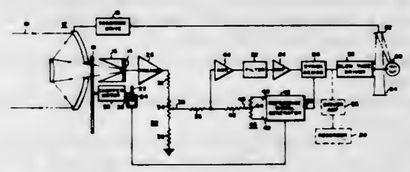
1. An arrangement for measuring a magnitude, comprising means defining an intermediate magnitude bound to the magnitude to be measured by a predetermined law, a reading head, a signal carrier, the signals carried by which are spaced by amounts corresponding to units of the magnitude to be measured, means driving the signal carrier across the reading head and controlled by the magnitude defining means, a counting mechanism controlled by the reading means, means indicating the number of signals counted by the counting mechanism and corresponding to the measurement of the magnitude to be measured as defined by the first-mentioned means and an arrangement for returning automatically to zero the signal carrier including means adapted to substitute for said magnitude defining means in the control of the driving means, a magnitude of the same nature as the intermediate magnitude and the value of which corresponds to the position of the signal carrier for which the indicating means are in their zero position and means returning the driving means under the control of the magnitude defining means when the return to zero of the indicating means has been obtained.

3,293,915

RADIOMETER CONTROL MEANS

Maggio C. Bauca and Nelson E. Engborg, Old Greenwich, and Donald W. Fisher, Norwalk, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Aug. 5, 1963, Ser. No. 299,842
2 Claims. (Cl. 73—355)



1. A radiometer for measuring the temperature of objects by infrared radiation emitted therefrom comprising

(a) a reference source of infrared radiation,

(b) an infrared detector for producing electrical signals in accordance with the infrared radiation impinging thereon,

(c) optical means for focusing infrared radiation from objects whose temperature is to be measured on said infrared detector,

(d) chopper means for alternately directing radiation from said objects and from said reference source to said detector,

(e) an amplifier channel connected to said detector for amplifying said electrical signals from said infrared detector,

(f) a demodulator means for detecting said electrical signals from said amplifier,

(g) utilization means,

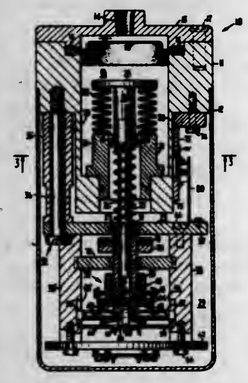
(h) means for connecting the electrical signals from said demodulator to said utilization means,

(i) attenuator means comprising a first variable resistor having a tap thereon connected to a first resistor which is substantially larger in magnitude than said first variable resistor,

(j) a variable offset signal means comprising a source of potential having a second variable resistor connected across said source, said second variable resistor having a tap thereon connected to a second resistor which is substantially larger in magnitude than said second variable resistor, and

(k) means for connecting said variable offset signal means subsequent to said attenuator means in said amplifying channel with said first and second resistors being connected to a common point in said amplifying channel for substantially reducing interaction between said attenuator means and said variable offset signal means.

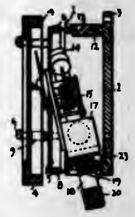
3,293,916
PRESSURE TRANSDUCER
Harold W. Goff, Huntington, N.Y., assignor to Instrument Systems Corporation, Westbury, N.Y., a corporation of New York
Filed May 6, 1964, Ser. No. 365,358
2 Claims. (Cl. 73—398)



1. A multiple-stage pressure transducer, comprising
a casing forming a chamber having an aperture at one end through which fluid may pass,
a flexible diaphragm within said chamber covering said aperture,
a movable shaft within said chamber having a platform attached at one end,
a bellows surrounding said shaft and yieldably supporting said platform and said movable shaft, but only in part, when said pressure transducer is below sea level,
a stretchable tape suspended from said casing surrounding and supporting said bellows,
a bending plate supported by said casing and supporting, in part, said movable shaft when said pressure transducer is below sea level,
filtering means disposed between said movable shaft and said bending plate for transmitting only axial movement of said movable shaft to said bending plate, said filtering means being adjustable to a zero pressure setting on said bending plate,
at least one strain gauge attached to said bending plate for measuring the deflection of said sensitive bending plate,
means for locking said filtering means in a lowest position thereby shielding said bending plate from further pressure increases,
resilient means disposed between said movable shaft and said filtering means permitting the further descent of said movable shaft once said filtering means has been locked in position, and
at least one strain gauge attached to said stretchable tube for measuring the magnitude of the deflection of said tube over a wide range of fluid pressures.

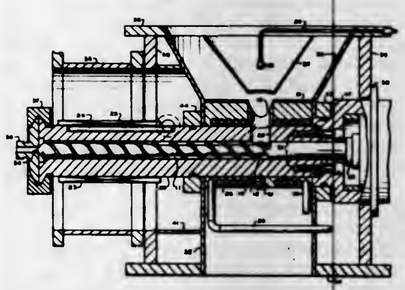
3,293,917
PRESSURE GAUGE CASING
George Albert Vanderheyden, Edmonton, Alberta, Canada, assignor to C.P.W. Valve & Instrument Ltd.
Filed May 11, 1964, Ser. No. 366,379
4 Claims. (Cl. 73—418)

1. In a pressure gauge, a casing, an opening through the side of the casing, a socket having an externally threaded stem, such socket mounted in the casing with the stem projecting through the opening, gasket material positioned between the socket and the casing, a nut engaged on the threads externally of the casing to bear against the casing and secure the socket in fluid tight engagement in the casing, a pressure responsive element and indicating mechanism mounted on the socket within



the casing, a transparent cover secured removably on the casing, such cover having fluid tight seal with the casing and arranged to engage with the nut to prevent the nut from turning.

3,293,918
THERMOPLASTIC MATERIAL SAMPLING
Frederick J. Zavasnik, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,709
10 Claims. (Cl. 73—422)

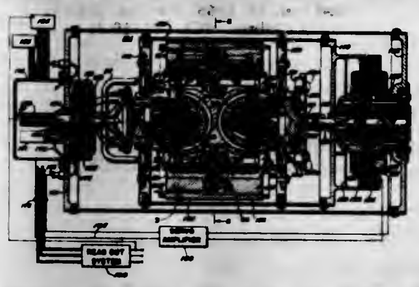


1. Apparatus comprising a cylindrical member extending transversely across the flow path of thermoplastic particles flowing downwardly through a conduit, the cross-sectional area of said cylindrical member constituting only a portion of the total cross-sectional area of flow of said particles, a tube member positioned within said cylindrical member and extending outwardly from said cylindrical member, an elongated opening extending axially through said tube member, a tapered screw member positioned within said opening, means for rotating said tapered screw member, means for heating that portion of said tube member extending beyond said cylindrical member, a sample inlet positioned in said cylindrical member so as to receive a portion of said downwardly flowing thermoplastic particles, and a passage communicating between said elongated opening and said sample inlet.

3,293,919
ULTRASONIC ANGULAR DISPLACEMENT SYSTEM
Donald Luther Ensley, Hurst, Tex., assignor, by direct and mesne assignments, to Harvest Queen Mill & Elevator Company, Dallas, Tex., a corporation of Texas
Filed July 29, 1963, Ser. No. 298,261
18 Claims. (Cl. 73—505)

1. An inertial reference unit for sensing rotational deviation which comprises:
(a) a chamber unit full of fluid,
(b) a pair of hemispherical acoustic transducers supported by said unit symmetrical to an axis extending therethrough in a spaced apart relation with the exterior surfaces thereof facing each other, and

(c) an inertial element positioned in said unit having a pair of oppositely opening concave surfaces symmetrical to a line parallel to said axis whereby said



inertial element may be resiliently supported in said fluid upon excitation of said transducers to develop standing pressure waves by reaction with said surfaces on said element.

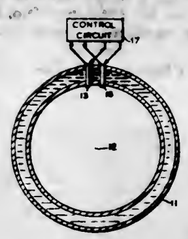
3,293,920
OMNIDIRECTIONAL ACCELERATION DEVICE
David H. Geipel, Fullerton, Wilbur W. Hawley, Santa Ana, and Willis D. Longyear, Newport Beach, Calif., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application Dec. 26, 1962, Ser. No. 247,136. Divided and this application Dec. 14, 1965, Ser. No. 513,758
1 Claim. (Cl. 73—515)



An accelerometer for determining the magnitude of acceleration forces from all directions comprising:
a spherical housing responsive to omnidirectional acceleration forces,
a spherical chamber within said housing filled with a liquid,
a pair of oppositely disposed pressure sensors attached to said housing and extending into said chamber for measuring the static pressure of said liquid at opposite ends of said chamber,
whereby the average pressure at said pair of pressure sensors is linearly proportional to the magnitude of said acceleration forces.

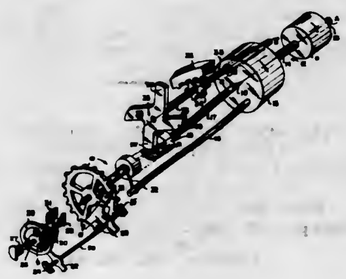
3,293,921
ANGULAR ACCELEROMETER
Hugh E. Riordan, Wyckoff, and John C. Stiles, Morristown, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Nov. 7, 1963, Ser. No. 322,085
7 Claims. (Cl. 73—516)

4. An angular accelerometer comprising a tubular toroid containing a substantially unobstructed interior, an electrically-conductive fluid in said toroid, transducer means to generate and maintain a compressional standing wave in said fluid having nodes and anti-nodes circumferentially spaced around said toroid, said transducer means comprising:
means to apply to said fluid at a first point an oscillatory force at the frequency of said compressional standing wave and in phase with the instantaneous particle velocity due to said compressional standing wave,
means to apply to said fluid at a second point spaced circumferentially from said first point an oscillatory force at the frequency of said compressional standing wave and in phase with the instantaneous particle



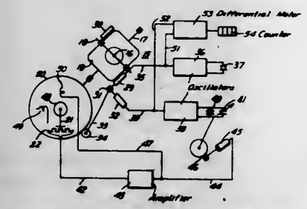
velocity of the fluid due to the compressional standing wave so that said compressional standing wave is fixed relative to said fluid, and
means to detect the movement of said standing wave relative to said toroid.

3,293,922
SPEED REGULATING DEVICE
Paul R. Pittman, Jr., Dayton, Ohio, assignor to Globe Industries, Inc., Dayton, Ohio, a corporation of Ohio
Filed May 8, 1963, Ser. No. 278,888
19 Claims. (Cl. 74—1.5)



5. An intermittent locking means for use with an escapement means and arranged to be operated by a power source, said locking means comprising, in combination:
a detent member;
a driven member having detent engaging means so located as to intermittently engage said detent member,
said power source when activated being interconnected to constantly impress a loading force upon said driven member,
said detent member being affixed to be moved coordinately with a portion of said escapement means;
and means for intermittently impressing a releasing force upon said detent member at a time determined by the movement of said portion of said escapement means;
whereby when said driven member is moved into detent engaging position with said detent member by said power source, said power source is momentarily locked out of operation and thereafter is momentarily permitted to transmit power.

3,293,923
ARRANGEMENT FOR INERTIA NAVIGATION BY MEANS OF GYROSCOPES
Carl-Erik Granqvist, Lidingo, Sweden, assignor to Aga Aktiebolag, a corporation of Sweden
Filed Jan. 16, 1961, Ser. No. 82,964
Claims priority, application Sweden, Jan. 21, 1960, 565/60
15 Claims. (Cl. 74—5.22)



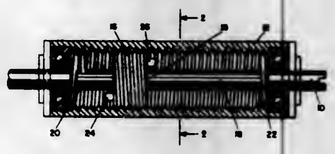
1. A navigational system for a vehicle moving at high speed above the surface of the earth and comprising, a gyro-controlled device which maintains its orientation in space, a second device which changes its orientation in space in response to the direction of terrestrial gravity, a rotatable element mounted independently of said gyro-controlled device and having a predetermined relationship with said second device, means for generating a voltage having a frequency proportional to the rate of deviation between said rotatable element and said second device, means coupling said gyro-controlled device and said rotatable element and responsive to said generated voltage for rotating said rotatable element to re-establish said predetermined relationship between said rotatable element and said second device thereby compensating for the deviation therebetween, and means connected to said voltage generating means for reading said voltage frequency to indicate the speed of the vehicle.

3,293,924
TURNING GEAR FOR INTERNAL COMBUSTION ENGINES
Giuseppe Costelli, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy
Filed Mar. 18, 1965, Ser. No. 440,840
Claims priority, application Italy, Mar. 24, 1964, 6,885/64
5 Claims. (Cl. 74—6)



1. Turning gear for internal combustion engines for effecting axial displacement of the engine starter drive, of the type comprising a fork acting on a shifting member mounted for rotation and axial displacement against the action of a spring on a sleeve slidable by helical splining on the end of the engine starter shaft and coupled through a free wheel with the pinion engaging the engine gear on the flywheel of the internal combustion engine, wherein the shifting member interposed between the actuating fork and the sleeve comprises two sheet metal discs freely mounted on the sleeve and interconnected by tabs and notches to define therebetween an annular groove in which a third sheet metal disc is loosely mounted, and connecting means for connecting said third disc to the actuating fork.

3,293,925
MULTI-TURN STOP MECHANISM
Clarence R. Linsley, La Crescenta, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 428,941
3 Claims. (Cl. 74—10.2)



1. In a multi-turn stop mechanism having an internally threaded housing, a control shaft rotatably mounted in said housing, a running nut slidably mounted on said shaft and having external threads engaging the internal threads of said housing, and keying means for causing said nut to rotate with said shaft as said shaft is turned in said housing, the combination of: at least one stop member mounted on said nut and protruding from one end thereof and displaced radially from the axis of rotation of said shaft to rotate about said axis with said nut; and a coil spring member mounted in said housing in coaxial relationship with the axis of rotation of said shaft and having a protruding end portion disposed in the path of said stop member to be contacted thereby at a limit of rotational movement of said shaft.

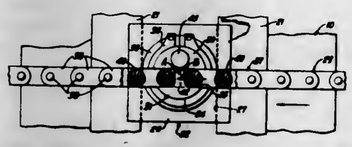
3,293,926
SEALED ROTARY DRIVE APPARATUS
William C. Woellmer, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,524
1 Claim. (Cl. 74—18)



A sealed rotary drive apparatus for mounting on a wall of a container comprising,
a bearing plate fixed to said wall and surrounding a hole therethrough,
said bearing plate having a dependent positioning ring fitting into said hole in said wall,
said bearing plate also having a first hollow cylindrical boss extending therefrom in the direction away from said ring,
a shaft having an axis and having a circular disk extending perpendicularly to said shaft axis from an end of said shaft, and eccentrically mounted with respect to said shaft,
said shaft extending through and being rotatably mounted in said first boss with said disk beyond said boss in the direction away from said ring,
a bearing member fixed to said bearing plate and forming a chamber with said bearing plate,
said bearing member having a second hollow cylindrical boss extending from said bearing member in a direction away from said wall,
a second shaft and circular disk identical with said first shaft and disk, said second shaft extending through and being rotatably mounted in said second boss, the axes of said shafts being aligned and said disks being positioned in said chamber,

and means for mechanically coupling said disks including,
a ring positioned between said bearing plate and said bearing member and surrounding said hole in said wall,
a bellows having two ends, one end of said bellows being hermetically fixed to said ring,
and a motion transmitting element, said motion transmitting element comprising an outer rim hermetically fixed to the other end of said bellows,
said motion transmitting element also comprising a pair of cylindrical members extending from opposite sides of said rim,
said disks each being received in a cooperating relationship with a respective one of said cylindrical members,
means to hermetically seal said bearing plate to said wall and said ring to said bearing plate, said sealing means each comprising a resilient O-ring respectively positioned between said bearing plate and said wall and between said ring and said bearing plate.

3,293,927
CHAIN LOCKING MECHANISM
William George McClean, Milwaukee, Wis., assignor to McClean-Anderson, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 13, 1964, Ser. No. 337,321
9 Claims. (Cl. 74—37)



1. In an apparatus of the class described, an elongated drive member disposed to move in a path of travel, a plurality of supporting members lying in a common plane and supporting said drive member in movement in said path of travel, a second elongated member connected in side-by-side relation to said drive member and extending along at least a portion of the length of said drive member, said second elongated member traveling in a plane offset from said common plane whereby said second elongated member is unsupported and does not engage said supporting members during travel of said drive member, a movable member mounted for reciprocating movement, and releasable connecting means for connecting said movable member directly to said second elongated member, said connecting means being free of engagement with said elongated drive member to thereby enable said drive member to pass freely over said supporting members.

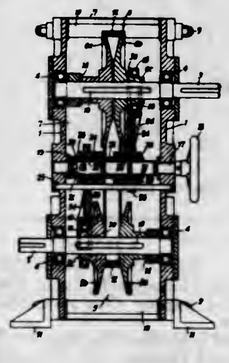
3,293,928
PULSATING TORQUE CONVERTER
Paul J. Heister, Oxford, Md., assignor of one-half to Claire C. Heister
Filed Aug. 25, 1964, Ser. No. 391,995
12 Claims. (Cl. 74—64)

1. A torque converter comprising, a driving pulley rotatable about an axis and including a skirt portion symmetrical about said axis, an internal gear formed on the internal surface of said skirt portion, said gear having a pitch line defined by the rotation at uniform angular rate about said axis of a point, while cyclically and uniformly varying the radial distance of said point from said axis between predetermined maximum and minimum limits, to define a plurality of equiangularly-spaced lobes, the teeth of said gear being uniformly spaced along said pitch line, an integrally connected hub and plate rotatable on said axis, a plurality of pinions, means mounting said pinions individually on said plate in uniformly-spaced relation about said axis and for guided movement toward and from said gear, and means operable to urge said pinions with selective force into engagement with said gear, said hub having a bore in and along said axis and



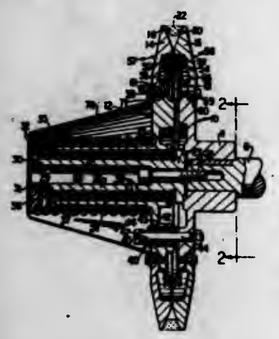
a plurality of radial holes opening into said bore, said last-named means comprising a plurality of pins each slidably fitting a respective one of said holes and a shaft fitting said bore for translation along said axis, said shaft having a tapered end for contact with the radially inward ends of said pins, and means engaging said shaft and selectively operable to axially translate the same.

3,293,929
VARIABLE-SPEED BELT GEARING
Alfred Booth, London, England, assignor to Stone-Wallwork Limited, London, England
Filed Apr. 13, 1964, Ser. No. 359,094
Claims priority, application Great Britain, Apr. 26, 1963, 16,571/63
5 Claims. (Cl. 74—230.17)



1. A gearing comprising two adjustable pulleys with belt-engaging cone faces, the said faces of at least one said pulley having a slight convex curvature such that the length of the belt path is constant for all positions of adjustment of the pulleys, pulley shafts upon which slidable cone faces of the two pulleys are shiftable axially, a shaft mounted between the said pulley shafts, a sleeve disposed upon the last-named shaft, screw means for displacing the said sleeve along the last-named shaft, axially adjustable thrust members, including arms carried upon the said sleeve and operably connected with the said cone faces for shifting the latter axially in the same direction.

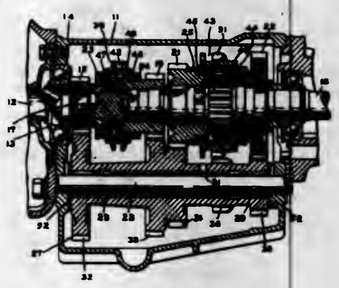
3,293,930
VARIABLE DIAMETER V-BELT PULLEY
William A. Schlesinger, Ridgewood, N.J., and Karl Theodor Lang, Darmstadt, Germany, assignors to William E. Hack, New York, N.Y.
Filed Jan. 27, 1965, Ser. No. 428,480
7 Claims. (Cl. 74—230.17)



1. A variable diameter V-belt pulley comprising
adjacent coaxial pulley members having oppositely facing rims adapted to engage opposite sides of a V-belt trained about them,
means for constantly biasing said members toward one another against the tension of said belt,
means for mounting a first of said members for rotation on a fixed axis, and
anti-friction means interconnecting said members for rotation together in constantly fixed angular relation and yet for free relative movement parallel to said axis,
said anti-friction means including bearing socket means in one of said members, each said socket means presenting an inwardly facing tubular surface extending parallel to the axis of rotation of said members, bearing core means fixed to the other of said members and extending through and beyond said socket means, each said core means presenting an outwardly facing bearing surface parallel and symmetrical to said surface of the related socket means, and an anti-friction bearing sleeve confined between said oppositely facing surfaces of each said core means and the related socket means, whereby said members are freely movable toward and away from one another under forces applied to them by said belt and said biasing means.

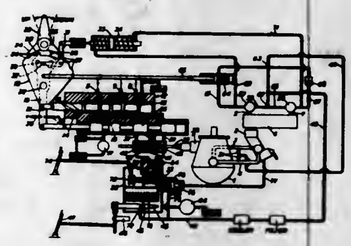
3,293,931
THRUST BEARINGS
Peter E. Bostic, Hornchurch, Essex, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 22, 1964, Ser. No. 369,373
4 Claims. (Cl. 74—325)

4. In a transmission, a shaft, a rotatable gear cluster mounted on said shaft, a pair of thrust washers, said thrust washers mounted on said shaft and held against rotation, each thrust washer having a planar bearing surface, said gear cluster having a planar bearing surface on each of its end faces, each planar bearing surface of said gear cluster being in opposed relationship to the planar bearing surface of one of said pair of thrust washers to absorb any axial thrust that is developed between the bearing surfaces of said gear cluster and said thrust washers during rotation of said gear cluster, an oil film disposed between opposed bearing surfaces, said bearing surfaces of the thrust washers having recessed portions, said recessed portions having surfaces inclined upwardly with respect to the bearing surface of said gear cluster to define wedge-shaped spaces between each of said opposed bearing surfaces, said wedge-shaped spaces pointing in the direction of rotation of said gear cluster so as to generate a high pressure in the oil film between corresponding bearing surfaces when said gear cluster is being rotated as a result of viscous shear of the oil film,



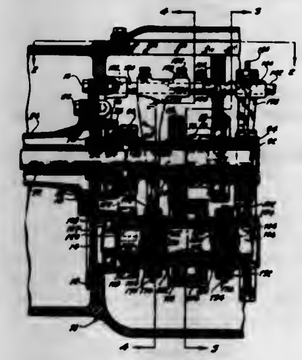
oil supply grooves formed in the planar bearing surface of said one of said pair of thrust washers, each groove extending radially inwardly and communicating with the base of its adjacent recessed bearing surface portion, each supply groove forming an acute angle with respect to a radial reference line whereby oil is supplied in a radially inward direction through said grooves to said inclined surfaces against the opposing influences of centrifugal force due to rotation of said gear cluster.

3,293,932
CLUTCH CONTROL
Kenneth R. Boydell, Bredons Hardwicke, near Tewkesbury, and Bertram C. Kempson, Cheltenham, England, assignors to Dowty Hydraulic Units Limited, Ashchurch, near Tewkesbury, County of Gloucester, England, a British company
Filed Dec. 3, 1963, Ser. No. 327,792
Claims priority, application Great Britain, Dec. 6, 1962, 46,109/62
6 Claims. (Cl. 74—339)



1. In combination, a hydrostatic power transmission and a step change mechanical gear box arranged in series for the transmission of power from a power source to a load, a clutch associated with gear box and having driving and driven shafts through which the power passes from the transmission to the load, a speed ratio control for the transmission, a gear selecting control for the gear box, overrider means responsive to each change of gear by the gear selecting means, to disengage the clutch and override the speed ratio adjustment of the transmission speed ratio control, so as to cause an increase or decrease in the transmission speed ratio in accord with the decrease or increase, respectively, in the gear box speed ratio, and speed difference means responsive to the gear change to terminate the control of the overrider means and re-engage the clutch when the speeds of the driving and driven shafts of the clutch become equal.

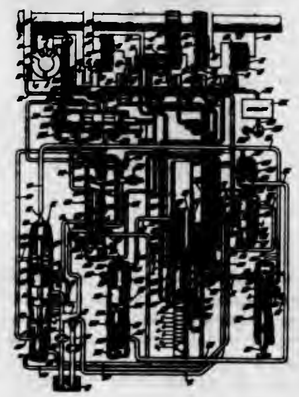
3,293,933
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM WITH FULL RANGE REVERSE
William J. Fenwell, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,806
7 Claims. (Cl. 74—360)



1. A power transmission mechanism having gear elements that define torque delivery paths between a driving member and a driven member, first and second gear assemblies having gear elements journaled rotatably about a common axis, a countershaft mounted in parallel disposition with respect to said common axis, gears journaled for rotation about the axis of said countershaft, final drive multiple speed ratio gearing defined in part by one of said gear assemblies, a power output element of said gearing being connected to said driven member, first and second reverse drive pinions, said first reverse drive pinion engaging drivably a gear element of the other of said gear assemblies and a first one of said gears, the second reverse drive pinion engaging another element of said other gear assembly and a second of said gears, a third element of said other gear assembly engaging a third of said gears, a fourth element of said other gear assembly engaging a fourth of said gears, a first selectively engageable clutch means for connecting at different times said fourth gear and said first gear to a power input element of said gearing and second selectively engageable clutch means for connecting at different times said third gear and said second gear to said power input element of said gearing whereby multiple ratios in both a reverse drive range and a forward drive range can be obtained.

3,293,934
TRANSMISSION
Robert H. Schaefer, Westfield, and Mark E. Fisher, Carmel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 25, 1962, Ser. No. 226,021
12 Claims. (Cl. 74—472)

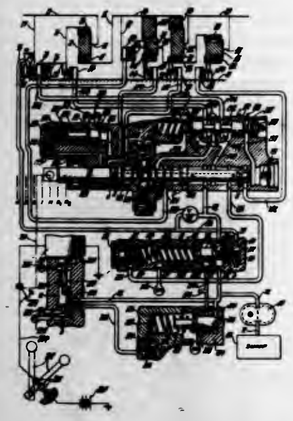
6. In a transmission; an input shaft; a converter shaft; an intermediate shaft; an output shaft; a torque converter and a fluid operated lockup clutch connecting said input shaft to said converter shaft; a first gear unit connecting said converter shaft to said intermediate shaft having a low ratio and a high ratio fluid operated drive establishing means selectively operable to provide low and high drive ratios; a second multiratio gear unit connecting said intermediate shaft to said output shaft having a plurality of fluid operated drive establishing means selectively operable to provide a plurality of ratios; a source of fluid under pressure; governor means providing a governor pressure proportional to intermediate shaft speed; torque demand means providing a torque demand pressure proportional to torque demand; a lockup shift valve having a valve element governor pressure responsive means operatively connected to said governor means to receive governor pressure to move said valve for upshift, a shift pressure controlled spring abutment, a biasing spring between said valve element and said spring abutment urging said valve element to downshift and a closed chamber between said valve element and spring abutment connected to said torque demand means to receive said torque demand pressure for acting on said valve element operative in response to governor pressure overcoming said biasing pressure and torque demand pressure at a predetermined speed to connect said source to said lockup clutch to engage said lockup clutch; selector valve means operably connected to said source and to said fluid operated drive establishing means of said first and second gear units to selectively connect said source to pairs of said drive establishing means to provide a plurality of drive ratios and including means operative when fluid is connected to said high ratio fluid operated drive establishing means operative to supply pressure to said shift pressure controlled abutment to move said abutment a controlled distance to increase the biasing force of said biasing spring to control said lockup shift valve to provide an upshift to engage the lockup clutch at a predetermined higher governor speed and pressure.



3,293,935
TRANSMISSION CONTROL
Robert M. Tuck, Indianapolis, and Mark E. Fisher, Carmel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,462
18 Claims. (Cl. 74—472)

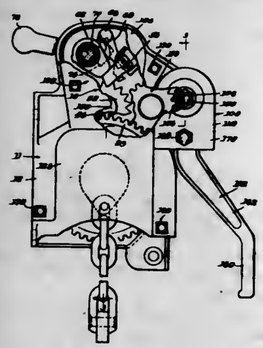
1. In a transmission,
(a) a fluid operated drive engaging device,
(b) a source of fluid under pressure,
(c) supply line means connected to said source, first valve means for regulating the pressure in said supply line means in a high pressure range,
(d) means including selector valve means selectively operatively connecting said supply line means to said device,

(e) and second valve means selectively operatively controlled by said selector valve means effective to interrupt the pressure regulation by said first valve means and to regulate the pressure in said supply line means in a low pressure range when said supply line means and device are disconnected, and upon connection to gradually increase the pressure until



a pressure value effective to establish full drive engagement is obtained and to re-establish the pressure regulation by said first valve means, so that the pressure initially supplied to said device for initial drive engagement is a transient pressure which is gradually increasing to the high pressure to gradually and softly engage said drive engaging device.

3,293,936
PUMP HANDLE HAND BRAKE FOR PIGGY-BACK CARS AND THE LIKE
Jack Wilson, deceased, late of Chicago, Ill., by Ethel E. Wilson, Chicago, Ill., Patricia E. Wilson, Pittsburgh, Pa., and Clive J. Wilson, Homewood, Ill., heirs, and Arthur L. Zuiker, Riverdale, Ill., assignors to Universal Railway Devices Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 402,030
7 Claims. (Cl. 74—505)



1. In a hand brake for railroad cars, of widths approximating maximum permissible clearance lines at the sides of the car, with the hand brake including a housing adapted to be mounted on the car, a brake drum and a winding sahft journalled in said housing for rotation about parallel, substantially horizontal axes and coupled together in rotational movement transmitting relation, a ratchet wheel keyed to said winding shaft, ratchet wheel holding means releasably engaging said ratchet wheel for selectively holding and releasing said ratchet wheel against and for movement in a brake releasing direction, and handle means coupled to said shaft for turning said shaft in a brake applying direction, the improvement wherein:

said handle means comprises pump handle means positioned at one side of said housing and mounted for swinging movement about a horizontal axis that substantially parallels said axes,

said handle means comprising:

a winding shaft journalled in said housing for rotational movement about the last mentioned horizontal axis,

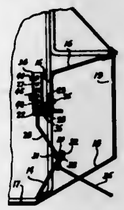
a toothed ratchet wheel keyed to said handle means winding shaft and positioned exteriorly of said housing,

a hood having a downwardly opening bottom portion received over said handle means ratchet wheel and journalled for swinging movement about said axis of said handle means winding shaft,

and a handle pivotally secured to said hood,

said handle including pawl means for engaging said handle means ratchet wheel when said handle is pivoted with respect thereto to rotate said ratchet wheels and drum in the brake applying direction.

3,293,937
THROTTLE CONTROL
Edson F. Gardner, 1925 79th Ave., Vero Beach, Fla. 32960
Filed Jan. 11, 1965, Ser. No. 424,701
4 Claims. (Cl. 74—526)

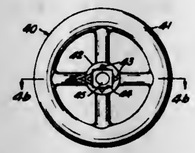


1. A throttle control comprising a rod having a horizontal portion adapted to be pivotally connected to the accelerator pedal of a vehicle and a vertical portion, a tube support having an opening therein adapted to be attached to the interior of the vehicle adjacent the accelerator pedal, a tube pivotally mounted on said tube support, said vertical portion of said rod extending through said opening into said tube, a weight in said tube, said weight having a bore therein through which said rod extends and means for securing said weight at a selected point on said rod to limit the extent to which said rod can be moved, and hence limit the amount of depression which may be imparted to the accelerator pedal.

3,293,938
HANDLE
Leonard R. Nestor, 2139 E. Magnolia Ave., St. Paul, Minn. 55119
Filed Aug. 24, 1964, Ser. No. 391,717
6 Claims. (Cl. 74—552)

1. A universal handle comprising a handpiece and a generally cup-shaped socket, the interior walls of said socket defining a generally square-cornered cross-section

area, the four walls being gently rounded on a common radius centered on the axis of said socket, and at least



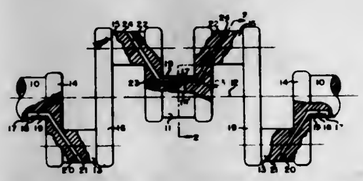
two diametrically opposing paraxially extending sharply rounded protrusions within said socket area at the center of said rounded portions.

3,293,939
VIBRATION ELIMINATORS
Robert O. Brown, Rte. 2, Box 262, Smithsburg, Md. 21783
Filed Sept. 13, 1963, Ser. No. 308,797
2 Claims. (Cl. 74—574)



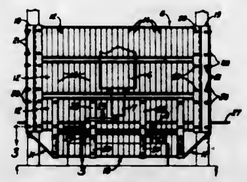
1. A vibration eliminator for rotating bodies having a circular outer channel, a central hub member, a web-like portion connecting said hub member and said channel and having peripherally spaced dividing members, said hub member and said dividing members defining a liquid supply chamber, the spaces between said dividing members serving as passages connecting said circular outer channel and said chamber, and providing a controlled flow of liquid between said chamber and said outer channel by gravity or by centrifugal force.

3,293,940
ENGINE CRANKSHAFT
Henry Brockman, Box 147, Humboldt, Saskatchewan, Canada
Filed Dec. 7, 1964, Ser. No. 416,345
1 Claim. (Cl. 74—596)



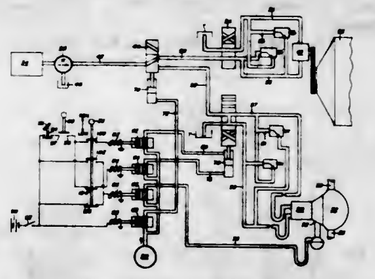
In an engine crankshaft, the combination of a cylindrical main bearing pin, a radial web extending laterally to one side of said main bearing pin, and a crank bearing pin connected to said web, said main bearing pin being provided with an oil passage parallel to the main bearing pin axis and eccentrically offset from said axis to the same side of the main bearing pin to which said web projects, one end of said passage being angulated and having an oil entrance opening at said one side of the main bearing pin, the other end of said passage communicating with a straight passage extension extending diagonally through said web and through said crank bearing pin, said passage extension terminating in an oil outlet aperture at the same side of the crank bearing pin as said oil entrance opening of the main bearing pin, said oil passage in the main bearing pin being very closely spaced from the main bearing pin side surface by a passage wall thickness of approximately ten thousandths of an inch.

3,293,941
SAFETY GUARD
Joseph L. Schwabe, Jr., West Allis, Wis., assignor to Acro Metal Stamping Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 29, 1964, Ser. No. 407,471
9 Claims. (Cl. 74—608)



1. A safety guard for a working tool, comprising a series of interconnected panels disposed around the tool, each panel including a pair of spaced support members and a plurality of thin flat tines mounted on said support members, said tines having a substantially greater width than thickness and said tines being disposed in generally parallel planes normal to the axis of said support members whereby the thin edges of said tines are in alignment with the operator's line of vision, each panel also including a pair of end members located at the ends of the panel and mounted on said support members, each end member adapted to be connected to end members of adjacent panels.

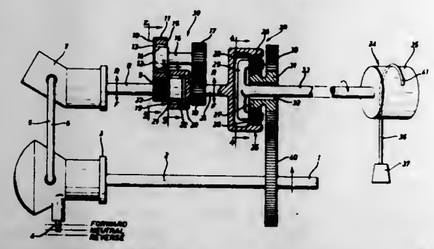
3,293,942
TRAILER TRANSMISSION
Gary Stein, New Berlin, Richard C. Hare, Waukesha, and William A. Hohl, Brookfield, Wis., assignors to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 14, 1964, Ser. No. 344,978
2 Claims. (Cl. 74—664)



1. A drive apparatus for a vehicle having first and second driven axles, a power unit for said first axle, a mechanical transmission means having first and second output levels drivingly connecting said power unit with said first axle; gear shift means for said mechanical transmission for selecting the desired output level; a hydraulic pump driven by said power unit; hydraulic fluid hose means operatively connecting said hydraulic pump with said hydraulic drive means; and control means for

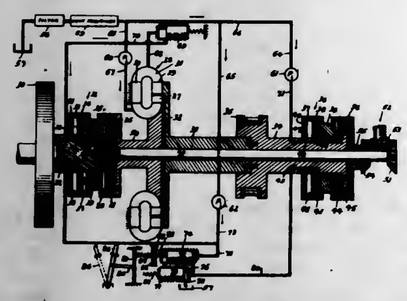
said hydraulic drive means operable to prevent said hydraulic pump from delivering power to said second axle unless said mechanical transmission means has been shifted to its first output level, a clutch means operable between neutral and drive positions and adapted to engage and disengage said hydraulic drive means with said second axle, means for said clutch means operable to engage said clutch means only when said mechanical transmission means has been shifted to its first output level, said power unit having a gear ratio to said first axle in said first output level slightly less than the gear ratio of said hydraulic drive means to said second axle.

3,293,943
HYDROSTATIC TRANSMISSION SYSTEMS AND CONTROLS THEREFOR
John Graham MacDonald, Goderich, Ontario, Canada
Filed Dec. 10, 1965, Ser. No. 517,174
72 Claims. (Cl. 74—687)



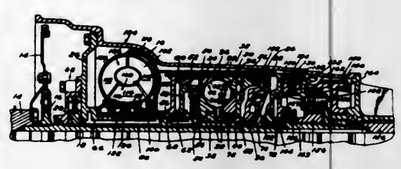
1. A transmission system comprising in combination a source of rotary power; a variable speed reversible hydraulic drive and control means therefor; a differential gear assembly including a first power input member, a second power input member, and a power output member, said first power input member being adapted for connection to said source of rotary power to be uni-directionally rotated thereby, said second power input member being adapted for connection to said source of rotary power by said hydraulic drive; and power transfer means adapted to connect said second power input member and said hydraulic drive, said power transfer means being responsive to the direction of rotation of said hydraulic drive to vary the speed ratio between said hydraulic drive and said second power input member within a predetermined range.

3,293,944
POWER TRANSMISSION
Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed May 19, 1964, Ser. No. 368,670
18 Claims. (Cl. 74—732)



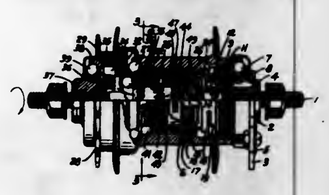
1. For use with apparatus having means for hoisting and lowering a load, a power transmission connectible to a power source and including hoisting and lowering power trains having a common output arranged for connection to the input of the apparatus, the hoisting power train including in series power flow relation a first hydraulically controlled friction clutch for providing connection with the power source, a hydraulic torque converter and the common output, and the lowering power train including in series power flow relation a reverse gear connected to the power source, a second hydraulically controlled friction clutch and the common output, means for selectively determining the engagement of either clutch including means for infinitely modulating either engagement to provide any desired rotative speed of the common output in either direction.

3,293,945
INFINITELY VARIABLE SPEED TRANSMISSION
Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,398
6 Claims. (Cl. 74—740)



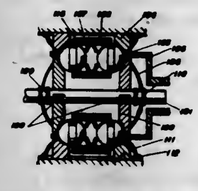
1. A transmission having rotatable power input and output shafts, and a plurality of infinitely variable speed drive units connecting said shafts providing a plurality of drives therebetween including a rolling element friction drive unit and a hydraulic torque converter, said drive unit having inner and outer races and a rolling element carrier, said converter having pump and turbine and stator members, means connecting one of said races to said input shaft and said carrier to said pump member, means connecting said turbine member to said output shaft, and means for holding the other friction drive race and said stator member stationary to condition said converter to be underdriven by said carrier and to provide a further underdrive of said output shaft by said turbine.

3,293,946
SEMI-AUTOMATIC SPEED CHANGE DEVICE
Hollis K. Gleasman, Elmira, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed June 10, 1964, Ser. No. 374,080
6 Claims. (Cl. 74—750)



1. In a two-speed hub for velocipedes and the like comprised of: a fixed axle, a low-speed threaded screw shaft journalled thereon, a high-speed threaded screw shaft rotatably mounted on the low-speed shaft, a hub rotatably mounted relative to the fixed axle, a driving member, means for rotating both shafts from the driving member at different gear ratios, a low-speed clutch threadedly engaging said low-speed shaft for movement into and out of clutching engagement with said hub, a high-speed clutch threadedly engaging said high-speed shaft for movement into and out of clutching engagement with the hub, low-speed clutch retarder means for frictionally resisting rotation of said low-speed clutch, a high-speed clutch retarder member connected to said low-speed screw shaft for rotation therewith, said high-speed clutch retarder member frictionally engaging said high-speed clutch to resist relative rotation of said high-speed clutch greater than the speed of rotation of said low-speed screw shaft, and selector means selectively permitting and blocking drivable engagement of said high-speed clutch with said hub in response to operator control.

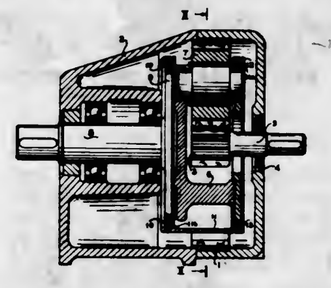
3,293,947
TORQUE CONVERTER AND VARIABLE DRIVE
Walter Valdemar Chery, 908 Fairview Ave., Meadville, Pa. 16335
Filed July 27, 1964, Ser. No. 385,329
23 Claims. (Cl. 74—796)



1. A transmission comprising a shaft,
spaced sun wheels slidably and non-rotatably supported on said shaft,
spaced reaction rings disposed generally concentric to said shaft and said sun wheels,
resilient means on said shaft urging said sun wheels toward each other,
resilient means urging said reaction rings toward each other,
a planetary cage disposed generally concentric to said shaft and extending between said rings and said sun wheels,
said ring members each having an internal peripheral surface inclined radially outward and toward the other of said ring members,
each said sun wheels having an outside peripheral surface inclining radially outward and away from the other said sun wheel,
and planetary rolling elements in said planetary member engaging said inclined surfaces of said ring members and said sun members and being preloaded by a force exerted by said sun wheels and said resilient means.

3,293,948
PLANETARY TRANSMISSION ARRANGEMENT
Friedrich Jarchow, Essen-Bredeney, and Joseph Knuesen, Lank, near Krefeld, Germany, assignors to Rheinstahl Huttenwerke A.G., Essen, Germany
Filed Dec. 24, 1964, Ser. No. 421,125
Claims priority, application Germany, Dec. 24, 1963, R 36,877
15 Claims. (Cl. 74—801)

1. A planetary transmission arrangement comprising, in combination, a planetary transmission including a plurality of rotary transmission elements having toothed portions; two shafts, one of said shafts being connected to one of said transmission elements for rotation with the same; and coupling means including a first coupling part located on one side of said transmission, said first coupling part including a toothed coupling portion engaging a toothed portion of another one of said transmission elements so as to be coupled with the same for rotation therewith, a second coupling part located on the other side of said transmission and coupled with the other shaft for rotation therewith, and an intermediate part extending between said first and second coupling parts and between two of said transmission elements from one side



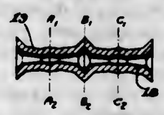
of said transmission to the other side so that said other shaft is coupled with said transmission without a substantial increase of the length of the transmission arrangement.

3,293,949
MULTIPURPOSE BLADE RECONDITIONING TOOL
Raymond S. W. Lindsay, 1434 Mountain Ave., Duarte, Calif. 91010
Filed Jan. 10, 1964, Ser. No. 336,897
6 Claims. (Cl. 76—82.2)



1. A multipurpose blade reconditioning tool having an elongated rigid main body formed in two interfitting halves provided with a handgrip at one end and having four differently shaped notches opening through the end and each lateral edge of its other end, a single thin wafer blade sharpening insert having sharp-cornered edges rigidly supported between the halves of said main body with portions of its sharp edges projecting into three of said notches each adapted to engage and shave at least one face edge of a blade as the blade is inserted in a selected notch and drawn across the exposed edge of said wafer, a fourth notch opening through the edge of said tool having a pair of sharp-edged sector-shaped sharpening elements in edge-to-edge abutment and exposed therein for sharpening hollow-ground blades, and cam lever means for detachably and releasably clamping said sector-shaped sharpening elements in place in said main body.

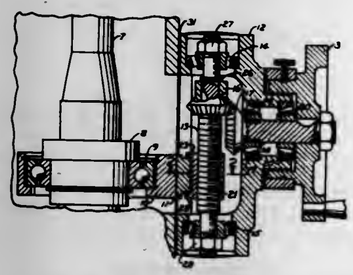
3,293,950
WIRE DRAWING DIE
Edward L. Kern and Dennis W. Hamill, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Jan. 15, 1965, Ser. No. 425,875
10 Claims. (Cl. 76—107)



1. A process for making dies comprising the steps of depositing from the vapor phase a layer of silicon carbide on a substrate,
removing the substrate, and

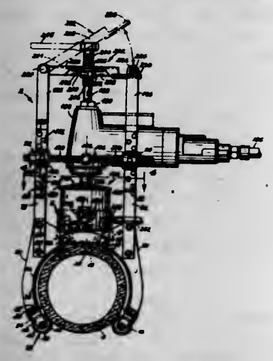
finishing said silicon carbide to the final die configuration.

3,293,951
BORING AND FACING ATTACHMENT
Robert C. Lauterwasser, 5005 Rolling Meadows Road, Rolling Hills Estates, Calif. 90274
Filed Sept. 24, 1965, Ser. No. 490,048
5 Claims. (Cl. 77—4)



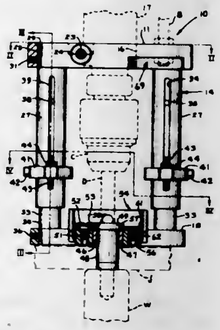
1. A boring and facing attachment improvement comprising a slide with a separate drive nut mounted on a jack screw with said drive nut free to move relative to said slide in one plane but restrained axially and rotationally by said slide and with said jack screw mounted between bearings in a manner which permits axial adjustment of a bevel gear mounted on said jack screw relative to another bevel gear mounted in an end cap into which all of the components associated with said jack screw may be assembled prior to attachment of said end cap onto the attachment housing.

3,293,952
PIPE HOLE CUTTER AND METHOD
Philip R. Fairbanks, 1219 10th Ave. S., Nampa, Idaho 83651
Filed July 30, 1963, Ser. No. 298,778
16 Claims. (Cl. 77—42)



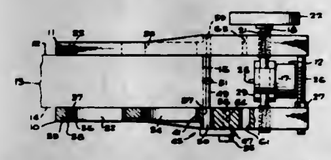
1. Apparatus for cutting a hole in the side wall of a concrete pipe, comprising: a cylindrical housing; a bracket mounted upon said housing at diametrically opposite sides thereof; a pair of clamping arms pivotally connected at one end thereof on each of said brackets for mounting said housing upon said pipe; a roller carried by the other end of each clamping arm and engageable with said pipe; one-way brake means engaging each roller; a lever connected with the pivoted end of each clamping arm; a swivel nut carried by each lever; a turnbuckle rod interconnecting the swivel nuts of the levers associated with each pair of clamping arms, each turnbuckle rod having a right-hand thread at one end thereof and a left-hand thread at the other end thereof and the swivel nuts associated with the threaded ends of each turnbuckle bar having mating right and left-hand threads, whereby rotation of said turnbuckle bars will effect adjustment of said clamping arms toward or away from a pipe when disposed therebetween; a cylindrical cutter sleeve disposed in said housing having teeth at one end thereof engageable with said pipe; said cutter sleeve having two sets of axially spaced and circumferentially staggered openings extending therethrough; rollers carried by said cutter sleeve with one roller extending through each of said openings and engaging said housing to position said cutter sleeve concentrically in said housing; a mandrel connected with said cutter sleeve and extending upwardly therefrom; a motor connected with said mandrel for rotating said cutter sleeve; a bracket connected with said levers in a region above said swivel nuts; adjustable means carried by said bracket and engageable with said motor for urging said motor and cutter sleeve in a direction away from said bracket to engage the teeth of said cutter sleeve with a pipe; a spindle mounted axially within said cutter sleeve; a tubular member mounted on said spindle for axial and rotary movement relative thereto; and a magnet carried by said tubular member.

3,293,953
DRILL BUSHING FEED DEVICE
William E. Hendrick, Comstock Township, Kalamazoo County, Mich., assignor to Galesburg Manufacturing Co., Inc., Galesburg, Mich., a corporation of Michigan
Filed Apr. 24, 1964, Ser. No. 362,260
4 Claims. (Cl. 77—55)



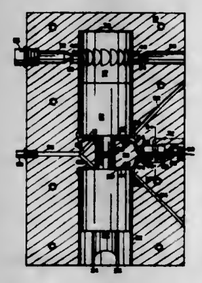
1. A drill bushing carrier, comprising:
head means having a central opening therethrough for receiving a drill press quill;
base means having a central opening therethrough aligned with the central opening of said head means;
means continuously urging said base means away from said head means, said last-named means comprising two pairs of guide members provided on said base means and said head means on opposite sides of said central openings, each pair of guide members comprising a first guide member secured to said head means and extending away therefrom toward said base means, and a second guide member secured to said base means and extending away therefrom toward said head means, said guide members of each pair being tubular and said guide members being in close slideable and telescopic engagement with each other whereby said base means is closely guided for movement toward and away from said head means, the innermost guide member of each pair having a radially outwardly extending pin affixed thereto and the outermost guide member of each pair having an elongated slot through which said pin extends, stop means vertically adjustably mounted on said outermost member for engagement with said pin;
a coil spring disposed within said innermost member of each pair of guide members and engaging said head means and said base means at its opposite ends for urging the guide members of each pair apart; and
a drill bushing mounted on said base means and extending through said central opening thereof.

3,293,954
MULTIPLE LOCATION BORING JIG
Fred J. Russell, 8635 Otis St., Southgate, Calif. 90280, and Paul Cirocco, Bellflower, Calif.; said Cirocco assignor to said Russell
Continuation of application Ser. No. 263,794, Mar. 8, 1963, now Patent No. 3,212,366, dated Oct. 19, 1965. This application June 28, 1965, Ser. No. 467,310
1 Claim. (Cl. 77—62)



A boring jig for guiding a side hole drill in the making of a side hole through a door at a selected distance from an edge of the door and for guiding an edge hole drill in the making of a hole in the edge of said door, said boring jig comprising opposite side plates adapted to engage opposite sides of the door, at least one of said plates having a side hole drill guide therethrough, a clamping mechanism attached to respectively adjacent ends of said plates and including a positioning block having a drill guide hole adapted to guide said edge hole drill, and a locator assembly and means for selectively removably mounting said locator assembly in a first position on at least one of said plates or in a second position on at least one of said plates, said locator assembly when mounted in either of said positions being closer to said edge of the door than said positioning block and adapted thereby to locate said side hole drill guide at a first location or at a second location relative to said edge of said door.

3,293,955
CONTROL APPARATUS
Arthur L. Malmgren, Seattle, Wash., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 23, 1964, Ser. No. 398,692
6 Claims. (Cl. 77—77)



1. A pneumatic perforator in combination with a source of air under pressure and connection means, comprising:
a piston with a longitudinal axis of rotation having an upper end adapted to function as a turbine wheel, a lower end hollow ground to provide two dynamically balanced cutting tips, and a central region reduced in diameter providing upper and lower surface areas normal to the axis of rotation;
a housing defining a cylinder for said piston and dividing the area surrounding the central region of said piston into upper and lower piston actuator cavities, adjacent surface areas of said piston and said housing between said upper and lower cavities defining an air bearing, said housing also defining a chamber having an exhaust passage to the exterior of said housing;
means defined by said housing for supplying high pressure air to the upper and lower piston actuator cavities from said air source thereby providing forces acting on the upper and lower normal surface areas to cause longitudinal displacement of said piston in said cylinder;
means defined by said housing for supplying air from said source in an impinging high pressure stream to a portion of said piston adapted to function as a turbine wheel;
means defined by said housing providing a first pair of air exhaust capillaries connecting the upper and lower piston actuator cavities respectively to said chamber;
an exhaust valve mounted in said chamber, selectively operable to close either one of the first pair of exhaust capillaries; and
a second pair of exhaust capillaries defined by said housing connecting the upper and lower piston actuator cavities respectively to the exterior of said housing, said second pair of exhaust capillaries alternately opened and closed by bidirectional longitudinal displacement of said piston.

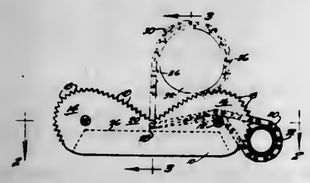
3,293,956
DEVICE FOR REMOVING INSULANT FROM WIRES
Robert A. Adamson, 35 Courtfield Rise, West Wickham, England, and Colin P. Adamson, Monorest, Westerham Road, Biggin Hill, England
Filed Apr. 13, 1965, Ser. No. 447,702
Claims priority, application Great Britain, Apr. 14, 1964, 15,367/64
3 Claims. (Cl. 81—9.5)



1. A wire end insulant stripper comprising a rod-like body containing a heating element, a handle secured to one end of said body, a mounting unit secured to the other end of said body, said mounting unit having closely adjacent parallel bores in a first of which bores said other end of said body is received, a first wire insulant stripping blade secured to said unit so as to close an open end of said first bore and projecting laterally from said unit, an axle rotatably mounted in a second of said bores and

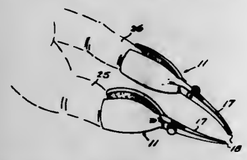
carrying a second wire insulant stripping blade secured to and projecting laterally from said axle, said second blade being movable into overlying relation to said first blade on rotation of said axle and said blades having co-operating notches for engaging wire insulant, a finger operable member mounted on said handle, and a resilient torsion like connected at one end to said finger operable member, and at the other end of said axle, said torsion link resiliently maintaining said second blade in non-overlapping relation to said first blade until said finger operable member is depressed.

3,293,957
LID VISE
Seth H. Hoffheins, Box 116, Jemez Springs, N. Mex. 87025
Filed Apr. 9, 1965, Ser. No. 446,903
2 Claims. (Cl. 81—3.3)



1. A device for loosening and tightening lids comprising an epicycloid-shaped base member having a pair of arcuate ends and a longitudinal slot therein, a bearing member secured to said base at a mid-point between the ends and intersecting said slot, an endless chain mounted at one portion thereof on said bearing member to form a loop disposed for receiving a lid, securing means for said base member extending through said slot in the arcuate ends and engageable with said endless chain the outer edges of epicycloid portions of said base and the endless chain including means for providing cooperative frictional engagement with a lid.

3,293,958
FINGER-MOUNTED TWEEZERS
Elbridge G. Smith, 2824 W. Fort St., Detroit, Mich. 48202
Filed Apr. 16, 1965, Ser. No. 448,771
2 Claims. (Cl. 81—43)



1. A pair of tweezer implements adapted to be mounted on a user's fingers, each implement comprising a resilient elongated, concavely-recessed receiving portion contoured to receive and substantially cover and resiliently grasp the end of a finger, an elongated rigid lug projecting longitudinally forwardly from said receiving portion, said lug being formed with a longitudinal slot, and a tweezer prong pivotally connected to said lug at said slot.

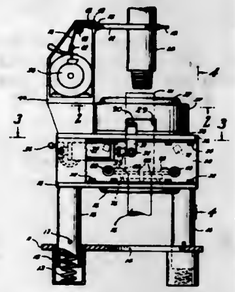
3,293,959
PIPE SUPPORTING WELL TOOL
Thomas A. Kennard, 1506 Conrad Sauer, Houston, Tex. 77043
Filed June 15, 1964, Ser. No. 379,761
7 Claims. (Cl. 81—54)

2. In an apparatus for securing a length of pipe having tool joints on the upper and lower ends thereof from rotation during make up on a drilling platform having a rat hole therein, comprising:

a housing for mounting on said platform in a stationary position over the rat hole and having a vertical opening therethrough for insertion of said length of pipe to be made up,

retractable pipe support means mounted in said housing and including means for supporting the lower end of the upper tool joint of said length of pipe inserted into said opening,

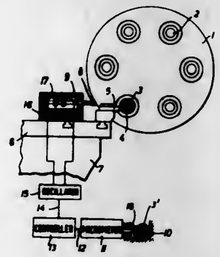
means for engaging said support means in a pipe supporting position and for subsequently retracting said support means,



clamping means above said pipe support means, mounted in said housing for engaging and clamping the upper tool joint of said pipe supported in said opening, said clamping means including a plurality of pivoted gripping members each of which has a tool joint contacting surface which is adapted for movement through a generally horizontal arc which intersects the circumference of said tool joint, and

means for first rotating said gripping members counterclockwise as viewed from above to a clamping position to thereby secure said pipe from turning and for subsequently rotating said gripping members in the opposite direction to release said pipe.

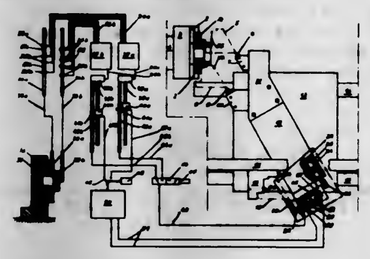
3,293,960
AUTOMATIC TURNING MACHINE WITH AUTOMATIC DIMENSIONAL CONTROL
Philip Feldwisch, 34 Rektor-Schmitz-Strasse, Cologne-Neuehrenfeld, Germany
Filed Oct. 21, 1964, Ser. No. 405,481
Claims priority, application Germany, Nov. 8, 1963, Sch 34,131
4 Claims. (Cl. 82—2)



1. In a machine tool, in combination:
(a) a support;
(b) work holding means for holding a work piece in a predetermined position on said support;
(c) first abutment means on said work holding means;
(d) a cutting tool;

(e) a tool carrier mounted on said support and movable thereon in a direction toward an operative position, said tool being mounted on said carrier for cutting engagement wtih a work piece held in said predetermined position when said carrier moves toward said operative position thereof;
(f) second abutment means on said carrier and engageable with said first abutment means for limiting movement of said carrier in said direction, said second abutment means including
  (1) a contact member movable relative to said carrier in said direction, and
  (2) actuating means for actuating movement of said contact member relative to said carrier in said direction in response to the temperature of said actuating means;
(g) sensing means for sensing the dimension of a work piece;
(h) signal generating means for generating a signal in response to the dimension sensed by said sensing means; and
(i) heating means responsive to said signal for raising the temperature of said actuating means.

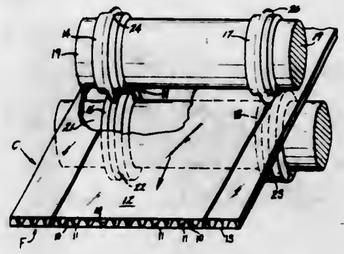
3,293,961
METHOD OF AND DEVICE FOR CONTROLLING MACHINE TOOLS, ESPECIALLY COPYING MACHINES
Eugen A. Matthias, Schaffhausen, Switzerland, assignor to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Feb. 8, 1965, Ser. No. 430,815
Claims priority, application Switzerland, Feb. 11, 1964, 1,638/64
17 Claims. (Cl. 82—14)



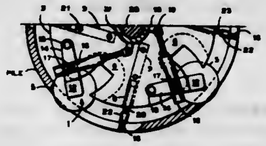
1. A method of controlling machine tools, especially copying lathes having at least two carriage supported independently adjustable and successively effective machining tools and template controlled servomotor and linkage means connected between a template and the carriage for controlling the movement of the carriage which comprises; adjusting the servomotor and linkage means prior to the engagement of each said tool with a workpiece to correct for the individual tool position on the carriage.

3,293,962
CORRUGATED BOARD CUTTER DEVICE AND PROCESS
Peter Giannaris, West Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Jan. 7, 1965, Ser. No. 424,697
1 Claim. (Cl. 83—470)

An apparatus for cutting or slitting paperboard such as corrugated kraft board without crushing the board and without impeding the advance or the discharge of the board to and from the cutting station comprising at least one pair of rotatably mounted anvils, said anvils being spaced to form a nip defining a gap between said anvils, said gap being at least as wide as the thickness of said board, one anvil being fitted with a circular saw-toothed cutter, the other anvil having a circular undercut in alignment with said cutter providing clearance for said cutter, and said cutter having a plurality of circumferentially spaced cutting elements projecting from said cutter, each element defining a pyramid.



3,293,963
PILE CUTTER
Joseph J. Carroll and John B. Galletti, Jr., Pasadena, and Joseph F. O'Kelly, Jr., La Porte, Tex., assignors to J and J Marine Diving Company, Pasadena, Tex., a corporation of Texas
Filed Mar. 10, 1965, Ser. No. 438,686
14 Claims. (Cl. 83—54)

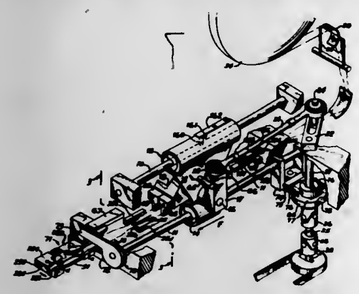


11. A method of cutting a pile secured at one end comprising the steps of cutting through the wall of the pipe from the inside at a multiplicity of circumferential locations, such first cuts being of limited circumferential extent and being made substantially simultaneously, and thereafter orbitally cutting the wall to join the ends of said first cuts, said orbital cuts also being made substantially simultaneously.

3,293,964
BAND RIBBON FEEDING MECHANISM
James Keith Macomber, Rockville Centre, N.Y., assignor to Consolidated Lithographing Corporation, Carle Place, Long Island, N.Y., a corporation of New York
Original application Apr. 10, 1961, Ser. No. 110,289, now Patent No. 3,174,371, dated Mar. 23, 1965. Divided and this application Dec. 31, 1964, Ser. No. 422,700
8 Claims. (Cl. 83—86)

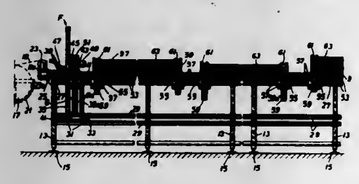
1. In a band feeding device, a hopper for receiving cut bands one at a time and for holding a quantity of such cut bands comprising: a first end and a second end, said ends forming an open bottom with ledge means adapted to releasably hold at least one band at the bottom level, said band being substantially flat when in such bottom position; each of said ends comprising side means with band settling guide means, each of said band settling guide means including a side wall structure comprising a relatively narrow substantially vertical bearing edge disposed

internally with relation to the rest of said side wall structure with the lowermost portion of said bearing means of each of said side wall structures being positioned at and



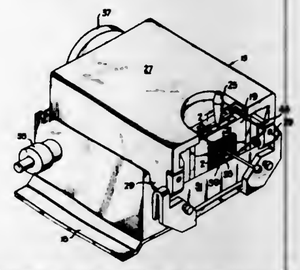
adapted to touch a portion of the edge of the bottom label in substantially point contacting relationship when said label is positioned at the bottom level of the hopper.

3,293,965
APPARATUS FOR SUBDIVIDING AND STACKING WEBS OF TEXTILE MATERIALS OR THE LIKE
Ernst Habicht, Urfeld, near Bonn, Germany, assignor to Emil Hoogland G.m.b.H., Bonn-Nord, Germany
Filed Aug. 24, 1965, Ser. No. 482,154
17 Claims. (Cl. 83—87)



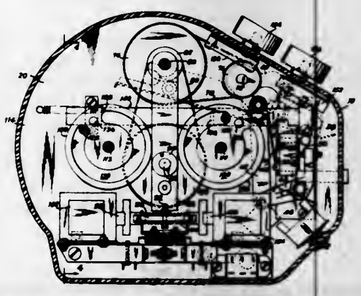
10. In an apparatus for subdividing webs of textile or similar material into sections of desired length and for accumulating such sections into stacks, an elongated supporting table having a top face; a feed adjacent to one longitudinal end of the table and including at least one supply of convoluted web stock having a leading end; a plurality of inverted U-shaped pressing units movable in the longitudinal direction of said table and each including a presser bar extending transversely across said top face, each of said presser bars being movable up and down toward and away from said top face; an inverted U-shaped carriage movable in the longitudinal direction of said table and arranged to bypass said pressing units, an inverted U-shaped gantry mounted in said carriage and including a crosshead extending transversely across said top face, said crosshead being movable up and down with reference to said carriage so that it may be lifted to a level above said presser bars during movement of the carriage past said pressing units; a clamping device provided between said crosshead and said feed; means for moving said clamping device away from and toward said crosshead so that the clamping device may attach the leading end of the stock to the crosshead whereby the stock shares the movement of the crosshead away from said feed and its leading end may be tucked under one of said presser bars upon disengagement of said clamping device; and a cutting device mounted on and movable in the longitudinal direction of said crosshead to sever the stock and to thus form a section upon movement of the crosshead back toward said feed so that the trailing end of the thus separated section may be tucked under another one of said presser bars.

3,293,966
MICROTOME ANTI-ROLL DEVICE
James B. McCormick, La Grange, and Leighton C. Johnson, Westmont, Ill., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
Filed Sept. 29, 1964, Ser. No. 399,982
7 Claims. (Cl. 83—109)



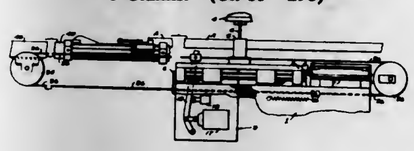
1. A microtome comprising a supporting base, a carrier mounted on said base adapted to support a specimen, a microtome knife mounted on said base adjacent said carrier adapted to slice sections from a given face of a specimen supported on said carrier incident to a predetermined engagement between said specimen and knife, means for causing relative movement between said carrier and said knife so as to effect said predetermined engagement, and a device positioned adjacent said carrier for preventing curling of a section sliced from the specimen, said device including means for mechanically engaging only a single line along the surface of the section as it is being sliced from the specimen, said member being pivoted about an axis located on the opposite side of the cutting plane from said section and vertically above the upper level of a specimen frozen to said specimen carrier so as to cause said member to bear downwardly and inwardly against the surface of the section so as to urge the section against the face of the knife blade and thereby prevent the section from curling.

3,293,967
TAPE SERVING DEVICE
Everett E. Sharpe, Shelton, Conn., assignor to Better Packages, Incorporated, a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,397
14 Claims. (Cl. 83—241)



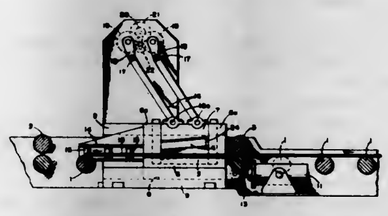
1. A machine for dispensing strip material comprising means for feeding a length of strip material, first and second rotatable drums selectively connectible to said feeding means for measuring the length of strip material being fed by said feeding means, means for selectively connecting said first and second rotatable drums to said feeding means, and control means connected to said feeding means and including a member disposed for actuation by a predetermined movement of said first and second movable drums to stop said feeding means.

3,293,968
AUTOMATIC FLYING SHEARS
Kenneth William Reilly, 7827 Dunbarton Ave., Los Angeles, Calif. 90016
Filed July 19, 1965, Ser. No. 473,048
5 Claims. (Cl. 83—295)



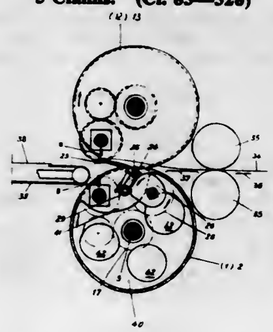
1. An automatic severing means for material issuing and moving linearly from a continuous forming machine, said means comprising:
(a) a reciprocable carriage movable along an axis parallel to the axis of movement of said material;
(b) a severing tool for said material carried by said carriage;
(c) variable speed means for moving said carriage including a speed adjusting means to effect movement of said carriage within a speed range extending from a rate below the speed of said material to a rate above the speed of said material;
(d) a target engaged by said material and movable therewith, said target being connected with said speed adjusting means to bring the rate of movement of said carriage into coincidence with the rate of movement of said material;
(e) means operable when the rates of movement of said carriage and material are equal to activate said severing means;
(f) and means for deflecting said target from the path of said material after operation of said severing means.

3,293,969
EDGE TRIMMING SHEARS FOR OPPOSITE POSITIONING IN SHEARING LINES
Karl Greis, St. Ingbert, Saar, Germany, assignor to Verwaltungsgesellschaft Moeller v. Neumann Offene Handelsgesellschaft, St. Ingbert, Saar, Germany
Filed July 1, 1963, Ser. No. 293,228
Claims priority, application Germany, June 29, 1962, V 22,716
17 Claims. (Cl. 83—318)



1. Edge trimming shears for positioning opposite each other along a metal sheet to trim the sheet edges while the sheet is in motion comprising in combination a support stand, a knife support mounted for reciprocating movement on said support stand, a straight lower knife fixed to said knife support, a straight upper knife mounted in said knife support for vertical movement relative to said knife support and said lower knife, first power operated means for moving said knife support on said support stand, rigid, elongate means connected to said upper knife at one end, second power operated means for engaging said rigid elongate means at the other end, said second power operated means being adapted to lock in position to provide a stationary support for said rigid elongate means during the cutting action and adapted to move from said locked position to lift said upper knife at the end of the cutting action, said first power operated means actuating said knife support to move said rigid elongate means from an inclined upper position at the start of the cutting action to a vertical lower position at the end of the trimming action to lower said upper knife and trim said metal sheet.

3,293,970
GUILLOTINE FOR CUTTING WEBS OF PLASTICS MATERIAL SHEETING
Friedrich Franz Brockmüller, Lengerich, Germany, assignor to Windmöller & Hölscher, Lengerich, Germany
Filed Aug. 11, 1965, Ser. No. 478,972
Claims priority, application Germany, Oct. 19, 1964, W 37,781
5 Claims. (Cl. 83—328)

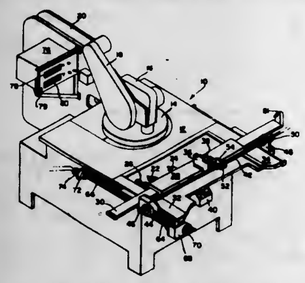


1. A guillotine for cutting webbed material, said guillotine comprising a first knife beam rotatably mounted about an axis spaced above said material, a second knife beam rotatably mounted about an axis spaced below said material, said knife beams extending transversely to the direction of travel of said material and each carrying a blade, first moving means to move said beams along an arcuate path, second moving means to continuously advance said material between said blades so that said blades will simultaneously engage said material at periodic intervals to sever sheets from said material, conveying means to convey said sheets from said blades, at least one support member pivotally mounted about an axis spaced below said material and movable along an arcuate path similar to that of said second knife beam, and means to control the pivotable movement of said support member so that it lifts the leading end of said material and guides same to said conveying means after said severing.

3,293,971
TEMPLATE PRODUCER
Robert S. Kass, Broomall, Pa. (1020 Ford St., West Conshohocken, Pa. 19428)
Filed June 23, 1965, Ser. No. 466,332
5 Claims. (Cl. 83—412)

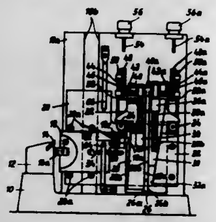
1. Apparatus comprising a table, a frame, said table being mounted on said frame, ways on said table, a carriage, said ways slidably supporting said carriage, a cross slide reciprocally supported by said carriage, a first lead screw coupled to said carriage, a second lead screw coupled to said cross slide, said second lead screw being substantially perpendicular to said first lead screw, a slot in said table extending substantially parallel to said ways, said second lead screw being mechanically coupled to a member extending in said slot, said member being coupled to a gear slidably disposed on a shaft and coupled to the shaft in a manner to facilitate transmission of rotary motion from said shaft to said member, a separate digital

encoder coupled to each lead screw for generating a signal representative of the number of rotations of the screw from a zero point to thereby indicate the position of the



cross slide and carriage, and a bidirectional counter for receiving said signals and directly indicating the position of said cross slide and carriage with respect to a given zero point.

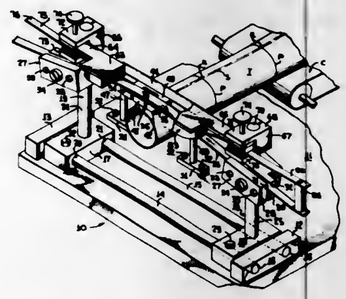
3,293,972
MICROTOME
Rolf Burkhardt, Munich-Pasing, and Richard Lankes and Anton Imhof, Munich, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a firm of Germany
Filed Aug. 23, 1965, Ser. No. 481,671
Claims priority, application Germany, Sept. 8, 1964, C 33,827; Apr. 8, 1965, C 33,898
9 Claims. (Cl. 83—414)



1. A microtome comprising a base, a knife mounted on said base, a main carriage reciprocable on said base, a preparation holder reciprocable towards and away from the knife on said main carriage, and advancing means for advancing the preparation holder in relation to the knife, said advancing means including a wedge, a projection on the preparation holder engageable with the wedge, and a step indexing mechanism operatively associated with the wedge for adjusting the position of the wedge whereby the preparation holder is advanced relative to the knife, an auxiliary carriage mounted on said main carriage for movement in the direction of advance of the preparation holder, a supporting surface on the auxiliary carriage and a counter bar on the main carriage, a second wedge bearing against the supporting surface and against the counter bar and a second indexing means cooperating with the second wedge whereby the total displacement of the preparation holder is the sum of the advances provided by the two wedges.

3,293,973
MAGNETIC IMPULSE SEVERING APPARATUS
Howard L. Gerber, Chicago, and Bernard R. Juskie, Oak Forest, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 6, 1964, Ser. No. 401,893
21 Claims. (Cl. 83—542)

21. Severing apparatus comprising cutting means for cutting a member, support means for supporting the member adjacent the cutting means, deformable means for moving the cutting means from a first position spaced from the member to a second position at which the cutting



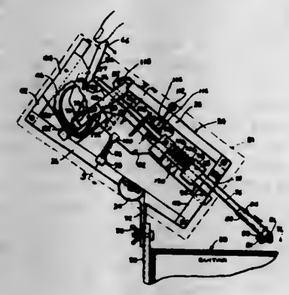
means contacts and severs the member, and means for causing said deformable means to deformably move between said first and second positions.

3,293,974
PLUCKING MECHANISM FOR MUSICAL INSTRUMENTS OF THE HARPSICHORD FAMILY
Rainer Schütze, Muhltalstrasse 128, Heidelberg, Germany
Filed May 7, 1965, Ser. No. 453,963
Claims priority, application Germany, May 13, 1964, Sch 35,153
8 Claims. (Cl. 84—258)



1. A string plucking mechanism for plucked string instruments comprising
(a) a shank,
(1) the shank defining an elongated rectangular slot extending between two side walls and two end walls;
(b) a tongue arranged in said slot,
(2) the tongue having two end walls associated and cooperating with respective ones of said side walls of the slot, and two opposite sides extending between the tongue end walls;
(c) a plectrum carried by, and projecting from, one of the sides of the tongue at one end of the tongue;
(d) a pivoting joint mounting the tongue in the slot at the other end of the tongue and permitting pivoting of the tongue in a plane defined by the plectrum and perpendicularly to the sides of the tongue,
(3) the joint comprising a pivot pin engaged in an associated and cooperating bore, the pivot pin and bore extending perpendicularly to the sides of the tongue;
(e) stop means mounted on the shank for limiting the pivoting movement of the tongue out of a plane defined by the slot; and
(f) spring means mounted on the shank and biased for normally holding the tongue in the plane defined by the slot.

3,293,975
PLUCKING MECHANISM FOR MUSICAL INSTRUMENT
Thaddeus A. Kosiecki, 24261 Tamarack Circle, Southfield, Mich. 48075
Filed Aug. 19, 1964, Ser. No. 390,635
9 Claims. (Cl. 84—329)



1. A mechanism for plucking a vibratory tone generating element comprising a frame, a picker rod disposed in said frame, means connected to said frame for slidably supporting said rod for longitudinal movement of the rod and for lateral movement of the rod about a pivot point, a lever pivoted in said frame for oscillatory movement between first and second positions in the plane of lateral movement of said rod and having a surface disposed adjacent one end of said rod and resilient means biasing said rod longitudinally toward said lever such that said one end of said rod slidably abuts said surface of said lever, said lever being pivotally movable from said first to second positions wherein the angle of said surface relative to the axis of said rod changes to first push said rod lengthwise and then cam the same laterally through a sliding action of said rod end in one direction along said surface of said lever, said resilient means acting on said lever through said rod to develop a torque tending to return said lever from said second to first positions and causing reverse sliding action of the rod on the lever as the same is pivoted from said second back to said first position.

3,293,976
EMBOUCHURE MIRROR
Howard Windows, Jr., R.D. 4, Box 296, Tarentum, Pa. 15084
Filed Dec. 18, 1964, Ser. No. 419,317
4 Claims. (Cl. 84—453)



1. An embouchure monitoring device having
a body portion with a planar surface,
a clamp member extending from said body portion,
said clamp member adapted to engage the tubular portion of a wind instrument adjacent to the wind instrument mouthpiece,
said clamp member arranged when secured to the wind instrument tubular portion to position said body portion planar surface in a plane substantially normal to the longitudinal axis of said wind instrument tubular portion, and
said body portion planar surface having a reflective surface for the player of the wind instrument to continuously observe the embouchure while playing the wind instrument.

3,293,977
LIQUID ENCAPSULATED FASTENER DEVICE
A. Stanley Dalton, Bellbrook, and Albert Olevitch, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 30, 1964, Ser. No. 407,938
1 Claim. (Cl. 85—37)



A rivet fastener having a shank and an enlarged head, said shank and the underside of said head having smooth external surfaces, a first coating directly upon substantially the entire external surfaces of said shank and the underside of said head, said first coating being formed from a tacky liquid that dries rapidly, a second coating covering said first coating, said second coating being formed from a plurality of pressure rupturable capsules deposited directly upon said first coating while said first coating is tacky and thereby bonding said capsules to the shank and the underside of said head, said first coating being chemically inert to the material from which said capsules are formed, and a fluid sealant contained within said capsules, said sealant being formed from a fluid that is self-solidifying upon rupture of said capsules to provide a corrosion protective coat of sealant over said first coating upon installation of said fastener, said capsules being on the order of from 150 to 250 microns in size.

3,293,978
SCREW WITH V-SHAPED SLOT
Max G. Handley, 38645 Frontier Ave., Palmdale, Calif. 93550
Filed Dec. 21, 1964, Ser. No. 411,453
4 Claims. (Cl. 85—45)

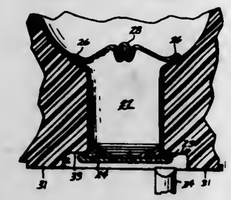


1. A screw having a head and a threaded shank:
said head and shank having a cavity therein,
the width of said cavity being within a range that will limit the area of the cavity at the juncture of the head and shank to no more than the difference in areas of the shank based on the diameters of the crest of the threads and the root of the threads,
said cavity comprising a V-shaped recess,
said cavity having essentially parallel sides with non-parallel edges,
said edges converging toward the bottom of said cavity,
said cavity having a depth of penetration into said shank approximately equal to one half the diameter of said shank,
said non-parallel edges forming an angle between 50° and 60°.

3,293,979
METHOD OF MAKING A CARTRIDGE
William B. Woodring, Stony Creek, and Charles O. Williams, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application Mar. 30, 1964, Ser. No. 355,853, now Patent No. 3,261,291, dated July 19, 1966. Divided and this application Oct. 19, 1965, Ser. No. 510,125
2 Claims. (Cl. 86—36)

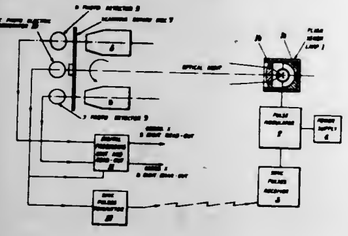
1. A method of making a cartridge comprising providing a one-piece tubular body having a head portion

with a primer opening therethrough, providing a one-piece rimfire primer having a first closed end portion including a rim, filling the interior of said rim with priming material, closing said other end of said primer by pleating in rosette fashion, inserting said primer into



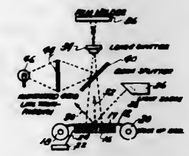
said primer opening until said rim seats on said head portion and said other end extends into the interior of said tubular body, and upsetting said other end of tubular primer to develop an outer projecting flange in contact with internal surface of said head portion whereby said primer is riveted in place.

3,293,980
DEVICE FOR DETECTING THE ANGULAR POSITION OF A LUMINOUS SOURCE
Neri De Benedetti, Rome, Italy, assignor to Bombrini Parodi-Delfino Societa per Azioni
Filed Sept. 15, 1965, Ser. No. 487,448
Claims priority, application Italy, Oct. 26, 1960, 18,455/60
5 Claims. (Cl. 88—14)



1. A system for detecting from a ground station in digital form the angular position of an active point-like infrared pulse modulated light source on board of a moving vehicle, comprising in combination a first assembly arranged in the ground station and a second assembly arranged on board of the moving vehicle, said first assembly including two equal telescopes having a common focal plane, for training said light source, an opaque disc having a number of $(4\times n)$ of said equispaced radial scanning slits, a number of $(4\times n)$ sets of (2^m+1) equispaced radial synchronizing slits symmetrically arranged above said scanning slits with the central slit lying in alignment with the corresponding scanning slit, said synchronizing slits having a pitch one from another corresponding to twice their width, the width of the scanning slit being 1.5 times the pitch of the synchronizing slits, on a radius greater than that of said synchronizing slits, there being provided $(4\times n)$ large slits each arranged two pitches before the first synchronizing slit of each set thereof, counting in the rotation direction of said disc and on a radius greater than that of said large slits, there being provided $(4\times n)$ small slits each arranged one pitch after the last synchronizing slit of each set thereof, counting in the rotation direction of said opaque disc, the figure n corresponding to an even number between 2 and 10, two photodetectors each arranged on the optical axis of the corresponding telescope of said two telescopes for detecting the light pulse of said light source and transforming it to an electric pulse, said two telescopes being parallel to one another and arranged with their axes passing through the radius circle of said scanning slits, opto-electronic means for generating electric pulse signals synchronized to the rotation of said disc-like means, digital computing electronic means for processing and displaying in digital form the electric pulses sent from said photo-detector means and the synchronized electric pulses sent from said opto-electronic means, and transmitter means for transmitting to the moving vehicle said synchronized electronic pulses, said second assembly on the moving vehicle including receiver means for receiving said synchronized pulses, modulating means for modulating the pulses transmitted from said receiver means and causing the lighting of said light source in accordance with said synchronized pulses and power supply means for energizing said modulating means and said light source, whereby the measurement of the angular coordinate of the position of the moving body with respect to the collimation axis of the telescope is obtained in digital form by effecting the numerical difference of synchronism pulses generated by said opto-electronic means by rotating of said disc, which precede and follow the reception instant of the light pulse signals from said infrared light source on the vehicle, said signals going through said scanning slits.

3,293,981
TAPE READ-OUT DEVICE
Evan A. Jensen, San Carlos, and Russel D. Cross, Redwood City, Calif., assignors to United Air Lines, Chicago, Ill., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,956
9 Claims. (Cl. 88—24)



1. Apparatus for photographically transcribing data which has been permanently recorded in the form of constant depth grooves in the surface of a record medium, comprising means for supporting said record medium whereby said surface lies smooth, means for illuminating said surface with light having a substantially constant angle of incidence with said surface, whereby light impinging on the grooved portions of said surface is scattered, a photographic film, and optical means for focusing only said scattered light upon said film.

3,293,982
OVERHEAD PROJECTOR WITH AN UNSYMMETRICAL REFLECTIVE SUPPORTING STAGE
Roger H. Appeldorn, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,651
13 Claims. (Cl. 88—24)

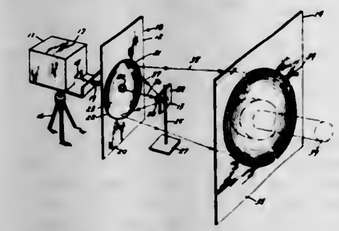
1. Projection apparatus comprising light source means for directing a beam of light to a stage, a light-reflective stage for supporting a transparency in position to receive and transmit said beam and for re-directing said beam through a said transparency supported thereon and to a projection head, and projection head means for focusing said beam on a viewing screen; said stage comprising a

substantially planar grouping of narrow concentric conoidal surfaces of increasing diameter and increasing inclination to a common axis which is offset from the center of said stage, all of said surfaces being focused on a com-



mon center on said axis; and said source and said head means being located closely adjacent and on opposite sides of said common center with said head means over the center of the stage.

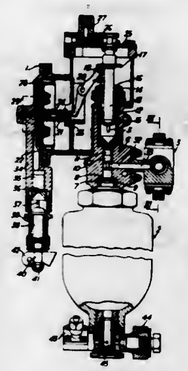
3,293,983
NON-STEREO DEPTH PERCEPTION PROJECTION DISPLAY DEVICE
Tad J. Gaudyn, % Maritza Guzman Esquilin, Box 22568, U.P.R. Station, Rio Piedras, Puerto Rico 00925
Filed Jan. 28, 1965, Ser. No. 428,762
4 Claims. (Cl. 88—24)



1. An optically projecting display device comprising: a light source; a displayed object supporting means positioned in the path of said light source, a parabolic mirror focused substantially upon said displayed object supporting means in such manner as to reflect rays from the displayed object in diverging paths; and a fresnel lens; said fresnel lens being focused by reflection upon said mirror upon said object supporting means.

3,293,984
VEHICLE ESCAPE SYSTEMS
James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, England
Filed Oct. 6, 1964, Ser. No. 401,788
Claims priority, application Great Britain, Oct. 7, 1963, 39,454/63
2 Claims. (Cl. 89—1)

1. An ejection system for ejecting an ejection seat from a submerged aircraft, such system including: a source of pressure fluid; an ejection gun connected to said source; and a pressure sensitive mechanism comprising a diaphragm adapted to be displaced by the pressure to which the mechanism is to respond, a spring-biassed plunger having a collar thereon, and a lever cooperating with said diaphragm and said collar normally to restrain said plunger, said lever being adapted to be moved clear of said collar to release the plunger for movement by its spring-biassing to an operative position in response to movement of the diaphragm under pressure in excess of a predetermined value; a safety device being interposed between said source and said gun, such safety device comprising a valve secured to said pressure sensitive mechanism, said valve comprising a valve body and a valve member, said valve body defining three outlet ports and one inlet port, said valve member defining a rebate



which is at all times in communication with said inlet port and which can be moved from an operative position in which it lies in communication with two said outlet ports or to an inoperative position where it lies in communication with only one said outlet port.

3,293,985
FIRING TURRET FOR TELEGUIDED MISSILES
Emile Stauff, Versailles, and Roger Fleury, Boulogne-sur-Seine, France, assignors to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Nov. 24, 1964, Ser. No. 413,480
Claims priority, application France, Nov. 28, 1963, 955,386
4 Claims. (Cl. 89—1.815)



1. A device for firing and controlling teleguided missiles comprising, in combination,

a firing turret carrying a launching ramp with the turret-ramp combination having at least two axes about which the turret-ramp combination may move,

an infra-red guiding system and optical sighting device combination with optical axes of said guiding system and said sighting device in parallel relationship to each other,

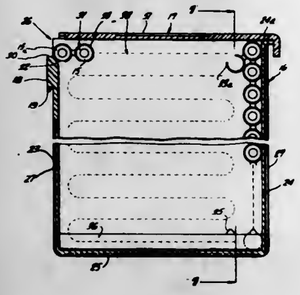
said guiding system and sighting device combination having a support in common with said launching ramp, with said guiding system and sighting device combination located rearwardly of said launching ramp,

said guiding system and sighting device combination having at least two axes about which the guiding system and sighting device combination may move,

locking and unlocking means on said at least two axes of said guiding system and sighting device combination to lock against movement about said axes of said guiding system and sighting device combination during launching and to unlock for movement about these same axes momentarily after launching of a missile

whereby the device enables control of the missile to be taken over by said guiding system at launching and the tracking of a target for the missile by the low inertia guiding system and sighting device combination during the missile flight.

3,293,986
MAGAZINE FOR BELTED AMMUNITION
Eugene M. Stoner, Rte. 1, P.O. Box 70, Port Clinton, Ohio 43452
Filed Jan. 19, 1965, Ser. No. 426,577
12 Claims. (Cl. 89—34)



7. The combination of a magazine for storing belted ammunition in a stack of serpentine folds and a belt-feed weapon adapted to support the magazine and withdraw the ammunition therefrom comprising, in combination:
(a) a belt-feed weapon having a feedway transverse to the bore of the weapon to register belted ammunition for engagement by the loading mechanism of the weapon;
(b) an ammunition magazine including a substantially rigid, open-top box having sides spaced-apart a distance approximating the length of the belted cartridges so that the serpentine folds of belted ammunition lie transverse to the bore of the weapon;
(c) an ammunition port formed in one end of the box adjacent the upper edge of the box;
(d) a rectangular, end-for-end reversible lid for the box adapted to seal the top of the box and the ammunition port when in a first position and to cover only the top thereof when in a second, reversed end-to-end position;
(e) means for attaching the magazine to the weapon when the lid is in the second position so that the ammunition port registers with the transverse feedway; and
(f) means associated with the weapon and magazine to prevent the attachment of the magazine to the weapon when the lid is in said first position.

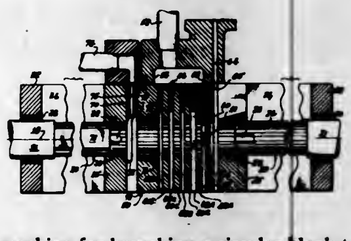
3,293,987
METHOD OF GEAR SHAVING
David W. Daniel, Birmingham, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed June 1, 1965, Ser. No. 460,177
14 Claims. (Cl. 90—1.6)

1. The method of shaving gears which comprises running a gear member in tight mesh with a gear-like shaving cutter member having helical teeth conjugate to the teeth of the gear member, in which the teeth of the cutter member have grooves in their flanks extending in planes perpendicular to the axis of the cutter member, the side walls of the grooves being inclined to intersect the flanks of the teeth to form cutting edges, the included angles between the side walls of the grooves and the flanks of the teeth being substantially equal included angles of at least 90 degrees, positively driving one of



said members in a single direction during the shaving operation, and driving the other member solely through the meshed engagement between said members.

3,293,988
METHOD AND APPARATUS FOR BROACHING GEARS
Alfred B. Strempel, Deep River, Conn., assignor to Giannini Controls Corporation, Duarte, Calif., a corporation of New York
Filed May 18, 1965, Ser. No. 456,697
7 Claims. (Cl. 90—10)

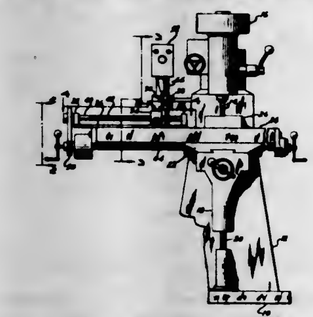


1. A machine for broaching a circular blank to form a gear, said machine comprising in combination
a series of ordered, axially alined, apertured dies with cutting edges at the peripheries of the apertures,
means for axially moving a blank successively through the apertures of the respective dies to progressively form gear teeth at the blank periphery to produce a gear, the initial diameter of the blank exceeding the outer diameter of the formed gear,
the first die having circumferentially spaced cutting teeth adapted to cut channels of predetermined width in the periphery of the blank between the gear teeth, and having an aperture diameter between said cutting teeth that exceeds said initial diameter of the blank,
and the second die having an aperture that clears the sides of said channels in the blank and having first cutting edges adapted to deepen said blank channels and second cutting edges adapted to form the tops of the gear teeth to substantially their final shapes.

3,293,989
TEMPLATE SYSTEM FOR MILLING MACHINES
Oscar Louis Kurtz, Manchester, Conn., assignor to Kurtz Brothers, Incorporated, Manchester, Conn., a corporation of Connecticut
Filed Aug. 9, 1965, Ser. No. 478,383
13 Claims. (Cl. 90—13)

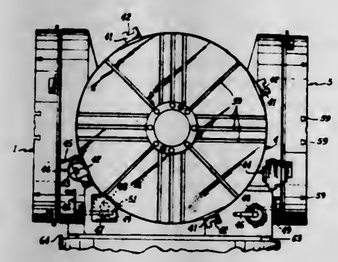
1. An attachment for a three dimensional milling machine having a tracer sensing device with a tracer stylus and a movable worktable actuated in response to said tracer sensing device, said attachment comprising a template having an edge corresponding in contour to a desired finished surface of a workpiece, said edge of said template being positioned in substantially perpendicular relation to the longitudinal movements of said worktable, a template carrier, means to support said template carrier in movable relation to said worktable, and means engageable with said

carrier for moving said carrier on said support means in an opposite direction in relation to and in response to the



longitudinal movements of said worktable, thereby maintaining continuous registration of said template with said tracer stylus.

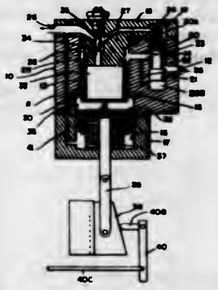
3,293,990
ROTATABLE DEVICE FOR SUPPORTING PARTS TO BE MACHINED
René Deflandre, Paris, France, assignor to Societe dite: DEREFA, Etablissement pour le Developpement, Recherches et Fabrications Industrielles
Filed July 26, 1965, Ser. No. 474,698
Claims priority, application France, Aug. 6, 1964, 984,329
11 Claims. (Cl. 90—58)



1. A rotatable device having a plurality of locations for supporting parts to be machined, said device comprising a housing, a plurality of cradles, means for mounting said cradles in such housing to rotate about horizontal axes, said cradles being located in different planes.

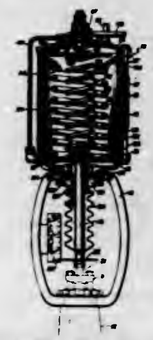
3,293,991
VISCOSITY RESPONSIVE CONTROL
Walter F. Isley, Grosse Pointe, and Frank C. Druzynski, Birmingham, Mich., assignors to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Original application Apr. 23, 1962, Ser. No. 189,378, now Patent No. 3,170,503, dated Feb. 23, 1965. Divided and this application Aug. 3, 1964, Ser. No. 386,957
6 Claims. (Cl. 91—52)

1. A viscosity sensing device comprising,
(a) a housing having an inlet and an outlet with said inlet being adapted for connection to a source of fluid pressure,
(b) said housing having a first orifice formed by a pair of concentric radially spaced cylinders in communication with said inlet, the innermost of said cylinders being hollow, and a second orifice disposed downstream and in series flow with said first orifice, said outlet being in communication with said second orifice,
(c) said housing having a chamber formed intermediate said first orifice and said second orifice and formed in part by the interior of said innermost cylinder and pressure sensing means disposed within said chamber to sense pressure changes intermediate



said orifices as produced by variations in fluid viscosity, and
(d) the distance between said cylinders which forms said first orifice being less than the greatest transverse dimension of said second orifice.

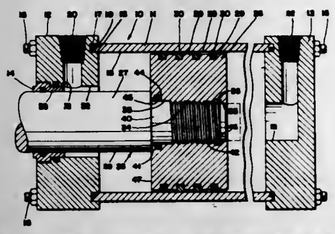
3,293,992
FLUID ACTUATOR
Hans D. Baumann, Decatur, Ill., assignor to A. W. Cash Company, Decatur, Ill., a corporation of Illinois
Filed Aug. 25, 1964, Ser. No. 391,891
2 Claims. (Cl. 91—386)



1. An actuator, comprising
(a) a housing including a cylindrical bore,
(b) a piston slidable in the bore at one end thereof,
(c) a piston rod extending from the piston to the exterior of the housing for the actuating function,
(d) a diaphragm extending across the bore at the other end and adapted to have a control signal applied to it,
(e) a spring extending between the piston and the diaphragm,
(f) a pilot valve operated by the diaphragm having an input to which pressure operating fluid is connected,
(g) a conduit connecting the output of the pilot valve to the piston for the operation thereof, and
(h) a second spring extending between the piston and the housing at the other end of the bore, wherein the piston is provided with a seal consisting of a diaphragm of rubber-like material whose periphery is fastened relative to the surface of the bore adjacent one end of the piston, whose central portion is fastened to the underside of the piston at the said one end, and whose intermediate portion is normally doubled between the surface of the piston and the

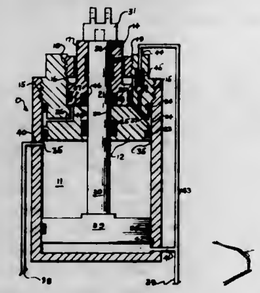
surface of the bore, the piston being provided at its other end with a seal which slides along the surface of the bore.

3,293,993
JOINT BETWEEN A PISTON HEAD AND A PISTON ROD OF A FLUID MOTOR
Robert W. Lanman, Wilmette, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 5, 1964, Ser. No. 409,167
3 Claims. (Cl. 91—396)



1. A fluid motor comprising a body having a first bore closed at one end by a transverse wall, a second bore through said wall and extending in the same axial direction as the first bore, a piston within said body, the piston having a head with an outer surface having a close fit with said first bore, the piston having a rod extending through the second bore and having an outer surface closely fitting said second bore, said head having axially spaced and aligned first and second generally circular bearing surfaces integral therewith and concentric with said head outer surface and in axial alignment therewith, said piston also having an internal thread integral therewith between said bearing surfaces, said rod having first and second axially aligned guide surfaces integral therewith and concentric with said rod outer surface and in axial alignment therewith and received in said first and second bearing surfaces respectively with a close fit therewith for maintaining said outer surfaces concentric and in axial alignment, said rod having an external thread integral therewith between said guide surfaces, said threads being engaged for holding said head and rod in assembled relation, and a shoulder on said rod engaged by an outer end face of the head for fixing the axial position of the head relative to the rod.

3,293,994
NON-LEAK PISTON SYSTEM
Pellegrino E. Napolitano, 1415 57th St., Brooklyn, N.Y. 11227
Filed Nov. 27, 1964, Ser. No. 414,189
6 Claims. (Cl. 92—86)



1. A leak catch seal for a fluid operated cylinder and piston rod comprising an end insert for the said cylinder adapted to be fixedly mounted into an end of the said cylinder to form a seal to inhibit the passage of fluids; a reciprocating piston rod slidably mounted through at least one opening in said insert; leak catch means formed between the perimeter of said insert and the inner walls of the said cylinder; said insert having a chamber centrally located therein to form a fluid trap means; a trap closure adapted to slide fit along said piston rod and within said chamber to enclose said fluid trap means; closure engaging means disposed on an outer portion of the said piston rod in faced relationship with the said trap closure; and at least one fluid communicating means between the said leak catch means and said trap means.

3,293,995
HYDRAULIC CONTROL APPARATUS WITH AIR PURGING MEANS
Darcy Smith, 1052 Verdier Ave., Brentwood Bay, British Columbia, Canada
Original application Mar. 23, 1964, Ser. No. 354,044, now Patent No. 3,233,407, dated Feb. 8, 1966. Divided and this application Oct. 20, 1965, Ser. No. 498,383
6 Claims. (Cl. 92—110)



1. Hydraulic control apparatus with air purging means, comprising a slave cylinder, pipe means connected to each of opposite ends of the cylinder and adapted to connect said ends to pump means for selectively directing fluid into and out of the cylinder ends and in communication with a fluid holder open to atmosphere, a piston and rod assembly with the piston slidably mounted in the cylinder and the rod slidably extending through an end of the cylinder, said rod being selectively movable relative to the piston, means in the cylinder for preventing movement of the piston when the rod is moved relative thereto, and passage means in said assembly adapted to bring the section of the cylinder on one side of the piston into communication with the section of the cylinder on the opposite side of said piston, said rod being selectively movable relative to the piston into a first position to close off said passage means and into a second position opening the passage means, whereby when the cylinder is connected to said pump means the latter can be operated to direct fluid through said pipe means and through said open passage means.

3,293,996
FILM RECORD CARDS AND METHOD FOR MAKING THE SAME
George A. Luning, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 26, 1963, Ser. No. 326,182
4 Claims. (Cl. 93—1)



1. The method of preforming a record card for mounting a film or the like for use in card classification systems which comprises:

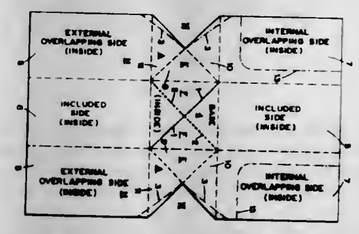
forming a depression on one side of said card having an area and depth depending upon the area and thickness of a film to be mounted by displacing the card material in said area and causing same to protrude from the reverse side of said card;

removing said protruding card material until it is flush with said reverse side of the card;

applying an adhesive coating to the perimeter of said depression; and

blanking out the area surrounded by the perimeter of said depression to form a window for viewing a film seated on the resulting adhesive-coated perimetral depression.

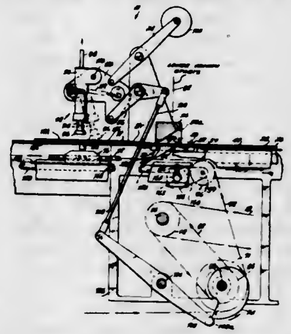
3,293,997
CONTAINERS, SUCH AS BOXES, CARTONS AND CUPS
Douglas Arthur Moreton, Derby, England, assignor to Bemrose & Sons Limited, Derby, England
Filed Dec. 19, 1963, Ser. No. 331,880
Claims priority, application Great Britain, Jan. 2, 1963, 291/63; Feb. 1, 1963, 4,336/63
9 Claims. (Cl. 93—36)



1. A method of forming a container including the steps of folding an initially flat sheet free from folds and having a thermo-plastic surface about a former into a container configuration comprising two opposed pairs of overlapping sides, two opposed sides included between said pairs of overlapping sides, a base integral at its opposite edges with said included sides, and two packs of triangular gussets having pointed apices and lying flat against the base, the gussets in each pack including a gusset integral laterally with the other two gussets and at its base with an edge of said container base, said other two gussets being integral with adjacent edges of the adjacent overlapping sides, and the apices of said gussets being coincident, and applying heat and pressure to said thermo-plastic surface while supported by said former to cause the two sides in each said pair of overlapping sides to stick together and each pack of triangular gussets to form a fluid-tight seal at said container base.

3,293,998
CONTAINER OPENING DEVICE AND METHOD OF OPENING A KNOCK-DOWN CONTAINER
Arthur D. Farnow, Verona, N.J., assignor to Superior Packaging Equipment Corp., Carlstadt, N.J.
Filed Oct. 21, 1963, Ser. No. 317,707
20 Claims. (Cl. 93—53)

5. A device for opening knock-down containers having a bottom wall, a top wall, and first and second side walls connected between said bottom and top walls at respective opposite sides thereof, said walls being oriented substantially flat by score lines defined therebetween with said first and second side walls extending in a common direction, comprising means defining a feed path for containers, a suction manifold member adjacent said means defining a feed path, a slide member movable along said manifold adjacent said means defining a feed path and having a suction gripper for contacting the bottom wall of a container and advancing it along said means defining a feed path, means for applying suction to said manifold, said manifold and said slide member being constructed to communicate vacuum to said suction gripper as said slide member is moved, and suction means for engaging and holding the top wall of said container to retard its movement in respect to its bottom wall and to permit the top and side walls to move outwardly first to a fully opened position and then beyond the fully opened position backwardly to a reversed folded flat position with

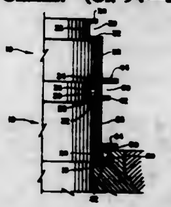


the side walls extending substantially opposite to their originally oriented position and to thereafter release said container.

3,293,999
MATERIAL AND METHOD FOR PAVEMENT CONSTRUCTION
John P. Gnaedinger, 1441 Linden Ave., Highland Park, Ill. 60035
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,235
5 Claims. (Cl. 94—7)

1. In a pavement construction which includes a subgrade, a base course disposed thereon, and a surface course, the improvement wherein said base course consists essentially of the reaction product obtained from a mixture having a water content along with a solids content consisting essentially of from 2 to 10% by weight lime and the balance incinerator ash, said incinerator ash comprising the product achieved by burning refuse in a rotary kiln at a temperature between 1600 and 2000° F., said refuse having a high carbon content to the extent that said ash contains sufficient carbon to provide at least 10% by weight carbon in the ash-lime combination comprising said solids content, and wherein 100% of the incinerator ash employed will pass through a ¾ inch to 1 inch screen, 60 to 90% will pass through a No. 4 screen, 10 to 30% will pass through a No. 30 screen, 2 to 12% will pass through a 100-mesh screen, and 1.5 to 8 percent will pass through a 200-mesh screen, said base course comprising the reaction product resulting from a carbonation reaction between said lime and said carbon.

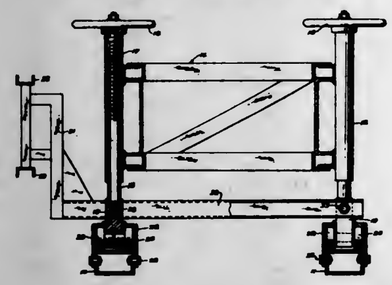
3,294,000
MANHOLE EXTENSION
Thurman A. Pelose, 3706 S. Hibiscus Way, Denver, Colo. 80237
Filed Mar. 30, 1964, Ser. No. 355,880
3 Claims. (Cl. 94—38)



1. An above-ground detachable extension for manholeholes and the like of a type bordered by a ring having an annular lid-supporting shoulder recessed into the

top thereof which comprises: an upstanding tubular member sized to define a continuation of the manhole bordering ring, means carried by the tubular element located adjacent to both ends thereof to produce a continuous annular channel sized for insertion into the recess formed above the lid-supporting shoulder of the manhole ring, said channel-producing means cooperating with that portion of the manhole ring lying above the lid-supporting shoulder to define a substantially enclosed continuous annular gasket cavity, the channel producing means includes a pair of radial spaced apart flanges located at each end of said tubular element, cylindrical wall sections bridging the spaces between each pair of flanges in integral relation, the cylindrical wall section of the first pair of flanges comprises a portion of the tubular element with one of said flanges bordering the edge of the tubular element and narrower than the remaining flange, the cylindrical wall section connecting the second pair of radial flanges is of lesser diameter than said tubular element, one of said second radial flanges forms the connection between said tubular element and cylindrical wall section, a pair of continuous annular tubular elastic inflatable gaskets sized to fit within each of said channel means in encircling relation with the tubular element.

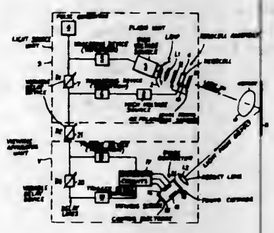
3,294,001
CONCRETE SPREADING AND FINISHING MACHINE
John E. Thomson, Waterloo, Iowa, assignor to Engineered Equipment, Inc., Waterloo, Iowa, a corporation of Iowa
Filed June 29, 1964, Ser. No. 378,607
3 Claims. (Cl. 94—45)



1. In a concrete spreading and finishing machine having means for moving it longitudinally of a road to be paved, a pair of spaced screed supports, jack means for vertically adjusting said screed supports to determine crown, a screed supported by each screed support for reciprocable movement, means for reciprocating said screeds relative to their supports, spaced beams connected to the lower portions of said jacks and extending forwardly, track means supported by said beams and responsive to crown adjustment of said screed supports, and a spreader member supported by said track for lateral movement ahead of said reciprocating screeds, whereby the spreader will follow a curved path corresponding to the curvature of the screeds.

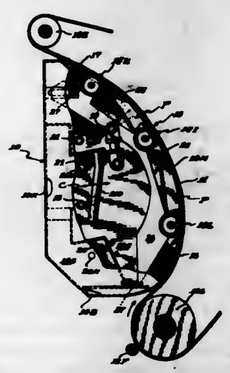
3,294,002
APPARATUS FOR VIEWING OR PHOTOGRAPHING OBJECTS
Alexandre Vitkine, 66 Rue d'Aggressseau, Boulogne, France
Filed Mar. 11, 1964, Ser. No. 351,069
Claims priority, application France, July 7, 1960, 832,305
4 Claims. (Cl. 95—11.5)

1. Apparatus for illuminating and forming an image of an object, comprising first electronically-controlled trigger means, second electronically controlled trigger means, an electronic pulse generator, means feeding pulses produced by said generator to trigger said first and second trigger means, a light source, means responsive to the triggering of said first trigger means to cause said light source to produce a light pulse, each time said first trigger means is triggered, of a time duration not in excess of the time light is seen from the apparatus to travel through the area to be seen illuminated, an image-forming apparatus for producing an image of the object and including obturating means for obturating the light reflected from the



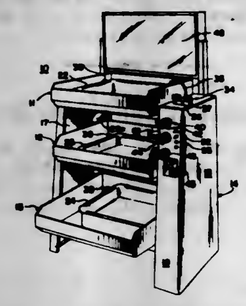
object, means responsive to the triggering of said second trigger means to open said obturating means, each time said second trigger means is triggered, for a short time duration of the order of the time duration of a light pulse, and variable delay means interposed in the feeding means to delay the time instants at which said second trigger means is triggered by said pulses relative to the instants at which said first trigger means is triggered by said pulses, the delay produced by said delay means corresponding approximately to the time required for the light to travel from the source to the object to be illuminated and from there to the image forming apparatus.

3,294,003
DEVELOPER TANK GUIDE WALL STRUCTURE
John Taisl, Skokie, Ill., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 12, 1964, Ser. No. 351,440
6 Claims. (Cl. 95—94)



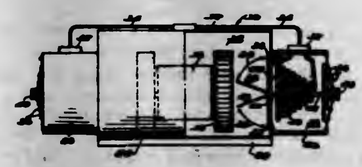
1. A developer tank for high speed gas contact development of radiant energy sensitive paper carried thereacross in pressure contact therewith by a high speed endless belt type sealing sleeve and comprising a casing providing a gas chamber, means for producing print developing gas in said chamber, said casing having marginal side portions bordering and defining an enlarged open face for said chamber and relatively slideably engageable by marginal regions of the sleeve to establish edge seals preventing escape of gas through said open face, said marginal side portions having a prescribed outline configuration in the direction of lengthwise movement of said sleeve to facilitate full length pressure contact with said sleeve during high speed movement thereof, and guide wall structure mounted to said casing and having a plurality of separate rows of idler rollers of transversely elongated configuration spanning said open face between said marginal side portions and constituting the sole print contacting surfaces of said guide wall structure to define a separate gas contact pocket region between each set of adjacent rows and extending full size across said face for unimpeded lateral flow of developing gas, said rows of rollers including an infeed row spanning said open face at a location therein adjacent its print entry region and an outfeed row spanning said open face at a location therein adjacent its print exit region, with the rollers of said rows having peripheries substantially tangent to the outline configuration established by said side portions and having a row spacing several times as great as the roller diameter.

3,294,004
SINK
Harold R. Benson, Lombard, Ill., assignor to The Nuarc Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 16, 1963, Ser. No. 330,200
8 Claims. (Cl. 95—96)



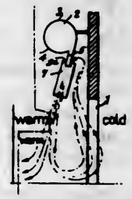
8. A sink for processing sensitized materials and the like, comprising a base structure; a plurality of vertically spaced sink basins carried by said base structure; drain means in each of said basins; means for directing a flow of hot and cold water selectively into each of said basins independently of the other basins; and darkroom safe light means positioned above each of said basins.

3,294,005
APPARATUS FOR PROVIDING AN AIR BARRIER
Herman M. Molnar, McKeesport, Pa., assignor to National Air Products, Inc., trading as Mol-Aire Company and/or Mol-Aire Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 28, 1964, Ser. No. 385,729
2 Claims. (Cl. 98—36)



1. A device for generating an air flow of prescribed dimension and velocity and directing it across an access door or other opening to serve as a barrier to the passage of heat, insects, and other bodies therethrough, comprising: a casing having a volute-shaped chamber at least partially lined with a sound-suppressing material; a motor and at least one rotatable blower wheel driven thereby and having a plurality of spaced impellers disposed within said chamber and rotatable to effect a substantially constant superatmospheric pressure internally of said chamber during their rotation by said motor; a discharge slot including a plurality of adjustable vanes for directing the flow of air as it passes through said slot; inlet means at the opposite ends of said casing defined by a plurality of concentric annular inlet passages and including angularly movable baffle means for controlling the effective area of said inlet passages, and a chamber having a plurality of coils of increasing diameter which provide resistance elements effective for heating the flow of air as it passes through said inlet means into said casing.

3,294,006
MEANS FOR PROVIDING AN AIR CURTAIN AT AN OPEN DOORWAY
Erling Berner and Christian Berner, New Castle, Pa., assignors to Berner Industries, Inc., New Castle, Pa., a corporation of Pennsylvania
Filed Feb. 23, 1965, Ser. No. 434,515
3 Claims. (Cl. 98—36)



1. An apparatus for producing an air curtain comprising, a plenum mounted adjacent to a doorway and having an elongated nozzle from which an air curtain is forced, a housing arranged around the nozzle, said housing consisting of a tubular element encircling the outlet end of the nozzle and with no intervening elements between it and the nozzle and spaced from the nozzle to provide unrestricted spacing between said housing and the nozzle, the housing being open at the top at a point above the outlet end of the nozzle to permit the entry of air from atmosphere into said spacing by the aspiration created by air forced through the nozzle, the housing extending beyond the outlet end of the nozzle.

3,294,007
AIR GUIDE STRUCTURE
Glen Le Roy Gleason, Belding, and Gerald Robert Deitz, Turk Lake, Mich., assignors to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed Oct. 16, 1963, Ser. No. 316,669
7 Claims. (Cl. 98—40)



5. Louver structure for use in an air conditioner having an opening through which a stream of conditioned air passes, comprising an elongated base plate adapted to span one edge of said opening, a plurality of parallel posts projecting from said base plate toward the opposite edge of said opening in a direction normal to said base plate, a plurality of vanes, hinge means formed integrally with

said vanes and said posts for hinge connecting the respective vanes and posts to mount said vanes for swinging movement about predetermined parallel axes, a drive link connected by an integral hinge construction to one of said vanes for imparting a drive force to said one vane, and a link connected to each of said vanes at points spaced from said predetermined axes to connect said vanes for co-movement about said predetermined axes.

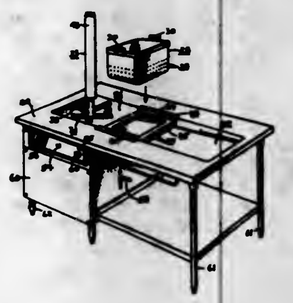
3,294,008
DAMPER FOR BASEBOARD HEAT DIFFUSER
Louis C. Cotte, 2512 Oak St., Michigan City, Ind. 46360
Filed June 12, 1964, Ser. No. 374,699
12 Claims. (Cl. 98—41)



1. A baseboard air diffuser comprising
a housing having front, back, top, bottom and end walls and a connection to a source of air to be distributed,
said housing having an apertured shouldered front wall part intermediate its height and an upper front wall part,
said housing being vertically curved above the level of said shoulder,
a damper constituting a single plate bent longitudinally to provide a portion adapted to span and close at least some of the openings in said shoulder part and a vertically curved upper portion confronting, substantially conforming with, and shiftable vertically on said upper front wall part, and
means for retaining said damper at selected elevation relative to said shoulder vertical shifting of said damper bodily shifting said lower damper portion between a closed position in substantially face engagement with said shoulder part and an open position displaced angularly from said shoulder and spaced therefrom, said diffuser being substantially imperforate above the level of said shoulder.

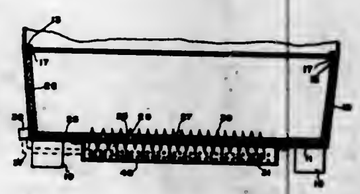
3,294,009
MEAT TENDERIZING APPARATUS
Albert Di Loreto, Philadelphia, Emilio Di Loreto, Clifton Heights, Paul Romano, Philadelphia, and Camillo W. Ippolito, Ridley Park, Pa., assignors to Rodel Metal Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 20, 1965, Ser. No. 449,588
9 Claims. (Cl. 99—254)

6. Apparatus for liquid treating articles comprising in combination,
(a) a tank for holding a liquid bath, and a sloping drainboard extending laterally therefrom and emptying thereinto,
(b) a liquid pervious receptacle adapted to hold articles to be liquid treated,
(c) first support means adapted to support said receptacle in spaced overlying relation to said drainboard and immediately adjacent to said tank, whereby liquid draining from said receptacle passes into said channel and is returned to said tank,
(d) second support means adapted to support said receptacle for movement downward into said tank from an upper position above the normal liquid level of the said tank to a lower position where said receptacle is immersed in the tank held liquid and for



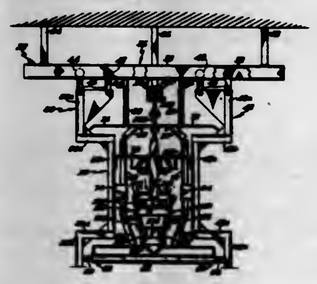
return movement upward out of said tank to the said upper position, the upper position of said second support means being immediately laterally adjacent to the said first support means so that said receptacle may be laterally shifted from said second support means to said first support means.

3,294,010
SELF-ENERGIZING GRILL AND GENERATOR THEREFOR
Joseph R. Zentko, 3407 South Ave., Youngstown, Ohio 44509
Filed Oct. 17, 1963, Ser. No. 317,007
2 Claims. (Cl. 99—421)



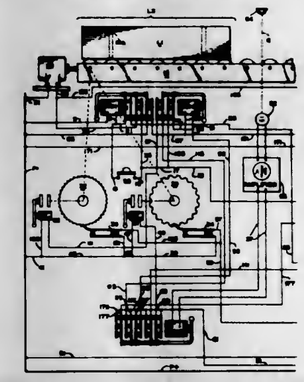
1. A portable grill comprising a deep sheet-metal tray having side walls and a bottom wall and constituting a fire basket for the reception of glowing charcoal, the side walls of said basket being lined on the inside with a fire resistant and heat insulating sheet, an enlarged aperture in the sheet metal of the bottom wall of said basket and spanned by said sheet which sheet is at least at this location also electrically insulating, a horizontally and rotatably supported spit located over the upper open end of said tray, an electrical motor and a speed reducing drive connected to the output shaft thereof for slowly rotating the spit, said sheet at said location being provided with a multiplicity of closely spaced apertures, and a multiplicity of serially connected thermocouples projecting through said apertures and held therein and having hot junctions positioned within said basket and cold junctions positioned outside said basket, a ventilating cover secured to the outer surface of a sheet-metal wall of said tray and enclosing said cold junctions, and means to conduct electric current from said thermocouples to said motor.

3,294,011
CONTINUOUS ROASTING AND BROILING OVEN FOR FOOD PRODUCTS
Robert B. Brunson, Medicine Lake, and Kenneth M. Christensen, Hopkins, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Feb. 5, 1965, Ser. No. 430,600
8 Claims. (Cl. 99—443)

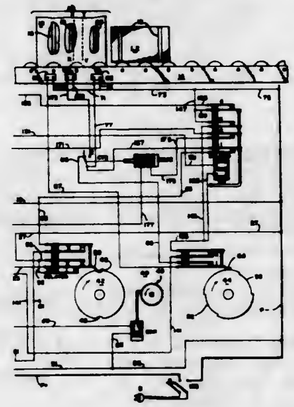


1. A grilling and roasting oven for preparing food products for use in combination with an endless overhead track conveyor having a plurality of hangers extending downwardly therefrom, each said hanger having a food supporting tray at the lower end thereof, said oven comprising a pair of spaced apart generally vertically disposed reflective side walls, a plurality of burners therein, said burners comprising a hollow housing having a duct means for conveying an inflammable mixture of gases thereto, a heat absorptive infra-red radiator means mounted across the open front of the burner and a bed of absorptive material disposed within the oven at a level below the level of the trays for receiving the drippings from the trays and for burning the drippings within the oven whereby the food products passing through the oven will be exposed to the flames and oxidation products of their own drippings.

3,294,012
LOAD POSITIONING DEVICE FOR STRAPPING MACHINES
Robert J. Kobiella, Rolling Meadows, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed July 22, 1965, Ser. No. 474,038
5 Claims. (Cl. 100—4)



1. The combination with a strapping machine establishing a strapping station, a strapping chute disposed at said strapping station for applying a strap to successive indiscriminate length loads positioned at said strapping station, said loads varying in length with respect to a predetermined maximum length load, a conveyor for transporting the loads successively from a loading station to the strapping station, and a motor operatively connected to the conveyor in driving relationship, of a load positioning apparatus for controlling the terminal position of each load at the strapping station with respect to the strapping chute and a leading and trailing edge of the load, said load positioning apparatus comprising a sensing device positioned along the path of travel of the loads and effective to sense said leading and trailing edges thereof, the effective distance between said sensing device and the strapping chute being substantially equal to one-half said maximum length, a first impulse-emitting device effective when energized to emit electrical impulses in timed relation to the rate of movement of the load along said path and at a rate which is such that during passage of a maximum length load past the sensing de-

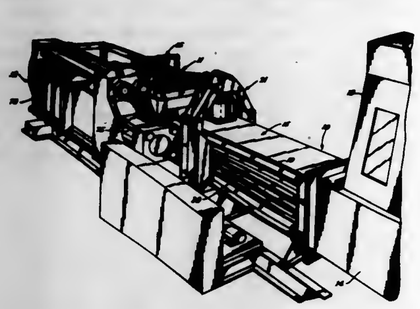


vice a predetermined quota of impulses will be emitted, a second impulse-emitting device effective when energized to emit electrical impulses at a rate equal to twice the rate of emission of impulses by the first impulse-emitting device, means operable upon sensing of the leading edge of a load by said sensing device for energizing said first impulse-emitting device to the exclusion of the other impulse-emitting device, means operable upon sensing of the trailing edge of a load by said sensing device for actuating the second impulse-emitting device to the exclusion of the first impulse-emitting device, an impulse-receiving counter operatively connected to said impulse-emitting devices and means effective when said predetermined quota of impulses have been received by said counter for disabling said motor.

3,294,013
METHOD OF AND APPARATUS FOR BALING
Robert E. Seltzer, Bellevue, Ohio, assignor to The American Baler Company, Bellevue, Ohio, a corporation of Ohio
Filed Feb. 23, 1965, Ser. No. 434,221
16 Claims. (Cl. 100—41)

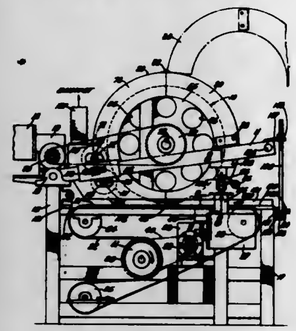
1. A process for converting a mass of loose material of a lesser average density and greater volume into a multi-faced bale having a self-retaining shape and of greater average density and lesser volume comprising the steps of
(1) successively compressing measured quantities of loose material of lesser average density and greater volume into layers of a self-retaining shape and greater average density and lesser volume and each having generally oppositely disposed and parallel faces corresponding dimensionally to cross sections of the bale to be formed, said faces being spaced apart a distance that is a fraction of the length of the bale to be formed,

(2) accumulating a plurality of layers produced in Step 1 in a face-to-face relationship and pressing each succeeding layer accumulated together in said facing relationship with preceding accumulated layers to produce a bale having a self-retaining shape comprised of a pressed-together plurality of said layers,



(3) compressing as a unit and reducing the volume of the bale produced in Step 2 to produce a smaller and more dense bale having a self-retaining shape and comprised of the loose material introduced in Step 1.

3,294,014
DEEP CAVITY DIE BURNING APPARATUS AND PROCESS
Joseph P. Knoisel, 3920 El Lado Drive, La Crescenta, Calif. 91014
Filed Aug. 23, 1965, Ser. No. 481,771
8 Claims. (Cl. 101—8)



1. A method of creating deep and sound cavities in a given type of wood without structurally damaging the wood bounding such cavities, said wood having volatile matter therein which can be violently released as gases when heated to a high temperature, comprising the steps of

heating die means to a temperature which will cause violent release of volatile matter from said type of wood as gases upon contact with said die means with said type of wood to carry away substantially all products of thermal decomposition resulting from said contact,

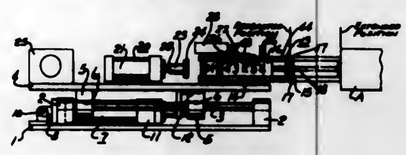
engaging a piece of said type of wood with said die means and moving said die means into said piece of wood at a substantially constant rate to a desired depth to produce a cavity,

adjusting the relationship of the rate of insertion of said die means into a piece of said type of wood and the temperature of said die means if said resulting cavity is bounded by substantially any charred material or crushed into said piece of wood,

repeating said steps of engaging a piece of wood and adjusting until a clean, sound and uncrushed cavity with substantially no charred material therein is obtained, and

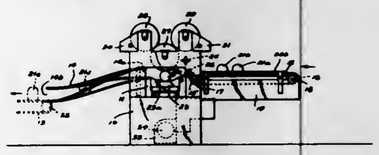
moving said die means into a piece of said type of wood with the selected relationship of rate of insertion and temperature of said die means to create a deep and sound cavity therein by causing the violent release of volatile matter as gases to carry away substantially all products of thermal decomposition and prevent the build-up of charred material in the last named cavity.

3,294,015
ARTICLE CONTROLLED ACTUATING MEANS FOR CODE PRE-SET WHEEL PRINTER
Roger H. Gartside, Shaler Township, Allegheny County, Pa., assignor to The Pamler Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1964, Ser. No. 419,906
6 Claims. (Cl. 101—35)



1. A code pre-set wheel printer for printing pieces as they travel consecutively along a defined path, consisting of a base adjacently of said path and carrying a guide way disposed transversely of said path, a carriage reciprocal on said guide way, a reciprocal motor on said base and connected to said carriage to extend and retract said carriage on said guide way, an annular printing wheel rotatably mounted on a vertical axis on said carriage, one portion of said wheel extending beyond the front of said carriage to engage and print a piece travelling along said path, cam means on said wheel, a limit switch adjacent said path to engage consecutive pieces travelling along said path, circuit means initiated by said limit switch being engaged by consecutive pieces travelling along said path to extend said carriage to engage said printing wheel on the piece to be printed, and cam switch means actuated by the cam means on said wheel to retract said carriage at termination of the printing of the code on said piece.

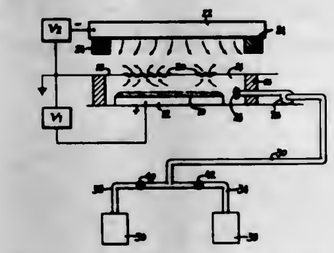
3,294,016
APPARATUS FOR PRINTING ON CYLINDRICAL CONTAINERS
Louis J. Kessler and Jacob Kessler, Brooklyn, N.Y., assignors to Industrial Marking Equipment Corporation, Brooklyn, N.Y., a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,537
7 Claims. (Cl. 101—40)



1. A machine for placing indicia on a cylindrical container including in combination an upwardly facing arcuate planar surface, a cylindrical printing blanket overlying said planar surface with the periphery thereof spaced therefrom at a distance substantially equal to the diameter of said container and with its axis parallel to the axis of said planar surface, a conveyor with an end thereof spaced from said planar surface, a plurality

of individual cradle means provided on said conveyor, each of said cradle means being constructed and arranged to support a container therein with its axis parallel to the axis of said planar surface, a pair of spaced star wheels, a star wheel supporting shaft parallel to said planar surface for supporting said star wheels between said conveyor and said planar surface, transfer means for applying indicia to said printing blanket, drive means, a drive shaft driven in rotatable motion by said drive means, a printing blanket shaft coupled to said drive shaft, a conveyor drive shaft of said conveyor coupled to said printing blanket shaft, said star wheel supporting shaft being coupled to said conveyor drive shaft, means for energizing said drive means whereby said conveyor drive shaft is rotated to sequentially deposit containers on said star wheels, said star wheel shaft being rotated to sequentially deposit containers on said planar surface, said printing blanket shaft being rotated and said printing blanket engaging the surface of said container and rolling said container over said planar surface while transferring indicia thereto and container receiving means for receiving said container after it leaves said planar surface under the influence of engagement with said blanket.

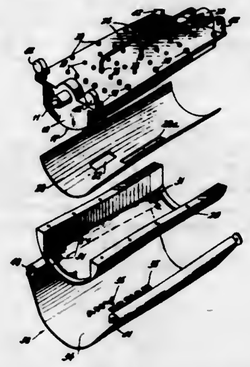
3,294,017
PROCESS AND APPARATUS FOR ELECTROSTATICALLY PRINTING ON HOT SUBSTRATE
Douglas F. St. John, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 19, 1964, Ser. No. 404,822
11 Claims. (Cl. 101—114)



1. The method of applying an image shaped layer of powdered frit particles to an article surface heated to a relatively high temperature comprising the steps of interposing a stencil screen having an image defining aperture therethrough between a supply of frit particles capable of being electrically charged and the surface of a heated article to be decorated with the screen disposed in spaced relationship to the supply and to the article surface, diffusing into the space between said supply and said screen a moisture laden gaseous fluid at a temperature substantially less than that of the article surface, and establishing an electric field between said supply and article surface operable to electrically charge and impel particles from said supply through the apertures of said screen to said article surface.

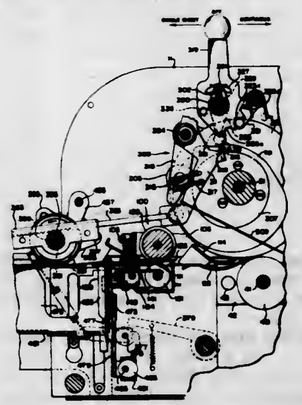
3,294,018
APPARATUS FOR SIMULTANEOUSLY PRINTING IMAGES WITH DIFFERENT KINDS OF INK
Angelo A. Hennis, 1401 Park Ave., Bridgeport, Conn. 06604
Filed Nov. 20, 1963, Ser. No. 325,092
9 Claims. (Cl. 101—115)

8. A device for simultaneously printing a plurality of separate images of different kinds of ink comprising a frame, a base movably mounted for movement between an operative printing and an inoperative position, an ink separation mask on the base comprising a sheet having openings therethrough, a printing plate disposed over the mask and having ink-impervious portions and spaced ink-pervious portions adapted to form the image thereon, said plate being secured to said base and having the ink-pervious portions disposed over said openings in the mask in sealing relation therewith, a plurality of supplies of different kinds of inks, conduit means selectively con-



necting said supplies of different kinds of inks to the openings in said mask located under said pervious portions of the plate to continuously supply ink therethrough to form ink images on the plate, and means causing the plate to be pressed against a receiver material to simultaneously transfer the ink images of different kind from the plate to said receiver material.

3,294,019
ROTARY PRINTING MACHINE
Norman W. Taylor, Cleveland, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,128
35 Claims. (Cl. 101—144)



1. In a printing machine, including printing means comprising a rotary printing cylinder, means for repeatedly applying ink to said cylinder in an image pattern, means for starting the top sheet of a supply of sheets and moving the same forward into the control of the printing means, and a timing cam moving in timed relation with the printing cylinder, the improvement which comprises:

a print control handle settable in either a non-printing position or a printing position and effective when moved into the latter position from the former to

provide a mechanical signal that initiation of sheet starting is desired; and mechanical means responsive to both said starting signal and the action of said cam for causing operation of said sheet starting means but delaying the same for a fraction of a revolution of the cylinder after said handle movement until a treatment of said printing cylinder beginning at the leading edge thereof has been started by said ink applying means following said signal, and thereafter initiating operation of said sheet starting means in time with the cylinder for a printing rotation thereof.

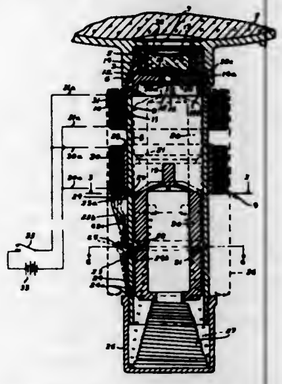
3,294,020
IGNITION DEVICE
Hans Stadler, Nuraberg, and Heinz Gawlick and Hellmut Beadler, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Jan. 25, 1965, Ser. No. 427,616
Claims priority, application Germany, Jan. 24, 1964, D 43,427
12 Claims. (Cl. 102—39)



1. A cartridge for igniting gas mixtures with air or oxygen requiring a hot ignition flame burning for a relatively long period of time, especially for gaseous propellants of engines, comprising a generally tubular case having rearward and forward ends; a bottom piece substantially closing the rearward end of said case; a generally tubular burning charge within said case forming a generally axially extending firing channel substantially void of propellant charge; means at the forward end of said case adjacent to said charge for igniting said burning charge including at least one sheet of ignition powder extending generally transverse to the axis of said chanel; said sheet being provided with at least one aperture aligned with said channel; the area of the cross section of said aperture being substantially less than the area of the cross section of said channel; sheet means adjacent said apertured sheet for completely closing said aperture and said channel; and said sheet and sheet means being the sole end closure for said cartridge case.

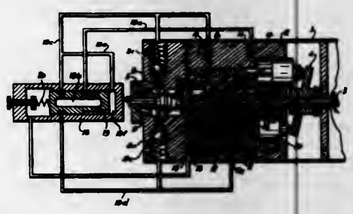
3,294,021
INITIATOR, MECHANICAL EXPLODING DEVICE
Sherin L. Stutz, Lewisburg, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 16, 1965, Ser. No. 440,329
11 Claims. (Cl. 102—70)

11. In a detonator device, a solenoid coil, a supporting nonmagnetic cylinder therefor extending axially beyond the ends of the coil, said cylinder having a percussion cap explodable squib receiving chamber at one end and a removable closure cap at its opposite end, said cylinder having a concentric firing pin receiving opening formed therein extending from said squib receiving chamber toward said cap, a solenoid hammer core member axially slidable in said cylinder having a firing pin disposed in alignment with said opening for projection into said squib receiving chamber to detonate an explosive squib therein, upon projection of said core member toward said one end by magnetic flux from said solenoid coil when said solenoid coil is energized, magnetic latch release means on said cylinder for latching engagement with said core for releasably retaining said core in predetermined axially spaced relation in said cylinder from said solenoid coil, means for simultaneously energizing



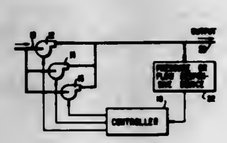
said coil and said latch release means, and spring means in said cylinder between said core and said closure cap for urging said core toward said one end into the flux field of said solenoid coil when the same is energized and the core is released.

3,294,022
POST-ACTUATING PUMPS FOR MOTOR CARS
Walter Hunger, Rodenbacherstrasse 56, Lohr (Main), Germany
Filed Dec. 15, 1964, Ser. No. 418,503
6 Claims. (Cl. 103—10)



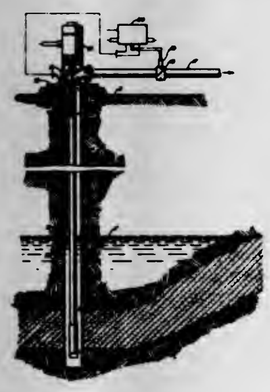
1. In a hydraulic pump for operating motor car posts by a pressure medium, a pump body comprising a single low pressure channel, an even number of high pressure channels and post-actuating passages; a driving shaft extending through said pump body, compound high pressure and low pressure pistons in said pump body, said pump body having inner passages connecting each of said pistons with a separate channel, a tumbler disc carried by said driving shaft and actuating said pistons, a sleeve carried by said shaft and located within an inner chamber of said pump body, valves located between said post-actuating passages and said inner chamber, said sleeve being adapted to open and close said valves, means connected with said shaft for actuating said sleeve, a casing, conduits connecting said channels with the interior of said casing, said passages communicating with the conduits connected to the high pressure channels, a slide movable within said casing and having recesses adapted to establish communication between said conduits, and means adjusting the position of said slide within said casing, said slide being adapted to be actuated by the pressure medium to separate the conduit connected to the low pressure channel from the conduits connected to the high pressure channels, wherein the sleeve-actuating means comprise a pin carried by said pump body and engaging screw threads formed in a portion of the sleeve.

3,294,023
AUTOMATIC MOTOR CONTROLLER
Charles A. Martin-Vegue, Jr., and Edwin F. W. Kellermann, Miami, Fla., assignors to Hersey-Sperling Motor Co., El Monte, Calif., a corporation of Massachusetts
Filed May 31, 1963, Ser. No. 284,714
20 Claims. (Cl. 103—11)



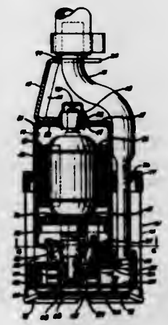
1. An automatic controller for a system including a plurality of circuits operative when energized to alter a condition existing in said system, comprising a bi-directional stepping switch movable into a selected one of different positions, said stepping switch having a plurality of switch sections, one for each circuit, each of said switch sections having a plurality of switch contacts at said different positions of said stepping switch; drive means for selectively moving all sections of said switch simultaneously to a selected one of said different positions to connect predetermined ones of said switch contacts to the circuit associated with its respective switch section, whereby predetermined combinations of said circuits will be energized at said different positions of said stepping switch; means sensing said condition in the system and means responsive to said sensing means for stepping said stepping switch to select one of said predetermined combinations.

3,294,024
PUMPING SYSTEM
Charles O. Meyers and Maurice S. Hoss, Tulsa, Okla., assignors to Combustion Engineering, Inc., New York County, N.Y., a corporation of Delaware
Filed June 10, 1964, Ser. No. 373,929
2 Claims. (Cl. 103—21)



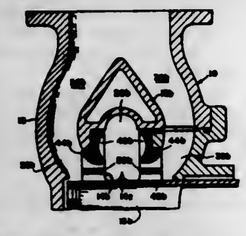
1. A system with which to produce a water wall, including,
a well bore extended from the ground surface to form a reservoir of water in the bottom of the bore,
a column pipe extending from the ground surface and within the bore to a point near the bottom of the bore,
pump elements mounted within the pump shaft so as to draw water from the reservoir and up the column pipe to the ground surface,
means for powering the pump elements connected to the pump elements,
a valve mounted in the pump discharge,
first and second level detection elements spaced vertically in the well bore,
and an electrical circuit connected to the level detection elements and the valve to control the setting of the valve in accordance with the position of the water level in the well bore with respect to the level detection elements,
whereby the valve will be moved toward full open as long as the water level is above both elements, the valve will be held at the setting reached as the water level is brought to between the elements and the valve will be moved toward full closed as long as the water level is below both elements.

3,294,025
ELECTRIC CENTRIFUGAL IN-THE-TANK PUMP
Edgar Niemeyer, Normandy, and Charles W. Jeep, Jr., Webster Groves, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Aug. 6, 1965, Ser. No. 477,865
11 Claims. (Cl. 103—87)



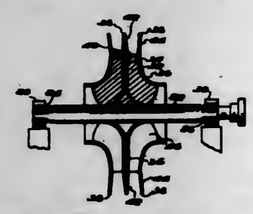
1. The combination in a submergible liquid transfer device including a motor having an elongated cylindrical housing defining an opening at one end, a centrifugal pump housing connected to said opening at said one end of said cylindrical housing, said centrifugal pump including a volute having inlet and discharge ports, an impeller rotatably mounted in the casing and being co-operative with said volute to form a pumping chamber, a shaft depending from said motor and drivingly coupled to said impeller for rotating the latter to pump liquid through said discharge port, conduit means communicated with said pump outlet port for carrying liquid therefrom, a filter assembly substantially surrounding at least a portion of said elongated cylindrical housing and said pump casing, respectively, said filter assembly including a base member supportably positioned at the lower side of said pump casing, a resilient member depending from said base member to engage a wall in a liquid holding reservoir for insulating said transfer device from vibrations during operation thereof, a screen carried on said base member and extending adjacent to said cylindrical housing and to said casing and being spaced slightly apart to form an annulus and, a collar engaging the upper end of said housing forming therewith and with said conduit means respectively a substantially liquid tight seal at said cylindrical housing to preclude entry of liquid into said pump inlet means other than by way of said screen.

3,294,626
VORTEX PUMP
Val S. Lebanoff, Port Washington, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Original application Sept. 30, 1963, Ser. No. 314,576, now Patent No. 3,288,701, dated June 14, 1966. Divided and this application Mar. 25, 1966, Ser. No. 537,501
4 Claims. (Cl. 103—104)



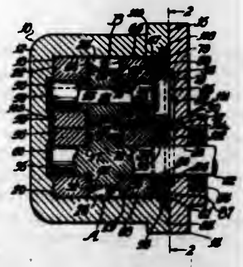
1. A centrifugal type vortex pump comprising:
a casing including a central pump chamber dividing the casing and a pair of inlets disposed to either side of and in communication with said central pump chamber;
and a single outlet for said chamber;
an impeller rotatably journaled in said casing and centrally disposed within said pump chamber, said impeller being of a thickness equal to the axial width of the pump chamber;
said impeller having a pair of axially spaced, opposed, annular rings circling said pair of inlets and carrying on their inner opposed faces a series of vanes with the vanes on each ring being arranged in spaced coaxial relation to the vanes on the other ring and to the center of the impeller whereby pumped fluid is moved thereby axially through the inlets into the pump chamber and discharged radially outwardly between the vanes and rings.

3,294,627
CENTRIFUGAL PUMP IMPELLER
Louis Denis, Neuilly-sur-Seine, France, assignor to Société Anonyme des Etablissements Neu, Lille (Nord), France, a corporation of France
Filed Mar. 18, 1964, Ser. No. 352,835
Claims priority, application France, Mar. 29, 1963, 18,197
9 Claims. (Cl. 103—115)



1. A centrifugal pump rotor-impeller assembly comprising: an elongated hollow shaft rotatable about its longitudinal axis and supported for such rotation at longitudinally spaced journal portions thereof; a plurality of blades having forward, rearward, outer end, and inner end portions, said blades being rigidly secured at their inner end portions to said shaft and extending outwardly in spaced relationship from a circumferential section of said shaft; disc means rigidly secured with respect to said shaft and extending peripherally thereabout in abutting relationship with a substantial radial expanse of the rearward portions of said blades, said disc means being an integral continuous member; and a shroud comprised of shroud segment means extending between the forward portions of adjacent pairs of blades and spaced from said disc means and said shaft to define generally radially outwardly directed passageways having generally axially facing inlets and radially outwardly facing outlets adjacent the outer end portions of said blades.

3,294,628
PRESSURE LOADED GEAR PUMP
Carl P. Dahl, Maple Heights, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 23, 1964, Ser. No. 420,652
9 Claims. (Cl. 103—126)



1. In a pressure loadable gear pump, the combination comprising:
a housing,
means defining a pumping chamber in said housing,
an inlet leading to and an outlet leading from said pumping chamber;
rotatable pumping means disposed in said pumping chamber for drawing fluid from said inlet, pressurizing the fluid and forcing it out said outlet under pressure, said pumping means provided with axially extending journals;
bearing means situated in said housing and adapted for rotatably mounting said journals,
at least one of said bearing means being axially movable pressure loadable bearing means, said pressure loadable bearing means having means associated therewith defining pressure loading chambers at the rear thereof, which loading chamber means are adapted to be subjected to outlet pressure, each of said pressure loadable bearing means also having an inner peripheral bore at the rear thereof;
first fluid communication means between said outlet and said pressure loading chamber means at the rear of said pressure loadable bearing means for directing outlet fluid pressure to said chamber means;
second fluid communication means between said journals and said inlet for directing journal leakage to said inlet;
fluid pressure confining means carried by said housing, said pressure confining means comprising tubular means which extend circumferentially around said journals carrying said pressure loadable bearing means and through said loading chamber means at the rear of said pressure loadable bearings and into said inner peripheral bore at the rear of said pressure loadable bearing, said pressure confining means having sealing means associated therewith and adapted to seal said chamber means from said journals, said tubular means adapted to overlay said axially movable pressure loadable bearings whereby outlet pressure will be communicated to said loading chamber and in turn to the rear of said axially movable bearings to urge said bearings along said journals into sealing engagement with said rotatable pumping means.

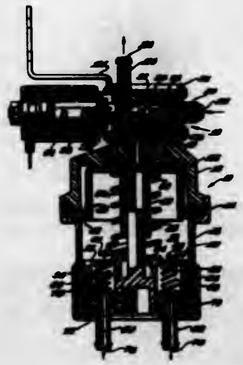
3,294,629
PRESSURE BALANCED SEAL-PACK FOR REVERSIBLE PUMPS AND MOTORS
Hubert M. Clark and Gilbert H. Dretchen, Birmingham, and Phillipp Becker, Utica, Mich., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 20, 1965, Ser. No. 481,221
10 Claims. (Cl. 103—126)



5. In a gear pump of the type having a casing formed with a groove system and a figure 8-shaped chamber housing a pair of intermeshing gears mounted for rotation therein for propelling a fluid between two ports, the improvement comprising:
a fluid pressure seal pack having:
a gasket and channel-shaped web for seating within the groove system of said casing and each having a generally ovaloid-shaped outer rim segment,
two interior circular ring segments with a merging bridge therebetween, and
radial arms extending from each of said circular ring segments at equal angular displacements on opposite sides of the major axis of said oval outer rim segment to merge with said outer rim and form together therewith a keystone-shaped zone about said major axis between said arms of each of said ring segments and an ox-yoke shaped zone between said bridge and the straight leg portions of said oval rim;
said web seating within the groove system behind said gasket for urging said gasket toward the adjoining gear side face;
a wear plate having an oval shape for seating in said casing in said chamber and having a sealing surface juxtaposed to said gears and an opposite motive surface in contact with said gasket,
said wear plate having pressure communication holes for communicating pressure from said chamber axially opposite said zones into said zones, said wear plate further including a pressure communication groove formed in said sealing surface for allowing the communication of pressure between said keystone-shaped zones and one of said ox-yoke shaped zones on the outlet side of the pump, said wear plate further being selectively seated in reverse alignment upon said gasket in either of two orientations so as to allow such communication between said keystone-shaped zones and either one of said ox-yoke shaped zones.

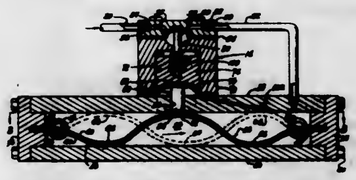
3,294,630
POSITIVE DISPLACEMENT SYRUP PUMP
William L. Fox, Niles, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Dec. 3, 1964, Ser. No. 415,679
2 Claims. (Cl. 103—150)

1. A displacement pump comprising
a body member having a cavity therein,
one end of said body member having a valve chamber therein and a pair of passages each extending from a respective end of said valve chamber,
a valve member disposed in said valve chamber,
the valve chamber being in fluid communication with one end of said cavity,
a first biasing means for biasing said valve member to one position of sealing engagement with one of said passages,
means for removing the force of said first bias means acting upon said valve member,



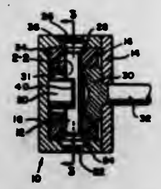
a second bias means for biasing the said valve member in a sealing engagement with the other of said passages when said first bias means is inoperative upon said valve member,
a flexible membrane sealingly secured within said cavity, and
means for biasing said membrane toward the one end of said cavity.

3,294,631
FLUID MOTOR SYSTEM
Stephen H. Lasnwic, 2360 Ewald Circle, Detroit, Mich. 48238
Filed July 28, 1965, Ser. No. 475,350
15 Claims. (Cl. 103—152)



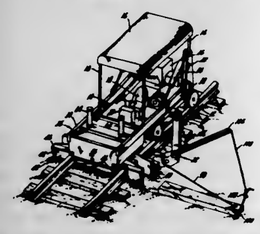
1. In a fluid proportioning system, a first line arranged and adapted to carry a first fluid, a second line arranged and adapted to carry a second fluid, and means operatively coupled to said first line and to said second line for introducing said second fluid into said first fluid at a rate related to flow of said first fluid in said first line comprising means forming a walled chamber in said first line, a flexible wall mounted in said chamber in an undulatory configuration to form a series of oppositely directed crests, said flexible wall being responsive to flow of said first fluid through said chamber to undergo undulatory motion at a rate related to flow of said first fluid through said chamber, pumping means having an inlet and an outlet, said inlet being in fluid communication with said second line, said outlet being in fluid communication with said first line, and means operative in response to said undulatory motion of said movable wall to actuate said pumping means.

3,294,032
METERING PUMP
Leif J. Sundblom, Castro Valley, Calif., assignor to Rockwell Manufacturing Company, San Leandro, Calif., a corporation of Pennsylvania
Filed June 15, 1964, Ser. No. 375,029
4 Claims. (Cl. 103—160)



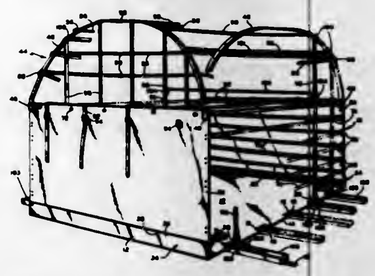
1. A metering pump for pumping minute, accurately measured quantities of fluid at a very slow rate, comprising:
a housing having a near-cylindrical bore;
substantially cylindrical rotor means disposed in said bore in sealing engagement with the portions of said bore of least diameter, and cooperating with said housing to define at least one inlet port and one outlet port;
reciprocable piston means disposed in said rotor transversely to its axis and cooperating with said rotor to form cavities of variable volume at each end of said piston;
and means for continuously reciprocating said piston concurrently with the rotation of said rotor to increase the volume of said cavities in the vicinity of each said inlet port and decrease it in the vicinity of each said outlet port;
the portions of said rotor defining said cavities and adapted to seal against said housing being formed of resilient material so that the walls of said cavities may expandingly yield under the pressure imparted to fluid trapped in said cavities by the movement of said piston while said cavities are sealed off from said ports, expansion of said cavity walls forcing the resilient rotor surface material thereabout into tighter sealing relationship with said housing to prevent any fluid leak from said cavities between ports in normal operation.

3,294,033
TIE BED SCARIFIER
Weltzin B. Blix, Jr., South Milwaukee, and Edward H. Krause, Jr., New Berlin, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 29, 1963, Ser. No. 326,744
24 Claims. (Cl. 104—9)



1. In a railroad tie bed scarifier, a frame, means for moving it along a railroad track, a pair of generally parallel bladelike digger means extending transversely of the frame and mounted thereon, of a length greater than the rail gauge, said digger means being movable up and down on said frame, means for causing said digger means to move downwardly into the ballast beneath the rails, and means for moving said digger means apart to form a trench in the ballast beneath the rails to provide for subsequent insertion of a railroad tie.

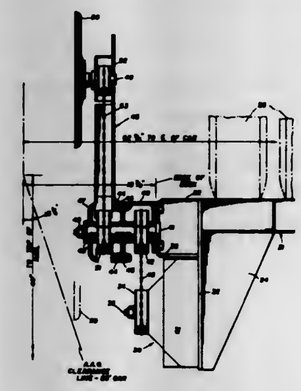
3,294,034
CARGO CONTAINER FOR AIRPLANES
Bert A. Bodenheimer, Stamford, Conn., and John Diogiardi, Jackson Heights, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed June 18, 1964, Ser. No. 376,196
11 Claims. (Cl. 105—366)



1. A cargo container comprising a floor, side walls attached to opposite sides of said floor, and longitudinally spaced frame members shaped to conform with the contour of the roof of a carrier carried by said side walls, a plurality of straps located in spaced relationship along said frame members depending therefrom into proximity with said floor of said container, means on the free end of each of said straps for securing said free ends of said straps to said floor of said container, and adjustable locking buckle mounted on each of said depending straps, cargo load straps extending across the top of cargo in said container, each of said load straps having its ends passing through corresponding pairs of said buckles at the front and rear of said container, and locking means in said buckles for securing said cross straps against loosening when said straps are tightened against the top of said cargo in said container.

3,294,035
MULTI-PURPOSE RAILWAY CARS OF THE PIGGY-BACK TYPE INCORPORATING IMPROVED HAND BRAKE MECHANISMS
Samuel H. Enochian, Thornton, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Feb. 1, 1965, Ser. No. 429,493
14 Claims. (Cl. 105—368)

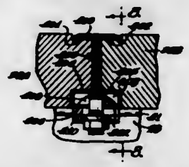
1. A railway car especially adapted to transport simultaneously two road semi-trailers and comprising an elongated longitudinally extending frame having a length between the opposite ends thereof in excess of about 85 feet, a pair of wheeled trucks respectively supporting the opposite ends of said frame, a pair of brake mechanisms respectively incorporated in said trucks, brake rigging carried by said frame for simultaneously controlling said brake mechanisms, a pair of elongated longitudinally extending and laterally spaced-apart treadways respectively carried by the opposite sides of said frame and adapted respectively to support the laterally spaced-apart road wheels of each of two road semi-trailers mounted in tandem relation on top of said frame, the longitudinal distance between the opposite ends of each of said treadways being at least about 85 feet and the lateral distance between the opposite outer sides of said treadways being at least about 100 inches, brake actuating mechanism carried by one side of said frame adjacent to one end thereof and disposed below the adjacent one of said treadways and positioned laterally inwardly of the adjacent outer side of said one treadway, said brake actuating mechanism including a laterally extending and rotatably mounted operating shaft, an operative connection between said operating shaft and said brake rigging, a laterally extending jack shaft carried by said one side of said frame and mounted thereupon for rotation about its own axis, said jack shaft being positioned adjacent to said brake actuating mechanism and disposed below said one treadway, an operative connection between said jack shaft and said operating shaft, a mast carried by said one side of said frame laterally outwardly of said one treadway and mounted adjacent to the inner end thereof for rotation in an upstanding plane about said jack shaft and between a generally horizontal retracted position and a generally vertical projected position, the outer end of said mast being disposed adjacent to the top of said one treadway when said mast occupies its retracted position and the



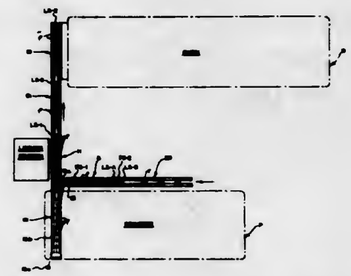
outer end of said mast being disposed well above the top of said one treadway when said mast occupies its projected position, a manually operable hand wheel carried by the outer end of said mast and mounted thereupon for rotation about its own axis and also movable with said mast between its retracted and projected positions, said hand wheel being arranged so that the top thereof does not project upwardly any substantial distance above the top of said one treadway when said mast occupies its retracted position, whereby said hand wheel when said mast occupies its retracted position is in non-interfering relation with respect to loading and unloading of the road semi-trailers with respect to the top of said frame, and an operative connection between said hand wheel and said jack shaft, all of the elements of said car and all of the parts carried by said frame and including said hand wheel being arranged laterally inwardly so that no one of them projects beyond the A.A.R. clearance line for said car when said mast occupies either its retracted position or its projected position.

3,294,036
FLOOR CONSTRUCTION
John H. Van Moss, Jr., Chicago, Ill., assignor to Vanguard Corporation, a corporation of Illinois
Filed Sept. 9, 1965, Ser. No. 492,970
6 Claims. (Cl. 105—422)

5. A flooring structure for transportation of commodities, said structure being formed primarily of lumber and having strength far in excess of the lumber and without exposed fasteners for the lumber which could work loose comprising, a series of integral lumber boards disposed adjacent to each other with adjacent boards each having a recessed portion and a rib therebeneath extending for the length thereof, a reinforcing member positioned between adjacent boards constructed to stiffen the boards and provide holddown means for the boards, each of said members having a central web with a pair of oppositely extending hold-down flanges extending outwardly therefrom adjacent the upper portion thereof and fitted over the recessed portions to overlap the boards and hold down the boards, a first pair of oppositely extending support flanges extending outwardly from said web below said hold-down flanges and positioned beneath said ribs for bearing support of the boards, and a second pair of support flanges below said first pair of support flanges and adapted to rest on an underlying support, said second pair of support flanges being spaced apart in the area of said underlying supports to provide a slot therebetween for access to the interior of said member, clip fastener means positioned in said slot for adjustment in the slot to a position adjacent the underlying support and a clip connected to said fastener means and adapted to engage the underlying support.

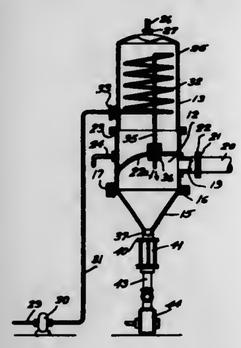


3,294,037
CONVEYOR SYSTEM
Dale H. Hoag and Peter H. Valentyne, Saginaw, Mich., assignors to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Nov. 12, 1963, Ser. No. 322,735
13 Claims. (Cl. 107—4)



10. In bakery apparatus; bakery processing units for performing operations on panned farinaceous products; first conveyor means on which the products are received from one of the units; second conveyor means including a traveling portion for receiving and transferring products from said first conveyor means; means for driving said traveling portion of said second conveyor means at a predetermined slower speed than said first conveyor means to cause the panned products to move into end-to-end engagement; third conveyor means, including a traveling portion for receiving the products from said second conveyor means and advancing them along the third conveyor means; and means for driving said traveling portion of said third conveyor means at a predetermined speed faster than said traveling portion of the second conveyor means to space said products one from the other a predetermined distance; said first conveyor means including a pair of conveyors, the second of which is an endless conveyor driven at a faster speed than the first to space the products on the second a greater distance apart.

3,294,038
CONTINUOUS VACUUM CANDY COOKER
Anthony J. Rossi, 40 Kashay St., Clifton, N.J. 07013
Filed Feb. 18, 1964, Ser. No. 345,634
4 Claims. (Cl. 107—4)



1. A continuous vacuum cooking apparatus for cooking candy and the like, comprising a steam chest, a pipe leading into said steam chest and extending therealong and having a discharge end opening downwardly through the bottom of said steam chest, a vacuum chamber in association with said steam chest and in receiving relation with respect to said pipe, a vacuum output line leading from said vacuum chamber and having connection with a source of vacuum for withdrawing excess moisture from the cooked product discharged therein, and a pump in product receiving relation with respect to said vacuum chamber and continuously pumping the cooked product therefrom.

3,294,039
METHOD AND APPARATUS FOR MAKING CARAMEL CORN
Ralph P. Ogden, 7522 Walnut St., Hammond, Ind. 46322
Filed Aug. 20, 1963, Ser. No. 303,228
8 Claims. (Cl. 107—54)



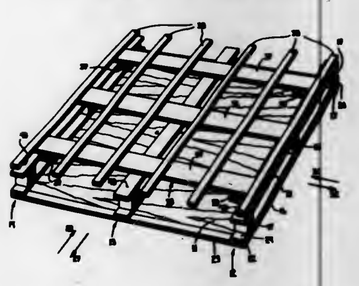
8. The method of making caramel corn which includes:
taking a round bottom pot and immersing the bottom portion thereof in heat transfer relation with a liquid heat transfer medium while maintaining said bottom portion physically separated from said medium,
taking a lump of caramel in the solid state and formed to define a bottom portion substantially complementing the configuration of the pot bottom and putting the lump in the kettle with the lump bottom in engagement with the pot bottom,
heating the heat transfer medium to uniformly heat the pot bottom portion to melt the lump and raise the temperature of same to a temperature in the range of from about 280 to about 290 degrees F.,
pouring into the melted caramel a selected quantity of popped corn,
stirring the popped corn into the caramel,
and removing the caramel coated corn.

3,294,040
LOAD CARRYING PALLET
Resta S. Gregoire, Newport, Pa., assignor to Gregoire Engineering and Development Company, Adelphi, Md.
Filed Mar. 15, 1965, Ser. No. 439,619
13 Claims. (Cl. 108—53)



1. A pallet comprising:
a platform having cutouts in its side edges adapted to receive leg members within the periphery of the platform,
a nestable leg member set into each cutout and having outwardly extending flanges on its opposite sides forming channels for slidably receiving the corresponding side edges of the cutouts into which they are set, and
means for fixing said flanges to the corresponding edges.

3,294,041
BEAM PALLET ASSEMBLY
Arno Leasheim, 109 Beech Grove Ave., Batesville, Ind. 47006
Filed Sept. 17, 1965, Ser. No. 488,118
6 Claims. (Cl. 108—53)



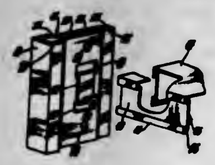
1. In a beam pallet assembly, the combination comprising:
a first board means having an extended surface at the bottom thereof;
at least two block beams horizontally spaced on said first board means and secured thereto, each of said block beams including a lower elongated plate and an upper elongated plate and horizontally spaced spacer and support blocks affixed to the top surface of said lower plate, the lower plate of each block beam being attached to said board means and the upper plate for each block beam being disposed in parallel vertically spaced relationship to the lower plate thereof;
a disposable grid-type pallet section on top of said block beams and including a plurality of parallel horizontally spaced plates received on and supported by the upper plates of said block beams and extending transversely thereto, a plurality of parallel horizontally spaced elongated grid bars mounted on the upper surface of said plates of said disposable pallet section and affixed thereto and extending transverse thereto and parallel to the plates of said block beams, and locator blocks projecting downwardly from the plates of said disposable pallet section and located adjacent plates of said block beams to limit relative movement between the block beams and the grid bars in a direction transverse thereto to maintain a proper position of said disposable pallet section on said block beams.

3,294,042
TABLE WITH SELF-STORING LEAF
Charles Charne, 2037 N. John Russell Circle, and John N. Brelt, 8210 Forrest Ave., both of Elkins Park, Pa. 19117
Filed Mar. 9, 1965, Ser. No. 438,242
7 Claims. (Cl. 108—94)



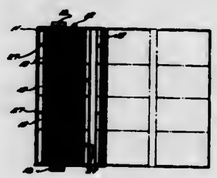
1. A table with a self-storing center leaf comprising two side table sections having matable edges and a rotatable, elevatable center leaf, said center leaf having a major longitudinal dimension and having a stored position in which said major longitudinal dimension is at right angles to said matable edges of said side sections and a raised position in which said major longitudinal dimension is parallel to said matable edges, slide bars connecting said side sections, a crossbracket connected to said slide bars, said crossbracket comprising (1) a vertical element, (2) an upper horizontal leg extending from said vertical element, and (3) a lower horizontal leg extending from said vertical element, apertures in said upper and lower horizontal legs; a center leaf positioner mounted on said crossbracket and supporting said center leaf, said center leaf positioner including (a) means to permit only an initial horizontal rotation of said center leaf through only approximately 90° in only a horizontal plane from said stored position of said center leaf, (b) means to permit a vertical rise of said center leaf to said raised position only after said initial rotation from said stored position, (c) a spring, said spring bearing on said crossbracket and center leaf positioner and being biased only to tend to raise said center leaf with respect to said crossbracket, and (d) a vertical tube running through said leg apertures, said vertical tube being attached at the upper end thereof to the center leaf.

3,294,043
SHELF FRAME
James E. Joyce, Battle Creek, Mich., assignor to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Apr. 29, 1963, Ser. No. 451,806
14 Claims. (Cl. 108—111)



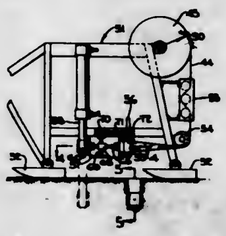
1. A shelf frame comprising: a plurality of upright post members; a plurality of shelves each having a substantially planar surface; means for securing said shelves to various ones of said upright post members; each of said shelves having an integral flange extending from said surface along at least two edges thereof; each of said flanges having a recess therein which is disposed substantially parallel to said surface; each of said flanges first extending downwardly, then inwardly, then downwardly, then outwardly, and then downwardly to form said recess in said flange and to provide a portion to engage said means.

3,294,044
GRATE BAR
George K. Dreher, Flossmoor, Ill., assignor to Burnside Steel Foundry Company, Chicago, Ill., a corporation of Illinois
Filed June 30, 1965, Ser. No. 468,457
5 Claims. (Cl. 110—40)



1. A grate comprising,
a pair of parallel spaced laterally extending end frame members,
at least two laterally spaced longitudinally extending support bars connecting said side frame members together and extending therebeneath,
a plurality of longitudinally spaced laterally extending grate fingers spaced above each support bar and extending to each side thereof,
and support legs extending upwardly of said support bars and supporting said grate fingers on their upper ends and isolating said grate fingers from said support bars.

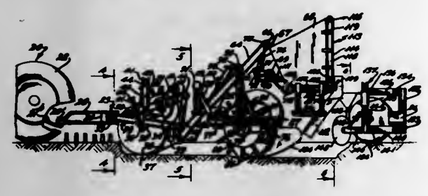
3,294,045
SEED PREGERMINATING AND PLANTING PROCESS
Omer J. Kelley, Altadena, and William K. MacCurdy, Menlo Park, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Aug. 9, 1963, Ser. No. 301,983
12 Claims. (Cl. 111—1)



6. A process of planting pregerminated seeds comprising affixing individual seeds at spaced locations along the length of a tape, immersing said seed laden tape in a nutrient solution to bring the moisture content of the seeds to a level sufficient to insure germination and to provide essential elements for growth, removing said seed laden tape from said solution, draining off excess solution from said tape, placing said seed laden tape in a controlled humidity and temperature environment until roots are just ready to emerge from the seed coat,

removing said seed laden tape from said environment, severing single seed containing increments of said tape from the remainder thereof, and inserting said increments a desired depth into the ground at spaced locations.

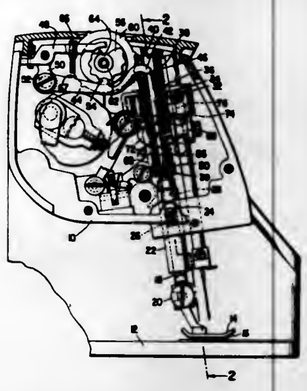
3,294,046
METHOD AND APPARATUS FOR REJUVENATING SUGAR CANE STUBBLE
Vernie A. Boots, P.O. Box 456,
Belle Glade, Fla. 33430
Filed Dec. 8, 1964, Ser. No. 416,772
12 Claims. (Cl. 111—3)



1. Apparatus for rejuvenating sugar cane stubble comprising a main frame having ground-engaging wheels, said frame having generally parallel side members connected by front and rear end members, means for propelling said frame, an auxiliary frame located between said side members and pivotally connected to the said front end member, means on said side members for tilting said auxiliary frame relative to said main frame, a pair of colters rotatably mounted on said auxiliary frame and adapted to sever the lateral roots of the stubble, a lifter shoe carried by said auxiliary frame rearwardly of said colters for raising said stubble from the ground, a first drum mounted on said auxiliary frame, said first drum having a plurality of rows of spaced staggered teeth for engaging the stubble as it is removed from the earth and breaking said stubble into relatively small pieces, means for driving said first drum, a shaker chain conveyor having one end pivotally connected to said lifter shoe for receiving material therefrom, a hopper for receiving stubble from said shaker chain conveyor, a tiller frame movably mounted on said main frame rearwardly of said auxiliary frame, means for raising and lowering said tiller frame, a second drum rotatably mounted on said tiller frame, said second drum having a plurality of radial knives for cultivating the soil, means for driving said second drum, a tiller blade mounted on said tiller frame rearwardly of said second drum for forming a furrow, a material chute for receiving material from said hopper and discharging such material into the furrow, a pair of spaced disks for moving earth into said furrow, and a packing wheel for compacting said earth, whereby sugar cane stubble will be removed from the earth after which the earth will be cultivated and the stubble will be replanted.

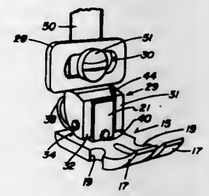
3,294,047
REGULATED PRESSER MECHANISMS FOR SEWING MACHINES
Richard P. Graham, Westfield, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 14, 1965, Ser. No. 448,211
9 Claims. (Cl. 112—235)

1. In a sewing machine having a machine frame, a presser-rod pressure regulating mechanism comprising a lever supported by said machine frame, a cam and cam follower in cooperation with said lever for pivotally moving said lever about its fulcrum, resilient means cooperating with and held under tension by said lever for longitudinally urging said presser-rod in a direction tending to relax said tension, the face of said cam being provided with a recess sufficiently deep to prevent contact between said follower and said cam, and adjustable means for use



in cooperating with said lever when said follower resides in said recess to adjust the force by which said lever holds said resilient means under tension.

3,294,048
COMBINATION PLAIN FOOT AND SLIDE FASTENER FOOT FOR SEWING MACHINES
Angelo Micale, 995 Nassau St.,
North Brunswick, N.J. 08902
Filed Oct. 22, 1963, Ser. No. 318,031
4 Claims. (Cl. 112—240)

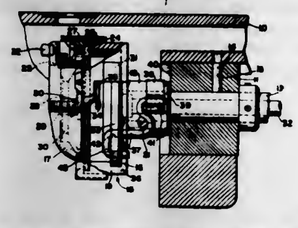


1. The combination, with the foot bar of a sewing machine, of a foot having opposed, needle-accommodating notches in its outer sides, said foot comprising a forked body portion and a component pivoted at its lower end to the body portion, the upper part of said component having an elongate horizontal aperture, releasable means passing through said aperture to fasten the foot to the foot bar, said foot being laterally slidable along said aperture relative to said releasable means so that the machine needle may pass through the fork interspace or through either of said notches, said body portion of the foot having a horizontal recess in its rear end portion, and a compressed spring in said recess pressing said component forwardly.

3,294,049
LUBRICATING DEVICES FOR SEWING MACHINES
Stanley J. Ketterer, Morris Plains, and Michael F. Ivanko, Rockaway, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 8, 1965, Ser. No. 430,904
5 Claims. (Cl. 112—256)

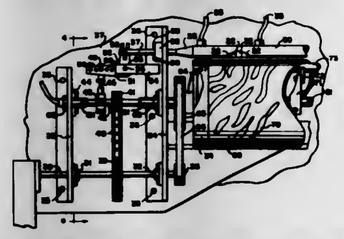
1. A lubricating device for a sewing machine having a frame, a shaft mounted in the frame, and a loop-taker mounted on the shaft, said loop-taker having a rotary

member, a stationary member and bearing surfaces between the rotary and stationary members, said lubricating device comprising a wick supported on said rotary mem-



ber, means for intermittently shifting a portion of the wick against one of the bearing surfaces between the rotary and stationary members of the loop-taker, and means for applying oil to the wick.

3,294,050
PATTERN MECHANISM FOR A TUFTING MACHINE AND A PROCESS FOR PRODUCING A PATTERNED TUFTED FABRIC
John W. Cerley, Buena Vista Road, and Alton R. McDaniel, Rte. 3, both of Calhoun, Ga. 30701
Filed Feb. 18, 1964, Ser. No. 345,750
5 Claims. (Cl. 112—266)



4. In a process of producing a tufted fabric wherein a varying pattern of tufts is produced in successive transverse rows in a base fabric, the steps of:
- rotating a pattern drum about its longitudinal axis whereby its exterior surface moves in a given direction past a sensing means,
- oscillating said sensing means in a path disposed at an angle with said given direction,
- determining at least some of the characteristics of said pattern drum with said sensing means, and
- inserting tufts of yarn through a base fabric in a pattern corresponding to the characteristics of said pattern drum as determined by said sensing means to thereby produce a fabric which has no definite line between the longitudinal and transverse repeats of the characteristics of said pattern reproduced thereon.

3,294,051
APPARATUS FOR DRILLING IN DEEP WATER
Leonide Kholstovsky, Paris, France, assignor to Compagnie Generale d'Equipements Pour les Travaux Maritimes, Paris, France
Filed Nov. 30, 1964, Ser. No. 414,716
Claims priority, application France, Nov. 29, 1963, 955,438
10 Claims. (Cl. 114—.5)

1. A permanently floating device for deep-water drilling comprising:
- an ordinarily submersed, sealed shell having a buoyancy close to zero;
- a plurality of vertical columns attached at their lower ends to said shell, said columns having a high buoyancy;
- a platform having a plurality of vertical openings for passage of said columns, said platform having a positive buoyancy, the buoyancy of said columns being sufficient to support said platform; and



- means for controlling the relative motion of said platform and said columns, whereby said platform may be simultaneously raised on each of said columns out of the water.

3,294,052
STEERING MECHANISM FOR HYDROFOIL BOATS
Ted O. Jones, Kennydale, Wash., assignor to Hydro Marine Incorporated, Houghton, Wash., a corporation of Washington
Filed May 13, 1965, Ser. No. 455,460
9 Claims. (Cl. 114—66.5)

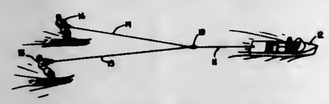


1. A water craft comprising: an elongated hull; front and rear hydrofoil assemblies, each comprising a transverse hydrofoil spaced below the hull, and including a relatively flat central portion and surface piercing side portions extending both upwardly and laterally outwardly from and on opposite sides of said central portion, and support structure for said hydrofoil interconnected between said hydrofoil and the hull, with at least the support structure for the forward assembly including a substantially vertical strut disposed below the hull, and a turning rudder having a forward portion journaled for horizontal rotation generally at the rear edge of said strut, with at least a greater portion of said rudder being disposed rearwardly of the rear edge of said strut; and propulsion means for said craft situated rearwardly of said front hydrofoil assembly.

3,294,053
TOW CONNECTOR FLOAT
Parfitt S. Emery, Jr., 200 N. 3rd St., Elwood, Ind. 46036
Filed Aug. 27, 1965, Ser. No. 483,126
5 Claims. (Cl. 114—235)

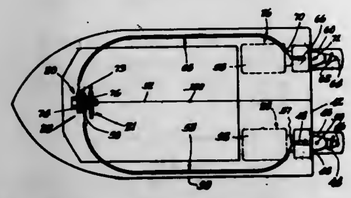
1. A tow connector comprising a hollow, water-tight, integral body having a reduced, solid tail portion and a further reduced, solid nose portion, said nose portion having a transverse opening therethrough, said tail portion being formed with a plurality of perimetrally-spaced cavities, each opening through the perimeter of said tail portion adjacent the proximal end of said tail portion,

and said tail portion further being formed with a longitudinally-extending, perimetrally-opening groove extending from each cavity through the distal end of said tail



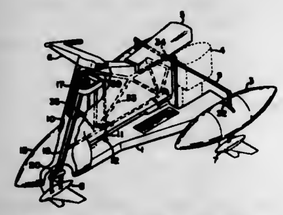
portion, and a cap snugly embracing said nose portion and overlying the radially-outward region of the distal ends of all of said grooves.

3,294,054
STEERING ARRANGEMENT FOR BOATS
Calhoun Norton, 2017 Greenleaf St., Glenview, Ill. 60025
Filed Sept. 29, 1964, Ser. No. 400,051
9 Claims. (Cl. 115—37)



1. In a steering system for a boat powered by engine means including first and second spaced drive units respectively having first and second propellers respectively on first and second rotatable propeller shafts mounted for pivotal adjustment about upstanding axes and means for controlling the speed of rotation of said propellers, said steering system including first and second means for pivoting the first and second propeller shafts about said axes, first and second control means connected to the first and second means for independently pivoting the propeller shafts for selective positioning of said propeller shafts in predetermined relationship with respect to each other, and means connecting said first and second control means for enabling operator of said boat to steer said boat by simultaneously pivoting said first and second propeller shafts with the propeller shafts maintained at said predetermined relationship.

3,294,055
WATERCRAFT
Shely W. McGuire, 2355 Olivia Ave., Yuma, Ariz. 85364
Filed Jan. 15, 1965, Ser. No. 425,804
12 Claims. (Cl. 115—70)



1. In a steering mechanism for watercraft:
(1) a substantially vertical steering column,
(2) manual controls secured to the upper end thereof,
(3) water contacting means secured at the opposite end thereof,
(4) a D-shaped guide member surrounding said column,
(5) a substantially horizontal member,
(6) linkage connecting the D-shaped member to the horizontal member whereby said members are in fixed parallel space relationship,
(7) a support member in operative engagement with the guide member,
(8) a tract portion provided in the guide member,
(9) a follower operatively mounted in said tract portion,
(10) a U-shaped connecting member to which the follower is affixed at the mid-outer surface of its arcuate portion,
(11) a bar mounted on the steering column at right angles thereto and pivotally connected at the ends thereof to the ends of the U-shaped connecting member,
(12) a coupling arm pivotally secured to lower extremity of steering column,
(13) an upper frontal connecting rod pivotally connecting the coupling arm to the U-shaped member,
(14) a frontal water contacting means,
(15) a lower frontal connecting rod pivotally engaging the coupling arm to the frontal water contacting means.

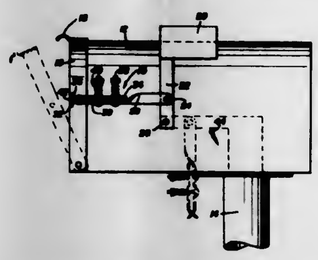
3,294,056
WARNING DEVICE FOR VEHICLES
Joseph L. Gouger, 920 S. Oakland St., Ontario, Calif. 91761
Filed Oct. 15, 1964, Ser. No. 404,043
3 Claims. (Cl. 116—28)



1. A device adapted to be attached to a vehicle for warning highway vehicles of impending danger; the device consisting of a tubular housing having a first end portion which is substantially parallel with a roadway and which is secured to an under portion of a vehicle, a second end portion joined to the first end portion and extending therefrom at an angle, the distal end of the first end portion having an opening through which a flare can be discharged, a distal portion of the second end portion having a coiled spring therein, the distal end of the second end portion having a closure means against which one end of the spring rests, a piston-like means at the other end of the spring, a rod attached to the piston-like means which extends through the convolutes of the spring and exits through the closure means for attachment to a remote control means so that the spring can be compressed and released, a flare in the first end portion having a firing means that can be set-off by friction at its end which faces toward the spring, the piston-like means having a friction means on a part thereof facing toward the flare so that when the piston-like means is released after the spring is compressed, the friction means strikes the firing means of the flare to cause the flare to ignite as it is ejected from the first portion of the tubular housing onto a roadway.

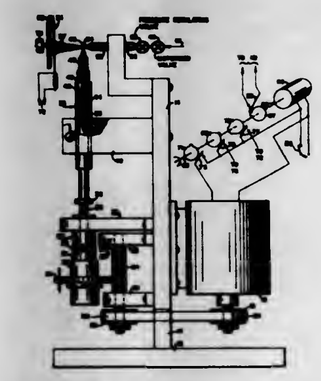
3,294,057
AUTOMATIC RURAL MAIL BOX FLAG TRIPPER
Sam C. Fell, R.R. 1, Box 116, Earlimart, Calif. 93219
Filed Feb. 18, 1966, Ser. No. 528,435
1 Claim. (Cl. 116—132)

In combination with a mail box having a moveable closure door, a gravity operated signal flag, an arm supporting said flag for pivotal movement about an axis to swing the signal flag in a vertical plane, and means interconnecting the door and signal flag for retaining the signal flag raised when the door is closed and releasing the signal flag when the door is opened, said mail box including stop means thereon to limit the pivotal movement of said flag; said means including a projecting member on said door, and clamp means attached to the signal flap arm and being detachably engaged with the projecting member, said



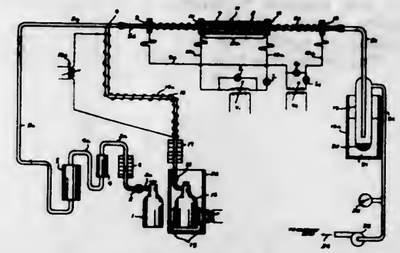
clamp means including a pair of opposed clamp straps, one of said straps being pivotally attached to said arm, said strap being pivotally attached at an intermediate place on said arm between said flag and said axis, spring means interconnecting said straps to bias the straps toward each other, and each of said straps having an outwardly flared end and an offset portion to enable reception and gripping of said projecting member.

3,294,058
PRECISION SPRAY COATING DEVICE
Morris A. Shrire, 88 Sheridan Ave., Mount Vernon, N.Y. 13476
Filed Apr. 19, 1965, Ser. No. 451,095
24 Claims. (Cl. 118—11)



15. A precision liquid spraying apparatus comprising:
a container, having an inner wall, for receiving liquid to be sprayed;
a member fitted to said container having an orifice communicating with the interior of said container;
an internally threaded slippery synthetic resin sleeve having an internally threaded bore communicating with the interior of said container, a threaded piston member rotatably mounted in said sleeve and spaced from said inner wall, said threaded sleeve being fitted to said container in an airtight connection;
means to rotate said threaded piston member; and
means to provide a jet of gas proximate the orifice to aspirate fluid exuded by action of said piston.

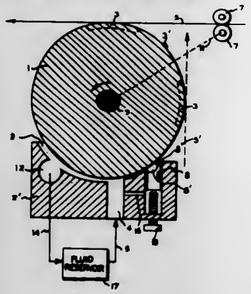
3,294,059
DEPOSITION OF NICKEL FILMS ON THE INTERIOR SURFACE OF POLYTETRAFLUOROETHYLENE TUBING
Charles R. Barnes, Medway, and Charles R. Gessner, New Carlisle, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 15, 1963, Ser. No. 273,248
2 Claims. (Cl. 118—49.5)



1. An apparatus for plating the inner surface of flexible plastic tubing such as tetrafluoroethylene tubing with a coating of nickel which comprises, a source of hydrogen gas under pressure, a source of nickel carbonyl gas under pressure, a hydrogen gas delivery conduit connected to said hydrogen gas source having a flow meter, a deoxidizer, and a drier therein, valve means for controlling the discharge of hydrogen gas from said source of hydrogen gas into said hydrogen gas delivery conduit at a predetermined low pressure, a nickel carbonyl gas delivery conduit from said nickel carbonyl gas source connected to said hydrogen gas delivery conduit having a flow meter therein, nickel carbonyl gas control valve means in said nickel carbonyl gas delivery conduit for controlling flow of said nickel carbonyl gas at a predetermined low pressure into said hydrogen gas delivery conduit, electric heater means surrounding said nickel carbonyl gas delivery conduit and said nickel carbonyl gas source, adjustable for heating said nickel carbonyl gas source and said nickel carbonyl gas delivery conduit to a uniform temperature of about 34° C., means for connecting a length of tubing to be plated interiorly with nickel adapted to be connected at one end to said hydrogen gas delivery conduit, downstream from the juncture of said nickel carbonyl gas conduit therewith, electrical heating coil means adapted to surround the plastic tubing to be internally plated, to extend substantially from end to end thereof, a regulated electrical source connected to the opposite ends of said surrounding heating coil for maintaining the tubing to be internally plated at a temperature of 34° C. during the internal plating thereof, an elongated electrically nonconductive tubular heat confining member concentrically surrounding said electrical heating coil and the plastic tubing to be plated to enclose a predetermined length of said heating coil and tubing intermediate the ends thereof, adjustable axially along the tubing and said surrounding heating coil, electrical conductor means fixed at each end of said tubular heat confining member establishing electrical contact with said surrounding electrical heating coil at the opposite ends of said tubular heat confining member, second regulated electrical source connected to said last conductor means for maintaining the temperature in a plating zone within said nonconductive tubular heat confining member substantially uniform between the ends thereof at 90° C., a discharge conduit adapted to be connected to the opposite end of the plastic tubing to be internally plated, a vacuum pump connected to the discharge end of said discharge conduit for maintaining a partial vacuum in said discharge conduit and in the tubing to be plated of substantially two millimeters of mercury during the internal plating thereof,

and a cold trap in said discharge conduit adapted to contain a low temperature liquid such as liquid nitrogen for freezing down any undecomposed vapors such as nickel carbonyl vapors and carbon monoxide vapors passing thereinto from said plating zone to said vacuum pump.

3,294,060
FLUID APPLICATOR
Donald B. McIntyre, 210 Hillside Ave., Needham, Mass. 02192, and Frederic S. McIntyre, 19 Garrison Road, Wellesley, Mass. 02181
Continuation of application Ser. No. 281,623, Apr. 20, 1963. This application Mar. 21, 1966, Ser. No. 536,152
4 Claims. (Cl. 118—261)



1. A fluid-applicator system having, in combination, a wheel for receiving fluid along the peripheral surface thereof, means for rotating the wheel to contact surfaces-to-be-coated by the fluid, a block housing a fluid-containing cavity through which the successive peripheral portions of the wheel may pass during rotation of the wheel, and a doctor blade supported by the block and disposed adjacent the wheel substantially at the end of the cavity from which the successive peripheral surface portions of the wheel emerge during the said rotation, the doctor blade having a cutter edge oriented to slice the fluid carried thereto to a predetermined thickness, the blade having a duct preceding the cutter edge to receive the sliced fluid and re-deliver the same to the wheel peripheral surface ahead of the cutter edge, said blade being supported on said block for movement toward and away from the periphery of said wheel, said cutter edge having a projection extending substantially tangential to said wheel at said end of the cavity and extending rearwardly a predetermined distance into said duct, said duct having a substantially circular cross-section which extends from said edge progressively farther away from the periphery of said wheel and then progressively closer to the periphery of said wheel.

3,294,061
APPARATUS FOR GROWING OYSTERS FROM SPAT
Fletcher Hanks, 22 Port St., Easton, Md. 21601
Filed Aug. 27, 1965, Ser. No. 483,152
3 Claims. (Cl. 119—4)



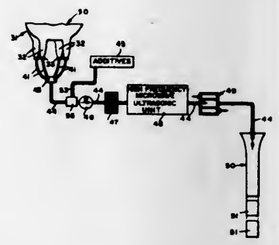
1. Apparatus for growing oysters comprising a cylindrical housing adapted to be submerged in a body of oyster growing water; said housing having a relatively smooth outer surface and having a series of substantially horizontally extending tubular recesses; at least a portion of the sidewall of each of said recess having a rough surface for the attachment thereto of oyster spat.

3,294,062
METHOD AND APPARATUS FOR CULTIVATING OYSTERS
Fletcher Hanks, 22 Port St., Easton, Md. 21601
Filed Aug. 27, 1965, Ser. No. 483,209
7 Claims. (Cl. 119—4)



3. Apparatus for growing oysters comprising a housing adapted to be submerged in a body of oyster-growing water; said housing being relatively smooth on the outside and having an outwardly opening recess defined by a pair of substantially vertically extending convergent sidewalls located between a pair of horizontally extending plates; at least one of the sidewalls of said recess having a rough surface for the attachment thereto of oyster spat.

3,294,063
MILK EXTRACTION, PROCESSING AND PACKAGING SYSTEM
Merrill S. Brodrick, Mansfield, Pa. 16933
Filed June 3, 1965, Ser. No. 461,107
6 Claims. (Cl. 119—14.02)

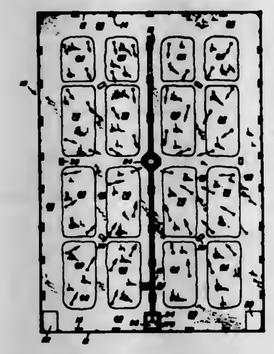


1. A method of obtaining milk from cows without exposing the milk to the atmosphere, comprising the steps of continuously removing the milk from the cows' udders as the milk is let down and immediately subjecting the milk to high frequency microwave energy and cooling the milk.

3,294,064
HUNTING PRESERVE AND GAME BIRD RELEASE THEREFOR
John C. McKown, P.O. Box G, Carterville, Ill. 62918
Filed June 29, 1965, Ser. No. 467,913
11 Claims. (Cl. 119—15.6)

1. A hunting preserve comprising a fence enclosing a land area, a duck pond located centrally in said land

area, a first plurality of bird retaining and releasing traps encircling said pond, and a plurality of duck blinds dis-



posed in circumferentially spaced relation outwardly of said pond.

3,294,065
BIOCIDAL DEVICES
Thelma Myers, Solon, and Howard S. Webb, Conneaut, Ohio; said Myers assignor to Hudson Associates, Hudson, Ohio, a corporation of Ohio
Filed Oct. 29, 1964, Ser. No. 407,396
6 Claims. (Cl. 119—25)



2. A method of assembling a biocidal device from an elongated carrier comprising the steps of: forming a groove of substantially uniform width in and along the carrier, elastically tensioning a resinous strand carrying an effective amount of a volatile biocide and normally having a thickness somewhat greater than said groove width until the thickness of the strand is reduced to less than said groove width, inserting the strand while still under tension into the groove, and then releasing the tension on the strand whereby the strand expands laterally and is frictionally retained within said groove.

3,294,066
FEEDER FOR NURSING ANIMALS
Andrew H. Seay, Spotsylvania County, Va. (R.F.D. 1, Box 104, Fredericksburg, Va. 22553)
Filed Nov. 30, 1964, Ser. No. 414,683
9 Claims. (Cl. 119—51.11)

7. A feeder for suckling animals comprising the combination of an elongated, pliant, foldable, tubular bag of thin, supple material containing a mixture of dry feed and liquid, and stationary vertical supporting means of substantially the same length as said bag for supporting and maintaining said bag in tubular shape when filled with said feed and liquid for suckling by a nursing animal, said bag having an opening provided in an upper end thereof to receive said liquid and converging at the lower end when filled with liquid from its maximum width to a narrow extremity of substantially less width having an aperture therein so that said lower end forms a narrowed feeding nipple portion, said supporting means detachably suspending said bag at its upper end, said supporting means having a tubular portion receiving said bag therein, said tubular portion being no larger in diameter than said tubular shape of said bag and encircling and confining said bag above said narrowed feeding nipple portion with said narrowed feeding nipple portion below said tubular portion of said support, said tubular portion of said support maintaining said bag, when distended by liquid, stationary and in tubular shape, so that the liquid in said bag forms



a column which moves up and down within said bag as the narrowed feeding portion below said tubular portion is intermittently compressed by a nursing animal to agitate said mixture of feed and liquid.

3,294,067
HANDLE MOUNTED PENCIL SHARPENER
Francis E. Chipman and Melvyn E. Cowher, both of 611 Glenwood Road, Yorktown Heights, N.Y. 10598
Substituted for abandoned application Ser. No. 364,081, May 1, 1964. This application Oct. 20, 1965, Ser. No. 511,571
1 Claim. (Cl. 120—1)



In combination with a hand held tool comprising:
(a) a handle,
(b) a recess in the handle extending longitudinally inwardly from the free terminal end thereof,
(c) a pencil sharpener complemental in shape to said recess positioned therein with the inner end of the pencil sharpener seated on the bottom of said recess,
(d) fastener means extending through the inner end of said pencil sharpener longitudinally into said handle, and
(e) said recess being of a depth greater than the length of said pencil sharpener, such that the outer end of said pencil sharpener is spaced inwardly from the terminal end of said handle, whereby to be wholly contained within said recess in order to obviate damage thereto wherein,
(f) said recess is of a uniform rectangular cross section throughout its length and having a flat bottom,

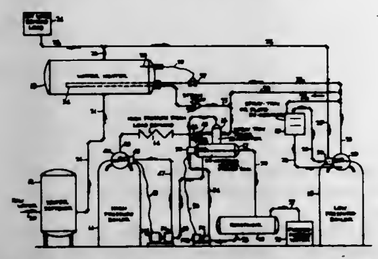
(g) said pencil sharpener having a chamber for receiving shavings extending lengthwise thereof, with its bottom at the inner end of said pencil sharpener, and
(h) said fastener means extending through the bottom of said chamber.

3,294,068
MULTI-COLOR PEN
Emil Hechtle, Oradell, N.J., assignor to Radiant Pen Corp., Kenilworth, N.J.
Filed Apr. 29, 1965, Ser. No. 451,919
Claims priority, application Canada, July 16, 1964, 907,395
11 Claims. (Cl. 120—42.13)



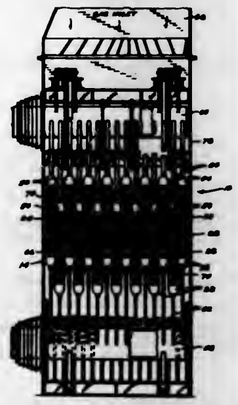
1. A pen having a body; a one piece cap therefor, provided with a side opening extending longitudinally of the cap, and a bottom opening; a cartridge supported in said cap in a protract and a retract position; a spring encircling said cartridge; an apertured spacer positioned within said cap for supporting the spring and urging the cartridge away from the spacer; the side opening in said cap provided with an integrally formed longitudinal extending rail having a stop at one end and a catch at the other end, a plunger riding on said rail and abutting the cartridge, said plunger having a length shorter than the distance between the spacer and the side opening and in excess of the length of the side opening so that the plunger and cartridge are inserted through said side opening of the cap and on the rail; said plunger having a latch for engaging the catch on the end of the rail to provide the protract position of the cartridge, said plunger further provided with a stop surface for determining the retract position when urged by the spring; and means for releasing the plunger from the catch.

3,294,069
STEAM BOILER SYSTEM
Frank J. Smith, 7351 Limekiln Pike, Philadelphia, Pa. 19138
Filed Oct. 15, 1965, Ser. No. 496,262
4 Claims. (Cl. 122—1)



1. A steam boiler system, comprising in combination, a low pressure boiler, a high pressure boiler, means for supplying source water first to the low pressure boiler, a condensate deaerating heater for the liquid supply to said high pressure boiler, a steam load unit supplied with steam from said low pressure boiler and having a steam condensate return, means for supplying condensate from the low pressure boiler to said condensate deaerating heater for the high pressure boiler, means for returning condensate from the high pressure boiler back into said condensate deaerating heater along with the condensate from the low pressure boiler, and means for supplying steam from said low pressure boiler to said condenstate deaerating heater.

3,294,070
GAS-COOLED REACTORS
Alan Bell, Cookham, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,797
Claims priority, application Great Britain, Apr. 8, 1963, 13,954/63
5 Claims. (Cl. 122—32)

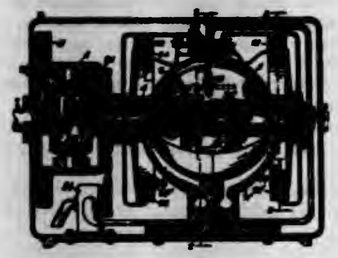


1. In a forced circulation boiler having a tube system including in series preheating, evaporating and superheating sections, the improvement comprising in said superheating section a plurality of tubes in a cluster including a center tube and first and second sets of tubes substantially parallel to, coextensive with and removed from said center tube on opposite sides thereof, the center tube having a cross-sectional area of flow substantially less than the cross-sectional area of flow in the evaporating section, said cluster of tubes defining a circular array encompassing the center tube, said first set of tubes being two tubes on opposite sides of the center tube, said cross-sectional areas of the center tube and first set of tubes being substantially equal, means for directing the flow from the evaporating section to said center tube, second means for directing the flow from the center tube to said first set of superheating section tubes, and third means for directing the flow therefrom to the second of said sets of tubes so that the flow leaves the superheating section at an end removed from the evaporating section.

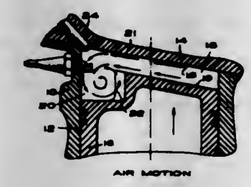
3,294,071
INTERNAL COMBUSTION ROTARY PISTON ENGINE
Jérôme Turco, 2111 Girouard St., Montreal 28, Quebec, Canada
Filed Feb. 21, 1964, Ser. No. 347,333
6 Claims. (Cl. 123—11)

1. An internal combustion spherical engine with rotary pistons, including a casing having a spherical chamber therein, said casing being formed of two parts each having a half sphere, the axis of said chamber passing through the center thereof and being normal to the plane of intersection of said two casing parts, bearings placed in the center of each casing part and aligned with said axis, each

casing part having two apertures, each aperture in one casing part being diametrically opposed to an aperture in the other casing part, two pairs of pistons disposed in said chamber for rotation about said axis with each piston of one pair being intermediate the other pair of pistons, two coaxial shafts extending along said axis into said chamber, one pair of pistons being connected to one of said shafts and the other pair of pistons being connected to the other of said shafts, said shafts extending out of said chamber with one shaft connected to one gear of a differential and the other shaft connected to the opposite gear of said differential, a flywheel and a transmission shaft being connected to the housing of said differential, the edge of said pistons conforming to the spherical chamber and the piston surfaces intermediate said edge and said axis is radially disposed, two drums, one fixed to each of said shafts, two hydraulic brakes, one acting on each drum to brake said drum when hydraulic pressure is applied to the brake, and cams carried by said drums to coact with a slide valve to actuate one or the other of said brakes to prevent rotation of the drum and its shaft and pair of pistons.



3,294,072
INTERNAL COMBUSTION ENGINE
Alador O. Simko, Detroit, and Laszlo Hideg, Dearborn Heights, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 17, 1964, Ser. No. 375,732
9 Claims. (Cl. 123—32)



1. An internal combustion engine of the spark ignition unthrottled type having a cylindrical bore and a piston member moving reciprocably therein, a cylinder head member closing said bore and together with said piston member and bore defining an air flow chamber, and a combustion chamber formed in a portion of one of said members and located to one side of the axis of said bore and radially within the cylindrical surface of projection of said bore, said air flow chamber containing a charge of fresh air therein having a negligible swirl air motion, the remaining surface portion of said one member being essentially parallel with the axially adjacent surface of the other member, said surface portions together with the walls of said bore defining said air flow chamber constituting a squish area for the transfer by the piston during the compression stroke of said piston of the air in said air flow chamber transversely across and essentially parallel to the top of the piston surface from one side of said latter chamber towards a diametrically opposite side towards and into said combustion chamber in streamline air layers, the major portion of which extend essentially in the same general direction, said combustion chamber being contiguous with and extending axially and radially from said air flow chamber effecting flow of squish air thereinto and having a shape that effects an air rotation of said air layers in said combustion chamber, low pressure injection means adjacent said chamber injecting a fuel spray directly into said combustion chamber and cylinder volume in a direction against said rotating squish air stream whereby said air stream redirects the fuel spray back into said combustion chamber to reduce the penetration distance of said fuel into said air and prevent a substantial wetting of the cylinder walls to thereby effect a fuel-air mixture cloud concentrated substantially within said combustion chamber with essentially fresh air in the air flow chamber, and means adjacent said combustion chamber for igniting said mixture cloud.

3,294,073
ATTACHMENT FOR INTERNAL COMBUSTION ENGINES FOR REDUCING NOXIOUS GASES IN THE EXHAUST
Ferruccio Brenna, Bronx, N.Y., assignor of twenty per cent to Irwin L. Lubowe, thirty-seven and one-half per cent to Jerilson Seeman, both of New York, N.Y., and five percent to Herman L. Mehr, Rockville Centre, N.Y.
Filed May 6, 1964, Ser. No. 369,680
5 Claims. (Cl. 123—119)



1. An attachment for internal combustion engines which have a carburetor having at least one fuel jet, an intake manifold leading from the carburetor to the engine cylinders and a pipe for the exhaust gases, said attachment comprising a connection for leading the hot gases to the intake manifold from a point in the exhaust pipe where the exhaust gases are at a high temperature, said connection including a screen for screening the hot gases and a metering orifice means having a fixed cross-sectional area which is one half the carburetor fuel jet area or small variations therefrom.

3,294,074
SUPPLEMENTAL AIR SUPPLY DEVICE
Erwin J. Mennicken, Reinbek, near Hamburg, Franz Muth, Hamburg-Blankenese, and Kurt H. Strohle, Schwarzenstedt, near Hamburg-Bergedorf, Germany, assignors to Filterwerk Filter G.m.b.H., Glinde, near Hamburg, Post Reinbek, Germany, a corporation of Germany
Original application Sept. 30, 1963, Ser. No. 312,664, now Patent No. 3,224,424, dated Dec. 21, 1965. Divided and this application Sept. 28, 1965, Ser. No. 490,838
Claims priority, application Germany, Jan. 31, 1963, F 38,986
4 Claims. (Cl. 123—124)

1. In the combination of an internal combustion engine and a carburetor for supplying a combustible mixture to said internal combustion engine, said carburetor including means supplying a normal quantity of air to

form a part of said combustible mixture, means for providing controlled introduction of a supplemental quantity of air into said mixture sufficient to assure complete combustion of said combustible mixture, said means comprising:

a hollow casing having an internal chamber and an outlet opening communicating with said chamber and connected to said carburetor;

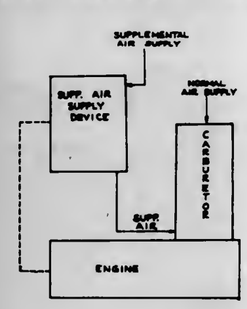
shaft means having at least one end thereof projecting beyond said casing;

means coupling said one end of said shaft means to a revolving shaft in said internal combustion engine whereby said shaft means is rotated at the same speed of revolution as said revolving shaft;

a centrifugal operating mechanism disposed within said internal chamber and attached to said shaft means for concurrent rotation therewith;

means for introducing air into said centrifugal operating mechanism;

said centrifugal operating mechanism including aperture means communicating with said internal chamber and centrifugally movable means operative to progressively close said aperture means;



said centrifugally movable means including piston means movable toward said aperture means and compensated spring means normally biasing said piston means away from said aperture means;

said introduced air within said centrifugal operating mechanism being transferred, as said engine is idling, through said casing outlet opening and to said carburetor to supplement said normal carburetor air supply;

said shaft means being rotated faster when the speed of revolution of said engine shaft is increased from an idling condition, to thereby operate said centrifugally movable means to gradually overcome the biasing effect of said spring means and to progressively close said aperture means until the same are completely closed, thereby terminating the supply of supplemental air to said carburetor;

said spring means being so compensated and correlated with the weight of said piston means to assure that said supplemental air supply will gradually diminish at a preselected rate and will be completely terminated when a predetermined speed is reached.

3,294,075
INJECTION SYSTEM FOR INTERNAL COMBUSTION ENGINES
Jean Louis Gratzmuller, 66 Blvd. Maurice Barres, Neuilly-sur-Seine, France
Filed Oct. 7, 1964, Ser. No. 402,162
Claims priority, application France, Aug. 27, 1964, 986,325
8 Claims. (Cl. 123—139)

1. In a device for controlling the quantity of liquid fuel fed from a source thereof to a means for injecting the fuel into an internal combustion engine which is responsive in speed to the quantity of fuel injected thereinto, the improvement comprising:

suction pump means including cylinder means and piston means;

said piston means being disposed within said cylinder means and being reciprocable therewithin;

driving means operative by said engine and engageable with said piston means to reciprocate the same within said cylinder means at a rate responsive to the speed of said engine;

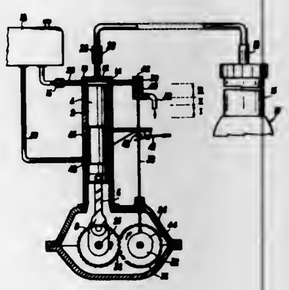
said piston means being reciprocable in one direction to define a suction stroke and being reciprocable in the opposite direction to define a pressure stroke;

said cylinder means having a fixed pressure face means;

that portion of said cylinder means between said pressure face means and the end of said piston means defining a chamber means, the volume of which increases during said suction stroke and decreases during said pressure stroke;

first conduit means establishing communication between said suction pump means and said source of fuel;

second conduit means establishing communication between said chamber means and said means for injecting the fuel into said engine;



said first conduit means including spaced apart first and second passage means through said cylinder means;

said first passage means communicating with said chamber means during said piston means suction stroke to admit liquid fuel from said source thereof into said chamber means;

means for blocking said first passage means during at least a part of said pressure stroke to interrupt the supply of said liquid fuel from said source thereof, whereupon said fuel already in said chamber means is forced under pressure into said second conduit means;

hydraulic seal means formed between said piston means and said cylinder means to prevent said chamber means from communicating with the atmosphere;

said hydraulic seal means including a reduced diameter portion extending axially along said piston means between the ends thereof;

said reduced diameter portion of said piston means and said surrounding cylinder means serving to define annular groove means;

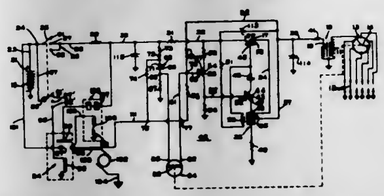
said second passage means communicating with said annular groove means whereupon said annular groove means is filled with fuel from said source;

said annular groove means being elongated axially of said piston means for a length such that, regardless of the position of said piston means within said cylinder means, said annular groove means will still remain in communication with said second passage means;

said hydraulic seal means hence being in constant communication with said source of liquid fuel, whereby the liquid pressure within said annular groove means will remain substantially constant and will be substantially unaffected by pressure variations within said chamber means; and,

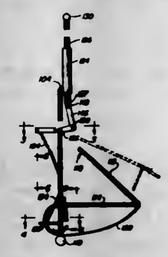
calibrated jet means operatively interposed in said first conduit means to limit the quantity of fuel passing therethrough to less than the capacity of said chamber means and more than the quantity of fuel to be fed to said means for injecting the fuel into the engine.

3,294,076
IGNITION SYSTEM
Laurence F. Mieras, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,004
12 Claims. (Cl. 123—148)



11. The transistorized ignition system for an internal combustion engine comprising, an ignition coil including a primary winding, a source of electrical energy, a transistorized circuit coupled to said source of electrical energy and said primary winding of said ignition coil including a transistor for controlling the energization of said primary winding of said ignition coil from said source of electrical energy, an electromechanical generator operated in timed synchronism with the internal combustion engine and having an output winding generating an alternating output, said transistor including a base electrode, one terminal of said output winding connected to said base electrode, and means connected to each terminal of said output winding for preventing a phase shift between the voltage and current in said output winding.

3,294,077
CENTRIFUGALLY OPERATED BALL PROJECTING DEVICE
Robert E. Lee, P.O. Box 142, North Branch, Minn. 55056
Filed Mar. 11, 1964, Ser. No. 351,043
8 Claims. (Cl. 124—4)



1. In a ball propelling device, an upright yoke shaped frame, a generally hollow arm pivotally mounted within and swingable through said frame from a rearwardly inclined ball holding position to a forwardly inclined ball release position, said arm having a forward slot extending upwardly from its lower free end and a rearward slot in upwardly spaced relation to the said forward slot, a plunger carried by said frame above said arm and mounted for reciprocal movement with respect to said frame, a pivotal link means operatively connecting the lower end of said plunger with the upper end of said arm for pivotal movement of the latter, a ball support carried adjacent the lower free end of said arm, a ball engaging pawl member pivotally carried by said arm below said ball support for movement from a ball holding position to a ball release position, a push rod slidably mounted within said arm and engageable with said pawl member, means biasing said push rod into engagement with said pawl member whereby to normally urge the same in a ball holding position, and a flexible elongated tension means slidably carried within said arm and extending through the said rearward slot connecting said push rod with said frame and adapted to move said push rod out of engagement with said pawl member and permit the release of a ball from said support when said arm is swung into a ball release position by said plunger.

3,294,078
ARCHERY BOW BRACING DEVICE
Harry W. Allen, 6220 Apache St., Dayton, Ohio 45424
Filed Aug. 9, 1963, Ser. No. 301,098
7 Claims. (Cl. 124—23)



1. A bow bracing device consisting of a pair of grip elements each apertured to accommodate a bow tip and anchor thereto and a cord-like means having a fixed connection to one of said grip elements and a loop connection to the other of said grip elements, said loop connection being formed by one end of said cord-like means being looped on itself and means providing a slide connecting device on said one end of said cord-like means slidably relating to the other end of said cord-like means which is threaded therethrough, said slide connecting means being adapted to anchor in a fixed position on tension being applied to said cord-like means.

3. A bow bracing device, including a pair of grip elements, each comprising a pocket-like retainer to receive an end of a bow and including cord-like means forming a loop which overlies an inserted bow end above the nock, a swivel type device to which the free ends of each of said cord-like means are secured, and other cord-like means interconnecting said swivel type devices.

3,294,079
ADAPTER TO PERMIT THE BURNING OF LPG FUELS IN NORMALLY LIQUID-FUEL BURNING STOVES
Richard R. Thompson, Rte. 2, Box 55, Oregon City, Oreg. 97045
Filed June 7, 1965, Ser. No. 461,781
7 Claims. (Cl. 126—38)

1. A conversion apparatus for use in combination with a liquid-fuel burning stove for converting said stove to use with liquid petroleum gas fuels, said stove normally including a burner with a fuel inlet and a generator tube connected to a liquid fuel tank and having a rod and coil within said tube, said apparatus comprising:

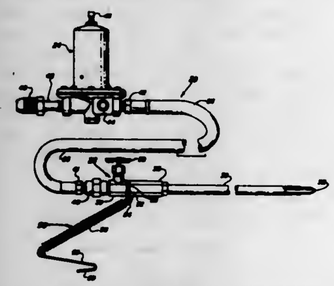
a length of flexible hose,

a reduction valve means connected to one end of said hose,

connector means adapted for connecting said reduction valve means to a pressurized supply of liquid petroleum gas fuel,

a shut-off valve means connected to the other end of said hose,

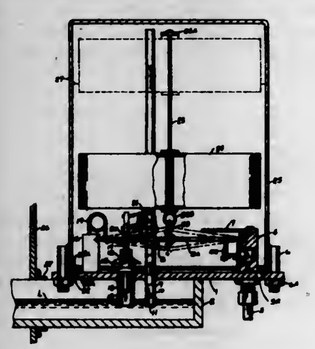
said shut-off valve means including a housing provided with a connector means adapted for connecting said housing to the generator tube of the liquid-fuel burning stove after the tube has been disconnected from



its fuel tank and after the rod and coil have been removed from within said tube,

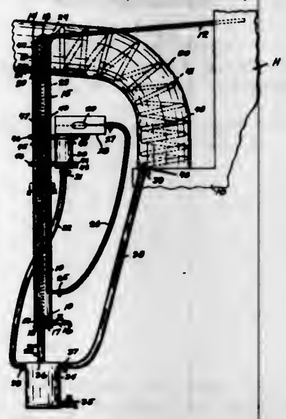
and releasable attachment means adapted for rigidly attaching said shut-off valve housing to the stove with said shut-off valve positioned outwardly of and adjacent said stove.

3,294,080
HUMIDIFIERS
Charles A. Adams, 614 Taylor St., Davenport, Iowa 52802
Filed Aug. 31, 1964, Ser. No. 393,135
10 Claims. (Cl. 126—113)



1. A humidifier having a tank for the purpose of accumulating a supply of water, and at intervals feeding the water into a furnace humidifier pan by vacuum means, said tank having automatic means for simultaneously closing a water check valve at the base of the tank, and opening a service water inlet valve when the tank is to be filled; said tank also having automatic means for vice versa operation of said valves after the tank is filled, a furnace humidifier pan rigid with and at least partially underlying the base of the tank, the tank having a water outlet pipe passing through and sealed into the bottom of it, the upper end of the pipe serving as a seat for the water check valve, and the lower end extending down to the normal water level in the humidifier pan, and an air vent pipe passing through and sealed in the base of the tank, its upper end extending to the upper inside area of the tank and its lower end extending downward near to the water level in the humidifier pan, so that when the water level rises and closes the vent pipe it will create a vacuum in the tank, thus stopping the flow of water from the tank.

3,294,081
FUEL CONSERVER AND HUMIDIFIER FOR WARM AIR FURNACES
Henry A. Zach, Winnebago, Nebr.
Filed Oct. 21, 1965, Ser. No. 499,666
4 Claims. (Cl. 126—113)



4. In combination with a warm air furnace and the flue pipe thereof, a helical tubular coil in said flue pipe, means for providing a water supply in said tubular coil including an outer elongated vertically positioned tube, an inner tube received in said outer tube, a further inner tube positioned within said inner tube, means for providing a water supply under pressure through said further inner tube, said further inner tube communicating through said inner tube at its upper end to the space between said outer tube and said inner tube, means communicating from the lower end of said inner tube and the lower end of said tubular coil, said inner tube having an inlet opening at its upper end communicating to the upper end of said tubular coil, and also having a further outlet opening, a settling tank positioned at the lower end of said inner tube and communicating therewith, a tap valve for drawing off water borne particles attached to said settling tank, a further tap valve positioned at the lower end of said outer tube for drawing off further water borne particles settling at the bottom of said outer tube, a still further tube positioned within said outer tube having an open upper end, a float unit adjustably attached to said outer tube, tubular means attached between the lower end of said still further tube and said float unit, a steam passage pipe communicating between the upper end of said outer tube and the plenum chamber of said furnace.

3,294,082
SERPENTINE-TYPE HEAT EXCHANGE ASSEMBLY
John W. Norris, Marshalltown, Iowa, assignor to Lennox Industries Inc., a corporation of Iowa
Filed Aug. 19, 1964, Ser. No. 391,363
10 Claims. (Cl. 126—116)

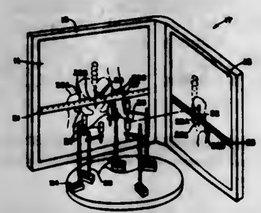
1. A clamshell-type heat exchanger assembly comprising a plurality of heat exchanger units each including left and right sides of sheet metal each having spaced apart portions and perimetric flanged edges joined together to form a generally upright passage, said sides being elongated in depth and height, said passage including a lower combustion chamber longitudinally extended

from front to rear along a first axis, an upper flue gas collection chamber longitudinally extended from front to rear along a second axis, and an intermediate chamber longitudinally extended from front to rear, the depth and height of the heat exchanger being relatively great with respect to the width thereof, the intermediate portions of the sides defining the intermediate chamber being curved and the flanged edges of the intermediate portions being joined in a surface curved widely out



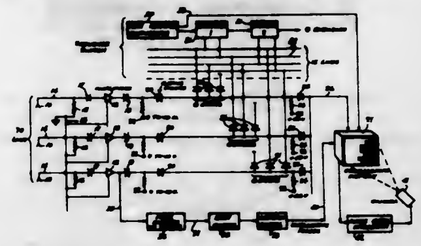
away from a generally upright plane through the axis of the combustion chamber and the axis of the flue gas collection chamber, the heat exchanger units being adapted to be rigidly affixed in a furnace cabinet adjacent the tops and bottoms thereof, whereby the intermediate portions of the sides of each unit flex in the same direction in unison with respect to a respective plane in response to expansion and contraction to maintain substantially constant internal transverse cross-sectional areas in the intermediate chamber of each unit.

3,294,083
DOSIMETRY SYSTEM FOR PENETRATING RADIATION
Samuel W. Alderson, New York, N.Y., assignor to Alderson Research Laboratories, Inc., Long Island City, N.Y., a corporation of New York
Filed Aug. 26, 1963, Ser. No. 304,394
8 Claims. (Cl. 128—2)



1. A dosimetry system for applying penetrating radiation to the human body comprising, a right-angled frame for viewing X-ray pictures taken of the body at right angles to each other and with intersecting median rays, a support mounted adjacent to said frame, a source of penetrating radiation which is to be applied to a predetermined position in the body, a plurality of radiation sensitive devices for measuring the radiation produced by said source, clamping means for securing the source and the radiation sensitive devices to the support in the relative positions of the source and selected body organs when the source is in the body; and measuring means for determining the dosage received by the body organs; said measuring means including a container for holding the support and its clamps immersed in water, and radiation indicating means for connection to said radiation sensitive devices.

3,294,084
POTENTIAL MEASURING AND DISPLAY APPARATUS, ESPECIALLY FOR ELECTROCARDIOGRAPHIC OR LIKE USE
Graham T. Schuler, Kingston, Ontario, and Orest Z. Roy, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate
Filed May 14, 1964, Ser. No. 367,411
6 Claims. (Cl. 128—2.06)



1. Apparatus for detecting and displaying simultaneously a plurality of potentials, comprising

(a) a plurality of electrodes arranged in a spatial array,

(b) means connected to each electrode for determining the difference between the potential detected by such electrode and the average of the potentials detected by the remaining electrodes,

(c) and means connected to said potential difference determining means for generating and displaying a spatial array of visible signals corresponding to the spatial array of the electrodes, said visible signals each corresponding to said potential difference for a respective electrode,

(d) wherein said display means comprises an oscilloscope display on which said visible signals each appear as an area having a light intensity corresponding to said potential difference of a respective electrode.

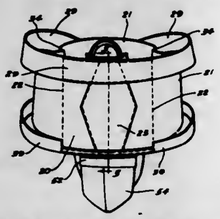
3,294,085
ENDOSCOPE
Frederick J. Wallace, New York, N.Y., assignor to American Cystoscope Makers, Inc., Pelham Manor, N.Y., a corporation of New York
Filed Sept. 27, 1963, Ser. No. 312,167
6 Claims. (Cl. 128—6)



1. An electro-surgical instrument, comprising an elongated endoscopic sheath having a proximal and a distal end, said endoscopic sheath further comprising an outer tube, an inner tube defining an annular space therewith, a plurality of optic fibers disposed in said annular space, the distal ends of said optic fibers being substantially coextensive with the distal ends of said inner and outer tubes, the proximal ends of said fibers extending beyond the proximal end of said sheath and being adapted for connection to a light source, said fibers throughout their extent being adhered together and substantially rigid; an electrode assembly including a conductive rod adapted to be connected to a source of electric current and having an operating loop at its forward end; mounting means supporting said electrode assembly and adapted for reciprocating said electrode assembly relative to said

sheath between a proximal and a distal position; a telescope assembly connected to said mounting means and extending through said sheath; and means releasably connecting said mounting means to the rearward end of said sheath.

3,294,086
MALE SUPPORTING GARMENT
Henry G. Nelkin, Kansas City, Mo., assignor to H. G. Enterprises, a co-partnership
Filed May 15, 1964, Ser. No. 367,766
9 Claims. (Cl. 128—78)



1. A supporting garment having a body portion adapted to encircle the body of the wearer comprising a front panel of elastic fabric, a central reinforcing panel of inextensible fabric secured to said front panel, a rear panel of elastic fabric attached permanently at the forward ends thereof to the ends of said front panel in spaced relation to the side margins of said reinforcing panel, an upper elastic band extending lengthwise along the top of said front panel and secured to said front panel throughout the length of said panel, said elastic band extending beyond the ends of said front panel and having its ends secured to said rear panel in spaced relation to the forward ends of said rear panel and being free of said rear panel between said forward ends of said rear panel and the ends of said band, and lower elastic bands secured at one end of each thereof to an end of said front panel in downwardly spaced relation to said upper band and at the other end thereof to said rear panel in spaced relation to the forward end of said rear panel, said lower bands being free of said rear panel between the ends of said lower bands.

3,294,087
SYNERGISTIC DECOMPOSABLE SET-INHIBITORS FOR PLASTER OF PARIS
David F. Smith, 120 Grove St., Bay Head, N.J. 08742
No Drawing. Filed May 2, 1966, Ser. No. 546,572
6 Claims. (Cl. 128—91)

1. A settable plaster of Paris mix comprising major proportions of powdered plaster of Paris and water and minor proportions of (1) boric acid in amount from about 0.05 to about 1 percent of the weight of plaster of Paris and (2) NH_3 in amount from about 8 percent to about 23 percent of the weight of water plus NH_3.

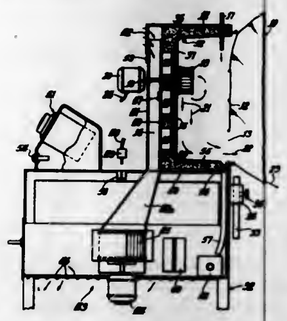
3,294,088
COOLING APPARATUS FOR OXYGEN TENTS
Andrew P. Boehmer and Boubene M. Jaremus, Barrington, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 2, 1964, Ser. No. 335,085
6 Claims. (Cl. 128—191)

5. In an arrangement for cooling the atmosphere within an enclosure defined by an oxygen tent including a lower portion disposed at a reference level, said tent further defining an entrance aperture at a preassigned distance above said reference level, the improvement which comprises:

an air mixing chamber communicating with said tent through said entrance aperture adjacent the lowest point of the mixing chamber, said chamber having a plurality of wall portions, one of said wall portions being in common with a wall portion of said tent, and all of said wall portions having continuous, smooth wall surfaces on the interior thereof;

a thermoelectric module positioned adjacent the one of said smooth wall surfaces of the mixing chamber which is opposite said aperture to remove heat therefrom;

a first fan, positioned within said mixing chamber, for moving the air in a turbulent flow in a first direction parallel to said one surface to cool the atmosphere within said chamber, the cooled air descending to the



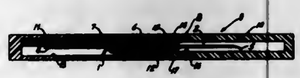
bottom of the mixing chamber and passing through said entrance aperture in a quiescent flow in a second direction substantially normal to said first direction, whence the cooled air descends gently to the reference level of said oxygen tent to thereby cool the atmosphere within said oxygen tent;

a second fan, positioned outside said mixing chamber, for carrying away the heat removed by said thermoelectric module;

means for enriching the atmosphere within said tent with oxygen; and

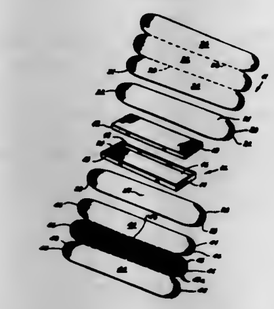
means for energizing said thermoelectric module and said first and second fans.

3,294,089
HYPODERMIC NEEDLE
Richard A. Brookfield, 90 Spring Lane, Canton, Mass. 02021
Filed Dec. 14, 1960, Ser. No. 75,746
6 Claims. (Cl. 128—221)



1. In combination, a hypodermic needle and a container therefor, said needle being for use with a syringe having an internally threaded, needle receiving socket, said needle comprising a cannula provided with a bevelled point, at least at one end thereof, and a cannula supporting hub of the same cross sectional size and shape throughout its length, said container having a socket, said hub including first and second portions, the cross sectional size and shape of the hub being such as to establish a plurality of ribs lengthwise thereof and to enable said first portion to be entered in said syringe socket and become detachably attached thereto by being turned relative thereto as it is seated therein, said hub being of a material soft enough to have threads formed in the first hub portion by such seating and turning, the second portion being within the container socket, said container socket being dimensioned to accommodate the bevelled point when the second named hub portion is positioned in the container socket with the first hub portion exposed, and a closure attachable to the container to freely confine the exposed part of the needle, the second hub portion and the container socket including portions slidably engaging to hold the second hub portion against turning relative thereto whereby said container becomes a detachable tool for use in seating and turning the first named hub portion in the syringe socket and for detaching the needle from the syringe after the use thereof.

3,294,090
SANITARY PAD
Joy M. Younger, Sacramento, Calif. (4164 Hill St., Fair Oaks, Calif. 95628)
Filed Aug. 12, 1963, Ser. No. 301,514
6 Claims. (Cl. 128—290)



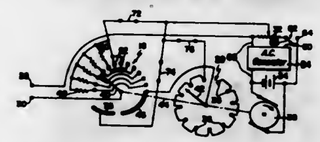
5. A sanitary pad comprising a laminated arrangement including a core of cellulosic absorbent filler material enveloped in a plurality of layers of sheet material, said layers including a lowermost external sheet portion provided with a series of generally transverse, closely-spaced ridges extending below the main plane of the said portion a distance sufficient to effect a friction surface for meshing interengagement with a supporting garment disposed therebelow and an uppermost external sheet portion having a smooth external surface.

3,294,091
SANITARY NAPKIN
Edward A. Morse, Fanwood, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Jan. 28, 1965, Ser. No. 428,673
2 Claims. (Cl. 128—290)



1. A sanitary napkin comprising a relatively thick, elongated absorbent core, a liquid pervious cover over the top and sides of said core extending beyond the ends thereof and a thin flexible film adjacent to said cover and covering the bottom and sides of said core extending beyond the ends thereof coextensive with said cover, said film being bonded to said bottom and sides of said core, to the longitudinal side edges of said cover and to said cover in the area extending beyond the ends of said core, said absorbent core consisting essentially of comminuted cellulosic pulp fibers having a uniform density of from about 14 to about 24 grains per cubic inch.

3,294,092
THERAPEUTIC APPARATUS
Fred S. Landauer, 11 Bloxham Court, Rockville Centre, N.Y. 11570
Filed Sept. 13, 1965, Ser. No. 486,656
3 Claims. (Cl. 128—420)



1. An electrical therapeutic apparatus comprising a source of electrical energy;

a pair of applicators for applying electrical currents to a patient;

lead means for connecting one of said pair of applicators to one side of said source;

means for limiting the flow of current from said source to said applicators;

said limiting means comprising a first impedance connected to said source,

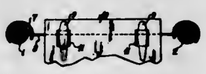
second impedance means having a plurality of determinable values serially connected with said first impedance,

first switching means for connecting to the other applicator graduated values of said second impedance means to produce a gradually increasing and then gradually decreasing value of currents applied to said pair of applicators during the first portion of a cycle of operation of said apparatus,

and second switch means for connecting to said other applicator said first impedance to produce a constant value of current applied to said pair of applicators during a second portion of a cycle of operation of said apparatus;

and means for sequentially operating said first and second switch means to produce electric currents having different characteristics during a cycle of operation of said apparatus.

3,294,093
DEVICE FOR FILING PLANS
Jesus A. Cagigal Gutierrez, Calle Zurbano 34, Madrid, Spain
Filed Nov. 16, 1964, Ser. No. 411,317
Claims priority, application Spain Nov. 15, 1963
3 Claims. (Cl. 129—1)



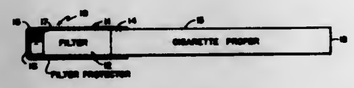
1. A file assembly comprising, in combination, a framework including a pair of bars disposed in horizontally spaced relation and means for selectively varying the spacing between the bars, a plurality of thread members extending horizontally between and supported by said bars, a plurality of pin members carried by each thread member, each pin member having an upper part projecting above its associated thread member and a lower part depending from its associated thread member, each such lower part being of greater length than the upper part, and a file sheet having a pair of spaced openings along its upper edge, each opening being of a height dimension that is greater than the length of said upper parts of the pin members but is less than the length of said lower parts of the pin members, the pin members on one of said thread members being passed through said openings to secure the file sheet in suspended relation to such one thread member.

3,294,094
MACHINE FOR HARVESTING COMESTIBLES
John A. Dreyer, Castro Valley, Calif., assignor to Bonner-Newman, Inc., Oakland, Calif., a corporation of California
Filed Sept. 9, 1963, Ser. No. 307,466
4 Claims. (Cl. 130—30)



1. In a machine for harvesting comestibles having a wheeled framework, a shaker mechanism mounted on the wheeled frame and having spaced apart members, means mounted on the framework and connected to the shaker members causing vibratory movement of the shaker members, means for delivering comestible bearing plants to the shaker mechanism, the said movement of the shaker mechanism causing the comestibles to be separated from the plants and to drop between the spaced apart members of the shaker mechanism, and a conveyor for receiving comestibles as they drop through the shaker mechanism; the combination therewith of a sorting and filling unit disposed rearwardly of said shaker mechanism and having a sorting conveyor receiving comestibles from the first named conveyor, means for delivering a plurality of boxes into a position so that they can be sequentially filled from the sorting conveyor, a discharge conveyor movable between upper and lower positions, the discharge conveyor in its lower position being adapted to receive boxes after they have been filled by the sorting conveyor, said discharge conveyor having means for advancing the boxes after they have been positioned thereon, and said discharge conveyor in its upper position being adapted to receive the discharged comestibles directly from the sorting conveyor.

3,294,095
CIGARETTE FILTER PROTECTOR
Carl L. Ackermann, 3396 Blue Rock Road, Cincinnati, Ohio 45202
Filed Sept. 26, 1963, Ser. No. 311,893
1 Claim. (Cl. 131—10.7)



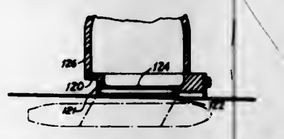
In a cigarette construction the combination of a cigarette proper comprising a tobacco cylinder and a filter having a conventional filter plug adjacent the tobacco cylinder and a built-in non-combustible protector for discouraging the user from igniting the filter end, comprising: a one-piece thermosetting plastic thimble closely concentrically fitting said filter, said thimble having a cap end formed to provide a plurality of ports for smoking and to extend beyond the consumer end of the filter to distinguish the touch of the filter end of the construction from the end normally lighted, said thimble having its other end extending toward the normally ignited end of the cigarette to provide a margin of protector-tobacco cylinder overlap, said margin and the tobacco cylinder being formed with a cool air-admitting port extending transversely through said margin and partially through said tobacco cylinder.

3,294,096
CIGARETTE FILTER
Arthur Meyers, West Orange, N.J., assignor of one-half to Meyer Weinberg, South Orange, N.J., and twenty percent to Arthur J. Sills, Metuchen, N.J.
Filed Aug. 19, 1965, Ser. No. 480,944
20 Claims. (Cl. 131—10.7)



7. A filter for a tobacco smoking article comprising dried particles of kelp.

3,294,097
PASTER FOR MACHINE MADE CIGARS
Sterling T. Gustavson, Rosedale, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Original application Aug. 1, 1961, Ser. No. 128,580, now Patent No. 3,187,756, dated June 8, 1965. Divided and this application Sept. 28, 1964, Ser. No. 399,918
1 Claim. (Cl. 131—105)



In a cigar manufacturing machine, a wrapper or binder suction transfer device comprising an elongated carrier having enclosing side wall portions and a bottom wall, said bottom wall having a substantially planar face formed with a plurality of suction channels, each having an aperture communicating with a suction system within said device, the enclosing wall portion along a lower longitudinal edge of said bottom wall extending substantially perpendicular to said face and then outwardly therefrom to form an elongated notch along the exterior of said carrier adjacent said longitudinal edge, said planar face extending to said perpendicular wall portion and corresponding in size substantially to that of the wrapper or binder to be transferred.

3,294,098
AIR INJECTION IN SMOKING
Peter Gustafson, 2909 Anderson Road, Coral Gables, Fla. 33134
Filed Aug. 13, 1964, Ser. No. 389,318
1 Claim. (Cl. 131—184)



A device for smoking tobacco and the like in the nature of a smoker's pipe comprising; a bowl means having an upwardly opening combustion chamber with a mass of burning tobacco therein, a longitudinally outwardly extending cylinder means mounted in said bowl means, said cylinder means having a side wall defining a central bore extending beneath said combustion chamber, a first passage means extending upwardly through said side wall at a location spaced outwardly from an innermost end portion of said central bore to interconnect said

combustion chamber and central bore, piston means slidably mounted in said central bore, said piston means including an outer end portion adapted to be positioned in the mouth of a smoker and a second passage means extending completely through said piston means to interconnect said central bore and said outer end portion whereby smoke may pass from said combustion chamber through said bore and second passage means into the mouth of a smoker, said piston means being slidably movable from a first outer position to a second inner position for expelling gas from said bore into said combustion chamber to increase the rate of burning of said tobacco when said second passage means is blocked by the finger of a smoker, said piston means in said second inner position blocking said first passage means to thereby entrap a quantity of said gas in said innermost end portion of said central bore to retard farther inward movement of said piston means.

3,294,099
BRUSH-TYPE HAIR CURLER HAVING SELF-STERILIZING BRISTLES
Raymond L. Wardlaw and Loren Seely, Spirit Lake, Iowa, assignors, by mesne assignments, to Merlyn O. Larson, Spencer, Iowa, and Leon Pollack, Chicago, Ill.
Filed May 19, 1964, Ser. No. 368,549
2 Claims. (Cl. 132—39)



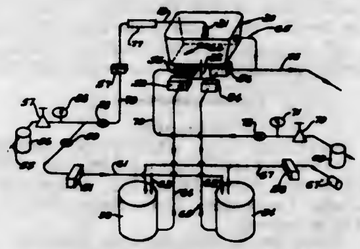
1. A hair curler comprising a wire spring, a plastic mesh body supported by and surrounding said spring, and a brush disposed within said spring and having bristles the ends of which extend through said mesh, said brush being made of self-sterilizing bristles comprising a filamentary synthetic resinous material having incorporated therein a small percentage of a powdered bactericidal agent which is partially incompatible with said synthetic resinous material.

3,294,100
TOOTHBRUSH DEVICE
Curtis J. Adcock, Rte. 3, Grand River Road, Newburgh, Warrick County, Ind. 47630
Filed Mar. 3, 1964, Ser. No. 349,013
2 Claims. (Cl. 132—84)



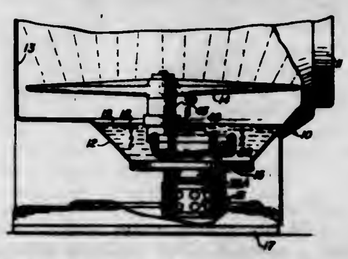
1. A toothbrush structure comprising a casing having a cap portion and a base portion, a removable dentifrice containing member disposed within said base portion of said casing, said removable dentifrice containing member having a preassembled elongated flexible tubing extending therefrom, a bristle carrying member engaging said base portion of said casing, where bristles thereon are concealed by said cap portion in a condition of nonuse, a passageway in said bristle carrying member communicating with said bristles and receiving said elongated flexible tubing from said dentifrice containing member, means securing said elongated flexible tubing within said passageway in said bristle carrying member, and dispensing means disposed on said base portion of said casing effecting flow of dentifrice.

3,294,101
IMMERSION TREATMENT APPARATUS
Fred K. Stumpf and Michael Spitzer, Chicago, Ill., assignors to Delta Research, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 8, 1964, Ser. No. 394,926
2 Claims. (Cl. 134—60)



1. In an apparatus for automatically effecting immersion treatment of materials, an immersion chamber for containing the materials and having a bottom drain pipe, closed liquid storage tanks at a lower level than said chamber, a supply pipe connecting each tank bottom with said drain pipe, a solenoid operated valve in each supply pipe at its juncture with said drain pipe, a motor driven main shaft having cams thereon, means including a solenoid operated valve adapted for supplying compressed air to said tanks to force liquid therefrom through the supply pipes and drain pipe into said chamber, a motor driven auxiliary cam shaft with cam means thereon, means including cam means on the main cam shaft adapted to establish circuits to energize the auxiliary cam shaft motor and to deenergize the main cam shaft motor for initiating the retention period for a treating liquid held in the immersion chamber, means including a manually adjustable switch coacting with the auxiliary cam means for terminating the retention period and re-energizing the main cam shaft motor, means including a solenoid operated valve adapted for venting air from said tanks, means including solenoid operated valves adapted for introducing wash water into said chamber and for draining the water, means including an air heater and a solenoid operated valve for supplying drying air to said chamber, and switches operated by said main shaft cams in a predetermined sequence adapted for controlling said solenoid operated valves.

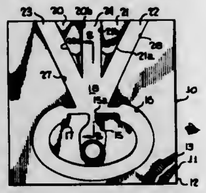
3,294,102
DISHWASHING APPARATUS HAVING IMPROVED PUMP MEANS
James G. Rugina, White Bear Lake, and Wilbur G. Peyer, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Dec. 9, 1964, Ser. No. 417,045
3 Claims. (Cl. 134—186)



1. A dishwashing apparatus, comprising: means forming a liquid sump; means for removing liquid from said sump; pump means in said sump rotatable in one direction during normal dishwashing to pump liquid through

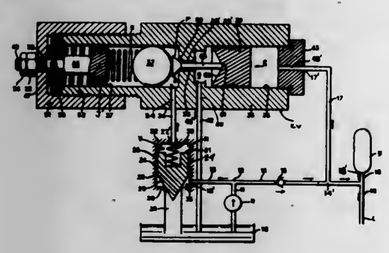
the dishwashing apparatus and rotatable in the opposite direction during removal of liquid from said sump; and means cooperating with said pump means for venting air into said pump means during said opposite direction rotation to substantially prevent noise caused by liquid in said pump means and to substantially reduce the power requirements of said pump means during said liquid removal, said pump means including a pump housing having an impeller means and a cut-water clearance area therein, said air venting means leading to adjacent both said impeller means and said cut-water clearance area.

3,294,103
FLOW SPLITTER FOR REDUCING DOMINANT EDGE TONE FREQUENCIES IN FLUID SYSTEMS
Ronald E. Bowles, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Jan. 9, 1964, Ser. No. 336,678
5 Claims. (Cl. 137—81.5)



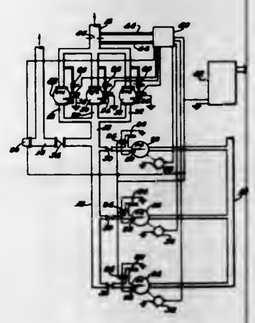
2. In a fluid system, a chamber for receiving and confining fluid flow, means for issuing a fluid stream into said chamber, at least one output passage located downstream of said chamber for receiving fluid therefrom, means having an edge extending into the downstream end of said chamber for splitting a portion of flow into said output passage, means for preventing the generation of a narrow band of edge tone frequencies along said edge, said means constituting a slope of said edge away from said means for issuing over the entire length of said edge.

3,294,104
PRESSURE CONTROL UNIT FOR HYDRAULIC SYSTEMS
Jean Mercier, 1185 Park Ave., New York, N.Y. 10028
Filed Jan. 31, 1963, Ser. No. 255,401
Claims priority, application France, Feb. 6, 1962, 887,080
10 Claims. (Cl. 137—108)



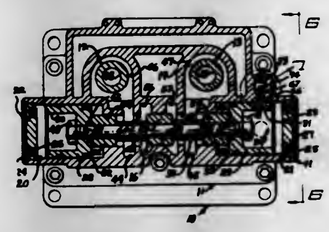
1. A pressure control unit for maintaining the pressure in a hydraulic system within predetermined limits, comprising a normally closed discharge valve having a discharge port, a valve member adapted to close said discharge port, said discharge valve having a pressure inlet port associated with one end of said valve member and a control port associated with the other end of said valve member, means in said discharge valve providing communication between said inlet port and said control port, a control valve comprising a body portion having a pressure chamber, a discharge chamber and a control chamber, said pressure chamber having a port connected to the control port of said discharge valve, said discharge chamber having a discharge port and said control chamber having a pressure inlet port, a passageway in said control valve providing communication between said pressure chamber and said discharge chamber, said passageway having a port in said pressure chamber defining a valve seat, a pilot valve controlling said seat, a piston in said pressure chamber, a first coil spring operatively interposed between said piston and said pilot valve normally to retain the latter on said seat to close said passageway, a second coil spring of greater force than said first coil spring reacting against said piston in the opposed direction to said first coil spring, a piston in said control chamber, rigid means extending through said passageway and coacting with said second piston and said pilot valve to urge the pilot valve away from said seat, whereby when the pressure in said pressure chamber and said control chamber rises to a predetermined value, the piston in said pressure chamber will be moved in direction to reduce the force of said first coil spring against said pilot valve and the piston in said control chamber will move in direction to cause said rigid means to move the pilot valve off its seat, thereby permitting flow of fluid from said pressure chamber through said passageway into the discharge chamber, to reduce the pressure in said control port of the discharge valve to permit opening of the latter by the pressure applied to the inlet port thereof, said first coil spring being compressed when the pressure in said pressure chamber is reduced by the movement of the first piston by the second coil spring to seat said pilot valve when the pressure in said control chamber has fallen below a predetermined amount.

3,294,105
COMBINATION DOMESTIC AND FIREWATER PUMPING SYSTEM
Robert F. Schaub, La Grange, Ill., assignor to Syncrodo, Inc., Downers Grove, Ill., a corporation of Illinois
Filed Apr. 29, 1963, Ser. No. 276,328
5 Claims. (Cl. 137—110)



1. A tankless pumping system for combined domestic use and fire control use, said system comprising a water supply line having a fire water supply branch and a domestic water supply branch, a plurality of pumps of different sizes for delivering water under pressure to the water supply line and thereby to both of said branches, means energizing at least one of said pumps for delivering water to the domestic water supply branch commensurate with the demand therein, means for signaling the flow of water in the fire water supply branch, and means responsive to said signaling means for closing the flow of water to said domestic water supply line and for energizing all of said pumps, whereby water pumped by said pumps is directed to the fire water supply branch.

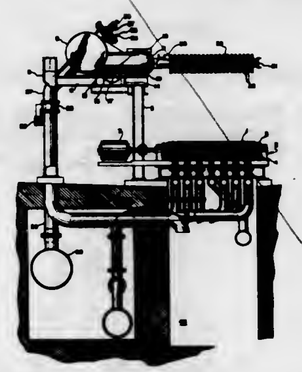
3,294,106
SHUTTLE VALVE WITH INTEGRATED DETENT MEANS
Walter D. Ludwig, Bloomfield Township, Oakland County, and Walter J. Bowman, Detroit, Mich., assignors to Mac Valves, Inc., Detroit, Mich., a corporation of Michigan
Filed May 13, 1963, Ser. No. 279,840
4 Claims. (Cl. 137—110)



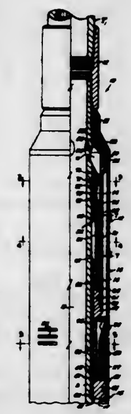
1. In a safety valve of the type having a pair of inlet pressure fluid chambers and a base provided with a pressure fluid supply chamber and a shuttle valve housing having a shuttle valve bore in which is operatively mounted a shuttle valve including a spool provided with a centrally mounted valve head and a piston of equal area at each end for engagement by fluid under pressure provided by said fluid chambers, to maintain the shuttle valve in a central operative balanced position, said valve including an outlet closable by said valve head when it is moved from said balanced central position, a variable pressure detent means comprising, a detent piston mounted in said shuttle valve housing for movement transverse to the longitudinal axis of the shuttle valve; one of said shuttle valve pistons having a V-shaped groove formed on the periphery thereof; said detent piston having a pointed inner end extendable into said shuttle valve bore and into releasable engagement with said V-shaped groove on said one of said shuttle valve pistons and, passage means through said base and shuttle valve housing interconnecting said pressure fluid supply chamber and said detent piston for normally moving said detent piston pointed inner end into operative engagement with said V-shaped groove on said shuttle valve piston, said detent piston being automatically adjustable to variations in the operating pressure of said safety valve whereby the inwardly directed transverse force exerted on said detent piston is directly proportioned to the pressure of the operating fluid, so that as the operating pressure in said pressure fluid supply chamber varies the force exerted on said detent piston varies and therefore the force it exerts on said shuttle valve piston varies.

3,294,107
APPARATUS FOR COOLING HOT BODIES
Joseph A. Maruszewski, Cleveland Ohio, Carl F. Larsen, Canonsburg, Pa., Ronald L. Wiegel, Marquette, Mich., and Terrence E. Dancy, Bethel Park, Pa., assignors to Jones & Laughlin Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 2, 1964, Ser. No. 348,548
8 Claims. (Cl. 137—124)

6. Apparatus for supplying liquid comprising a source of liquid under pressure, a closed header chamber connected thereto through a valve, a closed feeder pipe connected to the headed chamber, and at least one siphon delivery pipe connected to the feeder pipe, the inlet end of each said siphon delivery pipe opening out of the uppermost wall of the feeder pipe and being substantially flush with the inside surface thereof.



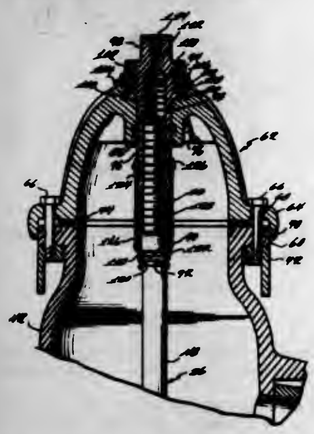
3,294,108
GAS LIFT VALVE
Purvis J. Thrash, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 338,845
7 Claims. (Cl. 137—155)



1. A valve including: a tubular mandrel; a tubular housing disposed on said mandrel and providing with said mandrel an annular longitudinally extending chamber about said mandrel; a tubular flexible sleeve valve disposed in said annular chamber and dividing said annular chamber into an annular flow passage and a charge chamber, said housing and said mandrel having lateral ports opening to said flow passage at longitudinally spaced locations, said sleeve valve being biased by the pressure of a charge of gas in said charge chamber toward engagement with one of said mandrel and said housing to close the ports thereof; and reinforcing means in said flexible sleeve providing protuberances thereon each engageable with one of said lateral ports of said one of said mandrel and said housing to close said port; said reinforcing means having a portion surrounding said protuberance holding the portion of said sleeve adjacent said protuberance out of engagement with that

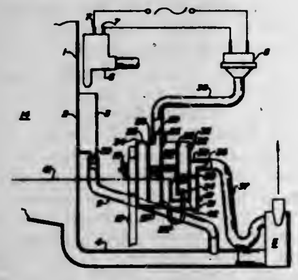
portion of said one of said mandrel and said housing adjacent said port to admit fluid pressure between the sleeve and said one of said mandrel and said housing adjacent said port.

3,294,109
SEALING MEANS FOR FIRE HYDRANT ACTUATOR
John J. Smith, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Jan. 20, 1964, Ser. No. 338,934
15 Claims. (Cl. 137—298)



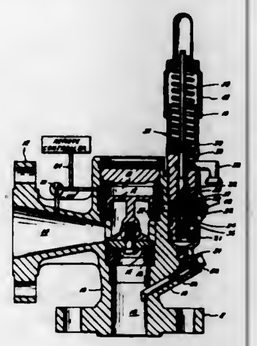
13. A fire hydrant comprising a barrel; top closure means detachably secured to said barrel; a reciprocating valve stem extending upwardly within said barrel; an elongated operating nut rotatably supported in said closure means and having a portion thereof threadedly engaged with the upper end of said stem; a substantially rigid sleeve element surrounding a portion of said stem and a portion of said operating nut, said sleeve element being fixedly attached to said stem and being slidable relative to said operating nut; and sealing means between said sleeve element and said operating nut and between said sleeve element and said stem.

3,294,110
LIQUID LEVEL CONTROL
Kazimir Stanislaus Rozanov, Glasgow, Scotland, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Mar. 5, 1964, Ser. No. 349,554
Claims priority, application Great Britain, Mar. 15, 1963, 10,466/63
11 Claims. (Cl. 137—386)



1. A liquid level control for a receptacle having an inlet valve and automatic regulating means for opening and closing said valve comprising; a first tube having one end communicating with the interior of said receptacle near the bottom thereof and having its other end communicating with an overflow chamber, the overflow level of said overflow chamber being substantially the same as the desired liquid level in said receptacle, a second tube having one end communicating with the overflow of said overflow chamber and having its other end comunicating with a pressure actuated switch, said pressure switch being above the overflow level of said overflow chamber and coupled to said automatic regulating means, whereby when the liquid in said receptacle reaches the desired level the liquid overflows from said overflow chamber into said second tube thereby compressing the air in said second tube which causes actuation of said pressure switch to close said inlet valve through said automatic regulating means.

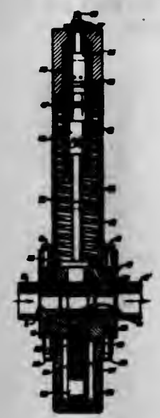
3,294,111
RELIEF VALVE
Bolling A. Abercrombie and Joseph W. Taylor, Houston, Tex., assignors to U.S. Industries, Inc., New York, N.Y.
Continuation of application Ser. No. 294,273, July 19, 1963. This application June 1, 1965, Ser. No. 460,097
3 Claims. (Cl. 137—492)



1. As a subcombination, a pilot valve adapted to admit and release pressure fluid into a pressure chamber in response to the pressure of the fluid, comprising, in combination, a housing having a bore, an inlet port, an exhaust port and an intermediate port connecting the bore with the pressure chamber, an inlet valve in the bore between the inlet port and the intermediate port to control the flow of pressure fluid to the pressure chamber, an exhaust valve located between the intermediate port and the exhaust port to control the flow of pressure fluid from the pressure chamber, each valve having a valve member and a valve seat with the inlet valve having an effective area exposed to pressure fluid larger than the exhaust valve, said exhaust valve seat being a flat, relatively thin, annular ring made of elastomer material and the valve element having a flange portion with sides converging toward its end to provide a surface for engaging the flat side of the seat, said surface having a relatively small area as compared to the area of the flat side of the seat and having a diameter substantially larger than the inside diameter of the seat to allow upstream pressure to act on the portion of the seat inside the flange of the valve element and cause it to flow against the flange and increase the area of the seal between the seat and the flange, stop means to limit the distance the valve element of the exhaust valve can travel toward the exhaust valve seat, resilient means urging the exhaust valve

closed, and means interconnecting the valve member of both valves to prevent the valves from being closed simultaneously.

3,294,112
REMOTELY OPERABLE FLUID FLOW CONTROL VALVE
Bruce J. Watkins, Palo Verdes Estates, Calif., assignor to Regan Forge & Engineering Co., San Pedro, Calif., a corporation of California
Filed July 1, 1963, Ser. No. 291,725
7 Claims. (Cl. 137—494)



1. A remotely operated flow bean for use in subsea oil wells comprising:

a valve body having a flow stream passage to be interconnected with the flow stream of a subsea oil well and a gate receiving passage normal to and intersecting said flow stream passage;

gate means slidably mounted in said gate receiving passage to move normal to and through said flow stream passage, said gate means including a plurality of individual orifices of different sizes for alignment with said flow stream passage on movement of said gate means to selectively restrict fluid flow through said flow stream passage;

biasing means associated with said body and gate means to bias said gate into an open starting position;

control means associated with said body for moving said gate means against said bias relative to said flow stream passage to selectively align any of said orifices with said flow stream passage to control fluid flow therethrough in response to flow stream back pressure;

ratchet means for holding said gate against said bias in positions selected by operation of said control means with a selected orifice aligned with said flow stream passage; and

resetting means for holding said ratchet means inoperative under said bias upon movement of said gate to a fully raised position by application of fluid stream back pressure on said control means and for releasing said ratchet means into operative position on return of said gate to said starting position, said control valve thereby being fully operable from a starting position through selected orifice aligned positions to a fully raised position and reset back to said starting position by the selected application of flow stream back pressure through the single flow line in which said valve body is interconnected and from a location remote from said control valve.

3,294,113
WELL BORE PRESSURE REGULATOR APPARATUS
David V. Chenoweth, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 2, 1963, Ser. No. 327,220
17 Claims. (Cl. 137—[illegible])

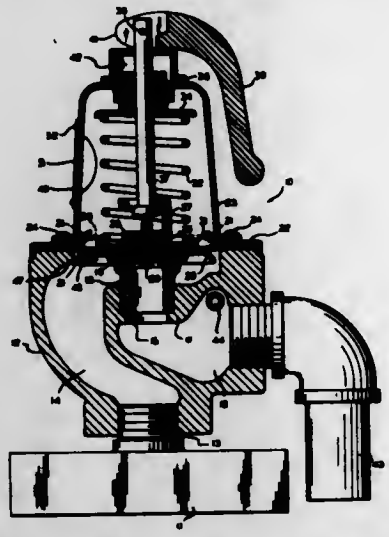


1. In a pressure regulator for fluid flowing through tubing in a well bore: a body adapted to be mounted in the tubing and having a fluid passage therethrough; a first valve member in said body providing a valve seat; a second valve member in said body movable upwardly from said seat by fluid pressure in said body therebelow; means providing a lower seal between the exterior of said second member and body to prevent fluid in said body below said second member from flowing between the entire circumference of said exterior of said second member and body, said second member having a surface responsive to fluid pressure in said body thereabove to urge said second member downwardly toward said valve seat; means providing an upper seal between the exterior of said second valve member and body to prevent fluid in said body above said second member from flowing between the exterior of said second member and body; the seal diameter of said lower seal being greater than the seal diameter of said upper seal; said body and second member providing a space therebetween and between said upper and lower seals; said body having another passage establishing fluid communication between the exterior of said body and said space to allow fluid pressure in the tubing externally of said body to pass through said another passage into said space and act on and urge such second member downwardly toward said seat, the fluid pressure force below said second valve member and acting on said second valve member to urge said second valve member upwardly from its seat being greater than the fluid pressure force in said space and acting downwardly on said second valve member to urge said second valve member downwardly toward its seat.

3,294,114
PRESSURE RELIEF VALVE HAVING MEANS TO INSURE FULL OPENING UPON FAILURE OF THE DIAPHRAGM
Henry P. Birkemeier, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, a corporation of Maryland
Filed Apr. 23, 1964, Ser. No. 361,953
3 Claims. (Cl. 137—510)

1. A pressure relief valve comprising a valve body having an inlet and an outlet and a valve seat between said inlet and outlet, a valve disc operatively related to said seat, a valve bonnet secured to said valve body, a diaphragm secured to said valve disc and having the periphery thereof secured between said valve body and said

valve bonnet, an auxiliary valve disc exposed to inlet pressure and bearing against the underside of said diaphragm, a spring plate bearing against the opposite side of said diaphragm, spring means acting between said bonnet and said spring plate and normally urging said disc against said seat, the diaphragm and auxiliary valve disc being responsive to a predetermined inlet pressure to move the disc away from said seat, and structure providing for the operation of said valve to full relief opening upon rupture of said diaphragm comprising a substantially circular opening in said valve body across which opening said dia-



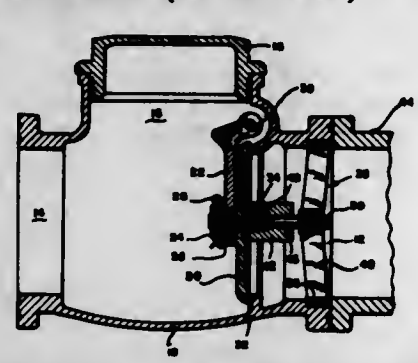
phragm extends, the diameter of said opening being slightly greater than the diameter of said auxiliary valve disc, the portion of said bonnet adjacent the part secured to said body having an inner surface the size of which is sufficiently larger than said auxiliary valve disc to permit the clamping of said diaphragm therebetween, an annular flange on said auxiliary valve disc, said diaphragm and said auxiliary valve moving against the inner surface of said bonnet with said diaphragm therebetween upon rupture of said diaphragm to seal said ruptured diaphragm and provide for pressure relief only by way of said outlet.

3,294,115

SWING TYPE CHECK VALVE

Max Koenigsberg, Highland Park, Ill., and Richard J. Hall, Hales Corners, Wis., assignors to Milwaukee Valve Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed July 22, 1963, Ser. No. 296,840
3 Claims. (Cl. 137—527)



3. A swing type check valve comprising, a valve housing member having a valve seat; a disc member pivotably mounted in said housing and adapted to normally engage said seat to close the check valve, said disc member being responsive to flow through said housing in one direction to move away from said seat; a magnetizable component connected to one of said members and a magnet component connected to the other of said members; said components having such relative position in respect to each other, that said components exert a magnetic closing bias upon said disc member when said disc member engages said seat, and that said magnetizable component moves (relative to said magnet component) out of the effective magnetic force of said magnet component when said disc member moves away from said valve seat; and spring means interposed between one of said components and the member to which it is connected to thereby permit limited relative motion between said components independently of the relative motion between said housing and disc members.

3,294,116

NON-REFLUX VALVES

Jean Tremeau, % Societe des Clapets, Boite Postale 142, Chalon-sur-Saone, France

Filed Apr. 25, 1963, Ser. No. 275,711
4 Claims. (Cl. 137—541)



1. A unidirectional valve for enabling the flow of fluid in only one direction, comprising a casing having a passage therethrough for the flow of said fluid, said casing having an integral constricted portion terminating in a seating at one end thereof and a shoulder at the other end thereof, said constricted portion forming a guideway in said casing, a movable egg shaped valve member, said valve member having a plurality of flexible vane like appendages dependent therefrom, said vane like appendages having a flat rectangular cross-section extending radially to the axis of fluid, said valve member normally resting on the seating to preclude fluid flowing in one direction and moving from said seating responsive to fluid flow in the other direction, said appendages extending through said constricted portion with the outer edges of said appendages being in sliding engagement with the inner walls of said constricted portion so that the travel of said valve member is restricted to a substantially straight line motion, said appendages terminate in laterally projecting claws, said claws lying in vertical alignment with said constriction and helical coil spring means floating between said claws and said shoulder without being anchored to either said claws or said shoulder, whereby said egg shape said vane like appendages and said floating spring cooperate to substantially eliminate rotational movement of the valve.

3,294,117

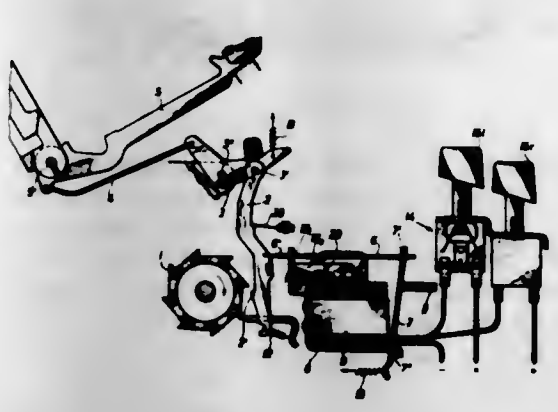
SELECTOR ARRANGEMENT FOR TYPEWRITERS HAVING FEWER OPERATING MEANS THAN TYPELEVERS

Hans Eichemeyer, Wilhelmshaven, Rolf Koenen, Cologne-Hohenhaus, and Otto Winter, Wilhelmshaven, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany

Filed Apr. 10, 1964, Ser. No. 358,721
Claims priority, application Germany, Apr. 10, 1963, O 9,336
19 Claims. (Cl. 197—17)

1. A selector arrangement comprising, in combination, a set of groups of movable elements, each element being movable from an inoperative position to an operative position; a set of actuating members respectively correlated

with said groups of movable elements, each actuating member being movable between a plurality of coupling positions respectively located opposite different elements of the respective group, and being movable in each coupling position to an actuating position for moving the respective movable element to said operative position; control means connected to said actuating members and being operable for moving said actuating members simultaneously between said coupling positions; a set of operating means respectively correlated with said actuating members and operable for moving the same to and from said actuating position for moving the movable element located opposite the same in the respective coupling position to said operative position; and a set of groups of selector means,



each group of selector means being correlated with one of said operating means and with the respective actuating member, and each selector means being correlated with one of said movable elements, respectively, each selector means being operatively connected with said control means to actuate the same to cause movement of the correlated actuating member to a coupling position cooperating with the respective correlated movable element, and operatively connected with the respective operating means correlated with the respective group to cause movement of the respective actuating member to said actuated position so that upon actuation of any selecor means, the corresponding movable element is moved to said operative position.

3,294,118

FILLING VALVE FOR GAS LIGHTERS

Karl-Erich Wieden, Solingen-Merscheid, and Paul Heling, Solingen-Wald, Germany, assignors to Firma Wieden & Co. G.m.b.H., Solingen-Ohligs, Germany, a corporation of Germany

Filed July 7, 1964, Ser. No. 380,845
Claims priority, application Germany, July 15, 1963, W 34,888
2 Claims. (Cl. 137—588)

1. A filling valve for gas lighters comprising

a valve housing having a substantially cylindrical bore extending through the entire length of said valve housing adapted to be inserted into an opening of a fuel tank,

a spring-biased valve body longitudinally movable in said valve housing,

air escape passage means formed by slight radial play between said valve body and housing,

said valve body having an axial bore open at the outer end thereof and terminating short of the inner end of said valve body, and

said valve body has two oppositely directed and substantially radial entrance bores communicating with said axial bore thereof and terminating at the outer periphery of said valve body,

said valve housing terminating at its lower end into a conically widening valve seat face,

said valve body constituting closing means for the inner end of said valve housing, and

said conically widening valve seat face of said valve housing being disposed umbrella-like opposite said entrance bores of said valve body in the open, low-



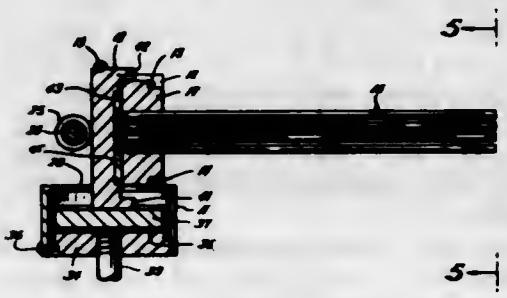
ered position of said valve body, and causing repeated reflections of the fuel against said valve seat face to prevent escape of fuel from the tank.

3,294,119

FLUID VALVE

David Lavon Hunt, P.O. Box 12021, Houston, Tex. 77017

Filed Apr. 3, 1964, Ser. No. 357,100
6 Claims. (Cl. 137—625.48)



1. In a valve for controlling the passage of fluid through conduits, the combination comprising:

a body member having

a lower portion and

two spaced apart upper projections attached to said lower portion and forming a slot therebetween.

a valve block removably secured in said slot and having

a plurality of conduits connected to the front side thereof and communicating therethrough to the back side thereof, for conducting pressurized fluids therethrough, said back side having a flat and uniform surface,

a valve head adapted for close pressure contact with

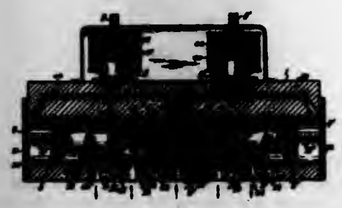
a first resilient biasing means for urging said valve block, said valve head having lugs attached to the upper and lower ends thereof for engaging said valve block and limiting the length of said linear reciprocation, and having a recess provided in the front side of said valve head,

an abrasive resistant plate mounted in said recess, with said plate having a plurality of valve ports on the front side thereof for alternately closing and opening fluid passage through preselected ones of said conduits,

a first resilient biasing means for urging said valve head and said plate against said back side of said valve block, and

means for reciprocating said valve head linearly with respect to said valve block at preselected intervals.

3,294,120
MULTIWAY CONTROL VALVES
Erich Rachner, Remmelshausen, Germany, assignor to Erich Herion, Stuttgart-Frauenkopf, Germany
Filed Jan. 15, 1964, Ser. No. 337,902
Claims priority, application Germany, Jan. 23, 1963, H 48,032
10 Claims. (Cl. 137—627.5)



1. A control valve comprising, in combination:

(a) a valve casing formed with a cavity having a plurality of portions and with inlet means, two controlled outlets, and two return outlet means, said inlet means, outlets, and outlet means communicating with respective portions of said cavity;

(b) two plunger members in said cavity, each plunger member being movable toward and away from a blocking position in which said plunger member sealingly engages said casing in said cavity for separating a portion of said cavity communicating with an associated controlled outlet from another portion of said cavity communicating with an associated return outlet means;

(c) motion transmitting means connecting said plunger members for movement of each plunger member away from the blocking position thereof when the other plunger member moves toward the blocking position of the same, and for movement of each plunger member toward the blocking position thereof when the other plunger member moves away from the blocking position of the same;

(d) two valve seats interposed in said cavity between respective portions of said cavity communicating with said two controlled outlets and the portion of said cavity communicating with said inlet means, each valve seat being formed with a valve opening;

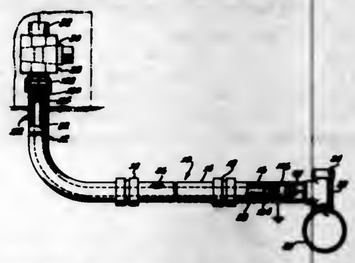
(e) two valve elements movable in said cavity toward and away from respective valve closing positions in which said valve elements engage respective valve seats and close the openings thereof;

(f) yieldably resilient means biasing said valve elements toward the respective valve closing positions; and

(g) abutment means associated with each of said plunger members for joint movement, each abutment means engaging one of said valve elements for moving the same away from the closing position thereof, and for thereby opening communication between the associated controlled outlet and said inlet means when the associated plunger moves in a direction toward said blocking position thereof; and

(h) actuating means for actuating said movement of said plunger members.

3,294,121
METHOD AND APPARATUS FOR INSERTING A TUBE INTO A PIPE
Jonathan S. Powell, Pasadena, and Paul Weldon, Orange, Calif., assignors to Southern California Gas Company, Los Angeles, Calif., a corporation of California
Filed June 7, 1963, Ser. No. 286,569
14 Claims. (Cl. 138—97)



2. Apparatus for lining a pipe, comprising in combination: a tubular member for insertion into said pipe to provide a flow path other than said pipe; and an assembly for establishing a seal between one end of said tubular member and said pipe, said assembly including an expansible metal sleeve connected to said end of said tubular member, said sleeve having an annular groove formed in the inner surface thereof to establish a region of reduced wall thickness, an annular sealing member positioned on the outer surface of said sleeve and overlying said region of reduced wall thickness, an expander tool positioned within the bore of said sleeve and being in sealing engagement with the inner surface of said sleeve on both sides of said groove, said expander tool having a passageway therein communicating with said annular groove, means for preventing relative movement between said sleeve and said tool until a predetermined force is exerted on said tool, and means for supplying fluid under pressure to the passageway in said tool.

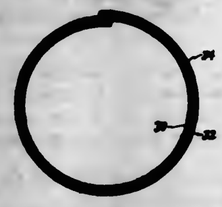
3,294,122
TUBING PROTECTOR
Lorld G. Sharp, Irving, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,263
7 Claims. (Cl. 138—110)



2. A protected tubing assembly for use in a well separately completed in more than one subterranean formation wherein a fluid stream containing particulate matter impinges thereon which comprises tubing and a sleeve comprising a plurality of elastomeric sections radially stretched about said tubing and held in stretched condition thereby, each section when relaxed having a bore of lesser diameter than the outer diameter of said tubing, a portion of reduced outer diameter on one end thereof,

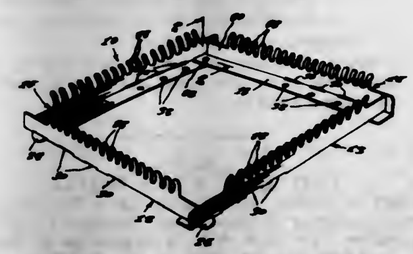
and internal annular recess provided inside the other end thereof, said recess and said reduced end portion being complementary in shape and length and joined so that the reduced end portion fills the recess and the overlapped ends are in elastically gripped and sealed relationship, and an outer surface continuously curving at a radius between 0.025 inch and 0.25 inch to minimize the surface area normal to the impinging stream.

3,294,123
OIL PERMEABLE PAPER LAMINATED CYLINDER AND THE LIKE
Charles F. Foster, Maple Glen, Pa., and Frank S. Nichols, Pittsfield, and Eugene K. Steele, Dalton, Mass., assignors to General Electric Company, a corporation of New York
Filed Sept. 18, 1963, Ser. No. 309,765
2 Claims. (Cl. 138—144)



1. A laminated cylinder comprising a plurality of layers of paper, each layer being bonded to an adjacent layer by a fluid permeable adhesive coating applied in the form of a suspension of polymer particles in a non-solvent medium, said fluid permeable adhesive crazing during curing which bonds said adjacent layers together, said crazed adhesive coating having cracks extending completely through said adhesive coating making said adhesive coating fluid permeable.

3,294,124
ADJUSTABLE WEAVING LOOM
Daniel A. Berger, 1749 E. 24th St., Brooklyn, N.Y. 11229
Filed Mar. 1, 1965, Ser. No. 435,908
3 Claims. (Cl. 139—34)



1. An adjustable weaving loom frame comprising:

(a) four side bars,

(b) each side bar being of angle bar form, having a horizontal leg and a vertical leg,

(c) a row of upstanding teeth extending from the upper edge of the vertical leg,

(d) a tongue extending from one end of the horizontal leg, integral therewith and in the plane thereof,

(e) a notch at the base of said tongue opening at the free longitudinal edge of said horizontal leg and normal thereto,

(f) a downwardly projecting detent in said horizontal leg adjacent to and inwardly of said tongue notch,

(g) a row of longitudinally spaced and aligned slots in said vertical leg located substantially at the juncture of the vertical leg with the horizontal leg, and

(h) a row of longitudinally spaced and aligned openings in said horizontal leg with each opening opposite a slot in said vertical leg,

whereby an interlocking engagement of said side bars to each other to provide said loom frame is effected by the insertion of a tongue of one side bar into a selected slot in the vertical leg of an adjacent side bar with a part of said vertical leg fitting into said tongue notch and the detent in the horizontal leg of said one side bar projecting into the opening in the horizontal leg of the adjacent side bar opposite said selected slot to thereby provide a corner connection wherein said adjacent side bars are right-angularly related.

3,294,125
ELECTRODE COIL AND METHOD
Thomas H. Heine, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1963, Ser. No. 323,741
10 Claims. (Cl. 140—71.5)



1. The method of making a coiled wire and mandrel suitable for use as an electrode coil for an electric discharge device, which method comprises:

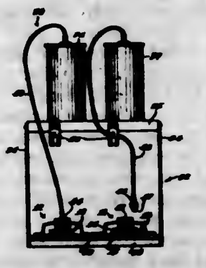
(a) winding a first wire as a coil about a first mandrel;

(b) placing the resulting first-wire-coiled mandrel parallel to and adjacent a second mandrel;

(c) overwinding a second wire as a coil completely about said first-wire-coiled mandrel and said parallel and adjacent second mandrel to form an overwound composite; and

(d) when said overwound composite is in its desired electrode coil configuration, removing said first mandrel while leaving said first wire coil to hold said second wire coil in position about said second mandrel.

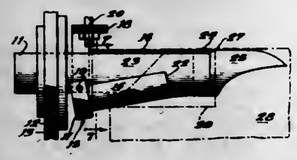
3,294,126
APPARATUS AND METHOD FOR FILLING NURSER
Raymond W. Barton, Evansville, Ind., assignor to Mead Johnson & Company, a corporation of Indiana
Filed Apr. 21, 1964, Ser. No. 361,360
6 Claims. (Cl. 141—9)



1. The method of filling an expandable nurser which comprises providing first and second separate supplies of different nursing formulae, connecting the first supply to the nurser for filling the nurser by gravity flow, restricting expansion of the nurser to a predetermined level of formula whereby the nurser is filled to a predetermined capacity less than full capacity, disconnecting said first

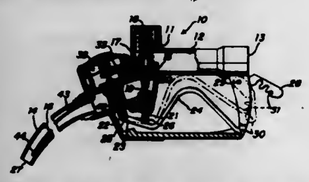
supply, releasing said nurser for greater expansion beyond said first predetermined formula level, and connecting said second supply to the nurser for filling said nurser to a second predetermined formula level by gravity flow of said second formula from said second supply.

3,294,127
EXPANDABLE SPOUT FOR BAG FILLING MACHINE
Erwin M. Lau, Dolton, Ill., assignor to Black Products Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 16, 1964, Ser. No. 411,469
7 Claims. (Cl. 141—68)



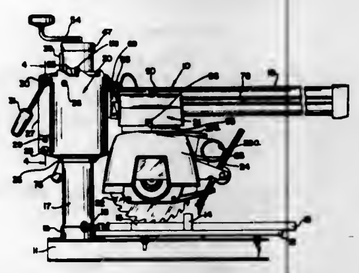
1. An expandable spout for a bag filling machine comprising a filling tube, a flexible resilient sleeve surrounding said filling tube, an expander device disposed between said sleeve and said filling tube, and means for moving one end of said expander device away from said filling tube against the resilience of said sleeve to engage the valve of a bag which has been fitted over said spout.

3,294,128
AUTOMATIC DISPENSING NOZZLE
Corbin C. Poynter, Downers Grove, Ill., assignor to Dover Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,097
12 Claims. (Cl. 141—209)



1. In an automatic shutoff dispensing nozzle or the like including a housing having an actuating lever for opening and closing said nozzle and having diaphragm sensing means for automatically closing said nozzle when a filled condition is sensed thereby, the improvement comprising an elongate axially reciprocable member carried by said housing, means operatively interconnecting one end of said member to said lever, a latch member supported for reciprocal sliding movement transversely of said elongate member adjacent to the other end of the latter for engaging and latching said elongate member in one position relative to said housing, interengaging means between said other end of said elongate member and said latch member for effecting said latching of the elongate member in said one position, means tending to move said elongate member axially to another position to release said lever from its nozzle opening position, means operatively interconnected between said diaphragm sensing means and said latch member to slide said latch member to its unlatching position when a filled condition is sensed whereby said elongate member can be moved to said another position, means acting to return said elongate member to said one position thereof, and means acting to reversely slide said latch member and effect re-interengagement of said other end of the elongate member with said latch member by the return movement of said elongate member to the said one position.

3,294,129
RADIAL ARM SAW MACHINE
Samuel H. Kohler and Ewald Schutz, Lancaster, Pa., assignors to De Walt, Inc., Lancaster, Pa., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,100
6 Claims. (Cl. 143—6)



1. In a radial arm saw machine having a stationary column, an arm extending horizontally from the upper portion of the column, and a saw carriage mounted for reciprocation on the arm; the improvement which comprises:
(a) a hub between the column and the arm;
(b) a hub ring within said hub;
(c) means mounting said hub ring to the column for vertical movement of said hub ring on the column;
(d) means mounting said hub to said hub ring for a conjoint vertical movement on the column, thereby facilitating an adjustment in the depth of cut;
(e) said last-named means including means for circumferentially moving said hub relative to said hub ring and about the axis of the column, thereby facilitating a mitre cut, and comprising:
(1) an internal annular flange formed on the upper portion of said hub;
(2) a cooperating annular peripheral flange formed on the lower portion of said hub ring, whereby when said hub ring is seated within said hub, said cooperating flanges abut one another; and
(3) fastening means passing radially through said hub and including a member within said hub and lodged against the bottom of said peripheral flange on said hub ring; and
(f) means mounting the arm to said hub for rotary movement of the arm about its own axis, thereby facilitating a bevel cut.

3,294,130
PNEUMATIC SCREW DRIVER
Herbert M. Dörrer, Mühlhausen, Kreis Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 17, 1963, Ser. No. 295,780
Claims priority, application Germany, July 25, 1962, St 19,524
5 Claims. (Cl. 144—32)

1. A pneumatic screw driver having a housing and automatic screw-feeding means coupled thereto comprising means for retaining a screw in a fixed position in the mouthpiece of said housing, means for applying a rectilinear component of motion to said screw to disengage said screw from said retaining means, and means for applying a rotary component of motion to said screw, said means for applying a rectilinear component of motion to said screw comprising a bit adapted to move axially within said housing toward said mouthpiece, a piston coupled to one end of said bit, said bit and said piston having a bore, tensioning means partially disposed within said bore and having a first extremity fixed within said bore, a cylindrical barrel within said housing and slidably mounted for axial motion therein, said bit and said piston being moveably disposed within said barrel, a cylindrical sleeve closed at a fixed end thereof and flanged at the other end thereof, said cylindrical sleeve being coupled at said flanged end to said barrel, said



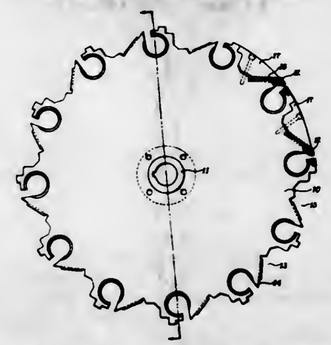
tensioning means being fixed at its second extremity to said closed end of said sleeve, means for applying compressed air internally of said barrel to act upon said piston and said bit to produce rectilinear motion thereof, and clutch means coupled to said bit to allow rotary motion of said bit only subsequent to rectilinear motion thereof.

3,294,131
SHEAR CLAMPING MECHANISM
Robert W. Larson, Ashland, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Jan. 12, 1966, Ser. No. 520,236
4 Claims. (Cl. 144—34)



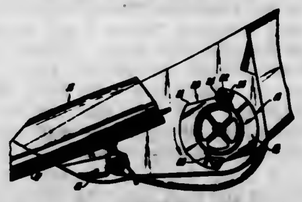
2. A shearing and clamping mechanism for tree harvesting apparatus comprising a support frame, a pair of shear blades pivotally mounted on said support frame for movement toward and away from each other, hydraulic motor means connected between said support frame and each of said shear blades respectively for actuating said blades in a shearing operation, a pair of rigid clamping jaws pivotally mounted on a fixed pivot on said support frame for movement toward and away from each other to clamp the tree therebetween, separate spring means connected between said support frame and each of said clamping jaws for urging them into clamping engagement with the tree, a pair of detent pins one fixedly secured with respect to each of said shear blades for movement therewith, said pins being located between inwardly facing portions of said clamping jaws to abut said portions and thereby constrain said clamping jaws to follow the shearing movement of said shear blades until the surface of the tree is engaged and then become disengaged from said portions, and to re-abut said portions to separate said jaws against the action of said spring means upon retraction of said shear blades.

3,294,132
CIRCULAR CHIPPING DEVICE
Thomas B. Little, Quebec City, Quebec, Canada, assignor to Anglo Paper Products, Limited, Quebec City, Quebec, Canada
Filed Oct. 8, 1964, Ser. No. 402,548
7 Claims. (Cl. 144—218)



7. A wood chipping device comprising a circular frame having an axial hub for rotative mounting of said frame, a plurality of knives mounted on the periphery of said frame, each said knife having a first cutting edge substantially parallel to the axis of said frame and a second cutting edge adjoining one end of said first cutting edge and disposed substantially right angularly with respect thereto, said first cutting edges having a circular path of movement, and said second cutting edges having a circular path of movement of greater diameter than that of said first cutting edges, each alternate one of said knives has said second cutting edge at an end thereof opposite to that of each of the others of said knives.

3,294,133
CONVEYING AND CUTTING AUGER FOR A COMBINE
Helmut Claas, 4 am Kattenpott, Harsewinkel, Westphalia, Germany
Filed Feb. 13, 1964, Ser. No. 344,674
Claims priority, application Germany, Feb. 14, 1963, C 29,158
10 Claims. (Cl. 146—117)



1. A combine harvester including conveying means adapted to push harvested crop transversely to its direction of passage to a threshing mechanism of the harvester, said conveying means comprising a feed auger rotatable about an axis which extends transversely to the direction of passage of the crop and at least one helical rib extending about said auger and outwardly from the peripheral surface thereof, said helical rib being provided with spaced recesses extending from the outer edge of the rib into the same; and cutting means for cutting the harvested crop during conveyance thereof, said cutting means including a knife attached at each recess to said helical rib so as to project into said recess, said knife having a cutting edge extending traversely to the outer edge of said rib and the outer end of each cutting knife being located within the circular side projection of said helical rib.

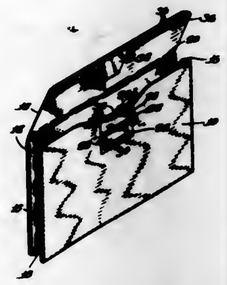
3,294,134
WARDROBE BAG
Irving B. Matrose, Newton Center, and Samuel Matrose, Brighton, Mass., assignors to Montrose Manufacturing Company, Incorporated, Boston, Mass., a corporation of Massachusetts
Filed May 21, 1964, Ser. No. 369,121
9 Claims. (Cl. 190—1)



1. In an elongated wardrobe bag of the type formed of flexible web material, providing a multiplicity of vertically spaced apart compartments accessible from a vertical edge of the bag, said bag having means adapted to support said bag, the improvement wherein said bag comprises the combination of two outer side wall members of flexible web material each extending along the length of said bag and an inner side wall member extending at least along a portion of the length of said outer side wall members, said inner side wall member having a running length substantially longer than the corresponding running length of said outer side wall members, said inner side wall member being configured into a multiplicity of vertically spaced apart special loops, and said inner side wall member secured to said outer side wall members alternatively between said loops by transversely extending joints, said inner side wall member at least extending freely from a first transverse joint with one of said outer side wall members, downwardly a first distance, thence upwardly a second distance substantially greater than said first distance to a second transverse joint with the other of said outer side wall members, thence freely downwardly a third distance less than said second distance, thence upwardly a fourth distance substantially greater than said third distance to a third transverse joint, the running length of inner side wall from said first to said third joints and the length of outer side wall between said first and third joints defining a first compartment, the portion of said inner side wall member extending between said second and third transverse joints forming the bottom of the next above compartment, and said compartments caused to vertically overlap due to said relationship of said third and fourth distances.

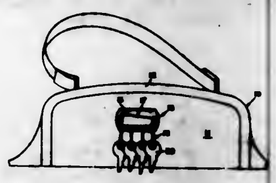
3,294,135
MEANS FOR FASTENING OR SECURING IN CLOSED POSITION, HAND CONTAINERS, PARTICULARLY PORTFOLIO OR COURIER CASES
Murry J. Brenner, 2924 S. Wabash Ave., Highland Park, Ill. 60035
Filed Oct. 1, 1964, Ser. No. 400,840
2 Claims. (Cl. 190—1.6)

1. A portfolio comprising, rectangular front and rear walls, interconnecting members between said walls, said front and rear walls defining a compartment having an opening, a closure member for said opening joined to the upper edge of said rear wall and terminating in a free edge, a horizontally extending slot integral with said front wall comprising a cutout portion in the material of said front wall approximately centrally thereof, a locking flap centrally positioned and attached to the inside of said



closure member and having a free end thereof facing away from the free edge of the closure member and adapted to be inserted into said horizontal slot when said portfolio is closed, and means secured to the front wall rearwardly of the slot defining a pocket in which the flap is secured when inserted into said slot.

3,294,136
KEYHOLDING ACCESSORY FOR A LADIES' HANDBAG
Carl C. Cain, R.D. 1, Box 205, and Betty Sutton, R.D. 1, Central Ave., both of Linwood, N.J. 08221
Filed Dec. 15, 1965, Ser. No. 513,971
1 Claim. (Cl. 190—34)



In combination, a ladies' handbag having an internal wall adapted to be exposed upon opening of the handbag, an elongate finger-press plate in facing relation with said internal wall, a fastener pin secured longitudinally along the facing side of said plate and detachably securing said finger-press member to said wall in said facing relation, and a plurality of key-receiving hooks each including a shank rigidly fixed to the facing side of said finger-press plate projecting transversely from and beyond said plate, a bight portion at the distal end of each shank, and a free-end portion extending from each bight portion along the adjacent shank toward and terminating in a terminal portion short of said plate and projecting away from said wall, said finger-press member being manually engageable to steady said hooks for removal and replacement of keys with respect to said hooks.

3,294,137
KEY CASE
David B. Rubenstein, 10 Dorset Road, Pawtucket, R.I. 02860
Filed Feb. 4, 1964, Ser. No. 342,589
10 Claims. (Cl. 190—40)

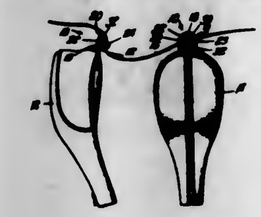
1. A key case comprising a pair of rectangular members in hinged relation to each other, means for releasably locking said members in edge to edge relation to close said case, a wall portion hingedly mounted at said case hinge

and extending between said members, the free edge of said wall portion being adapted to lock adjacent the free edge of either of said members, and means for suspending



a plurality of keys from each of said members, said key suspending means being at opposite ends of said case to suspend said keys toward each other.

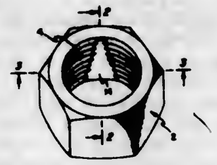
3,294,138
GOLF CLUB HEAD COVER MARKING DEVICE
John G. Pawly, Delavan, Wis., assignor to A. J. Industries Corporation, Delavan, Wis., a corporation of Wisconsin
Filed July 17, 1964, Ser. No. 383,376
2 Claims. (Cl. 190—62)



1. In combination with a golf club head cover having a tab with an eyelet thereon, said eyelet having a hole therethrough extending through said tab, a golf club head cover marking device which comprises: a disk-shaped member substantially larger than said eyelet having a number indicia thereon; an integral elongate stem projecting from said disk-shaped member, said stem having a maximum diameter slightly less than the diameter of said hole in said eyelet and having an elongate hole transversely through the principal portion thereof adapted to receive a head cover tie string; an integral resilient annular protrusion formed on said stem in spaced relation to said disk-shaped member, said protrusion having a maximum diameter greater than the diameter of said hole in said eyelet; said stem extending through said hole in said eyelet so that said annular protrusion thereon and the principal portion of said elongate hole therethrough are on opposite sides of said tab from said disk-shaped member, whereby said marking device can be removably secured to said golf club head cover and the selective individual identification and joining of a plurality of head covers are readily effected.

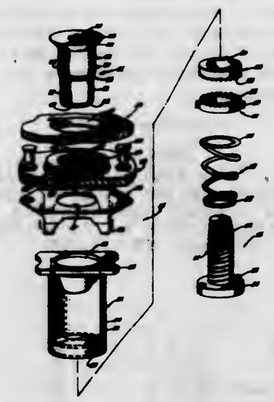
3,294,139
PLASTIC PATCH, SELF-LOCKING THREADED FASTENERS AND METHODS OF MAKING SUCH FASTENERS
Joseph R. Prentice, Clark, N.J., assignor to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Sept. 23, 1964, Ser. No. 398,695
15 Claims. (Cl. 151—7)

1. A self-locking threaded fastener wherein the thread is of standard form and the self-locking characteristic is derived from a patch of thermoplastic material applied in powder form to a plurality of thread convolutions of the unmodified surfaces of the thread to a limited circumferential extent and fused by heat and solidified without work-shaping pressures while the fastener is in a horizontal position, the patch being of the shape of a free-form liquid pool of the thermoplastic material adhered to the



unmodified surfaces of the thread and gradually merging at its boundary edge portions into such surfaces of the thread.

3,294,140
PANEL FASTENER
Frank J. Cocuzza, Palos Verdes Peninsula, Calif., assignor to Calnut, Incorporated, Redondo Beach, Calif., a corporation of California
Filed Sept. 2, 1964, Ser. No. 393,963
4 Claims. (Cl. 151—13)



1. A panel fastener for securing together a pair of apertured panels in facewise abutment, said fastener comprising:
a stud nut assembly, said assembly including a headed cylindrical sleeve element for insertion through an aperture in the first panel, and
means to prevent complete withdrawal of said sleeve element through said aperture after insertion therein;
the head of said sleeve element having means for engagement with driving means;
said sleeve element further having a shank with a threaded bore, said bore extending axially from a point in proximity to the head, to the end of the shank remote from the head;
said sleeve element further having interlocking means disposed at the end of its shank remote from its head; and
a receptacle assembly, said receptacle assembly including
a headed screw, said screw having threading for mating engagement with the threading in the said bore of the shank of said sleeve element;
an open-ended receptacle, said receptacle having such internal configuration as to enable it to house said screw and to rotatably receive said cylindrical sleeve element;
means to secure said receptacle in register and in coaxial alignment with an aperture in the second panel;

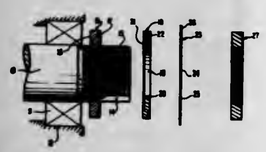
said receptacle being provided with means to hold said screw against rotation relative to said receptacle and in a position with its head remote from the aperture in said second panel and its shank extending coaxially with said receptacle toward said aperture;

at least one helical spring disposed in said receptacle about said screw shank and extending from the screw head toward the opposite end of the screw;

a first annular ratcheting element, the last said element being disposed coaxially in said receptacle and circumscribing said screw, and further being axially movable in said receptacle and relative to the screw shank, the last said element further having one transverse face thereof in abutment against an end of said spring and urged axially by the latter, and having a plurality of teeth disposed on its opposite transverse face, the last said element further being secured against rotation relative to said receptacle; and

a second annular ratcheting element, said second element being disposed in said receptacle in coaxial abutment with said first annular element and movable axially relative to the shank of said screw, and said second element also having teeth on one face in mating engagement with the teeth on said first annular element, and said second element further having means for releasably engaging the interlocking means on the end of said sleeve element of the stud nut assembly, whereby said second element and said sleeve element are coupled together to prevent rotation of said second annular element relative to said sleeve element.

3,294,141
SHAFT MOUNTING ADJUSTMENT NUT MEANS
Eugene B. Schotthoefer and Jerome W. Schotthoefer, both of 3520 Fergerson, Melvindale, Mich. 48127
Filed Oct. 20, 1965, Ser. No. 507,599
2 Claims. (Cl. 151—15)



1. The combination, with a bearing mounted on a shaft at a selected location, the shaft being threaded and having a keyway interrupting the threads and extending along one side thereof, of a shaft mounting means comprising:

an adjustment nut having a screw threaded engagement with the shaft and having inner and outer faces;

the inner face of the adjusting nut being located adjacent the bearing;

the outer face of the adjusting nut having a continuous multiplicity of circumferentially spaced, radial serrations therein;

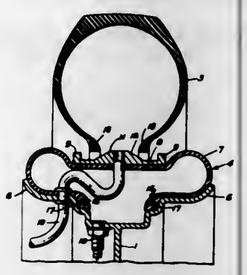
an annular locking disc having a smooth bore engageable over the shaft and having a key engaging within the keyway thereof and positively locking the adjustment nut against turning;

the disc being provided with inner and outer faces, the inner face being arranged adjacent the outer face of the adjusting nut, and the inner face having a circumferential, continuous multiplicity of serrations like the nut serrations and interengaged adjustably therewith to positively locate the nut with respect to the disc and lock the nut against rotation after said interengagement;

a jam nut on the shaft having screw threaded engagement therewith and engaging the disc and being tightened thereagainst to positively locate the disc with respect to the adjustment nut whereby the selected positioning of the adjustment assembly is positively maintained; and

a lock washer interposed between the disc and the jam nut, the lock washer having a key engaging within the keyway and having bendable tabs on its periphery extending radially beyond the disc and bendable about the disc and the jam nut.

3,294,142
PNEUMATICALLY EXPANDABLE TIRE CASING MOUNTING
Elmer W. Robertson, 6965 Park Blvd., Oakland, Calif. 94611
Filed May 19, 1965, Ser. No. 456,959
7 Claims. (Cl. 152—339)



1. In a pneumaticaly expandable mounting for tire casings of several bead diameters

(a) a wheel,

(b) a dished rim on the wheel,

(c) an inflatable radially expandable rim nested in said dished rim,

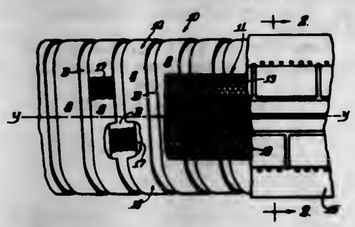
(d) restraining means on said dished rim engaging the sides of said inflatable rim thereby to restrain lateral expansion of the sides of said inflatable rim, and to center and preload said sides thereof,

(e) a radially expandable stiffener crown fixed around the outer periphery of said inflatable rim, being transversely stiff, thereby to prevent crowning, and being contractable radially inwardly to be insertable in tires of several bead diameters,

(f) means on said crown for engaging and limiting the lateral relative movement of the beads of a tire casing on said crown when said inflatable rim is inflated and radially expanded.

3,294,143
RESTRICTIVE TREAD COMPONENT
Larry C. Frazier, Prescott, Ariz., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Apr. 28, 1965, Ser. No. 451,503
11 Claims. (Cl. 152—361)

1. A restrictive tread component for incorporation between the carcass and tread of a pneumatic tire comprising a first annular ply defined by first cord means lying in a plurality of first circumferentially successive and serially connected convolutions, each of said first serially successive convolutions being in overlapping relation with more than one of said first serially successive convolutions, a second annular ply defined by second cord means lying in a plurality of second circumferentially successive and serially connected convolutions, each of said second serially successive convolutions being in overlapping relation with more than one of said second serially successive



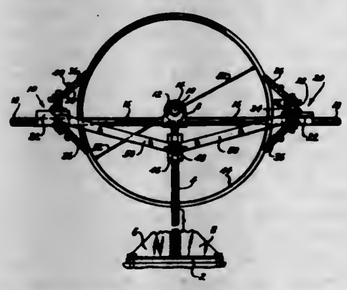
convolutions, and said first and second plies being disposed in superposed laterally offset relation with respect to each other.

3,294,144
REPAIR PATCH
William J. Anderson, Rte. 1, Box 26, Newberg, Oreg. 97132
Filed Oct. 6, 1961, Ser. No. 143,473
11 Claims. (Cl. 152—367)



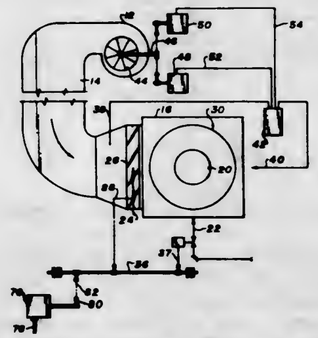
11. A repair patch having an elastomeric body reinforced with at least one cord extending in a plurality of convolutions, each convolution being equally spaced from each adjacent convolution whereby each convolution will carry a proportionate amount of load across a ruptured area in a tire.

3,294,145
SPOKING JIG
Donald M. Basset, 410 W. Holly Ave., Pitman, N.J. 08071
Filed Oct. 24, 1965, Ser. No. 504,384
5 Claims. (Cl. 157—1.5)



1. A jig for a wheel having a hub, a rim and adjustable spokes connecting said rim and hub, comprising: a hub mount for supporting a wheel hub for rotation about a fixed axis; a plurality of wheel rim engaging and supporting means; means supporting said rim engaging means for movement toward and from said axis; and actuating means for simultaneously moving said rim engaging means through equal distances whereby all said rim engaging means are at the same distance from said axis, said rim engaging means being mounted on their supporting means for yieldable movement thereon in a direction generally radial to said axis whereby to indicate a non-concentric portion of said rim.

3,294,146
METERED COMBUSTION AIR SUPPLY SYSTEM
Temple S. Voorhis, Palo Alto, Calif., assignor to Coen Company, Burlingame, Calif., a corporation of California
Filed Apr. 15, 1965, Ser. No. 448,304
2 Claims. (Cl. 158—1)



1. In combination: a single burner having a fixed inlet throat opening; a forced air draft source for supplying air to said burner through said throat opening; a wind box connecting said source to said burner; primary air control means in an open inlet side of said wind box between said source and burner and being in series combination with said throat opening; said primary air control means comprising at least one adjustable vane movable from a substantially fully open position to a nearly closed position to control the rate of air flow from the air source to the burner in relation to the operating load demand of said burner; the cross sectional area opening of the primary damper when in substantially open position being substantially larger than the fixed cross sectional area of the throat opening, and the cross sectional area opening of the primary damper when the vanes are in nearly closed position being substantially smaller than the cross sectional area of the throat opening, whereby the air pressure drop across the primary air control means when the latter is in nearly closed position is substantially greater than the pressure drop across the throat opening, and whereby the pressure drop across the throat opening is substantially greater than the pressure drop across the primary air control means when the latter is in substantially open position; secondary adjustable air control means located to the upstream side of said primary air control means operable to control the rate of air flow from the source to the burner; pressure sensing means for sensing pressure differential across the series combination constituted by said primary damper and said throat opening; and means operatively connected to and responsive to said pressure sensing means for adjusting said secondary air control means to maintain a substantially constant predetermined pressure differential across the series combination.

3,294,147
LIQUID FUEL BURNER CONTROL SYSTEM
Ralph S. Dumon, Cleveland, Ohio, assignor to Hunter Manufacturing Company, Solon, Ohio, a corporation of Ohio
Filed Nov. 15, 1965, Ser. No. 507,828
7 Claims. (Cl. 158—28)

1. A liquid fuel burner control system comprising:

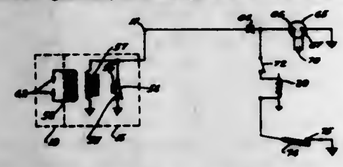
a prime mover;

a combustion chamber having a fuel nozzle communicating therewith;

a fuel supply system including a fuel reservoir;

a pump connected to said reservoir and coupled in driven relationship to said prime mover, a conduit supplying said burner fuel nozzle to said pump;

an electrical system including an electrically-operated normally closed valve in said conduit, a magneto coupled in driven relationship to said prime mover and having a secondary winding and having a primary winding electrically coupled in controlling relationship to said electrically-operated valve, and normally closed interrupter contact means connected to said primary winding, thermostat switch means



positioned to respond to the temperature of said burner and electrically coupled in circuit with said electrically-operated valve to interrupt the electrical current to said valve when said thermostat switch means is heated to a predetermined temperature thereby causing said valve to close, said system further comprising rectifier means electrically coupled between said magneto primary winding and said electrically operated valve, a capacitor means connected to the output of said rectifier means to store current pulsations whereby direct current is supplied to said electrically operated valve.

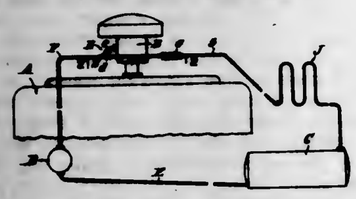
3,294,148

FUEL FEEDING SYSTEM FOR INTERNAL COMBUSTION ENGINES

Humberto R. Alvarado, 1221 W. 66th St., Los Angeles, Calif. 90044

Filed Mar. 2, 1965, Ser. No. 436,505

7 Claims. (Cl. 158—36.4)



1. In combination in a motor vehicle for preventing vapor lock in the vehicle where such vapor lock results from the vaporization of fuel for driving the motor vehicle where the motor vehicle includes a fuel pump, a fuel reservoir, a carburetor and a motor and where the fuel pump, the fuel reservoir, the carburetor and the motor are disposed within an enclosure,

means for providing for the introduction of fuel from the fuel reservoir to the carburetor,

means disposed in contiguous relationship to the carburetor for providing a by-pass of a portion of the fuel from the carburetor,

means responsive to the difference in temperature between the fuel in the by-pass means and the atmosphere within the enclosure for providing a port with progressively increasing dimensions for the by-pass means in accordance with progressive differences between the temperature of the fuel in the by-pass means and the atmosphere, and

means for providing for the introduction of the fluid in the by-pass means to the reservoir and for providing for the cooling of such fluid during such introduction of the fluid to the reservoir.

3,294,149

LIQUID FUEL BURNING HEATING APPLIANCES

Harbans Singh Dewan, Greenford, England, assignor to Aladdin Industries Limited, Middlesex, England, a British company

Filed Mar. 22, 1965, Ser. No. 441,463

Claims priority, application Great Britain, Mar. 24, 1964, 12,303/64

2 Claims. (Cl. 158—98)



1. A liquid fuel burning appliance having a fuel reservoir and a wick trough, said trough being divided into two or more sections with each of said sections containing a separate portion of wick, and each fed by a separate fuel pipe, the points at which the trough sections are fed being progressively higher around the trough with the higher feeding points nearer to the fuel reservoir than the lower ones.

3,294,150

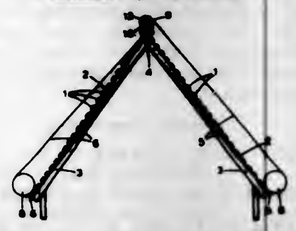
SUNBLINDS FOR GREENHOUSES OR THE LIKE

George Thomas, 98 Bridge Road, Petersfield, England

Filed Dec. 20, 1965, Ser. No. 514,115

Claims priority, application Great Britain, Jan. 2, 1963, 278/63; Apr. 3, 1963, 13,142/63

7 Claims. (Cl. 160—6)



5. A greenhouse having a sunblind adjustable between open and closed positions respectively permitting and limiting entry of sunlight through a light transmitting wall portion into the greenhouse, adjusting means operable to adjust the sunblind from one position to the other, and control means for the adjusting means including a pair of means sensitive to two different conditions influencing temperature within the greenhouse, said pair of means comprising an element sensitive to the temperature in the greenhouse and an element sensitive to light intensity in the greenhouse whereby said control means closes the sunblind when the temperature and light intensity each succeeds a predetermined level, and opens the sunblind when either the sensitive temperature or light intensity falls below a predetermined level.

3,294,151

AUTOMATIC ELECTRIC AWNING

Andrew G. Hartley, 3433 NE. Cadet, Portland, Oreg. 97220, and John D. Beery, 2074 NE. 134th Place, Portland, Oreg. 97230

Filed Oct. 5, 1964, Ser. No. 401,887

5 Claims. (Cl. 160—6)

1. An electrically controlled awning assembly comprising an awning arranged for movement between open and closed positions, electric motor means arranged to drive the awning to open and closed positions, an electric circuit for said electric motor means including a pair of auxiliary circuits, one of said auxiliary circuits being arranged to operate said electric motor means to produce opening movement of said awning and said other auxiliary circuit being arranged to operate said electric motor means to produce closing movement of said awning, weather sensing means in said circuit operable to control the opening and closing driving movements of said electric motor means, and a delay relay in each of said auxiliary circuits arranged to delay actuation of said motor means for a selected time after a controlling signal from said sensing means.



3,294,152

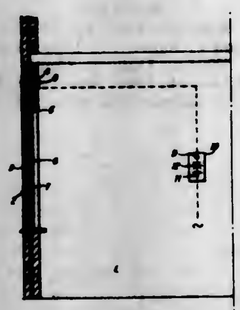
WINDOW SCREENS

Arend William Kattenhoven, Chestnut House, Barrowby, Grantham, England

Filed Mar. 27, 1964, Ser. No. 355,909

Claims priority, application Great Britain, Apr. 3, 1963, 13,249/63

7 Claims. (Cl. 160—6)



1. Apparatus for screening a room against solar radiation incident upon a surface in the room comprising, a window curtain of a material that will both reflect and transmit solar radiation, a light sensitive device within the room, means controlled by the light sensitive device for moving the curtain to vary the window area covered by the curtain, said light sensitive device being positioned to receive light of an intensity which bears a substantially constant relationship to the intensity of the light incident upon the said surface, the said device being positioned to receive and respond to both light passing directly through the window to the said surface and light passing through the window and the curtain material to the said surface.

3,294,153

VENETIAN BLINDS

Clarence F. Pennick, Perrysburg, Ohio (7 Mechanic St., Box 278, Merrimacport, Mass. 02739)

Filed Oct. 7, 1964, Ser. No. 402,169

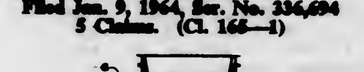
10 Claims. (Cl. 160—176)

10. A Venetian blind headrail comprising:

a pair of rigid slide rods disposed horizontally and closely juxtaposed to each other along their length;

pairs of blind slat support means;

means for securing said slide rods in predetermined position while allowing reciprocal longitudinal movement and for directing the slat support means for fastening to said slide rods, first ones of each pair of slat support means being secured to one slide rod while the respective others of each pair are secured to the other slide rod; and



whereby longitudinal reciprocation of said slide rods causes lengthening and shortening of respective ones of the pairs of slat support means to thereby enable tilt control of the blind.

3,294,154

HATCH COVERS

Jack Jerome, East Williston, N.Y., assignor to Marine Steel Corporation, New York, N.Y.

Filed May 15, 1959, Ser. No. 813,622

1 Claim. (Cl. 160—198)



Hatch cover arrangement on board ships, railway wagons and the like comprising at least two hatch cover sections having two adjacently located edges, a free space between the adjacent edges of said sections, protruding extensions fixedly provided on the adjacent edges of said sections facing each other and extending into said space, circular practically identical toothed edge portions on said extensions in mutual continuous meshing engagement, the centers of the circles corresponding to said circular edge portions being situated on said respective extensions, pivot pins located on said extensions centrally with respect to said toothed edge portions, a connecting link forming member pivotally mounted on said two pivots, an arm forming extension on said link member and jack means with a jack rod pivotally mounted on one of said sections and having its jack rod pivotally connected to said arm forming extension to bring said section in the hatch closing and the hatch opening positions.

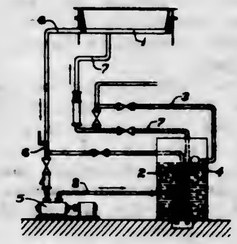
3,294,155

METHOD AND APPARATUS FOR CIRCULATING COOLANT

Hanns Biegler, Josef Zimmermannstrasse, Wesseling, near Cologne, Germany, and Friedrich Endter, 606 2nd Ave., New York, N.Y. 10016

Filed Jan. 9, 1964, Ser. No. 336,694

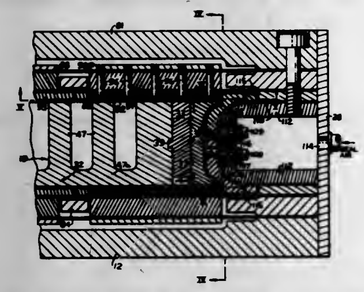
5 Claims. (Cl. 165—1)



1. A process for supplying liquid coolant to a cooling element associated with a reaction vessel, comprising

sucking the coolant through the cooling element from a source having a free liquid surface at a lower level than the cooling element, and of a capacity sufficient to contain all the liquid in the cooling element.

3,294,156
ROTARY REGENERATOR
Albert H. Beaufrere, Huntington, N.Y., and Lloyd E. Johnson, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 21, 1965, Ser. No. 426,758
9 Claims. (Cl. 165—9)



7. A seal in a rotary regenerator for keeping separate the compartments of the rotary regenerator through which a drum rotates wherein the compartments have different temperature and pressure conditions comprising in combination;

a generally elongated sealing support member disposed adjacent to a surface of the drum having a centrally located longitudinally extending slot, wherein at least one surface which includes the slot is concave;

a first flexible diaphragm member secured to the concave surface of said support member and disposed to span the centrally located slot;

a second flexible diaphragm member secured to the opposite surface of said support member and disposed to span the slot;

a stabilizing block disposed in the slot and affixed to said first diaphragm members and said second diaphragm;

sealing blocks affixed to said first diaphragm member on its surface remote from said second diaphragm member and adjacent to the drum surface; and

means operable to apply a pressure against said first diaphragm member which urges said sealing blocks away from said second support member and into the drum surface.

3,294,157
REVERSE CYCLE HEAT PUMP
Charles P. Coughlan, Old Mount Vernon Road, Mount Vernon, N.H. 03057
Filed July 21, 1964, Ser. No. 384,142
9 Claims. (Cl. 165—29)

9. In a system for heating and cooling an enclosed, human inhabited space, the combination of:

a heat-insulated, heat-sealable housing mounted outside said space;

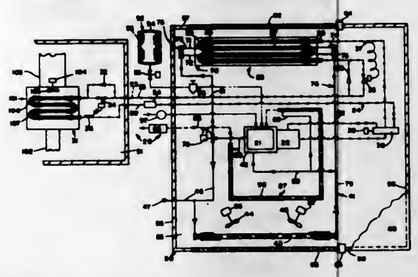
a liquid cooled, internal-combustion engine driven reverse-cycle refrigerating unit, including a liquid jacket on said engine, means to reverse the flow of refrigerant in said unit and a first evaporator-condenser coil, mounted within said housing;

at least a second evaporator-condenser coil mounted within said space to serve as a heat exchanger therein;

sealed refrigerant gas conduits connecting said second coil into said unit in said housing;

a liquid piping system including the liquid jacket of said engine, manifolds at each end of said first coil and a plurality of straight, individual, independent liquid tubes extending between said manifolds, each sealably mounted concentrically within a gas tube of said coil for exchanging heat therewith;

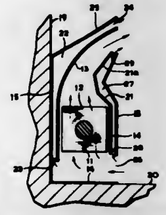
valve means in said liquid piping system for selectively opening said system to said coil;



shutter means for sealing and unsealing said housing, and

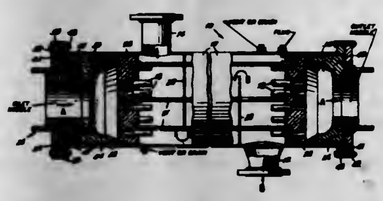
temperature responsive means in said space and in said housing controlling the operation of said engine, the valve means of said system and said shutter means in accordance with variations of temperature therein.

3,294,158
BASEBOARD HEATER
Anton F. Baljet, 136 Dixon Road, Weston, Ontario, Canada
Filed Dec. 30, 1963, Ser. No. 334,134
1 Claim. (Cl. 165—55)



A baseboard heater comprising rear and front enclosure plates, front and rear baffles supported between said enclosure plates, a heater element supported between said front and rear baffles and means for supporting said heater in a substantially horizontal position, said rear baffle having a lower, substantially vertical portion located behind said heater element with a bottom edge spaced from the bottom of the heater and an upper portion rising above and gradually extending over said heater element away from the back and toward the front of said heater and being substantially devoid of sudden changes in configuration, said front baffle having a lower, substantially vertical portion located in front of said heater element with a bottom edge spaced from the bottom of the heater to define an air inlet for said heater and having an upper portion with a lower end rising above and inclined over the heater element toward the back of the heater and an upper end inclined toward the front of the heater to substantially match the front boundary of the path of the warm air stream set up by the rear baffle, the upper portions of said front and rear baffles defining a gradually converging, funnel-like passage rising above said heater element and gradually changing direction from a path directed to the top of the heater to a path directed substantially to the front of said heater and ending in a heater outlet which is devoid of obstructions to the flow of warm air from said outlet with the heater in operation and which directs warm air outwardly from the front of the heater, the lower portions of the front and rear baffles being closely adjacent to the heater element to reduce cold air flow around and past said heater element to a minimum, said rear enclosure plate substantially covering but positioned in spaced relationship from said rear baffle to define a first ventilated air space therewith, said front enclosure plate substantially covering but positioned in spaced relationship from said front baffle to define a second ventilated air space therewith and the upper ends of said front and rear enclosure plates being substantially devoid of any obstructions interrupting flow of air from the passage between the front and rear baffles, the upper portions of the front and rear baffles being of substantially smoothly curved configuration to provide a substantially smoothly-curved passage for heated air between the upper portions of the front and rear baffles.

3,294,159
HEAT EXCHANGER WITH SPRING BIASED SUPPORT
Albert E. Kovalik, Cleveland, and Samuel H. S. Raub, Bay Village, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Nov. 9, 1964, Ser. No. 409,860
9 Claims. (Cl. 165—81)



1. A heat exchanger, comprising a shell, a tube bundle therein, a floating tube sheet for slidably supporting one end of said tube bundle within said shell, a flange on said shell at the floating tube sheet end thereof, a floating cover abutting said floating tube sheet, an end plate for the floating end of said heat exchanger, means for securing said end plate to said flange, resilient loading means disposed between said end plate and said floating cover and passage means for enabling the shell side fluid to impress against said floating cover in the direction of said resilient loading means whereby the tubes of said tube bundle are compressively loaded.

3,294,160
HEAT TRANSFER APPARATUS
Richard P. Siegfried, Bath Township, near Akron, and Frank E. Garrison, Clinton, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 27, 1964, Ser. No. 414,217
2 Claims. (Cl. 165—83)

1. An air heater comprising:

an air passageway,

first, second and third tube banks each including:

a multiplicity of tubes and

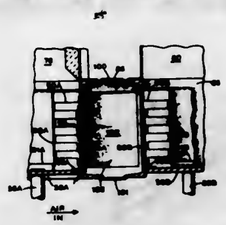
a tube sheet supporting said tubes,

means for moving relatively low temperature air through said passageway into successive contact with the outer surfaces of the tubes of said first, second and third tube banks,

means for directing relatively high temperature heating gas through tubes of said first and second tube banks and through tubes of said third and second tube banks, whereby heat is transferred to the air contacting said tubes,

supporting means connected to the tube sheets of at least two neighboring tube banks and extending along the adjacent edges thereof,

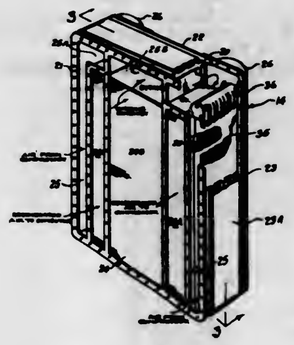
means defining with said supporting means a duct open to said passageway for conducting at least a portion of the air flowing through said passageway into



heat transfer relationship with said supporting means, and

an expansion joint between said supporting means and the tube sheet of said first tube bank providing a flexible seal between the air flowing through said duct and the heating gas flowing through said directing means.

3,294,161
HEAT EXCHANGERS
Homer J. Wood, Sherman Oaks, Calif., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed July 3, 1961, Ser. No. 121,748
6 Claims. (Cl. 165—140)



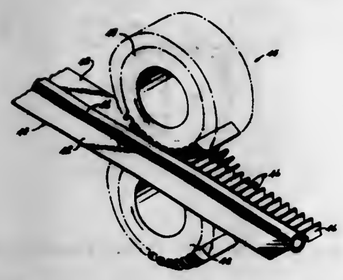
1. A heat exchanger comprising

(a) a core structure having a plurality of closely spaced parallel passages extending from one face to an opposite face of said structure,

(b) a hot fluid duct and a cold fluid duct connected with adjacent areas of said core structure and adapted to provide respectively hot and cold fluid flow through adjacent groups of said passages,

(c) means transferring heat from the areas of said core structure connected with said hot fluid duct to the areas of said core structure connected with said cold fluid duct and comprising a plurality of fluid conduits extending through said core structure areas normal to said passages and in heat exchange relation therewith, and means circulating a heat transporting fluid through said fluid conduits simultaneously with the flow of fluid through said hot and cold fluid ducts.

3,294,162
HEAT EXCHANGER CONSTRUCTION AND METHOD FOR MAKING THE SAME
[illegible], Loudoun County, Va., and Edward [illegible], Ky., assignors to Reynolds Metals [illegible], Va., a corporation of Delaware
Filed Nov. 23, 1965, Ser. No. 513,815
10 Claims. (Cl. 165—181)



1. A heat exchanger comprising a hollow tubular member having outwardly directed flange means integrally interconnected to the outer peripheral surface of said member, said flange means defining a fin having the base thereof substantially parallel with the longitudinal axis of said tubular member and having the remainder thereof disposed at an angle relative to said axis, said remainder of said fin being oppositely curved at the top and bottom ends thereof whereby said fin provides turbulence to fluid flow passing transversely relative to said longitudinal axis.

3,294,163
ORIENTING AND PERFORATING METHODS AND APPARATUS
Maurice P. Lebourg, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 25, 1965, Ser. No. 435,099
4 Claims. (Cl. 166—4)



3. A method for orienting perforating apparatus in one of a plurality of pipe strings in a well comprising the steps of rotating said perforating apparatus through a plurality of angular orientations within said one pipe string, creating at the same level in the well for each of said angular orientations of said perforating apparatus a distribution of energy which characterizes the angular orientation of at least a second pipe string with respect to said one pipe string at said level, detecting said energy distribution at the same level in the well for each of said angular orientations of said perforating apparatus to obtain a signal at the earth's surface indicative of said angular orientation, and rotating said perforating apparatus in said one pipe string to a position in prescribed relation to said angular orientation.

3,294,164
SECONDARY RECOVERY OF PETROLEUM WITH A [illegible] SLUG
William C. [illegible], Park Forest, Ill., and Keith L. [illegible], Bixby, Okla., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Aug. 12, 1963, Ser. No. 301,909
1 Claim. (Cl. 166—10)

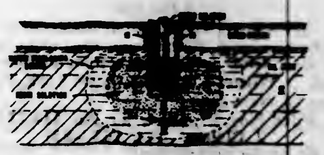


The secondary recovery method for petroleum-containing fluid from a reservoir containing said fluid in layered formations of varying permeabilities which includes:

introducing through at least one injection well into said reservoir an emulsion in preformed condition and comprising liquid continuous and discontinuous phases, one of said phases comprising as a major constituent acidized petroleum oil having a low interfacial tension, the other phase being aqueous, to produce in the reservoir a slug in the form of such emulsion having a higher effective viscosity than the petroleum-containing fluid in the reservoir and varying in penetration into said formations; and

then providing a fluid drive through said injection well to advance said slug to drive before it the petroleum-containing fluid to at least one producing well.

3,294,165
METHOD FOR TREATING WATER PERMEABLE EARTH FORMATIONS
Francisco H. Mello, Cornelis Bossenbroek, and Marinus van Zanten, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,597
Claims priority, application Great Britain, Aug. 8, 1962, 30,432/62
17 Claims. (Cl. 166—33)



1. A method for treating a porous earth formation which comprises

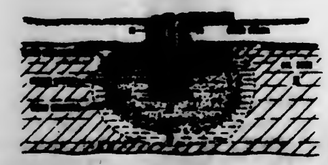
(a) preparing a solution comprising an aliphatic solvent, an epoxy resin having more than one vicinal epoxy group per molecule, an amine curing agent for said epoxy resin,

the total amount of epoxy resin and curing agent being between 3 and 50 volume percent of said solution, the composition of said solution being predetermined to maintain the reaction product of said resin and amine in solution for the time required to inject said solution into said formation,

(b) injecting said solution into said formation, and

(c) retaining said solution in said formation for a sufficient time to permit partially cured epoxy resin to separate from said solution, deposit on the sand grains of said formation, and cure to a hard, cross-linked, hydrocarbon insoluble resin.

3,294,166
CONSOLIDATING EARTH FORMATIONS
Izaak Havenaar, Olijswijk, and Frederick H. Meyt, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of New York
Filed Oct. 28, 1963, Ser. No. 317,963
Claims priority, application Great Britain, Jan. 25, 1962, 2,911/62
13 Claims. (Cl. 166—33)



1. A method for treating unconsolidated porous earth formation and forming permeable consolidated earth formation, comprising the steps of

(a) preparing a solution containing

(1) a reaction product of a polyepoxide resin and an amine curing agent incorporated into a hydrocarbon solvent consisting of a mixture of aromatic and non-aromatic saturated hydrocarbons capable of dissolving the reaction product in solution for a period of time required to inject said solution into said earth formation and to ensure subsequent separation of the reaction product from said solution,

(2) the polyepoxide resin having more than one vicinal epoxy group per molecule, and

(3) the amine curing agent for said polyepoxide resin being present in an amount sufficient to react with at least a portion of the epoxy groups of the resin and the total amount of the reaction product being between 3 and 50 volume percent of the solution,

(b) injecting said solution into said formation, and

(c) retaining said solution in said formation for a sufficient time to permit partially cured polyepoxide resin to separate from the solution, deposit on the grains of said unconsolidated porous earth formation, and thereon cure to a hard, cross-linked hydrocarbon insoluble resin that thereby bind the grains of said formation into a consolidated permeable earth formation.

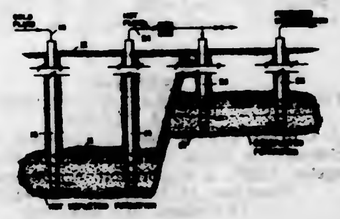
3,294,167
THERMAL OIL RECOVERY
John V. Vogel, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 361,111
7 Claims. (Cl. 166—39)

7. A method of recovering hydrocarbons from a subsurface formation which comprises the steps of

providing communication through a well between the surface of the earth and a first subsurface formation from which hydrocarbons have been recently recovered by a conventional thermal recovery method whereby said formation contains a substantial amount of heat,

providing communication between said heat-containing first subsurface formation and a second subsurface formation containing hydrocarbons at least a portion of said communication being provided through a well,

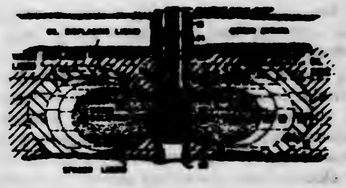
forcing fluid from the surface of the earth down to, into and out of said heat-containing first subsurface formation, said fluid having a temperature less than that of said heat-containing formation at the time it is forced thereinto,



conveying said fluid from out of said heat-containing formation and into said second subsurface formation to heat the hydrocarbons therein, and

producing said hydrocarbons from said second subsurface formation.

3,294,168
TREATING A PERMEABLE MASS
Cornelis Bossenbroek, Franciscus H. Mello, and Marinus van Zanten, all of Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 361,111
Claims priority, application Great Britain, Apr. 22, 1963, 15,777/63
7 Claims. (Cl. 166—33)



1. In the method of treating a permeable earth formation which comprises

(a) preparing a solution comprising a solvent, a resin-forming polyepoxide and a curing agent for said polyepoxide;

(b) injecting said solution into said formation; and

(c) retaining said solution in said formation for a sufficient time to permit the resulting epoxy resin to adhere to the sand grains of said formation and cure to a hard, cross-linked, hydrocarbon-insoluble resin;

the improvement which comprises preparing as said solution a mixture of:

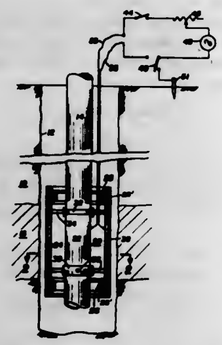
(1) a hydrocarbon solvent consisting of a mixture of at least 50 percent by weight of aromatic hydrocarbons, the remainder being saturated non-aromatic hydrocarbons, wherein the ratio of said types of hydrocarbons is predetermined to maintain the reaction product of said resin and curing agent in solution for the period of time required to inject said solution into said formation;

(2) a resin-forming polyepoxide;

(3) a hydrocarbon-soluble amine curing agent for said polyepoxide; and

(4) a lower aliphatic ketone;
in proportions selected such that:
(i) the total amount of said hydrocarbon solvent is between 30 and 95 percent by volume of said solution;
(ii) the total amount of polyepoxide and curing agent is between 3 and 50 percent by volume of said solution; and
(iii) the composition of said solution is predetermined to maintain the partial reaction product of said polyepoxide and said curing agent dissolved for the time required to inject said solution into said formation.

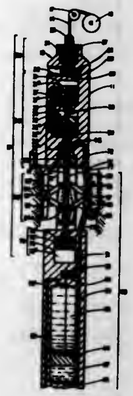
3,294,169
METHOD AND APPARATUS FOR CONTROLLING WELL FLUIDS
Leo J. O'Brien, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 17, 1962, Ser. No. 244,959
12 Claims. (Cl. 166—46)



4. The method of isolating a well bore zone from an axially adjacent well bore zone comprising disposing a cylindrical member within said well bore between said zones, in spaced relationship with said well bore to form an annular space therebetween, said cylindrical member being substantially impermeable to fluid flow in axial direction, disposing in the annular space a fluid that exhibits a change in apparent viscosity upon the application of an electric field, providing means by which an electric field may be applied across said fluid, and applying an electric field transversely of said annular space.

3,294,170
FORMATION SAMPLER
David R. Warren and Ernest H. Parfurst, Houston, Tex., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 303,104
14 Claims. (Cl. 166—100)

8. A device for obtaining samples of the fluid content of earth formations traversed by a bore hole comprising: a support adapted to be lowered within a bore hole from the surface of the earth to a location adjacent an earth formation from which a fluid sample is desired; means on said support, including a fluid inlet, for engaging an area of formation comprising the bore hole wall and for establishing communication between said inlet and fluids contained within said formation; first, second and third chambers in said support; valved passage means interconnecting said first, second and third chambers; said first chamber containing a quantity of substantially incompressible fluid; a normally closed sample fluid passageway interconnecting said fluid inlet with said first chamber; means for opening said sample fluid passageway to provide fluid flow and pressure communication therethru from said fluid inlet into said first chamber, whereby any



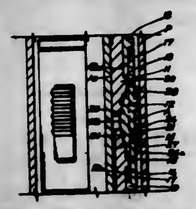
sample fluid entering said first chamber operates to displace the incompressible fluid therein through said passage means into one of the other of said chambers.

3,294,171
HYDRAULIC OPERATED WELL TOOLS
Emory A. Kelley, Corpus Christi, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,738
10 Claims. (Cl. 166—120)



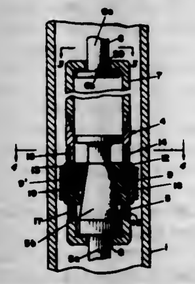
5. A tool assembly movable through a well flow conductor; said tool assembly including: a well tool having a body provided with a piston chamber; a piston movably disposed in said chamber and operator means carried by said body and operable by said piston, said piston being movable from an initial inoperative position to an operative position in said chamber by fluid pressure; and an actuator tool having a body connected to the upper end of said well tool body, said actuator tool body having a flow passage opening into said piston chamber and a lateral port communicating said passage with the exterior of said actuator tool body, closure means in said passage closing said passage and preventing fluid flow from the exterior of said actuator tool body to said chamber through said passage, a support rod releasably secured to said well tool body in an upper position and movable downwardly relative to said well tool body, said support rod opening said closure means when moved longitudinally downwardly relative to said well tool body, and anchor means on said well tool body movable to expanded position to anchor said body against downward movement in a flow conductor.

3,294,172
WELL TOOLS, SUCH AS WELL PACKERS
Cleave C. Brown, 8490 Katy Road, Houston, Tex. 77024
Filed Aug. 5, 1963, Ser. No. 299,982
16 Claims. (Cl. 166—139)



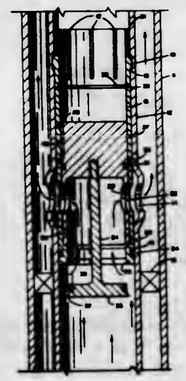
9. In an anchoring means assembly which comprises, a support with movable upper and lower expander cones and a gripping element carrier, the improvement residing in
a gripping slip mounted for radial movement in said carrier,
said gripping slip comprising a body having its inner surface formed with inclined areas for co-action with the upper and lower expander cones,
the upper portion of the outer surface of the body having gripping teeth formed thereon and the lower portion of said outer surface being smooth and lying in a longitudinal plane inwardly of the longitudinal plane in which the apex of each gripping tooth is disposed.

3,294,173
PULLING TOOL ASSEMBLY
James W. Hodges, Beaumont, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Jan. 9, 1964, Ser. No. 336,778
6 Claims. (Cl. 166—178)



1. In a wireline pulling tool assembly for pulling subsurface controls upwardly through a string of tubing, a lower jar attached securely to the subsurface control to be pulled upwardly, an upper jar attached to a wireline manipulatable at the surface, means coupling together said lower jar and said upper jar so that they normally move upwardly together in response to reeling in of said wireline, said coupling means providing a degree of looseness whereby said jaws can move relative to each other in the direction of the length of said tubing; and means acting only in response to an upward movement of said lower jar relative to said upper jar for arresting the further upward movement of said lower jar and of the subsurface control carried thereby.

3,294,174
FLUID OPERATED VALVE DEVICE
Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed June 16, 1964, Ser. No. 375,456
5 Claims. (Cl. 166—224)



3. A valve device for use in a well comprising:
an elongated tubular valve housing, said housing being open at one end and having port means in the wall thereof;
packing means positioned on the exterior of said housing below said port means for forming a seal in the annular space in said well exterior of said housing;
a valve seat adjacent the open end of said housing;
an elongated element positioned in said housing to move longitudinally therein, a portion of said elongated element having a continuous outer circumferential surface such that said portion forms a sealing fit with the interior of said housing so that when said elongated element is in a first position there is free communication from below said packing means through said port means to above said packing means and when said elongated element is in a second position said communication is restricted by said circumferential surface;
a valve means carried by said elongated element below said portion of continuous circumferential surface for sealing against said valve seat and completely closing the open end of said housing when said elongated element is in said second position.

3,294,175
ADJUSTABLE IMPELLER
Charles H. Bodner, 2413 127th Ave. NE., Bellevue, Wash. 98004
Filed Oct. 11, 1965, Ser. No. 494,626
2 Claims. (Cl. 170—160.61)

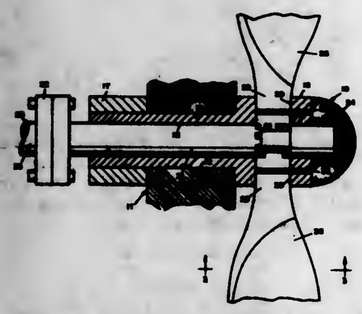
1. An impeller assembly rotatable about a rotation axis to provide a converging fluid stream in a forward direction, said impeller assembly comprising means for rotating the assembly, a plurality of blades extending radially outward from said rotation axis, each of said blades being inclined at a pitch angle about its pitch axis to impart forward thrust to surrounding fluid, a plurality of radially spaced arcuate vanes extending forwardly from the forward face of each of said blades, each of said blades having a larger area on the trailing side of its pitch axis than on the leading side thereof, said respective inner vanes having progressively shorter respective radii of curvature in the radially inward direction, the outer vane being adjacent to the periphery of the blade and being curved, said vanes on each blade having respective centers of

curvature spaced apart in a direction radially of the rotation axis and at a substantial angle relative to the pitch axis of the blade, whereby the trailing edges of the vanes are spaced apart further than their leading edges and the trailing edges of respective inner vanes are nearer the rotation axis than their leading edges, whereby fluid is discharged from the trailing edges of the blades with a radially inwardly directed component of motion, whereby



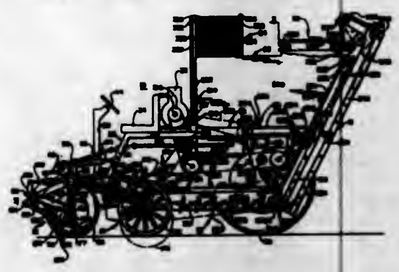
fluid is urged radially inwardly by centripetal action of the vanes to converge the fluid stream being impelled in the forward direction, and mechanical means for coordinate variation of the pitch angle of the blades to provide compound curvatures of respective vanes according to the selected degree of convergence and the selected distance from the blades of the focus of said stream of impelled fluid.

3,294,176
CHANGEABLE-PITCH PROPELLER
Felix Reimers, Mont Clare, Pa. 19453
Filed Apr. 11, 1966, Ser. No. 542,497
3 Claims. (Cl. 170—160.1)



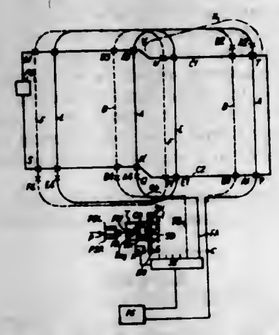
1. A changeable-pitch propeller comprising an axially rotatable hollow outer shaft having a plurality of angularly spaced radially extending thru openings located with their axes intersecting at the axis of said outer shaft, an axially rotatable inner shaft extending coaxially within said outer shaft past said openings and journaled therein for rotation with and relative to said outer shaft, said inner shaft being adapted at one end for connection to a reversible power shaft, said inner shaft having an intermediate portion formed with an annular circumferential groove opening radially outwardly into said openings and of a width approximating the diameter of said thru openings for registry therewith, a plurality of blade shanks each having a diameter approximating that of one of said thru openings and the width of said groove and extending rotatably through a respective thru opening for rotation with said shaft and rotation relative thereto about the respective axes of said openings, said blade shanks having their inner ends entering said groove, a propeller blade projecting from each of said shanks generally radially outwardly of said outer shaft, interengaging drive means on said inner shaft in the groove thereof and on the inner ends of said shanks for axially rotating the latter in opposite directions upon axial rotation in opposite directions of said inner shaft relative to said outer shaft, and limit means limiting the axial rotation of said shanks to predetermined positions in opposite directions of inner-shaft rotation relative to said outer shaft, said drive means comprising a generally circular array of shank teeth projecting from the inner end of each shank into the adjacent portion of said groove, and an annular array of inner-shaft teeth projecting from one side of said groove into meshing engagement with the teeth of said shanks.

3,294,177
BEET HARVESTER
Dale H. Schaal, Walter J. Schaal, and Max N. Schaal, all of Rte. 1, Berthoud, Colo. 80513
Filed Aug. 17, 1964, Ser. No. 389,917
19 Claims. (Cl. 171—42)



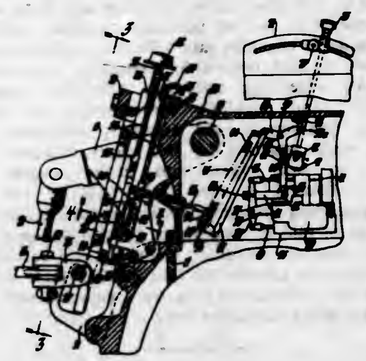
1. The self-propelled sugar beet harvester which comprises: a frame having at least two substantially horizontal decks superimposed one above the other, the lower of said decks having an open area therein, uprights interconnecting the upper and lower decks at the rear corners thereof so as to leave a relatively unobstructed passage extending readwardly off the lower deck; a pair of steerable wheels mounted on the front of the frame; a prime mover carried on the frame in position to leave the space between the decks unobstructed; a pair of drive wheels journalled for rotation on the rear outboard extremities of the lower deck; a drive train operatively interconnecting the drive wheels and prime mover so as to leave the space between the decks relatively unobstructed, said train including a transmission suspended from the underside of the upper deck in upwardly offset relation to the axis of rotation of the drive wheels and offset means forming a driving connection between said transmission and each drive wheel, said offset means connecting into the drive wheels at points spaced above the axis of rotation thereof so as to leave the space between the upper and lower decks relatively unobstructed; beet topping means carried by the frame between the steerable wheels adapted to sever the foliage therefrom upon movement into contact therewith; a hinged frame mounted within the open area of the lower deck for pivotal movement about a transverse axis located at the rear extremity thereof; beet digging means carried in the forward end of the hinged frame directly behind the beet-topping means, said digging means including elements defining a wedge-shaped opening therebetween adapted to releasably grasp a beet upon forward movement into engagement therewith, and said wedge-forming elements being operative to enter the ground and raise a beet to the surface that enters the wedge-shaped opening when the hinged frame is lowered; beet-releasing means mounted between the upper and lower decks in operative relation to the beet-digging means, said releasing means including ejector elements positioned to engage a beet wedged between the digger elements after the latter have freed the beet from the soil, and said ejector elements being operative upon actuation to remove the beet from the wedge-shaped opening in the digger elements allowing said beet to drop free onto the hinged frame; beet cleaning and conveying means mounted on the hinged frame behind the beet-digging means and in position to receive beets ejected therefrom by the beet-releasing means, said cleaning and conveying means including a plurality of transversely-extending elements rotatable in the same direction about longitudinally-spaced parallel axis, said transverse elements being adapted to tumble the beet falling thereon while carrying same to the rear of the hinged frame; an open-topped hopper mounted on the upper deck directly over the hinged frame; elevator means located at the rear of the lower deck in position to receive beets issuing from the cleaning and conveyong means, said elevator means being adapted to carry the beets upwardly behind the hopper to a height substantially on a level with the open top thereof; and, conveyor means adapted to receive beets from the conveyor means and deliver same forwardly into the hopper.

3,294,178
AUTOMATIC VEHICLE GUIDANCE SYSTEM
Robert Lawson, Wigston Fields, Leicester, and Peter James Hilling, Braunstone, Leicester, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Feb. 16, 1965, Ser. No. 433,119
Claims priority, application Great Britain, June 7, 1961, 20,509/61
14 Claims. (Cl. 172—3)



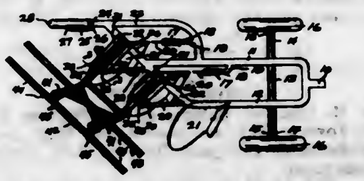
1. An electrical guidance system for a self-propelled and automatically steerable vehicle capable of automatically following a path defined by a wire energised by alternating current, said system comprising a plurality of separately energisable loops of conducting wire defining respective circuitous paths embracing different overlapping pieces of land, all the loops having sections of their lengths lying co-extensively adjacent one another, a source of alternating current for energising said loops of conducting wire, switching means for selectively connecting said source to each of said loops of conducting wire individually, and means responsive to the passage of a vehicle a predetermined number of times around the path defined by an energised one of said loops of conducting wire to produce a transfer signal, said switching means being responsive to said transfer signal to disconnect said source of alternating current from the energised loop of conducting wire and connect it to another of said loops during the time that the vehicle is located on said co-extensive sections of the loops.

3,294,179
DRAFT CONTROL SYSTEM WITH INDEPENDENT RANGE AND SENSITIVITY ADJUSTING MEANS
Ernest V. Bunting, Detroit, and Hans V. Lind, Royal Oak, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed June 9, 1964, Ser. No. 373,633
12 Claims. (Cl. 172—10)



5. A draft control system for a tractor with a hydraulically operated lift arm under control of a valve having supply, discharge and neutral positions, comprising, in combination, a draft control member mounted on said tractor, said member being proportionately movable in opposite directions in response to tension and compression draft forces exerted by an implement coupled to said tractor, draft follow-up means associated with said member for shifting said valve between said positions in response to changes in said forces, a manual control lever associated with said follow-up means and positionable between opposite limits for regulating the amount of said forces required to shift said valve, and independently adjustable means associated with said follow-up means for altering the effective length of said follow-up means between said member and said valve so that said lever regulates shifting of said valve in response to a different range of said forces between said limits.

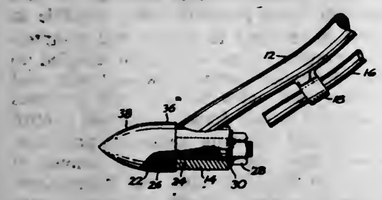
3,294,180
PLOW MOUNTED HARROW
Raymond W. Bergmann, Cushing, Iowa 51018, and Lowell W. Albers, Battle Creek, Iowa 51006
Filed May 27, 1965, Ser. No. 459,263
1 Claim. (Cl. 172—197)



A plow mounted harrow comprising a plow framework, a harrow mounted on said framework, said harrow being secured to said plow framework whereby raising of said plow framework will raise said harrow, means for

adjustably attaching said harrow to said plow framework for providing adjustable positioning of said harrow with respect to said framework, said means including pairs of spaced angle members, said angle members being secured to said plow framework, said harrow including rearwardly extending members, said members being pivotally attached to the forward ends of said angles, U-shaped members attached at the rearward ends of said angles adapted to receive said rearwardly extending members, means attached between said rearwardly extending members and said U-shaped members for adjustably supporting said rearwardly extending members, including bolts pivotally attached to said rearwardly extending members, said U-shaped members having openings receiving said bolts, nuts threadably engaging said bolts for varying the pivotal movement of said rearwardly extending members, said rearwardly extending members extending angularly, rearwardly, and angularly downwardly, said harrow including transversely and angularly positioned pipes harrow teeth attached to said pipes, further angles attached to said pipes, said further angles being pivotally attached to the lower ends of said rearwardly extending members, vertical rods attached to the other ends of said further angles, bracket angles attached to said rearwardly extending members, said vertical rods being adjustably attached to said bracket angle members to adjustably position said pipes with respect to each other, means for raising said framework.

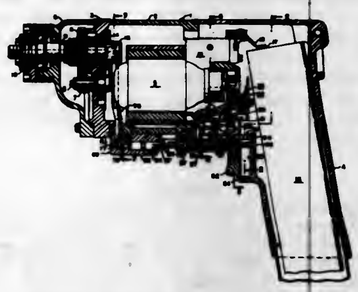
3,294,181
EARTH PLOWING TIP FOR FERTILIZING IMPLEMENTS
Bryce K. Binder, P.O. Box 275A, Madras, Oreg. 97741
Filed May 13, 1964, Ser. No. 367,069
3 Claims. (Cl. 172—708)



3. For use in a fertilizing implement wherein a projecting support rod is provided with a hollow plowing tip mounting sleeve of predetermined cross sectional shape and dimension: a plowing tip compising a head section, a shank section of reduced cross sectional dimension extending rearwardly from the head section for support in said mounting sleeve and arranged to mount the head section coaxial with the sleeve, the head section having a rearward portion of substantially uniform cross sectional shape matching the shape of the sleeve and a forward portion which tapers from the rearward portion forwardly substantially to a point, the rearward portion constituting at least about 15% of the total length of the head section, and the rearward portion of the head section having a cross sectional dimension at least equal to the cross sectional dimension of the mounting sleeve.

3,294,182
POWER TOOLS
Arthur H. Filsinger, Baltimore, and William W. Chambers, Towson, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Sept. 23, 1964, Ser. No. 398,611
10 Claims. (Cl. 173—77)

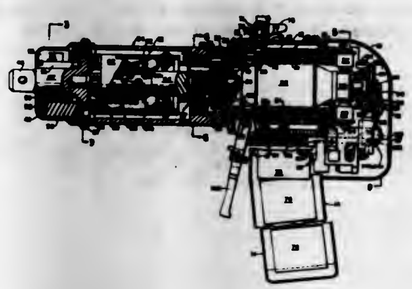
1. In a power driven tool, the combination of
a motor housing;
a motor mounted in said housing;
an output shaft driven by said motor and having passage means for the flow of a suitable fluid;
a manual operating member mounted on said housing for movement between a first and a second position;
control means mounted within said housing,
said control means including a movable actuating member and being arranged to control said motor in accordance with the position of said actuating member;
a valve body carried by said housing and having
an inlet to which a fluid supply conduit can be connected,
an outlet, and
a valve chamber between said inlet and outlet;
a movable valve member disposed in said valve chamber for movement between an open position, allowing flow of fluid from said inlet to said outlet, and a closed position, preventing such flow;



means connecting said manual operating member to said actuating member of said control means and to said movable valve member,
movement of said operating member in one direction causing said movable valve member to move to its closed position and operating said actuating member to move to a position in which the tool is deenergized, movement of said operating member in the other direction causing said movable valve member to move to its open position, allowing fluid flow, and operating said actuating member to a second position, in which the tool is energized; and
conduit means interconnecting said outlet of said valve body and the passage means of said output shaft.

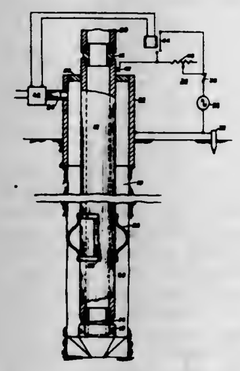
3,294,183
POWER DRIVEN TOOLS
Robert H. Riley, Jr., Towson, and Richard F. Koen, Lutherville, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Sept. 30, 1964, Ser. No. 400,438
17 Claims. (Cl. 173—162)

1. In a low torque-reaction portable power-driven rotary tool, the combination of
housing means adapted to be grasped and manipulated by the operator;
power means mounted in said housing and having a rotary driven element;
output means mounted to rotate about an axis;
said output means being driven by said driven element of said power means;
a member mounted for rotation relative to said output means;
means interconnecting said driven element and said member and operative to impart rotary movement to said member in a direction opposite to the direction of rotation of said driven element when said power means operates to rotate said driven element; and



restraining means connected to said member, tending to control the same against said opposite rotation.

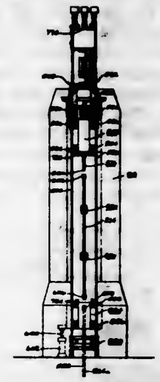
3,294,184
WELL DRILLING APPARATUS AND METHOD
Leo J. O'Brien, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 17, 1962, Ser. No. 244,960
7 Claims. (Cl. 175—65)



1. In a method for drilling a well bore by the rotary method wherein a drill string extends substantially through the length of the bore, the improvement comprising circulating in the bore a drilling fluid that exhibits a change in apparent viscosity upon the application of an electric field, and varying the viscosity of said fluid in at least a portion of the annulus between the drill string and the wall of the well bore by applying an electric field thereto.

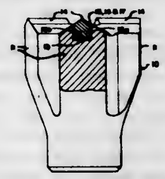
3,294,185
AUTOMATED WELL DRILLING APPARATUS
Joseph V. O'Neill, Inkster, George Homanick, Livonia, and Robert C. McCord, Inkster, Mich., assignors, by direct and mesne assignments, to Leyman Corporation, Cincinnati, Ohio
Original application Feb. 2, 1959, Ser. No. 790,486, now Patent No. 3,095,048, dated June 25, 1963. Divided and this application Jan. 22, 1963, Ser. No. 271,533
12 Claims. (Cl. 175—85)

2. The combination comprising a vertically traveling annular drill head having a pipe gripper for suspending a drill string within a well hole during a drilling operation, and a removable connection between said head and said pipe gripper for permitting said pipe gripper to



be moved out of an obstructing position for passage of pipe axially through the annular head.

3,294,186
ROCK BITS AND METHODS OF MAKING THE SAME
Eugene F. Buell, Richland Township, Allegheny County, Pa., assignor to Tartan Industries, Inc., Duncansville, Pa., a corporation of Pennsylvania
Filed June 22, 1964, Ser. No. 377,010
6 Claims. (Cl. 175—410)

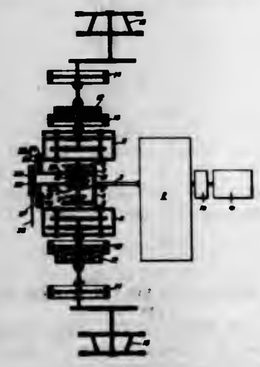


1. A rock bit comprising an elongated generally cylindrical steel body, having at one end an internally threaded opening adapted to receive a drill stem, a plurality of radially extending wings at the other end of said body, a slot in each wing extending from a point adjacent the axis of the body to the end of the wing, a cemented carbide tip in each such slot extending over the length thereof and spaced from the sides of said slot, a metal shim in said slot between each side of said slot and the carbide insert and spaced from each end a braze alloy layer on each side of said shim, said braze alloy layers being fused to opposite sides of the shim and to the carbide insert and the sidewall of the slot.

3,294,187
MECHANICAL DRIVE FOR TRACKED VEHICLES
Walter Ruf, Landhaus am See, Bottighofen, Thurgau, Switzerland
Filed Jan. 17, 1964, Ser. No. 338,387
Claims priority, application Germany, May 9, 1963, R 35,146; May 30, 1963, R 35,298
16 Claims. (Cl. 180—6.66)

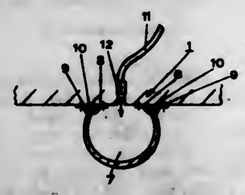
14. A mechanical drive device for tracked vehicles having at least two tracks comprising a vehicle engine, a clutch driven by said vehicle engine, a stepped transmission unit driven by said clutch, steering gear means, a steering gear means input shaft driven by said stepped transmission unit, two planetary gear means, two steering gear output shafts which connects the steering gear means with the planetary gear means respectively, four coaxially

arranged coupling members in said steering gear, two of said coupling members being output coupling members and being positively connected with the steering output shafts respectively, the other two of said coupling members being input coupling members and being driven in opposite directions by said steering gear input shaft, connecting means coaxially arranged with said coupling members and axially displaceable into different positions, whereby in a first position one of the input coupling members is connected with both output coupling members for driving



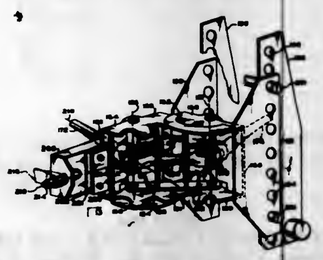
them in the opposite direction compared with the first position, and in a third position one of the output coupling members is connected with one of the input coupling members and the other output coupling member is connected with the other input coupling member for driving the output coupling members in opposite directions and in a fourth position both of the output coupling members are connected with each other and are disengaged from the input coupling members, track drive wheels, means for connecting each said track drive wheel with one of the planetary gear means including clutch means and brake means for stopping the rotation of each of the track drive wheels independently of the other track drive wheel.

3,294,188
SHOCK ABSORBING MEANS FOR AIR CUSHION VEHICLES
Derek J. Hardy, Cowes, Isle of Wight, England, assignor to Westland Aircraft Limited, Somerset, England
Filed Dec. 4, 1964, Ser. No. 415,883
Claims priority, application Great Britain, Jan. 16, 1964, 1,903/64
3 Claims. (Cl. 180—7)



1. An air cushion vehicle comprising a rigid body structure, a peripheral skirting assembly secured to the periphery of the rigid body structure and depending therefrom to form the boundary of the air cushion, and shock absorbing means secured directly to the rigid body structure and depending therefrom, the lower edge of the shock absorbing means extending below the rigid body structure a minimum distance sufficient to protect the underside of the rigid body structure from obstacles, said shock absorbing means comprising reinforced rubber skids secured directly to the rigid body structure, said reinforced rubber skids having curved ends to provide leads to assist the skid in movement over rough ground.

3,294,189
ARTICULATED POWER TRANSMISSION ARRANGEMENT
Hugh J. Rear, 755 River Ave., Eugene, Oreg. 97402
Filed Jan. 29, 1964, Ser. No. 532,692
10 Claims. (Cl. 180—14)



1. An articulated coupling for connecting together a tractor vehicle and a trailer vehicle comprising:
a draft connector link extending between said vehicles and pivotally connected to one of said vehicles for articulation about a first upright hinge axis,
universal joint means connecting said connector link to the other said vehicle so as to permit relative articulation between said link and said other vehicle about a second upright hinge axis and about a generally horizontal transverse hinge axis,
said universal joint means including means providing for relative twisting movement between said vehicles about a longitudinal axis,
and angle equalizer means in association with said connector means for maintaining the angular variation between one said vehicle and said conductor link substantially equal to the angular variation between the other said vehicle and said connector link,
said second upright hinge axis, said transverse hinge axis and said longitudinal twisting axis all intersecting at a common imaginary point in all positions of relative articulation of said vehicles whereby said coupling is capable of transmitting both axial and load forces between said vehicles in all positions of articulation thereof.

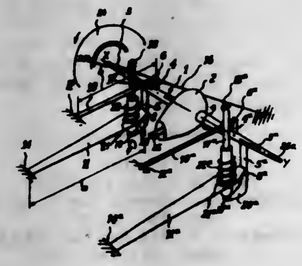
3,294,190
WHEEL DRIVE AND SUSPENSION ARRANGEMENT FOR TRANSPORT VEHICLE
Tosra Saver, 4901 Berkeford Ave., Sacramento, Calif. 95841, and Michael H. Windell, 4427 Trexler Ave., North Highlands, Calif. 95660
Filed Nov. 5, 1964, Ser. No. 409,184
4 Claims. (Cl. 180—27)



1. A wheel drive and suspension arrangement for a transport vehicle comprising:
(a) an elongated main frame;
(b) a front steering wheel on the forward end of said main frame;

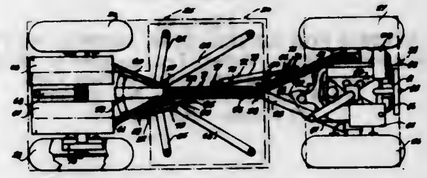
(c) a front cross member extending across said main frame and projecting from the sides thereof;
(d) a rear cross member extending across said main frame and projecting from the sides thereof;
(e) a pair of elongated side frames;
(f) means for pivotally mounting one of said side frames on said front cross member for rotation about a transverse axis;
(g) means for pivotally mounting the other of said side frames on said front cross member for rotation about said transverse axis;
(h) springs interposed between the trailing ends of said side frames and the projecting portions of said rear cross member;
(i) ground engaging wheels individually rotatably mounted adjacent the trailing ends of said side frames;
(j) individual electric motors mounted respectively on said side frames;
(k) means for connecting said individual motors to respective ones of said ground engaging wheels;
(l) a battery mounted on said main frame in a fore and aft location between said front cross member and said rear cross member; and,
(m) electrical conductors extending from said battery to the respective ones of said individual electric motors.

3,294,191
REAR-AXLE SUSPENSION SYSTEM
André Cauvin, Port-Marly, France, assignor to Société Anonyme dite: Simca Automobiles, Paris, France
Filed Oct. 12, 1964, Ser. No. 403,964
Claims priority, application France, Oct. 28, 1963, 951,945
4 Claims. (Cl. 180—73)



1. In a motor vehicle including a frame, rear wheels, a rear axle assembly carrying said wheels and including wheel axle housings, and differential means in said assembly having an input to which an engine torque is applied and having coaxial outputs applying said torque to said wheels; the improvement comprising a first pair of upward arms projecting upwards from said axle housings; a second pair of downward arms projecting downwards from said axle housings; a third pair of arms extending forwardly from said downward arms; a pair of upper links having rear ends pivotally connected to said upward arms and forward ends pivotally connected to said frame; a pair of lower links having rear ends pivotally connected to said downward arms and forward ends pivotally connected to said frame; the ratio of the length of said upper links to the length of the lower links being less than 1:1, but greater than approximately 0.4:1; and a pair of shock absorbers having upper ends connected to the frame and having lower ends connected to the forward ends of said third pair of arms, said third pair of arms thus acting as lever arms between the shock absorbers and the axis of said axle housings.

3,294,192
ARTICULATED MODULAR VEHICLE
Tommy A. Middlesworth, Hinsdale, Jack R. Findley, Downers Grove, and Richard R. Steinegs and William H. Knapp, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Original application Mar. 8, 1962, Ser. No. 178,294, now Patent No. 3,246,714, dated Apr. 19, 1966. Divided and this application Sept. 14, 1965, Ser. No. 516,109
3 Claims. (Cl. 180—79.2)



1. For use in a mobile vehicle having a front unit and a rear unit, each having wheels fixed in the longitudinal direction, articulation means comprising:
means on one of said units providing a reference pivot axis;
a reference member, having a first portion journaled about said reference pivot axis to afford movement of said reference member about said axis, and a second portion defining a secondary pivot axis;
a first actuating means, coupled to said reference member, for effecting angular displacement thereof about said reference pivot axis;
means for intercoupling the other said units to said one unit about said secondray pivot axis to afford pivotal movement between the front and rear units;
a second actuating means, coupled between said reference member and said other unit, to afford relative angular displacement about said secondary pivot axis;
and means for concomitantly operating said first and second actuating means, thereby to provide movement of said reference member with respect to said one unit in a given angular direction and simultaneous, movement of said reference member with respect to the other of said units in a direction opposite to said given angular direction, to provide a cumulative articulated movement of the front and rear units of said vehicle.

3,294,193
ACOUSTIC IMPEDANCE MEASURING INSTRUMENT
Jozef J. Zwislocki, 311 Comstock Ave., Syracuse, N.Y. 13210
Filed Sept. 20, 1963, Ser. No. 310,270
11 Claims. (Cl. 181—.5)



1. An acoustic bridge comprising an acoustically symmetrical transducer,
two main tubes disposed in acoustically symmetrical relation to said transducer,
a variable acoustic impedance system,
one of said main tubes being adapted to be coupled to an unknown acoustic impedance by means of a coupling cavity and the other tube being coupled to said variable acoustic impedance system,

a chamber adjustable to the volume of said coupling cavity disposed between said acoustic impedance system and said other tube providing acoustical communication therebetween, said chamber having a cross-sectional area substantially larger than the cross-sectional area of said other tube,

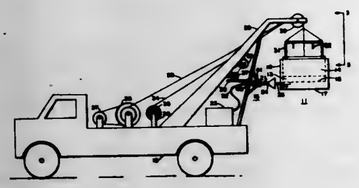
and an output system connected to said main tubes and bridging said transducer in an acoustically symmetrical manner for coupling an output signal from said bridge.

3,294,194

SYSTEM FOR GENERATING SEISMIC WAVES

Raymond W. Sloan, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed June 18, 1964, Ser. No. 376,001
12 Claims. (Cl. 181—.5)



9. A system for generating seismic waves useful in the investigation of subsurface formations comprising:

a ground vehicle,

means forming a weight and including an explosive charge to be dropped from a desired height to the surface of the earth,

means coupled to said vehicle and to said weight means for raising said weight means above the surface of the earth and dropping said weight means to the surface of the earth, and

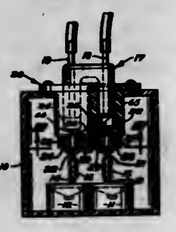
means for initiating the explosion of said charge upon contact of said weight means with the earth when dropped to generate a desired seismic wave.

3,294,195

COMPRESSIONAL WAVE SIGNALING APPARATUS

Dean W. Flygstad, Roseville, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware

Filed Jan. 25, 1965, Ser. No. 427,800
13 Claims. (Cl. 181—31)



1. In combination with a dual channel compressional wave energy signal transmission system; an aperture in each of the dual channels; means disposed on each of said apertures for adjustably controlling the size thereof; and means operatively connected to said last named means for simultaneously adjustably controlling the size of said apertures.

3,294,196

EMERGENCY ESCAPE LADDER AND AMUSEMENT DEVICE

Nicholas A. Rabelos, 2448-A Morosgo Way NE., Atlanta, Ga. 30324

Filed May 13, 1965, Ser. No. 455,517
3 Claims. (Cl. 182—100)



1. A device comprising an elongated flexible line, means at the upper end of said line for supporting engagement with an elevated support, a plurality of support members attached to said line at longitudinally spaced points thereon, each of said support members being in the form of a substantially circular disc including a relatively thin circular plate having a depending flange at the outer edge thereof and a relatively thick hub at the center thereof, said hub having a tapered bore extending therethrough with the larger dimension of the bore being at the bottom thereof, enlargement means on said line for wedging engagement with the bottom portion of said bore, said disc including arcuate openings adjacent the periphery thereof with the inner edge of the flange defining one edge of the opening thereby providing handholds for persons climbing the line.

3,294,197

PERCH FOR A LADDER

Rudolph J. Kwiatkowski, 816 W. 3rd St., Erie, Pa. 16507

Filed Sept. 3, 1964, Ser. No. 394,118
2 Claims. (Cl. 182—120)



1. A perch for use on a ladder comprising

a platform,

arms attached to said platform and extending therefrom generally at right angles thereto,

a bar,

said bar being fixed to the distal end of said arms,

the ends of said bar extending outwardly a substantial distance beyond the outer sides of said arms and adapted to overlie the side rails of a ladder,

hooks,

said hooks being attached to said platform at spaced positions thereon,

said hooks having a surface adjacent said arms generally parallel thereto and spaced therefrom and adapted to receive a ladder rung therebetween,

a catch swingably attached to said hooks to the distal ends thereof and adapted to swing under said rung to hold said hooks against movement from said ladder,

said platform and arms being made of sheet like material with said arms integrally attached to said platform,

a portion of said platform being bent downwardly to a position at right angles to said platform, forming a reinforcement to said platform,

said catch having a laterally extending lever thereon which overlies the rear surfaces of said hooks,

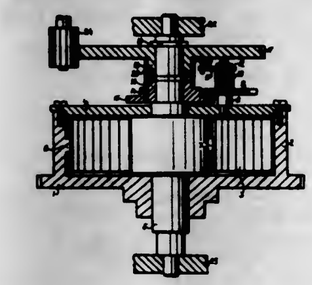
and a spring affixed to said hooks which engages said lever, urging said catch to a position to overlie a ladder rung.

3,294,198

SPRING-OPERATED CONSTANT TORQUE TRANSMISSION FOR ELECTRIC CLOCKS

Václav Pfeifer, Prague, Czechoslovakia, assignor to Laboratorní Přístroje, národní podnik, Prague, Czechoslovakia

Filed Dec. 10, 1964, Ser. No. 417,384
Claims priority, application Czechoslovakia, Jan. 6, 1964, 81/64
4 Claims. (Cl. 185—37)



1. A spring-operated source of constant torque comprising, in combination:

(a) a barrel member having an axis;

(b) a shaft member mounted on said barrel member for rotation about said axis;

(c) a spiral spring operatively interposed between said members for winding and unwinding thereof and for corresponding changes in the stress of said spring when said members rotate relative to each other;

(d) a driving wheel;

(e) means for rotating said wheel in a predetermined direction;

(f) clutch means normally responsive to rotation of said driving wheel in said direction for drivingly connecting the same to one of said members and for thereby winding said spring; and

(g) clutch control means operative to disengage said clutch means in response to a predetermined minimum stress of said spring while said driving wheel is rotated in said direction, and to lock the other one of said members to said driving wheel in response to relative rotation of said members under the driving force of said spring through a number of revolutions greater than one, when said driving wheel stands still.

3,294,199

AUTOMATIC STAIR-CLIMBER

Murray Jarvik, 2727 Palisades Ave., Riverdale, N.Y. 10463

Filed June 28, 1965, Ser. No. 467,457
13 Claims. (Cl. 187—1)



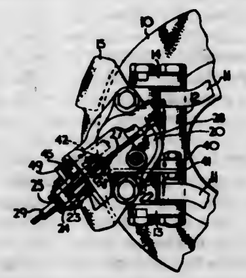
1. A step-climbing device comprising a base sized to receive a person thereon, means mounted on said base and adapted to abut a particular step for raising the base above the next succeeding step, means operable by a person for actuating said last named means, whereby a person supported on said base will be elevated above the next succeeding step, said device being portable and adapted to be moved from step to step by the person using it.

3,294,200

ADJUSTMENT DEVICE FOR DISC BRAKES

Harold Hodkinson, Finham, near Coventry, England, assignor to Dunlop Rubber Company, Limited, Fort Dunlop, Erdington, England, a corporation of Great Britain

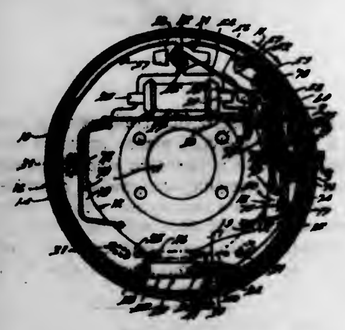
Filed Aug. 18, 1964, Ser. No. 390,313
Claims priority, application Great Britain, Aug. 21, 1963, 33,016/63
5 Claims. (Cl. 188—73)



1. In a disc brake including a rotatable disc having spaced annular braking surfaces adapted to be frictionally engaged, a brake comprising nonrotatable support means, friction pads, one on each side of said disc and engageable with a respective annular braking surface, a U-shaped caliper-type housing mounted on said support means and adapted for axial movement relative to said disc to bring one of said pads against a confronting opposed disc surface, a stabilizing device secured at one end to said support means, means forming an articulated connection between the other end of said stabilizing device and said caliper-type housing for defining the operative axial position of said housing, and an automatic adjuster means disposed between said device and housing for determining said axial position of said housing relative to said

stabilizing device and thereby position the friction pads, one on each side of said disc, said automatic adjuster including operator means for activating said adjuster means responsive to movement of said friction pads beyond a predetermined amount.

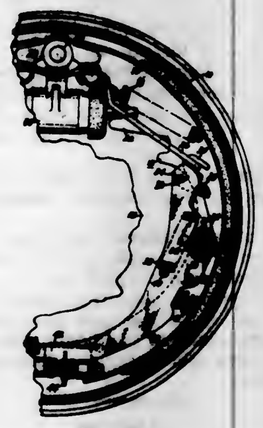
3,294,201
AUTOMATIC BRAKE ADJUSTER
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 31, 1964, Ser. No. 386,640
3 Claims. (Cl. 188—79.5)



1. In a web-ledge type brake, a pair of brake shoes provided with webs, a brake drum, an anchor, a backing plate provided with ledges engaging said webs to slidably support said brake shoes, means for moving said brake shoes away from said anchor and into engagement with said brake drum, a strut connecting adjacent ends of said brake shoes, and a rotatable toothed wheel for controlling the extension of said strut, that improvement which comprises, an adjusting lever slidably mounted on the web of one of said brake shoes and having a portion functioning as a pawl to engage said toothed wheel to rotate the same, a second lever connected to a fixed part of said brake structure and pivotally connected to said brake shoe for rocking movement thereby when said brake shoe is moved, a tension spring connecting adjacent ends of said levers whereby a rocking movement of said second lever will exert a pulling force on said spring to slide said adjustable lever in a direction to rotate said toothed wheel, said spring being extended to permit relative movement between said levers when said adjusting lever is held against movement, as for example when the brakes are sufficiently adjusted, and a substantially U-shaped spring wire device secured to said backing plate and slidably engaging said brake shoe and said adjusting lever to hold the latter in sliding contact with said brake shoe.

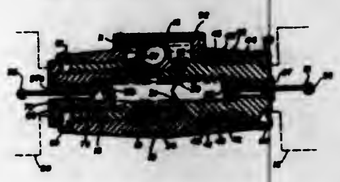
3,294,202
AUTOMATIC BRAKE ADJUSTER POSITIONING DEVICE
James G. Halvorsen, Lewisburg, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,636
4 Claims. (Cl. 188—79.5)

4. A positioning device for a lever actuated brake adjuster, said positioning device comprising: a sleeve bisectedly mounted on a brake shoe and having cam portions and locking portions; a brake adjusting lever pivotally mounted on the sleeve and arranged to be repositioned by the cam portions of the sleeve; and holding means carried by the pivotable lever in an arcuate manner relative to the sleeve and arranged to cooperate with the locking portions of the sleeve to maintain the adjusting lever in a



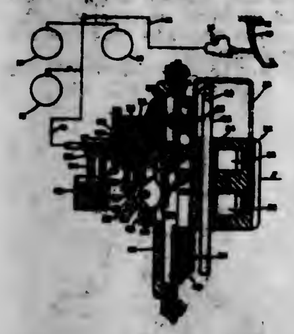
selected pivoting position wherein the amount of pivotal movement allowed the lever relative to brake adjusting mechanism is limited.

3,294,203
BRAKE ACTUATING MECHANISM WITH AUTOMATIC ADJUSTMENT
Francis L. Wise, Englewood, Colo., assignor to The American Coleman Company, Littleton, Colo., a corporation of Nebraska
Filed Jan. 21, 1965, Ser. No. 426,924
4 Claims. (Cl. 188—79.5)



2. An automatic slack adjustment for a brake actuating mechanism having a rotary member mounted between the ends of a pair of brake shoes, which rotary member is rotated during braking action in moving the ends of said shoes apart, comprising an adjusting screw threadedly mounted in an end of said rotary member and arranged to vary the distance between the ends of the brake shoes; stop means between said adjusting screw and said rotary member to permit one-way rotation for extending said adjusting screw from said rotary member ratchet means mounted on and arranged to rotate with said adjusting screw inclusive of a plurality of ratchet teeth; at least one dog means arranged with the end of the adjacent brake shoe and mounted in engagement with said ratchet and arranged to be non-rotating against rotation of said adjusting screw and ratchet; and means maintaining said at least one dog means against said ratchet whereby rotation of said rotary member rotates said adjusting screw outwardly and said adjusting screw is prevented from inward rotation by said stop means to maintain a predetermined spacing between said brake shoe ends to compensate for wear.

3,294,204
ANTI-SKID BRAKE
Joseph C. Zaboski, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 16, 1964, Ser. No. 396,545
7 Claims. (Cl. 303—100)



1. Fluid control mechanism for preventing a skid of a vehicle having disc brakes, said fluid control mechanism comprising: hydraulic pressure source means; first means having a disc shape and carried by a vehicle wheel and arranged to rotate therewith; friction means responsive to pressure from said hydraulic pressure source means to engage said disc and impede the rotation thereof thereby providing a braking means for the vehicle; second means pivotable on the axis of the disc and carrying said friction means, said first means adapted to move on the periphery of the first means in an arcuate path during a braking condition thereby generating a force; resilient means connected to a fixed portion of the vehicle relative to the first means and arranged to control the movement of said second means; third means engageable by said second means on retarding of a problem of rest after a pivotal movement; said third means including a pivotable cam and cam follower; and fourth means adapted to control pressure from the hydraulic pressure source means and including a portion responsive to said cam portion during a pivoting movement thereof to prevent a further pressure response of said friction means to said hydraulic pressure source means and responsively releasing any hydraulic pressure acting on the friction means at that time; said second means being operable in an opposite direction to wheel rotation by said resilient means when a condition of no relative movement between the first means and the second means occurs during a braking action thereby preventing a skid of the vehicle wheel due to brake lock-up.

3,294,205
FRICTION [illegible] AND
Hans Schaag, [illegible], Germany, assignor by [illegible] Limited, London, England, a company of [illegible]
Filed [illegible]
Claims priority, [illegible], Sept. 3, 1963,
4 Claims. (Cl. [illegible])

1. In a disc brake having a [illegible] and a pair of friction pads one on each side of said disc for engagement therewith, spaced guide means disposed at circumferentially spaced positions adjacent the periphery of said braking disc and having guide surfaces providing guide surfaces for said friction pads, and a circularly supporting and retaining means for said friction pads in the form of a resilient member of a generally [illegible] shape having one portion engaging said guide means to define the position of said member and limit its radially outward movement and another portion transverse to said first position



and including oppositely extending portions forming spring arms extending into engagement with said friction pads to effect supporting and retaining relation therewith.

3,294,206
LUGGAGE
Charles S. Colvin, Montclair, N.J., assignor to Prestolock Co., Inc., Guttenberg, N.J., a corporation of New York
Filed July 29, 1964, Ser. No. 385,661
10 Claims. (Cl. 190—49)

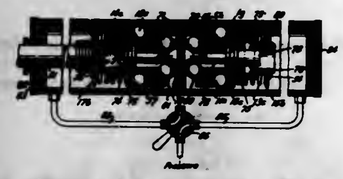


1. In a luggage case formed of a pair of opposed, generally cup-like sections having peripheral edges adapted to be positioned in substantial juxtaposition when the case is closed, the combination of a valance member engaged to the peripheral edge of one of the case sections and a locking device associated with the valance member to releasably secure the case sections in cup overlap, said valance member being integrally formed and comprising a longitudinally extending web the two opposed surfaces of which lie in substantially the same planes as the plane of the top surface of the case section to which it is secured, a pair of laterally opposed, longitudinally extending flanges extending from the underside of said web providing an internal channel, said locking device comprising a flat mounting plate overlying and in flush engagement with the top surface of said web, said mounting plate having an aperture extending therethrough, a frame member suspended from said mounting plate extending through an aperture disposed in said web and positioned in said internal channel, loop-engaging means interposed of the mounting plate and the frame member, and a resiliently mounted plunger for retaining the loop-engaging means, said plunger having a push button portion positioned in said mounting plate aperture, the top surface of the push button portion normally lying in substantially the same plane as the top surface of said mounting plate.

3,294,207
REVERSE [illegible] MECHANISM
William M. Green, Jr., Macon, Ga., assignor to John Deere Adams, Inc., Bibb County, Ga., a corporation of Georgia
Filed Apr. 22, 1964, Ser. No. 361,497
4 Claims. (Cl. [illegible])

1. In a reversal locking mechanism, a guide member of tubular form, means for closing the ends of said guide member to provide a fluid pressure tight chamber, a spring member wholly movable in said guide member, a piston member backed by said spring member and serving to impart movement to said spring member under the

influence of pressure fluid introduced into said guide member, clutch means carried by said carriage member and normally cooperating in clutching engagement with the inner wall of said guide member, said clutch means being juxtaposed to opposite faces of said piston member, the clutch means being seated on said carriage member on inclined plane means whereby upon axial movement of said piston member disengagement of the clutch means with the inner wall of the guide member may be afforded, said piston member being mounted for such axial movement on said carriage member and upon initiation of its axial movement will cause one or the other of its opposite



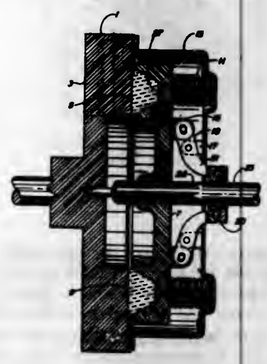
faces to contact said clutch means to free them from clutching engagement with the inner wall of said guide member, means for restoring said clutch means to said clutching engagement upon cessation of movement of said piston and carriage members, means for optionally introducing pressure fluid to either end of the chamber of said guide member and hence in operative relation to either face of said piston member to move the piston member in a chosen direction, and means connected with said carriage member and extending outwardly of an end of the guide member for transmitting the movement of said carriage member to means to be controlled by such movement.

3,294,208
ONE-WAY ROLLER OVERRUNNING REVERSIBLE CLUTCH
Edward A. Anderson, Cleveland Heights, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 16, 1964, Ser. No. 396,878
15 Claims. (Cl. 192—44)



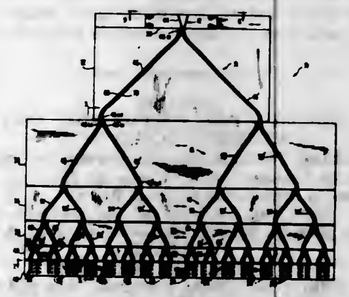
1. In a uni-directional engaging device comprising coaxially disposed driving and driven members supported for rotation; one of said members having a race surface; the other of said members having a generally coaxial surface radially spaced from said race surface and having at least one peripheral recess having a bottom of varying radial depth; a wedge element disposed between said recess and said race surface and movable in said recess between a wedging position for effecting rotation of said members as a unit when the relative rotation of one of said members is in one direction with respect to the other of said members and a releasing position when the relative rotation of said one member is in the opposite direction with respect to said other member; wedge element positioning means disposed between said coaxially disposed members including a member disposed outside of said recess and between said recess and said race surface for moving said wedge element to said wedging position when the relative rotation of said members is in said one direction, and retainer means for retaining said wedge elements and said wedge element positioning means in their dispositions between said coaxially disposed members, said retainer means comprising a generally radially extending retainer member supported by said other member and an axially extending lip integral with said other member which is bent over to retain said retainer member in place.

3,294,209
FRICTION MECHANISM WITH SAPPHIRE FRICTION SURFACE
Robert D. Kachman, Madison Heights, and William R. Kee, Birmingham, Mich., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 15, 1964, Ser. No. 396,783
1 Claim. (Cl. 192—66)



A friction device for clutches, brakes and the like, comprising a driving friction member and a driven friction member having friction faces in pressure contact; at least one friction element of brittle, elevated temperature resistant nature, such as sapphire, having a frusto-conical shape with opposite lateral faces converging on an angle of 60 degrees, seating in a like-shaped recess in one of said members and extending outwardly of the face of the member a small distance compared to its length, and being chamfered around the edge of the extended portion.

3,294,210
SORTING ASSEMBLY
Howard H. Aiken and Robert W. Bizrell, Carlisle, and Maynard W. Richards, York, Pa., assignors to Howard Aiken Industries, Carlisle, Pa., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,736
6 Claims. (Cl. 193—31)

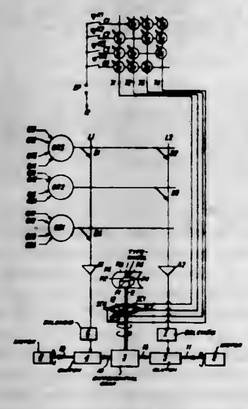


1. A selective sorting assembly of the type having a material feed inlet, a plurality of sorting stages arranged in succession following the inlet, and a plurality of separate sorted material outlets following the last of the sorting stages, an arrangement of the sorting stages and sorting paths therein allowing for a predetermined constant increment of movement to be applied to any selected one of the stages to accomplish this selected sorting, the arrangement comprising:
each sorting stage including material guiding paths in a body of the stage,
each said path having an inlet end and an outlet end,
the paths of each succeeding sorting stage being in separate groups,
there being a number of groups which is equal to the number of paths of the preceding stage,
the inlet end of the paths of each group of each succeeding stage originating adjacent each other and in the vicinity of the outlet end of each path of the preceding stage,
the inlet end of one of the paths of each group being normally aligned with the outlet end of the path of the preceding stage, and the inlet end of the other path of the same group originating inwardly of the outlet ends of the paths of the same group of the preceding stage, and
means for bodily moving the guide paths of adjacent stages relative to each other, the inlet and outlets by a predetermined constant increment of movement equal to the distance between the center of inlet ends of the paths of a group in the stage having relative movement to selectively align the outlet ends of the paths of the preceding stage with selected inlet ends of the paths of the next succeeding stage.

ERRATUM

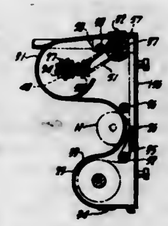
For Class 197—17 see:
Patent No. 3,294,117

3,294,211
TYPE PRINTING APPARATUS WITH MOTION GENERATOR AND INDICATING MEANS
Frederick Percival Mason, Croydon, England, assignor to Creed & Company Limited, Croydon, England, a British company
Filed Mar. 25, 1963, Ser. No. 267,661
Claims priority, application Great Britain, Mar. 30, 1962, 12,287/62
2 Claims. (Cl. 197—48)



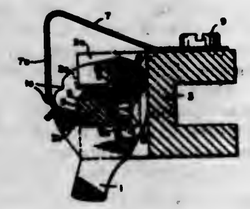
1. Type printing apparatus comprising:
a type-wheel having a plurality of typefaces disposed therearound;
a motion generator mechanically coupled to said type-wheel;
means for indicating whichever one of said typefaces on said type-wheel is in a printing position;
means for selecting anyone of said typefaces for movement to said printing position;
a matrix of "AND" gates, one for each combination of a current setting of said type-wheel and a desired setting of said type-wheel to move a selected typeface thereon to said printing position, and each adapted when energized by said indicating and selecting means to deliver an electric current signal output in accordance with said indication and selection, which electric current signal output from an "AND" gate corresponds to a required movement of the type-wheel between said current and a desired setting thereof;
a plurality of electronic "OR" gates coupled to said "AND" gates each of which is arranged to deliver an electric current signal output on receipt of an electric current signal input from one of said plurality of "AND" gates; and
amplifier means coupled to said "OR" gates for amplifying the electric current output from one of said "OR" gates and for applying the amplified signal to said motion generator to effect movement of the said selected typeface to the printing position.

3,294,212
PAPER LOADING DEVICE FOR DATA PRINTER
John D. Gearheart, Covina, and Donald O. Rasmussen, Arcadia, Calif., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Mar. 4, 1965, Ser. No. 437,216
2 Claims. (Cl. 197—133)



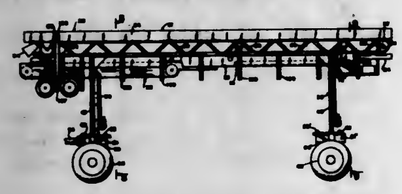
1. Means for removably mounting a record strip in cooperative relation with a data printer having power transmission means and a rotatable type member carrying a plurality of type characters therearound,
comprising a cartridge having a wall member,
means for removably attaching said wall member to said printer,
said wall member having a window therein,
spaced strip supply and takeup rolls supported by said cartridge on opposite sides of said window,
means on said cartridge for guiding a record strip from said supply roll,
intermediate said type member and said window and onto said takeup roll,
means on said cartridge for advancing said strip in equal increments onto said takeup roll,
a hammer carried by said cartridge intermediate the path of said strip and said window for effecting an imprint of a selected one of said type characters onto said strip,
said hammer being located intermediate said rolls,
means carried by said cartridge for actuating said hammer, and
means responsive to attachment of said cartridge to said printer for connecting said power transmission means to said advancing means and said actuating means,
an imprint of said type character on said strip being visible through said window.

3,294,213
TABULATING MECHANISM FOR TYPEWRITERS AND LIKE MACHINES
Karl Gunnar Hansen, Karlskoga, Sweden, assignor to Facit-Halda Aktiebolag, Svenarps, Sweden, a joint-stock company
Filed Nov. 20, 1964, Ser. No. 412,642
Claims priority, application Sweden, Nov. 26, 1963, 13,046/63
2 Claims. (Cl. 197—179)



1. A carriage tabulating mechanism for typewriters and the like comprising, in combination, a tabulating rod extending longitudinally of the carriage, a plurality of transversely extending guide slots in said rod, a like plurality of tabulator stops, each guided in one of said slots, a longitudinally extending groove in said tabulating rod, said groove extending into the portion of said rod bearing said transverse slots, circular openings in said tabulator stops, a shaft extending through said openings, said shaft being journaled in said longitudinal groove and forming a support upon which said tabulator stops are rotatably mounted, a spring comb having a tooth bearing against each said tabulator stop to hold said shaft in said longitudinal groove, a radially extending protrusion extending throughout the length of said shaft, said tabulator stops comprising a first and a second group wherein said openings are enlarged to a greater radius over lesser or greater angular extents respectively, said shaft protrusion lying in said enlarged openings, said tabulator stops of the first group being adapted to be set to active position or restored to inactive position by rotation of said shaft in opposite directions from a center position and said stops of the second group being adapted to be manually set to active position and to be returned to inactive position together with said first stops by rotation of said shaft.

3,294,214
CONVEYOR DEVICE
Malcolm S. Tveten, Benton, N. Dak. 58218
Filed Jan. 4, 1965, Ser. No. 423,001
4 Claims. (Cl. 198—89)



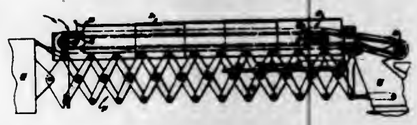
1. A conveyor apparatus comprising a frame, a first conveyor mounted to said frame, means for mounting said first conveyor for movement relative to said frame, means for moving said conveyor forward of said frame, a second conveyor beneath said first conveyor and movable therewith and movable relative to said first conveyor and said frame so as to project forwardly of said first conveyor, said second conveyor being pivotally mounted to said first conveyor, jack means positioned at the upstream end of said second conveyor to pivot said second conveyor about a horizontal axis, whereby said second conveyor when projected forward of said first conveyor is adapted to pivot about said horizontal axis.

3,294,215
ARTICLE ACCELERATOR OF VARIABLE PITCH CHAIN TYPE
Charles T. Walter, Lemont, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 14, 1965, Ser. No. 448,006
17 Claims. (Cl. 198—116)



1. Article conveying means comprising a channel having converging side walls, and article conveying means positioned within said channel, said means comprising a plurality of interconnected elements each of which includes a first anti-friction means and a second anti-friction means restrained by and adapted to follow the side walls of said channel, one anti-friction means per wall, an article engaging finger connecting said first and second anti-friction means and extending beyond one of said walls, an intermediate link joining each of said elements to the adjacent element, and means for advancing said article conveying means in said channel to convey articles therealong and to smoothly accelerate said articles in accordance with the angle of convergence of said converging side walls.

3,294,216
EXTENSIBLE CONVEYOR
Antonio Lawrence Girardi, Rte. 3, Box 324, Stockton, Calif. 95205
Filed Mar. 25, 1964, Ser. No. 355,532
5 Claims. (Cl. 198—139)



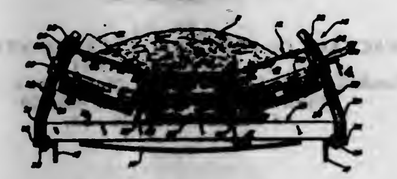
1. An extensible conveyor belt for apparatus provided with an extensible conveyor frame comprising a plurality of frame sections movable longitudinally relative to each other through a wide range of movement between fully retracted and fully extended positions and having pulleys mounted upon opposite ends of the conveyor frame for movement by and with the conveyor frame sections in conformity with extending and retracting movements thereof, said conveyor belt comprising a plurality of elastic members adapted to operate over the pulleys, said elastic members being disposed in laterally proximate and longitudinally parallel relationship and being extensible by and with the conveyor throughout the range of relative movement of the frame sections thereof, and transversely disposed cross members secured to the elastic members at spaced points along the length of the conveyor for holding said elastic members in fixed lateral proximity while permitting longitudinal extension and retraction of the elastic members in conformity with lengthening and shortening movements of the conveyor frame sections.

3,294,217
[illegible]
John G. [illegible], [illegible], assignor to E. Jos. Lamb Co., [illegible]
[illegible] 9 Claims. (Cl. 198—168)



1. A workpiece elevator comprising a pair of vertically spaced sprockets one of which is adapted to be driven, an endless chain trained around the sprockets so that it has an upward traveling run and a downward traveling run, a vertically extending elevator shaft adjacent each of said runs, said elevator shafts being adapted to restrain workpieces therein laterally, each elevator shaft having a slot extending along one side thereof, each slot having a width less than the elevator shaft, a plurality of work pushers on said chain, said pushers extending laterally from said chain and being adapted to project horizontally through said slots and into said elevator shafts to form workpiece-supporting elements and means forming a delivery chute to each elevator shaft and a discharge chute from each elevator shaft the delivery and discharge chutes in each elevator shaft being vertically spaced.

3,294,586
BELT CARRIER
Alfred Chamberland, Humboldt, Iowa 50548
Filed Aug. 19, 1964, Ser. No. 390,099
4 Claims. (Cl. 198—192)



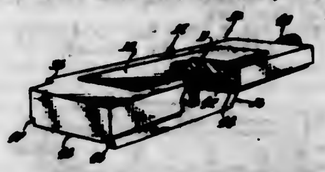
1. A carrier for supporting a portion of a belt comprising:
(a) a frame member including a cross bar having end sections and an upright support means,
(b) upright posts having lower end sections and upper end sections, the lower end section of each post being secured to a corresponding end section of the cross bar and the upper end sections of the posts being curved inwardly toward each other, the axis of the radius of curvature of each upper end section intersecting said upright support means,
(c) first roller means for supporting the midsection of said belt, said first roller means extended substantially parallel to said cross bar and secured for rotation to said upright support means, and
(d) second roller means for supporting the side sections of said belt, each of said second roller means having shaft means for rotatably supporting said roller means, each of said shaft means having inner ends pivotally mounted on the upright support means at said ends of the radii of curvature of said upper end sections, and means adjustably securing the outer ends of each of said shaft means to the corresponding upper end sections of the posts for varying the angular position of the second roller means relative to the first roller means to change the cross sectional concave contour of the belt.

3,294,587
COMPACT CENTER [illegible] AUGER CONVEYOR
Merlin [illegible], Algona, Iowa,
Filed [illegible] 6 Claims. (Cl. 198—213)



1. An auger conveyor construction comprising a pair of auger tubes having respective end portions thereof substantially overlapping and in parallel offset communication with one another, respective right-hand and left-hand helical auger flights in said auger tubes and each journalled in a respective end plate of the corresponding tube, each of said end plates being secured to the side wall of the other tube; a shaft for each auger flight, said shafts extending through the respective end plates and secured to respective pulleys lying in planes perpendicular to the common plane of said auger flight shafts; a pair of transfer pulleys mounted on a common transverse axis and spaced and dimensioned to have common tangents with reference to the pulleys of said auger flight shafts; an endless belt connecting all of said pulleys, and means for driving one of said transfer pulleys.

3,294,220
CASTING DEVICE
Fred L. Mosier, Chicago, Ill., assignor to Ludlow Typograph Company, Chicago, Ill., a corporation of Delaware
Filed July 15, 1963, Ser. No. 472,241
4 Claims. (Cl. 199—1)



1. For use with a slug casting machine having means for supplying molten metal to a casting space, mold means comprising a portion of the walls of the casting space, and holding means for rigidly positioning a matrix assembly in contact with the mold means, an improved matrix assembly comprising a casing having an upper surface, a lower surface and an aperture extending between said upper and lower surfaces, said lower surface of said casing including a flange surrounding said aperture, a

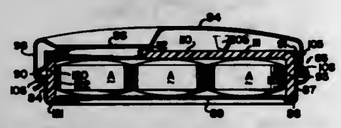
matrix fitting within said aperture and supported by said flange in spaced relation to the mold means so that said matrix and said flange cooperate with the mold means to define the casting space, said matrix having a vertical dimension less than the distance between said flange and the upper surface of said casing, and a holding block fitting within said aperture and lying against the upper side of said matrix, said holding block having a vertical dimension correlated with the dimension of said matrix so that the upper surface of said holding block projects above the upper surface of said casing and said holding block and the holding means cooperate to rigidly position said matrix in contact with said flange.

3,294,221
MOVING AND STORAGE WARDROBE CONTAINER
Michael F. Notko, North Riverside, and John F. Zoellin, Wheaton, Ill., assignors to Druth Packaging Corp., Chicago, Ill., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,902
6 Claims. (Cl. 206—7)



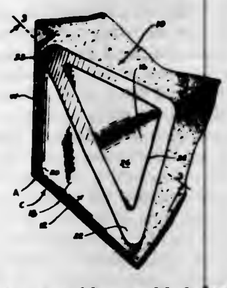
1. A moving and storage wardrobe container, comprising an elongated container having a closed bottom and having side and end panels provided at their tops with side and end sealing flaps, one of said sides being transversely crimped at an intermediate point to provide an access door adjacent the flap thereof, a hanger bar extending through said end flaps and resting on said end panels, each of said top end flaps having latching slots on either side of said bar and parallel with said side panels, and each of said side flaps having inwardly-turned tabs for latching engagement with the slots of said end flaps.

3,294,222
AIR-TIGHT TABLET BOX
Jack Edward Hodgson, Baltimore, Md., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 2, 1965, Ser. No. 429,712
4 Claims. (Cl. 206—42)



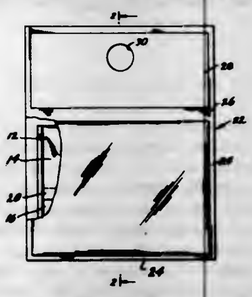
1. A tablet container comprising a container body having a bottom wall, opposed side walls, a front wall, and a rear hinge wall, a cover, the cover including an end panel and a depending peripheral skirt contoured to the general configuration of the container body for embracingly surrounding the same in a closed position of the cover and container body, said peripheral skirt including a hinge wall, said hinge walls being cooperatively secured together by hinge means for hingeably uniting said cover and container body, means for securing said container body and cover in the closed position thereof, means forming a air-tight seal between portions of the cover and the container body in the closed position thereof, said seal forming means being an insert conforming generally to the configuration of said container body, said insert having an upper panel disposed generally adjacent the end panel of said cover, said insert upper panel including an upstanding peripheral lip terminating in a free terminal edge, and said cover end panel including a recessed portion contactingly engaging and forming a seal with the free terminal edge of said peripheral lip in the closed position of said container body and cover whereby articles packaged therein are precluded from being adversely affected by air and moisture.

3,294,223
CORNER SUPPORT FOR PACKAGING OF ARTICLES
Francis T. Gobus, 36 Fern Court, Hicksville, Long Island, N.Y. 11801
Filed June 15, 1964, Ser. No. 375,190
4 Claims. (Cl. 206—46)



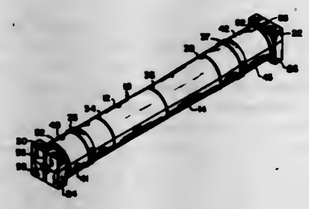
3. A corner support blow-molded from polyethylene plastic material into a triangular polyhedron configuration and shaped to be fitted into the corners of a carton, said corner support comprising a unitary wall including three pairs of inner and outer wall segments, the walls of each pair being spaced apart from each other and disposed in confronting relation and said pairs together forming an air-tight hollow internal chamber entrapping a volume of air.

3,294,224
PACKAGE OF POWDERED INGREDIENTS FOR WATER-BASE PAINT
Harold Horwitz, Highview Road, Mossey, N.Y. 10952
Filed Nov. 4, 1964, Ser. No. 409,019
5 Claims. (Cl. 206—46)



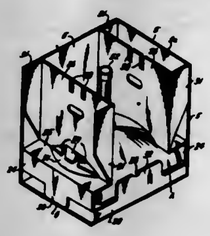
2. As an article of manufacture, a package of ingredients for preparing a water-base paint comprising an admixture of finely comminuted paint pigment, finely comminuted filler material, and finely comminuted water soluble glue, an envelope formed of a water soluble synthetic plastic material enclosing said admixture of powders and an outer hermetically-sealed air and moisture-impervious envelope enclosing said water soluble envelope.

3,294,225
COMBINED SHIPPING PACKAGE AND PROTECTIVE ARMOR FOR GLASS PIPE
Charles H. Kenyon, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,975
12 Claims. (Cl. 206—46)



11. The combination with a section of glass pipe of packaging and armoring means, said means comprising a body portion surrounding said pipe and having an inner surface complementary to the outer surface of said pipe an end portion at each extremity of said body portion, each said end portion being provided with a transverse outwardly extending square flange and between said body portion and each said end portion a weakened portion adapted to facilitate the removal of said end portion to expose an end of said pipe.

3,294,226
CONTAINER
William W. McFarland, Wooster, and Harry D. Wintringer III, Shelby, Ohio, assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed Sept. 2, 1965, Ser. No. 484,544
23 Claims. (Cl. 206—46)



11. In combination, a container, a packaging insert and an article, said article consisting of a base portion integral with relatively smaller neck portion, said insert having horizontal fold lines and vertical fold lines which generally define and hingedly connect parts of said insert, said parts including an article bottom support and cushioning panel, first article support and cushioning panels each connected to an edge of said bottom panel by a said vertical fold line, second article support and cushioning panels each connected to an edge of said first panels by a said vertical fold line, third article support and cushioning panels each connected to an edge of said second panels by a said vertical fold line, first article spacer members each connected to an edge of said bottom panel by a said horizontal fold line, second article spacer members each connected to a said edge of said bottom panel by a said vertical fold line, third article spacer members each connected to an edge of said third panels by a said horizontal fold line and each of said second panels and each of said third panels having means defining an article receiving and positioning opening at a said vertical fold line, said first panels being folded perpendicularly to said bottom panel and extending upwardly therefrom, said second panels being folded perpendicularly to said first panels and extending inwardly therefrom, said third panels being folded perpendicularly to said second panels and extending upwardly therefrom, said first and second members being folded perpendicularly to said bottom panel and extending downwardly therefrom, said third members being folded perpendicularly to said third panels and extending outwardly therefrom, said base portion of said article being positioned upon said bottom panel of said insert and with parts of said base portion being positioned in each of said openings and said insert being positioned within said container.

3,294,227
MULTIPLE COMPARTMENT PACKAGE
William S. Schneider, Glendale, and Arthur P. Corello, North Hollywood, Calif., assignors of ten percent to V. Wayne Rodgers, South Pasadena, Calif.
Continuation of application Ser. No. 243,948, Dec. 11, 1962. This application Mar. 5, 1965, Ser. No. 443,749
10 Claims. (Cl. 206—47)



1. A compartmented package adapted to hold and mix a plurality of components and having at least two adjacent compartments of which one is adapted to hold a liquid, comprising: a flexible bag having two opposed, similarly shaped outer walls secured to each other to form between them an interior space within the bag; and rupturable barrier means between and secured to the two outer walls to divide the interior space into two separate compartments, said barrier means comprising an elongated sheet having a first layer of heat sealing thermoplastic compound and a backing layer bonded to the first layer, and folded longitudinally into a U-shape with the heat sealing layer outside and the respective arms of the U-shaped heat sealed by the first layer of heat sealing thermoplastic compound to opposed areas on the inside faces of the outer walls of the bag placing the loop portion of the heat sealing layer between the outer walls and exposed to liquid in said one compartment; said barrier means being constructed to be ruptured by forces that tend to spread the outer walls apart and place the first layer under a predetermined tension at the loop therein, the barrier means rupturing along a line of relative weakness between the two portions of the first layer sealed to the outer walls whereby liquid can flow from said one compartment to the other along a path following said line of rupture, said backing layer of the barrier means consisting of a sheet co-extensive with said layer of heat sealing thermoplastic compound and the heat sealable bond between the heat sealable thermoplastic compound and said backing layer being of less strength than the corresponding bond between the heat sealable compound and the walls of said bag to provide the line of rupture when the walls of the bag are spread apart to subject the barrier to rupture forces.

3,294,228
CARBON RIBBON SUPPLY PACKAGE
Sebastian J. Urso and John C. Broadwell, Hartford, Conn., assignors, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 28, 1964, Ser. No. 407,128
6 Claims. (Cl. 206—52)



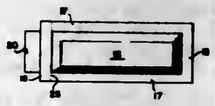
2. In combination:
a hollow ribbon core on which a ribbon is wound, and a combined package and mounting container for said core wound ribbon adapted to be non-rotatively secured to a typewriter frame, said container comprising a pair of ribbon guide flanges, one of said flanges having a coaxially formed sleeve extending toward the other of said flanges dimensioned to rotatably support said ribbon core and to be supported by a typewriter frame supported post extending thereinto,
annular means peripherally fixedly securing said ribbon guide flanges in spaced parallel relation so that the axial spacing between said flanges is greater than the width of said ribbon,
and a removable spacer disposed between one side of said core wound ribbon and one of said guide flanges to prevent axial movement of said core wound ribbon between said flanges during shipping and storage,
said annular means having cut out sections to permit removal of said spacer and to provide an exit for said ribbon respectively.

3,294,229
RETAIL TABLE NAPKIN PACKAGE
Albert L. McConnell, Nether Providence, and Marshall L. Corazza, Glen Mills, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 15, 1965, Ser. No. 448,361
3 Claims. (Cl. 206—57)



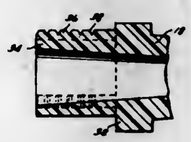
1. In combination, a folded paper product holder comprising an elongated base having inwardly converging upstanding portions integrally connected to its longitudinal sides, said holder being formed from a single sheet of semi-rigid resilient foam the ends of which have been bent into position along heated transverse lines defining the longitudinal sides of said base to form said upstanding portions, said upstanding portions inclining inwardly over said longitudinal base so that the upper ends thereof approach each other in the relaxed position, a plurality of folded paper products of substantially equal size arranged in overlying relationship, said folded paper products being removably retained edgewise within said holder so that said upstanding portions contact the outer faces of the outer folded paper products, and an overwrap surrounding said folded paper products and said holder.

3,294,230
COMBINATION PROPHYLACTIC AND LUBRICANT THEREFOR
Stanley Penska, Worcester, N.Y. 12197
Filed Sept. 25, 1964, Ser. No. 399,169
1 Claim. (Cl. 206—63.2)



A combination package of pliable material having two spaced compartments including a first compartment containing a lubricant and a second compartment containing a prophylactic, the package consisting of a substantially flat first wall common to both compartments and providing one wall of each compartment, a second wall for said first compartment and a second wall for said second compartment, said second wall being mutually substantially identical and each including a basin-shaped portion and peripheral edge portions extending outwardly from the rim of the basin-shaped portion and lying in a common plane, said second walls having said edge portions thereof sealed to said first wall thereby together with said first wall enclosing said compartments, a separate easily rupturable means for each of said compartments for facilitating opening of the compartments, said means for said second compartment consisting of a reduced unattached extension of one of the edge portions of said second wall of said second compartment to provide a pull tab and continuous substantially parallel tear lines extending from said tab through said second wall of said second compartment for a substantial distance, said means for said first compartment consisting of a tear line extending through one edge portion of the rim of the basin portion of said second wall thereof and through said first wall.

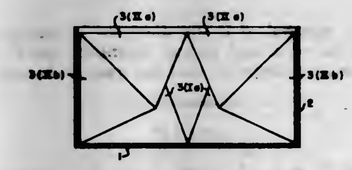
3,294,231
DENTAL NEEDLE SHIELD
Russell C. Vanderbeck, Saddle River, N.J., assignor to Becton Dickinson and Company, East Rutherford, N.J., a corporation of New Jersey
Filed Nov. 1, 1965, Ser. No. 505,889
1 Claim. (Cl. 206—63.2)



A sterile disposable needle assembly adapted for use with a hypodermic syringe comprising a substantially rigid hub element having a longitudinal opening therethrough and including an annular skirt portion and a neck portion integral therewith and extending in opposite longitudinal directions, said neck portion carrying a plurality of longitudinal extending and circumferentially spaced ribs, said annular portion carrying an internal relatively rigid thread, a cannula rigidly and sealingly received within said longitudinal opening of said hub whereby the ends of the cannula extend outwardly of said annular skirt and neck portions, a sheath member received on said neck in surrounding relation to one of said cannula ends and frictionally retained by said neck ribs, a yieldable cap

adapted to be received within said annular portion in surrounding relation to said other cannula end, and means on said cap for mounting the latter to said annular portion comprising a plurality of longitudinally extending and circumferentially spaced ribs of less rigidity than the thread formed on the annular skirt portion whereby said cap is received on said hub by a straight axial force causing the open end to yield inwardly thereafter returning to its original shape to be retained by the interaction of said ribs and thread in assembled position for removal by an unthreading force.

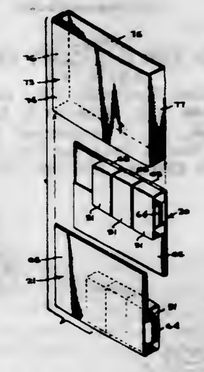
3,294,232
COMPACT STACKING ASSEMBLY FOR TETRAHEDRAL PACKAGES IN A CONTAINER
Lars Malte Roland Wettlen, Lomma, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a corporation of Sweden
Filed May 10, 1965, Ser. No. 454,397
6 Claims. (Cl. 206—65)



1. A compact stacking assembly for a number of tetrahedral packages 3, the four triangular sides of which are essentially congruent in relation to each other, said packages being stacked in a container 1, 2 having a side wall 2 surrounding a central container axis, characterized in that the package 3 in the container 1, 2 form sets having essentially the shape of a sector angle of less than 180° and constituting a sector of a double-coned polygonal disc having a cross-section tapering from the cone axis towards the circumference and in which each package defines, by means of one or two relatively perpendicular and opposed margins provided with sealing fins 4, a corresponding portion of the sector circumference margin, while by means of the other one, together with the corresponding margins of the remaining packages in the set, it essentially defines the sector apex margin coinciding with the cone axis, and that the sets with their sector circumference margins contained in planes through the container axis have their sector apex margins resting against the inside of the side wall 2 of the container in alternatingly one and the other of two cross-sectional planes perpendicular to the container axis.

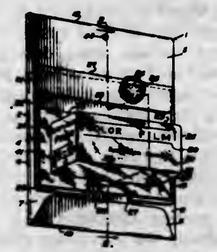
3,294,233
PACKAGE ASSEMBLY
Paul Hellinger, Pikesville, Md., assignor to Nexcross Chemical Company, Baltimore, Md., a corporation of Maryland
Filed Oct. 22, 1965, Ser. No. 502,233
14 Claims. (Cl. 206—65)

1. A package assembly comprising at least two carton units nested together, each of said units including a main panel and a carton secured to the back side thereof, said cartons having slits in the upper and lower portions thereof adjacent said main panel, said cartons being disposed in side by side relation with said main panels in overlapping relation and a connector including a first panel overlying the front sides of the overlapping main panels of said carton units, tuck flaps hingedly connected to the first connector panel received within the slits in the lower portions of said cartons, a second panel hingedly connected to the upper portion of the first connector panel overlying the back sides of the overlapping main panels of said carton units and the second connector panel having tuck



flaps inserted into the slits in the upper portions of said cartons.

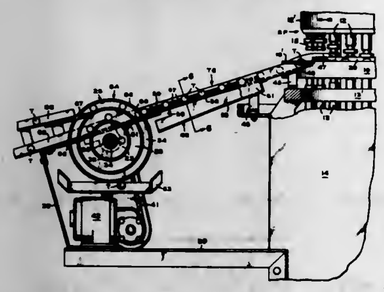
3,294,234
DISPLAY AND MAILING ENVELOPE
Walter L. Hierstetner, Mission, Kans., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,474
6 Claims. (Cl. 206—78)



5. A display and mailing envelope for an article of merchandise, including
generally rectangular front and back panels interconnected along two edges by folds,
a bottom flap and a closure flap on other edges of one panel,
an extension on the bottom flap and having an easy line of tear,
a carrying sheet for displaying an article of merchandise thereon,
adhesive securing the carrying sheet to one face of the extension of the bottom flap,
adhesive securing the bottom flap to said other panel and cooperating with the folds in closing sides and bottom of a pocket between said panels with the pocket having an insert opening at the closure flap,
said closure flap having a portion overlapping a portion of the carrying sheet opposite the seal flap,
means for retaining an article to be displayed to the carrying sheet and holding said portion of the closure flap in contact with the carrying sheet to cooperate with the bottom flap in retaining the carrying sheet against the envelope and said closure flap in closed position over the insert opening when the article is on display,
said portion of the closure flap being removable to free the carrying sheet for facilitating detachment of the extension from the bottom flap when the carrying sheet is removed for insertion of the article into the pocket of the envelope, and

an adhesive on the closure flap to seal the closure flap when the article is placed in said pocket.

3,294,235
APPARATUS FOR GAUGING AND SORTING ARTICLES
Courtney G. Pitkin, University City, and John J. Fahey, Webster Groves, Mo., assignors to Lewis-Howe Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 8, 1963, Ser. No. 322,443
11 Claims. (Cl. 209—104)



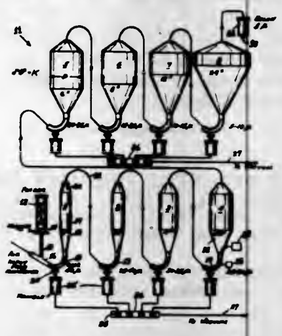
4. A gauging apparatus for receiving all articles from a source and individually sizing and sorting articles within a predetermined manufacturing tolerance from other articles that are relatively undersized and oversized comprising rotating wheel means having disc members mounted on a common axis in fixed spaced relation, said disc members having surface areas defining groove means therebetween, said surface areas being formed within predetermined tolerances to provide a central groove means portion defining the maximum dimension of undersized articles, to provide an annular intermediate groove means portion circumscribing said central portion and defining the maximum dimension of articles within the manufacturing tolerance therefor, and to provide an annular outer groove means portion circumscribing said intermediate portion and defining the maximum dimension of articles that will be accommodated by said groove means, means for feeding articles in spaced relation into said groove means at a substantially uniform rate, and said wheel means having a predetermined speed of rotation to accommodate and remove articles from said feeding means at substantially the delivery rate thereof.

3,294,236
METHOD FOR PNEUMATICALLY ELUTRIATING SOLID PARTICLES
John S. Lagarias, Silver Spring, Md., assignor to American Instrument Company, Inc., Silver Spring, Md.
Filed Jan. 28, 1965, Ser. No. 428,693
1 Claim. (Cl. 209—139)

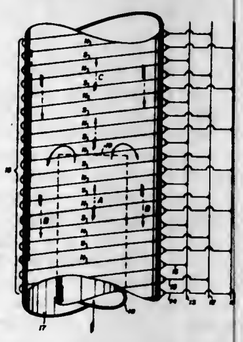
A method of separating finely divided material into a plurality of fractions in a multi-stage apparatus of the type comprising a series of vertical elutriation chambers of increasing diameters wherein each chamber is provided at its bottom end with an inlet conduit, respective conduits connecting the top ends of the elutriation chambers to the inlet conduits of the next successive elutriation chambers, a collecting vessel connected to the top end of the last chamber for receiving the smallest fraction, and additional collecting vessels connected to the inlet conduits for receiving the intermediate fractions, the reciprocals of the diameters of the successive chambers differing by a substantially constant amount through the entire series of chambers, the steps of introducing compressed air into the inlet conduit associated with the smallest elutriation chamber, introducing the material to be fractionated into the last-named conduit, and regulating the air flow substantially in accordance with the expression

$$F=0.1409\times10^{-3}\,\rho d^{2}D^{2}$$

where F is the air flow in liters per minute, ρ is the density of the material, d is the diameter in microns of a particle to be separated in any chamber, and D is the diameter in centimeters of said last-named chamber.

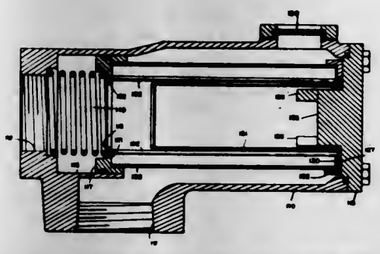


3,294,237
MAGNETIC SEPARATOR
David Weston, 129 Adelaide St., W., Toronto, Ontario, Canada
Filed May 31, 1963, Ser. No. 284,423
15 Claims. (Cl. 209—214)



1. A process for separating particles of a solid material having at least a predetermined magnetic susceptibility from a mixture of said particles with other solid particles having a lower magnetic susceptibility, said process comprising: helically developing a flow of multi-phase alternating current around a tubular space whereby to form and maintain within said tubular space a magnetic field characterized by a plurality of planar north and south poles alternately disposed transversely to the longitudinal axis and substantially across the whole cross section of said tubular space, said magnetic field having a sufficient flux density effectively to magnetize said particles of solid material having at least said predetermined magnetic susceptibility: forming a suspension of said mixture in a fluid vehicle: introducing said suspension and advancing the same along a first pathway within said tubular space and extending lengthwise thereof, advancing said poles stepwise along said tubular space whereby the particles of material within said suspension which are effectively magnetized are advanced along said first pathway under the influence of the stepwise advancement of said poles: discharging said suspension from said first pathway into said tubular space: withdrawing along a second pathway within said tubular space said fluid vehicle and suspended solid material which is not effectively magnetized and subsequently collecting such material: and continuing to advance said effectively magnetized particles within said tubular space under the influence of the stepwise movement of said poles to a point of collection and collecting the same.

3,294,238
OIL FILTERS
Oscar E. Rossen, Grosse Point, and Nils S. Rossen, Bloomfield Hills, Mich., assignors to The Rossen Filter Company, Hazel Park, Mich., a corporation of Michigan
Continuation of application Ser. No. 26,046, May 2, 1960. This application Dec. 11, 1963, Ser. No. 331,640
3 Claims. (Cl. 210—90)



1. An oil filter comprising a cylindrical housing, a laterally arranged oil inlet thereto, an axially arranged oil outlet therefrom, the housing wall surrounding said outlet being finished to provide a cylinder, an annular piston slidable in said cylinder and carrying one end of a first cylindrical screen surrounding the opening in the annular piston and spaced from the wall of the housing, a ring abutting the other end of said screen and fixed thereto, a second cylindrical screen fixed at one end thereof to said ring and closed at the opposite end and concentrically disposed within and spaced from the first screen to form a two screen cartridge unit, a closure plate for said housing at the end opposite said outlet, said plate having a boss coaxial with said ring and slidably fitting therein, spring means biased between said piston and said housing at the end of said housing opposite said ring for maintaining the piston, screen and ring assembly against said closure plate and with said boss closing the ring opening, said spring means allowing the said assembly to move axially away from said plate and uncover the ring opening to permit incoming oil to enter said opening and by-pass said first mentioned screen when the pressure differential between the space inside and outside said screens increases beyond a predetermined amount due to clogging of the first screen, and means engaging the ring and movable thereby upon axial movement of said assembly to indicate the extent of said movement.

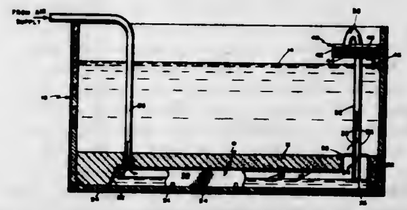
3,294,239
AQUARIUM AERATOR
Frank Dayes, 4971 Narragansett St., San Diego, Calif. 92105
Filed Mar. 15, 1963, Ser. No. 265,517
2 Claims. (Cl. 210—169)

1. A filter and aerator for use in an aquarium tank containing water, a bed of comminuted particles on the floor of said tank and a source of air under pressure, said filter and aerator comprising:

an imperforate housing having a top wall of an area comparable to the water surface and side walls extending substantially normal thereto;

openings in the lower edge of said side walls to facilitate flow of liquid through the entire thickness of said bed and into said housing;

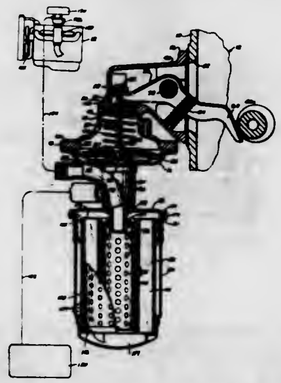
an outlet conduit having an end disposed below the level of said top wall for the discharge of liquid and air from said housing, a top filter into which said



outlet tube exhausts, and said outlet tube having by-pass openings between said housing and top filter; and

an air inlet tube to admit pressurized air to said housing to depress the level of the water to the end of the outlet conduit.

3,294,240
FUEL PUMP AND FILTER ASSEMBLY
Alfred C. Korte, Jennings, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 161,044, Dec. 21, 1961. This application Dec. 6, 1965, Ser. No. 517,146
7 Claims. (Cl. 210—181)



1. A pump for vaporizable fuel comprising; a spring housing having a peripheral flange defining an opening, a pump housing including a plate attached to said peripheral flange, a diaphragm disposed across said spring housing opening and being sealably held at said peripheral flange to define a pumping chamber in said pump housing adjacent said plate, actuating means pivotably engaging said spring housing and being operably connected to said diaphragm for reciprocably moving the latter in said pumping chamber, a plurality of elongated thin walled cup members depending from said pump housing plate in a generally parallel direction, said cup members being spaced from each other to allow the passage of air thereabout, each of said cup members having an open end thereof communicated with said pumping chamber, one of said cup members having fuel inlet means, a check valve disposed in each of said elongated cup members and being operable to provide a unidirectional flow of fluid through said pump chamber in response to reciprocatory movement of said diaphragm, a filter support structure including a plate depending from

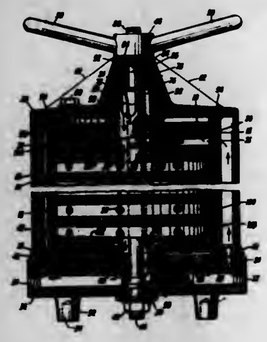
at least one of said elongated cup members and being spaced from said pump housing to expose the respective spaced cup members to said passage of air thereabout, and having a circular rim on said filter support plate, discharge means including a conduit carried in said filter support structure having an inlet opening disposed inwardly of said circular rim and an outlet disposed adjacent said respective elongated cup members, passage means in said filter support structure communicating the latter with at least one of said elongated members to receive fuel therefrom, a filter assembly carried on said filter support structure and including a filter cup sealably engaging said circular rim and defining a closed filter compartment, a cylindrical filter unit positioned in said filter cup and including an outlet port engaging said discharge means providing communication with the latter, said filter unit having an end wall disposed adjacent to said plate of said filter support structure and defining a space therebetween for accumulating air and vapors of said vaporized fuel.

3,294,241

EASILY ASSEMBLED FILTER ASSEMBLY

Marcel Clarence Sicard, Cheshire, and Arthur W. Schnick, Meriden, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Dec. 11, 1963, Ser. No. 329,621
10 Claims. (Cl. 210—232)



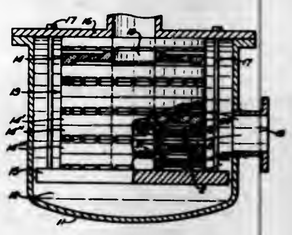
1. A filter comprising a pressure tight housing, having lower and upper facing end members, a substantially cylindrical hollow filter stack held under endwise compression within said housing by and between said end members, said lower end member having inlet and outlet passages and a central cavity communcating with said outlet passage, said upper end member having a central cavity communcating with the center of said stack, a non-circular impermeable collector tube supported in said lower central cavity in fluid tight engagement therewith and passing axially through said stack beyond the upper surface thereof into said upper cavity, said collector tube having at least one opening adjacent its upper end and axially beyond said upper surface and radially extreme and axially extending land-like surfaces engaging the interior peripheral walls of said stack and said upper cavity to affect trans-axial alignment therebetween and to define, in conjunction with said peripheral walls, a plurality of axially extending passages stretching from said lower member to said central cavity within said upper member and communicating with the interior of said tube, and means for maintaining said housing, said stack and said tube in pressure tight condition with respect to each other, whereby fluid entering said filter serially passes through said stack, vertically upward through said axially extending passages, thence downwardly through said collector tube and outward from said outlet port.

3,294,242

FILTER ASSEMBLY HAVING FILTER ELEMENTS WITH INTEGRAL DISTRIBUTING AND SUPPORTING MEANS

Georges Notari, Monte Carlo, Monaco, assignor to Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone, Paris, France, a corporation of France

Filed June 10, 1964, Ser. No. 373,950
Claims priority, application France, June 15, 1963, 938,258
10 Claims. (Cl. 210—347)



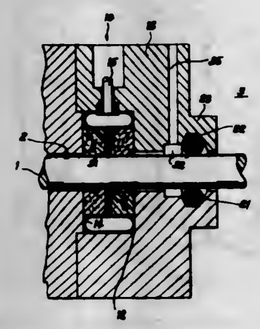
1. A filter comprising a plurality of substantially identical elements, each element being made from a porous material and being substantially plate-like with two oppositely disposed sides defining the thickness thereof, each said element having a substantially central orifice extending therethrough, one of said two sides including a peripheral bearing member which extends inwardly from the periphery of said element towards but short of said orifice, the other of said two sides including a bearing member which extends peripherally around said orifice and extends outwardly from said orifice towards but short of the periphery of said element, one of said two sides including a plurality of spaced apart first ribs each of which runs from a location spaced inwardly from the periphery of said element towards said orifice and at least some of which terminate substantially at said orifice thereby forming passageways which have openings at said orifice and which terminate inwardly from said periphery, the other of said two sides including a plurality of spaced apart second ribs each of which runs from a location spaced inwardly from the periphery of said orifice towards the periphery of said element and at least some of which terminate substantially at the periphery of said element thereby forming passageways which have openings at said periphery and which terminate inwardly from said orifice, the upper surface of each of said first and second ribs being in the same plane as the outer face of the bearing member of its side, said first and second ribs extending and being inclined in directions such that they angularly intersect planes disposed radially of the central axis of said orifice, said elements being arranged substantially in alignment so that the orifice of each forms a central passageway through the filter and being further arranged so that the peripheral bearings of a pair are opposite and in engagement with one another, so that a third element has its orifice bearing opposite and in engagement with the orifice bearing of one element of said pair so that said ribs on each side of each element are opposite to and in engagement with said ribs on the next adjacent element along substantially the length of said ribs, and so that a fourth element has its orifice bearing opposite and in engagement with the orifice bearing of the other element of said pair.

3,294,243

STUFFING BOX CONSTRUCTION

Georges F. Carlo, Rue Roche a Gardanne, Bouches-du-Rhone, France

Filed Sept. 10, 1963, Ser. No. 308,026
Claims priority, application France, Sept. 19, 1962, 909,503
8 Claims. (Cl. 210—402)



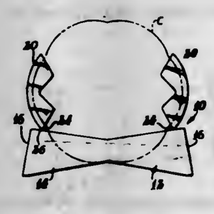
4. In a filter apparatus for use in combination with abrasive material wherein said apparatus comprises a rotatable drum including porous wall portions, said drum including a shaft and a bearing carrying said shaft, and wherein in the operation of said apparatus the axis defined by said shaft is located below the level of said abrasive material, the improvement comprising a stuffing box comprising a housing, a first annular chamber defined by said housing, a first plastic packing included within said chamber and surrounding said shaft in close fitting relationship therewith, a second plastic packing included within said second chamber and surrounding said shaft in close fitting relationship therewith, said second chamber and packing being located between said first chamber and said bearing, a pressure applying member comprising a flexible tubular member surrounding said second packing, means for introducing fluid under pressure into said tubular member for increasing the pressure applied by said second packing to said shaft, an open space defined between said packings, and means for introducing fluid under pressure into said open space.

3,294,244

STORAGE DEVICE FOR CIRCULAR OBJECTS

Clayton A. Laughlin, St. Paul, Minn., assignor to Flambeau Plastics Corporation, a corporation of Wisconsin

Filed Feb. 8, 1965, Ser. No. 431,846
5 Claims. (Cl. 211—41)



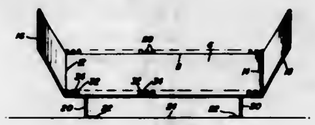
1. A unitary holder for storing circular objects, said holder comprising a base, a pair of upstanding ears for receiving said objects therebetween, and means integral with both said base and with said ears for hingedly and resiliently connecting said ears to said base.

3,294,245

CATALOG FILING RACK

Arthur M. Parce, 1519 Druid Hills Ave., Hendersonville, N.C. 28739

Filed Feb. 10, 1965, Ser. No. 431,628
8 Claims. (Cl. 211—42)



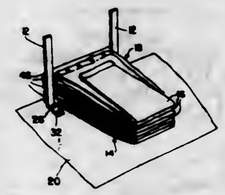
1. In combination with a plurality of articles each of the type including a plurality of pages bound together along one set of corresponding marginal edge portions and forming a back thereon, a rack for supporting said articles in position for ready reference, said rack comprising base panel means including an upper surface and one pair of generally parallel opposite marginal edge portions, said edge portions each including a plurality of longitudinally spaced anchor lugs, said articles being disposed on said base panel means with the backs thereof resting on said panel means and extending between said edge portions, a plurality of tension members each defining a pair of generally parallel reaches interconnected at opposite ends by means of integral end portions, said tension members each extending between said edge portions and having the end portions thereof passed about corresponding lugs carried by said edge portions, at least one reach of each tension member passing between adjacent pages of a corresponding article.

3,294,246

STACKED ARTICLE SEPARATOR DEVICE

Irving Oppenheim, 17202 Steopel Ave., Detroit, Mich. 48221

Filed Feb. 25, 1966, Ser. No. 530,836
8 Claims. (Cl. 211—49)



1. In a device for maintaining the alignment of soft goods articles arranged in a stack though intermediate members of said stack are removed therefrom comprising

a surface for supporting a stack of articles,

upstanding spaced apart posts secured to said surface at one end of and adjacent each side of a stack,

and a plurality of relatively flexible separators in sheet form for separating each of the articles one from the other,

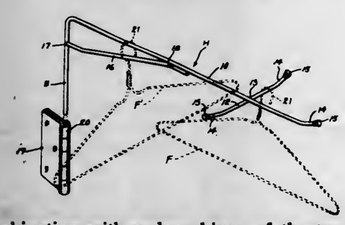
each of said separators having a body adapted to be disposed between adjacent articles of the stack and means secured to and at one end of said body adapted to engage and to move freely from and relative to said upstanding posts so as to restrict movement of said separator in the direction of the stack when an article is removed from the stack.

3,294,247
ADJUSTABLE RIFLE RACK
Newell E. J. Norrington, 1138 W. 10th Ave., Albany, Oreg. 97321
Filed Jan. 21, 1965, Ser. No. 426,791
5 Claims. (Cl. 211—64)



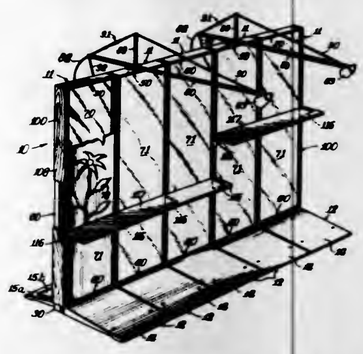
1. A mounting rack for rifles, comprising
(a) a pair of elongated supports adapted to be secured to a base in laterally spaced relation, each support comprising
(1) a pair of elongated strap members each having a plurality of longitudinally spaced openings therethrough,
(2) the pair of strap members being adapted to be arranged in longitudinally adjustable, overlapping relation with the openings in said overlapping portions in registry with each other,
(3) the outer end of each strap member being adapted to be secured to a base,
(b) at least one rifle support member associated with each support, each rifle support member having a base portion adapted to abut against the outer surface of the associated overlapping strap members, and
(c) elongated attaching means on said base portion extending rearwardly therefrom for passage through a pair of said registering openings in the associated pair of strap members for securing said strap members and support member together.

3,294,248
CLOTHES HANGER
Henry N. Olson, 3719 N. 87th, Milwaukee, Wis. 53228
Filed Nov. 30, 1964, Ser. No. 414,689
1 Claim. (Cl. 211—96)



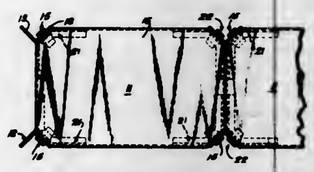
In combination with a door hinge of the type having intermeshing sleeves of a clothes hanger formed from heavy gauge wire bent to provide a leg extending into and through said intermeshing sleeves and a horizontally extending support arm, a transversely extending arm lying in substantially horizontal plane secured adjacent the opposite end of said support arm at substantially its midpoint, and a brace support rod positioned angularly between said leg and support arm and rigidly secured thereto, the end terminations of said support arm and said transversely extending arm being angled upwardly and provided with protective and cushioning caps.

3,294,249
DISPLAY DEVICE
James R. Simmons, Chicago, Ill., assignor to Dimensional Concepts Inc., a corporation of Illinois
Filed Mar. 11, 1965, Ser. No. 438,843
19 Claims. (Cl. 211—134)



14. A display section comprising: a bottom frame member having upper and lower surfaces, means forming a first longitudinally extending channel in the upper surface of said member adjacent the forward edge thereof, means forming a second longitudinally extending channel in the upper surface of said member spaced from and parallel with said first channel, means forming generally planar surfaces at opposite ends of said member in the upper surface thereof; side frame members, each seated on the planar surface at one end of said bottom frame member and having inner and outer sides, means forming a first longitudinally extending channel in the inner side of each side frame member adjacent the forward edge thereof and aligned with the first channel in said bottom member, means forming a second longitudinally extending channel in the inner side of each side frame member aligned with the second channel in said bottom member; a base member for supporting said display section and including a central portion having a generally horizontal top surface with the lower surface of said bottom frame member resting thereon, said base member including tapered support portions extending forwardly and rearwardly from said central portion and adapted to rest upon the floor; and means associated with said base for releasably mounting said frame members thereon.

3,294,250
SHELVING STRUCTURE
Robert J. Evans, Aurora, Ill., assignor to Aurora Equipment Company, Aurora, Ill., a corporation of Illinois
Original application Mar. 5, 1964, Ser. No. 349,623. Divided and this application Oct. 23, 1965, Ser. No. 503,875
15 Claims. (Cl. 211—176)



2. In a shelving structure,
shelves disposed in end-to-end relation each having cut-away corners and with adjacent cut-away corners defining post receiving pockets,

a series of corner posts complementary to and disposed in said pockets and each having leg portions with each leg portion having a pair of integrally connected convergently related vertically spaced key-hole slots for association with said cut-away corners and with one of said leg portions engaging one of said cut-away corners on one of said shelves and with another of said leg portions engaging one of said cut-away corners on another of said shelves, and
supporting brackets engaged by said shelves and having studs extending through holes in said brackets,
the studs having enlarged heads at opposite ends with one head being disposed at the inside of said bracket and with another head being disposed in said pocket and the stud engaged in a keyhole slot of said post.

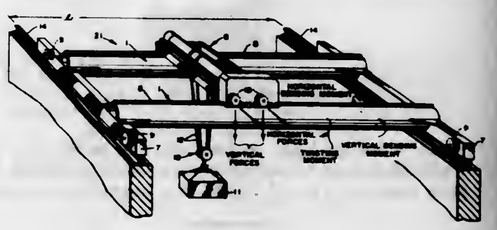
3,294,251
FOLDING DISPLAY RACK
David S. Howell, Royal Oak, Mich., assignor to Arlington Aluminum Company, Detroit, Mich., a corporation of Michigan
Filed Feb. 24, 1965, Ser. No. 434,754
9 Claims. (Cl. 211—178)



1. A folding display rack, comprising
a generally upright display board structure, and forward and rearward leg units of approximately U-shaped form having cross portions pivoted to said display board structure on parallel pivot axes disposed at spaced levels,
each of said leg units having laterally-spaced leg portions secured to and projecting downwardly from the opposite ends of its respective cross portion, the lower level cross portion being of greater length than the upper level cross portion.

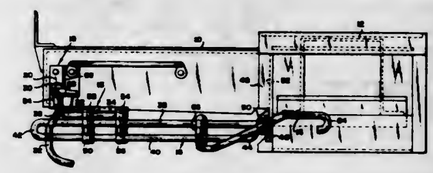
3,294,252
CRANE GIRDERS
Tadashi Hosoi, Hoya-machi, Kitatama-gun, Tokyo-to, Kazuhide Kobayashi, Meguro-ku, Tokyo-to, and Akira Kato, Omiya-shi, Saitama-ken, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo-to, Japan, a company of Japan
Filed Dec. 3, 1963, Ser. No. 327,740
Claims priority, application Japan, Dec. 6, 1962, 37/54,900, 37/54,901, 37/54,902
6 Claims. (Cl. 212—10)

1. In travelling crane apparatus wherein girder means are provided to support a trolley,
lateral runway means for supporting said girder means therebetween,
said girder means including at least one primary chord member for absorbing vertical forces applied to said girder means during operation of the crane, said chord member extending athwart said lateral runway means and having a fully expanded hollow shell structure which has a continuously curved cross section devoid of angles,
track means secured to each said chord member, to form an integral part therewith and extending substantially parallel to the longitudinal axis of said girder means,



and a trolley reciprocably movable along a substantial portion of said track means.

3,294,253
COUPLER OPERATING DEVICE
Leonard F. Manyek, Lansing, Ill., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,622
6 Claims. (Cl. 213—166)

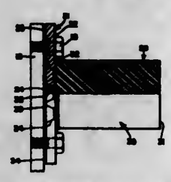


1. An uncoupling lever for car couplers comprising a plurality of parts, one of said parts comprising a pair of parallel rods, one of said rods having an eye formed therein providing means for pivotal mounting of said part adjacent the corner of a car end, a handle extending from said eye substantially normally to the axis of said rod, a coupler operating part having a hook at one end for attachment to the lock lifter of a car coupler, and an elongated eye at the other end, and an intermediate part comprising a pair of spaced parallel rods formed into an elongated loop, the ends of which loop overlap the adjacent ends of the handle part and the coupler operating part, means non-rotatably and slidably connecting the overlapped portions of the handle part and intermediate part, said eye of the coupler part encircling the overlapped portion of the intermediate part to provide a non-rotatable sliding connection thereto and permit angling of said respective parts, the inner end of said intermediate part terminating in means for attachment to a coupler striker for rotatably supporting same.

3,294,254
BUMPER DEVICE
Robert B. De Ment, Hickory Hills, Ill., assignor to Kasten Inc., Chicago Ridge, Ill., a corporation of Illinois
Filed June 17, 1964, Ser. No. 375,857
9 Claims. (Cl. 213—221)

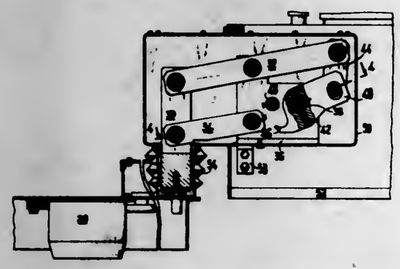
3. A bumper device comprising: a base plate having first and second sides and a plurality of tapered openings extending therethrough and tapered from small ends at the second side to relatively large ends at the first side; a flexible bumper of elastomeric material having an abutment portion projecting from the second side and bonded

to its surface, a thin wafer portion on the first side, and tapered anchoring studs of the elastomeric material dis-



posed in the openings integral with and interjoining the wafer portion and abutment portion; and a means on the plate adapted to fix the device to a supporting structure.

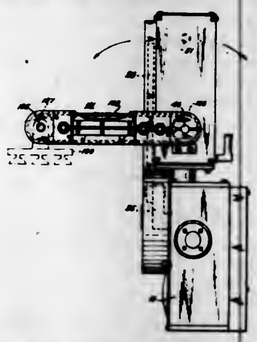
3,294,255
LIFTING MECHANISM
Jean Cabaret, Chatillon, Victor Gerard, Cachan, and André Valentin, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Sept. 25, 1964, Ser. No. 399,290
Claims priority, application France, Oct. 1, 1963, 949,226
3 Claims. (Cl. 214—1)



1. Lifting mechanism comprising an articulated parallelogram formed by two parallel arms which are pivotally mounted on a base-plate so as to rotate about pivot-pins which are in alignment on a vertical line, there being pivotally attached to the ends of said arms a vertical yoke which is fixed on the element to be lifted, said base-plate being mounted to rotate freely about a driving shaft to which is attached a crank-arm, said crank-arm being coupled to one of the arms of the articulated parallelogram and provided with a nose which is adapted to come into contact with an abutment fixed on said base-plate so as to drive said base-plate in rotation about the axis of said driving shaft, said nose being located at a distance away from said abutment when the element to be lifted is in position, with the result that the rotational movement of the driving shaft first produces the deformation of the parallelogram and consequently the vertical displacement of said element until the nose of the crank-arm comes into contact with said abutment, and then produces the rotational motion of the combined assembly consisting of base-plate, arm, yoke and element about the axis of the driving shaft.

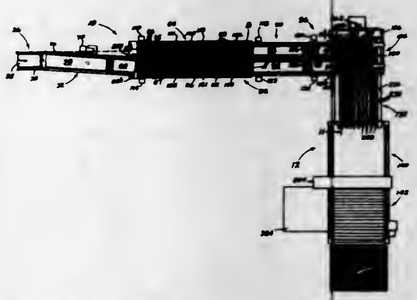
3,294,256
ARTICLE HANDLING APPARATUS
Joseph Nazali, Takoma Park, and Robert M. Strieby, Silver Spring, Md., assignors, by mesne assignments, to GBL Corporation, Washington, D.C., a corporation of Maryland
Filed Apr. 22, 1964, Ser. No. 361,652
4 Claims. (Cl. 214—1)

4. Article handling apparatus including a support base, a pair of spaced drive shafts rotatably journaled in said base, each of said shafts having a drive sprocket mounted thereon, a drive carriage, guide rails slidably mounting said drive carriage between said shafts on said base for reciprocating movement in translation, a sprocket chain entrained on each of said shaft sprockets, means for coupling said carriage to said sprocket chain, rotary drive means connected directly to said carriage for reciprocating said carriage, an operating arm mounted on one of said shafts and adapted to be rotated through an arcuate path of travel, article pickup means operably supported by said



arm, a first crank arm connected at one end to one of said shafts for rotation therewith, a second crank arm connected at one end to the other of said shafts for rotation therewith, said crank arms extending away from their respective shafts in opposite directions relative to each other, and spring means connected at opposite ends to the extending ends of said crank arms for urging said extending ends toward each other.

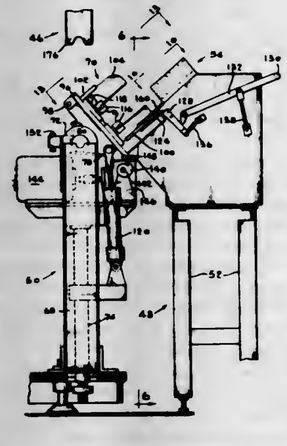
3,294,257
PACKAGE-HANDLING APPARATUS
Miles A. Davies and Louis B. Miller, Vancouver, Wash., assignors to Columbia Machine, Inc., Vancouver, Wash., a corporation of Oregon
Filed Dec. 2, 1963, Ser. No. 327,200
2 Claims. (Cl. 214—6)



2. Package-handling apparatus comprising
first and second elongated conveyer legs disposed at substantially right angles and with the offbearing end of said first leg in feeding relation to the feed end of said second conveyer leg,
said first conveyer leg including a package-transfer section with means defining two elongated paths of travel for packages extending along the leg,
said package-transfer section along one of said paths of travel being constructed and arranged to move packages forwardly without substantial change in their orientation and along the other of said paths of travel being constructed and arranged to move packages forwardly while applying simultaneously two speeds to the packages so related as to produce turning of successive packages about upright axes and a reorientation of the packages,

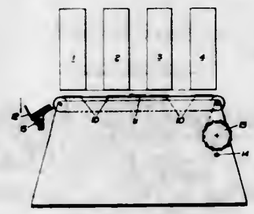
said first conveyer leg further including a feed-conveyer section operable selectively to feed packages first into one and then into the other of said paths of travel,
said second conveyer leg including a receiving station directly adjacent the offbearing end of the first conveyer leg where packages are deposited as rows on traveling from said transfer-conveyer section,
a collecting station forwardly in the second conveyer leg from the receiving station,
intermittently-actuated ejector means for shifting successive rows of packages deposited in said receiving station into said collecting station with said rows being stacked side by side to form a tier,
a transfer platform disposed forwardly in said second conveyer leg from said collecting station,
intermittently-operated means for shifting a tier of packages from said collecting station forwardly and onto said transfer platform,
a palletizing station disposed forwardly in said second conveyer leg from said transfer platform having means for supporting a pallet, and
intermittently-operated means for shifting said transfer platform while loaded with packages into said palletizing station and over a pallet supported therein and then sliding said platform out from under any tier of packages deposited thereon.

3,294,258
APPARATUS FOR ALIGNING THE PLATES AND SEPARATORS OF A BATTERY STACK
Anthony Sabatino, Minneapolis, Minn., and Richard A. Buttke and Paul V. Lowe, Milwaukee, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Original application Dec. 30, 1960, Ser. No. 79,728, now Patent No. 3,253,306, dated May 31, 1966. Divided and this application Sept. 16, 1965, Ser. No. 487,698
6 Claims. (Cl. 214—6)



1. An alignment mechanism for accurately aligning the plates and separators of a battery stack comprising:
a frame;
an alignment box adapted to receive and hold a plurality of battery stacks therein, said alignment box pivotally mounted on said frame so that it can be tilted to a non-vertical position to facilitate loading a stack therein and then pivoted back to a vertical position for removal of the stack after the stack has been aligned;
vibration means for vibrating the plates and separators of the battery stacks while in said alignment box; and
a stationary load head mechanism mounted adjacent said alignment box, said load head adapted to receive battery stacks and to retain said stacks therein until it is time to transfer said stacks to said alignment box.

3,294,259
APPARATUS FOR UNSTACKING A PLURALITY OF PLATELIKE ELEMENTS FROM DIFFERENT SUPPLIES IN A PREDETERMINED SEQUENCE
Helmut Pulsm, Graz, Austria, assignor to AGA-Elbak Batteriewerke Gesellschaft m.b.H.
Filed Mar. 23, 1964, Ser. No. 353,788
Claims priority, application Austria, Apr. 3, 1963, A 2,697/63
11 Claims. (Cl. 214—8.5)

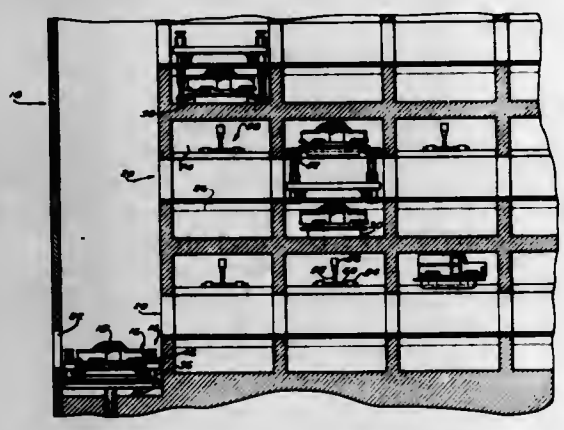


1. Apparatus for arranging a plurality of platelike elements from different supplies in a predetermined sequence, which comprises a plurality of magazines which are horizontally spaced apart and have open bottom ends, each of said magazines being adapted to accommodate a vertical stack of platelike elements and having at least one, substantially vertical side wall, each of said magazines having associated with it bottom supporting means extendable to a position in which they are under such stack of platelike elements in said magazine, and engageable by the underside of such stack, and retaining means disposed opposite to said vertical side wall closely above said bottom supporting means and extendable to engage the side of said stack opposite to said side wall closely above said lowermost platelike element whereby the second platelike element from below is forced against said side wall whereas said lowermost platelike element is free to drop vertically from said stack unless its underside engages said bottom supporting means, said bottom supporting means and said retaining means being mutually independently and selectively extendable and retractable with respect to said stack, said apparatus comprising further a carrier which is disposed below and movable under each of said stacks and adapted to collect said platelike elements which have been dropped from said stacks.

3,294,260
STORAGE SYSTEM
John W. Frangos, 2 Brimbal Hill Drive, Beverly, Mass. 01915
Filed Sept. 11, 1964, Ser. No. 395,769
5 Claims. (Cl. 214—16.1)

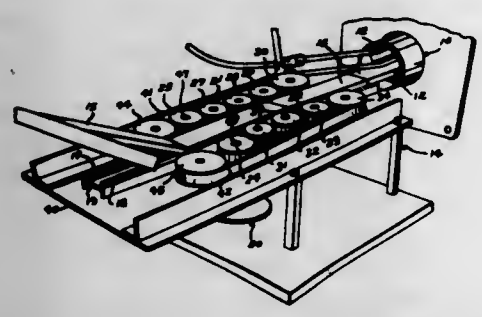
5. A parking system for motor vehicles and the like, comprising in combination, a building structure embodying a plurality of floors disposed in vertically spaced relation and including a road bed along each floor with clearance space thereabove for passage of a load and storage space above the clearance space and open thereto and along said road bed, an elevator disposed for vertical movement to the road beds, a load carrying dolly adapted to be carried on the elevator, said dolly being formed with a longitudinal clearance and provided with wheels for movement along the road beds, means for selectively lifting a load from the dolly into a storage space above

said clearance space or lowering a load from the dolly for storage along said road bed and means for retaining



a load in the storage space independently of the lifting and lowering means.

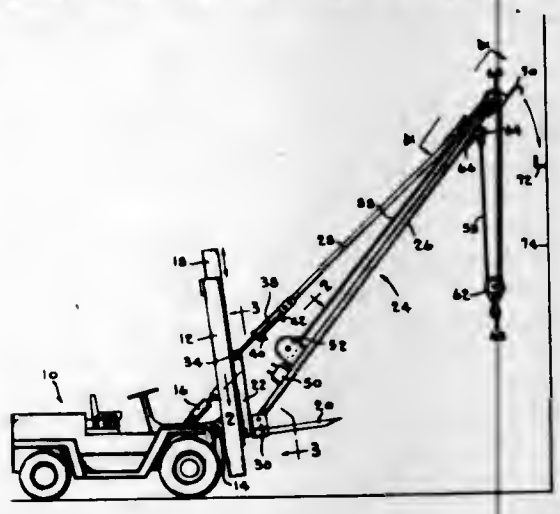
3,294,261
CONTINUOUS DRIVE FEED FOR OXIDATION-DIFFUSION FURNACE
Joseph A. Cloutier, Jr., Rte. 3, Box 272C, Arnold, Md. 21012
Filed June 30, 1965, Ser. No. 468,653
3 Claims. (Cl. 214—18)



1. In combination with a continuous oxidation-diffusion furnace, with a channel therein for receiving quartz carriers for semiconductor wafers, whereby the semiconductor wafers may be processed in said furnace; a continuous drive mechanism having a first pair of continuous conveyor belts with their driving surfaces located in juxtaposed parallel relation; means for driving the adjacent surfaces of said belts in the direction toward said furnace; a second pair of conveyor belts of stainless steel with each of said second belts surrounding one of said first belts; means for urging the adjacent surfaces of said belts toward each other; whereby said wafer carriers may be gripped therebetween; a plurality of quartz rods; means for supporting said quartz rods between and below the adjacent surfaces of said conveyor belts in line with the bottom of the wafer carrier support channel of said furnace and belt pulley roller means supporting each of said belts.

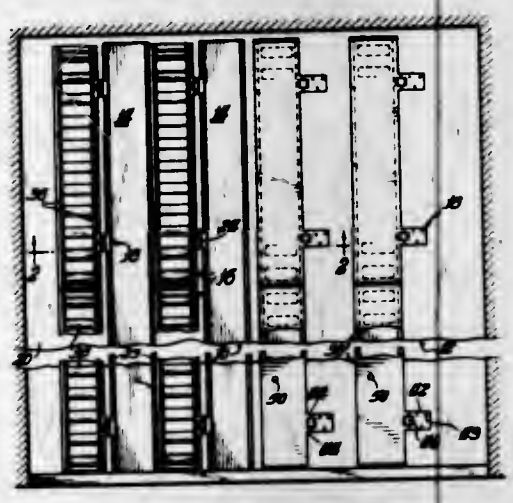
3,294,262
CRANE
Philip H. Person, Moon Lake, Mich., assignor to Lake Shore, Inc., Iron Mountain, Mich., a corporation of Michigan
Filed Nov. 9, 1964, Ser. No. 409,667
3 Claims. (Cl. 214—58)

1. A detachable crane for fork trucks or the like, comprising, a boom including tension and compression members provided with means for attaching the boom to a fork truck, a sheave at the free end of the boom, a hoist drum mounted on one of said members, a cable reeved from the drum over the sheave, first hook means attached to said cable and second rigidly mounted hook means on the free end of the boom, vertically disposed means for engaging said second hook means whereby the crane can be restrainted while the fork truck is backed away to



thereby facilitate removal of the crane from the fork truck.

3,294,263
CONVERTIBLE VEHICLE FLOOR ARRANGEMENT
Barney Naden, Elkins Park, Jack Trotman, Clifton Heights, and Isadore Benson, Philadelphia, Pa., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,327
4 Claims. (Cl. 214—84)



4. A cargo vehicle floor arrangement having deck sections which are fixed and conveyor sections which are movable between operative and inoperative positions for converting said floor arrangement from a flat deck to a conveyor, comprising in combination;

(a) a pair of elongated deck sections disposed in parallel relation with each other and spaced from each other to define therebetween an elongated well;

(b) said deck sections presenting flat upper surfaces disposed in a common plane;

(c) a movable conveyor section disposed in said well and mounted for pivotal movement out of said well and onto an adjacent deck section;

(d) said conveyor section including:

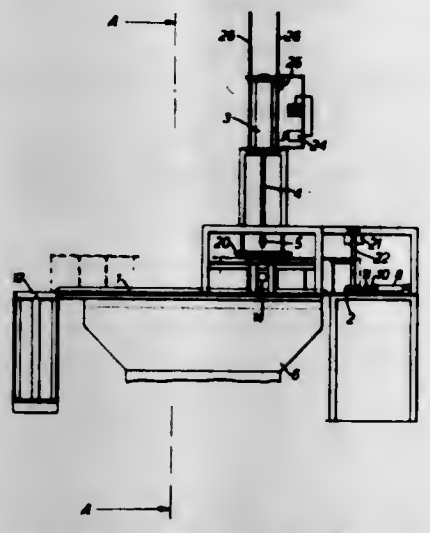
(i) an elongated plate positioned over said well and presenting a flat, horizontal, upwardly facing, outer surface on one side thereof which is disposed in the plane of said deck section surfaces when the conveyor section is in the inoperative position;

(ii) a plurality of spaced rollers rotatably mounted on the underside of said plate and positioned within the well when the conveyor section is in the inoperative position, and arranged to form an upwardly facing roller conveyor when said conveyor section is in the operation position;

(iii) hinge means disposed entirely below the plane of said deck section surfaces pivotably connecting said plate to one of said adjacent deck sections operative to permit the rotation of the former 180° into back-to-back relation with the latter to convert the conveyor from the inoperative to the operative position.

3,294,264
APPARATUS FOR OPENING CLOSED CONTAINERS

William Tom Everington, London, England, assignor to J. Lyons & Company Limited
Filed Sept. 14, 1964, Ser. No. 396,090
Claims priority, application Great Britain, Sept. 20, 1963, 37,960/63
4 Claims. (Cl. 214—305)

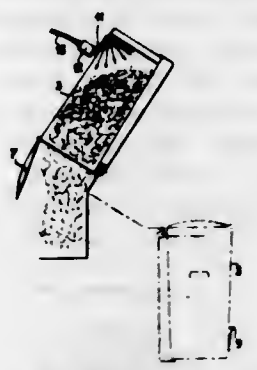


1. Apparatus for opening closed containers which incorporates: a loading platform for the containers, a first length of guideway for the containers extending between the loading platform and a container opening position, means including a fluid operated piston adapted to pass the containers along said first length of guideway to the opening position, at the opening position an elongate rupturive member guided for vertical movement along its length and provided at its lower end with a double-tapered four sided spike having a cross-section enlarged relative to the remainder of the rupturive member, means including a fluid operated piston adapted initially to urge said spike downwards through one of the containers whereby to pierce a hole through each of the top and bottom walls of the container and also adapted subsequently to withdraw said spike from the container, a vessel so disposed below said opening position as to collect fluid pouring down from an opened container, a further length of guideway for the containers disposed above said vessel and extending away from the opening position whereby opened containers may continue to drain into the vessel while a further container is at the opening position, means including a pair of fluid operated pistons adapted to clamp the container against lateral movement while said holes are pierced, and control means adapted to control the operation of said pistons.

3,294,265
ARRANGEMENT FOR CLEANING OUT THE BOTTOM OF REFUSE BINS OR THE LIKE CONTAINERS

Jean-Baptiste Roch, 20 Blvd. des Tchecoslovaques, and Jean Joseph Roch, 6 Rue Trarisset, both of Lyon, France
Filed Mar. 23, 1964, Ser. No. 354,053
13 Claims. (Cl. 214—310)

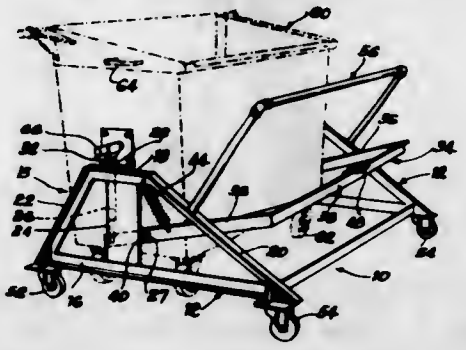
1. Apparatus for cleaning out refuse bins or the like containers, comprising a vehicle, cradle means for receiving and supporting a container, means mounting the cradle means for vertical swinging movement on the vehicle to upend a container thereon to place the container in dumping position, means carried by the vehicle for applying



fluid under pressure to at least the bottom of the inside of the container, and means responsive to movement of the container to said dumping position to actuate said applying means.

3,294,266
MEANS FOR SUPPORTING AND LIFTING A TRASH CONTAINER OR THE LIKE FOR TILTING MOVEMENT

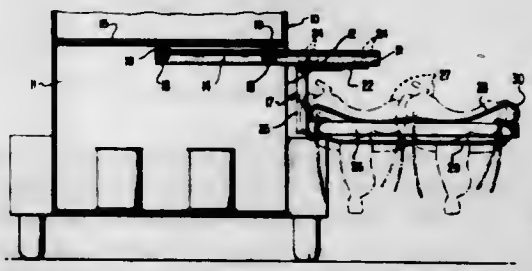
Elza Snow, Steger Road, Steger, Ill. 60475
Filed June 18, 1965, Ser. No. 464,945
7 Claims. (Cl. 214—314)



1. A device of the character described for supporting a container for tilting movement, a supporting member, lifting members carried by said supporting member, said lifting members being vertically slidable, a manually operable lever operated by foot pressure for operating said lifting members, a container having trunnions supported on said lifting members, said lifting members when elevated adapted to support the container elevated from a floor support to permit said container to be tilted wih respect to said supporting member.

3,294,267
SADDLE CARRIERS

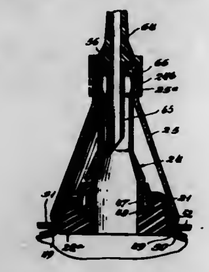
Johnny P. Schweigert, 106 S. 9th St., Livingston, Mont. 59047
Filed July 28, 1965, Ser. No. 475,355
4 Claims. (Cl. 214—450)



1. A saddle carrier for horse trailers having a low ceiling side opening storage compartment, said carrier comprising suspension bracket means secured to and depending from said low ceiling and including low friction rollers, a horizontal transversely shiftable carriage rail movably engaging said rollers and shiftable to an extended

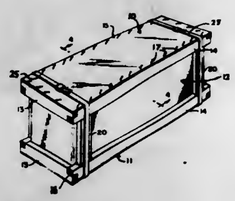
position partly outside of said compartment and to a retracted position fully within the compartment, positive stops means to limit movement of the carriage rail, and a saddle supporting frame mounted upon and depending from the carriage rail and having a horizontal saddle supporting arm beneath and spaced from said rail near the vertical center of said compartment, whereby the lower portion of said compartment is unobstructed and available for the storage of articles, said supporting frame equipped at its top with spaced low friction roller units having rolling engagement with the carriage rail, whereby the frame and rail are relatively movable.

3,294,268
NURSER
Raymond W. Barton and Joe T. Herron, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Original application Apr. 3, 1961, Ser. No. 100,160, now Patent No. 3,200,860, dated Jan. 28, 1965. Divided and this application Jan. 7, 1965, Ser. No. 424,027
6 Claims. (Cl. 215—11)



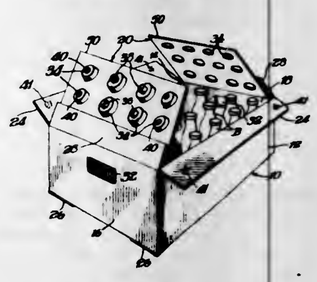
2. A nurser of the character described, comprising: a body having a nipple secured thereto and extending outwardly therefrom, said body having a groove therein around said nipple; a nipple cover with an inwardly formed rib engaged in the groove in said body, there being an outwardly opening groove in the outer surface of said cover, associated with said rib, and an annular member seated in the groove of said cover.

3,294,269
REUSABLE BOX CONSTRUCTION
Palmer Arzo, 2229 74th SE., Mercer Island, Wash. 98040
Filed Oct. 13, 1964, Ser. No. 403,477
1 Claim. (Cl. 217—12)



A "knock-down" reusable three-part box comprising a body component and preassembled interchangeable like top and bottom components; said body component comprising an elongated rectangular body strip of bendable sheet material that is transversely scored to define the corner lines of the body and the length of its opposite side and opposite end walls, cleats secured to the outside of said side walls of said strip adjacent the respective score lines and parallel thereto, the ends of the cleats being spaced inwardly from the edges of said strip, said body strip being bendable at the score lines and joined at its opposite ends in rectangular body form; each of said top and bottom components comprising a rigid rectangular frame, top and bottom sheet-like wall panels secured to said rectangular frames, said top and bottom components being fitted respectively over the top and bottom edge portions of the rectangular body with said edge portions of said body fitted within the rectangular frame of the corresponding component and seated against the respective top and bottom wall panels that cover the frame to provide a smooth interior walled enclosure, said cleats being in abutting and supporting engagement with the top and bottom frames and comprising the sole load sustaining reinforcement means between the top and bottom components; and strapping means, vertically and transversely surrounding said container in engagement with and overlying and parallel to said cleats and traversing said top and bottom wall panels.

3,294,270
CARTONS HAVING CONTOURED MOLDED PULP WALLS
William Geisler, San Francisco, Calif., assignor to Keyes Fibre Company, a corporation of Maine
Filed Mar. 13, 1964, Ser. No. 351,657
4 Claims. (Cl. 217—21)



1. A container for firmly holding a plurality of similar articles in spaced array comprising a plurality of wall panels joined together at their edges to form a continuous surrounding side wall, flap means hinged to the top and bottom of at least some of the side wall panels adapted to be folded inwardly to a position generally normal to the side wall, the flap means when folded inwardly extending significantly less than one-half the distance to the opposite side of the container, a pair of wall panels formed of heavy-duty molded pulp, one essentially spanning the distance between the side walls at their tops and the other essentially spanning the distance between the side walls at their bottoms, a significant portion of the area of both the top and the bottom of the container being closed only by the molded pulp wall panels, article pocket means integrally molded in the pulp wall panels to restrain lateral shifting of articles within the container, the vertical distance between the upper surface of the pocket means of the top wall panel and the lower surface of the pocket means of the bottom wall panel being equal to the vertical distance between the upper surface of the top flap means and the lower surface of the bottom flap means, and the pulp wall panels being secured near their edges to at least some of the flap means.

3,294,271
PLASTIC BARREL
Fritz Armbruster, Korntalerstrasse 23, Stuttgart-Stammheim, Germany
Filed July 5, 1962, Ser. No. 207,513
6 Claims. (Cl. 220—5)

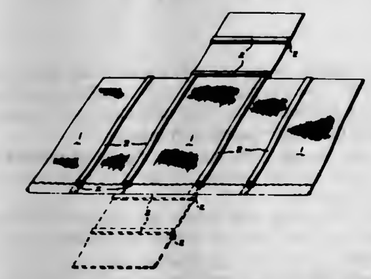
1. An integral barrel comprising a tubular main section and first and second end sections closing said tubular

main section at opposite ends thereof and integral therewith, all said sections consisting of a heat expansive synthetic resin material tending to expand in respond to heating and at least one of said end sections being of concave-convex shape and having a convex inner side facing the interior of said main section; at least one annular reinforcing element secured to and surrounding said main section, said reinforcing element consisting of a material whose expansion in response to heating is less than the expansion of the material of said main section; and an additional annular reinforcing element externally adjacent to and secured to said one end section in the region of the corresponding end of said main section, said additional reinforcing element comprising at least one ring consisting of a metallic material whose expansion



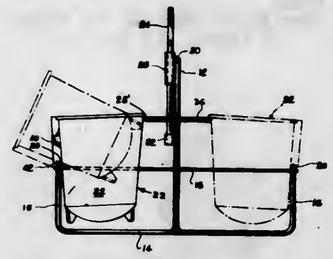
in response to heating is substantially less than the expansion of the material of said one end section, and a plate-shaped reinforcing element secured externally to the concave outer side of said one end section, said plate shaped reinforcing element consisting of a material whose expansion in response to heating is substantially less than the expansion of the material of said one end section, said main section being prevented by said one annular reinforcing element to expand in radial direction and said one end section being prevented by said additional reinforcing element to expand in radial direction and prevented by its shape and said plate shaped reinforcing element from expanding outwardly whereby said one end section is compelled to expand into the interior of said main section and to reduce the volume of the internal space in said barrel when the barrel is heated.

3,294,272
HIGH TEMPERATURE CONTAINER
Robert T. Nagler, Prairie du Sac, Wis., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 12, 1964, Ser. No. 403,419
7 Claims. (Cl. 220—5)



1. The method of making an unfoldable box-like container for dispensing chaff-like material into the atmosphere from high speed aircraft or missiles which comprises, forming a flat blank of flexible cloth to provide bottom, sides, ends and top flap closure portions with predetermined fold lines therebetween to form a rectangular container, impregnating the blank along the fold lines with strips of meltable waxy material which remains solid at room temperature, impregnating the blank between the strips with a hardenable plastic compound to subsequently form rigid bottom, sides, ends and top closure flaps of the container with the impregnated waxy strips therebetween, hardening the plastic compound at substantially room temperature to solidify and harden the same without melting the waxy strips, elevating the temperature to further heat and cure the plastic composition and melt and eliminate the waxy strips and expose the flexible cloth along the fold lines formerly occupied by the waxy strips, whereby the portions of the blank coated by the solidified composition forming the bottom, sides, ends and top flap portions are freely foldable relative to each other by the exposed cloth between the edges thereof, folding the blank on the exposed fabric between the edges formerly impregnated by the waxy strips to form the box-like container with the top flaps overlapping, and applying a mild adhesive between the top flaps remote from the outer ends thereof to releasably secure the flaps together.

3,294,273
SILVERWARE WASHER CONSTRUCTION
Ralph Ettlinger, 1370 Lincoln Ave. S., Highland Park, Ill. 60035
Filed Nov. 30, 1964, Ser. No. 414,528
5 Claims. (Cl. 220—23.83)

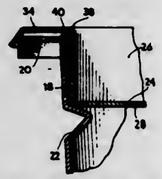


1. In a dishwashing apparatus, the improvement comprising a silverware rack including frame members defining an open framework, holders associated with said framework adapted to carry said silverware during operation of said apparatus, each of said holders including means for attachment to said frame members, and wherein said holders are pivotally connected to said frame members to facilitate discharge of said silverware therefrom, means formed in said rack adapted to normally engage said holders whereby said holders are normally tilted toward the side of said apparatus whereby said pivotal movement is facilitated, and including side bars formed in said rack, said attachment means comprising resilient fingers integrally formed with said holders to removably secure said holders in place, said fingers providing the pivotal attachment of said holders, and wherein said holders define concave interior bottom walls whereby the bottom ends of silverware standing in said holders will tend to assume positions toward the center of said holders while the upper ends will flare outwardly to provide greater contact of washing fluids with said upper ends.

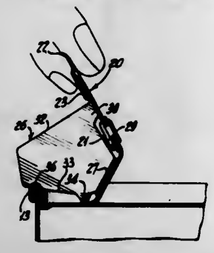
3,294,274
SEAL CONSTRUCTION
Albert E. Spitzberg, Fort Wayne, Ind., assignor to Lincoln Manufacturing Company, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Sept. 15, 1964, Ser. No. 396,774
1 Claim. (Cl. 220—46)

For use with a container and a cover, said container comprising side walls defining an opening and having an outwardly extending flange and said cover comprising an outwardly extending flange and depressed surfaces therebetween for fitting in said opening in a complementary

fashion, an improved seal comprising: an elongated deformable member for fitting between the container and cover along a portion of the flanges and surfaces adjacent thereto, said elongated deformable member having a transverse cross section comprising a trailing portion having a relatively long height and a relatively thin width, an outwardly extending ridge portion positioned near but spaced from the top of said trailing portion, and in inwardly extending sealing lip portion positioned at the top of said trailing portion.

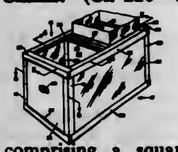


3,294,275
CONTAINER OPENING MECHANISM
Ciro Milcto, 343 E. 115th St., New York, N.Y. 10029, and Dominick Cornacchio, 2765 Sampson Ave., Bronx, N.Y. 10465
Filed Jan. 21, 1965, Ser. No. 428,608
2 Claims. (Cl. 220—54)



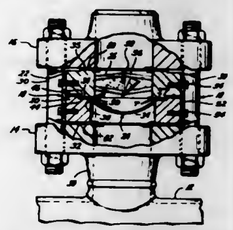
1. A container comprising a wall provided with a tear line delineating a tear strip, a tear tab secured to said tear strip adjacent to an end thereof and normally overlying said wall and movable to an upwardly extending position, and a lever member secured to at least either said tear tab or said tear strip, and normally overlying said wall and movable to an upwardly extending position between said tear tab and the other end of said tear strip, said wall having an upwardly directed peripheral lip and said tear lever having a recess formed in an edge thereof outwardly of said point of movement of said lever and adapted to engage said peripheral lip.

3,294,276
STRUCTURAL MEMBERS AND CABINETS UTILIZING SUCH MEMBERS
David C. S. Kemp, Orillia, Ontario, and John W. Strong, Hamilton, Ontario, Canada, assignors to Bartaco Industries Limited, Stoney Creek, Ontario, Canada
Filed Mar. 13, 1964, Ser. No. 351,606
16 Claims. (Cl. 220—80)



11. A cabinet comprising a square or rectangular shaped top frame, a similar shaped bottom frame, and four corner posts between the top and bottom frames, the top and bottom frames each being formed by connecting together at their ends four structural members all of the same cross-section, the four structural members of the top frame and the four corner posts all being of the same relatively flat bottom U-cross-section constituting a U-section main channel having one leg of the section longer than the other, the said longer leg being provided at the inner face thereof with a channel adapted to receive therein the edge of a sheet member having its general plane at least approximately parallel to the general plane of the said longer leg, the longer leg channel opening in a direction away from the main channel base, and the said shorter leg being provided at the outer face thereof with a channel adapted to receive therein the edge of a sheet member having its general plane at least approximately parallel to the general plane of the said shorter leg, the shorter leg channel opening in a direction towards the main channel base, said shorter leg channels of the four members of the top frame all opening in the same direction, each associated pair of corner posts having their longer leg channels with their open ends facing each other, and the said bottom frame being formed of members of cross-section constituted by the longer leg and the base of the main channel of the above described structural members constituting the top frame and side posts, the said bottom frame members all having their channels opening toward the top frame, and the cabinet comprising two side panels each having two opposite edges engaged in two longer leg channels of the respective two corner posts and two other edges engaged in longer leg channels of the top and bottom frames, and two other side panels each having at least two edges engaged in two shorter side channels of the respective two corner posts.

3,294,277
SAFETY DEVICE FOR PRESSURE VESSELS
Loren E. Wood, Houston, Tex., assignor to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,470
5 Claims. (Cl. 220—89)



5. In a safety device for a pressure vessel having a concave-convex disc supported by two holding members with the convex portion of the disc subjected to the pressure in the vessel, the improvement comprising,

said disc having a flat annular flange connected to the concave-convex portion of the disc by a small radius *r* connection,

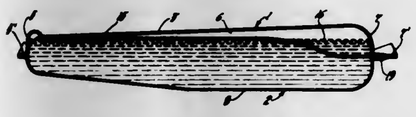
an inlet clamping ring having an annular flat recess for receiving said annular flange for centering said disc,

an outlet clamping ring having an annular flat ridge coacting with the annular recess of the inlet clamping ring to grip and hold the annular flange of the disc,

the inlet clamping ring terminating inwardly in a plane with the recess with a rounded shoulder coacting with the radius *r* for providing support during reverse pressure, and

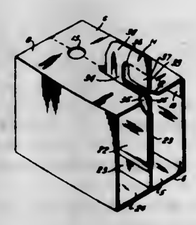
the flat portion of the outlet clamping ring terminating inwardly in a plane with the ridge with a rounded shoulder having a radius R which is positioned inwardly further than the rounded shoulder on the inlet ring by a distance at least as great as R thereby providing a backup shoulder against and supporting the transitional connection.

3,294,278
FUEL TANK ANTI-SLOSH DEVICE
Joshua R. Madden, Rochester, and Thomas R. Cassel, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,029
4 Claims. (Cl. 220—93)



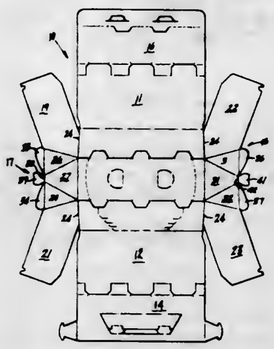
1. In a vehicle fuel tank comprising generally rectangular upper and lower sheet metal stampings, each defining one generally horizontal wall with side walls extending generally normal thereto and terminating in outwardly extending flanges sealingly abutting the corresponding flanges of the opposite stamping, the adjacent side walls of each said stamping merging with each other to define a generally rounded corner and a resultant widening of its flange in the area locally of said corner, and a sheet of soft flexible material disposed within said tank, said material being chemically inert to and of lower specific weight than liquid hydrocarbon fuels, said sheet being of slightly less width and length than the corresponding internal length and width of the tank and having one edge thereof clamped between two adjacent widened corner flanges of said stampings, the remainder of said sheet being free to flex with change in level of the fuel and thereby cushion noise incident to fuel sloshing within the tank during vehicle operation.

3,294,279
END LOADING BEER BOX
John W. Kidd, Lambeth, Ontario, Canada, assignor to Canadian International Paper Company, Quebec, Canada, a corporation of Canada
Filed Mar. 1, 1965, Ser. No. 436,031
4 Claims. (Cl. 220—105)



1. A carrier, said carrier including a bottom, side panels and a top, said top having means defining handle receiving opening therein, a handle slidably retained within said carrier, a handle retaining and carrier dividing member secured to said carrier and within said carrier with its top portions adjacent to and spaced from the underside of said top, said top including a structurally weakened portion, said handle retaining member including means preventing said slidable handle from coming into direct contact with said structurally weakened portion, said handle being slidably retained within said member, said member having means defining a handle receiving opening therein in alignment with said handle receiving opening in said carrier and said handle having portions extending through said openings in said carrier and said member, said handle being movable through said openings from an inoperative position to an operative position, wherein said top has tear means including a longitudinal line of weakness and transverse lines of weakness, said longitudinal line of weakness extending across the center of said top, said transverse lines of weakness extending along the side edges of said top, said longitudinal line of weakness and said transverse lines of weakness being connected to each other and said handle-retaining portions being spaced from the underside of said top and directly beneath said longitudinal line of weakness.

3,294,280
WRAP-AROUND ARTICLE CARRIER WITH FLOATING INTERNAL PARTITION
Earl J. Graser, Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed July 20, 1965, Ser. No. 473,386
1 Claim. (Cl. 220—112)

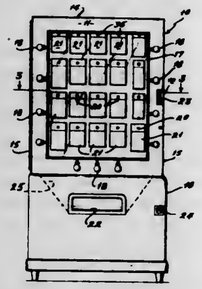


In a wrap-around article carrier including a body portion having top, bottom, and side walls connected in series, wing elements hinged to opposite sides of said top, each wing element being scored to form fold lines defining a set of end wall panels and tuck panels, each set having two end wall panels straddling three intermediate tuck panels, and a separate internal partition panel, the improvement comprising notches at both ends of said partition panel, each of said notches including a surface disposed generally parallel to said bottom, each set of tuck panels having a connector tab hinged thereto, each of said connector tabs being disposed generally perpendicular to said bottom and in engagement with said surface of said notch, the hinge structure of said tab facilitating limited motion of said partition panel relative to said body portion without breaking the connection therebetween.

3,294,281
PACKAGE VENDOR WITH HELIX SHAPED DELIVERY SPINDLE
Stanley O. Schlaf, Rte. 1, Box 233, Winfield, Mo. 63389
Filed Dec. 3, 1964, Ser. No. 416,966
20 Claims. (Cl. 221—9)

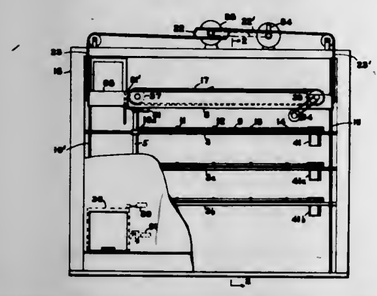
1. A vending machine comprising a case, a support panel, a plurality of helical dispensing spindles adapted to store and dispense merchandise packages mounted on the panel, drive means for rotating said spindles, means for selectively connecting said spindles with said drive

means, the spindles being inclined downwardly toward the front of the case and the leading ends of the uppermost



spindles project ahead of the next adjacent lower spindle end.

3,294,282
PACKAGE DISPENSING MEANS WITH DELIVERY ELEVATOR
Kenneth G. Brown, Wickham Ave., Mattituck, Long Island, N.Y. 11952
Filed Sept. 9, 1963, Ser. No. 307,574
1 Claim. (Cl. 221—12)



In a dispensing machine for fragile articles or packages of the type having horizontal vertically spaced racks adapted to hold rows of packages and having means to push said packages out of said racks;

means to deliver said packages pushed from said vertically spaced racks to a common delivery opening in said machine so that said package is supported underneath at all times comprising,

an elevator mounted for vertical movement adjacent to said racks to receive said packages pushed therefrom,

elevator motor means connected to said elevator to move said elevator vertically,

means to control said elevator motor means,

a horizontal conveyor mounted on said elevator to move said received packages into alignment with said delivery opening,

conveyor motor means connected to drive said conveyor,

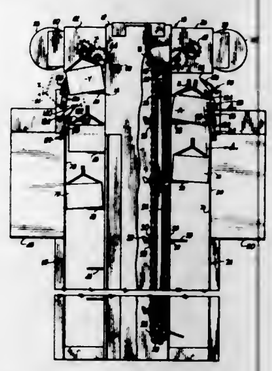
control means connected to said conveyor motor means,

a delivery door for said delivery opening in said machine,

an article operated delivery switch on said elevator,

an control relay means responsive to said delivery switch and movement of said elevator to delivery position, to unlatch said delivery door whereby said fragile articles are delivered with full support and control at all times to said delivery opening.

3,294,283
GUIDE AND POSITIVE DELIVERY MECHANISM FOR PRODUCT DISPENSING MACHINE CONVEYOR
Le Roy D. Gore, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Oct. 18, 1965, Ser. No. 496,837
8 Claims. (Cl. 221—77)



1. A dispensing machine comprising:

a conveyor for advancing a product upwardly along a path to be dispensed from storage disposition to a delivery location;

structure adjacent said conveyor and extending along said path for partially supporting said product as it is advanced by the conveyor, said structure including a shiftable element having an uppermost edge presenting a lip at said delivery location defining the upper limit of said path and permitting gravitation of said product from the conveyor as the product clears the lip of the element; and

means coupled with said element for biasing the latter in a direction to shift the same into disposition with said lip thereof in underlying relationship to said product as the latter clears the lip of the element, whereby said lip operates as a fulcrum offset with respect to the center of gravity of the products and thus effect catapulting of the product over said structure for gravitation from the conveyor.

3,294,284
ARTICLE DISPENSER WITH ROTATABLY MOUNTED MAGAZINES
James C. Chambers, 317 E. 13th St., Hialeah, Fla. 33010
Filed May 26, 1965, Ser. No. 458,868
6 Claims. (Cl. 221—120)

1. A dispenser for small bodies comprising a means forming a base including a fixed vertical rotor support means,

a rotor means journalled for rotation on said support means about a vertical axis,

a plurality of elongated tubular magazines of like length secured in spaced radial relation around the periphery of said rotor means with the axes thereof parallel said rotor means axis with the lower ends thereof positioned in a common plane above a dispensing zone,

each of said magazines having a longitudinal bore therethrough of uniform cross section substantially equal to the cross section of the bodies to be retained therein in end to end relation for storage and gravity descent therefrom,

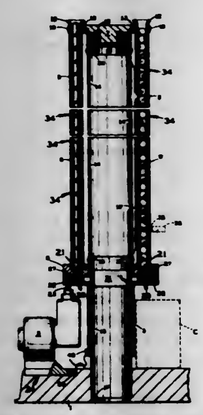
a shutter means positioned in said rotor means for movement from a normal position transverse and below the lower end of each said magazines for holding said bodies therein to a dispense position adjacent thereto for permitting the gravity descent of said bodies from each of said magazines when operated,

spring means biased between said rotor means and each said shutter means for urging the latter into said normal position,

a predetermined number of transverse holes through each of said magazines in predetermined spaced relation along the length thereof for slidably receiving a metering pin for intersecting the bore therein,

a pair of elongated electric contacts in uniform spaced vertical relation secured on said support means adjacent the path of rotation of the inner side of each of said magazines,

an electric conducting metering pin for manual insertion through a selected one of each said holes in each



said magazine for bridging said pair of contacts and holding a predetermined number of said bodies above said pin in each of said magazines when each of said magazines is selectively rotated into register with said zone,

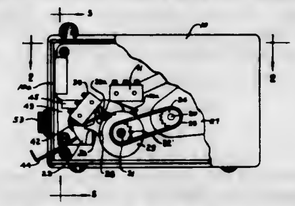
electro-magnetic means in said support adapted and constructed to move each of said shutter means from said normal to said dispense position when each of said magazines is rotated about said axis into register with said zone and said electro-magnetic means when the latter is energized,

a source of electric energy,

circuit means connecting said source of energy and said pair of contact means and said electro-magnetic means whereby the rotation of said rotor means will position a selected one of said magazines in register with said zone and the insertion of said pin in a selected hole in said selected magazine will energize said electro-magnetic means and permit the gravity descent into said zone a predetermined number of said bodies below said pin.

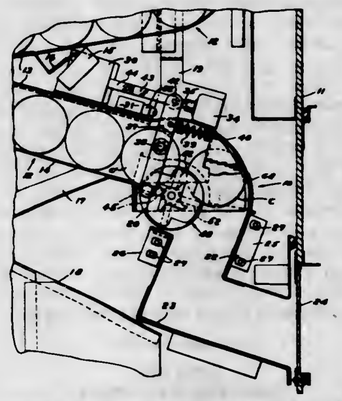
3,294,285
APPARATUS FOR DISPENSING LIGHTED CIGARETTES
Boris N. Kovacevic, 4419 N. Christiana Ave., Chicago, Ill. 60625
Filed Jan. 4, 1965, Ser. No. 423,190
7 Claims. (Cl. 221—147)

1. An apparatus for igniting and dispensing cigarettes comprising, a magazine adapted to contain a plurality of cigarettes and having an opening in the bottom thereof through which the cigarettes may pass, a rotatable member having a plurality of longitudinally extending flutes and disposed below said opening whereby said flutes are caused to pass successively into registration with said opening and each to receive a cigarette in the course of rotation of said rotatable member, an electrical ignition element disposed in close proximity to one end of said rotatable member, a discharge chute having its upper edge in close proximity to said rotatable member and to said



ignition element, a motor having speed reducing means associated therewith, a Geneva movement driven by said motor for intermittently rotating said rotatable member a fraction of a revolution in each cycle of operation whereby in one cycle of operation a cigarette is carried by said rotatable member from said magazine to a position wherein one end of said cigarette is disposed in close proximity to said ignition element and in the next cycle of operation said cigarette is ignited immediately prior to discharge from said apparatus.

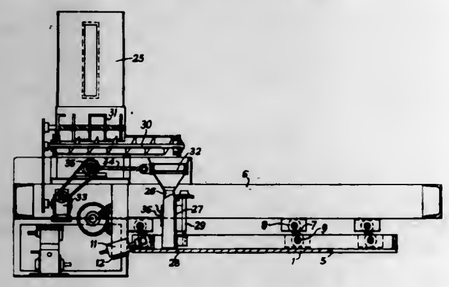
3,294,286
CAN VENDING MECHANISM
Elmore L. Zibbell, Redford Township, Wayne County, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed Nov. 8, 1963, Ser. No. 322,298
5 Claims. (Cl. 221—295)



1. A dispensing machine for cans and like objects, comprising a support having means to guide a series of said objects for gravitational discharge one after another along a path in a vertical plane, a discharge control rotor mounted on an axis intersecting said plane, said rotor having a plurality of radially extending vanes successively positioned upon rotary indexing of said rotor to individually intercept objects traveling along said path and then receive the objects thereon for gravitational discharge upon further rotary indexing, said rotor being provided on an axial end thereof with a central star detent formation and a series of stop formations surrounding the detent formation, said detent and stop formations and said vanes rotating as a unit with and on said rotor, said detent and stop formations being spaced radially from one another

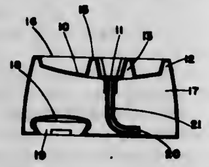
to define therebetween a circumferentially connected control path, a control member mounted on said support to move in opposite directions, said control member having an element received in said control path to successively engage and block said stop formations to control the indexing of the rotor, an actuator operatively connected with said control member to operate the same to position said element radially into and out of position for blocking engagement with said stop formations, and control devices positioned for alternate operation by said control member upon opposite movements of the latter, said control devices being operatively connected to said actuator to control periodic operation of the latter for the positioning of said control member element.

3,294,287
VIBRATORY FEEDER
Norman Henry West, London, England, assignor to Stalex International Limited, London, England, a British company
Filed Sept. 18, 1964, Ser. No. 397,471
Claims priority, application Great Britain, Sept. 20, 1963, 37,084/63
4 Claims. (Cl. 222—55)



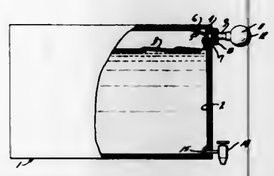
1. A vibratory feeder for a granular material comprising a main frame, a substantially horizontal feed tray, a series of parallel links extending between said feed tray and said frame, said links lying at a small angle to the vertical, torsion bushings connecting said links to said tray and said frame to permit limited reciprocatory movement of said tray in relation to said frame, means coupled only to said tray for imparting vibratory pulses to said feed tray in one direction, the said torsion bushes constituting resilient means for moving said tray in the reverse direction in the interval between said vibratory pulses, and a low-capacity feed hopper positioned over said feed tray, the distal end of said hopper being close to the upper surface of said tray and a doctor blade associated with said feed hopper to control the rate at which granular material is drawn off from said hopper.

3,294,288
CEREMONIAL FONT
Gabriel Macare, 389 1st Ave., West Haven, Conn. 06516
Filed Oct. 21, 1964, Ser. No. 405,422
7 Claims. (Cl. 222—78)



1. In a portable ceremonial font, a shape-holding yet plastically deformable liquid reservoir, comprising a top peripheral annular extension and a top segmented annular extension, a central liquid dispensing orifice within the base of said segmented annular extension, an air chamber with a pressure vent orifice located proximate to the central dispensing orifice, said air chamber maintaining communication between said pressure vent orifice and the inner chamber of the top peripheral annular extension, a capillary tube communicating from said liquid dispensing orifice to the inside bottom of said reservoir, and mounting or holding means for said reservoir.

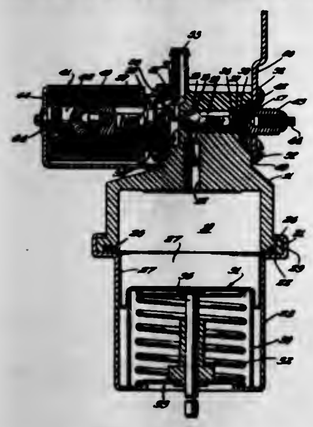
3,294,289
DISPENSING UNIT
Peter D. Bayne and James J. Solomon, Milwaukee, Wis., assignors to Jos. Schlitz Brewing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 27, 1965, Ser. No. 428,354
7 Claims. (Cl. 222—95)



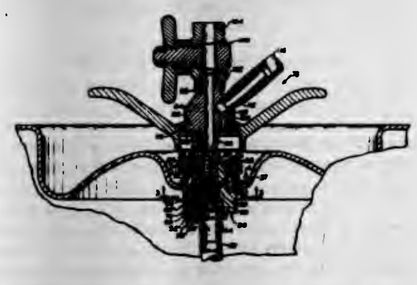
1. A unit to store and dispense a gas-containing liquid, comprising an outer container, a first flexible bag disposed within the container and containing a gas-containing liquid, said bag having an outlet opening therein, dispensing means disposed on the exterior of the container and entirely enclosing the outlet opening in said first bag for dispensing liquid from said first bag, said container having a hole therein, said first bag having a neck portion disposed in sealed relation to the portion of the container bordering said hole, a second bag disposed within the first bag and having a neck portion disposed within the neck portion of said first bag, and pressure supply means located on the exterior of the container and including valve means entirely enclosing the neck portion of the second bag for supplying a fluid under pressure to said second bag.

3,294,290
VALVE ASSEMBLY CONTROLLING FLOW INTO, AND DISCHARGE FROM, A FLUID MEASURING CHAMBER
Howard L. Erickson and Lawrence A. Kolze, Bensenville, and William R. McCarty, Jr., Skokie, Ill., assignors to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Apr. 6, 1965, Ser. No. 446,856
5 Claims. (Cl. 222—335)

5. A liquid measuring device comprising:
a measuring chamber,
a passageway leading into said chamber through one end thereof,
a piston at the opposite end of said chamber biased to move toward said passageway to force a measured quantity of liquid therethrough,
a valve body forming an end wall of said chamber and having said passageway leading axially therethrough,
a valve chamber in said valve body in communication with said passageway intermediate the ends thereof,
an inlet into said valve chamber at one end thereof,
an outlet from said valve chamber adjacent the opposite end thereof,
a valve member disposed intermediate said inlet and said outlet and adapted to move along said valve chamber,
a first biasing means for biasing the said valve member into a sealing engagement with the said outlet,
a second biasing means having greater biasing force than the first biasing means and engageably disposed with the said valve member for biasing the said valve member in a sealing engagement with the said inlet, and
force means for removing the biasing force of the said second biasing means upon energization of the said force means.

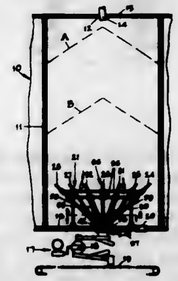


3,294,291
APPARATUS FOR WITHDRAWING BEER FROM KEGS
Joseph E. Sichler, Short Hills, N.J., assignor to P. Ballantine & Sons, Newark, N.J., a corporation of New Jersey
Filed Dec. 1, 1964, Ser. No. 415,064
4 Claims. (Cl. 222—400.7)



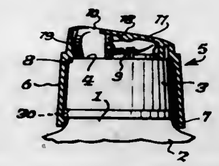
1. For use with a beer keg having a wall with an opening therein, a keg fitting in said opening and having a centrally located beer passage opening therethrough and a check valve within the beer passage for preventing escape of beer, a customers fitting with a sleeve extension that telescopes into the upper portion of the beer passage when the customers fitting is assembled in working relation with the keg fitting, a compressed gas passage through the keg fitting and through the customers fitting, the compressed gas passage opening through the confronting faces of the customers fitting and the keg fitting at substantially the same distance from the axis of the beer passages through both fittings, an annular groove in at least one of said confronting faces, the center of curvature of the groove being concentric with the axis of the beer passages in the fittings and said groove having a radius of curvature substantially equal to the radial spacing of the gas passages from the axis of the beer passages whereby both of the beer passages are in line with some part of said annular groove regardless of the phase angle of one fitting with the other when brought together in assembled relation.

3,294,292
BLENDING OF GRANULAR MATERIALS
Edward A. Adams, Wilbur F. Brown, Joseph J. Jarosi, and Glen C. Mook, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 5, 1964, Ser. No. 401,373
6 Claims. (Cl. 222—429)



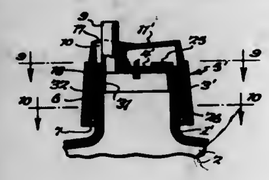
2. Apparatus for preventing segregation according to particle size in removing granular material through a relatively small central opening in the floor of a storage bin, comprising a collection system in the bottom of said storage bin including collecting tubes for gathering granular material from a plurality of points distributed over a cross section of said bin, and a metering system for receiving the granular materials from said collection system and controlling the rate of flow of said granular materials, said metering system comprising a separate chamber for receiving granular material from each of said collecting tubes, and means for regulating the discharge of all of said chambers simultaneously.

3,294,293
CLOSURE-ACTUATOR FOR CONTAINER WITH FLEXIBLE TUBULAR SPOUT
Stanley K. Johns, Buffalo, N.Y., assignor to Lever Brothers Limited, Toronto, Ontario, Canada
Filed Nov. 29, 1965, Ser. No. 510,170
7 Claims. (Cl. 222—507)



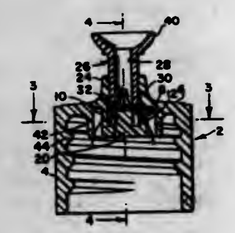
1. A dispensing closure comprising, in combination with a container part having projecting therefrom a flexible tubular dispensing spout, said spout being foldable upon itself transversely of its longitudinal axis to form a seal along the line of fold to close the dispensing route therethrough, a cap carried by said container part and having an opening through which said spout projects for dispensing from said container, said cap being movable relative to said part and to said spout to engage said spout and fold said spout upon itself to close said dispensing route, and lock means engaged upon movement of said cap into dispensing route closing position for releasably retaining said cap in said closing position.

5. A captive closure comprising in combination with a container having a neck with an externally threaded portion, an undercap having a flexible tubular spout with a dispensing passage therethrough and being foldable upon itself to close said dispensing passage, an overcap mounted on the undercap for rotation in opposite directions relative thereto to fold and unfold said flexible tubular spout upon



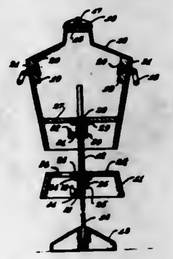
itself to close and open said dispensing passage, said spout extending through an opening in said overcap when in dispensing position, said undercap having a skirt with an internally threaded portion threadably engaging the externally threaded portion of said neck upon relative rotation of said undercap in one direction, and ratchet means for holding said undercap against rotation relative to said neck in the opposite direction.

3,294,294
DISPENSING CLOSURE WITH SLIDE
James Milton Amburgey, Kendall Park, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,689
7 Claims. (Cl. 222—525)



1. A dispensing closure for a container capable of holding a liquid and comprising an elastometric plastic top wall having an upwardly extending projection defining a passage extending through said extension and top wall, a stirrup having two diametrically positioned downwardly extending narrow arms connected at one end to the top wall adjacent to the inner end of said passage and at the other end to a cross piece, each of said narrow arms defining a segment of an annulus, the sum total of said segments being less than 180°, a plug on said cross piece axially aligned with and extending toward said passage, an elastomeric plastic slider slidably mounted in said passage in fluid-tight relation thereto, said slider having therethrough a discharge channel adapted to mate with and be closed at its inner end by said plug when said slider is positioned thereon, an enlargement on said slider at the outer end thereof to facilitate moving it outwardly off said plug, and cooperative means in said passage and on the slider to limit normal outward movement of the slider after the inner end thereof is slid clear of said plug.

3,294,295
ADJUSTABLE MANNEQUIN
Morris A. Wolf, 1545 N. Laurel Ave., Los Angeles, Calif. 90046
Filed Jan. 25, 1965, Ser. No. 427,767
1 Claim. (Cl. 223—68)

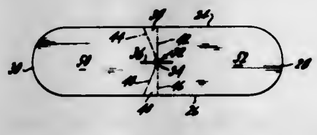


A mannequin for the display of upper garments of different lengths comprising:
a full round hollow upper form simulating a human figure from the waist to the neck and having an open lower end in a horizontal plane;
a member affixed within said upper form and spaced above the open lower end of said upper form;
a full round hollow lower form simulating a human figure from hip level to waist level and having an open lower end at said hip level in a horizontal plane, the upper end of said lower form being closed by a horizontally disposed top wall;
a vertically extending tubular member that is slidably mounted through both said member of said upper form and said top wall of said lower form;
a clamping means affixed to the lower surface of said member in said upper form that is releasably engageable with said vertically disposed tubular member for adjusting the vertical spacing between said upper form and said lower form or for supporting said upper form in contacting superposition of its horizontal open lower end on said horizontal top wall of said lower form; and
a clamping means secured to the underside of said top wall of said lower form that is releasably engageable with said vertically extending tubular member, said last-mentioned clamping means being concealed from view within said lower form, said top wall of said lower form being provided with an opening whereby access may be had through the open bottom end of said lower form and through said top wall of said lower form for releasing and engaging said clamping means in said upper form, while the mannequin is wearing an upper garment, for adjusting the overall length of the mannequin to dispose the hem of the garment in said horizontal plane of the lower end of said lower form.

3,294,296
GARMENT HANGER SHOULDER COVER
Louis Gelman and Jack Levenson, Brooklyn, N.Y., assignors to Nest-A-Pak Products, Brooklyn, N. Y.
Filed June 19, 1964, Ser. No. 376,425
1 Claim. (Cl. 223—98)

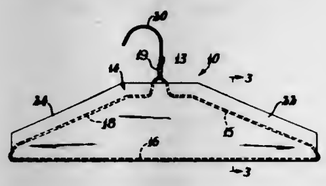
A hanger shoulder cover for a wire hanger comprising a single flat sheet of paper board material having parallel side edges and curved end edges joining said side edges, said cover being formed with a central opening for receipt of the hook portion of the wire hanger and a slit parallel to said side edges, said slit being bisected by said central opening, a single transverse fold line formed at the center of said cover perpendicular to and between two side edges, intersecting said central opening and defining first and second cover sections on opposite sides thereof, and a single

pair of angled fold lines formed on one side of said transverse fold line, each of said angled fold lines extending from said central opening to one of said side edges forming a triangular construction area bounded by said transverse fold line, said angled fold line and said one side edge, said cover being free of any fold lines other than said single transverse fold line and said pair of angled fold lines on one side of said single transverse fold line, said cover being folded at said transverse and angled fold lines



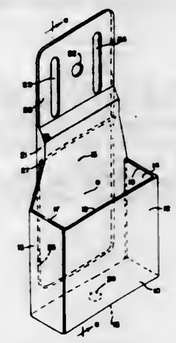
to bring said triangular construction areas into interposed relation between portions of said first and second cover sections, said triangular construction areas being coextensive when said cover is folded, and securement means interconnecting the material on transversely opposite sides of said central opening, said securement means extending in a straight line through each of said coextensive triangular construction areas pinching said cover together with said two triangular construction areas in substantially parallel orientation to form a contoured hanger cover.

3,294,297
GARMENT HANGER COVER
Gilbert M. Raphael, 8244 Keeton, Skokie, Ill. 60076
Filed Apr. 12, 1965, Ser. No. 447,345
2 Claims. (Cl. 223—98)



1. An improved hanger for supporting a garment comprising the combination of: a wire defining a generally triangular form having an elongated base and a pair of shoulder-supporting side members joined at an apex and having a downwardly-opening suspension hook portion extending from such apex, and a cover enclosing said triangular form and being constructed and arranged to provide extended surface support for a garment carried on said hanger to minimize creasing of the shoulder region of such garment, said cover comprising a paper sheet folded along an elongated fold line to form a pair of symmetrical side sections, the fold line engaging with and being substantially coextensive with said elongated base, the top edges of said symmetrical side sections opposite said base overlapping and extending beyond said side members of said triangular form and being bonded to one another on the exterior of the triangular form for affixing said cover on said hanger and for providing rigidified shoulder-supporting extensions extending upwardly from said side members of said hanger, said shoulder-supporting extensions being bendable along the associated side members of said wire for spacing the garment from the hanger and for providing extended surface support for a garment with a minimum of creasing in the shoulder region, said hook portion of said triangular form extending beyond said cover opposite said fold line.

3,294,298
HAMMER HOLDER
Richard E. Danielson, 6041 Newton Ave. S., Minneapolis, Minn. 55419
Filed Dec. 7, 1964, Ser. No. 416,328
4 Claims. (Cl. 224—5)



4. A hammer holder comprising:
(a) a receptacle having a pocket for the reception of a hammer, said pocket being open at the top to receive a hammer head with the handle extending upwardly,
(b) said receptacle being constructed from bendable sheet material providing,
(c) a back,
(d) a bottom extending forwardly from said back,
(e) a front issuing upwardly from the forward edge of the bottom,
(f) sides issuing rearwardly from the lateral edges of said front,
(g) flanges issuing toward each other from the lateral edges of said sides,
(h) said flanges overlying said back,
(i) means for securing said flanges to said back,
(j) an extension extending upwardly from said back and above said sides and front,
(k) a backing secured to said extension near the upper portion of said backing and extending upwardly above said extension,
(l) means for attaching the upper portion of said backing to the belt of the user, and
(m) the lower portion of said backing overlying said back and forming an insert for insertion into a pocket of the user.

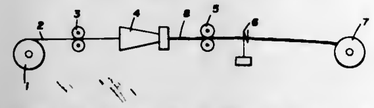
3,294,299
SAFETY DEVICES
Bernice B. Brennan, 1412 Wilmette Ave., Wilmette, Ill. 60091
Filed Sept. 29, 1965, Ser. No. 491,202
4 Claims. (Cl. 224—28)



1. A safety device for use by a person with a hand-carried object comprising:
a flexible strap;
means at one end of said flexible strap for connecting said strap to the hand-carried object in such a manner that the strap may be disconnected only when the other end of the strap is free;

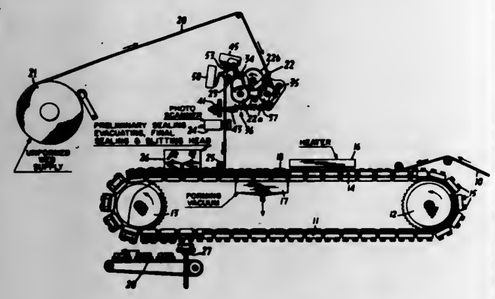
an annular ring connected directly to said other end of said strap, said annular ring being large enough to permit the threading of said strap therethrough to provide an adjustable loop formed from said strap to fit the wrist of a person hand-carrying the object; and stop means for preventing loss of said adjustable loop when said strap is not looped about the wrist of a person.

3,294,300
FUNNEL DEVICE FOR LONGITUDINALLY SPLITTING FILM
Warner D. Long and David C. Williams, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 7, 1965, Ser. No. 462,023
12 Claims. (Cl. 225—3)



1. A process for partially splitting a polymeric film which comprises the steps of:
(a) moving an oriented polymeric film through a splitting zone,
(b) foldng and compacting the film on itself while in said splitting zone,
(c) and exerting a dragging force on the film while it is being folded and compacted and thereafter while it is in said splitting zone thereby inducing a partial splitting in the direction of movement of the film.

3,294,301
WEB REGISTRATION SYSTEM
Joseph Richter, Fair Lawn, N.J., assignor to Standard Packaging Corporation, New York, N.Y., a corporation of Virginia
Filed Feb. 9, 1965, Ser. No. 431,396
7 Claims. (Cl. 226—27)



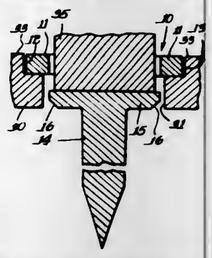
1. A web registration system for registering a stretchable film with respect to an intermittently moving element of a machine which takes the film as it is needed comprising film feeding means, a movable film take-up roll acting on the film intermediate the film feeding means and the said intermittently moving element, means acting on the said take-up roll and causing it to exert a greater stretching action on the film over one range of movement of the take-up roll than over another range of its movement, means controlled by the position of the take-up roll for controlling the operation of the film feeding means, and means responsive to sensing indicia on the film for changing the film take-up roll from one operating range to another to increase the amount of stretch when the sensing indicia is detected early and to decrease the amount of stretch when the sensing indicia is detected late.

3,294,302
MOTION PICTURE APPARATUS
Bjorn F. Floden, Palmyra, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Original application Apr. 10, 1963, Ser. No. 272,061. Divided and this application Nov. 26, 1965, Ser. No. 509,829
8 Claims. (Cl. 226—60)



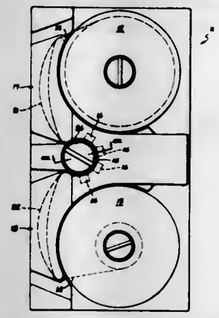
1. A mechanical filter for providing substantially uniform motion of a film which is to be driven at approximately constant speed along a path, said filter comprising, in combination,
(a) a post,
(b) a body of resilient material having hysteresis characteristics disposed around said post, and
(c) means disposed along said path for engagement with said film and coupled to said body for stretching said body and sliding said body over said post so as to absorb the energy of non-uniform motion of the film, thereby to oppose deviations in the motion of said film from uniform motion.

3,294,303
NAILING STRIP AND NAILING MACHINE THEREFOR
Edgar P. Anstett, 21 Lakewood Place, Highland Park, Ill. 60035
Filed Oct. 30, 1964, Ser. No. 407,630
5 Claims. (Cl. 227—95)



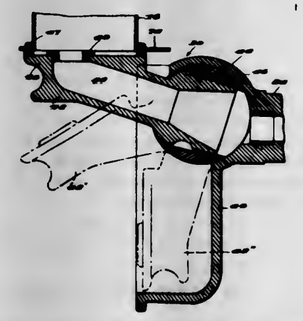
5. A nailing machine for sequentially severing and driving predefined headed nails from a nailing strip comprising a molded fracturable strip having lateral side portions and a row of spaced nail shanks extending from one side thereof and head defining recesses in one face of the strip about each nail shank, said nailing machine including a backing die provided with an opening and a reciprocatable plunger in alignment with the opening in the die and having transverse dimensions substantially less than the dimensions of the opening in the die, the transverse dimensions of the opening in the backing die being greater than the dimensions of the defined nail heads in the nailing strip and the transverse dimensions of the plunger being less than the dimensions of the defined nail heads in the nailing strip, and means in the nailing machine for guiding and intermittently advancing the nailing strip between the backing die and the plunger with the backing die underlying the lateral side portions of the nailing strip to sequentially position the defined nail heads in the strip in alignment with the opening in the backing die so that the plunger sequentially fractures the nailing strip at the head defining recesses therein and drives predefined headed nails from the strip.

3,294,304
MAGNETIC TAPE TRANSPORT AND TRANSDUCING APPARATUS
Joseph A. Dinsmore, San Carlos, and Richard I. Seddon, Santa Rosa, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 11, 1965, Ser. No. 463,117
5 Claims. (Cl. 226—95)



1. In a magnetic tape transport and transducing apparatus including a rotating member engaging one side of said tape and a transducing means mounted for movement between retracted and transducing positions on the other side of said tape opposite said rotating member, said transducing means having at least one pair of magnetic pole tips confronting said tape in said transducing position thereof, said pole tips being of predetermined width in an axial direction of said rotating member, the improvement comprising:
said rotating member being provided with at least one helical groove coaxial therewith and formed in the tape-engaging surface thereof, for deflating air bearing between said tape and rotating member;
the pitch of said groove being an aliquot part of said predetermined pole tip width.

3,294,305
YARN SWITCH
Robert George Schimpf, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 360,942
5 Claims. (Cl. 226—97)

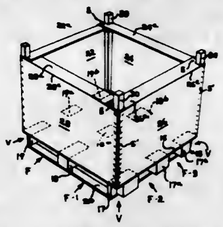


1. In a yarn-handling installation including a tube through which yarn normally advances between two process points, a disposal apparatus comprising: an otherwise imperforate conduit member provided with a fitting and a restricted through passage beginning at said fitting; means mounting the conduit member for pivotal movement of said fitting toward and away from a position of seated engagement with the outlet end of said tube; and a vacuum line connected to said mounting means for communication with the terminal end of said passage and said tube as the fitting is pivoted toward said position.

ERRATUM

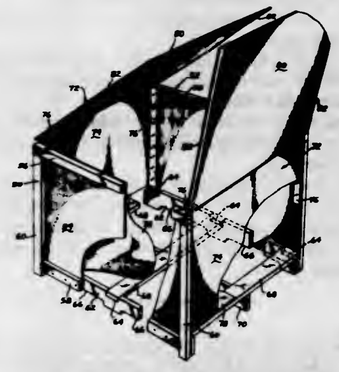
For Class 227—95 see:
Patent No. 3,294,303

3,294,306
PALLETIZED SHIPPING CONTAINER
James G. Areddy, Toledo, Ohio, assignor to Industrial Packaging Specialists, Toledo, Ohio, a corporation of Ohio
Filed May 18, 1964, Ser. No. 367,983
10 Claims. (Cl. 229—23)



7. A shipping container comprising a base, means on said base engageable with lift truck forks; said base having downwardly facing notches formed at each corner, side walls connected to said base, corner posts upstanding from said base above said notches and horizontal flange means on said side walls having end extremities holding said support posts vertically disposed.

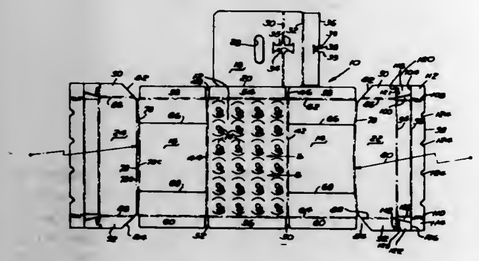
3,294,307
COLLAPSIBLE BIN BOX
Thomas Munroe, Dayton, Ohio, assignor to Moraine Box Company, Dayton, Ohio, a corporation of Michigan
Filed Aug. 24, 1965, Ser. No. 482,187
4 Claims. (Cl. 229—23)



1. A collapsible box or container comprising; end wall members each comprising a rectangular panel of corrugated paper, horizontal top and bottom rails outside each panel, vertical side rails outside each panel and extending beyond the pertaining bottom rails, an additional horizontal rail inside each end wall member at the bottom extending to the bottom of the pertaining vertical rails and notched on the bottom between the ends for receiving a lift truck fork, other notches on top of said additional rails for receiving the rails or slats of a support platform, a pair of other corrugated paper panels each comprising a main portion forming a side wall member

of the box, a first flap hinged to the top of each main portion to form a top closure member and a second flap hinged to the bottom of each main portion to form a bottom closure member, each said main portion having side edge portions turned in and secured to the insides of the end wall members, each said first flap having side edge portions overlying the top rails of the end wall member, and each said second flap extending transversely of the box above said additional rails for being supported by said additional rails while being foldable up against the pertaining main portions for collapsing of the box.
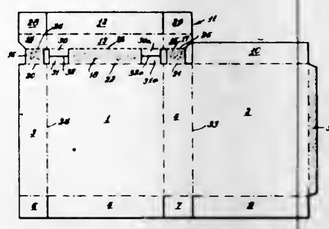
3,294,308
REUSABLE PLASTIC CONTAINER
John J. Tress, Beaver Falls, and Frank E. Lordi, Dean C. Rogers, and Robert F. Knee, Beaver, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,833
12 Claims. (Cl. 229—23)



1. In a container formed from plastic sheeting the combination comprising,
- a shaped plastic sheet container blank having a pair of spaced parallel transverse creases defining a container bottom wall and a pair of container side walls on opposite sides of said bottom wall,
- a pair of spaced transverse curved hinge creases in said plastic sheet container blank located on opposite sides of said parallel creases forming a pair of lids hingedly secured to said side walls,
- a pair of separate rectangular end walls formed from a plastic sheet,
- said container blank having 90° folds at said spaced parallel creases so that said side walls extend upwardly from said bottom wall,
- said end walls secured to the edge portions of said bottom wall and said side walls to form a rectangular container, and
- said lid portions folded 90° along said curved hinge creases to enclose said rectangular container, said curved hinge creases operable to maintain said side walls substantially planar with said lid portions in an open position.

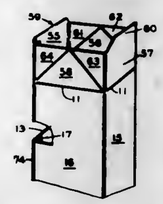
3,294,309
SNAP RECLOSEABLE HOODED CARTON WITH IMPROVED LOCK STRUCTURE
Merrill J. Coe, Kalamazoo, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,238
8 Claims. (Cl. 229—45)

1. A carton formed of an integral blank comprising a container assembly including a front wall panel, a rear wall panel and side wall panels, and a cover assembly hingedly connected to said rear wall panel including a cover top panel having a cover front wall panel and cover end wall panels connected thereto, means detachably connecting said cover front wall panel and said cover end wall panels to said container assembly comprising a pair of struts one adhesively affixed to the outer surface of each of said side walls panels and detachbly connected to the lower edge of each of said cover end wall panels, and a centrally positioned strut adhesively affixed to the outer surface of said front wall panel and detachably connected to the lower edge of said cover front wall panel, and two pairs of lock flaps, one pair positioned at each side of said centrally positioned strut and between said cover front wall panel and said front wall panel, one of the lock flaps of each pair being



adhesively affixed to a surface of one member of said cover front wall panel and said front wall panel and the other being hingedly connected to the edge of and folded over in engagement with a surface of the other member of said cover front wall panel and said front wall panel, each pair of said lock flaps having free edges in substantially abutting mutual engagement but being free of attachment to each other, whereby said lock flaps cooperate to retain said cover in closed position.

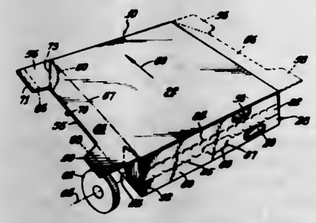
3,294,310
PAPERBOARD CONTAINER AND METHOD OF ELIMINATING EDGE WICKING IN THE CONTAINER
Melvin W. Miller, Detroit, and Duncan J. Crawford, Franklin, Mich., assignors to Ex-Cell-O Corp., Detroit, Mich., a corporation of Michigan
Filed Apr. 26, 1965, Ser. No. 450,651
1 Claim. (Cl. 229—48)



A self sustaining collapsed container formed from a one-piece foldable blank of paperboard having an overall surface coating of heat sealable thermoplastic material, said collapsed container comprising:
- (a) a group of four rectangular body panels and a lap side seam flap defined by a network of spaced vertical and horizontal score lines,
- (b) a group of top closure panels connected to said body panels,
- (c) a group of bottom closure panels connected to said body panels,
- (d) two of said body panels being folded along their score lines into overlapping relation to the remaining two body panels,
- (e) said lap side seam flap being secured to the inner face of the free side seam portion of the overlapped body panel adjacent thereto to unite said body panels in a lap side seam,

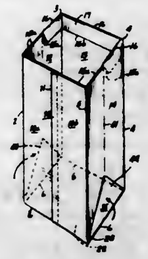
- (f) the improvement wherein said side seam flap being folded back upon its outer face along a vertical intermediate score line such that its uncoated raw edge is positioned parallel to and approximately midway between said intermediate score line and the vertical edge of said overlapped body panel wherein substantially equal portions of the outer and inner surface of said side seam flap are heat sealed to the inner face of said overlapped body panel to form a moisture impervious lap side seam.

3,294,311
CARTON HAVING A HINGED RECLOSABLE TOP
Francis A. Childrey, Jr., Devon, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,687
6 Claims. (Cl. 229—51)



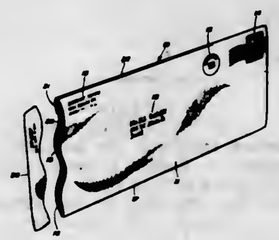
1. A carton formed of foldable paperboard, comprising:
- (a) opposed top and bottom walls, and opposed pairs of side walls and front and rear walls extended between and hingedly connected to corresponding side, front and rear edges of the top and bottom walls;
- (b) the side walls and the front wall including overlapping inner and outer panels hinged to the top and bottom walls;
- (c) front and rear end flaps hinged to the front wall inner panel and to the rear wall and extended between the side wall inner and outer panels;
- (d) each of said side wall outer panels being hinged at its upper edge to a related side edge of the top wall and extending therefrom toward the bottom wall, and presenting remote end sections that overlap and completely cover the related end flap and presenting an intermediate section having a lower free edge spaced above the lower free edges of said end sections to provide a gap in the side wall outer panel between the end flaps;
- (e) said end sections having horizontal strips of adhesive applied to the underside thereof, at locations vertically between the lower free edges of the end and intermediate sections operable to secure said side wall outer panel to the opposite end flaps and to the portion of the side wall inner panel exposed forwardly of the rear end flap for defining a top hood and for maintaining the side wall outer panel down relative to the side wall inner panel;
- (f) readily separable means for maintaining the front wall inner and outer panels in overlapped relation;
- (g) the side wall outer panel having a weakened section inclined upwardly and rearwardly from the lower free edge of the intermediate section at the rearward end thereof to a hinge line of the top wall extending parallel to the front and rear walls;
- (h) the top wall and hood being operable thereby upon separation of the front wall inner and outer panels and the breaking of the side wall outer panel weakened section to pivot about the top hinge line for opening and closing the carton.

3,294,312
BAG WITH RESERVE CAPACITY
Curtis Mullins, 368 Tompkins Ave., Brooklyn, N.Y. 11216
Filed Jan. 15, 1965, Ser. No. 425,730
16 Claims. (Cl. 229—53)



1. A collapsible bag with reserve capacity comprising a pair of opposed end wall panels and a pair of opposed side wall panels, interior and exterior bottom panels connected to respectively associated ones of said pair of opposed side wall panels, said interior and exterior bottom panels being secured together in superposed relationship and joining said pair of opposed side wall panels, a pair of top subpanels, a pair of interior bottom subpanels, and a pair of exterior bottom subpanels, said subpanels being arranged to form a pair of pockets joining respectively associated ones of said pair of opposed end wall panels to said interior and exterior bottom panels, each of said pockets comprising, in superposed relationship, one of said top subpanels and one each of said interior and exterior bottom subpanels arranged to define a space between the top subpanel and the interior bottom subpanel communicating with the interior of the bag, said interior and exterior bottom subpanels being secured together in overlapping relation to provide a double-thickness bottom for each said pocket.

3,294,313
ENVELOPE
Jerry L. Spaulding, Worcester, Mass., assignor to New England Envelope Mfg. Company, Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 389,355, Aug. 13, 1964. This application May 18, 1966, Ser. No. 560,030
1 Claim. (Cl. 229—85)



An envelope, comprising
- (a) a rectangular front panel,
- (b) a rectangular back panel connected along two end edges and one side edge to the corresponding edges of the front panel,
- (c) a gummed flap hingedly connected to the other side edge of the front panel and adapted to overlie and be connected to the back panel,

(d) weakening lines formed by a series of perforations extending across both panels adjacent one end edge, each line being curved in a sine wave form and changing direction from time to time to discourage unintentional bending of the envelope about the lines and to permit the contents of the envelope to be readily grasped, a weakening line extending over the flap in position to match a similar line on the back panel, and

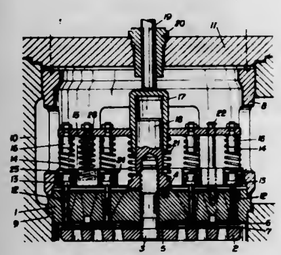
(e) means consisting of adhesive fastening the panels together in the portion of the envelope lying between the lines and the said one end edge to assure that the contents of the envelope do not occupy the said portion of the envelope.

3,294,314

LIFTING DEVICE FOR COMPRESSOR VALVES

Josef Ott, Schongau, Lech, Germany, and Friedrich Bauer, Vienna, Austria, assignors to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria

Filed Mar. 22, 1966, Ser. No. 536,377
Claims priority, application Austria, Mar. 24, 1965, A 2,650/65
10 Claims. (Cl. 230—24)



1. A lifting device for compressor valves serving for the infinitely variable control of the delivery volume of piston-type compressors, comprising lifting pins acting on a valve plate, lifting springs and a pressure plate pressing against an adjusting drive, the lifting springs connecting the lifting pins with the pressure plate, wherein the lifting pins are provided with adjusting weights detachably placed thereupon for the purpose of adapting the masses of the lifting pins to the operating conditions of the compressor, in particular with regard to speed, pressure and valve stroke.

2. A lifting device as claimed in claim 1, wherein the adjusting weights consist of sleeves inserted between the lifting springs and spring caps provided on the top of the lifting pins.

3,294,315

FAN CONSTRUCTION

Derrel N. Stewart, Hamburg, and Russell Olson, Buffalo, N.Y., assignors to Buffalo Forge Company, Buffalo, N.Y., a corporation of New York

Filed Sept. 28, 1964, Ser. No. 399,608
4 Claims. (Cl. 230—134)

3. A composite spark-resistant blade construction comprising a ferrous blade body having an inner edge for attachment to a rotatable hub and an outer edge adapted to be located adjacent a fixed casing, and a spark-resistant strip-like member joined to said outer edge of said blade body by a weld to thereby tend to obviate sparking in the event said strip-like member of said blade construction strikes said casing, said weld providing fusion of a portion of said strip-like member and said outer edge into each other for a substantial bonding zone in a direction axially of said blade body, and said strip-like member and said ferrous blade body having melting temperatures which



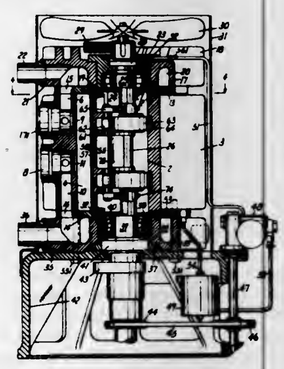
are sufficiently close to each other to effect said fusion to produce said weld.

3,294,316

GAS COMPRESSORS

Herbert E. Ellinger and Alfred H. Humphrey, Kalamazoo, Mich., assignors to General Gas Light Company, Kalamazoo, Mich.

Filed Nov. 4, 1964, Ser. No. 408,921
13 Claims. (Cl. 230—187)



1. A compressor having an elongated hollow body with radially disposed pump chambers extending from end to end thereof and opening at their radially inner sides to the interior of the body,

end members closing the ends of said chambers and rotatably supporting a shaft through the center of said body,

elongated rigid pumping elements slidably and sealingly mounted and positioned in said chambers,

pairs of inlet and outlet check valves mounted in the exterior of said body and communicating between the outer sides of said chambers and axial passages formed in the body and extending to an end thereof,

and eccentrics on said shaft within said body in radially driving engagement with the inner sides of said pumping element,

characterized by said pumping elements having inwardly projecting ribs transverse to said chambers and said shaft,

pins supported on said ribs and having bearings thereon rollingly engageable with said eccentrics,

links connected to said flanges and extending swingably towards said shaft,

second bearings on the radially inner ends of said links,

pump element retracting rings surrounding the radially outer sides of said second bearings on all of said links and surrounding said shaft,

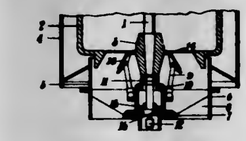
and a drive connection on said shaft external to one of said end members.

3,294,317

DEVICE FOR OPENING THE DISCHARGE OPENING OF A HYDROEXTRACTOR AND CONCURRENTLY LOCKING THE EXTRACTOR

Francesco Moretti, Terni, Italy, assignor to Officine Meccaniche e Fonderie A. Bosco S.p.A., Terni, Italy

Filed Nov. 3, 1964, Ser. No. 408,618
Claims priority, application Italy, Nov. 27, 1963, 93/409
4 Claims. (Cl. 233—20)



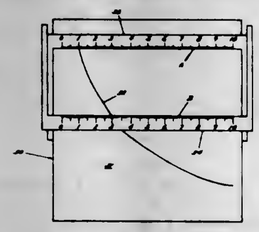
1. A shutter device for the discharge opening of a basket of a hydroextractor having a shaft, a hub coupled to the shaft and spokes connecting the hub with the basket to define a plurality of apertures at said discharge opening, said device comprising means for closing the apertures at said discharge opening including a plurality of doors one for each discharge opening, displaceable cylinder means mounted on said hub and coupled to the doors for pivotally opening the doors downwardly as the cylinder means is lowered, a bearing mounted on said cylinder means and a stationary ring for receiving the bearing when the cylinder means is lowered to prevent oscillation of the basket and positively lock the shaft of the basket.

3,294,318

PROPORTIONAL SCALE SLIDE RULE

Enrique J. Chicurel, 212 Marion St., Madison, Wis. 53703

Filed July 22, 1965, Ser. No. 474,060
1 Claim. (Cl. 235—61)



A proportional scale slide rule for performing mathematical calculations such as multiplication and division comprising:

(a) a substantially flat member having a non-scaled antilogarithmic curve thereon,

(b) said curve formed in a Cartesian coordinate system such that the ordinate is the antilogarithm of the abscissa,

(c) a first arm slidably attached to said flat member for straight line movement in a plane substantially parallel to the plane of said flat member,

(d) a second arm slidably attached to said first arm for straight line movement parallel to that of said first arm in a plane substantially parallel to the plane of said flat member whereby said arms may be moved independently of each other or in fixed relation, and

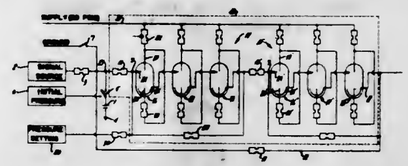
(e) each of said arms having a straight equi-spaced ten unit scale thereon beginning at a distance of one unit from the axis of the ordinate, said scales cooperating with said curve whereby the factors are set and the product is read on said scales against said curve during multiplication and whereby the dividend and divisor are set and the quotient is read on said scales against said curve during division.

3,294,319

PURE FLUID INTEGRATOR

Bjorn G. Bjornson, Milwaukee, Thomas J. Lechner, Jr., Menomonee Falls, and Paul H. Sorenson, West Allis, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 30, 1964, Ser. No. 414,812
6 Claims. (Cl. 235—200)



1. A purse fluid integrator, wherein

a forward gain amplifier includes a plurality of cascaded impact modulators each of which includes a pair of opposed impacting main streams and a transverse control stream engaging the input main stream for controlling the recovery of the impacting streams, said amplifier including feedback restrictor means to produce a pure fluid operational amplifier,

a fluid input restrictor connected to the first stage of the amplifier,

a feedback restrictor connected between said input restrictor and the output of the amplifier,

a signal source restrictor connected to said input restrictor, and

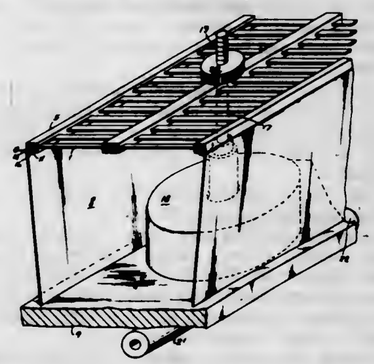
a fluid capacitor connected between a reference and said input restrictor.

3,294,320

BI-METAL TRANSDUCER

Rudolph J. Franz, Arlington Heights, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Apr. 26, 1965, Ser. No. 450,928
23 Claims. (Cl. 236—87)



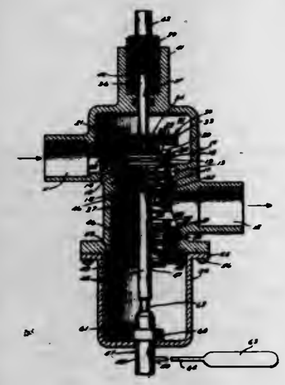
1. A temperature responsive actuator comprising a continuous bi-metal strip having the junction line of its two metals lying generally in a plane and having a plurality

of bights and substantially transverse segments interconnecting said bights to form a repetitive wave, a supporting frame having a pair of spaced arms, one of said arms being substantially rigidly secured to one alternate set of bights of said bi-metal strip, the other of said arms being substantially rigidly secured to the other set of bights of said bi-metal strip, an actuating arm secured to said bi-metal strip at a plurality of points located intermediate said pair of supporting arms, said actuating arm being movable by said bi-metal strip upon a temperature change of said bi-metal strip.

3,294,321
ZONE THERMOSTATIC VALVE WITH MULTIPLE MOVABLE SEATS

Robert W. Coulter, Deerfield, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Feb. 21, 1964, Ser. No. 346,519
2 Claims. (Cl. 236—99)

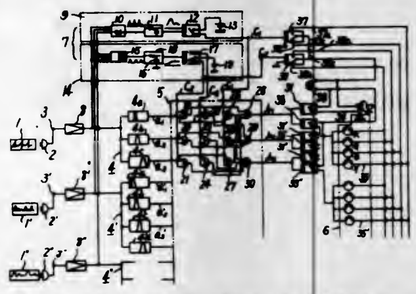


1. A fluid control valve comprising a valve body having an inlet and an outlet and a passageway communicating said inlet with said outlet,
a first valve member presenting a flat seating surface,
a sleeve valve member guided for axial movement within said passageway and having an annular lip cooperable with said seating surface to control the rate of flow of liquid through said sleeve valve and hence through said control valve and to prevent the flow of liquid in one position of the sleeve valve,
a thermal sensitive element casing mounted on said valve body and having an element extensible therefrom,
an over-travel coil spring interconnecting said element with said sleeve valve member to transmit extensible movement of said element to said sleeve valve member to move the latter relative to said first valve member,
thermal sensing means positioned at a point remote from said thermal element casing,
means interconnecting said thermal sensing means and said thermal element casing whereby movement of said element can be effected as a function of variances in temperature and in said sensing portion,
manual means for moving said first valve member relative to said sleeve valve member,
and a bias coil spring concentrically positioned with respect to the over-travel coil spring and connected to said manual means to bias said manual means and to cushion said seating surface as said annular lip moves into contact with said seating surface.

3,294,322
DEVICE FOR AUTOMATICALLY CONTROLLING WATER JETS OF ARTIFICIAL FOUNTAINS IN SYNCHRONISM WITH MUSICAL SOUNDS

Korelchi Kawamura, Yoshiko Kawamura, and Koichi Kawamura, all of 66 Jyonyoji, Kamakura, Japan

Filed Nov. 17, 1964, Ser. No. 411,857
Claims priority, application Japan, Nov. 18, 1963, 38/61,793
6 Claims. (Cl. 239—17)

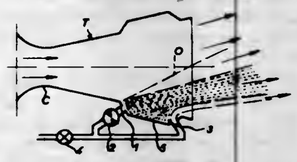


1. An automatic control device for controlling performance of water fountains responsive to musical selections, said device comprising, in combination, selectively operable water volume control means controlling the dynamic operation of a fountain; selectively operable colored illumination means for the fountain; transducer means operable to convert musical sounds into corresponding electrical signals; filter circuit means connected to said transducer means and operable to separate said electrical signals into respective frequency bands to provide plural respective band frequency signals; discriminator circuit means connected to said transducer means and operable to provide respective sound volume signals and sound rhythm signals corresponding to said electrical signals; combining means connected to said filtering circuit means and to said discriminator circuit means and operable to combine each band frequency signal with a sound volume signal and a rhythm signal to provide plural respective combined control signals each corresponding to a respective combination of band frequency, sound volume and rhythm; and means, including circuit connections, connecting said combining means to said water volume control means and said colored illumination to control the same to vary the dynamic operation and colored illumination of the fountain in accordance with variations in the sound frequency, sound volume and rhythm of the musical selection.

3,294,323
JET DEFLECTOR DEVICE OPERATING BY LIQUID INJECTION

Adolphe Otton Gautier Ernst, Bois-le-Roi, France, assignor to Societa Nationale d'Etude et de Construction de Moteurs d'Aviation

Filed July 2, 1964, Ser. No. 379,980
Claims priority, application France, July 11, 1963, 941,141
2 Claims. (Cl. 239—265.23)

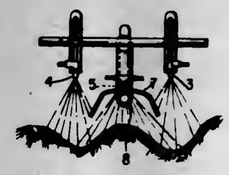


1. In combination with a nozzle having a convergent-divergent wall, a jet deflecting device comprising a recessed chamber formed in the divergent section of said wall and extending longitudinally between an upstream end and a downstream end, first liquid injecting means positioned at said upstream end and opening into said nozzle in a direction inclined downstream with respect to the normal to said divergent wall at said upstream end, second liquid injecting means positioned at said downstream end and opening into said nozzle in a direction inclined upstream with respect to the normal to said divergent wall at said downstream end, a common supply of vaporizable liquid under pressure, branched connections between said common supply and both said liquid injecting means, and means positioned in the connection leading to said first liquid injecting means for creating therein a pressure drop relatively to the connection leading to said second liquid injecting means, whereby said second liquid injecting means is supplied with vaporizable liquid at a relatvely high pressure and said first liquid injecting means is supplied with the same liquid at a relatively low pressure.

3,294,324
FIELD SPRAYER

Joseph B. Skaptason, 12700 Prospect Ave., Rte. 30, Kansas City, Mo. 64166

Filed May 10, 1965, Ser. No. 454,521
1 Claim. (Cl. 239—288)

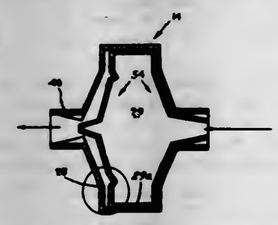


An apparatus for spraying row crops comprising a specific row applicator having a group of three spray nozzles connected to a source of spray material under pressure, the center nozzle being positioned over the row crop and the side nozzles being positioned on either side of the row crops and shielding means preventing the spray of the side nozzles from contacting the row crop but permitting over-lapping of the center spray band with the side spray bands.

3,294,325
AUTOGENOUS GRINDING MILL

John E. Nelson, Montreal, Quebec, Canada, assignor to Dominion Engineering Works, Limited

Filed Sept. 26, 1963, Ser. No. 310,272
10 Claims. (Cl. 241—70)

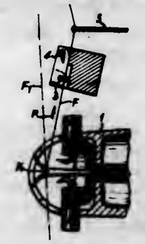


1. An autogenous grinding mill for reducing friable material, including a grinding chamber rotatably supported on a pair of axially aligned end journals, said chamber being bounded by a cylindrical mid-section wall having annular end wall portions extending radially inwardly substantially normal thereto, each connecting with a conical end wall portion extending axially outwardly from the respective annular wall portion, one said annular wall portion being an outlet wall and including grate means for the passage of crushed material axially outwardly therefrom, the combination end wall structure providing an unrestricted free-fall mid-section of extended axial length, for a mill of given axial dimension.

3,294,326
DEVICE FOR CHECKING THE OCCURRENCE OF FAULTY KNOTS IN YARN-WINDING MACHINES

Hans Rasch, Rheydt, Germany, assignor to Walter Reinert, Moenchen-Gladbach, Germany

Filed Sept. 23, 1964, Ser. No. 398,653
5 Claims. (Cl. 242—35.6)

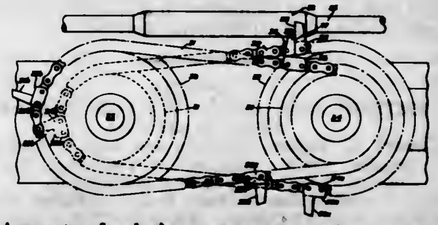


1. A device in winding machines for checking the occurrence of faulty knots due to doubling of yarn ends, comprising means defining a first travel path from a first to a second position for yarn to be wound, a knotter for knotting a pair of yarn ends mounted near said path intermediate said first and second positions, a sensing member mounted near but spaced from said first path between said knotter and said second position and responsive to a given limit dimension of the knotted yarn, travelling from said first to said second position, means for momentarily diverting the yarn from said first travel path between said first and second positions to a second travel path located between said positions and extending through the operating zone of said sensing member when a knotting operation is performed, and yarn severing means connected with said sensing member and controlled thereby to sever the yarn when said member responds to said limit dimension due to doubling of knotted yarn ends.

3,294,327
YARN WINDING MACHINE

John Maurice Horwood, Llanyravon, Cwmbran, England, assignor to British Nylon Spinners Limited, Pontypool, England

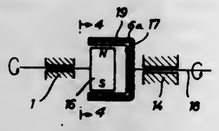
Filed Sept. 28, 1964, Ser. No. 399,670
Claims priority, application Great Britain, Oct. 2, 1963, 38,768/63
5 Claims. (Cl. 242—43)



1. Apparatus for laying a yarn on a driven rotating yarn package comprising: two oppositely driven endless members disposed in adjacent planes in positions such that at least a portion of one run of each member travels in a path which is inclined to the axis of the yarn package, said inclined paths being at equal angles relative to the axis of the yarn package but in the opposite sense and being disposed such that the directions of said paths intersect at a point on a line substantially midway along and

perpendicular to the yarn package; a plurality of yarn guiding members mounted on each of said endless members in such spaced-apart positions that two oppositely moving guiding members on said run portions pass each other at spaced apart traverse points, each of which corresponds to an opposite end of the yarn package; and means mounted adjacent said run portions of said endless members for constraining the yarn being guided by one of said guiding means to move in a yarn traverse path which is parallel to the axis of the yarn package whereby whichever yarn guiding means is guiding the yarn along said yarn path toward one of said traverse points moves out of said yarn path at said one traverse point so as to allow the yarn to slip off the tip of said one guiding member and simultaneously into contact with an oppositely moving yarn guiding member.

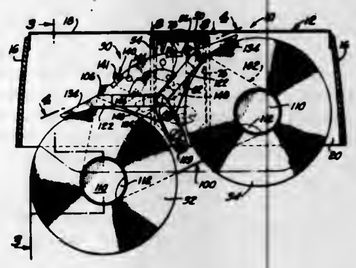
3,294,328
THREAD TRANSPORTING DRIVE
Richard Schmidt, Stuttgart-Vaihingen, and Hans Joachim Stock, Freiburg im Breisgau, Germany, assignors to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Sept. 11, 1964, Ser. No. 395,799
1 Claim. (Cl. 242—47.01)



A thread transporting drive comprising, in combination, a first shaft and a second shaft spaced in axial direction along a common axis; drive means for driving said first shaft; and an eddy current coupling including a magnet secured to said first shaft for rotation therewith, a pot-shaped transporting roller having a magnetizable cylindrical portion adapted to be engaged by a thread and surrounding said magnet so as to form two gaps with the same, and a circular bottom portion having a center secured to said second shaft for rotation therewith, and a pot-shaped member consisting of a material having high electric conductivity fitted into the interior of said pot-shaped transporting roller and having a cylindrical portion located in said gaps so that a magnetic field passing through said transporting roller permeates said cylindrical portion of said pot-shaped electrical conductive member whereby said first and second shafts are coupled to each other in such a manner that irregular motions of said first shaft are not transmitted to said thread transporting roller and to a thread transported thereby.

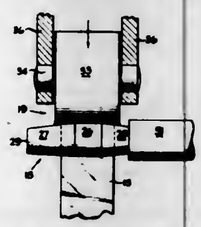
3,294,329
METHOD AND APPARATUS FOR DISPENSING STRIP MATERIAL
Council A. Tucker, Glendale, and Jack L. Perrin, Los Angeles, Calif., assignors to Towlsaver, Inc., Los Angeles, Calif., a corporation of California
Filed Jan. 27, 1964, Ser. No. 340,389
10 Claims. (Cl. 242—55.3)

7. In a dispenser for dispensing a plurality of rolls of strip material sequentially, the combination of: a support adapted to be secured to a surface; a roll holder pivotally mounted on said support and including spaced means for mounting a plurality of rolls of strip material, said roll holder being automatically pivotal from one position locating a first roll in a dispensing position and a second roll in a reserve non-dispensing position to a second position locating said second roll in a dispensing position after consumption of said first roll; detector means for determining the consumption of said first roll; and latch means normally maintaining said roll holder in said one position



and automatically operable by said detector means determining consumption of said first roll for releasing said roll holder to permit the automatic pivoting of said roll holder to said second position.

3,294,330
WEB GUIDE
James A. Whiteley, Campbell, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 1, 1963, Ser. No. 277,334
8 Claims. (Cl. 242—55.12)



4. In a low-tension tape transport of the class including a pair of supply and take-up reels, a transducing head means, and a tape stretched between said reels and across said transducing head means, the combination comprising:

a capstan having an axial dimension at least as great as the width of said tape and having a crowned portion engaging the entire width of said tape between said reels for moving said tape;

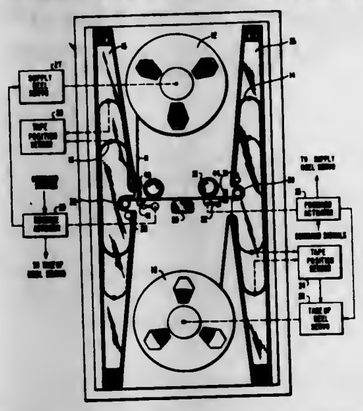
means for applying torque to said reels to tension said tape across said capstan, with the tape tension being less than that needed to cause said tape to conform transversely to the crowned shape of said capstan; and

a pinch roller having an axial dimension at least as great as the width of said tape and engaging the entire width of said tape and holding said tape in frictional contact with said crowned portion of said capstan across the entire width of said tape.

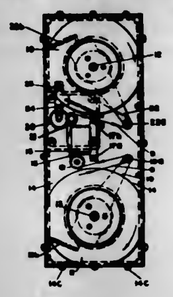
3,294,331
TAPE TRANSPORT DEVICE WITH FRICTIONAL CONTROL MEANS
Ben C. Wang and Norman P. Gruczelak, Los Angeles, and Thomas W. Lawson, Culver City, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Oct. 3, 1963, Ser. No. 313,535
13 Claims. (Cl. 242—55.12)

1. A tape transport system comprising a pair of tape reels, a pair of differential pressure chambers symmetrically placed relative to the reels for forming loops in the tape,

the chambers having varying cross-sections, a pair of tape loop servo means, each responsive to the position of the tape loop in a different chamber and coupled to rotate the adjacent tape reel to maintain a controlled loop in the chamber during tape movement, a pair of capstan drive means positioned along the tape path between the chambers, and a pair of stationary frictional means positioned along the tape path, each frictional means being between a different chamber and the closest adjacent capstan drive means, and each providing substantially greater friction to tape being drawn from the associated chamber than to tape being fed to the associated chamber.



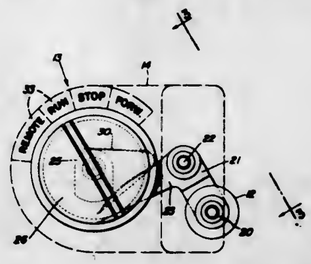
3,294,332
INCREMENTAL MAGNETIC TAPE RECORDER
Charles A. Miville, Mont Vernon, N.H., and Fred Hugel, West Acton, Mass., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Apr. 16, 1964, Ser. No. 360,258
17 Claims. (Cl. 242—55.12)



1. In a tape recorder having a pair of reel shafts for receiving tape reels, a recording head, and a capstan drive for said tape, the combination with said reel shafts of a pair of flat coil springs respectively tending to rotate said reel shafts in a direction to cause substantially uniform tension in said tape between said reels, driving connections between said springs and said reel shafts respectively, and means for interconnecting said reel shafts.

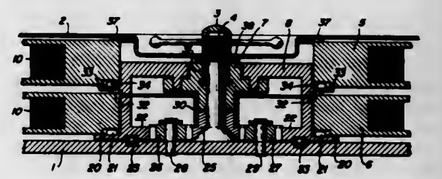
3,294,333
TAPE TRANSPORT DRIVE APPARATUS
Herbert F. Sanford, Littleton, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,949
5 Claims. (Cl. 242—55.12)

3. A tape transport system comprising a pair of tape storage reels, a tape driving capstan arranged between said reels, a pair of reel motors connected to respective ones of said reels, a tape transport control means connected to said reel motors to operate said motors in a plurality of predetermined modes, a mode selector switch connected to said transport control to select said modes, an operating shaft for said switch having a cam-shaped surface thereon, a pivoted arm carrying a pinch roller



on one end thereof in an operative relationship with said capstan, and leaf spring means responsive to movement of said cam surface and disposed between said cam surface and the other end of said pivoted arm to produce predetermined displacement of said arm to engage and disengage said roller with said capstan thereby absorbing rotational irregularities when said roller is in operative relationship with said capstan.

3,294,334
TAPE REEL CARTRIDGE
James T. Boag, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,623
5 Claims. (Cl. 242—55.13)

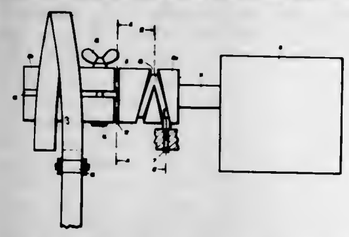


1. A tape cartridge for coaxially mounting a plurality of tape reels having substantially equal internal diameters comprising container means having a cover, a pair of tape reel drive hubs adapted to receive said reels, a common axle arranged to rotatably support said drive hubs and thereby said reels in a stacked concentric relationship between said container means and said cover for convenient access to said reels, and a spring clutch arranged to operatively connect said drive hubs in mutual driving communication, one of said drive hubs including means for driving the second of said drive hubs at a higher rotational speed than said one of said drive hubs.

3,294,335
TAPE-WINDING APPARATUS
Werner Schiebeler, Esslingen, Baden, and Peter Renner, Neuenburg, Wurttemberg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 28, 1964, Ser. No. 363,173
Claims priority, application Germany, May 24, 1963, 28,639
3 Claims. (Cl. 242—67.1)

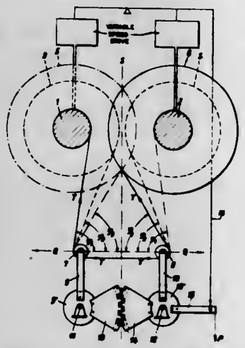
1. Apparatus for winding flat elongated material such as punched tape into a defined configuration comprising: a winding body upon which said tape is to be rolled;

a cylinder grooved with the defined configuration pattern thereupon, said cylinder and said winding body being in the form of a single cylinder subdivided by a slot extended normally in relation to its axis;



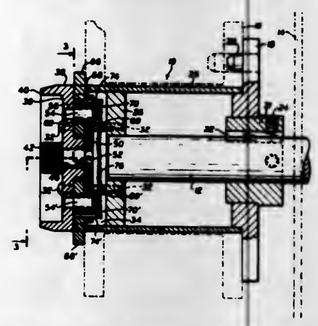
a stationary shuttle communicating with the groove of said cylinder causing said winding body to move in accordance with the grooved pattern;
means to guide said tape onto said winding body; and driving means for said winding body.

3,294,336
COMPENSATING BIASING AND FEELER UNIT FOR WINDING MACHINES
Erhard Franz Rotter, Duesseldorf, Germany, assignor to Gebr. Poensgen G.m.b.H., Duesseldorf-Rath, Germany
Filed June 9, 1964, Ser. No. 373,731
Claims priority, application Germany, July 20, 1963, P 32,247
5 Claims. (Cl. 242—67.4)



1. In a device for winding a long strip of textile material from one roll to another the combination comprising a first roll and a second roll, said rolls being spaced apart from each other; means including a speed control to drive at least one of said rolls; and means positioned along the path of travel of said material strip to maintain a substantially constant tension on the material as it travels from one roll to the other and one roll decreases diameter and the other roll increases diameter, said means comprising a pair of guide rolls spaced apart from each other and equi-distant from a plane of symmetry which is an extension of the locus of said first and second rolls, separate mounting means for supporting each of said guide rolls, each of said mounting means being freely pivotable about its own stationary axis, each of said mounting means also being arranged symmetrically with regard to said plane of symmetry and each mounting means having thereon a pivoting means, said pivoting means being interengaged with each other such that movement of one pivoting means will cause corresponding movement in said other pivoting means, and means attached to one of said mounting means to cause pivotal movement of said mounting means about its stationary axis thereby causing movement of said pivoting means on said mounting means and corresponding movement of the other pivoting means and mounting means to move said guide rolls toward and away from each other.

3,294,337
SPINDLE REEL LOCK
Andrew E. Jacob, Metuchen, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Apr. 16, 1965, Ser. No. 448,642
4 Claims. (Cl. 242—68.3)

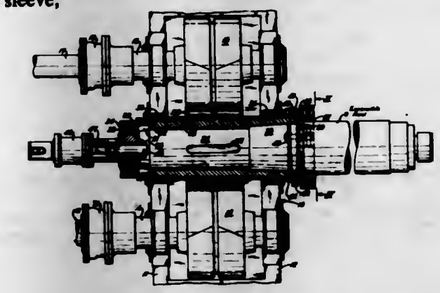


1. In combination with a spindle for holding a reel,
(a) an end cap on the spindle,
(b) locking fingers carried by the spindle and movable between two positions, in one of which the fingers project outwardly and block removal of a reel from the spindle, and in the other of which the fingers are retracted and a reel which fits the spindle can pass over the fingers,
(c) a manually-actuated device on the end cap, and
(d) motion-transmitting connections between the manually-actuated device and the fingers, and through which the manually actuated device moves all of the fingers simultaneously from one position to the other, characterized by the manually-actuated device being centrally located on the end cap,
(e) a center gear connected to the manually-actuated device and comprising part of the motion-transmitting connections,
(f) other gears, including a different gear for each of the locking fingers, and
(g) the other gears being angularly spaced around the center gear and meshing with the center gear at different locations around its periphery.

3,294,338
REEL FOR STRIP MATERIAL
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 23, 1965, Ser. No. 434,185
Claims priority, application Great Britain, Mar. 31, 1964, 13,262/64
7 Claims. (Cl. 242—78.1)

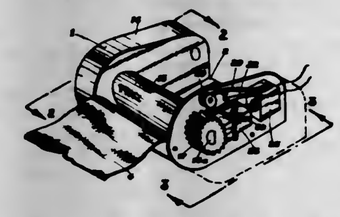
1. A reel for coiling and uncoiling strip-like material, including a rotatable mandrel,
a first portion of said mandrel adapted to support a coil of strip,
a second portion of said mandrel having two spaced-apart tapered surfaces, one tapered surface being located at the end of the mandrel furthest away from said first portion,
a rotatable sleeve for receiving said second portion of the mandrel and having an internal tapered portion complementary to and engageable with one of the tapered portions formed on the mandrel, said sleeve having a recess at its one end for receiving a clearance takeup member,

said member having an internal tapered portion complementary to and engageable with the tapered portion formed at the end of the mandrel,
a yieldable means for urging the member forcibly into contact with the tapered portion formed at the one of the mandrel to eliminate any clearance therebebetween,
means for drivingly connecting said mandrel to said sleeve,



a driving means for driving the sleeve and, hence, the mandrel, and
means for urging the cooperating tapered portions of the mandrel and sleeve into forcible contact with each other,
said last means being quickly disconnectable, thereby to permit the mandrel to be moved axially of said sleeve for removal and replacement of the mandrel relative to said sleeve.

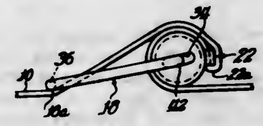
3,294,339
SEAT BELT AND LOCKING MEANS THEREFOR
John G. Fontaine, 2817 NE. 26th Court, Fort Lauderdale, Fla. 33306
Filed July 23, 1964, Ser. No. 384,649
5 Claims. (Cl. 242—107.4)



1. A belt retracting device having a spring-urged belt take-up roller on which a belt is wound, a ratchet carried by the roller, a spring-urged pawl normally engaging the ratchet to hold the roller against belt unwinding movement, solenoid means operative on the pawl to disengage the same from the ratchet upon the energization of the solenoid means and delay-creating means for causing a dwell between the energization of the solenoid and its de-energization to thereby permit disengagement of the pawl from the ratchet during such dwell and enabling the belt to be extended or retracted.

3,294,340
VEHICLE SAFETY BELT RETRACTING DEVICE
Ernest A. Ferris, Downers Grove, and Stephen J. Zaneski, Glen Ellyn, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 13, 1964, Ser. No. 337,430
10 Claims. (Cl. 242—107.11)

6. A self-contained resilient take-up unit adapted for a vehicle passenger safety seat belt of the flat type having a substantial width relative to the thickness thereof, and having vehicle anchored and unanchored ends, said take-up unit comprising: means defining an elongated hollow tubular reel upon which the flat surface of a seat belt is adapted to be received in double spiral coiled relation when retracted, means defining a reel belt anchor extending from and carried on the periphery of said tubular reel for connection with the belt intermediate the ends thereof, said reel belt anchor means being in the form of a bar-like yoke having an uninterrupted belt engaging surface adapted to extend transversely of a belt and being particularly characterized by having at least one portion thereof readily separable with reference to said tubular reel providing for the ready introduction of the belt from the side intermediate the ends thereof; means defining an open to view generally U-shaped bale of bar-like cross-section, for taking torque reaction entirely against the belt, said reaction bale including a contact guide surface substantially spaced from the axis of rotation of the reel and of a length substantially the same as the width of the belt, and arranged for guiding and reaction contact with the flat surface of the belt; and an elongated torsion coil spring confined within said tubular reel and

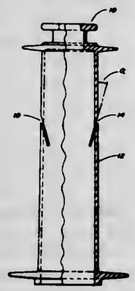


extending coaxially thereof, one end of said spring being connected in driving relation to said reel adjacent a first terminal of said reel and the other end of said spring being anchored in relation to said reaction bale adjacent the other terminal of said reel, said arrangement including at least one stopper-like closure plug at least partially inserted within one terminal of said tubular reel and functioning to support the associated terminal of said reel in rotative relation with reference to said reaction means, said arrangement being particularly characterized by said bar-like cross-section being made sufficiently sturdy to thus effectively prevent the winding up of said spring upon full extension of the belt from ejecting said stopper-like closure plug axially relative to said reel when the belt is placed in protective relationship about the vehicle passenger, the tension pull along the belt in fully extended position being absorbed directly through the belt to the vehicle anchor, said hollow reel being positioned on the belt by said barlike yoke and by the reaction on the belt of the said bale, the retraction and withdrawal of said belt towards and away from the vehicle belt anchor being effective to cause said take-up unit to similarly travel towards and away from said belt anchor.

3,294,341
PLASTIC BOBBIN
Cecil W. Dolen and Harvey E. Sullivan, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 339,919, Jan. 24, 1964. This application Mar. 11, 1966, Ser. No. 543,442
12 Claims. (Cl. 242—125)

1. Apparatus comprising a substantially cylindrical bobbin barrel flanged at both ends thereof, the flange at one end being slightly smaller than that at the opposite end, a protruding core portion at the end having the smaller flange, said protruding core portion being terminated by a flange of approximately the same diameter as said barrel, two slots approximately 180° apart in the bobbin barrel extending inwardly toward the axis of said barrel and toward the end of said barrel having the larger flange at an angle of from about 15 to 22° from the axis of said barrel, said slots being of a substantially uniform width of between about 1/64 and 1/16 inch, said flanged bobbin barrel

being held in contact with a spindle adaptor by a plurality of adaptor springs located around the circumference of said bobbin barrel, said springs being adapted to hold a yarn strand firmly in position during winding of yarn around said bobbin barrel and readily free same therefrom upon removal of said bobbin barrel from said



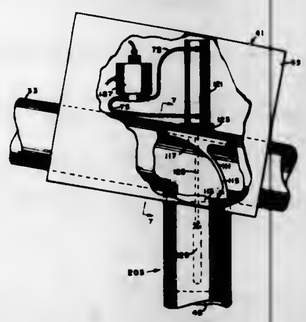
adaptor, said slot and adaptor springs being positioned such that the end of the slot toward the axis of said bobbin barrel is less than halfway from the end of the bobbin having the smaller flange to the end of the bobbin having the larger flange, and said apparatus excluding said adaptor springs being made entirely of plastic.

3,294,342
SERVICE FACILITIES AND EQUIPMENT
Malcolm C. McClure, Indianapolis, Ind., Ralph E. McClellan, Toledo, and George M. Stewart, Sylvania, Ohio, and K. G. Bullock, Lambertville, Mich., assignors to TV Bank Equipment Corporation, Toledo, Ohio, a corporation of Ohio
Filed Nov. 5, 1965, Ser. No. 506,457
13 Claims. (Cl. 243—2)



1. A pneumatic dispatch system comprising:
(A) two stations connected by two pneumatic transmission tubes between said stations, one tube for moving capsules in one direction and the other tube for moving capsules in the opposite direction,
(B) a capsule movable through said tubes between said stations,
(C) a chamber at at least one station connected to the delivering end of one of said tubes and the dispatching end of the other of said tubes,
(D) means at said one station for removing said capsule from said chamber, said capsule removing means comprising:
(a) a receptacle in said chamber for receiving said capsule from said delivering end of said tube,
(b) a door in said chamber attached to said receptacle,
(c) an electrically controlled means for actuating said door, and
(d) a senser means in said dispatching end of said tube for operating said actuating means to close said door when said capsule is placed and released in said distpatching end of said tube.

3,294,343
AUTOMATIC RESTAURANT
Joseph F. Campese, Latham, N.Y., assignor to Walter F. Wessendorf, Jr., Guilderland, N.Y.
Continuation of application Ser. No. 475,313, July 14, 1965. This application Mar. 18, 1966, Ser. No. 543,464
3 Claims. (Cl. 243—29)

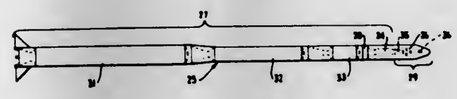


1. A down drop damper assembly for use with a conveying duct and a down drop duct for movement of a package horizontally along a horizontally disposed conveying duct or movement of said package in a downward direction through a vertically disposed down drop duct, said down drop damper assembly comprising a damper member, said damper member being disposed interiorly of said conveying duct and said down drop duct, said damper member having a lower portion, web and channel member, said web being intermediate said lower portion and channel member, said lower portion being received and reciprocable within said down drop duct, said channel member upon complete downward movement of said damper member allowing unrestricted travel of said package from one side of said conveying duct over said channel member to the other side of said conveying duct, and said web upon movement of said damper member upwardly to its fullest extent directing said package downwardly into said down drop duct, and means to move said damper member upwardly and downwardly.

3,294,344
CHANGING THE ORIENTATION AND VELOCITY OF A SPINNING BODY TRAVERSING A PATH
Harold A. Rosen, Santa Monica, and Donald D. Williams, Inglewood, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Original application Dec. 30, 1959, Ser. No. 862,921. Divided and this application Nov. 26, 1963, Ser. No. 325,983
14 Claims. (Cl. 244—1)

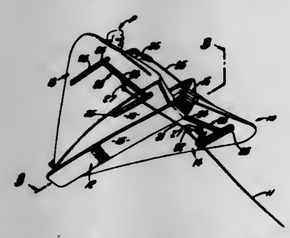
12. Apparatus for stopping the spin of a first body spinning about a first spin axis and then spinning said first body about a second spin axis comprising: a first body having a first spin axis extending through the center thereof; a second body rotatably secured to said first body and

extending outward therefrom along said first spin axis and having a spin axis coinciding with said first spin axis; means mechanically coupled from said first body to said second body for transferring angular momentum of said first body about said first spin axis to said second body to stop spin of said first body about said first spin axis;



means disposed on said first body adjacent to said second body for separating said second body therefrom when said first body has stopped spinning about said first spin axis; and means disposed on said first body for spinning said first body about a second spin axis after said second body has been separated from said first body.

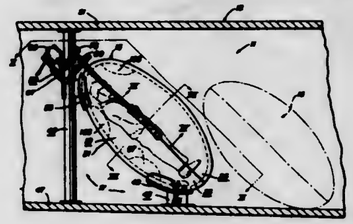
3,294,345
TOWED SOARING CRAFT
Lester A. Cottrell, 5446 Fulton Ave., Van Nuys, Calif. 91401
Filed Jan. 26, 1965, Ser. No. 428,146
11 Claims. (Cl. 244—3)



1. In a soaring craft to be towed on a line by a boat and controlled by a pilot, the combination of: a body having a pair of airfoils extending laterally outwardly on both sides at a level above the surface of the water during towing of the craft for producing substantial lifting force, means for connecting the boat tow line to said body for towing both in and above the water, said body having a rearwardly positioned upper platform for supporting the pilot substantially entirely above said body and airfoils and permitting shifting of position by the pilot, control reins connected at laterally spaced locations and extending upwardly and rearwardly for grasping by the pilot to permit leaning for control, and said airfoils having a longitudinal center of lifting force located relatively rearward of said tow line connection and substantially forward of said pilot platform for compensating and balancing the downward forces and turning moments to stabilize airborne flight and control.

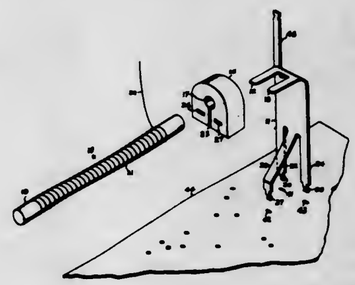
3,294,346
SAFETY MEANS FOR PROTECTING A RIDER IN AN AIRCRAFT CRASH
Willard Summers, 3007 Alishore, Memphis, Tenn. 38118
Filed Jan. 27, 1965, Ser. No. 428,345
9 Claims. (Cl. 244—121)

1. In an aircraft having a frame structure, safety means for protecting a rider from injury in the event of a crash of the aircraft, said safety means comprising a hollow shell completely enclosing space within the interior of said shell and adapted to enclose a rider within said interior; said shell being elongated and having a substantially smooth, hard and continuous outer surface; ingress



and egress means for the rider to enter or leave the interior of said shell, and frangible break-away mounting means for detachably securing said shell to said frame structure of said aircraft and for providing detachability of said shell responsive to the momentum of said shell upon crashing of said aircraft.

3,294,347
ANTENNA SUPPORT STRUCTURE
William O. Mongeaku, Utica, and Ralph W. Richter, Whitesboro, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 27, 1965, Ser. No. 459,154
4 Claims. (Cl. 248—40)

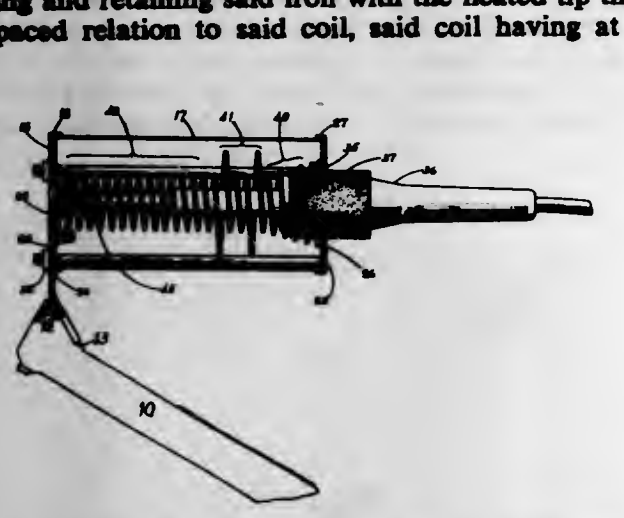


1. An antenna support structure comprising means providing a pair of spaced apart mutually parallel prongs, and a mounting block of resilient material provided with an antenna opening therethrough for holding a rod-like antenna, said mounting block further being provided with a slot extending radially therethrough from said opening to an edge of the block, and a pair of elongated openings in the mounting block, located at opposite sides from said slot and parallel to said antenna opening and adapted to fit over said prongs thereby securing the mounting block to said prongs.

3,294,348
HOLDER FOR SOLDERING IRONS AND THE LIKE
Francis E. Cerisano, 94 Lawrence St., Farmingdale, N.Y. 11735
Filed Mar. 3, 1965, Ser. No. 436,820
5 Claims. (Cl. 248—44)

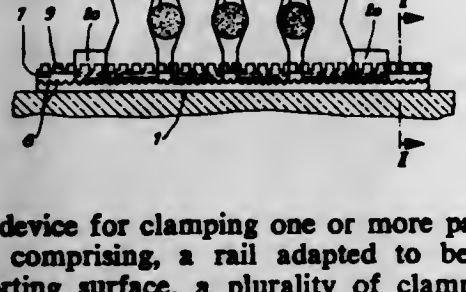
1. A holder for a heated soldering iron comprising a base member, a perforated cage member supported thereby, and an axially disposed coil within said cage for re-

ceiving and retaining said iron with the heated tip thereof in spaced relation to said coil, said coil having at least



two loops of sufficiently larger diameter to maintain the coil in spaced relation with said cage.

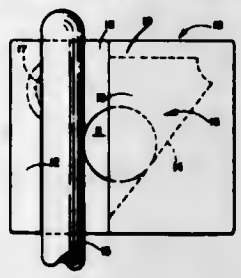
3,294,349
CLAMPING DEVICE
Gunther Mathes, Vaduz, Liechtenstein, assignor to Anstalt fur Montage-Technik, Vaduz, Liechtenstein
Filed Oct. 22, 1965, Ser. No. 501,776
Claims priority, application Germany, Oct. 26, 1964, A 47,441
7 Claims. (Cl. 248—68)



1. A device for clamping one or more parts in spaced relation comprising, a rail adapted to be attached to a supporting surface, a plurality of clamping elements mounted to slide along said rail and engage the parts to be clamped therebetween, said rail being of a T-shape form in cross section with a central web and flanges projecting laterally from the web, each of said clamping elements having reentrant flanges underlying the flanges on the rail and forming a T-shaped slot corresponding to the shape of the rail, said slot in each of said clamping elements having dimensions relative to the flanges on the rail to adapt the plurality of elements to slide longitudinally of the rails and tilt on the rail about an axis transverse to its longitudinal path of movement, said rail and said plurality of clamping elements having interengaging pawl and detent members adapted to slide by each other when moved relative to each other in one direction to press the clamping elements against the parts to be clamped and to engage each other by tilting movement of the elements, and means for sliding each clamping element along the rail into tight engagement with a part to be clamped, successively, whereby to clamp a plurality of parts on the same rail.

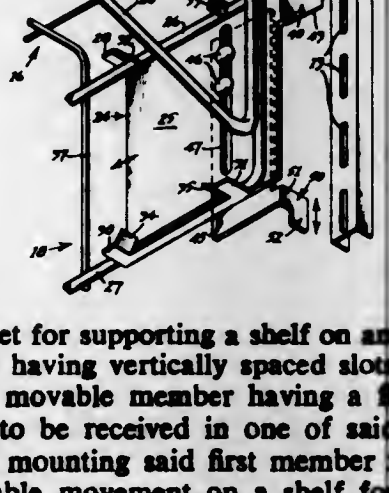
3,294,350
ARTICLE HOLDER
Oresto Grottola, 930 S. Velare St., and Kermit C. Shumard, 313 S. Dale St., both of Anaheim, Calif. 92804, and Ernest Grottola, 15263 Vanada Road, La Mirada, Calif. 90638
Filed Nov. 30, 1965, Ser. No. 528,320
3 Claims. (Cl. 248—113)

1. A two-piece article holder comprising:
a roller member;
a main body member having a back plate member adapted to be supported on a wall, formed integrally with said back member a vertical end member providing at least one gripping surface, a right circular cone segment recess in said one gripping surface, said recess having its largest diameter greater than the diameter of said roller member, a locking member formed integrally with said back member and having contained therein a ramp surface, providing a second gripping surface, said locking member adapted



to receive and release said roller when said roller is alined properly adjacent said recessed surface and to contain said roller within said locking member in all other positions, said locking member also positioned adjacent said vertical member such that an article inserted between said members is held in place by said roller member being in contact with said second gripping surface and also forcing said article into contact with said first gripping surface.

3,294,351
GONDOLA SHELF AND BRACKET
Clark B. Rollins, Jr., % Nashville Wire Products Manufacturing Co., P.O. Box 401, Nashville, Tenn. 37202
Filed Apr. 19, 1965, Ser. No. 449,085
7 Claims. (Cl. 248—243)



1. A bracket for supporting a shelf on and transversely of a standard having vertically spaced slots, comprising:
(a) a first movable member having a first projection adapted to be received in one of said slots,
(b) means mounting said first member for transverse reciprocable movement on a shelf for reception of said first projection in said one slot,
(c) a second movable member having a second projection adapted to be received in another of said slots spaced from said one slot, and
(d) means mounting said second member for vertical reciprocable movement on said first member for adjustment of said second projection to be received in said other slot.

3,294,352
TEXTILE TUBE HOLDER
Thomas Henry Leonard, Flockton, near Huddersfield, England, assignor to Edwin Field & Sons Limited, a corporation of Great Britain
Filed Feb. 15, 1965, Ser. No. 432,711
6 Claims. (Cl. 248—309)

1. A tube holder for supporting a yarn-package tube in a textile machine comprising a circular base, a central post projecting vertically from and fixed to said base, a

plurality of fins projecting substantially radially from said post and being united at their lower ends adjacent said post to said base but not united to said base at the outer extremities of said fins, each of said fins being tapered from top to bottom with the widest part of each



of said fins at the bottom, the outer edges of said fins together providing parts of a conical surface for locating a tube on the holder, all of said base, said post and said fins being formed as a one piece moulding of resilient plastic material.

3,294,353
TRIM MEANS OR A BORDER EDGE COVERING
Carl E. Rowe, Highland Park, Ill.
(4948 Dempster St., Skokie, Ill. 60076)
Filed Mar. 27, 1964, Ser. No. 355,230
7 Claims. (Cl. 248—346)



1. A trim for the edge of a board comprising a strip having a front wall, an end wall substantially at right angles to the front wall, and an inwardly and reversely bent inner wall spaced from the end wall and terminating short of the edge of the front wall to provide a space between the inner wall and the front wall to receive the edge of a board or the like, said inner wall having an inwardly crimped portion with the crimped portion of a generally V-shaped configuration in section, with the inner portion of the crimped wall closely adjacent the end wall.

3,294,354
SLIDING RETRACTABLE LADING STRAP ANCHOR
Truman R. Betey, Des Plaines, Ill., assignor to MacLean-Fogg Lock Nut Co., Chicago, Ill., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 437,036
7 Claims. (Cl. 248—361)

1. A lading strap anchor assembly comprising a structure having top, bottom and side walls, said top and bottom walls having elongated slots therein, the sides of the elongated slot in the bottom wall having opposed pairs of notches, a plate in the structure, said plate having a width greater than the width of the elongated slots in the top and bottom walls, a tongue on one end of said plate adapted to be received in a pair of opposed notches, and apertured load-holding means on the plate adapted to extend through the slot in the top wall, said

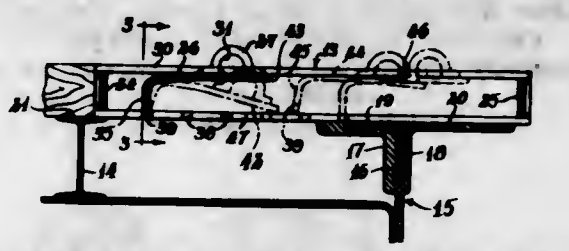


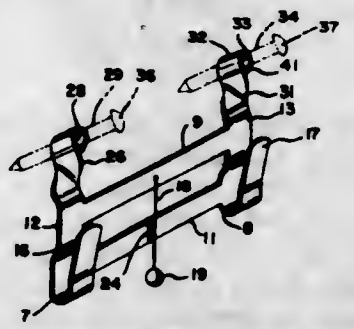
plate being slidable in the structure for its reception in a selected pair of the said opposed pairs of notches.

3,294,355
WALL HANGERS
Sam B. Topf, Coral Gables, Fla., assignor of one-half to Louis Rolnick, Miami Beach, Fla.
Filed Feb. 23, 1965, Ser. No. 434,228
3 Claims. (Cl. 248—467)



1. A wall hanger comprising a substantially rectangular sheet of flexible material having a slotted portion extending inwardly of one end forming a flap on each side of said slotted portion, an adhesive coating extending over one side of said sheet of flexible material, a hook member positioned on said sheet of flexible material in proximity of said slotted portion and in contact relation with said adhesive coating, a tongue portion extending outwardly of said hook member, said tongue portion being received by said slotted portion and extending outwardly of the other of said one side of said sheet of flexible material, and said flaps being folded at an oblique angle on themselves and on said hook member whereby said hook member is secured within said folded sheet of flexible material.

3,294,356
PICTURE HANGER
Melvin J. Sherman, 5040 Dublin Ave., Oakland, Calif. 94602
Filed Apr. 30, 1965, Ser. No. 452,159
5 Claims. (Cl. 248—476)

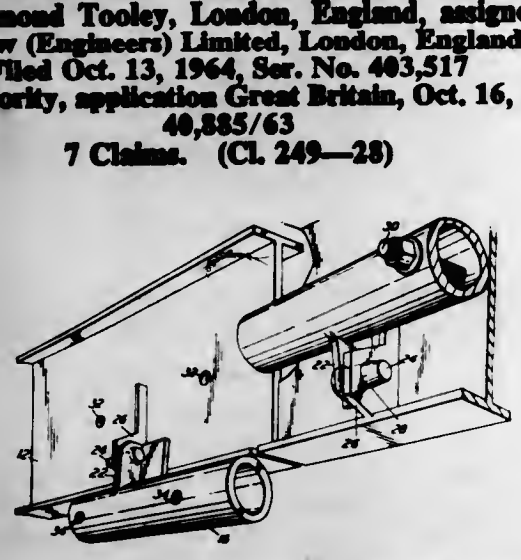


1. A level indicating wall bracket comprising:
a body member having a pair of spaced supports adapted for demountably receiving a frame;
a pendulum connected to said body for pendular movement between said supports;
said body being formed with an indicia mark located between said supports and relative to said pendulum so as to be aligned therewith when said supports are horizontal relative to one another; and
means for connecting said body to a wall.

3,294,357
FORMWORK FOR CONCRETE

Jack Raymond Tooley, London, England, assignor to Acrow (Engineers) Limited, London, England

Filed Oct. 13, 1964, Ser. No. 403,517
Claims priority, application Great Britain, Oct. 16, 1963, 40,885/63
7 Claims. (Cl. 249—28)

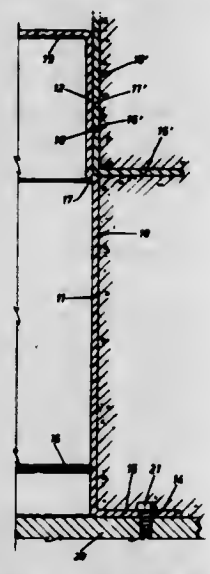


1. A system of slab formwork comprising a number of props, a number of beams supported directly by the props, a number of panels, and means pivotally mounted on the webs of the beams and supporting said panels in the working position with their casting faces level with the top surfaces of the beams and forming a continuous casting surface therewith, said means being swingable to a position in which the panels can be struck without striking the beams.

3,294,358
PIPE SLEEVE

Charles L. Hagedorn, 23 Burbank Drive, Willowdale, Ontario, Canada

Continuation of application Ser. No. 306,831, Sept. 5, 1963. This application Mar. 4, 1966, Ser. No. 534,566
1 Claim. (Cl. 249—175)

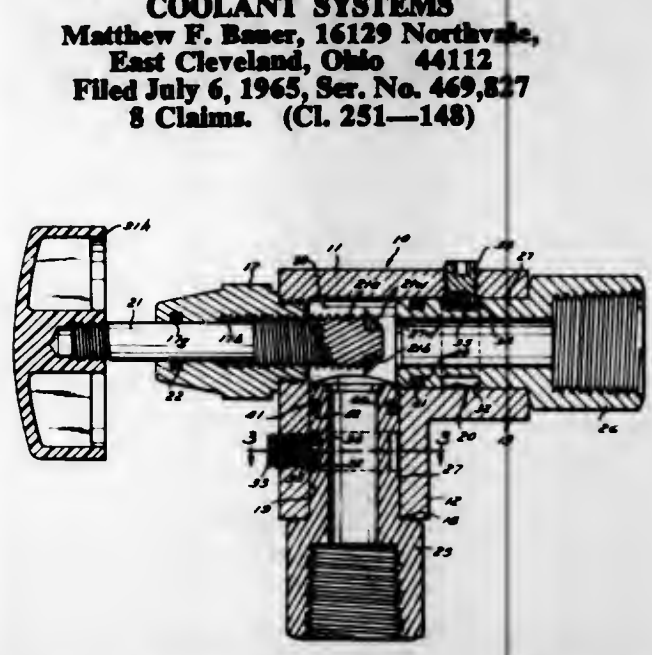


A pipe sleeve comprising: A substantially rigid unitary member including a continuous imperforate wall stepped intermediate its length to define a first tubular portion having a first end and a second end, and a second tubular portion having a first end and a second end, an outwardly extending flange on said first end of said first tubular portion, and an integral end wall extending across said second end of said second portion, said end wall having at least one hole therethrough, said first portion having an internal diameter corresponding to the outer diameter of said second portion, one of said portions having a peripheral groove adjacent one end thereof and the other of said portions having a peripheral rib adjacent one end thereof to matingly engage with a peripheral groove on the other of said portions of a like second sleeve to hold said second sleeve in secure engagement therewith.

3,294,359
VALVE SWIVEL FITTING FOR COOLANT SYSTEMS

Matthew F. Bauer, 16129 Northvale, East Cleveland, Ohio 44112

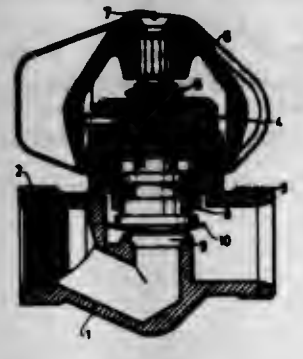
Filed July 6, 1965, Ser. No. 469,827
8 Claims. (Cl. 251—148)



1. A swivel fitting for piping systems comprising a fitting body having first and second bores extending inwardly respectively from first and second end faces of the body, said bores having axes angularly disposed to each other and intersecting said bores each having a hard surfaced bore wall, said bores being interconnected with each other and constituting a fluid connection between said end faces, a swivel member pivotally connected at each of said end faces, said swivel members each having an external intermediate stepped shoulder in confronting relationship to the respective end face, a stem portion extending in one direction from said stepped shoulder and rotatably received in the respective bore with a close fit therein, and a threaded connection portion extending in the opposite direction from said stepped shoulder, said threaded connection portion being adapted for connection in a piping system, said stem portion of each swivel member having a hardened external surface in confronting relationship to the respective bore wall, said swivel members each having a fluid passageway extending therethrough and communicating with said bores, means for establishing a drag friction between each stem portion of the swivel member and the fitting body for substantially equalizing the starting and sliding friction upon relative rotation between them, said means comprising at least a first, second and third drag friction means including a first external groove in said stem portion having a hard surfaced bottom wall and a set screw threadably extending through a portion of said body substantially radially into the respective bore and registering with said first groove, said set screw having an inner end softer than and bearing against the surface of said bottom wall to produce a first friction drag, said set screw having an outside diameter less than the width of the groove bottom wall, said set screw forcing said stem end portion of the swivel member laterally within said bore a distance sufficient to position the hard outside surface of said stem portion in frictional engagement with the hard-surfaced bore wall at a location directly opposite the set screw and with gradually diminishing frictional engagement therewith circumferentially on each side of said location, whereby to provide said drag friction means, said third drag friction means including a second external groove in said stem portion and a deformable resilient O-ring mounted therein, said second groove being located between the inner end of said stem portion and said first groove and having a bottom wall defining a depth with respect to said bore wall less than the cross-sectional diameter of said O-ring thereby compressing the O-ring between the bottom of the second groove and said bore wall over its

entire circumference to produce an O-ring drag friction upon rotation of said stem portion in said bore, said O-ring drag friction being of the greatest directly opposite said set screw with a gradual diminishing distribution of the friction on each side thereof, said first, second and third drag friction means each producing a different type of drag and all combining to substantially equalize the starting and sliding friction.

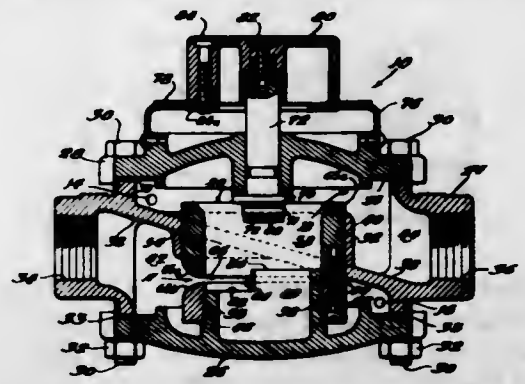
3,294,360
VALVE WITH RESILIENT DISC
Olof Lundberg, Hagersten, Sweden, assignor to AGA-Platforadling Aktiebolag, Halsingborg, Sweden, a corporation of Sweden
Filed Feb. 15, 1963, Ser. No. 258,875
Claims priority, application Sweden, Feb. 23, 1962, 1,968/62
1 Claim. (Cl. 251—205)



A valve comprising in combination with a valve member and an annular valve seat, said valve member being positioned in cooperation with said annular valve seat so as to limit the emergence of a fluid from said annular valve seat by being movable toward and away from said annular valve seat, a disc-shaped member positioned between said valve member and said annular valve seat, the diameter of the said valve member and the said disc-shaped member being at least as great as the diameter of the said annular valve seat, said disc-shaped member being curved about one of its diameters and of a resilient material, and said disc-shaped member being positioned between and cooperating with the relative movement of said valve member and said valve seat so as to regulate the quantity of fluid emerging from said valve seat to correspond with the distance of said valve member from said valve seat, and said disc-shaped member lying flat between said valve member and said valve seat when said valve is closed and curving away from said valve seat as said valve member moves away from said seat thereby increasing the flow of a fluid from said valve seat as the radius of curvature of said disc-shaped member is decreased.

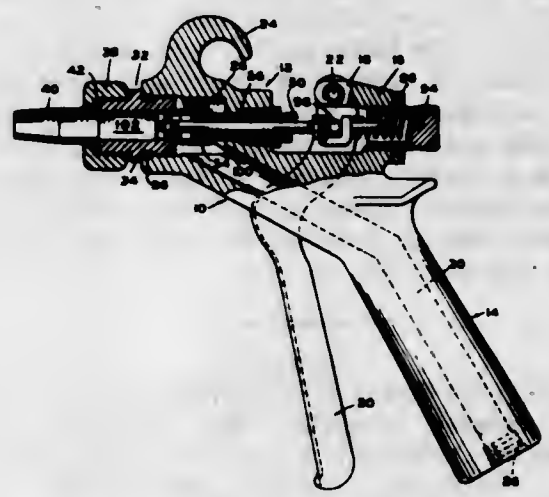
3,294,361
ADJUSTABLE ROTARY ORIFICE
Willard A. Kates, Deerfield, Ill., assignor to The W. A. Kates Company, a corporation of Illinois
Filed Nov. 6, 1963, Ser. No. 321,910
3 Claims. (Cl. 251—208)

1. An adjustable flow regulating apparatus for use with sensing instruments and sensing pressure differential in a conduit to determine the rate of fluid flow therein, comprising: a housing having generally axially aligned inlet and outlet passages connected to the fluid conduit to permit the flow of fluid therethrough; a partition extending transversely across the axes of the inlet and outlet passages to divide the interior of the housing into an inlet and outlet chamber, said partition having an intermediate cylindrical surface formed on an axis generally normal to the combined axes of the inlet and outlet passages; an upstanding boss in the housing generally concentric with the cylinder formed in the housing partition, said boss having means generally defining a transverse slot therein; and a sleeve generally concentrically within the cylinder and concentrically about the boss and having an elongated narrow slit formed therein in general alignment with the slot formed in the boss, said sleeve being mounted for rotation relative to the boss and to the cylinder to change



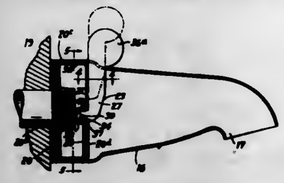
the size of opening existing through the partition defined by the cooperating slit of the sleeve and slot of the boss, whereby fluid entering the inlet is channeled through the opening defined by the sleeve and boss and passes outwardly through the sleeve to the outlet passage and into the remainder of the conduit.

3,294,362
FLOW GUN
Carl L. Schultz and David M. Nabozny, Detroit, Mich., assignors to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan
Filed Mar. 18, 1965, Ser. No. 440,731
2 Claims. (Cl. 251—239)



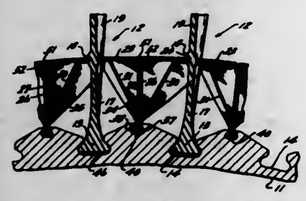
1. A gun for dispensing fluid materials under pressure comprising a body defining a material chamber having an inlet and an outlet and a material supply passage communicatively coupled with said inlet, valve means operable in the chamber to open and close said outlet and including a reciprocable rod projecting axially into the chamber having a U-shaped yoke at the rear end thereof and a hollow balanced closure piston mounted on the rod and adapted to sealingly seat within said outlet, a guide member fixedly mounted encircling said valve rod and projecting guidably into said piston, spring means operably coupled to said valve means yieldably urging the latter to a normally closed position, and trigger means pivotally mounted on said gun body having a laterally projecting pin fixed thereto embraced by said valve rod yoke whereby pivotal movement of said trigger imparting arcuate movement to said pin produces a substantially axial force on said valve rod to shift the valve to its open position, said piston exhibiting a relatively small effective area exposed to pressure of said material in the chamber to enable actuation of said valve means opening said outlet with a minimum force exerted on said trigger.

3,294,363
DIVERTER SPOUT CONSTRUCTION
Edward F. Winkle, Golf Manor, and John M. Zeigler, Fairfield, Ohio, assignors to P & W Tool and Die Company, Norwood, Ohio, a corporation of Ohio
Filed Apr. 22, 1963, Ser. No. 274,747
3 Claims. (Cl. 251—319)



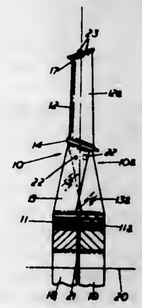
1. A diverter spout construction which comprises a hollow tubular body, said body having a discharge opening adjacent one end thereof and an inlet opening at the other end thereof, an upright baffle plate mounted in the body spaced from the ends of the body and dividing the interior of the body into two sections, there being an opening through said baffle plate spaced above a lower edge thereof for providing communication between the sections, an upright valve carrying plate mounted in the body on one side of the baffle plate, there being a slot in an upper wall portion of the body adjacent said baffle plate, a handle portion of the valve carrying plate extending through and being guided by said slot for up and down movement, guides on the baffle plate on opposite sides of the valve carrying plate for maintaining the valve carrying plate in upright position, a tongue on the valve carrying plate extending through the opening in the baffle plate, and a valve plate mounted on said tongue on the other side of the baffle plate, said valve carrying plate and valve plate moving between a lower position in which the opening in the baffle plate is open and a raised position in which the valve plate covers and closes the opening in the baffle plate, there being aligned upright slots in the baffle plate at upper and lower edges of the opening in the baffle plate adapted to receive the tongue when the valve carrying plate and the valve member are in raised and lowered positions to steady the valve carrying plate and the valve member.

3,294,364
ROTOR ASSEMBLY
Max W. Stanley, Fairfield, Ohio, assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1962, Ser. No. 163,926
4 Claims. (Cl. 253—77)



1. A rotor assembly for an axial flow turbomachine comprising the combination of
a rotor wheel having a plurality of axially extending undercut grooves in the periphery thereof,
a plurality of rotor blades having airfoil shank and base portions,
said base portions shaped to interfit with alternate grooves in said wheel to hold and circumferentially space said blades to extend radially from said wheel,
a plurality of baffles for preventing the axial flow of gas between adjacent blade shanks,
each baffle comprising a first wall member extending normal to and around a blade at the juncture of said airfoil and shank portions and having an opening therethrough fitting the contour of the blade at that point,
a second wall means extending radially between said first wall member and said rotor wheel on the upstream side of said blade,
third wall members extending transverse to said rotor wheel on each side of said blade and attached to said first and second wall means,
said third wall members having means for attachment to said rotor wheel comprising a base portion which with the adjacent baffle third wall member interfits with the remaining alternate undercut grooves to lock said baffles to said rotor wheel.

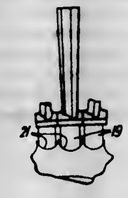
3,294,365
BLADE FOR USE IN A FLUID-FLOW MACHINE
Geoffrey Light Wilde, Cowers Lane, and Michael Poucher, Allestree, England, assignors to Rolls-Royce Limited, Derbyshire, England, a British company
Filed Nov. 24, 1965, Ser. No. 509,563
Claims priority, application Great Britain, Dec. 2, 1964, 49,099/64
4 Claims. (Cl. 253—77)



1. A rotor for use in a gas turbine engine comprising: a row of angularly spaced apart blades, each of said blades having a root portion, a shank portion, and an aerofoil-shaped portion, said shank portion interconnecting the root portion with said aerofoil-shaped portion and said aerofoil-shaped portion and said root portion of each blade having substantially radially extending centerlines axially displaced from each other; and a plurality of axially spaced parts in which the root portion of said blades are mounted, said blades being arranged so that all of the aerofoil-shaped portions traverse the same path when the rotor is rotated.

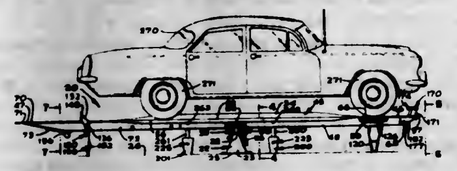
3,294,366
BLADES FOR GAS TURBINE ENGINES
John Frederick Coplin, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Jan. 20, 1966, Ser. No. 521,954
Claims priority, application Great Britain, Apr. 20, 1965, 16,677/65
2 Claims. (Cl. 253—77)

1. In combination: a plurality of rotor blades and an axial flow compressor disc for a gas turbine engine, each of said rotor blades comprising an aerofoil part including metal portions and thermosetting plastic portions bonded to each other to form a rigid unit, said metal portions of each of said blades being extended to form a root portion having a radially inner end of a convex arcuate profile, said compressor disc having a corresponding number of concave arcuate depressions in its rim complementary to the convex arcuate profile of the inner end of the root portions of each of said blades, and means of integrally



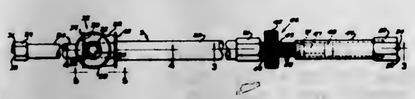
securing the inner end of the root portions of each of said blades in one of the depressions in the rim of said compressor disc.

3,294,367
VEHICLE SUPPORTING RACK
George W. Liskey, Okemos, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 250,266
23 Claims. (Cl. 254—88)



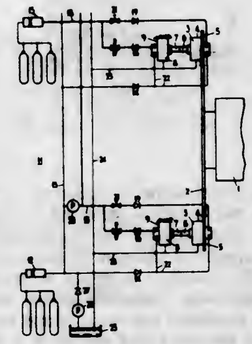
1. In a vehicle supporting rack, a runway having opposite end portions, a relatively fixed axis member extending transversely of the runway, means mounting said runway intermediate its end portions on said axis member for movement on said axis member transversely of the runway and for teetering movement about an axis defined by said axis member, and friction means opposing and engageable with said axis member for releasably resisting said lateral movement of the runway while permitting said teetering movement thereof.

3,294,368
VEHICLE WHEEL TOE-IN SETTING DEVICE
Lee Hunter, Rte. 1, Box 136, Creve Coeur, Mo. 63141
Filed Sept. 10, 1965, Ser. No. 486,314
5 Claims. (Cl. 254—100)



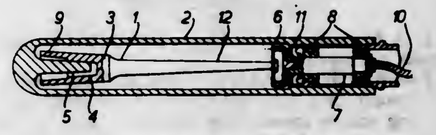
1. A vehicle wheel toe-in setting device including first and second members operably telescopically connected at adjacent inner ends, a first abutment element carried at the outer end of said first member, first adjustable means operably carried at the outer end of said second member in axial elongation thereof, a third member having an inner end telescopically mounted on said adjustable means, a second abutment element carried at the outer end of said third member, said third member being axially movable relative to said adjustable means to permit varying the total axial distance between said abutment elements, and second adjustable means between said inner ends of said first and second members to fix the telescoped position thereof.

3,294,369
VARIABLE SPEED DRIVES
Alan Henry Butler, Orpington, England, assignor to The General Electric Company Limited, London, England
Filed May 10, 1965, Ser. No. 455,854
Claims priority, application Great Britain, May 8, 1964, 19,272/64
6 Claims. (Cl. 254—172)



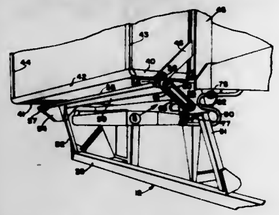
1. A winch arrangement comprising a fixed support, a winch drum mounted on the fixed support, a support cable wound on said winch drum and connectable to a load member which may fluctuate from time to time, and a hydraulic fluid circuit for controlling the winch drum, said hydraulic fluid circuit including at least one drive assembly which comprises a hydraulic motor unit having a pair of relatively rotatable members and a hydraulic pump unit also having a pair of relatively rotatable members, one member of one unit being connected to one member of the other unit and the other members of the units being connected between the fixed support and the winch drum so that in operation of the hydraulic fluid circuit, the motor unit provides a substantially constant torque to said drum, and any power in excess of that required to provide said substantially constant torque to the drum is used to drive the hydraulic pump.

3,294,370
VIBRATORS
Sven Hedelin, Granitvagen 18c, Uppsala, Sweden
Filed July 31, 1964, Ser. No. 387,271
3 Claims. (Cl. 259—1)



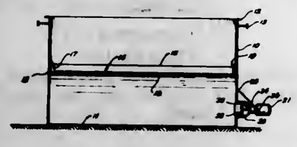
1. A vibrator, comprising an elongated rigid rotor, having a rotor body at one end thereof, said rotor body having a conical guiding surface, a housing enclosing said rotor and having a conical guiding surface for engaging the guiding surface of said rotor body, a counterweight carried by said rotor body, an axle shaft, hinging means comprising an open box centrally connected with said axle shaft, and a resilient cover carried by and closing said box and centrally connected with the other end of said rotor, bearings supporting said axle shaft and located within said housing and means driving said axle shaft, the guiding surface of said housing being spaced from the guiding surface of said rotor body, whereby said rotor body can carry out a planetary rolling movement relatively to said housing.

3,294,371
COTTON PICKER WITH VIBRATING HOPPER
Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,923
4 Claims. (Cl. 259—29)



4. In the combination of a cotton harvester having a main frame and a cotton receiving container having opposite ends and adapted for suspension on the main frame and supported thereon by horizontal pivot means permitting the container to swing vertically, and extensible and retractable hydraulic motor means extending between the container and main frame adapted to tilt the container on the pivot and including a pressurized fluid return line for returning the container to a normal operating position, the improvement comprising: cam members between the main frame and opposite ends of the container for effecting vertical vibratory motion of the container relative to the main frame, and hydraulic motor means operatively connected to the cam members for effecting vibration of the container; and a pressurized fluid source extending from the return line to the motor means connected to the cam members for operating the latter.

3,294,372
FLOATING ROOF MIXING TANK
George N. Davis, Rolling Hills, and Max B. Southwick, Los Alamitos, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 14, 1964, Ser. No. 417,986
12 Claims. (Cl. 259—95)



1. A floating roof tank for the storage and blending of liquids comprising:
- a substantially cylindrical vertical shell enclosed at the bottom by a floor and having an outwardly protruding section spaced from said floor so as to form a recess in said shell open to the interior of said tank;
- a vertically movable floating roof within said shell substantially covering the cross-sectional area thereof and adapted to float on the surface of said liquids; and
- mixing means for mixing said liquids mounted within said recess in said shell.

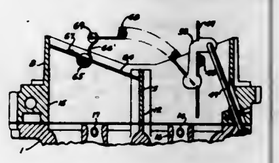
3,294,373
FERTILIZER MIXER
William W. Cochran, 462 Holiday Drive, Decatur, Ill. 62526
Filed June 1, 1965, Ser. No. 460,014
3 Claims. (Cl. 259—107)

1. A mixer particularly adapted for mixing particulate materials and the like, said mixer comprising a housing formed from upper and lower housing sections, each of said sections having base portions which are disposed in abutting engagement, an outlet formed in the lower one of said housing sections and an inlet formed in the upper one of said housing sections, a mixing plate positioned in closely spaced relation to said inlet, means for rotating said mixing plate about an axis which is substantially vertical to cause radially outward agitational movement of said particulate material to be mixed, said mixing plate including a spirally wound vane thereon, said vane being wound about itself and having a center axis portion there-



of disposed in substantial vertical alignment with said inlet end whereby said particulate material will enter at the center of said mixing plate and flow spirally outward to thoroughly mix the same, said particulate material being discharged from the outer periphery of said mixing plate into said lower section containing said outlet, said lower housing section being formed to a cross sectional shape diminishing in area progressively towards said outlet thereby being operative to further mix said particulate material on discharge from said mixing plate and movement toward said outlet.

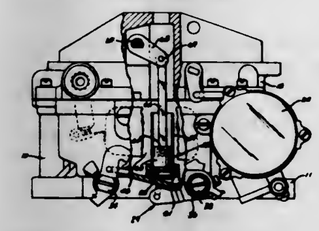
3,294,374
CARBURETOR
Robert J. Smith, Florissant, and Otto J. Eichmann, Normandy, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 29, 1964, Ser. No. 400,000
20 Claims. (Cl. 261—23)



1. A multistage carburetor for an internal combustion engine comprising a body structure having a primary mixture conduit and a secondary mixture conduit for the flow of an air and fuel mixture therethrough to said engine, means including a primary nozzle for providing fuel flow into said primary conduit and a secondary nozzle for providing fuel flow into said secondary conduit, manually operable means including a primary throttle and a secondary throttle movably mounted respectively within said primary and secondary conduits and downstream respectively of said nozzles for controlling the flow of air-fuel mixture therethrough, a control valve within said secondary conduit upstream of said secondary nozzle therein, means mounting said control valve for movement from a position closing said secondary conduit toward an open position by air flow through said secondary conduit, means connected to said control valve normally biasing said control valve against said air flow

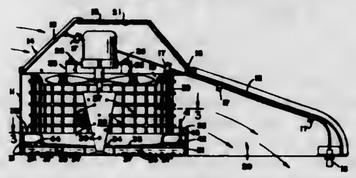
toward said closed position, and temperature responsive means connected to said control valve biasing means to modify said control valve biasing means in response to engine temperature.

3,294,375
CARBURETOR
Jesse L. Sawangaldi, Florissant, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 2, 1965, Ser. No. 484,652
8 Claims. (Cl. 261—23)



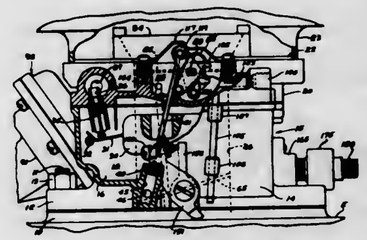
1. In an air valve carburetor including:
- (A) a body
- (B) primary and secondary air and fuel mixture conduits forming passages in said body with the primary conduit having a venturi passage,
- (C) a wall in said body separating said primary and secondary passages,
- (D) a throttle plate journalled in each of said mixture conduits for regulating the passage of fuel mixture therethrough,
- (E) an air valve journalled in said secondary mixture conduit upstream of said throttle plate and including an air valve shaft,
- (F) a fuel bowl formed in said carburetor body and being communicated through fuel nozzles to the respective primary and secondary mixture conduits for delivering fuel to the latter to mix with air introduced thereto,
- (G) a dash pot in said fuel bowl including:
  - (1) an elongated cylinder,
  - (2) a piston immersed in fuel in said fuel bowl and slidably received in the cylinder, said piston being operably connected to said air valve shaft,
  - (3) means forming a passage extending longitudinally of said piston and providing communication between opposed ends of said cylinder,
  - (4) said means forming a passage including an annular seat,
  - (5) a valve member retained in said piston and being co-operative with said means forming a passage to regulate flow of fuel through the latter, said valve member being normally immersed in fuel contained in said fuel bowl to be influenced by fuel temperature,
  - (6) said valve member including a deformable valve element being moveable between open and closed positions in response to a fuel temperature gradient and co-operative with said annular seat in said means forming a passage whereby at low fuel temperatures, the said deformable valve element will form a closure across said means forming a passage to prevent flow of fuel therethrough and impede movement of said piston axially through said cylinder thereby dampening movement of the air valve in said secondary mixture conduit in accordance with fuel temperature, and at an increased fuel temperature, said deformable valve element will be displaced from said annular seat thereby permitting fuel flow through said passage and provide a less impeded movement of said piston along said cylinder to effect a lesser degree of dampening of said air valve.

3,294,376
AIR-SCOOP ACTUATED AIR CONDITIONER
John Eranosian, 175 Phillip Road, Woodside, Calif. 94061
Filed June 14, 1965, Ser. No. 463,614
5 Claims. (Cl. 261—29)



1. An air-scoop actuated air conditioner which comprises a housing having an inlet and an outlet disposed below said inlet; an air scoop communicating with said inlet; a fan disposed concentrically within said inlet on a rotatable shaft; means for rotating said shaft; a pan disposed within said housing below said fan; a baffle covering said pan, having a central aperture therein, and a surface sloping downwardly to said aperture; a foraminous frustoconical pump secured concentrically to said shaft below said fan and extending through said aperture; and a filter element surrounding said pump, spaced therefrom and extending from said inlet to said baffle.

3,294,377
CARBURETOR
Robert J. Smith, Florissant, Mo., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 13, 1963, Ser. No. 330,360
4 Claims. (Cl. 261—39)

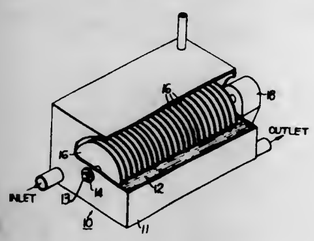


1. A carburetor comprising a body having an air and fuel mixture conduit therethrough, a throttle valve mounted across said mixture conduit for movement from an open position to a position closing said mixture conduit, means for operating said throttle valve, an air valve mounted within said mixture conduit upstream of said throttle valve for movement from an open position to a position closing said mixture conduit, means for biasing said air valve toward a closed position against flow of air through said mixture conduit, said carburetor body including a fuel reservoir and a fuel passage extending from said fuel reservoir to said mixture conduit between the air valve and the throttle valve, a metering rod adapted to be positioned in said fuel passage for varying the fuel flow thereto, and means operatively connecting the metering rod to said air valve to vary the flow of fuel to said

mixture conduit relative to the flow of air through said mixture conduit, said connecting means including temperature responsive means to vary the relationship between the flow of fuel to said mixture conduit and the flow of air through said mixture conduit in response to temperature, said temperature responsive means including a stop member holding said air valve in an open position above a predetermined ambient temperature and a bimetallic element between said stop and said air valve to move said air valve toward a closed position as said temperature drops below said predetermined value.

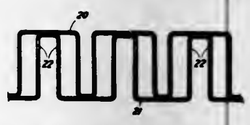
3. A carburetor comprising a body having an air and fuel mixture conduit therethrough, a throttle valve mounted across said mixture conduit for movement from an open position to a position closing said mixture conduit, means for operating said throttle valve, an air valve mounted within said mixture conduit upstream of said throttle valve for movement from an open position to a position closing said mixture conduit in response to air flow through said mixture conduit, a spring biasing said air valve closed, said carburetor body including a fuel reservoir and a fuel passage from said reservoir to said mixture conduit, means including a temperature responsive spring connected to said air valve and adapted to bias said air valve against said spring toward an open position upon engine warm-up above a predetermined temperature, means forming a first air passage to bypass air in said mixture conduit around the closed position of said throttle valve and a second air passage connecting said mixture conduit downstream of said air valve to air outside said carburetor, and temperature responsive valve means in said first and second air passages for limiting air flow through said first and second air passages at temperatures above said predetermined value.

3,294,378
TWO-PHASE CONTACTOR DISKS
Patrick G. Grimes, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 9, 1963, Ser. No. 328,916
4 Claims. (Cl. 261—92)



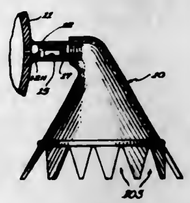
1. A two-phase contactor comprising a plurality of screens mounted for rotation in vertical planes about a horizontal axis, said screens being located so as to be partially submerged in a liquid to be treated, said screens comprising a plurality of arcuately spaced substantially radially extending members and radially spaced annular members interconnecting said radial members, said radially extending and said annular members forming a mesh of sufficiently small size to retain liquid by surface tension in individual meshes and to combine the liquid in adjacent meshes into a continuous liquid film and said radially extending members elevating liquid as they emerge from said liquid and directing said liquid to flow radially inward under the force of gravity in a cascading manner over said radially spaced annular members and in an elongated path along said screen as said screen is being rotated.

3,294,379
GUARDED PERFORATED TRAY FOR CONTACTING LIQUIDS AND GASES
Michel Desperier, Saint-Maurice, France, assignor to l'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed Mar. 25, 1963, Ser. No. 267,508
Claims priority, application France, Apr. 5, 1962, 893,424, Patent No. 1,327,227
2 Claims. (Cl. 261—114)



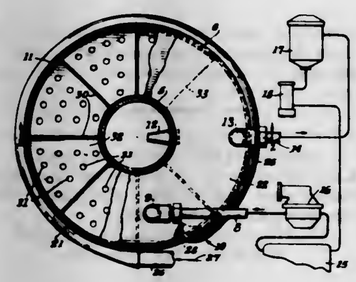
1. A perforated plate tray assembly for bringing a gas and a liquid into contact, comprising an upper plate providing a surface of contact between the gas and liquid, said upper plate having a non-rectilinear profile and provided with openings for dispersing the gas throughout the liquid, and a lower plate having a non-rectilinear profile, the lower portions of said lower plate forming liquid guards and the upper portions of said lower plate having openings for the free passage of the gas towards the upper plate, said upper and lower plates being fastened to one another in discontinuous areas of contact to form said tray assembly similar to the structure of an assembly of box girders, the upper and lower plates having a corrugated profile and said plates being fastened to one another along areas of contact located on one flank of each corrugation, the openings in the lower plate having flanged edges.

3,294,380
SOLID DOME DIFFUSER WITH TRAP
Robert E. Born, Broadview, Ill., assignor to American Well Works, a corporation of Illinois
Filed Oct. 4, 1963, Ser. No. 313,986
1 Claim. (Cl. 261—121)



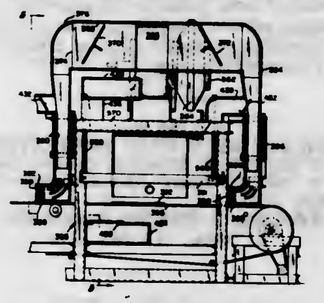
In a system for introducing a gas into a liquid, said system including a conduit leading to a submerged location within such liquid for supplying gas at a pressure greater than the liquid pressure at such location, in combination, a diffuser for mounting at such location and having an impermeable dome providing a gas pocket that is open at its lower extremity for emitting gas into the liquid surrounding such location, connection means including a horizontal pipe mechanically connected to support said diffuser at an upper region thereof from said conduit and provide a horizontal flow passage communicating from said conduit into said pocket at an elevated region thereof, a sleeve positioned within said pipe to provide a valve seat facing in a downstream direction at a location along said passage, and a flapper valve having one edge affixed to said sleeve to enable said valve to span said seat in sealing relation thereto, said flapper valve being freely shiftable in said downstream direction when sufficient pressure acts in said conduit and being responsive to a predetermined loss of pressure in said conduit to seal against said seat and prevent reverse flow of gas from said pocket into said conduit to trap gas in said pocket to act as a compressible cushion resisting the rise of liquid in said pocket.

3,294,381
CARBURETOR
Harold Schwartz, Baldwin Park, Calif.
(12260 E. Colefax Ave., Aurora, Colo. 80010)
Filed Mar. 18, 1963, Ser. No. 265,885
2 Claims. (Cl. 261—145)



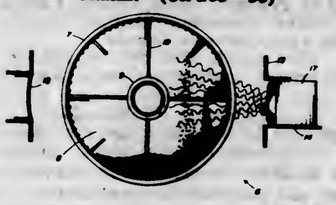
1. A carburetor for an internal combustion engine having an exhaust and an intake manifold, and a downdraft tube leading to said intake manifold, comprising:
(a) a housing having a flat, horizontal bottom and adapted to hold a shallow pool of fuel, said housing encircling said downdraft tube and mounted thereon,
(b) an arcuate scrubbing chamber in said housing open at one end and closed at its other end to the interior of the housing and having a top and bottom spaced above the housing bottom provided with holes open to the pool of fuel,
(c) a complement of radial baffles in said scrubbing chamber in arcuate arrangement and mounted vertically between the top and bottom of said scrubbing chamber,
(d) a liquid fuel inlet terminating in a spray nozzle discharging into said scrubbing chamber adjacent its closed end,
(e) means to conduct exhaust gases of said engine into said scrubbing chamber, said means terminating in a discharge for said exhaust gases directed toward said nozzle to commingle with the sprayed fuel emanating therefrom, thereby to produce a flow of fumes-laden finely-divided fuel that includes larger globules and means positioning said baffles so the fumes flow in a serpentine path toward the open end of the chamber around and in contact with said baffles so the larger globules are intercepted and run down the faces of the baffles and discharged through the holes in the chamber bottom and into the mentioned pool of fuel in the housing,
(f) a pickup pipe for drawing excess fuel from the pool with its pickup end located in spaced relation to the housing bottom but closer thereto than is the bottom of the scrubbing chamber, thereby maintaining the level of the pool below said chamber bottom,
(g) the remainder of the fumes-laden fuel discharging from said open end of the scrubbing chamber into the housing, and
(h) a nozzle tube intersecting the downdraft tube open to said fumes-laden fuel in the housing and directed to discharge the same into a flow of air in said downdraft tube to provide a combustible fuel mixture.

3,294,382
HEAT TREATING APPARATUS
John J. Fannon, Jr., Grosse Pointe Park, Mich., assignor to Happ Corporation, Cleveland, Ohio, a corporation of Virginia
Original application Aug. 18, 1960, Ser. No. 50,421, now Patent No. 3,228,113, dated Jan. 11, 1966. Divided and this application Oct. 29, 1965, Ser. No. 505,639
15 Claims. (Cl. 263—6)



1. Heat treating apparatus, comprising:
(a) a conveyor having a work piece supporting surface;
(b) infrared generators located above the conveyor with surfaces emitting visible radiation facing the work piece supporting surface of the conveyor and extending over substantially its entire width to provide a beam of radiation spanning the conveyor surface;
(c) means for supplying a combustible mixture to said infrared generators;
(d) means for directing a curtain of air between said infrared generators and work pieces on said conveyor substantially without impinging on and thereby reducing the temperature of the radiation emitting surfaces of said infrared generators, said last-named means including air supply means at one side of said beam and exhaust blower means, said exhaust blower means having greater capacity than said air supply means and being located at the side of the beam opposite the air supply means;
(e) means for supplying a combustible mixture of premixed gaseous fuel and air to said generators; and
(f) means for maintaining such supply only so long as said generators are ignited and at a rate normally determined by the temperature and presence of an object subjected to irradiation by said generators.

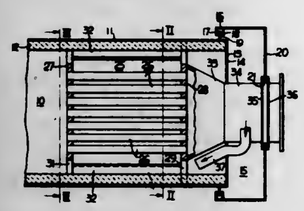
3,294,383
ROTARY SCREEN MACHINE FOR PROCESSING HEAT SENSITIVE GRANULAR ORGANIC MATERIALS
Harry Truax, Rural Route, Mooresville, Ind. 46158
Filed June 24, 1964, Ser. No. 377,602
15 Claims. (Cl. 263—33)



1. A machine for processing heat sensitive granular organic materials, comprising: a substantially cylindrically shaped screen forming a processing chamber; flat means within said processing chamber adjacent to said screen; means for introducing heat sensitive granular

organic materials into said processing chamber; a heat radiating source external of but adjacent to said processing chamber for emitting heat rays to said chamber through said screen; means for rotating said screen about its longitudinal axis whereby said granular organic materials in said chamber are repeatedly caused by said fins to be passed through said heat rays whereby said granular materials are uniformly heat treated throughout and thereby rendered more palatable and upgraded in nutrient value without adversely affecting protein values; and means for expelling processed granular organic materials from said processing chamber.

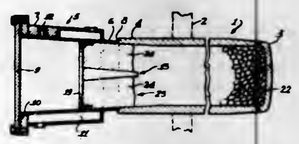
3,294,384
ROTARY KILN WITH PREHEATER
Norman H. Hollefriend, Montreal, Quebec, Canada, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 7, 1964, Ser. No. 416,433
4 Claims. (Cl. 263—33)



1. In a rotary kiln supported for rotation about an axis through the center of the kiln and inclined downwardly from the feed end toward the discharge end, a feed material preheater mounted within said kiln adjacent the feed end thereof comprising a pair of axially spaced tube sheets each defining a plurality of circumferentially spaced openings around the inner periphery of said kiln for passing therethrough particles of solid materials being kilned, a plurality of tubes passing through both said tube sheets and fastened thereto in parallel alignment with each other and with the central axis of the kiln, the ends of each of said tubes defining an opening to receive and pass through each tube gases coming from the material discharge end of said kiln, and a plurality of lifters between said tube sheets and mounted on the inner periphery of said kiln projecting radially inward toward said tubes for lifting material within said kiln between said tube sheets and discharging the material over said tubes to shower downwardly over the external surface of said tubes.

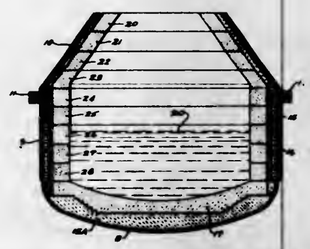
3,294,385
APPARATUS FOR FORMING AND REMOVING CONDENSED METAL CROWNS
Desmond M. Peplinski, Haley, Ontario, Canada, assignor to Dominion Magnesium Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Apr. 9, 1964, Ser. No. 358,516
Claims priority, application Canada, Apr. 23, 1963, 873,872
7 Claims. (Cl. 266—19)

1. Apparatus for the high temperature vacuum reduction and condensation of metal which comprises a retort, a tubular condenser having one end communicating with said retort, said condenser having an interior wall surface of gradually decreasing diameter towards said one end, and a metal crown supporting device comprising a wedge-shaped member having a pair of opposed converging major surfaces and a pair of opposed converging minor surfaces in loose fitting engagement with said wall surface, said member having a longitudinal axis about which said surfaces are substantially symmetrically disposed, said axis being substantially coincident with the axis of said condenser wall surface, said surfaces of said member all converging towards one end thereof adjacent said one end



of said condenser, and a transversely extending baffle plate mounted on the other end of said member and having its peripheral edge in loose fitting relation to the wall of said condenser.

3,294,386
OXYGEN CONVERTER LININGS
Henry Carl Willenbrock, Jr., Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1964, Ser. No. 351,365
8 Claims. (Cl. 266—36)



1. An oxygen converter furnace comprising a metal vessel having a mouth at its top, a shell protective lining in contact with the inside surface of said vessel and a working lining having a surface exposed to the interior of said vessel, said working lining constructed of three major zones, these three zones being the bottom zone, the barrel zone and the cone section zone, the bottom zone being generally disc-shaped and of upwardly opening concave configuration, the barrel zone extending from the dish-shaped bottom upwardly to the cone section zone, the barrel zone being of substantially uniform cross sectional dimension from the bottom zone to the cone section zone, the cone section zone being of downwardly opening truncated cross section configuration, the bottom zone portion of the working lining being fabricated of tar bonded basic refractory, the working lining extending from the bottom zone upwardly substantially the full extent of the barrel zone to the cone section zone, when viewed in vertical cross section, being constructed of alternating courses of tar bonded and tar impregnated chemically basic refractory shapes, the tar bonded shapes being fabricated of refractory material of the group hard burned lime, dead burned dolomite and dead burned magnesite, the ceramically bonded tar impregnated shapes being fabricated of refractory material analyzing at least about 95% MgO+CaO and selected from the group consisting of hard burned lime, dead burned dolomite and dead burned magnesite, there being no more than about 4% of SiO_2, Al_2O_3 and Fe_2O_3 in said ceramically bonded tar impregnated refractory shapes, and a final course about the peripheral lip of the open top of the furnace being fabricated of said ceramically bonded tar impregnated basic refractory.

3,294,387
LAMINATED CELLULAR MATERIAL
Marc A. Chavannes, 2 Horizon Road, Fort Lee, N.J. 07024
Filed Dec. 5, 1963, Ser. No. 328,422
2 Claims. (Cl. 267—1)



1. A cellular cushioning material comprising a first relatively thin pliable plastic film having a plurality of closely spaced embossments extending from one surface thereof, each of said embossments being spaced from adjoining embossments to provide interconnected areas of unembossed film therebetween, a second relatively thin pliable plastic film sealed to the other side of said unembossed portions and entrapping a compressible gas in said embossments, said embossments deforming upon the application of pressure, and a continuous layer of resilient foam material uniformly adhered to and overlying said embossments and filling the spaces between said embossments to enhance the resistance of said embossments to compressive stresses.

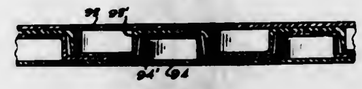
3,294,388
HYDRAULIC CUSHION
Robert A. Rasmussen, Ogden Dunes, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,882
21 Claims. (Cl. 267—1)



1. A hydraulic cushion comprising a cylinder having a closed head at one end and being open at the other end, a piston slidably mounted within said cylinder, a piston rod for said piston extending through said open end, means providing communication between opposite sides of said piston, and a convoluted boot having one end secured to said cylinder and the other end secured to the remote end of said piston rod, said boot having a plurality of beads closely surrounding said piston rod and providing, when in axially contracted position, a plurality of convolution chambers to accommodate the fluid displaced by said piston rod when said hydraulic cushion is in its contracted position.

3,294,389
LAMINATED CELLULAR MATERIAL
Marc A. Chavannes, 165 W. 66th St., New York, N.Y. 10023
Filed June 29, 1965, Ser. No. 469,970
1 Claim. (Cl. 267—1)

A cellular cushioning material comprising a pair of cellular structures each having at least two sheets of relatively thin pliable material hermetically sealed one to the other with one of said sheets having a plurality of sealed gas retaining tubular members formed integrally therewith and extending therefrom, said tubular members on said structures being spaced to provide alternating patterns of tubular members and spaces with the spaces of one structure being arranged to correspond to the positions of said tubular members on the other structure, said structures being secured one to the other with the tubular members



of one structure registering with and nesting in the spaces on said other structure and forming a resultant cushioning material having said tubular members uniformly distributed and closely spaced throughout the area thereof whereby said members afford mutual lateral support when the material is subjected to pressure.

3,294,390
SUSPENSION MEANS
Harry J. Warmkessel, Allentown, Pa., assignor to Mack Trucks, Inc., Montvale, N.J., a corporation of New York
Filed Feb. 11, 1965, Ser. No. 431,871
5 Claims. (Cl. 267—31)

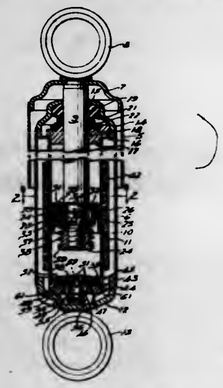


1. Suspension means for supporting a first member relative to a second member under variable load conditions, comprising an elongated leaf spring means susceptible of different degrees of deflection and having one end pivotally mounted about a fixed point on the first member, an intermediate point connected to the second member, and an opposite end adapted to be variably coupled to the first member at a point spaced apart from said fixed point; a compressible resilient member having one end connected to the first member and an opposite end adapted to be pivotally coupled to a pivot point on the first member; and cam means for coupling said opposite end of said compressible resilient member to said pivot point and having a cam surface of predetermined configuration for engaging said opposite end of said leaf spring means at one of a plurality of distinct points along said cam surface dependent upon the degree of deflection of said spring means, whereby the proportionate load applied to said compressible resilient member is a function of the overall load sustained by the suspension means and the degree of deflection of said elongated leaf spring means.

3,294,391
SHOCK ABSORBER CONSTRUCTION
Charles J. Smith and William W. Higginbotham, Monroe, Mich., assignors to Monroe Auto Equipment Company, Monroe, Mich., a corporation of Michigan
Filed Dec. 7, 1964, Ser. No. 416,475
2 Claims. (Cl. 267—64)

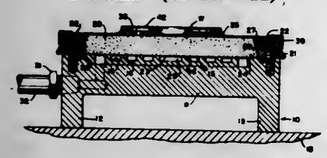
1. In a shock absorber, a pressure cylinder, a piston within the pressure cylinder, a piston rod on the piston, valves on the piston for controlling the flow of fluid through the piston from one or the other side thereof, a reservoir adjacent to said pressure cylinder, a valve between said pressure cylinder and reservoir for controlling

the flow of fluid to and from the cylinder and reservoir and a tube of elastomeric material substantially the length



of the pressure cylinder on the outer surface of which it is supported when located within said reservoir.

3,294,392
VACUUM CHUCKING
Russell H. Dunham, New Fairfield, Conn., assignor to The Dunham Tool Company, Inc., New Fairfield, Conn., a corporation of Connecticut
Filed May 31, 1963, Ser. No. 284,615
1 Claim. (Cl. 269—21)



A method of chucking a workpiece to a continuous, porous planar surface of a closed vacuum chamber with a non-porous sheet material, comprising the steps of

(a) supporting said workpiece on said porous surface,
(b) completely covering said workpiece and said surface with an integral sheet of non-porous material to seal said porous surface from the ambient atmospheric pressure, the pressures of the vacuum in said chamber thereby drawing said workpiece and said sheet toward said surface to hold them thereagainst,
(c) thereafter selectively removing portions of said covering sheet from upper portions of said workpiece to expose said upper portions for machining and to maintain a seal of said planar surface from the ambient pressure, the remaining portions of said covering sheet being drawn into ever closer contact with the edges of said workpiece by said vacuum.

3,294,393
APPARATUS FOR USE IN HANDLING FERRITE CORES
Dzidris Pliestnieks, Cherry Hill, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 4, 1964, Ser. No. 342,424
7 Claims. (Cl. 269—305)

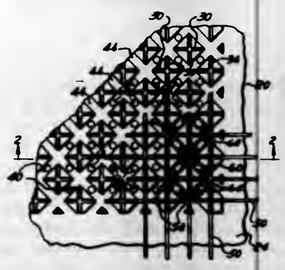
1. Core assembly apparatus comprising

a plate having a plane top surface,

a plurality of horizontal and vertical wire-receiving slots formed in said top surface and defining a plurality of generally rectangular areas oriented side-by-side in rows and columns and corner-to-corner in positive-slope diagonals and in negative-slope diagonals,

a plurality of first parallel, postive-slope core receiving diagonal slots extending along said positive-slope diagonals of rectangular areas and bisecting said rectangular areas by passing through opposite corners thereof, said positive-slope diagonal slots being spaced from each other by an amount equal to about the diameter of a core to be carried,

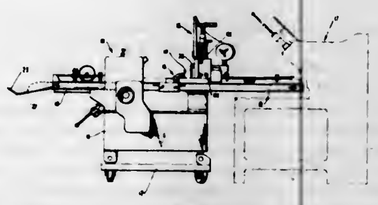
a plurality of second parallel, negative-slope core-receiving diagonal slots extending along said negative-slope diagonals of rectangular areas and bisecting said



rectangular areas by passing through opposite corners thereof, said negative-slope diagonal slots being spaced from each other by an amount equal to about the diameter of a core to be carried, and

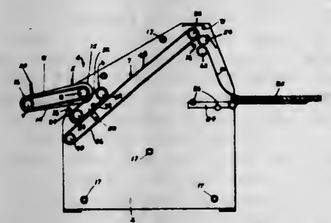
wires positioned in said horizontal and vertical slots surrounding said rectangular areas and forming intersections at spaced intervals along said positive-slope and negative-slope diagonal core-receiving slots, said intervals being equal to about the diameter of a core to be received, each core being held in place in an interval by said wire intersections.

3,294,394
SHEET HANDLING APPARATUS
Walter Holms, Pearl River, N.Y., and Clifford P. Rounsefell, Hillsdale, N.J., assignors to Michle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 25, 1964, Ser. No. 391,852
10 Claims. (Cl. 270—37)



1. In a signature handling apparatus the combination of a first signature folding means, a second signature folding means spaced from said first folding means, continuously operating means to convey signatures in a predetermined path between said first and second folding means, signature stop means adjacent said path and normally operatively positioned in said path to stop a signature, means to selectively move said signature stop means out of said path, signature detecting means positioned in said path and actuated by the passage of a signature toward said stop means, signature fastening means operatively positioned adjacent said path, means activatable in response to said detecting means upon passage of a signature to move said signature fastening means into fastening position relative to a stopped signature, and means responsive to movement of said fastening means into signature fastening position to return the latter to its non-fastening position and to activate said means to move the stop means out of said path whereby the fastened signature is released by said stop means to be fed into said second folding means.

3,294,395
SHEET FOLDER
Robert L. Sjöström, Boca Raton, Fla., assignor to Sjostrom Automations, Inc., Boca Raton, Fla., a corporation of Florida
Filed Sept. 18, 1964, Ser. No. 397,385
7 Claims. (Cl. 270—69)



1. A sheet-folding machine comprising a frame having opposed side members,

means for forwardly feeding a sheet including parallel rear and forward rolls with endless conveyor belt means supported on and rotated by said rear and forward rolls,

means journalling said rear and forward rolls in fixed relation to said frame with the axis of said forward roll above the axis of said rear roll whereby the upper surface of said belt means is inclined upwardly from the rear to the forward end of said machine,

means for effecting at least one lateral fold in a sheet moving from said upper surface of said belt means at the forward end thereof including a pair of parallel adjacent fold rolls,

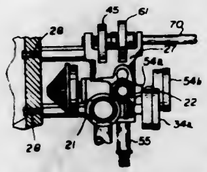
means journalling said fold rolls in fixed relation to said frame with the axis of one fold roll positioned rearwardly of and below the axis of the other of said fold rolls whereby the angle formed between a plane through the axis of said rear and forward rolls and a plane through the axis of said fold rolls is acute,

means for forcing a sheet passing adjacent said fold rolls between said fold rolls whereby said sheet is folded along a transverse line intermediate the forward and rear ends of the said sheet, and

means for rotating all of said rolls whereby said upper surface of said belt means moves forwardly and said folding rolls rotate in opposite directions.

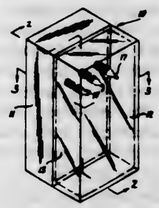
3,294,396
SHEET FEEDING MECHANISM HAVING A SINGLE CONTROL MEMBER FOR ACTUATING A SUCTION, AIR PRESSURE, AND PUMP MEANS
Alfred J. Staines, Shaker Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,100
11 Claims. (Cl. 271—26)

1. A sheet feeding mechanism for feeding sheet material from a pile comprising suction feed means for engaging the top sheet of the pile and feeding it forwardly thereof, nozzle means for directing a stream of air toward said sheet to assist in the feeding thereof, suction and air pressure supply lines leading from a source of suction and air pressure respectively to said suction feed means and said nozzle means respectively, first valve means in said suction supply line operable to control the pressure in said suction supply line, second valve means in said air supply line operable to vary the pressure in said air supply line, and actuating means for said first and second valve means effective to operate said first valve means to provide a predetermined suction pressure in



said suction supply line and then subsequently operate said second valve means to apply air pressure to said air supply line of a progressively increasing magnitude including a single control member for operating said actuating means.

3,294,397
POCKET CARRIED AMUSEMENT DEVICE WITH FLASHING LIGHTS
Elden Edwin Du Rand III, 114 Central Ave., Pewee Valley, Ky. 40056
Filed Dec. 19, 1963, Ser. No. 331,790
1 Claim. (Cl. 272—1)



An amusement device adapted to be carried conveniently in a pocket of a garment comprising

a rectangular box composed of opaque plastic having an open front with means forming a flange around the open front,

a rectangular box composed of transparent plastic having an open back with means forming a flange around the open back for sealably comating with the flange on the opaque box forming a compact closed box of a size which may easily be carried in a garment pocket,

an opaque removable partition in the closed box having three linearly spaced apertures therein and dividing the closed box into two compartments of approximately equal volume,

three neon lamps extending into the transparent box from the opaque box through the three apertures in the partition,

a battery in the opaque box,

three resistors of different resistances in the opaque box,

three capacitors of different capacitances in the opaque box,

conductor means connecting the three resistors and the three capacitors to form three individual series circuits with the battery and a resistor and a capacitor in each circuit,

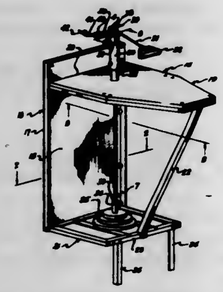
conductor means connecting each of the neon lamps electrically individually in parallel with the respective capacitors whereby the neon lamps blink on and off independently of each other and at different frequencies with respect to each other, said frequencies being between 0.5 and 20 cycles per second, to give a pleasurable sensation when being observed.

3,294,398
SPACE COUPE CARNIVAL RIDE
Milton Buechler, Buechler Law Bldg., Lennox, S. Dak. 57039
Filed Feb. 8, 1965, Ser. No. 430,999
7 Claims. (Cl. 272—36)



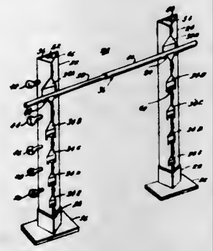
1. An amusement ride comprising a supporting base, an upright supporting mast operatively supported by said base, a laterally extending arm at the upper end of said mast, a depending frame supported from said arm for swinging movement of the depending frame about substantially a horizontal axis, a sub-frame disposed at the lower end of the depending frame, means pivotally supporting the sub-frame adjacent its center from the lower end portion of the depending frame for rotation of the sub-frame about a substantially horizontal axis parallel to the horizontal axis of movement of the depending frame, a pair of occupant receiving housings mounted in said sub-frame adjacent the ends thereof, means mounting the housings in the sub-frame for rotation thereof about substantially horizontal axes, each housing having an access means incorporated therein for enabling occupants to enter and egress in relation to the housing, and means interconnecting the depending frame and its supporting structure for oscillating the depending frame about its horizontal axis of movement, said sub-frame and housings being freely rotatable about spaced horizontal axes.

3,294,399
MANUALLY OPERATED WEIGHT RESISTANT EXERCISING DEVICE
Samuel Cagliari, 2355 Mahoning Road NE., Canton, Ohio 44705
Filed Oct. 8, 1963, Ser. No. 314,654
1 Claim. (Cl. 272—81)



An exerciser and body builder of the character described, comprising a vertical supporting rectangular member adapted to be secured to a vertical wall, having a top plate extending horizontally outward at right angle therefrom, the said top plate being provided with an opening in which is fitted structure in the form of a fixed vertically disposed tubular member having a pulley hanger secured to the upper end thereof, the upper end of the said pulley hanger supporting a horizontally disposed grease fitting on which is located a pulley over which rides the upper portion of a vertically and manually movable cable, the lower end of said cable being secured to one or more weights of a predetermined poundage, that are slipped on a vertically disposed tubular member from which the said weights are prevented from coming off by means of a nut on the lower end thereof, the said weights normally resting on a horizontally disposed weight supporting frame that has one end secured to the lowermost end of the said vertical supporting rectangular member, said plate having a front end thereof supported by a pair of vertically disposed legs, as well as by the lower end of a diagonally disposed brace member, the upper end of said brace member being secured to the front end of the said top plate, and a handle secured to the upper end of the said cable, the said weights being lifted by a person thereby exercising and building the body; and a threaded rod having one end secured to a U-shaped fitting, which in turn is secured to the uppermost end of the said pulley hanger, the said U-shaped fitting and said pulley hanger both supporting the said horizontally disposed grease fitting and said pulley, and the other end of the said threaded rod being secured to one end of a turnbuckle, that is also secured to an eyebolt, that has the eye portion thereof held by a screw eye, that is adapted to be screwed into said vertical wall.

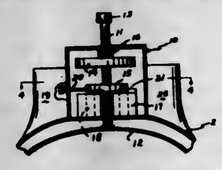
3,294,400
DANCING APPARATUS
Sidney Goldstein, 1406 Paper Mill Road, Philadelphia, Pa. 19118
Filed Mar. 21, 1966, Ser. No. 535,964
10 Claims. (Cl. 273—1)



1. Dancing apparatus comprising:
first and second uprights, one of said uprights having a plurality of energizable indicating means positioned thereon;
a cross-bar selectively positionable at any one of a plurality of positions along said uprights, each of said positions having one of said plurality of energizable indicating means associated therewith; and
circuit means responsive to said cross-bar being placed at any one of said positions for energizing the energizable indicating means associated therewith.

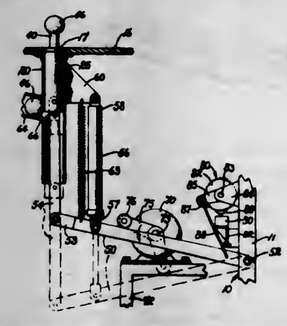
3,294,401
ELECTRONIC TARGET GAME
George Nicholas, 2361 Portage Path, Bellbrook, Ohio 45305, and Jason W. Sarnow, 502 W. South College St., Yellow Springs, Ohio 45387
Filed Oct. 2, 1962, Ser. No. 227,768
3 Claims. (Cl. 273—101.1)

1. Amusement apparatus consisting of a structure to be worn on the person, means incorporated for storing energy therein, apertures in said structure, said structure having means exposed at said apertures capable of being activated by a light beam of predetermined intensity to release the stored energy and means connecting with said



energy storing means responding to release of the stored energy and reacting on the person of the wearer to produce a predetermined physical movement.

3,294,402
GOLF BALL TEEING DEVICE WITH PHOTOCELL AND COUNTER OPERATED CONTROL MEANS
Howard A. Scott, 6476 N. Pleasant, Fresno, Calif. 93705
Filed Nov. 18, 1963, Ser. No. 324,492
2 Claims. (Cl. 273—201)



1. A golf ball teeing device comprising a frame adapted to be disposed in underground position having an exposed upper platform portion providing a golf ball ejecting opening therethrough, an elongated tubular golf ball guide member mounted on the platform in depending relation therefrom in registry with said opening, a source of golf balls, an elongated inclined golf ball delivery tube having a lower end connected to said guide member in downwardly spaced relation from said platform and an upper end connected to said source of golf balls, an elongated piston reciprocably disposed within said golf ball guide member providing opposite upper and lower ends, a tubular tee of resiliently flexible material mounted on said upper end of the piston in upward extension therefrom, a rocker bar having an end pivotally mounted on the frame in downwardly spaced relation from the platform and an opposite end pivotally connected to said piston, said arm including spaced substantially parallel upper and lower side surfaces, an electrically powered motor mounted on the frame having a rotatable crank arm providing a roller disposed in continuous engagement with said upper side surface of said rocker bar intermediate its ends, a coin actuated electrical control circuit connected to said motor, a photo-electric switch disposed in said circuit and mounted within the piston to receive externally available light through said tubular tee upon removal of the golf ball therefrom for completing the electrical circuit to the motor for energizing the same to rotate said crank arm and roller downwardly against said upper side surface of the rocker bar so as to motivate the piston downwardly through said guide member to a lower retracted position with the tee disposed below the lower end of the delivery tube gravitationally to receive a golf ball thereon with said golf ball blocking said externally available light to said photo-electric switch to interrupt the flow of electrical current to the motor for de-energizing the same, an elongated tension spring extended between said rocker bar and said guide member to return said piston and such a golf ball thereon upwardly through said guide member to dispose the golf ball in ball striking position with said piston blocking the golf ball delivery tube during movement of the piston to said upper ball striking position, a counter connected to said rocker bar having a switch portion in said electrical control circuit for interrupting the flow of current to said motor upon a predetermined number of cycles of the piston between its upper and lower positions, and electrical means energized by initial actuation of said coin operated control circuit to re-set said switch portion of the counter during subsequent actuation of said circuit and said counter.

3,294,403
PIVOTALLY MOUNTED CARTRIDGE
Martin C. Reed and William R. Baillie, Roselle, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Feb. 25, 1964, Ser. No. 347,207
6 Claims. (Cl. 274—23)



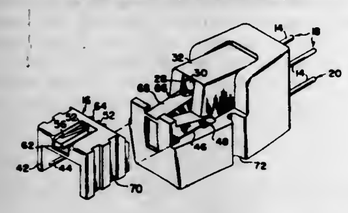
1. In a tone arm and cartridge assembly, the combination comprising: a support; a tone arm; means mounting said tone arm to said support for pivotal movement about a first axis 19; first means 21 biasing said arm in one direction about said axis; and second means for balancing said tone arm including, pivot means carried by said arm defining a second axis 29, a cartridge mounted in said pivot means and having a stylus spaced from said second axis adapted to track a record, the engagement of said stylus with a record defining a fulcrum, a mass 48 carried by said cartridge and spaced outwardly from said fulcrum, said cartridge and mass together having sufficient weight to overcome said first means, the reaction force of said mass pivoting around said fulcrum acting at said second pivot to create a force acting in the same direction as said first means to balance said tone arm.

3,294,404
TONE ARM AND CARTRIDGE COMBINATION
William A. Cavagnaro, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Dec. 29, 1964, Ser. No. 421,794
8 Claims. (Cl. 274—24)



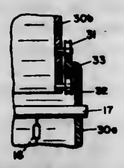
1. A tone arm and cartridge assembly comprising an elongated tone arm, a handle removably secured to said tone arm near its free end, said handle including a manually graspable portion projecting from said tone arm for enabling an operator to manually move said tone arm relative to a turntable, said handle also including a second portion, and a pickup cartridge arranged for disposition on said tone arm near its free end, said cartridge including a housing having a bearing aperture formed therein, said bearing aperture of said cartridge receiving the second portion of said handle for pivotally supporting the cartridge on the tone arm, whereby said handle serves both as an operating element for manipulating said tone arm and as a pivotal support for said cartridge.

3,294,405
PHONOGRAPH PICK-UP
Peter E. Pritchard, Bridgewater, Conn., assignor to Audio Dynamics Corporation
Filed Dec. 11, 1963, Ser. No. 329,768
6 Claims. (Cl. 274—37)



1. An electro-magnetic pick-up for a phonograph record comprising a housing containing an electro-magnetic circuit including a coil structure, and terminating in a pole face positioned outside of the coil structure, a stylus mount detachably secured to the outside of said housing, said mount including a moving stylus assembly comprising a cantilever having a stylus and a magnetically charged armature, said cantilever being pivotally secured to the stylus mount so as to move the armature in substantially the plane of said pole face and outside of the coil structure in response to the engagement of the stylus with a groove in the record, and a magnet means supported on the stylus mount for energizing the armature, said magnetic means being positioned external to the coil structure, and being the sole means for energizing the electromagnetic pick-up.

3,294,406
MILL MIXER AND SPREADER WITH DISPLACEABLE TOP
George C. Wood, % Darf Corporation, Edenton, N.C.
Filed May 12, 1964, Ser. No. 366,745
1 Claim. (Cl. 275—3)



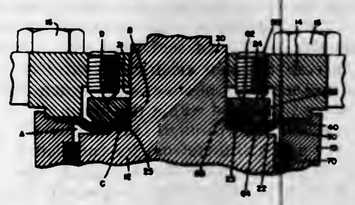
A portable material milling, mixing and spreading apparatus adapted to be loaded with material by loading means having a limited maximum elevation above the ground, said apparatus comprising a chassis having ground engaging wheels supporting the same, a substantially cylindrical housing mounted horizontally on said chassis with its longitudinal axis parallel to the plane of rotation of said wheels, said housing comprising a substantially semi-cylindrical lower housing portion fixed to said chassis and a segmentally complemental top portion, said lower housing portion including a pair of substantially semi-circular end walls having horizontally straight upper edges provided integrally with inwardly projecting horizontal beads, said beads having upper and lower edges of a convex cross-section constituting upper and lower tracks, said complemental top portion of said housing including a pair of segment-shaped end walls disposed inwardly of said beads of the lower housing portion, upper and lower pairs of concave rollers rotatably mounted exteriorly on lower regions of the end walls of said top portion, said upper and lower pairs of rollers rollingly engaging the respective upper and lower tracks of said beads whereby the top portion of the housing may be slid from its complemental position on the lower housing portion horizontally laterally to a loading position at one side of the longitudinal axis of the housing wherein the top of the lower housing portion at the other side of the longitudinal axis is open, and a material beater unit operative in said housing, said beater unit including a shaft journalled in the end walls of the lower housing portion below said beads, the size of said chassis and housing being such that the housing top portion projects above the aforesaid maximum elevation of the loading means but upon sliding of the housing top portion to the loading position the apparatus may be wheeled under the loading means for delivery of material into the partially open top of the lower housing portion.

3,294,407
FARM MACHINE TO LOAD, TRANSPORT AND SPREAD LIQUID, SEMI-SOLID FERTILIZER
John N. Vander Pol, 111 N. Front St., Mount Vernon, Wash. 98273
Filed Aug. 7, 1964, Ser. No. 388,071
1 Claim. (Cl. 275—8)



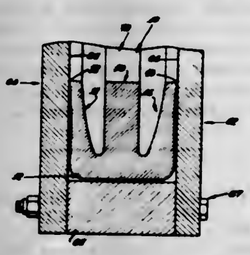
A farm machine to load, hold, transport, and spread liquid and semi-solid fertilizer comprising:
(a) a container adaptable to vehicle support;
(b) openings near the front and rear of the container;
(c) respective valve mechanisms to open and close the front and rear openings of the container;
(d) an auger rotatably supported in the bottom of the container and extended rearwardly to the rear opening and to some portions of the rear valve mechanisms, and extended forwardly terminating in shaft-form near the front opening of the container and adaptable for connection to a powered shaft of a vehicle; and
(e) a fertilizer spreader supported in part by the container about the front opening and about some portions of the front valve mechanism, and having spreader blades driven by the auger shaft.

3,294,408
AUXILIARY, EXTERNAL, PRESSURE SEAL FOR SHANK OF PLUG VALVE
Russell G. Smith, Cincinnati, Ohio, assignor to Continental Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Original application Apr. 22, 1963, Ser. No. 274,614, now Patent No. 3,235,272, dated Feb. 15, 1966. Divided and this application Aug. 2, 1965, Ser. No. 476,273
4 Claims. (Cl. 277—58)



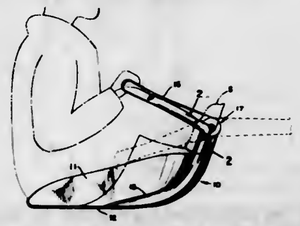
2. A rotary plug valve assembly, comprising a valve body, a cover plate secured thereon, a rotary plug in the body having a top end, a shank extending from said top end through an aperture in said plate, said plug top end having a flat surface which extends radially from and merges with the lower end of the shank by a transition fillet, an annular diaphragm seal assembly comprising at least two diaphragm discs in superimposed relation, the uppermost disc being of metal and the underlying one being nonmetallic, said assembly encircling said shank and resting adjacent to its center upon said flat surface of the plug and bearing snugly at its inner edge in said fillet, said diaphragm seal assembly being peripherally secured between the body and the cover plate, a rigid annular collar encircling the shank and having a relatively wide bottom surface overlying and bearing upon an area of the said diaphragm seal assembly and having a vertical inner surface closely opposing the shank, said bottom and inner surfaces of said collar terminating short of intersection with one another and thereby forming an annular seal receiving space around the shank, an annular compressible seal unit in said annular seal receiving space and having an upstanding inner surface engaging the shank of the plug and a second surface normal to said first surface and extending outwardly from the lower portion thereof and engaging a portion of the top side of the said diaphragm seal assembly closely adjacent to the plug and shank, and means for driving said rigid annular collar toward said top of the plug body and thereby imposing thrust against said annular seal unit and compressing the latter against said diaphragm seal assembly and against said shank to effectively prevent passage of fluid from within the valve body along the top and side surfaces of the plug and shank respectively between said rigid collar and the diaphragm seal assembly, the bearing area of said bottom surface of said collar upon the diaphragm seal assembly being radially outwardly of the seal unit and the diaphragm seal assembly below said collar bottom surface being vertically spaced from the top end of the rotary plug.

3,294,409
METAL SEAL CONSTRUCTION
Wilson A. Burtis, Inglewood, Calif., assignor to Dover Corporation, Louisville, Ky., a corporation of Delaware
Filed Feb. 20, 1963, Ser. No. 259,838
3 Claims. (Cl. 277—180)



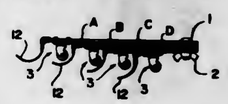
1. A metal seal construction for sealing between spaced metallic members, the seal being generally annular in form and having, as seen in transverse section and without external force applied thereto, a shape comprising:
an axially extending base portion;
a pair of arms having axially spaced roots formed integrally with the base and extending generally radially inwardly therefrom and divergent from one another,
whereby the distal ends of the arms are spaced apart substantially more than said roots, the axially outwardly facing surfaces of the arms being concave throughout substantial portions thereof from the distal ends toward the roots and the axially outermost edges of said arms constituting sealing edges in continuous line contact with said spaced metallic members;
and a reinforcing central leg formed integrally with the base intermediate the arms and extending radially inwardly from the base substantially the same distance as the radial extent of the arms.

3,294,410
SNOW SLED OR THE LIKE
Anthony J. Tomasino, Jr., 30—19 72nd St., Jackson Heights, N.Y. 11372
Filed Mar. 29, 1965, Ser. No. 443,188
1 Claim. (Cl. 280—12)



A snow vehicle comprising a substantially concavo-convex body adapted to seat a person thereon, a handle extending from the upper front edge of said body, means connecting said handle to said upper front edge whereby said handle may extend inwardly toward said body so as to be grasped by a person seated on said body, said body including upstanding, flat outwardly flared side walls at the front of the vehicle, for supporting the feet of the person and extending along the sides of the vehicle up to the rear edge thereof, said body further including an upstanding rear lip on the rear edge of said body for supporting the rear of the person thereagainst whereby said person may wedge himself between said rear lip and said side walls, said body being formed with a floor, and a centralized forward groove formed in said floor for positioning the person's legs on respective sides of said groove, said groove terminating midway of said floor.

3,294,411
LUGGAGE CARRIER
Byron L. Wolfson, 6320 Maryland Drive, Los Angeles, Calif. 90048
Filed Apr. 21, 1965, Ser. No. 449,756
5 Claims. (Cl. 280—35)

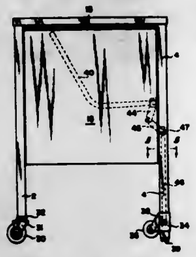


1. A luggage carrier comprising a plurality of arms each of a different length, a plurality of rolling members equal in number to the number of arms, each of said rolling members being secured adjacent one end of a different one of said arms, means pivotally securing said arms together adjacent the other end thereof, said arms being arranged one above the other in order of increasing length, each arm having a length such that it can freely rotate under the arm immediately thereabove.

3,294,412
BUSINESS MACHINE STAND
Wayne W. Good, Sturgis, Mich., assignor to Harter Corporation, Sturgis, Mich., a corporation of Michigan
Filed May 20, 1965, Ser. No. 457,395
5 Claims. (Cl. 280—43.13)

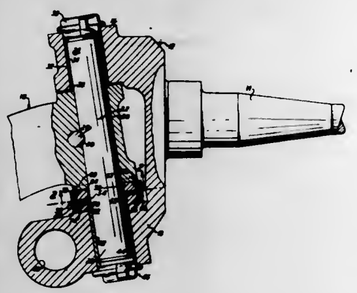
5. In a machine stand comprising a table top, a frame supporting said table top including front and rear legs mounted one at each corner of said stand, said front legs having casters revolvably mounted at the ends thereof,

the improvement wherein said rear legs are each provided with a vertically retractable caster assembly comprising a sleeve slideably mounted about said leg having means at one side thereof rotatably supporting a caster, and means provided in said machine stand for alternatively positioning said caster assembly in extended position whereby said caster supports said leg and in retracted position



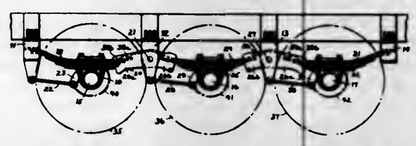
whereby the end of said leg engages the surface on which said machine stand is supported comprising a rod movably mounted within each of said legs having its lower end operatively connected to said caster assembly, lever means, and a connecting rod operatively connected at one end to an upper portion of said rod and at the other end to said lever means.

3,294,413
INTEGRAL THRUST BEARING AND KINGPIN BUSHING SEAL
Max L. Jurosek, Detroit, and Robert E. Spencer, Taylor, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,696
4 Claims. (Cl. 280—96.1)



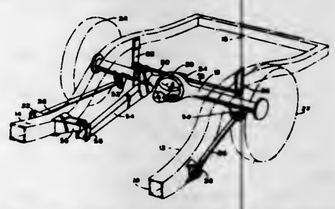
1. An axle assembly for a motor vehicle comprising an axle, a bifurcated steering knuckle embracing the end of said axle, said spindle and said axle having aligned bores therethrough, a kingpin extending through said aligned bores and forming a pivotal connection between said spindle and said axle, locking means securing said kingpin to said axle, an integral thrust bearing and kingpin bushing seal assembly interposed between a portion of said steering knuckle and a portion of said axle, said assembly comprising bearing means, said bearing means including a pair of bearing races separated by a bearing element, a one-piece resilient case surrounding said bearing means, said case having an upstanding lip, a portion of said axle having a groove, said lip being seated in said groove, sealing means being formed on a portion of said resilient case and engaging a portion of said steering knuckle, said bearing races having frustro-conical exterior edges, said resilient case having a complementary concave interior configuration adapted to surround said bearing element.

3,294,414
LOAD APPORTIONING TANDEM SUSPENSION STRUCTURE FOR VEHICLES
John N. Apgar, Sr., 644 N. Metafe, Bound Brook, N.J. 08805
Filed June 11, 1965, Ser. No. 463,305
1 Claim. (Cl. 280—104.5)



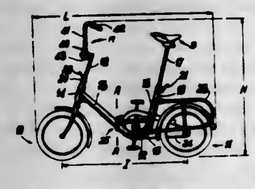
In a tri-axle tandem assembly for carrying the load at the rear end of a semi-trailer unit, the combination comprising four depending hanger brackets spaced longitudinally along each side of said semi-trailer unit, three dead non-steerable wheeled axles secured in parallel, spaced relation transverse to the longitudinal axis of said trailer unit, and located between said hanger brackets, braking means for the wheels on each axle, a leaf spring individual to and secured intermediate the ends thereof to each of said axles, the front and rear hanger brackets serving to carry the front and rear ends of the front and rear springs respectively, rocker beams pivotally mounted on the inner two brackets at each side of said semi-trailer unit, the two lever arms of said rocker beams extending towards each other and which carry corresponding ends of the leaf springs secured to the center axle being shorter than the other two lever arms of said rocker beams, each of said longer lever arms of said rocker beams including a pair of pads alternatively engageable with the corresponding ends of the leaf spring units secured to the lead and trail axles, the pads of each pair being located in spaced relation in a direction longitudinally of the leaf spring such that only the pad farthest from the pivot axis of the rocker beam engages the end portion of the leaf spring when said tandem operates under its loaded condition thereby to establish an asymmetrical division of the total load on said axles wherein the center axle carries more load than do the lead and trail axles whereas only the pad closest to the pivot axis engages the end portion of the leaf spring when said tandem operates under a no-load condition thereby to shorten the effective length of said longer lever arm and make it substantially equal to the effective length of said shorter lever arm thereby to establish a substantially symmetrical division of the loading on said axles and effect a substantially equal braking effect on all wheels.

3,294,415
LINKAGE TYPE REAR SUSPENSION SYSTEM FOR A MOTOR VEHICLE
William D. Allison, Grosse Pointe Farms, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 18, 1964, Ser. No. 419,481
3 Claims. (Cl. 280—124)



1. A vehicle suspension system having a vehicle frame, an axle housing, and suspension means constructed to connect said vehicle frame to said axle housing, said suspension means comprising a pair of suspension links each having a universal pivotal connection at one of their ends with said frame and a universal pivotal connection at their other ends with said axle housing, said suspension links being arranged in a forwardly and outwardly diverging manner, transverse link means resiliently positioning said axle housing with respect to said frame, said link means comprising a pair of links each having their inner ends pivotally connected to said axle housing and their outer ends connected to vertically extending laterally resilient leaf springs, said leaf springs being secured to said frame, a torque arm constructed to transfer brake and acceleration torque from said axle housing to said frame, a pair of spaced apart resilient connection means joining said torque arm to said axle housing, shackle means interconnecting one end of said torque arm and said frame, said suspension means permitting said vehicle frame to move laterally with respect to said axle housing whereby one end of said axle housing is moved forwardly and the other end of said axle housing is moved rearwardly to provide an understeer effect.

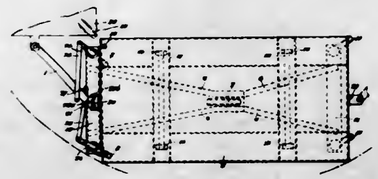
3,294,416
FOLDING TYPE BICYCLE
Guido Carnielli, 28 Piazzale Luigi di Savoia, Milan, Italy
Filed Jan. 6, 1965, Ser. No. 424,889
Claims priority, application Italy, Jan. 7, 1964, 273/64
5 Claims. (Cl. 280—278)



1. A portable folding type bicycle comprising a framework divided into a fore section to which a steerable assembly including a front wheel and a handle-bar is rotatably secured, a rear section to which a saddle seat, a rear wheel and pedal and transmission means to drive said rear wheel are secured, and hinge means connecting said sections, characterized in that said framework fore section comprises a first forwardly inclinded straight tubular component, and the said rear section comprises a middle portion and a rear upwardly directed framing to support said rear wheel and connected to said rear portion at vertically spaced locations thereof, and in that said hinge means is located between said first component and said middle portion of said other component and includes coabutting plate parts secured to said fore and rear section of framework, said plate parts having a hinge connection formed at a location laterially spaced from the plane of symmetry of said framework, locking means located at an opposite lateral spacing from said plane to releasably connect to each other said plate parts at their ends far from said hinge connection, and slanting abutting faces on said plate parts to induce a transverse pull on said hinge connection upon locking of said locking means.

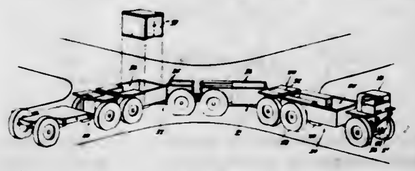
3,294,417
TRAILER WITH SELECTIVELY STEERABLE CASTORS
Adrian Anthony Cecil March, Hartfield, England, assignor to W. C. Youngman Limited, Crawley, England
Filed July 14, 1964, Ser. No. 382,588
Claims priority, application Great Britain, July 16, 1963, 28,138/63
12 Claims. (Cl. 280—408)

1. A vehicle for coupling in trains, said vehicle having a chassis, two selectively self aligning or direction controlling supporting means at the front of said chassis, in lateral spaced relation, two self aligning supporting means at the rear of said chassis in lateral spaced relation, a towing point and a hitch point fixed relatively to the longitudinal axis of the vehicle in plan view respectively at the front and rear of said chassis, a mounting on said chassis disposed substantially central between said towing point and hitch point, lateral movement restraining means in said mounting, said mounting constructed and arranged to permit movement of said restraining



means towards and away from the ground, said restraining means by contact with the ground resisting movement of said chassis in a direction at right angles to a line joining said towing point and said hitch point and providing support of said chassis between said front and rear supporting means, means for urging said restraining means towards the ground, a drawbar pivoted to said towing point and linkage connecting said drawbar to said self aligning supporting and direction controlling means.

3,294,418
ARTICULATED MODULAR VEHICLE
Tommy A. Middlesworth, Hinsdale, Jack R. Findley, Downers Grove, and Richard R. Steingas and William H. Knapp, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Original application Mar. 8, 1962, Ser. No. 178,294, now Patent No. 3,246,714, dated Apr. 19, 1966. Divided and this application Sept. 14, 1965, Ser. No. 510,110
4 Claims. (Cl. 280—408)



3. A four-point hitch for intercoupling the rear portion of a leading vehicle with the front portion of a trailing vehicle, comprising:

a pair of lower link assemblies, each pivotally coupled at one end to one of said vehicles and pivotally coupled at the other end to the other of said vehicles, and each having an intermediate portion;

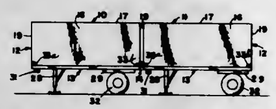
actuator means, having one portion coupled to one of said vehicles and another portion coupled to said intermediate portions of the lower link assemblies;

means for effectively locking said actuator means in a reference position, thereby to correspondingly maintain each of said lower link assemblies in a reference position substantially parallel to the ground plane;

a pair of upper link asemblies each coupled between said vehicles, each upper link assembly comprising a sleeve member for allowing relative displacement between the extremities of each upper link assembly;

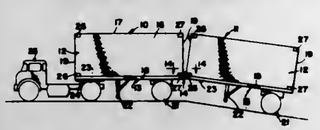
and means in each sleeve member for selectively locking the extremities of the upper link assemblies, thereby to maintain a constant distance between the extremities of the upper link assembly.

3,294,419
TANDEM CONTAINER CONNECTING ARRANGEMENT
John J. Martin, Westberly, Pa., and Robert A. Hitch, Milford, N.J., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,443
8 Claims. (Cl. 280—415)



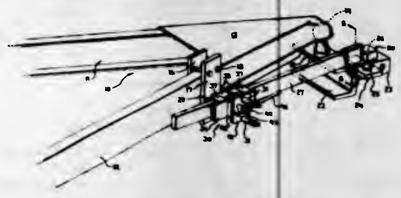
1. An arrangement for coupling two semi-trailers in tandem, comprising a first semi-trailer and a second semi-trailer, said first and second semi-trailers each including a wheeled chassis, frameless van size cargo bodies removably mounted thereon, and latching means for fastening said cargo bodies on the respective ones of said wheeled chassis, said cargo bodies each having corner brackets at the lower ends thereof, coupling means extending between said lower bracket means, said coupling means including rigid bar means insertable into said lower corner bracket at adjacent ends of said cargo bodies of said first and second semi-trailers and engageable with tie bar means formed in said lower corner brackets, said lower corner bracket tie bar means and coupling means being formed to permit limited rocking movement in a vertical plane of said first and second semi-trailers and means detachably fastening said coupling means within said lower corner brackets.

3,294,420
COUPLING ARRANGEMENT FOR TANDEM AXLE SEMI-TRAILERS
John J. Martin, Westberly, Pa., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,563
4 Claims. (Cl. 280—415)



1. An arrangement for coupling two semi-trailers in tandem comprising a first semi-trailer and a lengthwise spaced second semi-trailer, said first semi-trailer and said second semi-trailer each including a chassis and a substantially frameless rectangular cargo body detachably mounted thereon, said container cargo bodies each having a set of forward corner brackets at the lower corners of the front wall thereof and a set of rear corner brackets at each of the lower corners of the rear wall thereof, said front corner brackets each being of substantially box like construction having an interior chamber, a front corner bracket opening formed along the exterior end wall face of said front corner bracket communicating with said interior chamber, said front corner bracket being defined at the lower end thereof with a retaining bar, said rear corner brackets each being of box like structure and having an interior chamber, a rear corner bracket opening on the exterior end wall face of said rear corner bracket and communicating with said interior chamber, a clamping bar defining the lower end of said front corner opening, said openings in said corner brackets being in substantially transverse and longitudinal alignment for tandem attachment of semi-trailers; coupling means connecting said semi-trailers for tandem operation including a tie member having an abutment means insertable through said front corner bracket opening for engagement with said retaining bar, said hook member including a lengthwise spaced hook means insertable through said rear corner bracket opening and engageable with said clamping bar, and locking means movably disposed over said hook member between the adjacent exterior faces of said front and rear corner brackets of said first and second semi-trailers for retaining said abutment means and said hook means in engagement with said retaining bar and clamping bar, respectively.

3,294,421
SWAY CONTROL MEANS FOR TRAILERS
Martin H. Mathisen, Sun Valley, Calif., assignor to Eaz-Lift Spring Corporation, Sun Valley, Calif., a corporation of California
Filed Apr. 15, 1966, Ser. No. 549,107
17 Claims. (Cl. 280—446)



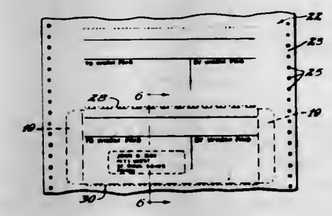
1. A sway controller between a towed vehicle and a towing vehicle wherein said towed vehicle is provided with a trailer tongue member and said towing vehicle is provided with a trailer hitch member comprising a bar mounted for universal pivotal movement on one of said members, brake shoe means mounted for universal pivotal movement on the other of said members in frictional engagement with said bar, and means for controlling the degree of frictional engagement between said bar and brake shoe means.

3,294,422
FOLDER FOR DATA CHARTS
Dragoljub Simonović, Saarbrucken, Germany, assignor to Firma GTV Gesellschaft fur Transport- und Verkehrswesen m.b.H., Saarbrucken, Germany
Filed July 16, 1965, Ser. No. 472,478
Claims priority, application Germany, July 23, 1964, G 41,175
4 Claims. (Cl. 281—1)



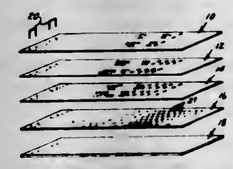
1. A folder for data charts or the like comprising two cover plates hinged along one edge, at least one of the plates being made of transparent material, portions on the inner and outer faces of the plates having markings for data and information to be entered, and a data chart supported between the cover plates of the folder, each of the cover plates being formed with an aperture with part of the material of the plate forming a tab comprising the partially removed material folded inwardly to overlie the inner face of the plate, and the apertures in the respective plates being aligned and the outer faces of the tabs being in opposed relation to contact each other.

3,294,423
CONTINUOUS ENVELOPES
Frank X. Mudd, Jr., Palestine, Ill., assignor to Curtis 1000, Inc., Ramsey, Minn., a corporation of Minnesota
Filed June 25, 1965, Ser. No. 466,959
10 Claims. (Cl. 282—25)



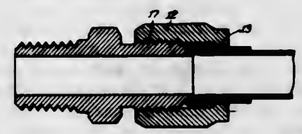
1. In combination, an elongated carrier sheet having groups of indicia on one surface thereof recurring at regularly spaced intervals,
an envelope detachably secured to the opposite surface of said carrier sheet rearwardly of each group of indicia on said one surface thereof, and
a duplicate form within each said envelope having indicia thereon corresponding in arrangement to that appearing in each said group on said carrier sheet,
said duplicate form being of a material capable of producing visible indicia on discrete areas thereof when subjected to pressure in said discrete areas,
whereby information typed on said carrier sheet among the indicia in one of said groups will be visibly duplicated on said duplicate form.

3,294,424
BALLOT OR THE LIKE
David D. Mathews, 98 Ford Road, Carmel Valley, Calif. 93924
Filed Oct. 12, 1965, Ser. No. 495,274
4 Claims. (Cl. 283—63)



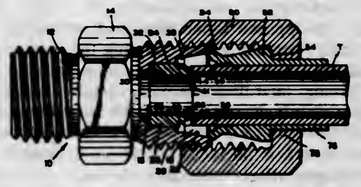
1. A ballot or the like usable with a stylus and a computer to tally choices, comprising:
a plurality of vertically stacked cards that are fastened together along a common side;
a plurality of stylus-receiving perforations formed in said cards, said perforations being vertically aligned when said cards are flat;
choice-offering indicia printed on the upper surfaces of said cards adjacent each of said perforations;
a tally sheet on the bottom of said cards and fastened thereto;
and a plurality of choice selection-indicating elements on said tally sheet arranged below said perforations with each of said choice selection-indicating elements being keyed to a single one of said choice-offering indicia whereby said stylus is insertable through said perforations into engagement with said choice selection-indicating elements to indicate choices whereafter said tally sheet is processed by said computer to tally said choices.

3,294,425
FLARED FITTING
George E. Franck, Morton Grove, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Aug. 27, 1964, Ser. No. 392,397
5 Claims. (Cl. 285—334.5)



1. A tube fitting for connection to a tube having a flared end, comprising:
a body member having an outer end provided with an exterior, axially outwardly narrowing, frusto-conical, flare surface for sealing engagement by said flared end of the tube, and a bore opening coaxially through said surface;
a nut member having a bore including an axially inner, cylindrical surface and an axially outer frusto-conical cam surface narrowing axially outwardly at a small angle, said body and nut members having cooperating thread means for coaxially urging said cam surface toward said flare surface as an incident of relative rotation therebetween; and
an annular sleeve member in said nut member bore and having an axially inner, frusto-conical pressure surface, a radially outer, frusto-conical axially outwardly widening frusto-conical stop surface concentrically juxtaposed to said cylindrical surface of the nut member bore, an annular, radially outwardly opening groove including a frusto-conical, axially outwardly narrowing, axially inner surface defining with said stop surface an annular edge, a first transverse axially outer surface, and a rounded radially inner surface extending between said axially inner and outer surfaces of said groove, and a second transverse axially outer surface spaced axially outwardly of said first transverse surface to define therebetween an annular, radially outwardly projecting flange, the inner diameter of the unconstricted sleeve being slightly greater than the outer diameter of the tube whereby forceful axially inward movement of said nut member cam surface against said flange causes said stop surface to have an axially outwardly narrowing configuration in abutment with said cylindrical nut member surface.

3,294,426
SELF-FLARING TUBE COUPLING
Gilbert T. Lyon, St. Clair Shores, Mich., assignor to L & L Manufacturing Company, St. Clair Shores, Mich., a corporation of Michigan
Filed Apr. 19, 1965, Ser. No. 449,037
6 Claims. (Cl. 285—334.5)



1. A self-flaring coupling comprising: a coupling body having a flow passage opening outwardly through a counter-bore in an externally threaded end of the body, said

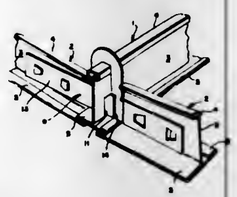
counterbore having a gradually converging conical throat extending axially inwardly from a steeply tapering conical mouth of the counterbore toward the bottom thereof and terminating in a substantially cylindrical wall at the bottom of the counterbore, a hollow tube-flaring cone coaxial with the counterbore and projecting axially outwardly from the bottom of the counterbore in radially inwardly spaced relation from said substantially cylindrical wall to define therewith an annular flare-tube-end receiving cavity, a flaring sleeve receivable over the end of a tube to be flared with the inner end of the sleeve having a steeply sloping surface whose radial dimension is substantially not greater than the maximum radial dimension of said steeply tapering mouth, said steeply sloping surface adapted to initially abut said steeply tapering mouth with the inside of the sleeve adjacent the inner end defining an annular gripping edge deformable into the tube upon radial inward deformation of the inner end of the sleeve, said sleeve having an annular area of reduced cross-section outwardly of said gripping edge to provide a weakened fulcrum area for contraction of the gripping edge of the sleeve, said steeply tapering mouth of the counterbore cooperable with said steeply sloping inner end of the sleeve to quickly contract said gripping edge into tube gripping relation by a bending of the sleeve in said fulcrum area during initial forcing of the sleeve against the steeply tapering mouth, and with the gradually converging throat of the counterbore during forcing of the sleeve down the converging throat providing an increasingly tighter gripping of the tube during flaring of the tube on the cone, said tube end during flaring radially extending into said annular cavity substantially filling the same and with the inner end of the sleeve disposed substantially wholly within the gradually tapering wall portion of the counterbore and squeezing the flared-tube-end axially inwardly against the inner end of said annular cavity, and nut means threadedly engaged with the externally threaded end of the coupling body and cooperating with the sleeve for urging the sleeve into the counterbore.

3,294,427
CYLINDRICAL HOLDER HAVING MEANS TO SUPPORT A HELD OBJECT COAXIALLY THEREIN
Gerald R. Hunt, Club Molino, Anaco, Venezuela
Filed Aug. 23, 1965, Ser. No. 482,336
6 Claims. (Cl. 287—1)



1. A holder of the character referred to including an elongate support comprising a pair of elongate tubular open ended support sections arranged in axial alignment and having opposed inner ends and oppositely disposed outer ends, coupling means coupling the sections together in axial alignment and for free relative rotation, said sections having laterally, normally axially aligned, work-receiving openings coextensive with their longitudinal extent and providing for free lateral access into the interior of the support, a plurality of elongate flexible, resilient work-engaging lines extending through the interior of the support in circumferential spaced relationship and normally parallel with the longitudinal axis of the support, anchoring means securing the ends of the lines to the outer end portions of their adjacent support sections, said support sections being adapted to be rotated relative to each other whereby the work engaging openings are shifted out of alignment and said lines are shifted out of parallelism to extend diagonally through the support and to establish substantial helical engagement about an elongate piece of work arranged centrally of and extending longitudinally through the support and lock means normally releasably holding the sections against relative rotation and including a part with a circumferentially disposed portion at the inner end portion of one section and engageable with a mating part at the inner end portion of the other section.

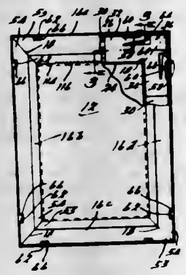
3,294,428
EXPANSION JOINT AND LOCKING CONNECTION FOR SUPPORTING GRID SYSTEMS
Robert P. Lickliter, 113 Buffalo St., and Earl Abbott, 81 Dudley Ave., both of Hamburg, N.Y. 14075, and John F. Reeves, Tonawanda, N.Y.; said Reeves assignor to said Lickliter and said Abbott
Filed Aug. 7, 1963, Ser. No. 300,442
5 Claims. (Cl. 287—189.36)



1. An expansible connection for supporting grid systems and the like comprising a support member, a connector for connecting said support member to another support member, and means securing said connector to said support member for relative movement therebetween lengthwise of said support member, said means including a shim of fusible material clamped between said connector and said support member and normally frictionally restraining said support member and said connector against relative movement, said shim fusing upon a predetermined rise in ambient temperature, thereby providing sliding clearance between said support member and said connector and lubricating the sliding surfaces thereof, wherein said securing means also permit relative vertical movement between said support member and said connector.

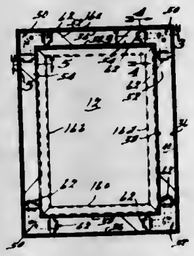
3,294,429
DISPLAY BOARD ASSEMBLY AND PARTS THEREOF
Nickolas J. Halip, 1907 Arras Place, Windsor, Ontario, Canada
Filed Mar. 30, 1964, Ser. No. 355,711
9 Claims. (Cl. 287—189.36)

1. In a display panel framing, adjacent framing members forming mitered joints with each other, each of said members having a frontal wall portion defining the front face of said framing and having other wall portions including generally paralleling side walls connecting with said frontal wall portion and definings a slideway therewith for receiving a portion of a coupling element, a coupling element for coupling the adjacent framing members forming each joint and having free ended leg portions slideably engaged in the said slideways of said framing members and means immobilizing said leg portions in said slideways said means comprising for at least one leg portion of each coupling element, an elongated resilient locking finger carried by this leg portion and extending lengthwise thereof in a direction away from the free end thereof, said finger having a locking portion normally projecting away from this leg portion and resiliently biased into releasable locking engagement with a locking abutment on one of said other wall portions of the portion of the framing member receiving this leg portion



and said finger being positioned inwardly of the free end of this leg portion whereby this end is adapted to freely enter said slideway during assembly without initial displacement of the locking portion of the locking finger.

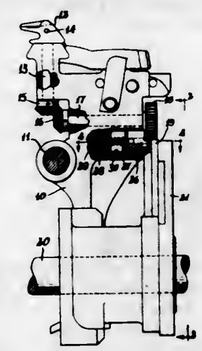
3,294,430
DISPLAY BOARD ASSEMBLY AND PARTS THEREOF
Nickolas J. Halip, 1907 Arras Place, Windsor, Ontario, Canada
Filed Mar. 30, 1964, Ser. No. 355,712
15 Claims. (Cl. 287—189.36)



1. A corner coupling member for display panel framing comprising a pair of intersecting leg portions, a recess in each leg portion and a resilient locking element of generally T shape secured to each of said legs on one face thereof, said locking elements each comprising a head portion forming the head of said T and a tongue portion forming the leg of said T and by which said elements are secured to said leg portions said tongues extending with a reverse bend through said recesses and terminating in said head portions adjacent the opposite faces of said legs.

3,294,431
KNOTTER LOCK FOR TYING MACHINE
Douglas A. Gregory and Elton E. Berry, Chicago, Ill., assignors to R. H. Bunn Company, Chicago, Ill., a corporation of Illinois
Filed May 4, 1965, Ser. No. 453,100
6 Claims. (Cl. 289—18)

1. In combination, a frame, a rotatable knotter beak on the frame, intermittent drive means for the beak, including a pinion gear, a shaft rotatable in the frame and driven by the pinion gear, means connecting the shaft to the beak, and an interrupted gear adapted to engage and drive the pinion gear; a plunger reciprocable in the frame toward and away from the pinion gear, a tooth on the plunger adapted to enter a space between adjacent teeth on the pinion gear, resilient means on the frame and bearing against the plunger to urge the plunger against the



pinion gear, and means movable with the interrupted gear to engage and move the plunger away from the pinion gear.

3,294,432
RELEASABLE LATCH FOR DOORS
Ernest Pascucci and Julio Pascucci, Meriden, Conn., assignors to The Miller Company, Meriden, Conn., a corporation of Connecticut
Filed Mar. 24, 1964, Ser. No. 354,406
6 Claims. (Cl. 292—122)



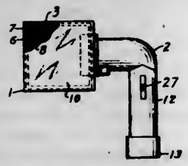
1. A releasable latch for a closure member hinged to a supporting member and movable to open and closed positions comprising an operating arm pivotally carried by one member and having a latching element on one end thereof, spring means connected to said arm to yieldably maintain it in a predetermined position, a cooperating latching cam carried by the other member, said latching cam having a pair of angularly disposed camming surfaces each intersecting and inclined in the same direction relative to a line defined by the pivotal attachment of said arm to said one member and said latching element when the arm is in said predetermined position, said surfaces diverging outwardly and downwardly relative to said arm, said latching cam further having a concave camming surface joining the outer ends of said pair of surfaces, a stop carried by said latching cam at the intersection of said concave surface with one of said pair of surfaces farthest from said latching element, and a second stop spaced downwardly from said concave surface to engage said latching element during movement of said members one toward the other, said latching element leaving said second stop and engaging the first stop upon reversal of the relative movement of said members, said arm is being carried by a bracket secured to said one member, said bracket having a slotted opening therein pivotally retaining said arm and said spring means surrounding said arm and engaging the latter on one end and said bracket on the other end.

3,294,433
MAGNETIC HOLDING UNIT
Kurt H. Granzow, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Dec. 17, 1964, Ser. No. 418,977
3 Claims. (Cl. 292—251.5)



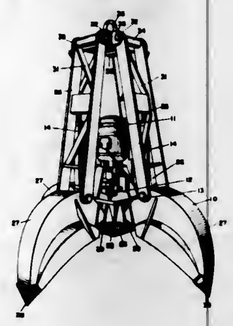
1. A magnetic holding unit comprising: a housing of non-magnetic material, including a ceiling means and sidewall elements extending from said ceiling means to define therewith a generally rectangular cavity for receiving magnet means therein, said ceiling means having surface means acting as abutment means to arrest movement of the magnet means in one direction and said sidewall elements having respectively forwardly and rearwardly disposed shoulders extending from the front and back edges of said elements generally parallel to and confronting said ceiling means spaced apart therefrom to act as abutment means for arresting movement of said magnet means in the opposite direction; a magnet means in said cavity having a main body portion dimensioned to reside loosely in said cavity generally spaced apart from said sidewall elements for shiftable movement relative to said housing, said magnet means having a first plurality of abbreviated arms disposed generally forwardly of said front edges between said ceiling means and said forwardly disposed shoulders and laterally beyond said sidewall elements to abut said front edges for arresting movement of said magnet means in one transverse direction and said magnet means further having a second plurality of abbreviated arms disposed generally rearwardly of said back edges between said ceiling means and said rearwardly disposed shoulders and laterally beyond said sidewall elements to abut said back edges for arresting movement of said magnet means in the opposite transverse direction, said first arms being spaced from said second arms by a distance greater than the span between said front and back edges, whereby said arms, said edges, said shoulders and said ceiling means coact to retain said magnet means shiftably in said housing.

3,294,434
GOLD LEAF PLACING DEVICE
William L. Sisa, 25706 Alto Court, San Bernardino, Calif. 92404
Filed Feb. 8, 1965, Ser. No. 431,120
4 Claims. (Cl. 294—64)



1. A lifter means for holding thin leaves or sheets and transferring them to a surface; the lifter means having a plurality of walls forming a head and enclosing an air chamber, one of the walls having a perforated screen against which a transfer leaf can be held, an opening in another wall of the head, a tube having one end swivelly connected in said opening and which tube extends laterally with respect to said screen, an air exit means associated with said tube, a handle means connected to the tube and extending therefrom at an angle, suction means associated with the tube so that air can be forced through the screen into the chamber and hence through the air exit means and thus hold a leaf to the screen until the leaf is released to a suitable surface.

3,294,435
HYDRAULICALLY ACTUATED GRAPPLE
Elwood R. Johnson, Erie, and Merritt Downing, Fairview, Pa., assignors to Erie Strayer Company, Erie, Pa., a corporation of Pennsylvania
Filed May 24, 1965, Ser. No. 458,017
7 Claims. (Cl. 294—88)



1. A grapple comprising
an oil tank,
spaced jaws swingably attcabed to said oil tank and having a point spaced from said oil tank,
an upper support,
spaced links having an upper and a lower end,
the upper end of each said spaced link being swingably connected to said upper support,
the lower end of each said spaced link being swingably attached to a said spaced jaw between said oil tank and said point,
spaced hydraulic cylinders,
each said hydraulic cylinder being attached to said oil tank,
a piston in each said hydraulic cylinder having a piston rod attached thereto,
each said piston rod being attached to said upper support,
a pump supported on said oil tank between said links and said upper support,
motor means connected to said pump,
and hydraulic pipe means connecting said pump to said oil tank and to said hydraulic cylinders.

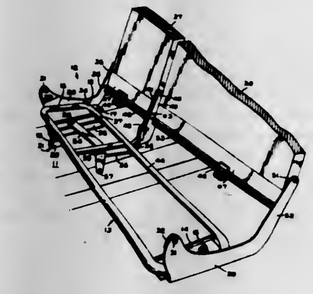
3,294,436
VEHICLE BODY TRIM SUPPORT
Douglas T. Ball, Warren, Donald A. Street, Royal Oak, and Wallace S. Wagner, Farmington, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,221
4 Claims. (Cl. 296—28)

1. In combination with a vehicle body having flange structure, a support member having a body portion and a pair of spaced return bent legs located in spaced relationship to one side of said body portion to provide spaced pockets receptive of said flange structure to mount said support member thereon, said member including a second return bent leg intermediate said first legs and in spaced relationship to another side of said body portion to provide a second pocket opening in the same direction as said first pockets and receptive of vehicle body trim, and a molding member having means thereon cooperating with means on



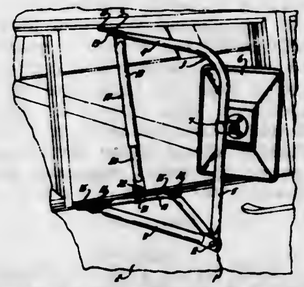
one of said legs to mount said molding member on said support member in concealing relationship thereto and to said trim.

3,294,437
PIVOTING SECOND SEAT
Charles Belsky and Willard J. Hershey, Detroit, Mich., assignors to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 11, 1965, Ser. No. 424,503
3 Claims. (Cl. 296—65)



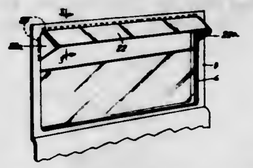
1. In a vehicle body having a supporting floor structure;
a seat structure having a horizontal seat frame extending transversely of said vehicle body;
means supporting said seat frame on said floor structure for swinging movement over said floor structure about a substantially vertical pivot axis located at one end of said seat frame;
a seat back assembly;
means pivotally supporting at least a part of said seat back assembly superjacent the rear edge of said seat frame;
said seat back assembly part being forwardly swingable over said seat frame on said pivot means;
and drive means interposed between said seat frame and floor structure comprising a link extending longitudinally of said seat frame for movement in a horizontal plane, said link being coupled at one of its ends to said floor structure intermediate the ends of said seat frame and at its other end to said seat frame intermediate said one end and the other end of said seat frame, and a connecting rod extending between said link means and said swingable seat back assembly part;
said connecting rod being coupled to said link means intermediate the ends of the latter;
said drive means being operative upon said seat back assembly part being forwardly swung on its pivot means to swing said link means about its coupling to said floor in a direction to swing said seat structure about said vertical pivot axis to a forwardly angularly displaced position relative to its transversely extending position.

3,294,438
REMOVABLE MIRROR ASSEMBLY
William Walter Carson, Jr., and William J. Murphy, Wauwatosa, Wis., assignors to Velvac, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 20, 1964, Ser. No. 405,169
5 Claims. (Cl. 296—152)



1. In combination with a vehicle having a window and having a molding bordering the window, a mirror assembly, comprising a generally L-shaped frame including a horizontal section and a vertical section, a mirror adjustably connected to the vertical section, a first mounting foot connected to the inner end of said horizontal section and disposed in bearing engagement with the portion of the molding bordering the upper edge of the window, a second mounting foot connected to the lower end of said vertical section and disposed in bearing engagement with the molding bordering the lower edge of the window, and a third mounting foot connected to the lower end of said vertical section and disposed in bearing engagement with the molding bordering the lower edge of said window, said second and third mounting feet being disposed in spaced relation and lying in the same horizontal plane whereby said mounting feet provide a three point suspension for said mirror assembly with respect to the vehicle, said first mounting foot being generally L-shaped and including an upwardly extending flange and said second and third mounting feet being generally L-shaped and having downwardly extending flanges, and resilient means for urging said first mounting foot in a direction away from said second and third mounting feet to thereby bias the feet into engagement with said molding.

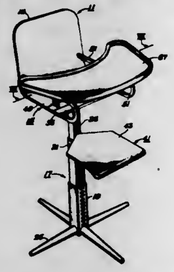
3,294,439
AUTOMOBILE WINDOW SHIELD AND CLIP ASSEMBLY
Asa R. Phillips, Jr., Atlanta, Ga. (3571 Broad St., Chamblee, Ga. 30005)
Filed Mar. 1, 1965, Ser. No. 436,011
4 Claims. (Cl. 296—152)



1. For an automobile door having a window frame, a window guiding channel disposed inwardly of said frame and having a portion which extends horizontally along the top of said frame, the opening of said horizontal channel being restricted to provide an elongated throat which opens into a lateral channel enlargement, the opposite junctions of said throat and enlargement forming parallel internal channel shoulders, and a channel liner in said channel; a window shield for outwardly overhanging the upper horizontal boundary of said

window, in combination with resilient shield retaining clips engageable in said channel, each of said clips being substantially U-shaped in cross-section and provided along one longitudinal edge with an anchoring flange insertable in said enlargement and engageable with one of said shoulders, its opposite longitudinal edge being provided with downwardly directed spaced legs normally spring-biased outwardly toward the adjacent wall of said channel throat, said legs terminating at their lower extremities in outwardly curved feet adapted to resiliently underlie the inner horizontal boundary of said frame, said shield being bounded along one longitudinal edge by a complementary curved ledge adapted for interposition between said spring-biased feet and frame boundary, whereby said shield is secured against lateral displacement by its engagement, and means engageable with the other of said shoulders for locking said clip in said channel.

3,294,440
UNIVERSAL CHILD'S CHAIR
Leonard J. Broder, 207 Skyline Circle, Apt. 37, Grand Prairie, Tex. 75050
Filed Dec. 1, 1965, Ser. No. 510,741
7 Claims. (Cl. 297—150)



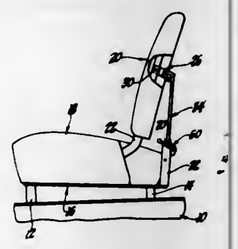
1. A universal child's chair comprising:
(a) a chair structure including seat and back members and support means therefor;
(b) means for varying the depth of the seat of said chair structure;
(c) a tray carried by said chair structure; and
(d) means releasably connecting said tray with said chair structure to enable selectivity in both the horizontal and vertical locations of said tray.

3,294,441
FLAT SPRING CLAMPING ASSEMBLY FOR CHAIR BACK
Aurelio Ciuffini and Phillip J. Williams, Bridgeport, Conn., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed May 20, 1965, Ser. No. 457,408
6 Claims. (Cl. 297—296)



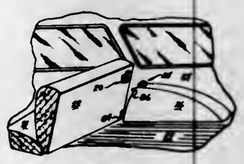
1. For use in connecting a flat spring member carrying a chair back to a U-shaped chair iron carrying a chair seat, the improvement comprising, a U-shaped bracket with the side legs of said bracket spaced for overlapping engagement with the side legs of said chair iron and opposite edges of said spring member, and a single bolt passing through the back leg of said iron, spring member and the back leg of said bracket for preventing longitudinal movement of said bracket, member and iron relative to each other and enabling said bracket to be clamped to said iron with said member held engaged against and between both said back legs, the side legs of said bracket spaced for engagement with the respective opposite edges of said spring member for restraining said member against rotation relative to the axis of said bolt.

3,294,442
ADJUSTABLE BACKREST SUPPORT
Hyland C. Flint, 3551 Walnut Lake Road, Rte. 2, Orchard Lake, Mich. 48033
Filed Nov. 17, 1965, Ser. No. 508,228
10 Claims. (Cl. 297—298)



1. In a seat structure having a base frame and a back member pivotally secured to a seat member mounted on said base frame and a back support frame mounted on said base frame and pivotally secured to said back member and including upwardly extending support members, means for changing the angular position of said back member relative to said seat member and comprising:
bracket members mounted on said base frame and having elongated slots formed therein;
a rod extending transversely of said back member and pivotally secured in said bracket members;
and cams secured to said rod adjacent said bracket members and extending through said slots therein, said cams engaging said back support frame and being rotatable with rotation of said rod to move said back support frame and said back member between first and second angular positions relative to said seat member.

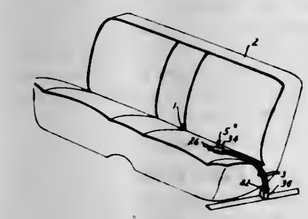
3,294,443
SEAT BACK LATCH
Ernest C. Beckman and Benard O. Anderson, Rockford, Ill., assignors to Modern Metal Products Co., Loves Park, Ill., a corporation of Illinois
Filed Mar. 22, 1965, Ser. No. 441,662
9 Claims. (Cl. 297—369)



1. A latching device especially adapted for latching a seat back to a vehicle body and comprising keeper means adapted to be secured to one of two members movable relative to each other and a latch mechanism having a latch end and a handle end generally opposite the latch end and adapted to be secured to a second of said members and including

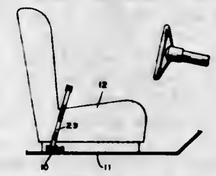
a housing having a base shaped for lying generally contiguous to said second member, generally opposite openings adjacent the latch end and handle end of the latch mechanism, an aperture defining a catch-retaining shoulder in the side opposite said base and adjacent the latch end, and a pivot disposed inside the housing adjacent the handle end,
a latch bolt slidably mounted in the housing and having a nose portion projectible from the housing to a latched position for engaging the keeper, handle means for retracting the latch bolt from the latched position to a retracted position, a catch portion extending substantially upright from the side adjacent the aperture for engaging with the catch-retaining shoulder when the latch bolt is in retracted position, a portion cut away adjacent the base for forming a surface slidable on the pivot and a spring engaging edge adjacent the latch end, and a stop means adjacent the handle end for engaging the housing when the latch bolt is in extended position thereby stopping projection of the latch bolt,
and spring means disposed adjacent the base and interposed between the pivot means and the spring-engaging edge for projecting the nose portion from the housing when the catch portion is disengaged from the catch-retaining shoulder, and so constructed and arranged that force applied to the handle to retract the latch bolt provides a couple with the force applied by the spring means whereby the latch bolt when retracted pivots on the pivot to force the catch portion into the aperture to engage the catch-retaining shoulder.

3,294,444
SEAT BELT FOR VEHICLES
Franklin C. Anderson, 557 Ridge Road, Owatonna, Minn. 55060
Filed June 18, 1964, Ser. No. 376,191
6 Claims. (Cl. 297—385)



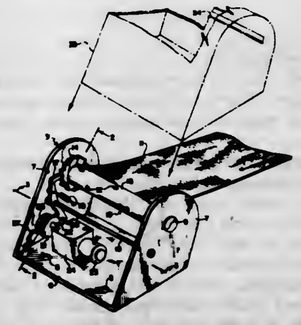
1. A passenger safety belt for vehicles comprising:
(a) a ring element for securement to the vehicle adjacent one side of a passenger position,
(b) an elongated belt for securement to the vehicle adjacent the other side of a passenger position, and
(c) a releasable latch member carried by said elongated belt and connectable to said ring element, said latch member comprising:
(1) a casing member,
(2) a pair of jaw elements having outer jaw end portions for releasable connection to said ring element and also having inner lever end portions,
(3) means pivotally connecting said jaw elements together for opening movements of the outer jaw end portions upon the squeezing together of said inner lever end portions,
(4) means biasing said outer jaw end portions toward a normally closed position, and
(5) means releasably mounting said jaw elements on said casing member.

3,294,445
SEAT BELT RETRACTOR
Dennis N. Tino, Wayne, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,465
9 Claims. (Cl. 297—388)



1. In a seat belt retractor mechanism,
a support,
a reel means journalled on said support for rotation about a fixed axis of rotation,
a seat belt section secured at one end thereof to said reel means and adapted in fully retracted position to be wound thereon,
shaft means coupled to said reel means coaxially for rotation therewith as said seat belt section unwinds as it is pulled from retracted to extended position,
clutch means coaxially coupled to said shaft means for limiting movement of said reel means in belt extending direction,
and clutch action nullifying means coaxially mounted on said shaft means operative during movement of said belt section from fully retratced to extended position,
said clutch action nullifying means moving longitudinally of said shaft means to an inoperative position upon release of said belt section after having been pulled to a desired extended position,
said clutch means becoming operative upon said clutch action nullifying means becoming inoperative to prevent further extension of said belt section.

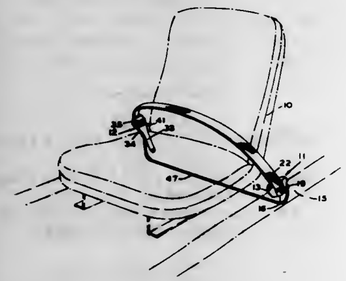
3,294,446
CONTROLLING MEANS FOR VEHICLE SEAT BELTS
John G. Fontaine, 2817 NE. 26th Court, Fort Lauderdale, Fla. 33311
Filed Jan. 5, 1965, Ser. No. 423,416
4 Claims. (Cl. 297—388)



1. Control means for vehicle seat belt sections that are adapted to have companion engagement with seat belt sections in a vehicle seat that comprises a rigid U-shaped frame, having a flat bottom and upstanding side walls, the bottom being anchored to a floor area of the vehicle at each end of the seat, a cover that is adapted to overlie the frame and to be fixed thereto, the cover in a forward wall being slotted to receive a seat belt section, the frame being provided with a winding drum that is journaled in the end

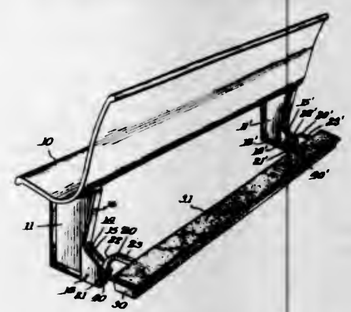
walls of the frame, the seat belt at its inner terminal end being fixed to the drum, a winding spring fixed upon the drum at one end whereby to bias the drum in a direction to wind the seat belt thereon, the winding drum at each end being provided with ratchets, pawls for engaging the ratchets and with the pawls being anchored upon a cross shaft that extends across the frame and with the pawls being biased in one direction to engage the ratchets by spring devices, a drive motor fixed upon the bottom of the U-shaped frame and having the slot in its forward wall to a shaft that is journaled in one side wall of the frame, the shaft having fixed thereon a cam that engages one of the pawls and in one position of the cam, the pawls are released from the ratchets and in a different position of the cam, the pawls are biased to engage the teeth of the ratchet to lock the drum and the seat belt in a predetermined position of extension, a second cam fixed upon the shaft of the motor for actuating a micro-switch that is fixed to one side wall of the frame and with the last named cam controlling the micro-switch to energize the motor and a push button that is disposed in a position adjacent to the seat of the vehicle whereby to actuate the motor and the micro-switch to control the motor for a predetermined number of rotations whereby the actuation of the push-button releases the pawls with respect to the ratchets to permit the seat belt section to be extended for coupling engagement with a companion seat belt section carried by the vehicle seat.

3,294,447
SEAT BELT RETRACTOR
Robert W. Riley, Taylor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,787
4 Claims. (Cl. 297—388)



1. In combination:
a seat belt adapted to be extended across a vehicle seat, said seat belt having a buckle element at one end;
a reel unit adapted to be located at one side of a vehicle seat,
said reel unit comprising reel means to which the other end of said seat belt is attached,
said reel means being rotatably journalled for unwinding of said belt therefrom to extended condition and winding of said belt thereon to retracted condition,
and control means on said reel unit comprising a ratchet plate coupled to said reel means for rotation therewith and pawl means engageable with said ratchet plate to prevent rotation of said reel means in unwinding direction;
a buckle receiving means adapted to be located at the other side of the vehicle seat to receive said buckle element in extended condition of said belt;
transmitting means extending between said reel unit and buckle receiving means;
and a first spring means urging said pawl means into engagement with said ratchet plate,
a second spring means forming a part of said transmitting means effective to negate the force of said first spring means in retracted condition of said belt,
the force of said second spring means being negated by said transmitting means upon engagement of said buckle element with said buckle receiving means whereby said first spring means urges said pawl means into engagement with said ratchet plate to prevent unwinding of said reel means and extension of said belt.

3,294,448
KNEELING RAIL FOR CHURCH PEWS
Joseph Palma, Jr., O-North 487 Willow Road, Wheaton, Ill. 60187
Filed June 21, 1965, Ser. No. 465,424
13 Claims. (Cl. 297—426)

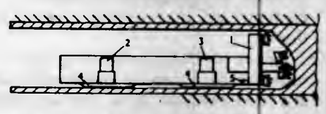


1. In a kneeler for church pews the combination comprising, leg members pivotable between raised and lowered positions, said leg members having inner and outer end portions, said inner portion at an angle to and extending below said outer portion of said leg members, pivot means at the extremity of the inner end portions of said leg members, a kneeling rail secured to the outer end portions of said leg members, and cantilever-support means for engaging the inner portion of the angle of said leg members in lowered position including rigid members spaced outwardly from said pivot means and below the inner end portions of said leg members when the latter are in lowered position.

ERRATUM

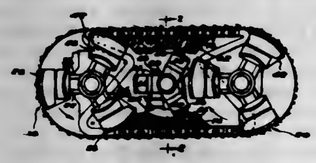
For Class 297—427 see:
Patent No. 3,294,451

3,294,449
APPARATUS FOR AUTOMATICALLY CONTROLLING THE STEERING OF A MINERAL MINING MACHINE
Dennis Hartley, Stanwell, Middlesex, and Laurence Reade Cooper, Datchet, England, assignors to Coal Industry (Patents) Limited, London, England
Filed Aug. 6, 1962, Ser. No. 215,099
Claims priority, application Great Britain, Aug. 14, 1961, 29,242/61
5 Claims. (Cl. 299—1)



1. Apparatus for automatically controlling the steering of a mineral mining machine comprising an extensible hydraulic jack connected with the machine and controlling the direction of travel of the machine in a direction perpendicular to the plane of a mineral seam, means for producing a first electrical signal having a characteristic dependent on the extension of the jack, a source of electromagnetic radiation mounted on the machine and directing radiation into material of the seam at a location adjacent the machine, a radiation detection device carried by the machine, the device being responsive to the amount of radiation back-scattered by said material adjacent the machine and producing a second electrical signal having a characteristic dependent on the amount of back-scattered radiation received by the device, an electrical discriminating means connected to be fed with both said signals and producing from them an output signal having a characteristic indicative of the steering correction required to restore the machine to a described direction of travel in the mineral, and an electro-hydraulic valve connected to receive the output signal and responsive to the output signal and controlling the supply or exhaust of hydraulic fluid to or from the jack to effect steering of the machine.

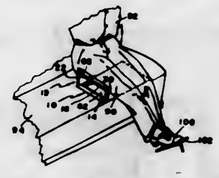
3,294,450
BORING TYPE CONTINUOUS MINER HAVING THREE BORING HEADS AND METHOD OF MINING
Jerry Karlovsky, Jr., Nashville, Ill., assignor to National Mine Service Company, Pittsburgh, Pa., a corporation of West Virginia
Filed Dec. 2, 1963, Ser. No. 327,466
6 Claims. (Cl. 299—18)



6. A method of continuous mining with a continuous miner having a pair of spaced end rotary boring heads, an intermediate rotary boring head, and upper and lower trimming cutters which includes the steps of:
first forming a pair of spaced end bores in the mine face with a rearwardly extending projections of material there between,
thereafter forming an intermediate bore in said rearwardly extending projection of material that overlaps said pair of end bores and forms upper and lower cusps in said rearwardly extending projection,
forming a pair of substantially horizontal kerfs in said rearwardly extending projection of material,
said horizontal kerfs extending substantially tangentially to the upper and lower portions of said pair of spaced end bores, and
dislodging the cusps of material formed between said horizontal kerfs and said intermediate bore.

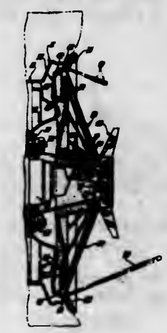
3,294,451
LEG HAMMOCK
Kenneth U. Quy, 830 Lakeside Drive, Wichita, Kans. 67203
Filed Aug. 9, 1965, Ser. No. 478,384
11 Claims. (Cl. 297—427)

1. An automobile seat accessory for leg support of a seat occupant comprising, a substantially rigid base having substantially coplanar and elongated upper and lower spaced sheet mounting portions, a first sheet of flexible material having an edge secured to the lower sheet mounting portion of the base, a second sheet of flexible material having an edge secured to the upper sheet mounting portion of the base, and said sheets being connected to each other at a position more remote from the base than the spacing of said portions of the base, each of the sheets



having an extent intermediate its secured edge and the position of connection to the other sheet at least one and one-half times as great as the spacing of the spaced mounting portions of the base.

3,294,452
WHEEL COVER
George A. Schmidt, Southfield, and Albert J. Gonas, Grosse Pointe, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,222
7 Claims. (Cl. 301—37)

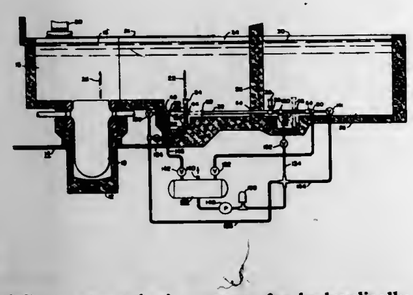


1. A wheel cover assembly comprising, in combination, an annular cover member adapted to be located in covering relationship to a portion of a vehicle wheel, and a wire ring assembly including an annular row of generally radially disposed spokes, means swingably mounting a radial end of each of said spokes on said member for movement axially outwardly of said cover member, and means interconnecting said spokes for simultaneous axially and radially outward movement thereof about their swingably mounted ends.

3,294,453
APPARATUS FOR HANDLING AND TRANSPORTING COMPONENTS
Walter E. Dommerchain and Leonard R. Katz, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1964, Ser. No. 349,871
15 Claims. (Cl. 302—2)

1. In apparatus for handling and storing components, a compartment capable of holding a liquid, another compartment also capable of holding a liquid, substantially horizontally-extending open tube means for connecting said compartments beneath the surfaces of the liquids

when contained therein, the means operable under the force of the static pressure head of the liquid when so contained in one of said compartments and exposed sub-

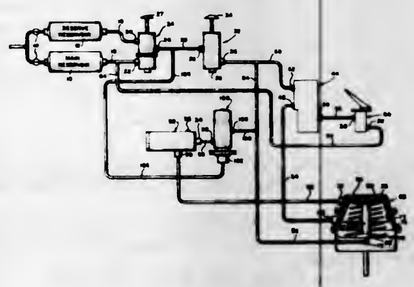


stantially to atmospheric pressure for hydraulically forcing a component in said one compartment through the tube means to said other compartment.

3,294,454
RECIPROCATING VANE TYPE ROTARY PUMP
Eugene E. Foerster, Los Angeles, Calif. (6616 Farralone, Canoga Park, Calif. 91303), and Wayne T. Keating, Los Angeles, Calif. (6550 Jumilla, Woodland Hills, Calif. 91364)
Filed Sept. 30, 1964, Ser. No. 400,523
8 Claims. (Cl. 302—14)

1. A reciprocating vane rotary pump comprising:
an inner rotor having a hub with a plurality of pairs of radial webs forming radial channels, a guide rod extending radially from said hub into each of said channels, a vane slidably mounted on each of said guide rods and resilient means urging said vanes outwardly, a vane guide mounted between each pair of webs adjacent the outer ends thereof and including resilient sealing means engaging said vanes, means for compressing said sealing means, and a cylindrical shoe mounted around the periphery of said rotor and having spaced openings through which said vanes extend;
an outer drum and housing having a wear resistant cylindrical liner spaced from said cylindrical shoe to form an annular passage, said housing having circular side plates, an extending cam mounted on one of said side plates, a retracting cam mounted on the other of said side plates, said housing also having an inlet passage and an outlet passage communicating with said annular passage, and a diverter block between said inlet and outlet;
each of said vanes having roller cam followers engaging said extending and retracting cams said cams being shaped to retract said vanes out of said annular passage prior to movement past said outlet and diverter block, and then extend said vanes across said passage prior to movement past said inlet.

3,294,455
VEHICLE FLUID PRESSURE BRAKE SYSTEM AND CONTROL VALVE
Harry M. Valentine, Elyria, Ohio, assignor to Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio, a corporation of Delaware
Filed Apr. 3, 1964, Ser. No. 357,199
16 Claims. (Cl. 303—9)

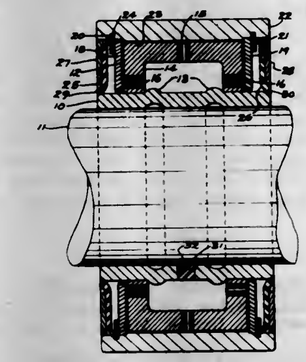


1. In a fluid pressure braking system including a source of fluid pressure, a brake actuator, a pair of serially arranged fluid pressure responsive elements operatively connected to said actuator for moving the same in a brake applying direction, a manually operated brake valve having an inlet connected to the source of fluid pressure and an outlet connected to one of said fluid pressure responsive elements, fluid conduit means connecting said source of fluid pressure to the other of said fluid pressure responsive elements, normally closed valve means between the outlet of said brake valve and said one fluid pressure responsive element, normally open valve means in the conduit means between said source and said other fluid pressure responsive element, fluid pressure responsive control means connected to said first named and said second named valve means and responsive to the presence of control pressure to move said first named valve to its open position and said second named valve to its closed position whereby only one of said pressure responsive elements at a time can be communicated with said source of pressure and other valve means movable to connect said other fluid pressure responsive element with atmosphere dependent upon movement of said second named valve to its closed position.

3,294,456
SHAFT BEARING HAVING SELF-CONTAINED LUBRICANT RESERVOIR
Joseph M. Williams and Raymond O. Oyler, Maumee, Ohio, assignors to The Bunting Brass and Bronze Company, Toledo, Ohio, a corporation of Ohio
Filed June 7, 1963, Ser. No. 286,411
1 Claim. (Cl. 308—36.1)

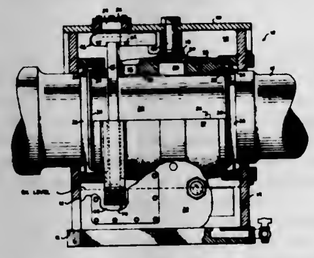
A bearing comprising inner and outer mated bearing members, one of said bearing members being hollow, a sleeve member cooperating with said hollow bearing member to form a self-contained lubricant reservoir, said hollow bearing member having a plurality of lubricant dispensing passages communicating said reservoir with the interface between said inner and outer bearing members, and having a plurality of lubricant return passages, said sleeve member being retained against axial displacement relative to said hollow bearing member by a plurality of inwardly directed beads entering said lubricant

reservoir and engaging the side walls thereof, radially extending lubricant guide members carried by one of said



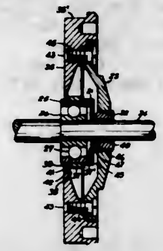
bearing members in close axial juxtaposition with said hollow bearing member, and axially spaced lubricant seals carried by said outer bearing member.

3,294,457
SELF-LUBRICATING BEARING
Theron C. Johnson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1964, Ser. No. 363,408
7 Claims. (Cl. 308—127)



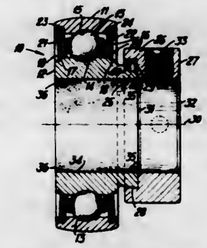
1. A self-lubricating bearing comprising
a pedestal having a shaft extending axially therethrough,
seal means on opposite ends of said pedestal for preventing leakage of oil from the pedestal when the shaft is rotating,
bearing shells in said pedestal coacting with the journal surface to form a journal bearing for the shaft,
means on said shaft designed for immersion in an oil reservoir when the shaft is rotating,
a device attached to the pedestal and coacting with said shaft means for causing oil picked up by said means during shaft rotation to move circumferentially and upwardly in a uniform flow pattern to the top of the pedestal, said device comprising a continuous channel shaped member in said reservoir and having a bottom thereof spaced from said pedestal and said channel shaped member spaced from and concentric with said shaft means,
means in said pedestal positioned near the top of said bearing for diverting oil carried upwardly by said shaft means for delivery to a port communicating with a passageway in said bearing, and
an outlet in said bearing for permitting the return of oil from the bearing to the sump.

3,294,458
BALL BEARING ASSEMBLIES
Matsuo Mishima, 23—8 6-chome, Denenchofu, Ohta-ku, Tokyo, Japan
Filed Mar. 27, 1964, Ser. No. 355,306
8 Claims. (Cl. 308—184)



1. An ultraminiature ball bearing assembly comprising an elastic medium to allow meridional movements to a bearing housing in which is secured a bearing outer race, a supporting means for the elastic medium for adjustably securing the outer edges of said elastic medium to a bearing holding frame so as to enable bringing the inner periphery of said bearing housing in concentric relationship with a shaft on which said bearing outer race is mounted, a first limiter means provided at inner side of said bearing holding frame with the intervention of minute clearances with respect to said bearing housing radially as well as axially thereof, and a second limiter means consisting of a threaded member disposed in concentric relationship with the shaft, said threaded member being screwed in centrally of said supporting means and adjustably with respect to the end surface of said bearing housing.

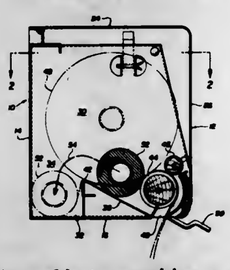
3,294,459
ECCENTRICALLY LOCKABLE BEARING CHARACTERIZED BY IMPROVED RESISTANCE TO FRETTING CORROSION
Ralph S. Howe, Jr., New Britain, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Dec. 14, 1964, Ser. No. 417,993
10 Claims. (Cl. 308—236)



1. In an antifriction bearing having an inner ring with an extending locking flange and having a locking collar associated therewith, said ring having on its locking flange an eccentric camming surface and said locking collar having an annular flange with an eccentric camming surface which mates with that of the locking flange, the improvement which comprises, a thin layer of a soft metal selected from the group consisting of cadmium, zinc, indium, tin and lead on the bore of the inner ring, said layer being thicker in the region of the locking flange of the inner ring and the end opposite said locking flange than the thickness of the layer near the center region of the bore, whereby said thicker layer in the region of the locking flange may be flowably and lockably jammed against a shaft passing through said bore while minimizing

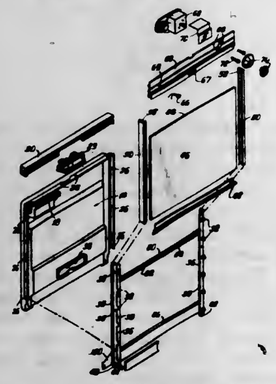
fretting corrosion at the regions of the shaft against which the inner ring is jammed.

3,294,460
DISPENSING CABINET
Philip A. Wooster, 266 Beach Road, Belvedere, Calif. 94920, and David H. Cox, San Francisco, Calif.; said Cox assignor to said Wooster
Filed June 14, 1965, Ser. No. 463,740
4 Claims. (Cl. 312—39)



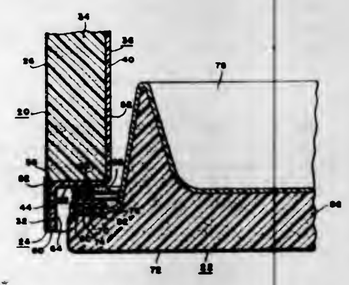
1. A dispensing cabinet comprising a case having an interior for supporting rolls of web material and means for advancing the material and tearing off portions thereof for use, means dividing said interior into two compartments, said last named means being constructed and arranged to provide a main compartment for receiving and supporting a full roll, and further constructed and arranged to provide a secondary compartment for accommodating a nearly empty roll in such manner that a new full roll and a nearly empty roll can be placed in the respective compartments at the same time, said secondary compartment communicating with said main compartment to define a passageway therebetween so that the nearly empty roll can be pushed into said secondary compartment to thereby make the first compartment available for receiving a new full roll and for simultaneous dispersement of web material from both full and nearly empty rolls, said secondary compartment lies behind and at a level below the main compartment so that material fed off the nearly empty roll passes the full roll in the same direction as material fed from the full roll.

3,294,461
DOOR CONSTRUCTION
Walter C. Barnard, St. Paul, and Ival G. Dutcher, White Bear Lake, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,407
11 Claims. (Cl. 312—213)



1. A door construction comprising: a door body adapted to close an opening; elongated frame means extending vertically along at least two sides of said body, and having a first forwardly extending portion, a second rearwardly extending portion, and a third forwardly extending portion at the lower end of said frame means; a panel retained on said third portion of the frame means and between said first forwardly extending portion of the frame means to define a front wall of the door construction; side holding means removably mounted on said frame means and frictionally engaging said first and second portions, said side holding means including a front portion extending in front of said panel for holding said panel against movement forwardly away from said body; and means removably secured to said door body for retaining said panel against upward movement relative thereto.

3,294,462
REFRIGERATING APPARATUS
Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 26, 1965, Ser. No. 442,984
9 Claims. (Cl. 312—214)

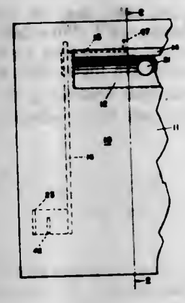


5. A refrigerator cabinet including an outer shell provided with a door opening at the front, said shell having side and top walls with edges at the front extending forwardly generally in alignment with said side and top walls, an inner wall within said outer shell having an inner portion spaced inwardly from said outer shell and an outer portion extending into close adjacency with the inner side of said edges, a compressible sealing strip extending between said portions of said outer shell and inner liner in close adjacency, a trim member extending around said edges and the adjacent portions of said outer shell and said outer portion, said trim member 24 constituting the sole means for holding said compressible sealing strip between the closely adjacent portions of said outer shell and said inner wall.

3,294,463
DRAWER AND FASTENER COMBINATION
William H. Kafferlin, Spring Creek, and Gene B. Hasbrouck and Travers Q. Stohlberg, Corry, Pa., assignors to Corry Jamestown Corporation, Corry, Pa., a corporation of New York
Filed June 28, 1965, Ser. No. 467,387
13 Claims. (Cl. 312—234.5)

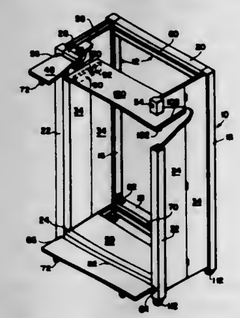
1. In combination, a drawer front and a label holder, said drawer front having an opening therein,
a bracket attached to said drawer front rearward of said opening,
said backet having a generally horizontally extending leg defining a downwardly facing leg surface and an upwardly and rearwardly inclined leg defining an inclined leg surface overlying said opening,
a relatively rigid transparent sheet-like member generally L-shaped in cross section having an upwardly facing leg surface underlying said downwardly facing leg surface and a rearwardly facing leg surface overlying said inclined leg surface,

means attaching said transparent member to said bracket with said inclined leg surface of said trans-



parent member swingable from said inclined leg surface of said bracket to permit an index card to be placed therebetween.

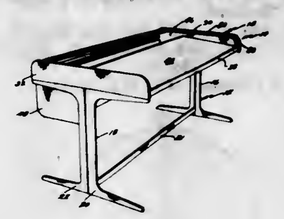
3,294,464
KNOCKDOWN WARDROBE OR THE LIKE
Harold Lew, 1970 Leonard Lane, Merrick, N.Y. 11566
Filed May 12, 1965, Ser. No. 455,158
10 Claims. (Cl. 312—258)



1. A knockdown wardrobe comprising a main body portion comprising a front frame and a rear frame connected by a pair of opposed inwardly folded walls, slide guide means associated with the said frame elements and side walls at the upper ends thereof, and slide guide means associated with the said frame elements and side walls at the lower ends thereof, together with a top slide element and a bottom slide element arranged to fit within the said upper and lower slide guide means respectively.

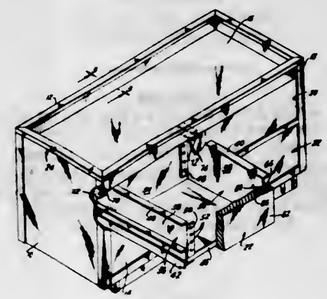
3,294,465
DESK WITH TAMBOUR
Leif Blodee, Holland, Mich., and Ronald H. Beckman, New York, N.Y., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Dec. 2, 1964, Ser. No. 415,388
9 Claims. (Cl. 312—297)

2. A desk comprising: a support pedestal assembly and a desk top mounted thereon; said pedestal assembly comprising a pair of spaced end pedestals; said desk top comprising a platform suspended between said pedestals, having an upper work surface, and having front and rear edges; a storage pod suspended between said pedestals adjacent said rear edge of said platform; said pod having an open top, forming a storage chamber; a closure cover means mounted on said desk and movable from a first



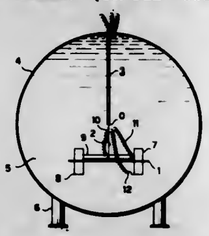
retracted position exposing said work surface and storage chamber, to a second extended position covering said work surface and storage chamber, and vice versa.

3,294,466
FIXTURE WITH DRAWERS
Jack M. Marateck, New York, N.Y. (785 Mace Ave., Bronx, N.Y. 10467), and Harold Marateck, New York, N.Y. (1075 Nelson Ave., Bronx, N.Y. 10453)
Filed Dec. 14, 1964, Ser. No. 418,002
13 Claims. (Cl. 312—343)



1. In combination, a cabinet, including spaced upright walls defining a drawer compartment and a drawer for said cabinet slidably supported between said upright walls in said compartment, said drawer including spaced side walls each having means at its front and rear ends for securing front and rear drawer walls thereto, each said side wall having a longitudinally-extending channel at its bottom facing the channel of the other of said side walls, said channels adapted to receive a bottom wall of said drawer, said bottom wall supported by its marginal edge portions within said channels, and means slidably supporting said drawer in said cabinet, said means including a roller mounted on the outer face of each of said drawer side walls at its upper rear corner for rotation on an axis normal to said face, a horizontally-extending, outwardly-projecting bar secured to the outer face of each of said drawer side walls in normal relation to said face, in vertically-spaced relation to said roller, a horizontally-extending, inwardly-facing channel provided on each of said upright walls at the top end of said drawer compartment in position to receive the adjacent of said drawer-supported rollers thereon, and a roller rotatably mounted on the inner face of each of said upright walls at its lower front corner, in position to support the adjacent of said bars when said drawer-supported rollers are disposed within said upright wall-supported channels.

3,294,467
STABILIZATION SYSTEM
Petrus J. Rademakers, Overveen, Netherlands, assignor to Laboratorium voor Instrumentatie Datawell N.V., Haarlem, Netherlands
Filed Sept. 15, 1964, Ser. No. 396,570
Claims priority, application Netherlands, Sept. 19, 1963, 298,085
6 Claims. (Cl. 312—351)

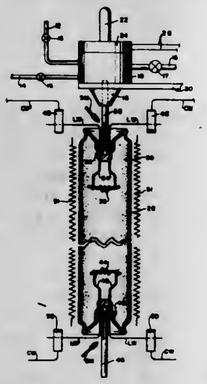


1. Stabilization system for supporting an instrument comprising a vessel filled with a single liquid, a platform freely suspended inside said vessel by suspension means, the said platform and suspension means forming a type of pendulum which can freely move angularly with respect to said containing vessel, and at least one instrument supported by said platform.

ERRATUM

For Class 316—17 see:
Patent No. 3,295,016

3,294,468
METHOD AND APPARATUS FOR MANUFACTURING FLUORESCENT LAMPS
Thomas J. Emidy, Morris Plains, and Donald P. Northrop, Bergenfield, N.J., assignors to Duro-Test Corporation, North Bergen, N.J., a corporation of New York
Filed Feb. 5, 1965, Ser. No. 430,533
12 Claims. (Cl. 316—24)



1. In the manufacture of an electron discharge device comprising a bulb having inlet and outlet connections at opposite ends and at least one electron emissive electrode therein, the steps of passing a flushing gas through said bulb from said inlet connection to said outlet connection to flush the air from said bulb to the atmosphere, heating said device to activate its cathode and drive off the occluded gases while continuing said flushing step, sealing off said outlet connection, withdrawing the flushing gas from said bulb to a final predetermined pressure, introducing a predetermined quantity of mercury into said bulb and sealing off said inlet connection.

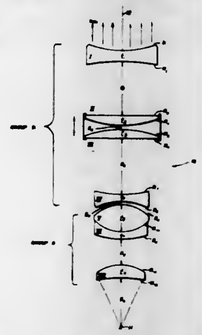
3,294,469
OPTICAL SHUTTERS
Eugene C. Letter, Walworth, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Jan. 26, 1962, Ser. No. 169,974
6 Claims. (Cl. 350—160)

1. An optical element comprising a substrate, an electrically-conducting reflective metal film, an anti-reflecting dielectric interference film separating the substrate and the metal film, and means for producing a high-voltage



electrical discharge across the metal film whereby the reflectivity of the optical element is destroyed.

3,294,470
PANCRATIC CONDENSER FOR PROJECTORS
Ralph K. Dakin, Pittsford, Nathan Rickless, Brighton, and Paul L. Ruben, Rochester, N.Y., assignors to Bausch & Lomb, Incorporated, Rochester, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,790
3 Claims. (Cl. 350—184)



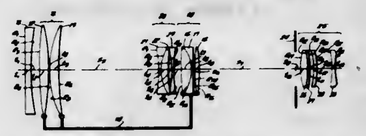
3. In a light condenser, a zoom type of pancratic optical system which forms an image of a light source at various continuous magnifications within a magnification range of at least 2.0,
said system comprising a plurality of optically aligned and axially spaced lens members which are,
a double concave lens member designated I located on the exit side of said system farthest from said source, the surface of strongest curvature being on the exit side thereof,
a symmetrical second lens member located on the entrant side of lens member I and composed of two similar positive lenses which are designated II and III and have duplicate convex surfaces facing and separated from each other,
said second member being movably mounted for axial motion as a unit to vary said magnification,
a double concave lens member designated IV located on the entrant side of said second lens member and having the surface of strongest curvature lying on the entrant side of member IV,
a double convex compound lens member located on the entrant side of member IV and comprising a rear double convex lens element V which contacts the concave side of a convex-concave lens element VI, and
a foremost positive meniscus lens member designated VII and having its surface of strongest curvature facing rearwardly,

the specific values in terms of F_A for the optical parameters being substantially as given in the table herebelow wherein F_A represents the equivalent focal length of lens elements V, VI and VII collectively, $-F_I$ to $-F_{VI}$ designate the equivalent focal lengths of the successive lens parts, the minus (−) sign meaning negative focal length, S_1 to S_8 representing the successive axial air spaces, t_1 to t_7 representing the successive axial lens thicknesses, and n_D and ν representing respectively the refractive index and Abbe number of the glasses in the lenses indicated.

$-F_I=2.423\ F_A$
$F_{(II,\ III)}=1.724\ F_A$
$-F_{IV}=2.505\ F_A$
$F_{(V,\ VI)}=2.128\ F_A$
$F_{VII}=1.296\ F_A$
$F_{II}=F_{III}=3.448\ F_A$
$F_V=.974\ F_A$
$-F_{VI}=1.439\ F_A$
$S_1=.3062\ F_A$ (High M)
$S_1=.928\ F_A$ (Intermediate M)
$S_1=1.544\ F_A$ (Low M)
$S_2=.00205\ F_A$
$S_3=1.262\ F_A$ (High M)
$S_3=.6425\ F_A$ (Intermediate M)
$S_3=0.207\ F_A$ (Low M)
$S_4=.0205\ F_A$
$S_5=.2238\ F_A$
$S_6=.556\ F_A$

$t_1=.165\ F_A$
$t_2=.228\ F_A$
$t_3=.228\ F_A$
$t_4=.1033\ F_A$
$t_5=.474\ F_A$
$t_6=.1053\ F_A$
$t_7=.292\ F_A$
n_D (I)=1.657
n_D (II)=n_D (III)=1.670
n_D (IV)=1.649
n_D (V)=1.517
n_D (VI)=1.751
n_D (VII)=1.517
ν (I)=36.6
ν (II)=ν (III)=47.2
ν (IV)=33.8
ν (V)=64.5
ν (VI)=27.8
ν (VII)=64.5

3,294,471
OPTICALLY COMPENSATED VARIFOCAL LENS ASSEMBLY
Frank G. Back, 55 Sea Cliff Ave., Glen Cove, N.Y. 11542
Filed June 5, 1963, Ser. No. 285,726
1 Claim. (Cl. 350—194)



A varifocal lens system for television cameras comprising, in the order of the direction of the incident light, a front lens, a front section of variable focal length including an axially slidable air spaced variator and compensator, a stationary erector therebetween, an aperture stop spaced from the front section, and a rear section of fixed focal length including a relay having three elements therein said lens system having optical characteristics of the following order wherein ND is the refractive index for the D line, V is Abbé's dispersion number, SFS stands for Special Dense Flint, SK indicates Dense Crown, LaK stands for Lanthanum Crown, SF stands for Dense Flint, F indicates Flint and BK stands for Borosilicate Crown, R_1 to R_{23} are the respective radii of refracting lens surfaces numbered from front to rear of the lens system t_1 to t_{13} are the respective axial thicknesses and s_1–s_{10} are the respective separations from the front to the rear of the lens system:

Lens No.	Radius R (in mm.)	Thickness (t) Air Spacing (s)	Glass Cat. Ref.	Index of Ref., ND	Dispersion V
Front Lens:					
10	$R_1=-1474.665$	$t_1=8.4$	SFS-4	1.7408	28.15
	$R_2=268$	$s_1=8.914$			
Variator:					
12	$R_3=552.181$	$t_2=10.0$	SK-16	1.62081	60.4
	$R_4=-294.349$	$s_2=1.0$			
13	$R_5=120.929$	$t_3=11.0$	SK-16	1.62081	60.4
	$R_6=570.929$	$s_3=115.671$			
Erector:					
21	$R_7=-154.410$	$t_4=3.0$	LAK-10	1.72062	50.3
22	$R_8=39.970$	$t_5=10.5$	SF-18	1.72127	29.3
	$R_9=307.16$	$s_4=2.9$			
23	$R_{10}=-187.939$	$t_6=4.12$	LAK-10	1.72062	50.3
	$R_{11}=262.709$	$s_5=6.085$			
Compensator:					
16	$R_{12}=459.78$	$t_7=12.68$	SK-16	1.62081	60.4
17	$R_{13}=-44.549$	$t_8=2.50$	F-2	1.62081	36.2
	$R_{14}=-2252.556$	$s_6=1.0$			
18	$R_{15}=244.899$	$t_9=5.5$	SK-16	1.62081	60.4
	$R_{16}=-167.83$	$s_7=112.43$			
Stop		$s_8=5.0$			
Relay:					
26	$R_{17}=59.01$	$t_{10}=8.0$	BK-7	1.517	64.5
27	$R_{18}=-102.34$	$t_{11}=3.0$	F-2	1.6208	36.2
	$R_{19}=-167.83$	$s_9=4.25$			
28	$R_{20}=-61.65$	$t_{12}=4.0$	SF-18	1.72127	29.3
	$R_{21}=-67.749$	$s_{10}=18.5$			
30	$R_{22}=-149.69$	$t_{13}=2.8$	SK-16	1.62081	60.4
	$R_{23}=56.7$				

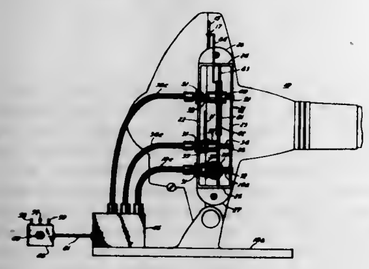
Equivalent focal length of the whole system—(EFL)=f=78.40 to 470.50.
Back focal length of whole system=100.7.
Radius, thickness and spacing in millimeters.

3,294,472

REMOTE CONTROL VISUAL ACUITY PROJECTION APPARATUS

Norman D. Haugen, Minneapolis, Minn., assignor to The Benson Optical Company, Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 29, 1962, Ser. No. 233,579
4 Claims. (Cl. 351—30)



1. Visual acuity projection apparatus comprising:

(a) a projector including a horizontally movable vertically slotted mask, a vertically movable horizontally slotted mask and a film chart having a plurality of visual acuity test characters linearly movable parallel to one of said masks, said masks and film chart constructed and arranged to be controllably moved across the light beam from said projector and cooperating to expose said test characters for projection between predetermined limits of travel;

(b) an electrical driving means including at least one reversible motor adapted to be controlled electrically;

(c) translational power means including a first spring attached to one end of said horizontal mask, a pair of rotatably supported drums driven by said electrical driving means, one of said drums having a flexible cable wound therearound, one end of which is attached to one end of said horizontally movable mask and the other end of which is connected to the other end of said spring, a second spring, a linear motion member supported for movement parallel to said vertically movable mask and in spaced and perpendicular relation to said other drum, another flexible cable wound about said other drum, one end of which is attached to one end of said linear motion member and the other end of which is connected to the other end of said member through said second spring, a connecting arm extending between said linear motion member and said vertically movable mask for causing movement thereof, and means drivably connecting said electrical driving means with said film chart and translating the motor movement of said electrical driving means into linear movement;

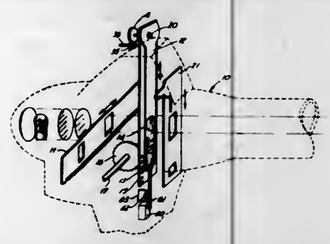
(d) and switch means electrically connected to said electrical driving means for controlling the movement of said masks and film chart to one of an infinite number of positions between said predetermined limits of said masks and film chart.

3,294,473

VISUAL ACUITY PROJECTOR WITH ELECTRIC MOTOR CONTROL FOR FILM CHART AND ROTARY ASTIGMATIC TEST ELEMENT

Norman D. Haugen, Minneapolis, Minn., assignor to The Benson Optical Company, Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 9, 1963, Ser. No. 250,438
4 Claims. (Cl. 351—30)



1. In visual acuity projection apparatus, the improvement comprising:

(a) a projector adapted to receive a film chart normally movable in a vertical plane across the light beam from the projector between predetermined limits of travel;

(b) a film chart for use with said projector having a rotating astigmatic element rotating between predetermined limits contained therein operably connected to a control element disposed at the upper extremity of said film chart and having a switch engaging portion at the lower extremity thereof;

(c) electrical driving means including at least one reversible motor carried by said projector and adapted to be controlled electrically;

(d) power connecting means constructed and arranged to connect said control element of said film chart to said electrical driving means;

(e) bracket means connected to said projector for supporting said power connecting means, one of said means moving between a first position where said film chart control element is normally engaged by said power connecting means and a second position where said power connecting means is operatively disengaged;

(f) resilient means continually uring one of said means towards said first position but allowing said means to move to its second position;

(g) power translating means drivably connected between said film chart and said electrical driving means for vertically moving said film chart;

(h) switch means connected to said electrical driving means and disposed in operable relation with the switch engaging portion of said film chart for disabling that power which is applied to said power translating means to stop the downward movement of said film chart when said rotating astigmatic element is in the projection light path;

(i) and control means electrically connected to said electrical driving means for controlling the vertical movement of said film chart and the movement of said rotating astigmatic element contained therein.

CHEMICAL

3,294,474

METHOD OF DYEING CELLULOSIC TEXTILES WITH MIXTURES OF THIOSULFONIC ACID-SULFUR DYES AND REACTIVE DYES AND COMPOSITIONS THEREOF

Max Stahlmüller, Petersberg, Gustav Böttiger, Forchheim, and Christian Heid, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a company of Germany

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,819
Claims priority, application Germany, Dec. 7, 1963, C 31,623
9 Claims. (Cl. 8—25)

4. A method of dyeing cellulosic textile materials comprising subjecting the textile materials to a single dye bath containing as a dye composition therein a water soluble alkali salt of a thiosulfonic acid group-containing sulfur dyestuff, an alkali, a reducing agent for the sulfur dyestuff, and a reactive dyestuff, for a period of time to effect dyeing thereof; then subjecting the dyed material to the usual finishing treatments.

3,294,475

PROCESS FOR DYEING TEXTILE MATERIALS WITH SULFUR DYESTUFFS AND REACTIVE DYESTUFFS

Christian Heid and Karl Holoubek, Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a German company

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,770
Claims priority, application Germany, Dec. 13, 1963, C 31,673
4 Claims. (Cl. 8—25)

1. A process for dyeing cellulosic textile materials as defined herein, with sulfur dyestuffs and reactive dyestuffs, comprising treating the textile material with the sulfur dyestuff together with an alkali and a reducing agent, rinsing the thus treated textile material, next treating the textile material with a solution of a reactive dyestuff, then oxidizing the sulfur dyestuff, and then finishing the thus dyed material.

3,294,476

SULFUR DYE COMPOSITIONS AND METHOD OF DYEING TEXTILE MATERIALS THEREWITH

Erwin Krusche and Christian Heid, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a German company

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,959
Claims priority, application Germany, Nov. 27, 1963, C 31,521
6 Claims. (Cl. 8—37)

1. A water-soluble, unreduced dyestuff composition for dyeing textile materials, comprising as the principal constituents, water-soluble salts of thiosulfonic acids of sulfur dyestuffs and a polyfunctional cross-linking agent, which constituents react with each other at elevated temperatures to give stable reaction products and enable the dyeing of said textile materials without the use of alkali reducing agents.

3,294,477

PROCESS FOR THE CONTINUOUS COLORING OF SILK, WOOL AND/OR SYNTHETIC POLYAMIDE FIBRES OR MATERIALS CONTAINING SUCH FIBRES

Ergun Tamer, Bergisch-Neukirchen, Otto Schneider, Cologne-Flittard, and Mathieu Quaedvlieg, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

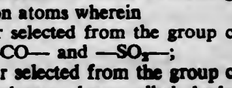
No Drawing. Filed July 30, 1963, Ser. No. 298,576
Claims priority, application Germany, Aug 4, 1962, F 37,522; Mar. 29, 1963, F 39,354
4 Claims. (Cl. 8—85)

1. A process for the continuous coloring of fibrous material containing at least one member selected from the group consisting of silk, wool and synthetic polyamide, comprising padding or printing the fibrous material with an acidified aqueous emulsion comprising

(a) a dyestuff,

(b) at least 10 grams per liter of a compound selected from the group consisting of

(1) a nitrogen-containing carboxylic acid of the formula



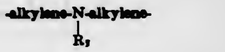
wherein

R is a member selected from the group consisting of saturated and unsaturated aliphatic hydrocarbon radicals containing at least 8 carbon atoms wherein

X is a member selected from the group consisting of —CO— and —SO_2—;

R_1 is a member selected from the group consisting of hydrogen, lower alkyl, hydroxy lower alkyl, and carboxy lower alkyl;

Y is a member selected from the group consisting of lower alkylene, hydroxy lower alkylene, amino-substituted lower alkylene, carboxy-substituted lower alkylene, an amide-substituted lower alkylene and



wherein

R_2 is a member selected from the group consisting of hydrogen, lower alkylene, hydroxy lower alkylene, amino-substituted alkylene and carboxy-substituted alkylene and

(2) the corresponding alkali or alkylolamine salts thereof, and

(c) a thickening agent; and thereafter exposing the fibrous material to the action of heat in a steam atmosphere.

3,294,478

N,N'-BIS(ALKOXYMETHYL) TREATMENT OF HIDES

Marcus Sittenfield, 7903 Gilbert St., Philadelphia, Pa. 19138

No Drawing. Filed Aug. 2, 1963, Ser. No. 299,456
16 Claims. (Cl. 8—94.33)

1. A method of treating an animal hide which comprises impregnating said animal hide with N,N'-bis (alkoxymethyl) uron.

3,294,479

ClO_2 DEPILATION AND KERATIN REMOVAL FROM HIDES AND SKINS

Kurt Rosenbusch, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 2, 1965, Ser. No. 429,898

Claims priority, application Germany, Aug. 17, 1963, F 40,522

5 Claims. (Cl. 8—94.12)

1. A method for removing the keratin-containing parts of animal hides and pelts and the keratin-containing parts adhering to such hides and pelts, which comprises contacting said hides and pelts with chlorine dioxide in an aqueous bath for a time sufficient to loosen said keratin-containing parts, said aqueous bath having a pH up to pH 6 and comprising from about 1 to 10 percent, by weight of the hides and pelts treated, of an alkali metal chlorite, said chlorine dioxide being generated in situ in said aqueous bath from said alkali metal chlorite.

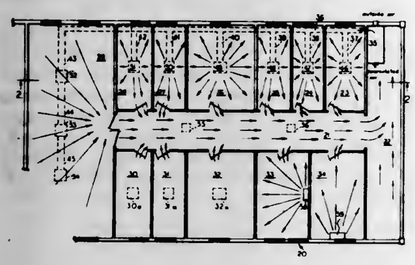
3,294,480

SYSTEM FOR THE PREVENTION OF THE SPREAD OF INFECTIOUS DISEASE BY AIRBORNE MICRO-ORGANISMS

Gennady Potapenko, Pasadena, Calif., assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York

Original application June 1, 1959, Ser. No. 817,327, now Patent No. 3,107,974, dated Oct. 22, 1963. Divided and this application July 24, 1963, Ser. No. 297,319

5 Claims. (Cl. 21—74)



1. A system for preventing the spread of infectious microorganisms from a first substantially enclosed area to a second adjacent substantially enclosed area, each of which is adapted for human habitation, said system comprising: fluid sterilizing means; fluid conducting means interconnecting said fluid sterilizing means and said enclosed areas; fluid distributing means within each of said areas and connected to said fluid conducting means for receiving fluid from said fluid sterilizing means and distributing said fluid within said areas; fluid removal means within each of said areas for removing fluid therefrom; fluid circulating means connected for moving fluid through said system; and control means within each of said areas for maintaining a pressure difference between said areas, said control means regulating the proportions of fluid received by and removed from each of said areas in response to variations in said pressure difference between said areas to maintain said pressure difference at a predetermined value.

3,294,481

PROCESS FOR RECOVERING PURE VANADIUM OXIDE FROM LOW GRADE VANADIUM ORES OR CONCENTRATES

Blair Burwell, P.O. Box 1951, Grand Junction, Colo. 81501

Filed Dec. 5, 1962, Ser. No. 242,532

9 Claims. (Cl. 23—15)

1. In a process of recovering pure vanadium oxide containing not less than 99.5% V_2O_5 from vanadium ores or concentrates, including the stages of roasting such a vanadium-bearing material containing some silica, chromium and iron and substantially no phosphorus as impurities, said material being mixed with sodium chloride so as to form water soluble sodium vanadate substantially free of silicon, iron, chromium and phosphorus during roasting, water leaching the roast calcine, filtering the resulting slurry for separation of the sodium vanadate solution from insolubles, extracting the anionic vanadium oxide component in the aqueous leach solution into a liquid-to-liquid ion exchange organic solution to obtain a two-phase liquid mixture, separating the aqueous phase from the organic phase of the two-phase mixture, extracting the vanadium ion from the separated organic phase as crystalline ammonium metavanadate by mixing with an aqueous solution containing ammonium chloride and ammonia, and subjecting the crystalline ammonium metavanadate to heating to form pure vanadium pentoxide containing not less than 99.5% pure V_2O_5, the improvement which comprises scrubbing roaster gases with a water solution containing ammonia and ammonium chloride so as to convert the chlorine and hydrochloric acid in the roaster gases to ammonium chloride, recycling a portion of the scrubbed solution from the scrubbing stage after adding additional ammonia to replace the ammonia consumed in the scrubber gas and in removing water in the hot gases, thereby effecting a concentration of ammonium chloride in the solution passing from scrubbing to not less than ten percent NH_4Cl, and introducing the remaining portion of the scrubber solution so concentrated into the stage for extracting the vanadium anion from the separated organic phase.

3,294,482

PROCESS FOR RECOVERING METAL CHLORIDES FROM GASEOUS MIXTURES

Bernard J. Lerner, O'Hara Township, Allegheny County, Pa., assignor to Dominion Gulf Company, Pittsburgh, Pa., a corporation of Delaware

Filed Jan. 28, 1963, Ser. No. 254,349

10 Claims. (Cl. 23—15)

1. A process for the recovery of normally solid, volatile metal chlorides selected from the group consisting of columbium, tungsten, molybdenum and zirconium chlorides from a gaseous mixture thereof with ferric chloride, comprising first separating ferric chloride from said mixture by contacting the same with an at least partly molten mixture of ferric chloride and sodium chloride at a substantially constant temperature above the condensation point of said metal chlorides, separating the remaining gas from the molten mixture, effecting selective vapor-phase condensation of the normally solid, volatile metal chlorides remaining in the separator gas by admixture thereof with a quench fluid that is inert with respect to the volatile metal chlorides and that is gaseous at the quenched temperature, said selective vapor-phase condensation being effected at a temperature such as to reduce the temperature of the gas below the solidification temperature of said metal chlorides without condensation of lower boiling chlorides, and separating the condensed metal chlorides from uncondensed gas.

3,294,483

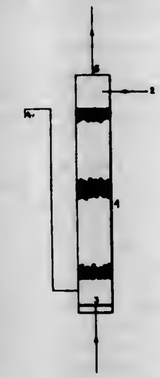
PROCESS FOR RECOVERING PALLADIUM FROM ACID SOLUTIONS

Rudolf Hirschberg, Bad Neuenderf, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Oct. 2, 1964, Ser. No. 401,055

Claims priority, application Germany, Oct. 4, 1963, F 40,911

5 Claims. (Cl. 23—87)



1. A process for recovering palladium as an inorganic chloride salt in a concentrated solution thereof, which comprises contacting an inorganic, acidic, palladium chloride salt solution with gaseous hydrogen and a porous packing material platinized by impregnation with a platinum chloride solution to reduce the salt to metallic palladium and deposit the palladium on said packing material as a metal and then recovering the palladium thus deposited by dissolving it with a member selected from the group consisting of an oxidizing acid and a combination of an oxidizing agent and a nonoxidizing acid to form a soluble salt of said acid.

3,294,484

PRODUCTION OF PALLADIUM CHLORIDE FOR DIMERIZING AROMATICS

Alan F. Ellis, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 17, 1964, Ser. No. 411,712

3 Claims. (Cl. 23—87)

1. A process for converting palladium metal to palladium chloride which comprises reacting palladium metal with chlorine in anhydrous carboxylic acid at a temperature at about 10° to about 100° C.

3,294,485

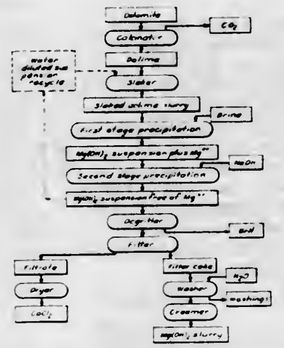
PROCESS FOR PRODUCING MAGNESIUM HYDROXIDE AND A NONCONTAMINATED EFFLUENT SOLUTION

Raymond P. Mayer, Ludington, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 12, 1963, Ser. No. 330,146

10 Claims. (Cl. 23—99)

1. In a method of producing magnesium hydroxide and a non-contaminated calcium chloride effluent solution from an aqueous solution containing magnesium chloride, the steps which comprise, slaking a form of quick lime selected from the group consisting of calcined lime and dolime, reacting said slaked lime in a first stage precipitation with said aqueous solution containing magnesium chloride in an amount such that a slight excess of $Ca(OH)_2$ is maintained corresponding to a soluble alkalinity of from about 4 to about 6 mls., thereby forming a suspension comprising magnesium hydroxide as a first stage precipitate suspended in a solution containing calcium chloride and residual unprecipitated magnesium values, treating the suspension so-produced in a second



stage precipitation with an amount of an alkaline precipitant corresponding to a soluble alkalinity of from about 20 to about 24 mls., selected from the group of slaked dolime, slaked lime, and NaOH, sufficient to precipitate the residual magnesium values as magnesium hydroxide, and separating the magnesium hydroxide precipitated in both stages from the resulting solution.

3,294,486

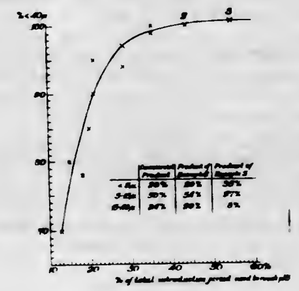
MANUFACTURE OF DICALCIUM PHOSPHATE, DIHYDRATE

Joseph Cremer, Hermulheim, near Cologne, and Heinz Harnisch, Lovenich, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany

Filed Sept. 15, 1964, Ser. No. 396,483

Claims priority, application Germany, Sept. 16, 1963, K 50,836; Sept. 28, 1963, K 50,945; Aug. 8, 1964, K 53,700

10 Claims. (Cl. 23—109)



1. In the process for the manufacture of dicalcium phosphate dihydrate by reacting feed compounds comprising (a) at least one calcium salt selected from the group consisting of aqueous calcium hydroxide, aqueous calcium carbonate, aqueous calcium chloride and aqueous calcium nitrate, (b) at least one phosphoric acid compound selected from the group consisting of phosphoric acid, aqueous alkali metal phosphate and aquous ammonium phosphate and (c) when the calcium salt (a) is a member selected from the group consisting of calcium

chloride and calcium nitrate, at least one basic compound selected from the group consisting of alkali metal and ammonium hydroxides and carbonates in the presence of water at a temperature below 70° C., the improvement which comprises simultaneously introducing into a reaction zone the calcium salt and the phosphoric acid compound to form a reaction mixture, reacting the calcium salt and the phosphoric acid compound by rapidly and intimately mixing them, adjusting the reaction mixture to a pH-value within the range of 2.0 and 6.0 and maintaining the pH-value during substantially the entire reaction by supplying the feed compounds such that the pH-value is maintained, whereby a higher pH-value within the pH-range produces dicalcium phosphate dihydrate having a smaller grain size and a lower pH-value within the pH-range produces dicalcium phosphate dihydrate having a larger grain size, after all of said phosphoric acid compound has been introduced, adding the balance of the feed compounds other than the phosphoric acid compound while increasing the pH-value adjusted and separating the dicalcium phosphate dihydrate from liquid matter accompanying it.

3,294,487

PROCESS FOR PRODUCING SULPHURIC ACID

Egon F. M. Pauling, Essen, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed June 16, 1964, Ser. No. 375,601
8 Claims. (Cl. 23—168)

8. In a process for the production of sulfuric acid from hot, dry gas containing a minor proportion of SO_2, the steps comprising:

(a) introducing said hot, dry gas at a temperature above about 140° C. into a first stage,

(b) ultimately and directly contacting said hot, dry gas in the first stage with dilute sulfuric acid which is at a temperature of about 40° to 70° C. and has a concentration between about 45 to 65% H_2SO_4 thereby cooling and humidifying the hot, dry gas to about 45 to 100° C. and producing sulfuric acid at a temperature of at least about 110° C. and a concentration of at least about 70% H_2SO_4,

(c) introducing the gas resulting from said first stage into a second stage and therein intimately and directly contacting it with an SO_2 conversion catalyst impregnated in an absorbent in the presence of oxygen while spraying water onto the absorbent, thereby producing dilute sulfuric acid,

(d) passing the gas resulting from said second stage into a third stage and therein intimately and directly contacting it with part of the sulfuric acid resulting from said first stage thereby drying and heating the exhaust gas from said second stage,

(e) combining the sulfuric acid resulting from said second and third stages and introducing it as the dilute sulfuric acid of said first stage,

(f) exhausting the gas resulting from said third stage to the atmosphere and recovering sulfuric acid from said first stage at a concentration of at least about 70% H_2SO_4.

3,294,488

PURIFICATION OF HYDROGEN PEROXIDE

Arthur K. Dunlop and Robert E. Meeker, Berkeley, and Gino J. Pierotti, El Cerrito, Calif., assignors to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Feb. 11, 1958, Ser. No. 714,510
3 Claims. (Cl. 23—207)

1. In a process for removing anion impurities from acidic impure hydrogen peroxide of about 10% to about 0% hydrogen peroxide concentration on a weight basis, and containing lower aliphatic carboxylic acid as an impurity, wherein the impure hydrogen peroxide is intimately contacted at a temperature not exceeding 40° C. under fluid flow conditions with an anion-exchange resin in bicarbonate salt form having functional quaternary ammonium groups attached to a copolymer of styrene and divinyl benzene, the improvement comprising dispersing said hydrogen peroxide over a bed of said resin in particulate form with a gas which is inert under the existing conditions admixed with carbon dioxide so the hydrogen peroxide solution passes in the form of a film downwardly through the bed of resin in contact with carbon dioxide containing gas under sufficient pressure to keep carbon dioxide dissolved in the aqueous hydrogen peroxide, and maintain the pH in the range of about 3 to about 8.

3,294,489

PROCESS FOR PREPARING CARBON FIBERS

Richard B. Millington, Los Angeles, and Robert C. Nordberg, La Mirada, Calif., assignors to Hitco, a corporation of California

Filed Dec. 19, 1961, Ser. No. 160,605
5 Claims. (Cl. 23—209.4)

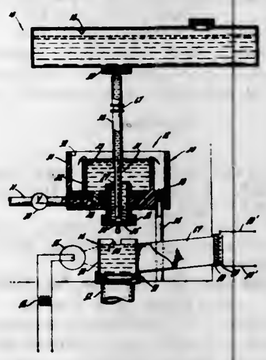
1. The method of preparing carbon fiber fabrics having high strength and resistance to erosion which includes the steps of washing a rayon fabric in a detergent solution to remove finish materials to below about 0.25% ether extractables, rinsing the washed fabric free of finish materials and the detergent solution, drying the fabric, winding the fabric into a skein, heating the fabric skein in a closed atmosphere in successive steps, each step lasting in excess of about twelve hours and being about 20° F. to 50° F. higher than the previous step, the temperature starting at about 360° F. and being raised up to about 700° F., to drive off excess water and to first form intermediate levoglucosan products and finally carbonaceous chars and volatile tars, the carbonaceous chars constituting non-graphitic carbon fibers, cooling the carbon fiber fabric thus formed to below about 300° F., flash firing the carbon fiber fabric by feeding the fabric through an approximately 2200° F. environment for an exposure time of about ten seconds, cooling the flash fired fabric by quenching in water substantially immediately after exposure to the high temperature environment, and drying the fabric.

3,294,490

AUTOMATIC CONTINUOUS ANALYZER

Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa

Filed Mar. 25, 1963, Ser. No. 267,467
7 Claims. (Cl. 23—253)



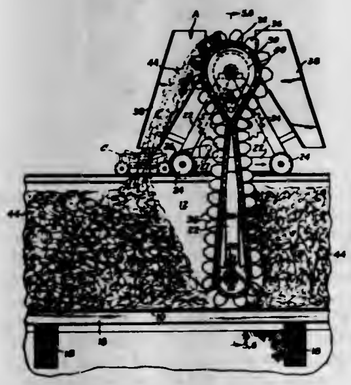
1. In an analyzer, apparatus for mixing a fluid reagent with a less dense fluid sample in controlled proportions comprising, in combination, a mixing body having a bottom aperture enclosed by a wall defining a sample reservoir of fixed head relative to the aperture, means for supplying a fluid sample to said reservoir at a rate greater than the flow rate through said aperture, said body including a trough to collect and discharge the fluid sample which spills over said wall, a reagent container positioned above said mixing body, and a capillary tube having a fluid connection with said container and extending down into the fluid sample in said reservoir so that the lower end of the tube overlies said aperture.

3,294,491

COMPOSTING APPARATUS

Victor Brown, Elmhurst, Ill., assignor to New Life Foundation, Wheaton, Ill., a not-for-profit corporation of Illinois

Filed Apr. 6, 1964, Ser. No. 357,423
8 Claims. (Cl. 23—259.1)



1. In a composting apparatus, an elongated tank adapted to be charged with organic material for aerobic digestion, means for periodically agitating said organic material comprising an agitator movable longitudinally of said tank and operable to progresively elevate the organic material adjacent the front of said agitator to a position above the level of the organic material in said tank and discharge it into said tank in a position adjacent the back of said agitator, and water-spray means mounted on said agitator for spraying a wall of the organic material adjacent to the agitator.

3,294,492

PROCESS FOR DECLADDING ZIRCONIUM FROM ZIRCONIUM CLAD NUCLEAR FUEL ELEMENTS

Charles B. Bartlett, West Islip, Edward Wirsing, Jr., Mattituck, and Lorenzo P. Hatch, Brookhaven, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 11, 1966, Ser. No. 527,383
2 Claims. (Cl. 23—324)

1. A process for recovering uranium from zirconium clad uranium bearing nuclear fuel elements comprising:

(a) immersing said element in a fluidized bed composed of inert granular solids;

(b) said bed solids being fluidized by the passage of a gaseous fluidizing medium composed of from about 20 to about 90 volume percent of oxygen based on the total volume of the fluidizing medium and from about 10 to about 80 volume percent hydrogen fluoride based on the total volume of fluidizing medium while maintaining the temperature of the fluidized bed at a temperature ranging from between about 500° C. to about 800° C. until the uranium contained in said element is exposed;

(c) fluidizing said bed and intimately contacting and reacting said exposed uranium with gaseous fluorine while maintaining the temperature of said bed at a temperature ranging from between about 400° C. to about 450° C. until the uranium in said bed is reacted with fluorine; thereafter recovering the uranium from the reaction product of uranium and fluorine gas.

3,294,493

METHOD OF SEPARATING URANIUM AND PLUTONIUM

Albert A. Jonke, Elmhurst, Robert K. Steunenberg, Naperville, and Richard C. Vogel, Hinsdale, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Apr. 18, 1966, Ser. No. 544,357
6 Claims. (Cl. 23—324)

1. A method of separating uranium values and plutonium values, comprising fluorinating said values in a fluidized bed with gaseous bromine pentafluoride, gaseous bromine trifluoride or mixtures thereof at an elevated temperature, whereby uranium hexafluoride is volatilized and plutonium tetrafluoride remains in the bed.

3,294,494

METHOD FOR REMOVING LANTHANIDES AND TRIVALENT ACTINIDES FROM AQUEOUS NITRATE SOLUTIONS

Fletcher L. Moore, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 28, 1966, Ser. No. 532,534
9 Claims. (Cl. 23—340)

1. A method of removing metal values selected from lanthanide and trivalent actinides from an aqueous acidic solution containing said values together with a nitrate salt comprising contacting said aqueous solution with an organic solution of a quaternary ammonium compound containing from 17 to 49 carbon atoms, and separating the resulting metal value-containing organic solution from the depleted aqueous phase.

9. The method of claim 1 wherein the acidic aqueous solution contains nitric acid in a concentration of 0.1 to 1.5 normal and aluminum nitrate in a concentration of 0.5 to 5.0 normal, and the quaternary ammonium compound is represented by the formula

$$[R_1—\underset{\displaystyle CH_3}{\overset{\displaystyle R_2}{\overset{|}{\underset{|}{N}}}}—R_3]NO_3$$

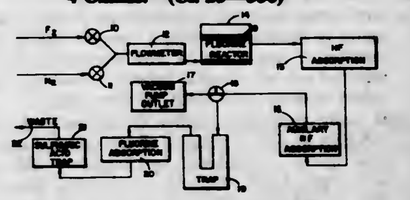
where R_1, R_2, and R_3 are saturated hydrocarbon chains containing from 8 to 10 carbon atoms each.

3,294,495

METHOD OF PREPARING DIFLUORAMINE

Emil A. Lawton, Woodland Hills, and John Q. Weber, Topanga, Calif., assignors to North American Aviation, Inc.

Filed Sept. 15, 1959, Ser. No. 840,066
4 Claims. (Cl. 23—355)



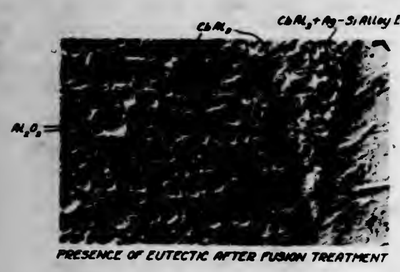
1. A method of preparing difluoramine comprising the steps of fluorinating, with elemental fluorine, a nitrogen compound selected from the group consisting of urea, bi-

urea, biuret, aminoguanidine, diaminourea, 5-aminotetrazole, guanidine hydrochloride, and semicarbazide hydrochloride, heating the liquid products of said fluorinating step and fractionally condensing gaseous products of said heating step to obtain substantially pure difluoramine.

3,294,496
METAL CERAMIC COMPOSITIONS
Aurel I. Bergheaun, Brussels, Belgium, assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,764
12 Claims. (Cl. 29—182.5)

1. A metal-ceramic composition consisting essentially of 2% to 50% weight of a first constituent composed of at least one material selected from the group consisting of copper, silver, manganese, zinc, nickel, cobalt, iron and oxides thereof; 2% to 35% of at least one material selected from the group consisting of silica and germania; the remainder alumina and incidental impurities, the silica germania group content being between about 0.5 and 1.5 times the first constituent content, said composition having a binder phase at least ternary and comprising (a) oxide of a metal selected from the group of metals of said first constituent, (b) alumina, and (c) material selected from said silica-germania group.

3,294,497
COATED COLUMBIUM OR TANTALUM BASE METAL
Stephen Feldes, San Jose, Calif., and Moses A. Levinstein, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Jan. 26, 1966, Ser. No. 523,220
7 Claims. (Cl. 29—194)



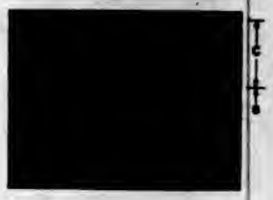
PRESENCE OF EUTECTIC AFTER FUSION TREATMENT

1. An article of manufacture comprising a body of a base metal selected from the group consisting of columbium, columbium-base alloys, tantalum, and tantalum-base alloys, and a protective coating integral with an exposed surface of said body to protect it against oxidation while not destroying the ductility of the base metal by greatly increasing sensitivity to crack propagation, said coating being bonded together and to said base metal by diffusion and comprising:

a continuous layer of a continuous phase of a monometal trialuminide having a composition in the proportion of one atom at least predominantly of the selected one of the base metals columbium and tantalum to each three atoms of aluminum,

said layer containing sufficient amounts of silver in solution so that an excess of the selected one of the base metals columbium and tantalum diffuses into said layer upon exposure to elevated temperatures and an oxidizing atmosphere, a ductile eutectic containing silver, aluminum and the selected one of the base metals columbium and tantalum forms at a substantial portion of the grain boundaries of said monometal trialuminide and acts as a barrier to the propagation of cracks from said layer into said base metal.

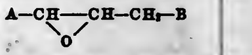
3,294,498
Cr-Fe DIFFUSION COATING FERROUS METAL SUBSTRATE
Giles F. Carter, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 24, 1963, Ser. No. 311,125
1 Claim. (Cl. 29—196.6)



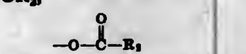
An article of manufacture comprising a ferrous metal substrate having a diffusion coating consisting essentially of Cr-Fe thereon, said coating having from about 12 to 60% by weight of chromium and being comprised of at at least three layers of diffused alloy, the layers being substantially parallel to the surface of the base metal, each layer having grains the dimension of which measured normally to the coating is no thicker than the thickness of each layer, said grains being disposed in side-by-side relationship in a mono-grain brick-type network in which the grains have a substantially uniform thickness, the grains in the different layers forming a tortuous and indirect grain boundary path from the surface of said coating to said substrate.

3,294,499
STABILIZED HYDROCARBON COMPOSITIONS
James H. T. Brook, Birkenhead, England, and Roy L. Allen, Gresford, near Wrexham, Wales, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,665
Claims priority, application Great Britain, Sept. 11, 1962, 34,669/62
28 Claims. (Cl. 44—63)

1. A distillate fuel composition consisting essentially of (a) petroleum derived hydrocarbons, at least 10% of which are normally liquid hydrocarbons produced from the cracking of petroleum hydrocarbons, (b) from 0.1 to 50 millimoles per liter of said composition of an oil-soluble organic epoxide corresponding to the formula



wherein A is selected from the group consisting of hydrogen and C_{1-30} alkyl and B is selected from the group consisting of $—R_1$, $—OR_2$,



and $—(OR_3)_n$, wherein R_1 is C_{8-18} alkyl, R_2 is selected from the group consisting of aryl and alkaryl having from 6 to 40 carbon atoms per molecule, cycloalkyl having from 10 to 40 carbon atoms per molecule, and alkyl having from 1 to 18 carbon atoms per molecule, R_3 is phenyl having no more than 3 alkyl substitutents, said alkyl substituents having no more than 2 carbon atoms per molecule, and *n* is a whole number from 3 to 8 and

(c) from 0.1 to 50 millimoles per liter of said composition of oil-soluble basic substance having a boiling point of not less than 190° F. selected from the group consisting of organic nitrogen base compounds and inorganic base compounds, the cations of which are selected from the group consisting of metals of Groups I and II having an atomic number of 12 through 56 and ammonium.

3,294,500
FUEL FOR INTERNAL COMBUSTION ENGINES
Max Zimmermann, Leverkusen, Werner Müller, Cologne, and Walter Hagge, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Jan. 25, 1962, Ser. No. 168,801
Claims priority, application Germany, May 15, 1954, F 14,727
10 Claims. (Cl. 44—70)

1. A composition of matter containing a liquid fuel for internal combustion engines and an active amount of additive mixture, said mixture consisting essentially of (1) a neutral ester of an acid selected from the group consisting of phthalic acid, isophthalic acid, terephthalic acid, diphenyl dicarboxylic acid and corresponding halodiphenyl dicarboxylic acids, hexahydrophthalic acid, alkylnaphthalene dicarboxylic acid, adipic acid, pimelic acid, suberic acid, azelaic acid, sebacic acid, nonane dicarboxylic acid, decane dicarboxylic acid, the corresponding halo and alkyl hydrocarbon substitution products thereof with members selected from the group consisting of an alkanol and cycloalkanol, and (2) a neutral phosphonic acid ester of the formula



wherein R is a member selected from the group consisting of alkyl and cycloalkyl; X is a member selected from the group consisting of alkyl, cycloalkyl, aryl, alkylaryl, and haloaryl; Y is a member selected from the group consisting of alkoxy, cycloalkoxy and X, as above defined; the ratio of additive mixture to fuel being about 1–2:1000–100,000.

3,294,501
CORROSION INHIBITORS FOR GASOLINES
Fred K. Kawahara, Park Forest, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Nov. 13, 1964, Ser. No. 411,146
1 Claim. (Cl. 44—71)

A gasoline containing, as a lead appreciator, a member selected from the group consisting of benzoic acid and hexahydrobenzoic acid together with a first additive and a second additive, said first additive being employed in conjunction with said second additive, said first additive comprising at least one member of the group consisting of:

Picric acid
3,5-dinitrosalicylic acid
5-nitrosalicylic acid
1-hydroxy-2-naphthoic acid
3-hydroxy-2-naphthoic acid
2,4,5-trihydroxy butyrophenone
5,5'-methylene disalicylic acid
2,4-dinitrophenol,

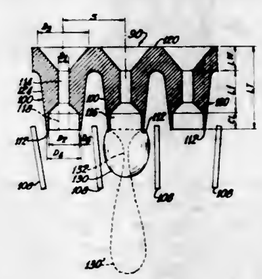
said second additive being 2,3,4-trihydroxy decanophenone, the amount of said first additive being effective to provide inhibition of the corrosiveness of gasoline containing water with respect to zinc, and the amount of said second additive being effective to improve said inhibition which results from the use of said first additive.

3,294,502
METHOD FOR PRODUCING POLISHING WHEEL
Paul E. Schaffner, Wexford, Pa., assignor to Schaffner Manufacturing Company, Inc., Ellsworth, Pa., a corporation of Pennsylvania
Original application Apr. 29, 1959, Ser. No. 809,647, now Patent No. 3,206,894, dated Sept. 21, 1965. Divided and this application May 9, 1962, Ser. No. 193,446
7 Claims. (Cl. 51—293)



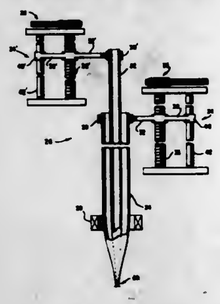
1. The method of forming a polishing wheel from a plurality of flaps comprising forming said flaps into an annulus, confining a liquid epoxy-resin adhesive within the opening of said annulus in communication with the ends of said flaps bounding said opening, rotating said adhesive at a first predetermined speed so that said adhesive is caused by centrifugal force to penetrate into said ends of said flaps, rotating said annulus at a second speed different from said first speed so that said adhesive which has penetrated into said ends is caused by centrifugal force to penetrate between the surfaces contiguous to said ends, and thereafter heating said adhesive to cure said adhesive so that said adhesive hardens forming said annulus into a wheel with a substantially solid hub, the viscosity of said adhesive being so related to said first and second speeds that said adhesive penetrates between said contiguous surfaces only for a predetermined distance along said flaps, said distance being such that said flaps extend freely from said hub over a substantial portion of their length.

3,294,503
APPARATUS FOR PRODUCING FINE CONTINUOUS FILAMENTS
George R. Machlan, Newark, and Charles L. McKinnis, Granville, Ohio, and Hellmut I. Glaser, Anderson, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Apr. 1, 1963, Ser. No. 269,510
5 Claims. (Cl. 65—1)



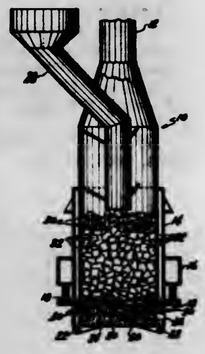
4. A stream feeder for flowing streams of molten glass from a supply comprising a planar feeder section formed of high temperature resistant material, a plurality of spaced tips integral with and depending from the planar section, each of said tips being formed with a passage, the marginal edge defining the outlet of the passage being of a thickness not greater than five thousandths of an inch.

3,294,504
METHOD OF MAKING FIBER BUNDLES
John W. Hicks, Jr., Fiskdale, Mass., assignor to Mosaic Fabrications, Inc., Southbridge, Mass., a corporation of Massachusetts
Original application Mar. 6, 1962, Ser. No. 178,526. Divided and this application Oct. 11, 1965, Ser. No. 512,254
4 Claims. (Cl. 65—3)



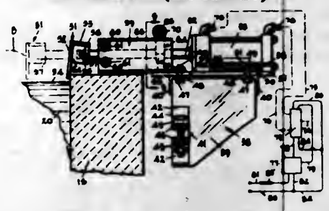
1. A method of making a stranded bundle of capillary tubes comprising forming a sleeve of a highly erodible glass on a glass tube relatively resistant to erosion, fusing together the sleeves of adjacent tubes to form a composite bundle of the formed tubes, coating the end portions of the bundle with an erosion resistant material and thereafter eroding the sleeve from each of the tubes of the bundle between the coated ends.

3,294,505
PROCESS OF PRODUCING GLASS IN A CUPOLA
Jack W. Garrison, Evanston, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1963, Ser. No. 334,025
8 Claims. (Cl. 65—17)



1. A process of rapidly producing glass which comprises charging a cupola with lumps of coke and with briquettes formed of a mixture of finely divided glass-forming materials comprising silica and a material reactive with silica selected from the group consisting of a source of sodium oxide and a mixture of a source of a boron oxide and a source of sodium oxide, said silica-reactive material having a substantially lower melting point than silica, a portion of said coke being charged in a layer at the bottom of said cupola, a portion of said briquettes being charged over said layer of said coke, additional briquettes and lumps of coke being charged periodically over the materials previously charged to said cupola, burning said coke in a bed at the bottom of said cupola to melt at least a portion of said materials of said briquettes above said bed of burning coke and to cause the materials of said briquettes to flow through said bed of burning coke to form molten glass and to refine the same, and withdrawing said molten and refined glass from said cupola.

3,294,506
METHOD AND APPARATUS FOR CONSOLIDATING BATCH
John C. Blaine, Ottawa, Ill., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed June 19, 1962, Ser. No. 203,512
5 Claims. (Cl. 65—27)



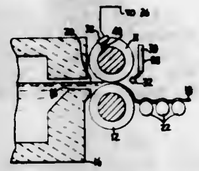
1. In a method of delivering glass making materials to the charging zone of a tank-furnace, wherein said materials are fed onto the surface of a molten glass bath in said charging zone in a blanket-like layer having a predetermined width less than the distance between the side walls of the furnace defining said charging zone and thereafter advanced in said blanket-like layer toward and into the melting area of the furnace, the improvement comprising the step of intermittently pushing and compacting from the said side walls inwardly any free floating lumps of material which have broken loose from said layer back into the marginal edges of the layer to thus maintain said side walls free of accumulations of said glass making materials and substantially preserve said predetermined width of said layer during passage of said materials into said melting area.

3. In apparatus for delivering a layer of glass making materials onto the surface of a bath of molten glass in the charging area of a tank furnace and advancing said materials forwardly from the charging area into the melting zone of the furnace, said charging area being in open communication with said melting zone and including an end wall and oppositely disposed side walls, means for depositing said glass making materials upon the molten glass in said charging area in a continuous layer with the edges of said layer spaced slightly inwardly from said side walls, a pusher blade mounted adjacent each said side wall between said side wall and the adjacent edge of said layer, the lower edge of each said pusher blade being disposed slightly above the surface of the molten glass, and means for periodically moving each said pusher blade inwardly from said side wall toward said adjacent edge of said layer to push batch material which has broken loose from said layer back into the marginal edge thereof and maintain said marginal edges spaced inwardly from said side walls.

3,294,507
TRANSVERSE HEAT ABSORPTION FROM A DRAWN GLASS SHEET SUBSEQUENT TO ROLL FORMING
Dean Borst, Monroeville, and Francis X. Mitteroder, Lower Burrell, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 13, 1963, Ser. No. 264,802
3 Claims. (Cl. 65—29)

1. In a method for forming a ribbon of glass from a molten bath by preshaping viscous glass to a control thickness by passing the glass between a pair of forming rolls set at a spacing equal to said control thickness to form a ribbon of workable glass having at least one region wherein the thickness of the glass in the region is less than the control thickness, the improvement which comprises:

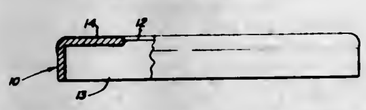
determining the transverse location of each region wherein the thickness of said ribbon is less than the control thickness of said ribbon,



withdrawing heat from each said region transversely of said ribbon at a location subsequent to the forming rolls until the viscosity of the glass in each said region is increased until, upon attenuation, the thickness in each said region is substantially the same as said control thickness, and

thereafter attenuating said ribbon of glass to produce a ribbon having substantially uniform thickness.

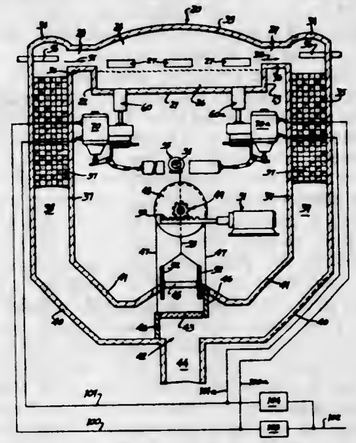
3,294,508
SEALING A MEMBRANE TO A TARGET SUPPORT METAL RING
Richard C. Anderson and Matthew J. Carras, both of Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,152
3 Claims. (Cl. 65—39)



3. The method of making an image orthicon target which comprises the steps of coating a target support metal ring with a layer of sealing glass frit having a thermal linear contraction over 200° C. not exceeding that of the ring by more than 0.0005 inch per inch per degree centigrade, heating the ring and thereby melting the sealing glass frit and forming a sealing glass coating on the ring, cooling the ring and solidifying the sealing glass coating in place on the ring, placing over the ring and in contact with the sealing glass coating a membrane of semiconducting glass having a softening-point temperature at least 120° C. higher than the softening-point temperature of the sealing glass and having a thermal linear contraction over 200° C. between that of the sealing glass and that of the ring, heating the resulting closed ring assembly and remelting the sealing glass coating in place on the ring and in contact with the membrane around the circumference of the ring, and then cooling the resulting sealed membrane and ring assembly and solidifying the sealing glass coating in sealing contact with the ring and membrane around the inner periphery of the ring.

3,294,509
METHOD OF AND APPARATUS FOR PRODUCING NON-THERMAL CURRENTS IN A BODY OF MOLTEN GLASS
Leonard D. Soubier, deceased, late of Toledo, Ohio, by Olive M. Soubier, executrix, Toledo, Ohio, and Arthur B. Swain, Jr., Toledo, Ohio, assignors to Owens-Illinois Inc., a corporation of Ohio
Filed July 16, 1962, Ser. No. 211,473
4 Claims. (Cl. 65—134)

1. In a method of melting glass in a reversible gas-fired melter furnace wherein the temperature of molten glass in the furnace varies substantially across the width of the furnace when the furnace is fired from either side, the steps of bubbling a gaseous medium through the molten glass in the furnace at each side of the furnace, increasing the extent of bubbling at that side of the furnace from which firing is being effected and at which the temperature of the molten glass is at a minimum, reducing the extent of bubbling at that side of the furnace toward which firing is being effected, and reversing the extent of bubbling at both said sides when the direction of firing of the furnace is reversed.



2. In a glass melting furnace which is alternately fired from opposing sides thereof, means for increasing the efficiency of melting comprising at least one bubbler adjacent each side wall of the furnace, means for emitting a gaseous medium from each of the bubblers, means for varying the volume of gaseous medium emitted from each of said bubblers and means responsive to the direction of firing of said furnace to emit a substantially greater volume of medium from the bubbler on that side of the furnace from which firing is being accomplished than from the bubbler on the other side of the furnace.

3,294,510
APPARATUS FOR AND PROCESS OF ANNEALING GLASS AS IT IS BEING DRAWN UPWARDLY
Albert Baudoin, Jumet, Belgium, assignor to Societe Anonyme Glaverbel, Brussels, Belgium, a Belgian company
Filed Nov. 23, 1965, Ser. No. 509,404
Claims priority, application Belgium, May 20, 1960, 469,425
13 Claims. (Cl. 65—84)

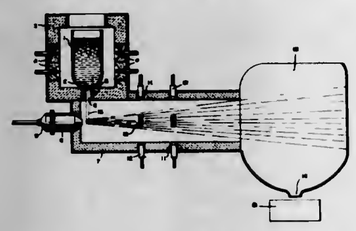


1. The process of annealing sheet glass drawn upwardly through a drawing chamber from a body of molten glass and having transverse temperature curves established therein during its movement through the drawing chamber, which comprises drawing the formed sheet up through an annealing zone located adjacently above the drawing chamber, introducing a cooling gas into the lower section of such annealing zone so that such gas is diffused upwardly from the place of discharge thereof into such zone,

the cooling gas being supplied to such lower section within an area thereof spaced inwardly from the side edges of the glass sheet and so that it is distributed in a non-uniform manner along an elongated region located in spaced, substantially parallel relation to the adjacent surface of the glass sheet, and controlling the ascent of the cooling gas so that it rises from such region in an ascending transversely non-uniform flow along the upwardly moving portion of the glass sheet and so as to withdraw heat from such glass sheet that the cooling action is greater in the central portion of the sheet than on the side edges thereof as to produce a transverse temperature curve in such glass sheet portion different from that established therein the upper portion of the drawing chamber.

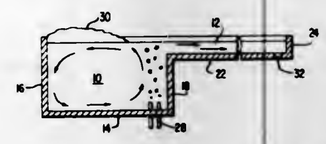
4. Apparatus for annealing sheet glass as it is being drawn upwardly through a drawing chamber from a body of molten glass and having transverse temperature curves established therein during its movement through the drawing chamber, comprising an annealing tower positioned adjacently above the drawing chamber, means for drawing the glass sheet upwardly through said tower, means for introducing a cooling gas into the lower section of said tower within an area thereof spaced inwardly from the side edges of the glass sheet and including elongated means in said lower section disposed in spaced relation to the rising glass sheet and in substantially parallel relation to such glass sheet, said elongated means being constructed and arranged to diffuse the cooling gas upwardly from the place of discharge thereof into said elongated means and to supply the cooling gas along such lower tower section in a non-uniform manner, and to enable the cooling gas to rise therefrom non-uniformly along said lower section and in an ascending direction so that an ascending, transversally non-uniform flow of cooling gas engages upwards along an upwardly moving portion of the glass sheet to effect à greater withdrawal of heat from such glass sheet in the central portion thereof than in the side edges of such glass sheet so as to produce a transverse curve of temperatures in such glass sheet portion different from that established therein in the upper portion of the drawing chamber.

3,294,511
APPARATUS FOR FORMING GLASS BEADS
Frederic O. Hess, Philadelphia, Pa., assignor to Selas Corporation of America, Dresha, Pa., a corporation of Pennsylvania
Filed Apr. 6, 1959, Ser. No. 804,466
3 Claims. (Cl. 65—142)



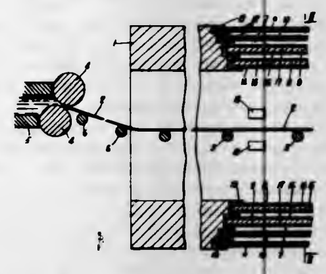
1. Apparatus for producing glass beads, comprising means for forming a molten glass stream of low viscosity, means in close juxtaposition with the stream forming means for dispersing said stream into a multiplicity of glass particles and directing the same along a path, an elongated substantially enclosed chamber disposed along a portion of said path, said chamber having a side wall and having openings in the ends thereof, said dispersing means being mounted in position to direct the dispersed particles through the chamber, heating means for maintaining the interior of said chamber at an elevated temperature sufficiently high to allow surface tension to shape the particles moving therethrough into spherical form, said particles being directed by said dispersing means from said chamber into a space for a period of time sufficient to cause the setting thereof to form glass beads, and means for collecting said beads.

3,294,512
GLASS FURNACE
Harvey L. Penberthy, 5624 SW. Admiral Way, Seattle, Wash. 98116
Filed May 22, 1963, Ser. No. 282,301
5 Claims. (Cl. 65—178)



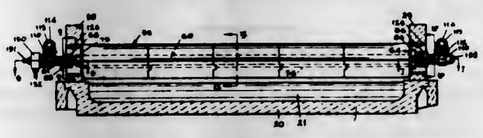
1. A glass furnace comprising a tank forming melting, fining and conditioning zones, said melting zone having a greater depth than the contiguous shallow fining zone, said change in depth being effected by a submerged wall, and means in said melting zone adjacent said submerged wall for creating a stream of molten glass rising from the botton of said melting zone along said submerged wall to the surface of the glass mass, said fining zone having an increasingly more shallow depth as it extends toward said conditioning zone.

3,294,513
APPARATUS FOR ANNEALING GLASS
John Reginald Beattie, Maghull, near Liverpool, England, assignor to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain
Filed Apr. 30, 1963, Ser. No. 276,834
Claims priority, application Great Britain, May 3, 1962, 17,083/62
5 Claims. (Cl. 65—194)



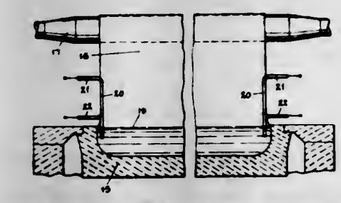
1. Apparatus including an annealing lehr having a low thermal capacity and adapted for controlling the rate of heat loss from the glass as it is cooled through the annealing range of the glass, the lehr comprising, at least in the neighbourhood of the annealing zone, a cavity wall structure of which each wall consists of a plurality of partitions extending along the wall face to face and spaced in directions transverse to the wall, at least one of the spaced partitions in each wall of the cavity wall structure having a coating of refractory material forming a reflecting surface, said refractory material being such that, in the temperature range of 570° C. to 480° C., said material has a surface reflectivity greater than its surface absorptivity at a substantial proportion of wavelengths between 2.5 microns and 6 microns for inhibiting the transmission of heat through the cavity wall structure from the interior of the lehr.

3,294,514
LIP-TILE MOUNTING
James T. Zellers, Jr., Charleston, W. Va., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 17, 1962, Ser. No. 231,288
11 Claims. (Cl. 65—196)



1. In apparatus for producing sheet glass, an elongated refractory lip-tile having an opening extending longitudinally therethrough, and means for supporting said lip-tile comprising an elongated support member extending through said opening and projecting at its opposite ends beyond the ends of said lip-tile, means carried by said support member adjacent one end of said lip-tile for axially locating said lip-tile relative to said support member, and compressible means carried by said support member adjacent the other end of said lip-tile for resiliently urging said lip-tile into engagement with said locating means.

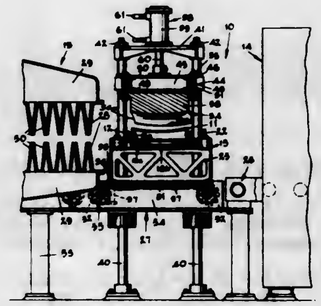
3,294,515
MEANS FOR MAINTAINING SHEET WIDTH WHILE DRAWING SHEET GLASS
Alfred E. Badger and Conrad B. Schafer, Maumee, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 28, 1962, Ser. No. 198,034
4 Claims. (Cl. 65—199)



1. Apparatus for producing sheet glass, comprising a working receptacle for containing a mass of molten glass, means for continuously drawing a glass sheet upwardly from said mass of molten glass including a bending roll positioned above said working receptacle and about which the upwardly drawn sheet is deflected into a substantially horizontal plane for passage through an annealing lehr, an elongated width maintaining member positioned adjacent each edge of said sheet for engaging the edge of said upwardly drawn sheet moving therepast, each said elongated member extending into the molten glass in said working receptacle at its lower end and extending upwardly in engagement with said sheet to a point where said sheet has set sufficiently to substantially maintain its width upon disengaging said width maintaining member, and means heating said width maintaining members to a temperature above that of the sheet with which they are in contact.

3,294,516
APPARATUS FOR PRESS BENDING GLASS SHEETS
Frank J. Carson and Herbert A. Leflet, Jr., Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 2, 1964, Ser. No. 395,360
3 Claims. (Cl. 65—273)

1. Apparatus for bending glass sheets about both major axes thereof, comprising an outline type bending mold including a substantially continuous peripheral shaping rail having a shaping surface adapted to form an anticlastic curvature in a glass sheet bent into conformity therewith, said shaping rail including a pair of opposed, spaced, longitudinally extending side members and a pair of transversely extending end members connecting the adjacent ends of said side members, the shaping surface portions of said side members being convexly curved as viewed in elevation to create corresponding convex curvature in said sheet in the longitudinal dimension throughout the entire length thereof and the shaping surface portions of said end members being concavely curved as viewed in elevation to create a corresponding concave curvature in the transverse dimension of the sheet throughout the entire length of said sheet, means supporting said mold for movement along a predetermined path, a furnace disposed along said path operable

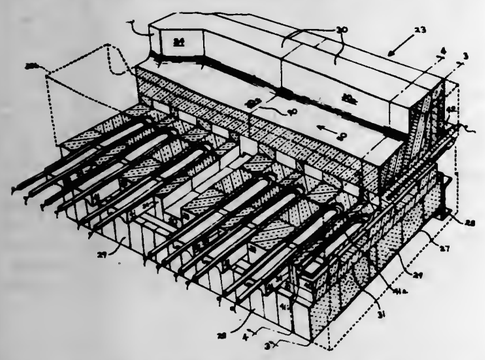


to heat the sheet to the softening point of glass causing it to sag onto said shaping surface, a pressure member disposed above said path, a complemental shaping surface formed on the downwardly directed face of said pressure member, means mounting said pressure member for movement relative to said path, toward and away from said bending mold between a first position wherein said complemental shaping surface is spaced above said mold and a second position wherein said complemental shaping surface is in close proximity to said shaping surface on said mold and operable to force a glass sheet resting on the shaping surface into pressing engagement with said shaping surface and form said anticlastic curvature in said sheet, and actuator means moving said pressure member between said first and second positions in timed relationship to the movement of said mold along said path.

3,294,517
FOREHEARTH CONSTRUCTION
George L. Fraser, Oakland, Calif., and Theodore F. Piel, Toledo, Ohio, assignors to Owens-Illinois Inc., a corporation of Ohio
Filed Feb. 11, 1963, Ser. No. 257,680
6 Claims. (Cl. 65—346)

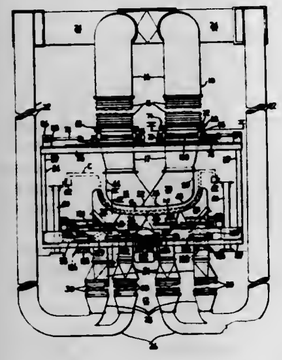
1. In a forehearth for conveying molten glass from a supply tank to a delivery section, or the like, the improved construction which comprises a plurality of block elements formed of a high-grade refractory constructed and arranged to define a channel inclusive of upstanding side walls and a bottom wall, said construction and arrangement further defining a plurality of passageways extending completely across said forehearth, said passageways being in parallel spaced relationship in a plane beneath said bottom wall and a plurality of high-grade refractory elements located in said passageways in slidable and removable relationship, said latter elements each

having an elongate central bore containing an electrical resistance element in slidable and removable relationship,



said resistance element being adapted when energized electrically to reduce the vertical temperature gradient of glass carried in said channel forehearth.

3,294,518
APPARATUS FOR TEMPERING BENT GLASS SHEETS
Frank B. Leseck, Natrona Heights, and Walter J. Ressler, Jr., Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 19, 1963, Ser. No. 296,279
10 Claims. (Cl. 65—348)



4. Appartus for tempering curved glass sheets comprising a frame comprising upper and lower horizontal beams supporting parallel upper and lower horizontal track means, at least two carriages having wheels supported by each of said track means, each carriage comprising a carriage frame engaging the periphery of a relatively narrow, flexible fluid supply means, a nozzle box communicating with each said supply means and comprising a set of relatively narrow, elongated parallel nozzles separated by relatively wire grooves extending lengthwise in a direction substantially parallel to said track means, the nozzle boxes comprising a series of upper nozzle boxes, each of said upper nozzle boxes being independently associated with a different carriage supported along said upper track means and having its nozzles provided with orifices opening downward, and a series of lower nozzle boxes, each of said lower nozzle boxes being independently associated with a different carriage supported along said lower track means and having its nozzles provided with orifices facing upward, means connecting each carriage to said frame for adjusting the position thereof relative to another carriage along its associated track means, and means for reciprocating said frame in a direction transverse to the direction of said track means, the nozzles of each of said nozzle boxes in each series of nozzle boxes being aligned with the relatively wide grooves of each nozzle box of said series adjacent thereto.

3,294,519
GLASS SHEET TEMPERING APPARATUS
Robert E. Fickes, Manor Township, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 1, 1963, Ser. No. 299,213
4 Claims. (Cl. 65—348)



1. A nozzle box for tempering glass sheets comprising an apertured wall positioned to face a surface of a glass sheet supported in spaced relation to said wall for tempering, means for supplying fluid under pressure through the apertures of said apertured wall to quench the glass sheet, said wall having sufficiently larger apertures in its central portion than in the remainder of said wall surrounding its central portion to cause a slight pressure gradient in said fluid from the central region to the outermost regions of said space between said glass sheet and said wall, thus resulting in a continuous outward flow of said fluid from the center to the margin of the glass sheet.

3,294,520
SYNERGISTIC HERBICIDAL COMPOSITION AND METHOD
Duane R. Arneklev, Sunnyvale, and Raleton Curtis, Los Altos, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 17, 1964, Ser. No. 411,732
2 Claims. (Cl. 71—2.3)

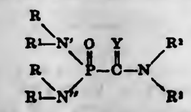
1. A synergistic herbicidal composition comprising N-[2 - (O,O - diisopropyldithiophosphoryl)ethyl]benzenesulfonamide and a material selected from the group consisting of 2,4-dichlorophenoxyacetic acid, its related salts and alkyl esters.

3,294,521
METHOD FOR CONTROLLING PLANT GROWTH
Edward D. Weil, Lewiston, Edwin Dorfman, Grand Island, and Jack S. Newcomer, Wilson, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Original application May 2, 1960, Ser. No. 25,845, now Patent No. 3,221,948, dated Nov. 30, 1965. Divided and this application Nov. 27, 1964, Ser. No. 414,418
8 Claims. (Cl. 71—2.6)

1. A method for the control of weeds which comprises applying to the media to be treated a phytotoxic amount of a composition comprising 2,3,6-trichlorophenylacetic acid in mixture with a compound selected from the group consisting of 2,3-dichlorophenylacetic acid, 2,5-dichlorophenylacetic acid, 2,6-dichlorophenylacetic acid, 3,4-dichlorophenylacetic acid, 2,3,5-trichlorophenylacetic acid, 2,4,5,α-tetrachlorophenylacetic acid, 2,3,5,6-tetrachlorophenylacetic acid, and mixtures thereof.

3,294,522
COMPOSITION AND METHOD FOR DESICCATING, DEFOLIATING AND DESTROYING PLANTS
Ivan C. Popoff, Ambler, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Original application Dec. 6, 1963, Ser. No. 328,511. Divided and this application Oct. 21, 1965, Ser. No. 545,175
25 Claims. (Cl. 71—2.7)

1. A defoliating composition comprising as an essential defoliating ingredient a compound of the formula



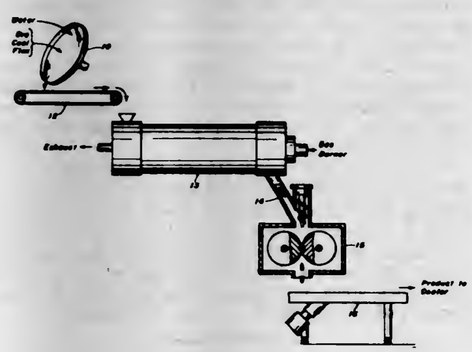
in which R is selected from the group consisting of hydrogen, hydrocarbon and substituted hydrocarbon; R^1, R^2 and R^3 are each selected from the group consisting of hydrocarbon and substituted hydrocarbon; and Y is selected from the group consisting of oxygen and sulfur dispersed in a carrier for defoliants.

3,294,523
VEGETATION GROWTH PROMOTER UTILISING BLOOD AS A MAJOR COMPONENT
Robert P. Morningstar, P.O. Box Drawer 427, Milford, Pa. 18337
No Drawing. Filed Jan. 29, 1964, Ser. No. 341,108
8 Claims. (Cl. 71—17)

1. A vegetation growth promoter fertilizer additive composition comprising the admixture, by weight, of the following ingredients:

	Parts
Gum karaya	9
Gum guar	9
Dehydrated blood	82

3,294,524
METHOD OF BRIQUETTING ORE
Eugene A. Pelczarski, West Deer Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,377
4 Claims. (Cl. 75—3)



1. A method of briquetting iron oxide fines with a bituminous coal binder comprising pelletizing a mixture of iron oxide and bituminous coal particles to form pellets having a coal content of 5 to 15 percent, heating the pellets to a temperature in the range of about 600 to 800° F., and compacting the pellets into briquettes directly following the heating step while their temperature remains in said range.

3,294,525
FUSION PROCESSES FOR THE MANUFACTURE OF METALS AND ALLOYS EMPLOYED IN CONTACT WITH MOLTEN MATERIALS
Roger Lacroix, Suresnes, and Henri Blavat, Cachan, France, assignors to Comptoir Lyon-Alemand Louyet & Cie, Paris, France
No Drawing. Filed Mar. 11, 1963, Ser. No. 264,061
Claims priority, application France, Mar. 30, 1962, 892,931
12 Claims. (Cl. 75—10)

1. An improved process for the manufacture of platinoids to be employed in contact with molten materials comprising compressing said platinoid in the form of a sponge into an element, simultaneously sintering and degassing said compressed element by heating said element under vacuum at a temperature, which is lower than, but near, the melting point of said platinoid sponge and melting said sintered and degassed element under vacuum without contact with a crucible.

3,294,526
DIP BRAZING COMPOSITION
Ronald D. Koeplinger, Saginaw, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 3, 1964, Ser. No. 372,387
2 Claims. (Cl. 75—122)

1. A low melting filler alloy for use in brazing consisting essentially by weight from about 37.0 to about 49.0 percent cadmium and from about 25.5 to about 28.5 percent zinc, the balance being magnesium.

3,294,527
AGE HARDENING SILICON-CONTAINING MARAGING STEEL
Stephen Floreen, Westfield, and Raymond Frank Decker, Fanwood, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 9, 1964, Ser. No. 373,872
4 Claims. (Cl. 75—123)

2. A martensitic steel characterized in the aged condition by a combination of relatively high yield strength together with good toughness and having a composition within the ranges of about 10% to 20% nickel, from about 1.75% to not more than 4% silicon, carbon in an amount up to not more than 0.03%, up to 5% chromium with the sum of the nickel plus silicon plus chromium contents not exceeding about 23%, up to about 1% titanium, up to about 1% aluminum, with the sum of the titanium plus aluminum not exceeding 1%, up to 0.75% manganese, up to 2% cobalt, up to 2% molybdenum, up to 2% vanadium, up to 2% tungsten, up to 0.2% beryllium, up to 2% columbium, up to 2% tantalum, up to 2% copper, with the proviso that the total summation of cobalt, molybdenum, vanadium, tungsten, beryllium, columbium, tantalum and copper is not greater than 2%, and the balance essentially iron.

3,294,528
NICKEL-COPPER-TITANIUM STEEL
Robert R. Hayward, Cleveland, Ohio, and George Raynovich and William H. Richey, Pittsburgh, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 21, 1962, Ser. No. 197,181
1 Claim. (Cl. 75—125)

A rolled steel consisting of carbon up to .15%, manganese between .60% and 1.0%, phosphorus not exceeding .04%, sulphur not exceeding .05%, silicon between .20% and .50%, copper between .20% and about .50%, nickel between .50% and .80%, and titanium between .03% and .06%, the balance being iron and incidental impurities in normal amounts, the steel in the hot rolled

condition in thickness not greater than ½" being characterized by an elongation of at least 22% in an 8" gauge length, an impact strength of at least 15 ft. pounds at a temperature of −50° F. and a lower yield point of at least 50,000 p.s.i.

3,294,529
SUPERCONDUCTIVE ALLOYS
Robert C. Haverstraw, Willoughby, Ohio, and Malcolm J. Fraser, Penn Hills, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,309
5 Claims. (Cl. 75—134)

5. A new superconductor comprising hydrogen and a zirconium-niobium alloy in which the zirconium is present to an amount of 15 to 60 weight percent of the alloy, the hydrogen being present in an amount sufficient to provide a volume in the superconductor of about 5 to 15 percent greater than that of the zirconium-niobium alloy free from the hydrogen.

3,294,530
FLASH SINTERING
Samuel Storchheim, Forest Hills, N.Y., assignor to Alloys Research & Manufacturing Corporation, Woodside, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 22, 1965, Ser. No. 427,507
8 Claims. (Cl. 75—214)

1. In a method of forming articles comprising forming a metallic powder mixture containing from 90% to 100% by weight of a primary metal selected from the group consisting of aluminum, magnesium, titanium, beryllium, zinc, and lead, shaping the mixture and sintering, the improvement which substantially reduces the pressure required for shaping, provides an oxide coating over at least a portion of the primary metal particles and reduces the time required for sintering comprising heating the product at a temperature above the melting point of the primary metal and less than the melting point of the primary metal oxide to effect melting thereof and maintaining the temperature for a period within the range from 5 to 60 seconds, sufficient to complete sintering.

3,294,531
PHOTOCONDUCTIVE LAYERS FOR ELECTROPHOTOGRAPHIC PURPOSES
Heinz Schlesinger, Wiesbaden, Germany, assignor, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed July 5, 1960, Ser. No. 40,519
Claims priority, application Germany, July 22, 1959, K 38,260
32 Claims. (Cl. 96—1)

1. An electrophotographic material comprising a conductive support layer and a photoconductive insulating layer, the latter comprising a member of the group consisting of an optical sensitizer and an activator in admixture with a compound selected from the group consisting of resinous reaction products of an aralkyl halide with itself; and an aromatic compound having at least one reactive hydrogen atom with a hydrocarbon containing at least two halogen atoms, in the presence of a Friedel-Crafts catalyst.

3,294,532
HOT MELT COMPOSITION FOR THREE-DIMENSIONAL PRINTING
Marion O. Brunson and James E. Huffaker, both of Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed July 9, 1965, Ser. No. 470,911
10 Claims. (Cl. 96—27)

3. A coating composition consisting essentially of a blend of 70–99.5% by weight of a thermally degraded propylene–butene-1 copolymer having a molecular weight of about 1,000 to 8,000, 3–30% by weight of a synthetic hydrocarbon resin comprising a polymer of unsaturates derived from deep cracking of petroleum or from wood distillates, said resin having a molecular weight of 300 to 2,000, a softening point of 40 to 150° C., a specific gravity 25/25° C. of 0.920 to 0.980 and an acid number of less than 1 and 0.25–1.0% by weight of a slip agent selected from the group consisting of the amides of C–10 through C–30 saturated and unsaturated mono and polycarboxylic acids and the acetylated monoglycerides.

3,294,533
PRESENSITIZED PRINTING PLATE AND PROCESS OF DEVELOPING PRINTING PLATE
Oskar Süs, Wiesbaden-Biebrich, and Hartmut Steppan, Wiesbaden-Dotzheim, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed Apr. 29, 1963, Ser. No. 276,210
Claims priority, application Germany, May 2, 1962, K 46,628
16 Claims. (Cl. 96—33)

9. A process for developing a printing plate which comprises exposing a light sensitive layer, on a non-metallic base, to light under a master and developing the resulting image by treatment with an aqueous developer, the light sensitive layer comprising the hexafluophosphate of at least one polyfunctional diazonium salt obtained by the acid condensation of a diphenylamine-4-diazonium salt with a compound selected from the group consisting of an aldehyde and a ketone, the layer containing substantially no excess of a strong acid.

3,294,534
DIAZOTYPE PHOTOPRINTING MATERIAL SUSCEPTIBLE TO THERMAL DEVELOPMENT
Bernard I. Halperin, Glen Aubrey, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 1, 1963, Ser. No. 292,066
8 Claims. (Cl. 96—49)

1. Light-sensitive diazotype photoprinting material having on one surface of a supporting sheet, two superposed dried coatings of an aqueous latex dispersion of a synthetic organic film-forming polymer, one of said coatings containing a light-sensitive diazonium compound and an acid stabilizer therefore, and the other containing an acid to neutral compound selected from the group consisting of the alkali metal and nitrogen base salts of organic acids, which is converted on heating to temperatures from 100 to 200° C. to an alkaline compound which is substantially non-volatile at the conversion temperature, and an azo coupling component in at least one of said coatings.

7. A process for making diazotype photocopies which comprises exposing the light-sensitive diazotype photoprinting material as defined in claim 1 to actinic light under a relatively opaque pattern carried on a relatively translucent background until substantial decomposition of the light-sensitive diazonium compound occurs in the light-struck areas, and heating resulting sheet at a temperature of 100 to 200° C to effect development.

3,294,535
PROCESS FOR DEVELOPING DIAZOTYPE ARTICLE COMPRISING MOLECULAR SIEVE WITH ALKALINE MATERIAL ABSORBED THEREIN
John B. Powers, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 1, 1962, Ser. No. 176,786
4 Claims. (Cl. 96—49)

1. In a diazo printing process wherein a base material is coated with a light sensitive stabilized diazo compound and an azo coupling component and is then exposed to light under a pattern to decompose such diazo composed in the area of transparency of said pattern and then treating such exposed coated base material with a material alkaline in nature, the improvement which comprises adsorbing the material alkaline in nature within the inner adsorption region of at least partly dehydrated crystalline zeolitic molecular sieve and retaining such material therein and thereafter controllably releasing said material in contact with said base material to develop an image thereon.

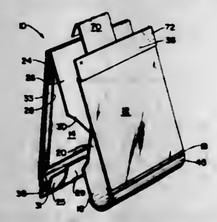
3,294,536
PHOTOGRAPHIC PREHARDENER COMPOSITIONS
Harry C. Baden, Charleton C. Bard, and James Marvin Seemann, all of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 4, 1963, Ser. No. 321,323
9 Claims. (Cl. 96—50)

1. A composition which in aqueous solution at a pH within the range of 2–10 is useful as a prehardener composed of the following: a succinaldehyde supplying compound selected from the group consisting of succinaldehyde, 2,5-dimethoxytetrahydrofuran and 2,5-diethoxytetrahydrofuran, formaldehyde, alkali metal sulfate, alkali metal bromide and a compound selected from the group consisting of dioxan, ascorbic acid, acetyl acetone, the C_6–C_{18} aliphatic alcohols, the aromatic sulfinic acids, kojic acid, and the amino aliphatic acids of 2–4 carbon atoms.

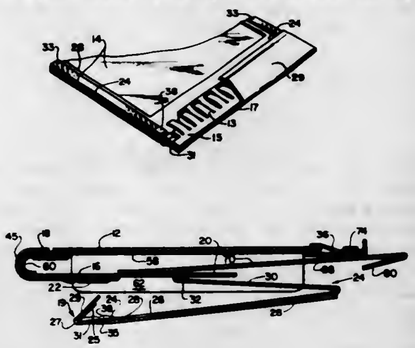
3,294,537
LITH-TYPE EMULSIONS WITH ORGANOSILICONE BLOCK COPOLYMERS
Kirby M. Milton, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 17, 1965, Ser. No. 488,244
23 Claims. (Cl. 96—67)

1. A photographic silver halide emulsion in which the halide comprises at least 50 mole percent chloride, said emulsion containing a block copolymer comprising blocks of polyoxyethylene and polyoxypropylene, about 10 to about 70%, by weight, of said copolymer being polyoxyethylene and the average molecular weight of polyoxypropylene in said copolymer being in the range of about 800 to about 3,000, said block copolymer containing up to about 15 percent, by weight, of silicon atoms in the main polymer chain.

3,294,538
LIQUID TRAPPING MEANS FOR A FILM PACK
Rogers B. Downey, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 14, 1963, Ser. No. 288,012
6 Claims. (Cl. 96—76)



1. A photographic film unit which is adapted to be processed by passing said unit between a pair of juxtaposed pressure-applying members which comprises, in combination, a first photosensitive sheet element, a second non-photosensitive sheet element and a rupturable container retaining a fluid processing composition, said sheet elements arranged for biasing into superposed relationship with said container positioned intermediate said sheet elements transverse a first leading edge thereof, to effect unidirectional discharge of said container's contents between and in contact with opposed surfaces of said elements upon application of compressive force to said container, liquid confining means attached to the trailing edge of said second sheet element, said liquid confining means comprising an elongated sheet including a first section having a



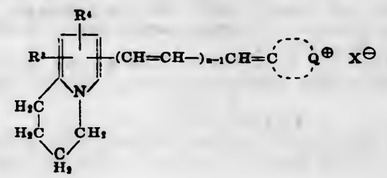
leading edge attached transversely said trailing edge, said elongated sheet medially folded to provide a second section extending transverse said first section within the laminate formed upon superpositioning of said first and said second sheet elements to provide retention of said processing composition entering intermediate said first and said second sections of said elongated sheet, a spring member attached to one of said first and said second sections and extending intermediate said sections for biasing said second section from juxtaposed contact with said first section.

3,294,539
LIGHT-FILTERING DYES FOR PHOTOGRAPHIC ELEMENTS
Joseph Bailey, Wealdstone, Harrow, Middlesex, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 3, 1963, Ser. No. 292,550
7 Claims. (Cl. 96—84)

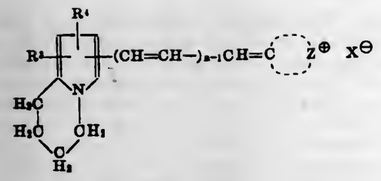


1. A light-sensitive photographic element comprising a support coated with at least one hydrophilic colloid layer containing a light-sensitive silver halide emulsion and at least one hydrophilic colloid layer containing at least one dye selected from the class consisting of dyes having the formulas:

I.

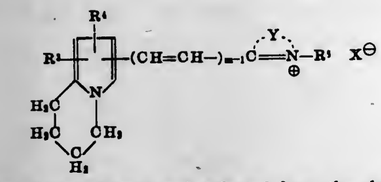


II.



and

III.



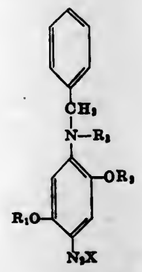
wherein R^3 and R^4 are each selected from the class consisting of the hydrogen atom, an alkyl group, an aryl group, a heterocyclic group, the carboxy group, an alkoxycarbonyl group, and an aryloxycarbonyl group, *n* represents an integer of from 1 to 3, Q represents the nonmetallic atoms needed to complete a heterocyclic nucleus selected from the class consisting of the pyrrole series, the indole series, and the pyrrocoline series, Z represents the nonmetallic atoms needed to complete a 1,2-tetramethylenepyrrole group, $X^{\ominus}$ represents an acid anion, *m* represents an integer of from 2 to 3, Y represents the nonmetallic atoms necessary to complete a heterocyclic nucleus selected from the class consisting of the thiazole series, the benzothiazole series, the naphthothiazole series, the thianaphtheno-7',6',4,5-thiazole series, the oxazole series, the benzoxazole series, the naphthoxazole series, the selenazole series, the benzoselenazole series, the naphthoselenazole series, the thiazoline series, the 2-quinoline series, the 4-quinoline series, the 1-isoquinoline series, the 3-isoquinoline series, the 3,3-dialkylindolenine series, the pyridine series, the imidazole series, the benzimidazole series and the naphthimidazole series, and R^5 represents an alkyl group.

3,294,540
LITH-TYPE EMULSIONS WITH BLOCK CO-POLYMERS
Charles A. Goffe, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 17, 1963, Ser. No. 331,141
12 Claims. (Cl. 96—87)

1. A light-sensitive photographic element comprising a support coated with at least one hydrophilic colloid layer containing a silver halide emulsion in which the chloride comprises at least 60 mole percent of the halide, and at least one hydrophilic colloid layer containing a water-soluble block polymer of polyoxypropylene and polyoxyethylene in which the polyoxypropylene moiety has an average molecular weight between 800 and 3,000 and the polyoxyethylene units constitute from about 10 to about 70 percent by weight of said polymers, such that the said block polymer is contiguous to the said silver halide.

3,294,541
DIAZO-LIGHT-SENSITIVE COPYING MATERIAL
Georg Werner, Wiesbaden-Biebrich, Gerhard Fink, Wiesbaden, and Walter Müller, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser, Hoboken, N.J.
No Drawing. Filed Sept. 23, 1964, Ser. No. 398,779
Claims priority, application Germany, Sept. 25, 1963, K 50,920
8 Claims. (Cl. 96—91)

1. A light-sensitive copying material for the diazotype process, which comprises a support and a light-sensitive diazo compound coated on said support, said compound having the formula:

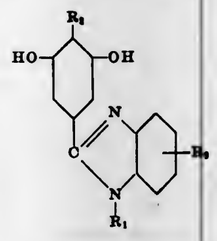


where R_1 and R_2 are alkyl radicals, R_3 is an hydroxyalkyl radical, and X is an anionic acid radical.

3,294,542
PHOTOSENSITIVE DIAZO COMPOSITIONS
Oskar Süs, Wiesbaden-Biebrich, and Heinz Schäfer, Wiesbaden-Sonnenberg, Germany, assignors to Keuffel & Esser, Hoboken, N.J.
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,122
Claims priority, application Germany, Dec. 23, 1963, K 51,717
8 Claims. (Cl. 96—91)

1. A diazo composition comprising a unilaterally diazotized paraphenylene diamine salt and a 2-(3',5'-dihydroxyphenyl)-benzimidazole salt.

2. A diazo composition comprising a unilaterally diazotized paraphenylene diamine salt and a salt of a 2-(3',5'-dihydroxyphenyl) - benzimidazole having the general formula:



where R_2 is a member selected from the group consisting of hydrogen, alkyl with one to three carbon atoms, hydroxyalkyl with one to three carbon atoms, and morpholino alkyl; R_2 is a member selected from the group consisting of hydrogen, alkyl with one to three carbon atoms, alkoxy with one to three carbon atoms, and halogen with atomic weight of at most 80; and R_3 is a member selected from the group consisting of hydrogen and bromine.

3,294,543
METHOD FOR SUPPLYING PHOSPHORUS AND OTHER DIETARY SUPPLEMENTS TO ANIMALS
Joe C. Eller, Houston, Tex., assignor to Dawson Chemical Company, Inc., Houston, Tex., a corporation of Texas
No Drawing. Filed Nov. 26, 1962, Ser. No. 240,133
4 Claims. (Cl. 99—2)

2. In a method of feeding phosphorus and other dietary supplements to animals, the process comprising the steps of charging a watering tank dispenser with a substantially dry mixture consistiing essentially of sodium triphosphate as the major constituent thereof, and hygroscopic dietary

and therapeutic supplements as minor constituents thereof, releasing said sodium triphosphate mixture into a watering tank at a rate to establish an effective concentration thereof of up to twelve parts of sodium triphosphate for each 100 parts of water, and thereafter supplying the resulting solution to animals as drinking water.

3,294,544
ARTIFICIAL SWEETENER - ARABINOGALACTAN COMPOSITION AND EDIBLE FOODSTUFF UTILIZING SAME
George L. Stinko, Cincinnati, Ohio, assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 6, 1964, Ser. No. 409,605
13 Claims. (Cl. 99—79)

1. A composition of matter comprising a mixture of arabinogalactan and an artificial sweetener, the proportion of artificial sweetener to arabinogalactan in said mixture being from about 0.005% to 10% by weight of the arabinogalactan.

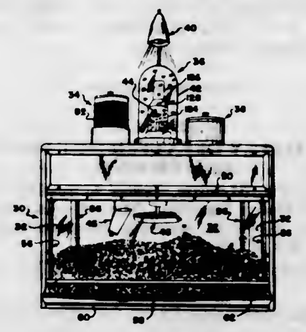
3,294,545
CORN CHIP APPARATUS, METHOD, AND PRODUCT
Fred A. Cunningham, John O. Klatt, A G Pinson, and Wayne B. Brown, all of San Antonio, Tex., assignors to The Facs Manufacturing Company, Inc., San Antonio, Tex., a corporation of Texas
Filed Mar. 22, 1962, Ser. No. 181,760
5 Claims. (Cl. 99—80)

1. A method of making corn chips, comprising: delivering corn masa from a source thereof under high pressure through a die orifice to form a continuous thin sheet of substantial width; cutting transverse rows of chip-sized sections from said sheet; separating said sections from the remainder of the sheet and delivering said sections to a cooking station; and frying said sections at said cooking section.

5. An extruded corn masa product formed in thin sheet form having substantially uniform thickness and having a generally rounded peripheral configuration and having a central portion thereof wherein the upper and lower surfaces are offset axially from the respective planes in which the upper and lower surfaces are disposed at the peripheral area of said product to effect a dome-shaped inner section concave in one direction, said chip being generally arch-shaped in cross-sectional configuration.

3,294,546
METHOD AND APPARATUS FOR POPPING CORN
Arthur L. Fingerhut, Livingston, N.J., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Mar. 27, 1962, Ser. No. 186,581
18 Claims. (Cl. 99—81)

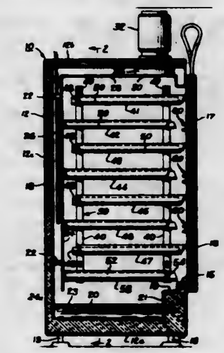
14. A method of popping kernels continuously which comprises circulating hot gas upwardly through a vertically disposed popping zone in a recirculation path at a velocity sufficient to maintain a bed of unpopped kernels in suspension in said zone while air-veying popped kernels upwardly away from said bed in said zone, removing the popped kernels from said gas and recirculating the gas to said zone at said velocity while adding heat thereto from a heat source upstream from said zone at a constant rate normally equal to the heat losses therefrom, maintaining the temperature of the gas-kernel mixture in said bed at an approximately constant value by delivering raw unpopped kernels into said path upstream from said zone and downstream from said heat source at an average rate varying directly with the temperature of said gas-kernel mixture in said bed, and limiting the temperature of said circulating gases to a predetermined maximum by reducing said rate of heat supply in response to increase of the circulating gas temperature substantially above said approximately constant value.



3,294,547
LOW MOISTURE CONTENT PASTRY DOUGH COMPOSITIONS
John A. Koolstra, Jr., Forest Park, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,516
4 Claims. (Cl. 99—92)

1. A pastry dough composition consisting essentially of from about 1% to about 15% by weight glycerol, about 10% to about 25% by weight water, about 40% to about 55% by weight flour, and about 20% to about 35% by weight shortening, the glycerol to water ratio being from about 1:9 to about 3:2.

3,294,548
METHOD OF COOKING FOOD
Alfred Vischer, Jr., Park Ridge, Ill., assignor of 2/30 percent each to William Vischer, Alfred Vischer, and Peter Vischer, 1/30 percent each to Walter W. Zitzewitz and Elmer K. Zitzewitz, 1/30 percent each to Gertrude J. Zitzewitz and Barbara O. Zitzewitz, and 2/30 percent to Gertrude V. Bouton
Filed Sept. 14, 1964, Ser. No. 398,147
5 Claims. (Cl. 99—107)



1. A method of cooking food comprising the steps of placing the food to be cooked in a confined space, supplying a mixture of steam and air to said space,

circulating said mixture in said space around said food, and continuously applying heat to said mixture to maintain the temperature in said space at a predetermined temperature differential approximately 8–12° F. above the temperature of said food during the cooking process.

3,294,549
PARTIALLY-DEFATTED NUT MEATS AND PROCESS

Henry L. E. Vix, Metairie, James J. Spadaro, New Orleans, and Joseph Pominski, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Feb. 12, 1965, Ser. No. 432,432
5 Claims. (Cl. 99—126)

1. A process for preparing a dry, skin-free, partially-defatted, high-protein nut meat comprising

(a) subjecting a high-calorie nut meat, having about from 3 to 8 weight percent moisture, and selected from the group consisting of a blanched raw nut meat, an unblanched raw nut meat, a blanched toasted nut meat, and an unblanched toasted nut meat, to pressing to remove about from 20 to 90 weight percent of the high-calorie oil therefrom, said pressing causing the nut meat to become physically distorted;

(b) blanching the pressed nut meat to loosen its skin—when the high-calorie nut meat is an unblanched nut meat—and removing the thus-loosened skin from the blanched nut meat;

(c) reconstituting the pressed nut meat from (a) or (b) above to its general original size and shape by immersing it in an aqueous vehicle comprising water and a flavoring agent whereby the nut meat absorbs about from 35 to 70 weight percent, based on the wet weight of the nut meat, of the aqueous vehicle, thereby to produce a reconstituted, flavored nut meat;

(d) drying the reconstituted, flavored nut meat to a moisture content of about from 3 to 8 weight percent, based on the total weight of the resulting dry product which comprises a flavored, skin-free, partially-defatted, high-protein nut meat; and

(e) recovering the said dry product.

3,294,550
PRODUCTION OF FULL-FLAVORED STABLE ESSENTIAL OILS

Robert M. Ikeda, Pasadena, and William L. Stanley, Richmond, Calif., Sadie H. Vannier, Bethesda, Md., and Lawrence A. Rolfe, Altadena, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Oct. 12, 1961, Ser. No. 144,802
7 Claims. (Cl. 99—140)

1. The process which comprises separating an essential oil selected from the group consisting of lemon and lime oils into a fraction containing the terpene constituents of the essential oil and a fraction containing the oxygenated constituents of the essential oil, removing from the terpene fraction essentially all the gamma-terpinene contained therein and combining the bulk of the remaining terpene fraction with the fraction containing the oxygenated compounds.

5. An essential oil product consisting essentially of the oxygenated components of the natural essential oil and the bulk of the terpene components of the natural essential oil but essentially free from gamma-terpinene, said natural essential oil being a member of the group consisting of lemon and lime oils.

3,294,551
5-CARBOCYCLICAMINOTETRAZOLE SWEETENING AGENTS

Robert M. Herbst, Meridian Township, Ingham County, Mich., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Feb. 24, 1964, Ser. No. 346,994
12 Claims. (Cl. 99—141)

1. The method of sweetening caloric materials and non-caloric chemotherapeutic materials for animal consumption which comprises:

(a) the step of adding a compound which exhibits a sweet taste selected from a group consisting of 5-carbocyclicaminotetrazoles and the non-toxic salts thereof to said materials.

3,294,552
PROCESS OF MAKING HONEY-SUGAR SYRUP

Harry Topalian, Dover, Del., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 15, 1963, Ser. No. 323,888
4 Claims. (Cl. 99—142)

1. A process of preparing a table syrup composition in the form of a stable, pourable, clear liquid which comprises forming an aqueous mixture consisting essentially of honey and sugar, said honey being present at a level of 1–30% by weight based on the total weight of the composition, blending said mixture at a temperature of about 145° to 165° F. to form a homogeneous aqueous solution of said honey and sugar, raising the temperature of said solution to about 165° to 175° F., filtering said solution, filling containers with said solution while keeping the solution at about 165° to 175° F., sealing said containers and maintaining the solution within said sealed containers at about 165° to 175° F. for at least 5 minutes to thereby assure a sterile product not susceptible to deterioration upon extended storage.

3,294,553
IMMERSION FREEZING OF STRAWBERRIES

Ernest J. Benson, Madison, Wis., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 11, 1963, Ser. No. 294,417
2 Claims. (Cl. 99—193)

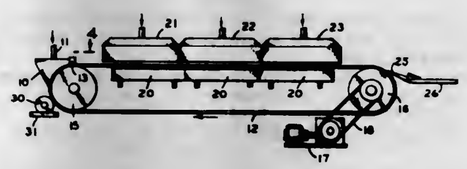
1. The method of preserving strawberries by freezing which essentially comprises immersing the strawberries in a liquefied gas selected from the group consisting of nitrogen and nitrous oxide until the berries are frozen from the surface to a depth such that not more than about 40%–60% of the volume of each berry is frozen, permanently removing the berries from immersion in the liquefied gas before about at most 60% of the volume of each berry is frozen, said frozen volume containing insufficient residual refrigeration in itself to freeze the berry throughout its cross section, transferring the berries from the liquefied gas to a tempering zone having a gaseous atmosphere evolved from said liquefied gas and of a temperature below about 0° F., maintaining the berries in the tempering zone until the temperature in each berry equalizes throughout its cross-section at a sub-freezing level, and thereafter removing the berries from the tempering zone.

3,294,554
DEHYDRATION METHOD AND APPARATUS

Robert J. Osborne, Fairfield, and Norman N. Potter, Stamford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Feb. 15, 1963, Ser. No. 258,809
4 Claims. (Cl. 99—199)

1. In a method for continuous drying of material on an arrangement comprising an endless belt including the steps of depositing material, from a feed material reservoir, on said belt, drying said material and separating the dried material, the steps which include remoistening residue on said belt after separating the dried material and



before the belt passes to the feed reservoir, scraping residue from said belt by means situated within said reservoir, and interspersing said residue with said feed material in said reservoir.

3,294,555
METHOD OF MIXING GLASS BATCH

Stanley M. Krisov, Lexington, Mass., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,112
4 Claims. (Cl. 106—47)

1. In a method of mixing glass batch ingredients including alkali metal carbonate for use as a feed in a glass forming furnace, the improvement comprising mixing the glass batch ingredients with between 5 percent and 20 percent by weight of water basis the weight of the batch ingredients and cooling the glass batch ingredients during said mixing to a temperature between 10° F. and 70° F. to thereby form higher hydrates of said alkali metal carbonate.

3,294,556
TAN OPHTHALMIC GLASS

Roy V. Harrington, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed July 19, 1963, Ser. No. 297,485
6 Claims. (Cl. 106—52)

1. A tan ophthalmic glass consisting essentially of the following calculated oxide composition, in percent by weight, 60 to 73% SiO_2, 0 to 5% TiO_2, 0 to 5% Al_2O_3, 5 to 10% CaO, 0 to 5% ZnO, 5 to 12% K_2O, 5 to 12% Na_2O, 0 to 5% B_2O_3, 0 to .001% CoO, 0.2 to 0.6% NiO, 0.5 to 2.0% CeO_2 and 0.5 to 2.0% Fe_2O_3, the refractive index being between 1.52 and 1.53.

3,294,557
ELECTRICALLY RESISTANT GLASS COMPOSITIONS

Stephane Dufaure de Lajarte, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Original application July 5, 1957, Ser. No. 669,956. Divided and this application Mar. 8, 1966, Ser. No. 532,592
Claims priority, application France, July 10, 1956, 1,162,152
5 Claims. (Cl. 106—52)

1. Electrically resistant glass, particularly useful for electrical insulators, having a composition consisting essentially of

SiO_2 69.6% by weight; Al_2O_3 3.5%; Fe_2O_3 0.8%; MnO 0.3%; CaO 11%; MgO 2%; Na_2O 10.6%; K_2O 2.2% having an upper limit of devitrification circa 1135° C., a maximum rate of crystallization at about 1016° C., a maximum rate of devitrification circa 7.5 microns/minute, and a resistance to perforation at 200° C. of about 24.5 kv.

3,294,558
COLORLESS HIGH INDEX GLASS COMPOSITIONS

Charles E. Searight, Ezra M. Alexander, and John R. Ryan, Jackson, Miss., and Dominick Labino, Grand Rapids, Ohio, assignors to Cataphote Corporation, Toledo, Ohio, a corporation of Ohio

Filed Apr. 22, 1963, Ser. No. 274,523
10 Claims. (Cl. 106—54)

1. A high refractive index glass composition consisting essentially of from about 10% to about 50% by weight of titanium dioxide, from about 10% to about 65% by weight of RO type oxides selected from the group consisting of barium oxide and zinc oxide, at least 10% by weight being barium oxide, from about 6% to about 40% by weight of calcium oxide, and from about 0.2% to about 30% by weight of silicon dioxide.

3,294,559
YELLOW GLASS BEAD COMPOSITIONS

Charles E. Searight, Ezra M. Alexander, and John R. Ryan, Jackson, Miss., and Dominick Labino, Grand Rapids, Ohio, assignors to Cataphote Corporation, Toledo, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,809
14 Claims. (Cl. 106—54)

1. A high refractive index yellow glass consisting essentially of a vitreous composition of from about 10% to about 50% by weight of titanium dioxide, from about 10% to about 56% by weight of barium oxide, from about 0.2% to about 30% by weight of silica, from about 0.5% to about 14% by weight of boric oxide, and from about .01% to about 1% by weight of cerium oxide.

3,294,560
BRONZE-SMOKE SEGMENT GLASS

James E. Duncan, Natrona Heights, and Joseph E. Cooper, Brackenridge, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,582
5 Claims. (Cl. 106—54)

1. A bronze-smoke glass consisting in its essential ingredients of 37 to 41 percent SiO_2, 17 percent to 21 percent BaO, 6 to 10 percent Na_2O, 0 to 2 percent K_2O, 1 to 4 percent B_2O_3, 2 to 5 percent CoO, 1 to 5 percent TiO_2, 4 to 8 percent ZrO_2, 15.5 to 18 percent PbO, 0 to 2 percent Sb_2O_5, 0.1 to 3.0 percent Al_2O_3, .001 to .007 percent CoO, and 0.1 to 0.4 percent NiO, and which exhibits a softening point between 1260° F. and 1310° F., an index of refraction between 1.6530 and 1.6610, and a total luminous transmittance of 23 to 27 percent for a thickness of 2 millimeters.

3,294,561
BRONZE-SMOKE SEGMENT GLASS

James E. Duncan, Natrona Heights, and Joseph E. Cooper, Brackenridge, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,601
5 Claims. (Cl. 106—54)

1. A bronze-smoke glass consisting of essentially the following ingredients in percent by weight 45 to 50 percent SiO_2, 18 to 30 percent BaO, 5 to 9 percent Na_2O, 1 to 7 percent K_2O, 3 to 6 percent B_2O_3, 3 to 7 percent CaO, 1 to 5 percent TiO_2, 1 to 4 percent ZrO_2, 0 to 6 percent ZnO, 0.0 to 2 percent Sb_2O_5, .1 to 4 percent Al_2O_3, .001 to .008 percent CoO, and .1 to .5 percent NiO, and which exhibits a softening point between 1260 and 1310° F., an index of refraction of between 1.587 and 1.593, and a total luminous transmittance of between 23 and 27 percent for a thickness of 2 millimeters.

3,294,562
REFRACTORY COMPOSITION
Mario J. Caprio and Rudolf F. Krisleit, New Kensington, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,807
5 Claims. (Cl. 106—64)

1. A ceramically bonded fibrous heat insulating refractory composition consisting essentially of 40 to 60% by weight of asbestos fiber; 30 to 20% by weight of calcium aluminate cement; 30 to 20% by weight of a fibrous material selected from the group consisting of fibrous alumina-silica which is refractory and substantially inert toward molten aluminum and fibrous potassium titanate, having a thermal conductivity of about 2–4 B.t.u./hr./ft.²/° F./in.

3,294,563
SILICATE GROUT
David Rowland Williams, High Town, near Liverpool, England, assignor to The Cementation Company Limited, London, England, a British company
No Drawing. Filed Mar. 4, 1965, Ser. No. 437,263
Claims priority, application Great Britain, Oct. 22, 1962, 39,966/62
15 Claims. (Cl. 106—74)

1. A grouting composition having a pH in the range of from 4 to 11 and formed by the addition of an alkali metal silicate to an aqueous system consisting essentially of a metal complex formed from a metal ion of any one of those metals which are able to form hydroxylated metal ions in the pH range of from 4 to 11 and a sequestering agent which reacts with the metal ion to give a soluble metal complex, the amount of alkali metal silicate present in the composition being equivalent to at least 0.5% by weight of SiO_2 and not more than 6% by weight of SiO_2, the silica to oxide ratio of said alkali metal silicate being less than 4, the amount of metal complex present in the composition being such that the molar ratio of metal ion to silica is in the range 0.05 to 5, and the metal complex being such that on the addition of the alkali metal silicate to the aqueous system the metal complex decomposes to release the hydroxylated metal ions at a rate which is not greater than that at which polysilicic acid is formed but which is high enough to allow at least 80% of the metal ions to be released within one week.

3,294,564
PROCESS OF REACTING BLOOD PROTEINS WITH GLUTARALDEHYDE AND THE PRODUCT THEREOF
Sulo A. Karjala and Frank K. Dering, both of Chicago, Ill., assignors to Wilson & Co., Inc., a corporation of Delaware
No Drawing. Filed Feb. 25, 1966, Ser. No. 529,919
10 Claims. (Cl. 106—135)

1. A composition of matter comprising a powdered product, said product being a product of reaction of blood protein and glutaraldehyde and containing an amount of glutaraldehyde constituting between 0.1% and 2.4% based upon the weight of blood solids, said product being substantially insoluble in water and having a major portion of the product soluble in an alkaline solution which is a 2.5% solids content dispersion of said product in water containing 0.1 gram of sodium hydroxide per gram of said product maintained at 70° F. and agitated for 10 minutes.

9. A glue comprising an alkali solution of a product of reaction of blood proteins and glutaraldehyde in which the protein-glutaraldehyde reaction product contains glutaraldehyde in an amount in the range between 0.1% and 2.4% based upon the weight of protein solids, said product being substantially insoluble in water due to dehydration of the reaction product at temperatures less than 200° F. and having a major portion thereof soluble in alkaline solution, the solubility in alkali solution being determined in a 2.5% solids suspension of said product in water containing 0.1 gram of sodium hydroxide per gram of said product maintained at 70° F. and agitated for ten minutes.

3,294,565
COATING COMPOSITIONS COMPRISING UNSATURATED HYDROCARBON POLYMERS AND A DRYING OIL
Joseph G. Svrchek, Hinsdale, Ill., assignor, by mesne assignments to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 20, 1963, Ser. No. 332,264
7 Claims. (Cl. 106—265)

1. A heat settable coating composition in which the siccative constituents consist essentially of a mixture of a heat settable copolymer of from 75 to 85% butadiene and 25–15% by weight styrene, the copolymer being a member of the group consisting of butadiene-styrene copolymers, oxidized butadiene-styrene copolymers containing from 5–20% by weight oxygen, and mixtures thereof, an olefinic liquid hydrocarbon containing dimers and trimers of olefins in the C_5 to C_9 range, and a drying oil, the weight ratio of said olefinic liquid hydrocarbon to said drying oil being from 1 to 2 to 2 to 1, and the sum of olefin liquid hydrocarbon plus drying oil content constituting from 5 to 50% by weight of the copolymer present.

3,294,566
SILOXANE WATER-REPELLENT COMPOSITION
Kenneth Graham Cooper, Glamorgan, Wales, assignor to Midland Silicones Limited, London, England
No Drawing. Filed Dec. 5, 1962, Ser. No. 242,350
Claims priority, application Great Britain, Dec. 12, 1961, 44,419/61
1 Claim. (Cl. 106—287)

A composition suitable for rendering fibrous materials water repellent consisting essentially of (1) (*a*) 100 parts by weight of a fluid organosilicon material selected from the group consisting of silanes of the formula

$$R_aR'_bSiZ_{4-a-b}$$

wherein each R is a monovalent radical selected from the group consisting of alkyl, aryl, alkenyl, halogenoalkyl, halogenoaryl and halogenoalkenyl radicals, each R′ is a monovalent hydrocarbon radical containing reactive hydrogen atoms in the form of radicals selected from the group consisting of hydroxyl radicals and amino radicals, each Z is a hydrolyzable substituent selected from the group consisting of halogen atoms and alkoxy radicals, *a* has a value from 0 to 2 inclusive, *b* has a value from 1 to 2 inclusive and $a+b$ does not exceed 4.0, and siloxanes of the general unit formula $R_xR'_ySiO_{4-x-y/2}$ when R and R′ are as above defined, *x* has an average value of from 1.0 to 2.5 inclusive, *y* has an average value of from 0.002 to 1.0 inclusive and the sum of $x+y$ does not exceed 3.0, (*b*) 1 to 50 parts by weight of a cyanuric halide, and (2) 1 to 25% by weight based on the total weight of (1) (*a*) and (*b*) of a salt of a carboxylic acid containing from 1 to 10 carbon atoms and an organic amine base which decomposes at a temperature in the range of 50° to 200° C.

3,294,567
PROCESS FOR PRODUCING INKS
Rollins E. Dobbin and Curt B. Beck, Pampa, Tex., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Continuation of application Ser. No. 162,423, Dec. 27, 1961. This application Jan. 18, 1965, Ser. No. 426,314
5 Claims. (Cl. 106—307)

1. In a process for the production of carbon black pellets for use in inks which comprises agitating a flocculent color grade carbon black in the presence of a pelletizing medium consisting of oil or oil/water emulsions until said flocculent black has been substantially completely converted into discrete dustless pellets which are suitable for use in inks except for an undesirably elevated levigation factor the improvement which comprises: depressing said levigation factor to an acceptable level by removing from the total mass of said pellets essentially only those pellets having diameters of less than about 280 microns and recovering the remaining pellets as finished product.

3,294,568
PROCESS FOR THE PRODUCTION OF PLAIN BEARINGS
Bernhard Gossmann, Lauchertthal, Hohenzollern, Germany, assignor to Fürstlich Hohenzollernsche Hüttenverwaltung Lauchertthal, Lauchertthal, Hohenzollern, Germany, a company of Germany
No Drawing. Filed Feb. 8, 1963, Ser. No. 257,068
Claims priority, application Germany, Feb. 9, 1962, F 35,990
5 Claims. (Cl. 117—8)

1. A method of making plain bearings having a metallic base and a layer of bearing material which method comprises mixing a polytetrafluoroethylene powder having a particle size in the range between 20 and 70 microns with a thermosetting resin to form a polymeric mixture, the amount of polytetrafluoroethylene in the mixture being 30% to 80% by weight, coating said polymeric mixture on said metallic base to form a layer having a thickness in the range of 0.1 to 1 millimeter, heat curing said polymeric mixture to form the layer of bearing material, and machining said layer of bearing material to expose the particles of polytetrafluoroethylene.

3,294,569
LUMINESCENT SCREENS UTILIZING NON-LUMINESCENT SEPARATOR LAYERS
Paul J. Mesinco, Skillman, and Soren Milton Thomsen, Pennington, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,201
2 Claims. (Cl. 117—33.5)



1. A luminescent screen comprising a substrate coated with a layer of phosphor particles, each of said particles comprised of:
(a) a core of a first phosphor having a surface skin layer thereof poisoned to provide a non-luminescent separator layer surrounding said core,
(b) and a second and different phosphor layer surrounding said separator layer.

3,294,570
OPTICAL BRIGHTENING OF MATERIALS OF SYNTHETIC POLYESTERS AND POLYAMIDES
Horst Pommer, Walter Stilz, Hartmut Hentze, and Magnus Rosenkranz, all of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Oct. 26, 1964, Ser. No. 406,545
Claims priority, application Germany, Oct. 31, 1963, B 74,080
4 Claims. (Cl. 117—33.5)

1. A process for the optical brightening of a material selected from the group consisting of synthetic linear polyesters and synthetic linear polyamides which comprises treating said material by applying thereto an aqueous dispersion in which is dispersed an optical brightener which is sparingly soluble in water and consisting essentially of a member selected from the group consisting of

p-bis-styryl-benezne,
p-bis-(2-chlorostyryl)-benzene,
p-bis-(2-chlorostyryl)-benzene,
p-bis-(2-bromostyryl)-benzene,
p-bis-(2,6-chlorostyryl)-benzene,
p-bis-(3,4-dichlorostyryl)-benzene,
p-bis-(2-cyanostyryl)-benzene,
p-bis-(3-cyanostyryl)-benzene,
p-bis-(4-cyanostyryl)-benzene,
p-bis-(3-chloro-4-cyanostyryl)-benzene,
p-bis-(3-chloro-6-cyanostyryl)-benzene,
p-bis-(4-methylstyryl)-benzene,
p-bis-(2-carbomethoxystyryl)-benzene,
p-bis-(4-carbomethoxystyryl)-benzene,
p-bis-(2-methoxystyryl)-benzene,
p-bis-(4-methoxystyryl)-benzene,
p-bis-(3,4-methylendioxystyryl)-benzene,
p-bis-styryl-2,5-dichlorobenzene,
p-bis-(4-methylstyryl)-2,5-dichlorobenzene,
p-bis-(2-chlorostyryl)-2,5-dichlorobenzene,
p-bis-(4-chlorostyryl)-2,5-dichlorobenzene, and
p-bis-(2,6-dichlorostyryl)-2,5-dichlorobenzene,

and mixtures thereof and fixing said brightener on said material by heating the treated material at a temperature between 90° C. and 215° C.

3,294,571
SHEETS OF COATED PAPER
Marc Henri Marie Ernst, Croix, France, assignor to Les Petits-Fils de Leonard Danel, Loos, Nord, France, a corporation of France
Filed May 13, 1963, Ser. No. 279,843
Claims priority, application France, May 18, 1962, 898,028
11 Claims. (Cl. 117—36.3)

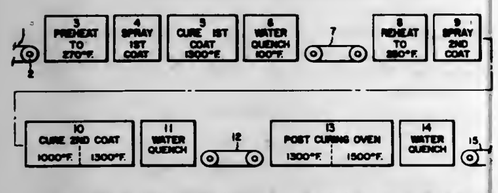


1. Sheets of paper coated with thin layers of different kinds on their two faces, said coated sheets, when superposed with each face thereof having a coating layer of a first kind in contact with another face thereof having a coating layer of a second kind, being adapted to transfer the inscribing made on the upper sheet by a pressure-exerting member to all the sheets placed thereunder, each thin coating layer of a first kind consisting essentially of resin film deposited to have a microporous structure and of an amorphous filler widely distributed throughout said resin and in an amount sufficient to render the resin friable but not over 50% by weight, whereby each coating layer of a first kind is locally broken into sharply outlined fragments by the inscribing pressure, whereas each thin coating layer of a second kind is adapted to retain the broken fragments of the frangible coating layer of a first kind in contact therewith, when the superposed sheets, the inscribing having been made thereupon, are separated from one another.

3,294,572
IMPREGNATION OF CARBON WITH SILVER
Salvatore Piccione, Glen Rock, N.J., and John E. Urbanic, Pittsburgh, Pa., assignors to Pittsburgh Activated Carbon Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 8, 1963, Ser. No. 263,738
6 Claims. (Cl. 117—47)

1. A method of impregnating activated carbon with silver comprising treating the activated carbon with an acid selected from the group consisting of nitric acid, chloric acid, perchloric acid, fluorogallic acid, hydrofluoric acid, lactic acid, fluorosilicic acid and salicyclic acid and impregnating the activated carbon with an aqueous solution of a silver salt and then converting the silver salt to metallic silver, said acid treatment being at least as early as the addition of the silver salt solution.

3,294,573
METHOD FOR COATING PIPE
James R. Michael, Roselle, Stephen A. Yuhas, Jr., Perth Amboy, and Donald F. Koenecke, Westfield, N.J., and Ober C. Slotterbeck, deceased, late of Rahway, N.J., by Lealia G. Slotterbeck, administratrix, Rahway, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,862
4 Claims. (Cl. 117—49)



1. A continuous method of applying a coating for the purpose of protecting a metal article against corrosion comprising:

continuously passing said metal article through a plurality of treating zones comprising the following successive steps:

(a) preheating said article to a temperature of 250–280° F.;

(b) applying at least one protective coat to said preheated article, said coating comprising an oxygenated polymer of 50 to 100 parts by weight of butadiene-1,3 and about 50 to 0 parts of styrene, containing 10 to 20 wt. percent oxygen;

(c) effecting partial cure of each of said protective coats by passing said freshly coated article through a heating zone maintained at a temperature of 1200–1600° F. for a contact time of 40–120 sec. so that the temperature of the coated article reaches 400–500° F.;

(d) cooling each of said partially cured coatings to 60–150° F.;

(e) reheating said coated article to a temperature of 210–250° F.;

(f) applying final protective coats to said reheated article consisting essentially of the same composition as said first coat;

(g) effecting a complete cure of all of said coats by passing said article through a final curing zone;

(h) maintaining an average gas temperature in the first two-thirds of said final curing zone of about 1000° F. and in the final third of said final curing zone of about 1300° F.;

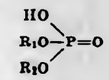
(i) maintaining said article in said first two-thirds of said final curing zone for about 32 to 96 seconds and in said final third of said curing zone for about 32 to 96 seconds so that the temperature of the coated article gradually reaches 450–550° F., but does not exceed, 550° F.;

(j) and storing said coated article.

3,294,574
COATING PLASTIC ARTICLES WITH AN EPOXY-UREA-FORMALDEHYDE FORMULATION
Morris Salame, Windsor, Conn., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware
No Drawing. Filed Aug. 28, 1962, Ser. No. 220,038
4 Claims. (Cl. 117—94)

1. A flexible polyethylene bottle having a hard, glossy, adherent surface coating composed of a cured reaction product of about 100 parts of an epichlorhydrin-polyhydric phenol condensate having an epoxide equivalent between about 160 and 200, about 35 to 70 parts of a urea-formaldehyde resin, about 8 to 20% (based on the combined weight of said condensate and urea-formaldehyde resin present) of an epoxidized fatty acid ester oil, about 3 to 8 parts of H_3PO_4 (based on the combined weight of said condensate and said urea-formaldehyde resin).

2. A process for applying a hard, glossy coating to a flexible polyethylene bottle which comprises forming a coating solution by dissolving in a ketone solvent having a boiling point between about 150° and 180° F., 100 parts of epichlorhydrin-polyhydric phenol condensate having an epoxide equivalent between 160 and 200, about 35 to 70 parts of a urea-formaldehyde resin, about 8 to 20% (based on the combined weight of said condensate and said urea resin) of an epoxidized fatty acid ester oil having a molecular weight between about 800 and 1500 and an oxirane oxygen content of about 1 to 5%, said solvent being present in an amount sufficient to result in a solution having a viscosity of about 16 to 18 sec. Zahn #2 at 80° F., adding to said solution about 2 to 10 parts of a phosphoric acid compound having the formula



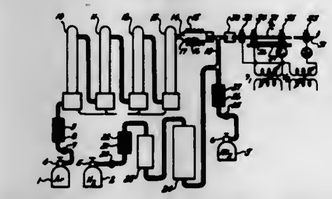
wherein R_1 and R_2 are members of the group consisting of hydrogen and alkyls of 1 to 8 carbon atoms, aging said solution at a temperature of about 60° F. to 90° F. after inclusion of said phosphoric acid compound therein until at least about 10% and not more than about 25% of the epoxide groups of said condensate are reacted with said urea-formaldehyde resin, applying the thus aged solution to the outer surface of a polyethylene bottle to form a liquid coating thereon, and drying and curing said liquid coating by exposing the resulting coated bottle to a curing temperature of about 175° to 220° F. for a period of about 8 to 20 minutes.

3,294,575
VAPOR PLATING COPPER
Charles R. Barnes, Medway, and Charles R. Geesner, Waynesville, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Dec. 3, 1962, Ser. No. 242,026
1 Claim. (Cl. 117—95)

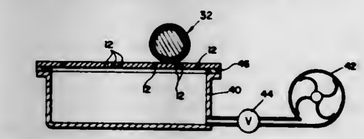
The process of applying a coating of copper metal to the interior surface substrate of the hollow object by combining a vapor of the metal as a reactant in stoichiometric proportions with anhydrous hydrogen and ammonia; adding to the combined reactant vapors a chemically inert carrier gas in providing a completely dry flowable gas mixture; heating the substrate surface to be coated; heating a plating zone area of the substrate area to be coated at a metal deposition temperature; passing the gas mixture across the substrate surface plating zone area at the metal deposition temperature according to the reaction

$$2Cu_2Cl_2+4NH_3+2H_2 \rightarrow 4NH_4Cl\ (g)+4Cu$$

within the temperature range of 450–550° C.; and progressively moving the substrate surface plating zone area at the metal deposition temperature linearly of the object substrate during the application of the metal coating thereto.



3,294,576
METHOD OF PRODUCING PRINTED CIRCUIT STRUCTURES
Joseph P. Geraghty, Walpole, Mass., assignor, by mesne assignments, to The First Safe Deposit National Bank of New Bedford, a National Banking Association
Filed Jan. 14, 1963, Ser. No. 251,090
10 Claims. (Cl. 117—98)



1. The method of appling a viscous, liquid coating material to a surface of a member having an opening therethrough, said method comprising:

moving an applicator charged with said viscous liquid coating material across said surface and said opening against said surface to transfer said coating material to said surface;

said applicator having an area moved against said surface which exceeds the area of said opening and is disposed in closing relation to said opening during movement across said surface and said opening;

passing a stream of a gas under pressure through said opening from the side of said member opposite said surface during movement of said applicator against said surface across said opening; and

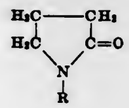
contacting said surface with a porous member to allow said gas to flow through said opening with said applicator extending across said opening in closing relation thereto and thereby exclude said coating material from said opening.

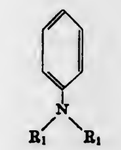
3,294,577
BARRIER COATED THERMOPLASTIC OLEFIN HIGH POLYMER SUBSTRATES
Walter P. Mayer, Lebanon, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 2, 1963, Ser. No. 299,483
10 Claims. (Cl. 117—138.8)

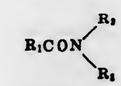
1. Barrier coated article comprising an olefin high polymer, selected from the group consisting of high density polyethylene, low density polyethylene, polypropylene, polybutene-1, poly(3-methylpentene - 1), polyhexene-1, polyheptene-1, ethylene/propylene copolymer and ethylene/butene-1 copolymer, capable of supporting its own weight without warping at about 95° C. and adhering thereto a film comprising a cured mixture of 100 parts by weight of substantially completely hydrolyzed polyvinyl alcohol and at least 5 parts by weight of a polymethyl ether of polymethylol melamine.

3,294,578
DEPOSITION OF A METALLIC COAT ON METAL SURFACES
Stanley P. Popeck, Nanuet, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 22, 1963, Ser. No. 318,102
6 Claims. (Cl. 117—130)

1. The process of depositing a metallic coat on a metallic surface without resorting to an electric current which comprises contacting said surface with a solution of a coating complex obtained by dissolving one mole of a compound containing a cation selected from the class consisting of copper, gold, palladium, platinum, silver and tellurium in one mole in excess of at least one nitrogen containing compound selected from the group consisting of compounds having the following general formulae:

(1)


(2)


(3)


(4) $NH(R_2)_2$

and

(5) $N(R_2)_3$

wherein R and R_1 represent a member selected from the group consisting of hydrogen and alkyl group of from 1 to 4 carbon atoms and R_2 and R_3 represent an alkyl group of from 1 to 4 carbon atoms, and in one mole of an acid selected from the class consisting of hydrobromic and hydroiodic.

3,294,579
LEATHER-LIKE MATERIAL AND METHOD OF MAKING THE SAME
Shu-Tung Tu, Ipswich, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
No Drawing. Filed May 9, 1963, Ser. No. 279,319
8 Claims. (Cl. 117—140)

1. The process of forming a leather-like material including the steps of applying to a side of a sheet of intermeshed textile fibers a quantity of an aqueous suspension of short textile fibers and at least ½ part by weight of swollen distinct fine collagen fibers of microscopic size to one part by weight of said short textile fibers to introduce collagen fibers and short textile fibers into spaces between said intermeshed textile fibers in a portion of the thickness of said sheet extending in from said side, said suspension having a pH outside the isoelectric range of said collagen fibers; and removing swelling water from said collagen fibers to reaggregate them into a larger collagen fiber structure binding said intermeshed fibers and short textile fibers.

3,294,580
PROCESS FOR PRODUCING NON-WOVEN FABRIC WITH AQUEOUS COPOLYMER EMULSION, AND THE BONDED FABRIC
Günter Kolb and Karl-Arnold Weber, Cologne-Stammheim, and Bruno Zorn, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,223
Claims priority, application Germany, Oct. 31, 1963, F 41,155
12 Claims. (Cl. 117—140)

1. A process for producing non-woven fabrics from fibre webs which comprises contacting fibre webs with an aqueous copolymer emulsion obtained by copolymerizing:

(a) 0.1 to 50% by weight, based on the total monomers, of a monomer of the formula

$$CH_2=\underset{\displaystyle R_1}{\underset{|}{C}}-CO-NH-CH_2-NH-COOR_2$$

wherein R_1 is selected from the group consisting of hydrogen and methyl and R_2 is a member selected from the group consisting of alkyl having 1 to 6 carbon atoms, cycloalkyl having 5 to 7 carbon atoms, phenylalkyl having 1 to 3 carbon atoms in the alkyl moiety, phenyl and naphthyl,

(b) at least 20% by weight, based on the total monomers, of at least one monomer with an elasticising action selected from the group consisting of conjugated 1,3-diolefins having 4 to 6 carbon atoms, esters of acrylic acid with an alcohol containing 1 to 20 carbon atoms and esters of methacrylic acid with an alcohol containing 4 to 20 carbon atoms, and

(c) 0 to 79% by weight, based on the total monomers, of at least one further monomer capable of copolymerizing with monomers (a) and (b).

and drying said non-woven fabrics at a temperature between 50 and 150° C.

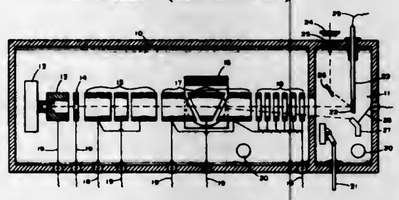
3,294,581
MANUFACTURE OF COLLAGEN FIBER MATERIAL
Laurence R. B. Hervey, Concord, and John R. Starr, Belmont, Mass., assignors, by mesne assignments, to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
No Drawing. Filed June 14, 1965, Ser. No. 463,910
3 Claims. (Cl. 117—140)

1. The process of forming a tough, flexible material which comprises the steps of applying to intermeshed open fiber mass in penetrating relation an aqueous suspension containing from about 1% to about 5% by weight based on the weight of the suspension of swollen, distinct, fine, collagen fibers of microscopic size to carry said collagen fibers into the interstitial spaces of said intermeshed fiber mass, said suspension containing at least about 1% by weight of deacetylated karaya gum based on the weight of collagen fibers in said suspension, said deacetylated karaya gum cooperating with said collagen fibers to resist packing together of said collagen fibers, and removing the swelling water from collagen fibers within said intermeshed fiber mass to reaggregate them into a larger collagen fiber structure within the interstitial spaces throughout said mass of intermeshed fibers to reinforce said intermeshed fibers against displacement.

3,294,582
PROCESS OF MAKING IMPREGNATED PAPER FILTER ELEMENTS AND COMPOSITION THEREFOR
George E. Suchy, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed Jan. 8, 1963, Ser. No. 250,003
3 Claims. (Cl. 117—155)

1. In a process for making paper filter elements the steps comprising impregnating the paper with a liquid composition consisting essentially of about 100 parts by weight of a stage A phenol-formaldehyde resin, about 20 to 28 parts by weight of a petroleum hydrocarbon-insoluble thermoplastic lignin-type resin derived from pine wood and containing both methoxyl and hydroxyl groups, at least about 1 part by weight of resorcinol for providing said paper with flexibility but not more than the maximum amount which provides said paper with substantially equal flexibility and about 17 to 20 parts by weight of water, and heating the impregnated paper to evaporate the volatile constituents without effecting a significant cure of the impregnant.

3,294,583
PROCESS OF COATING A SILICON SEMICONDUCTOR WITH INDIUM USING AN ION BEAM
Leonid Fedows-Fedotowsky, North Adams, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed June 14, 1962, Ser. No. 202,504
1 Claim. (Cl. 117—227)



A process for treating in a partial vacuum the surface of a silicon semiconductor body comprising:

(a) ionizing in an ion source an indium compound comprising indium and at least one other ion having a mass less than indium, in combined form therewith, whereby to form ions of indium and said lighter ions;

(b) drawing a beam of the ions out of the ion source by means of an ion extracting electrode;

(c) subsequently directing said beam through a shape-defining electrode so that said beam will assume the shape of the aperture thereof;

(d) subsequently passing the ion beam through a focusing lens designed to effect a size reduction in the cross-section of said beam of up to about ten times;

(e) subsequently subjecting said ion beam to the action of a magnetic deflector to separate the lighter ions from the heavier ions at an energy of several thousand electron volts and a velocity of the order of 10^7 cm./sec.;

(f) subsequently subjecting the separated ion beams to the action of an electric prism deflector to compensate for the magnetic deflection of the heavier ion beam;

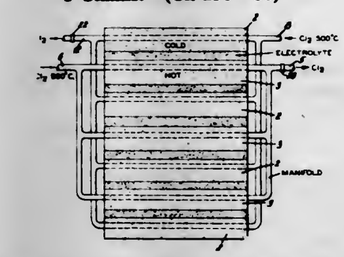
(g) and then passing the ion beams through an ion decelerator; and, decreasing the ion velocity to thermal velocities of the order of a few electron volts and,

(h) finally impinging and discharging said heavier ion beam on said silicon semiconductor body to form an adherent layer thereon while simultaneously passing the separated lighter ions to a collector.

3,294,584
STEAM BOILER CLEANER AND METHOD FOR CLEANING STEAM BOILERS
Norman A. Sommers, 4386 Manayunk Ave., Philadelphia, Pa. 19128
No Drawing. Filed Mar. 25, 1963, Ser. No. 267,850
5 Claims. (Cl. 134—22)

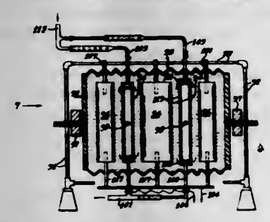
4. A method for cleaning steam boilers which comprises adding a composition consisting essentially of about 83 to 93 weight percent of diatomaceous earth, about 4 to 9 weight percent of anhydrous sodium sulphite, and about 1 to 2½ weight percent of silicone to the water inventory of an operating steam boiler, continuing the boiler operation for a period of at least 30 minutes whereby a sludge including boiler water contaminate is formed, and then removing precipitated sludge from the bottom of the steam boiler.

3,294,585
THERMOCELL
Seymour Senderoff, Fairview Park, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 9, 1961, Ser. No. 94,619
5 Claims. (Cl. 136—86)



1. A device for converting heat energy into electrical energy comprising a first inert, porous, current collector adapted to receive a gas at a predetermined temperature, a second, inert, porous current collector adapted to receive the same gas at a temperature higher than said predetermined temperature, the resulting temperature differential between said collectors being sufficient to generate an electromotive force therebetween, and an electrolyte intermediate said collectors, said electrolyte remaining molten at the operating temperature of said cell and containing ions of said gas.

3,294,586
FUEL CELL WITH MOVABLE CASING AND ELECTRODES AND METHOD FOR OPERATING FUEL CELL WITH AN ANODE CONTAINING AN ALKALINE EARTH METAL
Joseph Adrien M. Le Duc, Short Hills, N.J., assignor to Pullman Incorporated, a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,532
26 Claims. (Cl. 136—86)

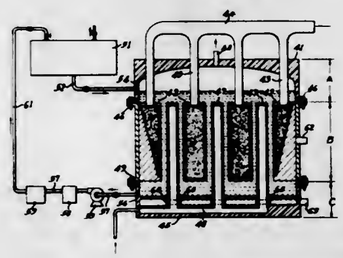


1. A method for the generation of electrical energy which comprises providing an electrochemical cell containing an aqueous alkaline electrolyte bath comprising hydroxyl anions and barium cations and having an anode and cathode disposed therein, said anode being in contact with a material selected from the group consisting of elemental barium in the solid state, a solid alloy of barium at least 50 percent by weight of the alloy being barium, and a liquid amalgam of barium, passing an oxygen-containing gas into said cell such that it is contacted with said cathode, operating the cell at a temperature between about 20° C. and about 250° C., barium being converted electrochemically at the anode to produce barium cations and oxygen being converted electrochemically at said cathode to produce hydroxyl anions with generation of electrical energy.

8. A fuel cell for the generation of electrical energy by the electrochemical reaction of a solid fuel and a gaseous oxidant which comprises in combination a liquid electrolyte bath having vertically disposed therein a plurality of anodes in contact with a solid fuel as the anodic reactant and a plurality of gas diffusion electrodes in alternating relationship to said anodes, the anodes and cathodes being spaced apart from one another and having liquid electrolyte bath between the opposing reactive anodic and cathodic surfaces, a movable casing within which the electrolyte bath is contained and to which the anodes and cathodes are connected, said casing being provided with means for effectuating movement thereof and of the anodes and cathodes which are connected thereto towards one another as the solid fuel is converted by the electrochemical conversion thereof, means for introducing a gaseous oxidant to said gas diffusion cathodes, means for introducing liquid electrolyte bath to the cell, and means for withdrawing liquid electrolyte bath from the cell.

19. A method for the generation of electrical energy which comprises providing an electrochemical cell containing an aqueous electrolyte bath and having at least one anode and at least one cathode disposed therein, said anode being in contact with a material selected from the group consisting of an alkaline earth metal in its elemental and solid state, a solid alloy of an elemental alkaline earth metal at least 50 percent by weight of the alloy being an alkaline earth metal, and a liquid amalgam of an elemental alkaline earth metal, passing an oxidant comprising halogen into said cell such that it is brought into contact with said cathode, the aqueous electrolyte bath comprising halide anions and alkaline earth metal cations, operating said cell at a temperature between about 20° C. and about 250° C. such that the aqueous electrolyte bath is maintained in the liquid phase, alkaline earth metal reacting at the anode to produce corresponding alkaline earth metal cations and halogen reacting at the cathode to produce halide anions with generation of electrical energy.

3,294,587
FUEL CELL
Joseph Adrien M. Leduc, Short Hills, N.J., assignor to Pullman Incorporated, a corporation of Delaware
Filed Mar. 1, 1962, Ser. No. 176,535
18 Claims. (Cl. 136—86)



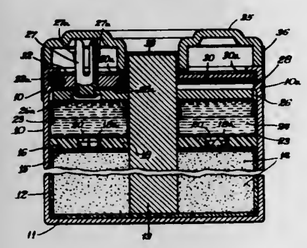
1. A method for the generation of electrical energy which comprises providing an electrochemical cell containing an aqueous medium and having at least one anode and at least one cathode therein, said aqueous medium having an alkali metal hydroxide and an alkaline earth metal salt dissolved therein, said anode being in contact with a fuel comprising an elemental alkaline earth metal, passing a gas comprising oxygen into the cell such that it is contacted with the cathode, maintaining said aqueous medium in the liquid phase and at a temperature between about 20° C. and about 250° C., electrical

energy thereby being generated by reaction of elemental alkaline earth metal at the anode to form corresponding alkaline earth metal cations and of oxygen at the cathode to form hydroxyl anions.

3,294,588
METHOD OF OPERATING FUEL CELL WITH ELECTROLYTE CONTAINING QUINONES OR DYES
Morton Beltzer, New York, N.Y., and Duane G. Levine, Colonia, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 19, 1962, Ser. No. 188,780
3 Claims. (Cl. 136—86)

1. In a method of operating a fuel cell comprising an anode, an anolyte compartment containing an aqueous anolyte, a cathode compartment containing an aqueous catholyte, fuel transfer means for introducing a fluid fuel into dual contact with said anode and said anolyte, and oxidant transfer means for admitting a fluid oxygen containing oxidant into said catholyte, the improvement which comprises introducing a fluid fuel into dual contact with said anode and said anolyte, admitting an oxygen containing oxidant into said catholyte, and adding to said catholyte a catholyte-soluble organic compound having an oxidized form admitting of electrochemical reduction upon receiving electrons from the cathode and a reduced form admitting of chemical oxidation by said oxidant to said oxidized form, said catholyte-soluble organic compound being selected from the group consisting of quinones, quinone-imines, quinone-diamines, indophenol dyes, indamine dyes, oxazine dyes, thiazine dyes and indigoid dyes.

3,294,589
DEFERRED ACTION TYPE OF DRY CELL BATTERY
Edward L. Barrett, La Grange Park, Ill., assignor of one-half to Kenneth T. Snow and Edward L. Benno, Chicago, Ill.
Filed May 27, 1963, Ser. No. 283,273
8 Claims. (Cl. 136—90)

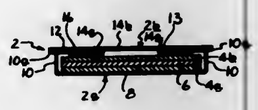


1. A dry cell battery comprising, a container comprising one terminal of said dry cell, the upper end of said container being open, a rod located in the center of said container to extend through the length thereof and comprising the other terminal of said dry cell, a depolarizer mix disposed in said container about said rod; said container, said rod and said depolarizer mix being formed to provide for the generation of an electromotive force between said terminals upon the dispersion of a certain fluid through said depolarizer mix to form an electrolyte, a flexible bag carried in said container above said depolarizer mix, said flexible bag containing said certain fluid in a sealed condition therein, lance means carried in said container above said depolarizer mix and below said flexible bag, a cell top member secured to the open upper end of said container and about said rod, piston means slidably carried in said container above said flexible bag and below said cell top member, said piston means including extended portions extending through said cell top member for manual pressure against said extended portions to press said bag against said lance means to cause said bag to be ruptured and said certain fluid to be forced therefrom and into said depolarizer mix, sealing means cooperating with said cell top member and with said piston means and sealing said dry cell against the leakage of any fluid therefrom after said certain fluid has been forced from said flexible bag, and locking means for locking said piston means in a depressed position after said certain fluid has been forced from said bag.

3,294,590
ELECTROCHEMICAL CELL
Frank Solomon, Lake Success, N.Y., assignor to Yardney International Corp., New York, N.Y., a corporation of New York
Filed Nov. 1, 1962, Ser. No. 236,762
14 Claims. (Cl. 136—120)

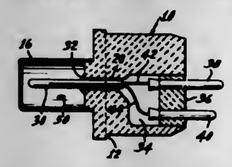
1. In an electrochemical device having a positive electrode, a negative electrode and an electroylte, the improvement whereby said positive electrode comprises an active material consisting of silver composed essentially of particles having a particle size as measured by the Fisher "Sub-Sieve Sizer" of not more than about 2.5 microns.

3,294,591
SEALED BATTERY
John Paul Jordan, Highland Park, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed Mar. 30, 1964, Ser. No. 355,566
5 Claims. (Cl. 136—133)



1. A battery including an open-end casing body having metal side walls and a metal end wall, a stack of battery plates within said casing body which fit through the open end thereof, an electrolyte for producing a voltage of opposite polarity across said plates, said plates extending parallel to said casing body end wall and the outermost plates of the assembly being of opposite polarity, the plate nearest said end wall contacting said casing body end wall and the plate nearest the open end of said casing body being positioned contiguous to the open end of said casing body, and an integral cover assembly comprising an outer metal member connected through a liquid tight, non-insulating joint to the open end of said casing body, said outer metal member having an opening in the central portion thereof, and an inner metal terminal member comprising an outer portion positioned adjacent the inner surface of said outer member and an outwardly projecting central portion passing through, and in spaced relation to the defining edges of, said opening, and an insulating layer impervious to the electrolyte bonding said inner terminal member to the inside surface of said outer member over an appreciable area thereof, and said outer portion of said inner terminal member pressing against the battery plate nearest the open end of said casing body to sandwich the plates between the casing body end wall and the inner terminal member of said cover assembly.

3,294,592
IMMERSION THERMOCOUPLE ASSEMBLY
Donald H. Fish, Livingston, and Joseph O. Acciani, Newark, N.J., assignors, by mesne assignments, to Leeds & Northrup Company, a corporation of Pennsylvania
Filed Sept. 11, 1959, Ser. No. 839,506
7 Claims. (Cl. 136—234)



1. In a high-temperature immersion thermocouple assembly, a head of refractory material having an aperture through it, a quartz tube having a closed and an open end, the tube having its open end permanently sealed into one end of said aperture to protrude outwardly from said head, the protruding end of said quartz tube being closed, a pair of thermocouple wires extending through said aperture into said quartz tube, the thermocouple wires having a junction located in the protruding quartz tube portion, a removable plug fitted into the other end of said aperture, said plug supporting the free ends of said thermocouple wires for removably maintaining said thermocouple wires in their position with respect to the quartz tube so that said thermocouple wires and said plug are removable from said head without removal of said quartz tube, and heat-resistant means for immersing said head into and retracting it from melting metal.

3,294,593
SOLUTION AND PROCESS FOR PRODUCING A PHOSPHATE COATING ON A METAL BODY
Ernst Wyszomirski, Hattersheim (Main), Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Dec. 4, 1962, Ser. No. 242,082
Claims priority, application Germany, Dec. 7, 1961, F 35,493; Sept. 1, 1962, F 37,716
12 Claims. (Cl. 148—6.15)

1. In a process of producing phosphate coatings on surfaces of a metal selected from the group consisting of iron, steel, zinc, and alloys of the said metals by contacting the metal surfaces with phosphatization solutions containing zinc ions, alkali metal ions, phosphate ions, nitrate ions and nitrite ions, in which solutions the portion of nitrate ions is at least as great as that of phosphate ions, the improvement of contacting the metal surfaces with the phosphatization solution at a temperature in the range of about 20° C. to about 45° C., maintaining in the solution a proportion by weight of PO_4:Zn:NO_3 of 1:0.8 to 1.7:1.5 to 3.2, and a point number of total acid of about 8 to about 14 and suppressing the formation of free acid in the solution by maintaining a nitrite content of about 0.1 to about 1 g. per liter of solution.

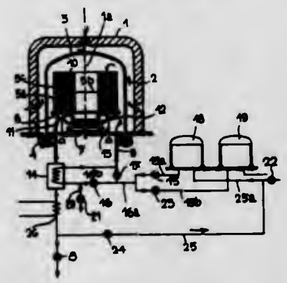
3,294,594
METHOD OF IMPARTING CORROSION RESISTANCE TO ZIRCONIUM BASE ALLOYS
Octavian Bertea and Stanley R. Seagle, Warren, Ohio, and James R. Gross, Kokomo, Ind., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Nov. 8, 1963, Ser. No. 322,438
7 Claims. (Cl. 148—11.5)

1. The method of increasing the corrosion resistance, as evidenced by decreasing the weight gain at least 13.2% when exposed to 750° F.–1500 p.s.i.g. steam for 15 days, of wrought zirconium base alloy products containing about 1 to 20 weight percent columbium having elevated temperature yield strengths at 900° F. between 28,000 and 53,000 p.s.i., which comprises the steps of hot working and annealing the alloy and finally cold working the surface of the alloy.

3,294,595
PRECARBURIZATION AND OTHER PREDIFFUSION TREATMENT OF SPIRAL ROLLED OR DIFFERENTIALLY PLASTICALLY FORMED AND STANDARD TYPE DRILL STEEL
Tadeusz W. Wlodek, 297 5th Ave., Ottawa, Ontario, Canada
No Drawing. Filed Oct. 24, 1965, Ser. No. 505,018
8 Claims. (Cl. 148—12.1)

1. Method for improving the fatigue resistance of a drill steel member which comprises the steps of carburizing the exposed surfaces of said member by heating in a medium rich in carbon at a temperature between 1600° and 2300° F., for a period of time sufficient to effect carburization of said exposed surfaces, then subjecting the outer carburized surface to plastic deformation by cold working by applying to portions of said surface and at spaced intervals, pressure beyond the elastic limit of the steel, said pressure being sufficient to provide small plastically deformed depressions at intervals, said intervals being interspaced with substantially undeformed portions, the distance between said depressions being greater than the depth of said depressions, and further subjecting said undeformed portions to over-rolling with a smooth roll at a temperature between room temperature and about 1000° F.

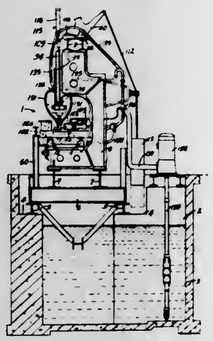
3,294,596
PROCESS AND APPARATUS FOR ANNEALING THIN STEEL PLATES
Jean Daubersy, 2 Ave. Mahiels, Liege, Belgium
Filed Apr. 14, 1965, Ser. No. 448,033
Claims priority, application Belgium, Feb. 24, 1961, 600,643
2 Claims. (Cl. 148—16)



1. Process of annealing steel plates in open coils as deep drawing plates of mild steel combined with a treatment of decarburizing and denitriding utilizing a bell furnace provided with a ventilator for internal circulation of an atmosphere of gases, comprising the steps of annealing the plates in a bell furnace at a temperature of about 700° C. during which there is admitted and extracted therefrom a relatively slight flow of protective gas having a base of dry nitrogen admixed with 5 to 10% of hydrogen, the said flows being established between 0.6 and 2 m.³ per ton of steel treated, there being established both an external circulation and an internal circulation during this step of heating and thereafter soaking said steel at about 700° C. for about 6 to 12 hours to ensure a course grain structure, during this period of soaking, at the time when the temperature ceases to rise the protective gas is replaced by hydrogen gas the flow of which will be established between 6 and 20 m.³/h. per ton of steel treated, and the internal circulation is stopped by

the manipulation of a valve to provide a direct passage of the hydrogen gas through the furnace and the coils without any internal recycling thereof, water vapor is admixed with the hydrogen gas in a quantity such that the dew point of the mixture will be between 25° to 70° C., as soon as the protective gas has been expelled and replaced by the hydrogen gas, the said hydrogen gas being introduced hot as a result of a temperature exchange with the outcoming gas after the end of the soaking period, after the desired soaking period the furnace is shut down, the supply of hydrogen gas is stopped, internal circulation is once again effected and the said protective gas is fed into the furnace to effect cooling of the coil.

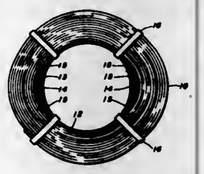
3,294,597
METHOD FOR QUENCHING A METAL MEMBER
Gerald J. Kuchera, Milwaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Original application Dec. 5, 1960, Ser. No. 73,954, now Patent No. 3,252,695, dated May 24, 1966. Divided and this application Aug. 4, 1965, Ser. No. 484,508
1 Claim. (Cl. 148—131)



A method of straightening and quenching an elongated channel member of intermediate manganese steel having a chemical composition of .22% to .30% carbon, 1.00–1.35% manganese, not more than .04% phosphorus, not more than .05% sulphur and the balance iron, the steps comprising, heating the channel member to a temperature in the range of 1450° F. to 1750° F., while disposed in a series of longitudinally moveable, laterally expandable die members adapted to clamp said channel member, straightening said channel member by means of a clamping force applied by said die members while the channel member is at a temperature above 1450° F., and thereafter uniformly and simultaneously subjecting all the surfaces of said member to an abundant flow of quenching liquid under pressure while holding the channel member with said die members without restraint against lateral and longitudinal movement during quenching, thereby uniformly quenching the workpiece to a temperature not more than 900° F. through its stock thickness within thirty seconds to provide a substantially uniform martensitic crystalline microstructure therein.

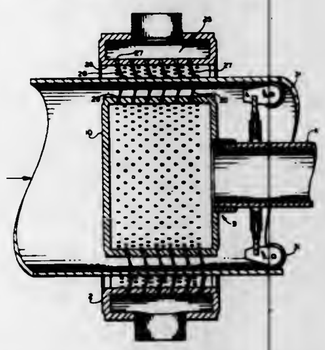
3,294,598
METHOD OF ANNEALING STRIP IN COILS
Donald O. Norris, Rocky River, Ohio, assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 361,380
4 Claims. (Cl. 148—134)

2. In an annealing process in which cold-rolled continuous steel strip is wound under tension on a hollow core to form a tight coil, the coil is bound with straps, and the coil and core are heated to an annealing temperature from the outside of the coil and from the inside of the core, whereby the convolutions of the coil at the outside and next to the core expand first, a method of preventing



scratching of the strip surface comprising shaping the core and coil in a non-circular configuration which locks the convolutions of the coil against relative longitudinal movement as they expand during heating.

3,294,599
METHOD AND APPARATUS FOR HEAT TREATING LOW CARBON STEEL
Robert A. Huseby, Milwaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed July 30, 1963, Ser. No. 298,724
5 Claims. (Cl. 148—143)



2. A method of quenching a tubular steel workpiece having a non-uniform crystallographic structure and containing up to 0.25% by weight of carbon and up to about 1% by weight of manganese and the balance iron, comprising the steps of heating said workpiece to a temperature above 1550° F., and simultaneously subjecting both the internal and external surfaces of said workpiece to a plurality of pressurized, rod-like, continuous streams of a quenching fluid in sufficient quantity to lower the temperature throughout said workpiece from 1550° F. to a temperature below 700° F. in less than 0.5 second whereby a steel workpiece having a uniform martensitic crystallographic structure throughout the thickness thereof is obtained.

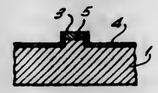
3,294,600
METHOD OF MANUFACTURE OF SEMICONDUCTOR ELEMENTS
Akira Yokota, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Nov. 14, 1963, Ser. No. 323,834
Claims priority, application Japan, Nov. 26, 1962, 37/53,079
4 Claims. (Cl. 148—177)

1. A method for making semiconductor elements comprising the steps of

providing a plurality of mesa shaped portions on one side of a wafer of semiconductor material,

providing an oxide film of predetermined thickness on said side of said wafer so that said film covers the exposed portions of said side,

coating a photoresistive emulsion on said side of said wafer so that said emulsion covers the exposed portions of said side except for the top surfaces of said mesa portions,



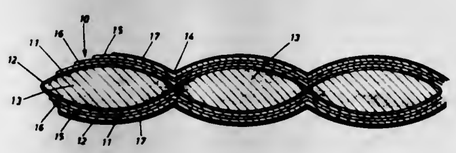
etching said top surfaces with a solution of ammonium fluoride to remove said oxide film therefrom,

and depositing aluminum on said top surfaces while heating said wafer in a vacuum to form alloy type PN junctions of planar shape adjacent the top surfaces of said mesa portions.

3,294,601
HEXAMETHYLENE TETRAMINE AND AMMONIUM NITRATE CONTAINING EXPLOSIVE COMPOSITION
William E. Gordon, Pittsburgh, Pa., assignor to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Feb. 9, 1966, Ser. No. 526,063
9 Claims. (Cl. 149—60)

1. A detonatable wet blasting agent in the form of a cohesive mass, comprising ammonium nitrate as an oxidizer, hexamethylenetetramine as a fuel, water and a thickening agent; characterized in that at least a portion of said ammonium nitrate and said hexamethylenetetramine are in solution in said water whereby they form an association complex as evidenced by n.m.r. spectra, and the undissolved portion of said blasting agent is retained substantially uniformly distributed throughout said cohesive mass.

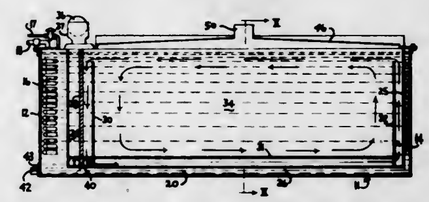
3,294,602
FLEXIBLE SELF-EXPANDABLE AND SELF-CONTAINED UNIT WITH PYROTECHNIC SHEET
Thomas Francis, 197 Glen Park Ave., Toronto, Ontario, Canada; Jack Fred Furrer, 129 Sedgemount Drive, Wayland, Mass. 01778; Maurice H. Jones, 48A Sussex Ave., Scarborough, Ontario, Canada; George Edwin Murray, 22 Pequot Road, Lexington, Mass. 02173; and Melanie P. Thorne, 29 Balfour St., Toronto, Ontario, Canada
Filed Dec. 12, 1963, Ser. No. 330,020
21 Claims. (Cl. 149—109)



1. A flexible, self-expandable and self-contained unit comprising a first flexible layer and a second flexible layer, said second layer being associated in heat-transfer relationship with said first layer, said first layer comprising a foamable composition of matter adapted to foam and form itself into a substantially rigid layer of cellular plastic upon the application of heat thereto, said second layer comprising means for generating and imparting sufficient heat to said first layer to cause foaming of said first layer.

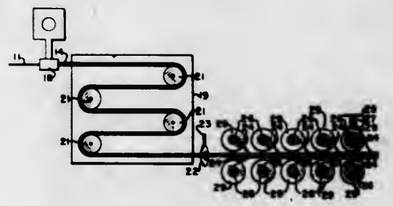
2. A flexible, self-expandable, self-contained unit according to claim 1 wherein said second layer comprises a flexible pyrotechnic sheet that is paper-like in physical structure in that said sheet is comprised of a matrix of intermingled fibres.

3,294,603
METHOD FOR TREATING A MATERIAL IN A SOLUTION
Daniel O. Myers, Mansfield, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1963, Ser. No. 316,718
2 Claims. (Cl. 156—24)



1. In a method of etching a sheet of glass in a solution containing hydrofluoric acid, the steps comprising providing a bath of said solution in a vessel that will accommodate completely submerging a vertically disposed sheet of glass to be etched, withdrawing vapors from a zone immediately above the bath at a location closely adjacent to the surface of said bath in two opposite directions from a substantially vertical plane centrally of the bath, continuing to withdraw vapors in the said manner while lowering a vertically disposed sheet of glass through the zone immediately above the bath and into the bath at a location substantially coincident with said centrally located vertical plane and while removing the etched sheet of glass from said solution.

3,294,604
METHOD OF MAKING ELECTRIC CABLE HAVING COMPRESSED INSULATION
George Feick III, Needham, Mass., assignor to Anaconda Wire and Cable Company, a corporation of Delaware
Original application Dec. 20, 1960, Ser. No. 77,236, now Patent No. 3,217,084, dated Nov. 9, 1965. Divided and this application Sept. 9, 1965, Ser. No. 509,659
2 Claims. (Cl. 156—56)

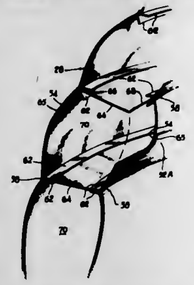


1. The process of manufacturing a high voltage electric cable comprising the steps of extruding a wall of dielectric insulation over a conductor and wrapping the insulated conductor with a plurality of layers of extensible dielectric film strip at a tension at least 30% of the breaking strength of said strip thereby compressing any voids in said insulation and increasing the dielectric strength thereof.

3,294,605
FABRIC FOR AND METHOD OF MAKING PREFABRICATED INFLATABLE STRUCTURES

William H. Fischer, Sandy Hook, Conn., assignor to Air Inflatable Products Corporation, a corporation of Delaware

Filed Feb. 8, 1963, Ser. No. 257,314
7 Claims. (Cl. 156—65)



1. A process for forming a curved inflatable cellular panel comprising in combination the steps of

(A) arraying two sheets of double layer fabric having a first layer and a second layer integrally interwoven with said first layer along a plurality of transverse junction lines spaced apart at predetermined distances;

(B) removing the central strip portions of the second layer between said junction lines to leave integrally interwoven pairs of tabs protruding from said junction lines along one face of each sheet of said fabric;

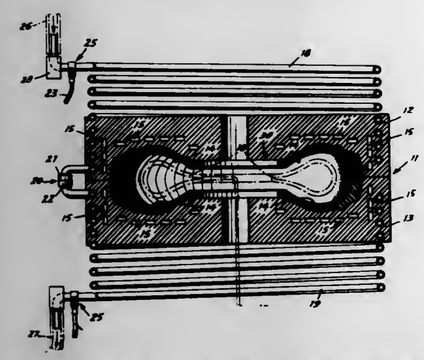
(C) arraying the two sheets of fabric with corresponding interwoven junction lines juxtaposed and protruding tabs in facing relationship;

(D) and, joining said tab pairs together to form cellular chambers between the two sheets of fabric.

3,294,606
METHOD OF MAKING A VULCANIZED WIRE REINFORCED TIRE BY MEANS OF INDUCTION HEATING

Allan Clark Morgan, Mount Vernon, N.Y. (130 Mount Vernon St., Winchester, Mass. 01890); Richard A. Mezger, Baltimore, Md. (2901 Henderson Ave., Wheaton, Md. 20902); and Robert H. Davis, Main St., Frankford, Del. 19948

Original application June 16, 1961, Ser. No. 117,711. Divided and this application Nov. 16, 1964, Ser. No. 420,236
3 Claims. (Cl. 156—124)

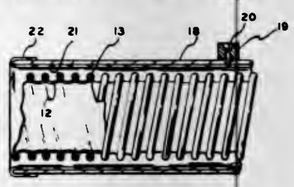


1. A method of making a tire comprising the steps of interleaving a plurality of highly electrically conductive reinforcing laminae with a plurality of laminae of flexible and elastic material, said reinforcing laminae each comprising a woven wire screen, the screen being formed of industrial steel wires of high tensile strength, each individual wire being coated with copper by electroplating, simultaneously applying heat and pressure to the opposite sides of the assembled laminae, and inducing a heating current in the electrically conductive laminae by means of a high frequency alternating magnetic field to produce uniform accelerated heating of the assembled laminae.

3,294,607
METHOD OF MAKING FLEXIBLE REINFORCED CONDUIT

Edward M. Rothermel and Russell B. Waddell, Jr., Waynesville, N.C., assignors to Dayco Corporation, a corporation of Ohio

Original application Mar. 30, 1959, Ser. No. 802,828, now Patent No. 3,152,618, dated Oct. 13, 1964. Divided and this application July 15, 1963, Ser. No. 298,516
6 Claims. (Cl. 156—144)

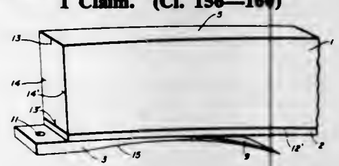


1. A method for the manufacture of flexible reinforced conduit comprising the steps of forming a tube of elastomeric material having a predetermined diameter, positioning thereover a circumferential reinforcing member having axially spaced coils with an inner diameter greater than the diameter of said tube, radially expanding said tube within its elastic limits to cause portions of its outer surface to engage the inner surfaces of said coils, bonding the so engaged surfaces to each other and releasing said tube from its expanded position to cause said tube to depend inwardly between said coils.

3,294,608
METHOD OF PRESTRESSING A WOOD BEAM

John Peterson, Madison, Wis., assignor to the United States of America as represented by the Secretary of Agriculture

Filed Feb. 27, 1964, Ser. No. 347,969
1 Claim. (Cl. 156—160)



A method of producing a prestressed wood beam having established stresses directed along a line parallel to the length of the beam, comprising:

(a) providing an elongated wood beam, a tension element consisting of a flat, thin sheet of high-strength material equal in length and width to a surface of said beam, and a pair of tension-transmitting shoes;

(b) releasably bonding one of the shoes at each end of one side of the tension element with the ends of said shoes extending beyond the ends of said tension element;

(c) applying oppositely-directed forces to the extending ends of the shoes, thereby placing the tension element under tension, the forces being transmitted from the shoes to the tension element through, and uniformly distributed over, the releasably bonded areas, whereby said areas of said tension element are under lower unit tension than the remainder thereof;

(d) permanently bonding the other side of the tension element to the beam while maintaining the tension on said element until said bonding has been completed;

(e) removing the forces on the shoes, thereby causing the tension element to relax and prestress the beam, the ends of said beam being under lower unit stress than the remaining portions thereof; and

(f) removing the shoes from the tension element.

3,294,609
METHOD OF MAKING A LAMINATED PLASTIC TUBE

William A. Foll, Cleveland, Ohio, assignor, by mesne assignments, of one-half to Albin M. Hanclik, Lakewood, Ohio, and one-half to William A. Foll, Cleveland, Ohio

Filed Oct. 17, 1960, Ser. No. 63,112
1 Claim. (Cl. 156—190)

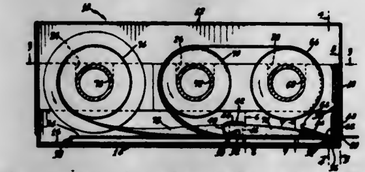


The method of making a heat sealable plastic tube comprising the steps of wrapping a removable protective pull sheet about a mandrel, wrapping a first laminated strip having inner and outer layers of a heat flowable plastic material selected from the group consisting of polyethylene and polyvinyl resins and an intermediate layer of a heat shrinkable plastic material selected from the group consisting of polyethylene terephthalate and irradiated polyethylene about said sheet, wrapping a second laminated strip having a layer of heat shrinkable plastic material selected from the group consisting of polyethylene terephthalate and irradiated polyethylene and an inner layer of heat flowable plastic material selected from the group consisting of polyethylene and polyvinyl resins about said first strip in overlapping spiraled relationship therewith to form a tubular structure, heating said tubular structure above the softening temperature of said seat flowable plastic material but below the shrinking temperature of said heat shrinkable plastic material to bond said strips into a unitary article, said pull sheet preventing said heat flowable plastic material when in the softened condition from adhering to said mandrel, removing said article from said mandrel, and subsequently removing said pull sheet from said article.

3,294,610
METHOD AND APPARATUS FOR DISPENSING A PLURALITY OF STRIPS OF MATERIALS IN OVERLYING RELATIONSHIP

Alan S. Kollock, New Hyde Park, N.Y., and Charles P. Covino, Upper Montclair, N.J., assignors to General Magnaplate Corporation, Belleville, N.J., a corporation of New Jersey

Filed Mar. 6, 1962, Ser. No. 177,899
10 Claims. (Cl. 156—202)

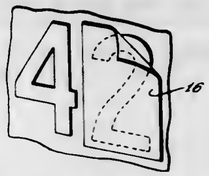


1. The method of conformingly applying film to the surface of a workpiece to be radiographed wherein said film holder includes a plurality of sheets of material light-tightly connected together along their longitudinal edges, said method comprising separately supporting said film and said plurality of sheets of material within a portable light-tight housing, withdrawing from said housing a portion of said sheets of material and connecting said sheets of material along their longitudinal edges with said film encased therebetween, holding said withdrawn portion of said sheets of material from movement relative to said surface to be radiographed, and moving said housing relative to said surface to withdraw lengths of each of said plurality of sheets therefrom while conformingly applying the sheets and the film to the surface to be radiographed.

3,294,611
INDICIA AND METHOD OF APPLYING THE SAME

John B. Vomela, St. Paul, Minn., assignor to Vomela Specialty Company, St. Paul, Minn., a corporation of Minnesota

Filed Jan. 3, 1963, Ser. No. 249,182
7 Claims. (Cl. 156—230)



5. A method of applying a cut-out figure to a flat surface, the cut-out figure including a pressure sensitive adhesive surface, and being sandwiched between a pair of contiguous generally rectangular sheets, which extend beyond the margins of said figure one of which includes an adhesive repellent surface in face contact with the pressure sensitive surface and the other of which includes an adhesive pressure sensitive surface having substantially less adhesive bonding characteristics than the adhesive surface of said cut-out figure adhered to the other surface of said cut-out figure, and to said adhesive repellent surface of said one sheet, said one sheet being slit along a line parallel to an edge of said one sheet and exteriorly of said cut-out figure, the method consisting in

removing the portion of said one sheet between said slit and said one edge,

adhering the exposed area of the other sheet to the said flat surface locating the cut-out figure in the desired position,

removing the remainder of the said one sheet to expose the pressure sensitive surface of the cut-out figure,

adhering the cut-out figure to the flat surface, and

removing the second sheet from the cut-out figure.

3,294,612
METHOD OF TRANSFERRING IMAGES

Daniel R. Pall, Midland, and Robert E. Sullivan, Bay City, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Mar. 4, 1963, Ser. No. 262,481
4 Claims. (Cl. 156—235)



1. A method of transferring images which comprises (1) contacting the image bearing surface with a flowable, coherent mass of a siloxane which can be readily

removed from said surface, allowing said siloxane to remain in contact with the image for a time sufficient that pigment forming the image is transferred to the surface of the siloxane adjacent to the image surface thereby reproducing the image on the surface of the said siloxane,

(2) separating the siloxane from the image surface, and

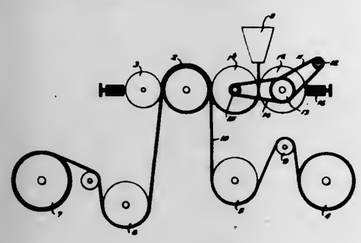
(3) thereafter contacting a second surface with the siloxane surface bearing the reproduction of the image, said second surface comprising a porous material, the surface of which is wet with a liquid in which the siloxane is soluble, whereby a portion of the flowable, coherent mass of siloxane containing the image embedded therein is transferred to said second surface and a reproduction of the image is formed on said second surface.

3,294,613

PROCESS FOR COATING THERMOPLASTIC MATERIAL ON CARRIER WEBS

Erich Eichler, Buderich, near Dusseldorf, Germany, assignor to Hans J. Zimmer, Frankfurt am Main, Germany

Filed Nov. 15, 1960, Ser. No. 69,377
1 Claim. (Cl. 156—242)



A process for coating thermoplastic material on a carrier web which comprises, feeding dry unmolten particles of thermoplastic material into the nip of a pair of rolls, heating the rolls to heat the thermoplastic material to a soft plastic state at a temperature below the melting point of the material, turning one of the rolls to produce a peripheral speed at least ten times faster than the peripheral speed of the other roll to draw a film of the thermoplastic material between the rolls onto the surface of said one of the rolls, heating the roll turning at the higher speed to a higher temperature than the roll turning at lower speed, moving a carrier web to be coated at the same speed as the surface speed of said one of the rolls, and pressing the carrier web against the film on said one of the rolls to transfer the film to the carrier web.

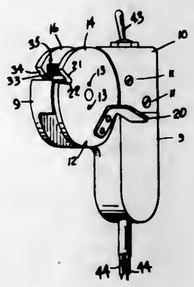
3,294,614

YARN SPLICING APPARATUS

Cornelis B. Abelsma, Buena Vista, Va., assignor, by mesne assignments, to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed June 24, 1964, Ser. No. 377,636
7 Claims. (Cl. 156—433)

1. A cutting and splicing tool for thermoplastic yarns comprising a handle, a spool journaled at one end of the handle, a pair of limit stops on said spool, spring means for holding the spool in a rotated position against one of said stops, means on the spool for manual contact thereof to rotate the spool against the tension of said spring means, a flange on said spool, walls defining a notch in said flange, said notch being positioned on the flange in alignment with a trough on the handle, a plate surrounding a portion of the periphery of said flange and under an edge of which the notch is carried when rotated, and a



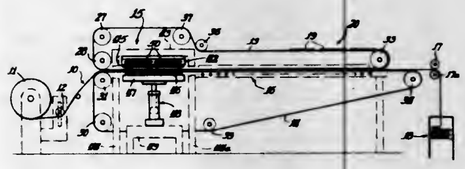
heating element positioned in close spaced relation to the inner terminus of said notch when the spool is rotated against one of said limit stops.

3,294,615

PLASTIC BAG MAKING MACHINE

Fleming Desmond Long, Monmouth, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed July 5, 1963, Ser. No. 292,900
24 Claims. (Cl. 156—537)



1. In a mechanism for forming contoured bags from two superposed layers of thermoplastic film, the combination of two spaced, cooperating die elements, a pair of thin, flexible separator members extending between the die elements, the separator members being arranged to receive two superposed, thermoplastic films therebetween, means for producing relative movement between the die elements to cause them to exert pressure upon the films through the separator members, one of the dies being formed of hard-surfaced, heat-conducting material, means for supplying heat thereto, said hard-surfaced die being of extended length to form at least the major portion of the perimeter of the bag and having a flattened surface of restricted width substantially parallel to the plane of the superposed films, the companion die element serving as the pressure receiving die, said element comprising a relatively thin surface sheet of neoprene rubber.

3,294,616

APPARATUS FOR SEALING POLYMERIC SHEET MATERIAL BY ULTRASONIC ENERGY

Seymour G. Linsley, Bridgeport, Conn., and Joseph E. Di Meglio, Providence, R.I., assignors, by direct and mesne assignments, to Branson Instruments, Inc., Stamford, Conn., a corporation of Delaware

Filed Oct. 3, 1963, Ser. No. 313,528
7 Claims. (Cl. 156—580)

1. Apparatus for sealing polymeric sheet material comprising

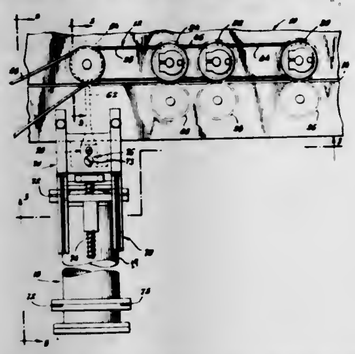
(A) Sheet material transport means for positioning layers of sheet material together for sealing as said sheet material is moved,

(B) means for compressing said layers of sheet material together,

(C) an ultrasonic transducer horn

(1) having an emitting end aligned with said compressing means,

(D) means for generating and transmitting ultrasonic energy to said ultrasonic transducer horn,



(E) an acoustically isolated anvil adjacent said emitting end of said transducer horn, and

(F) means rotatably supporting said anvil,

(1) said anvil being rotatable with its periphery maintaining a position opposing said emitting end of said transducer horn.

3,294,617

REINFORCED SEAMS FOR SUITS MADE OF EXPANDED ELASTOMERS, SUCH AS DIVING SUITS

Jack W. Way, Garden Grove, Calif., assignor to W. J. Volt Rubber Corp., a corporation of California

Filed Dec. 3, 1963, Ser. No. 327,764
9 Claims. (Cl. 161—36)



1. A reinforced seam for a diving suit having adjacent panels of an elastomeric expanded sheet including a jersey lining bonded on at least one side of said sheets, said seam comprising:

a cemented butt joint between adjacent edges of the expanded sheet, and

an extruded elastomeric ribbon having a predetermined strength and elasticity superimposed directly over said seam on a lining side of the sheet, said elastomeric ribbon forming a direct bond with said lining and permeating said lining to join the adjacent linings and thereby prevent seam failures.

3,294,618

PAPER PRODUCT

Louis R. Busche, West Hartford, Conn., and James T. Welch, Loundonville, and Charles E. Lanyon, Troy, N.Y., assignors to John A. Manning Paper Co., Inc., Troy, N.Y.

Continuation of application Ser. No. 219,329, Aug. 24, 1962. This application Apr. 22, 1965, Ser. No. 450,098
6 Claims. (Cl. 161—97)

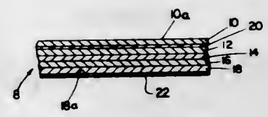
1. A pliable multilayer fibrous sheet having first and second outer surfaces and characterized by substantial resistance to degradation by wetting agents acting on at least said first surface, said sheet comprising

(A) at least first and second pliable water-laid layers of fibrous material,

(1) said layers being subject to degradation by wetting agents,

(2) said first layer forming said first surface,

(3) said second layer being adjacent said first layer, and



(4) the thickness of said first layer being substantially less than the combined thickness of the other layers in said sheet, and

(B) a pliable water-impervious resin film disposed between and bonded to said first and second layers and preventing the passage of wetting agents from said first layer to the bulk of said fibrous material in said sheet on the opposite side of said film from said first layer.

3,294,619

MULTILAYER DECORATIVE LAMINATE HAVING A TOP SURFACE OF AN ALKYL ESTER OF 2-FLUOROACRYLATE

James S. Noland, Greenwich, Conn., assignor to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Filed Mar. 29, 1962, Ser. No. 183,357
12 Claims. (Cl. 161—165)

1. A unitary, heat- and pressure-consolidated decorative laminated article which comprises a superimposed assembly of:

(1) a rigidity-imparting base member,

(2) a print sheet member directly bonded to said base member comprising a fibrous sheet impregnated with a substantially completely cured aminotriazine-aldehyde resin, and

(3) a substantially non-porous film, of from about 0.5 to about 30 mils in thickness, of a polymeric material selected from the group consisting of homopolymers of a lower alkyl ester of 2-fluoroacrylic acid and copolymers of a lower alkyl ester of 2-fluoroacrylic acid with not more than about 30%, by weight, based on the total weight of said copolymer of a different ethylenically unsaturated monomer copolymerizable therewith and selected from the group consisting of an acrylic acid and an alkyl ester of an acrylic acid, directly bonded to said print sheet member.

3,294,620

RESINS FROM ALIPHATIC AND CYCLOALIPHATIC DICARBOXYLIC ACID AND GLYCOL MIXTURES

John Christos Petropoulos, Norwalk, Robert Saxon, Stamford, and James Sterling Noland, Greenwich, Conn., assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,180
7 Claims. (Cl. 161—232)

1. A self-cross-linkable, normally solid, non-crystalline polyester resin composition consisting essentially of the esterification product of

(A) from about 34 to 49 mol percent of a cycloaliphatic dihydric alcohol having one ring of 6 carbon atoms,

(B) from about 1 to 16 mol percent of an asymmetrical, linear aliphatic dihydric alcohol,

(C) from about 30 to 49 mol percent of an α,β-ethylenically unsaturated dicarboxylic acid selected from the group consisting of fumaric acid and itaconic acid and

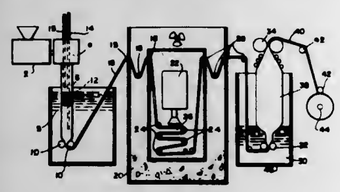
(D) from about 1 to 20 mol percent of a cycloaliphatic dicarboxylic acid having one ring of 6 carbon atoms, wherein the total mol percent of all components is 100%.

3,294,621

HIGH SHRINK ENERGY POLYETHYLENE COHESIVELY SEALED TO ANOTHER THERMOPLASTIC MATERIAL

William G. Baird, Jr., Winchester, Carl A. Lindstrom, Jr., Arlington, Arthur L. Besse, Jr., Weston, and Donald J. d'Entremont, East Boston, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Original application Feb. 7, 1958, Ser. No. 713,848, now Patent No. 3,022,543, dated Feb. 27, 1962. Divided and this application Apr. 6, 1961, Ser. No. 131,696
5 Claims. (Cl. 161—247)



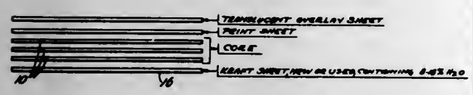
1. Polyethylene having a shrink energy of at least 100 p.s.i. cohesively sealed to a higher softening temperature thermoplastic material.

3,294,622

METHOD OF MAKING LAMINATED ARTICLES HAVING REDUCED WARPING TENDENCIES

John T. Wark, Glen Burnie, Md., assignor to National Plastic Products Company, Inc., Odenton, Md., a corporation of Maryland

Filed Apr. 18, 1963, Ser. No. 273,899
8 Claims. (Cl. 161—264)



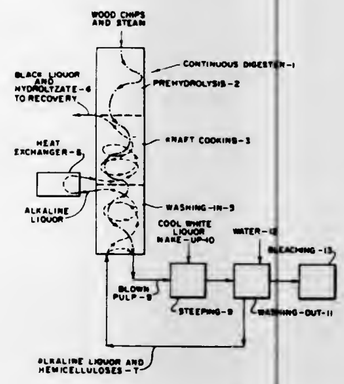
1. A method of making substantially flat, post-formable, planular laminated articles comprising the steps of consolidating under pressure a plurality of superposed sheets between a pair of heated platens to substantially completely cure the resins therein and to produce a post-formable, planular decorative laminate, the superposed sheets comprising a top protective overlay sheet composed of a cellulosic material and a pattern sheet thereunder composed of a cellulosic material having a design printed thereon, said overlay sheet and pattern sheet being impregnated with a melamine formaldehyde laminating resin which has been partially cured therein, a plurality of core sheets thereunder of cellulosic material impregnated with a partially cured phenol-formaldehyde laminating resin and a relatively wet bottom paper sheet unimpregnated by laminating resins and containing about 8% to about 18% of added water based on the weight of the sheet, said bottom sheet becoming integral with the bottom of the core during said consolidation due to the flow of resin from the core to the bottom sheet, which flow is accelerated by the presence of said added water in the bottom sheet.

3,294,623

CONTINUOUS DIGESTION AND PURIFICATION WITH RECIRCULATION OF LIQUOR

Amiel W. Brinkley, Jr., and Guthrie S. Mabrey, Mobile, Ala., and John W. Gilbert, Greenwich, Conn., assignors to International Paper Company, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 176,489, Feb. 23, 1962. This application Feb. 23, 1966, Ser. No. 529,291
15 Claims. (Cl. 162—19)



1. A process of cellulosic pulp manufacture, purification, and preparation for bleaching in which cellulosic fibrous material is continuously cooked with an alkaline liquor to produce cellulosic pulp and spent cooking liquor suitable for recovery and in which all of the alkaline liquor is brought together with the cellulosic fibrous material after having first been displaced by water from previously produced cellulosic pulp ready to be bleached, having second been used to steep previously produced cellulosic pulp prior to its being made ready for bleaching by resort to such a water displacement, and having third been used to displace for recovery previously produced spent cooking liquor from previously produced cellulosic pulp.

3,294,624

BLEACHING TREATED WOOD CHIPS

Arthur Raymond Sloman, Burnie, Tasmania, Australia, assignor to Associated Pulp and Paper Mills Limited, Melbourne, Victoria, Australia, a corporation of Victoria

Filed Jan. 21, 1963, Ser. No. 252,862
Claims priority, application Australia, Jan. 24, 1962, 13,668/62
8 Claims. (Cl. 162—19)

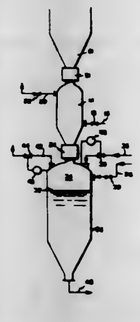
1. A method of bleaching wood chips which have been subjected to a chemical cooking treatment at superatmospheric pressure and elevated temperature in a first pressure vessel, which comprises pre-filling a second pressure vessel with fluid under superatmospheric pressure, transferring the said chips while under superatmospheric pressure from the first pressure vessel to said second pressure vessel, while displacing said fluid from said second pressure vessel as the wood chips are transferred thereto from the first pressure vessel; reducing the pressure in the second pressure vessel to atmospheric pressure, transferring the chips by gravity from the second pressure vessel to the upper end of a bleaching vessel, causing the chips to flow downwardly in the bleaching vessel, and causing bleaching solution to flow upwardly in the bleaching vessel countercurrent to the downflow of chips, the chips being maintained in substantially undefibered form throughout the said operations.

3,294,625

METHOD FOR IMPREGNATING CELLULOSIC MATERIAL

Adolf W. Gessner, Montclair, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Mar. 28, 1963, Ser. No. 268,623
7 Claims. (Cl. 162—68)



1. A process for impregnating wood chips or the like, comprising replacing air within the pores of the chips with water vapor in a deaerating zone,

introducing the deaerated chips into an impregnating zone having a body of cooking liquor at a temperature of from about 240° F. to about 260° F. and a vapor space above said body of liquor,

introducing an inert gas into said vapor space to maintain the pressure in said vapor space at about 2 to about 6 p.s.i.a. above the vapor pressure of said liquor at the operating temperature,

maintaining the pressure in said vapor space at about 1 to about 5 p.s.i.a. below the pressure of said deaerating zone,

and contacting said chips with said liquor to condense the water vapor in said chips to effect a lower pressure within said pores, thereby drawing said liquor into said chips.

3,294,626

CONTINUOUS FLOW WAFER IMPREGNATOR AND DIGEST TUBE

William R. Matthews, W. 1022 7th Ave., Spokane, Wash. 99202

Filed July 15, 1963, Ser. No. 295,025
7 Claims. (Cl. 162—236)



1. A device for liquid impregnation and treatment of cellulosic materials comprising an elongated cylindrical sleeve having an inlet at one end thereof and an outlet adjacent the other end thereof;

screw feed means in said sleeve for advancing the material from the inlet to the outlet;

a fluid supply conduit on the exterior of the sleeve extending lengthwise of the sleeve;

the sleeve having a band of apertures in its wall leading into said conduit;

a fluid discharge conduit on the exterior of the sleeve diametrically opposite to the supply conduit and extending lengthwise of the sleeve;

the sleeve having a band of apertures in its wall leading into said discharge conduit whereby fluid forced into said sleeve from the supply conduit may flow across the sleeve to the discharge conduit.

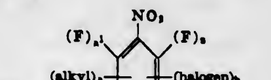
3,294,627

KILLING PESTS WITH APPLICATIONS OF CARBAMYL PHOSPHATES

Donald G. Stoffey, El Cerrito, Calif., Richard C. Maxwell, Pullman, Wash., and Arnold D. Gutmann, Oakland, Llewellyn W. Fancher, Lafayette, and James T. Hallett, Saratoga, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Nov. 6, 1962, Ser. No. 235,831, now Patent No. 3,242,498, dated Mar. 22, 1966. Divided and this application Jan. 10, 1966, Ser. No. 527,389
7 Claims. (Cl. 167—22)

1. The method of killing pests comprising applying to a pest habitat a compound of the formula



wherein R_1 and R_2 are lower alkyl radicals, R_3 is selected from the group consisting of lower alkyl and lower chloroalkyl and X, Y and Z are selected from the group consisting of oxygen and sulfur, at least one of the groups X and Y being sulfur.

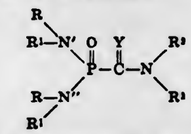
3,294,628

DIALKYL CARBAMYL AND THIOCARBAMYL PHOSPHONIC DIAMIDE ACARICIDAL COMPOSITION AND METHOD OF USE

Ivan C. Popoff, Ambler, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application Dec. 6, 1963, Ser. No. 328,511. Divided and this application Oct. 21, 1965, Ser. No. 545,176
11 Claims. (Cl. 167—22)

1. A method of controlling and killing acarides which comprises contacting acarides with an acaricidal quantity of a compound of the formula



in which R is selected from the group consisting of hydrogen, hydrocarbon and substituted hydrocarbon; R^1, R^2 and R^3 are each selected from the group consisting of hydrocarbon and substituted hydrocarbon; and Y is selected from the group consisting of oxygen and sulfur.

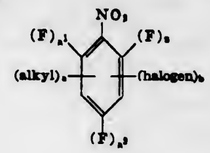
3,294,629

FLUORONITROBENZENE NEMATOCIDES

William J. Pyne and Fred L. Metz, Painesville, Henry Bluestone, University Heights, and Alfred Hirsch, Mentor, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed May 11, 1964, Ser. No. 366,660
13 Claims. (Cl. 167—30)

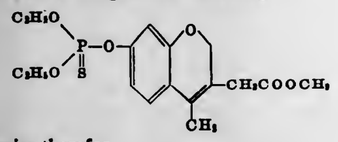
1. The method of controlling nematode infestation in soil which comprises applying to nematode-infested soil a nematocidal amount of a substituted nitrobenzene having the structure:



wherein *a*, a^1 and a^2 are each 0 to 1, inclusive, with the proviso that at least one of *a*, a^1 and a^2 is 1; *b* is 0 to 4, inclusive; and *c* is 0 to 4, inclusive, any free bonds being satisfied by hydrogen, with the further proviso that when *c* is 0, at least two of *a*, a^1, a^2 and *b* is 1.

3,294,630
O,O-DIETHYL-O-(3-ETHOXYCARBONYLMETHYL-4 - METHYLCOUMARIN - 7 - YL)PHOSPHOROTHIOATE INSECTICIDE
Gerald Sydney Poll and Malcolm Henry Black, both of Berkhamsted, England, assignors to Cooper, McDougall & Robertson Limited, Chemical Works, Berkhamsted, Hertfordshire, England, a British company
No Drawing. Filed Nov. 19, 1964, Ser. No. 412,306
Claims priority, application Great Britain, Nov. 20, 1963, 45,760/63
10 Claims. (Cl. 167—33)

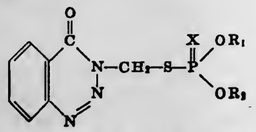
4. A pesticidal composition containing



and a carrier therefor.

3,294,631
PESTICIDAL ASYMMETRIC THIOL- OR THIONO-THIOL-PHOSPHORIC ACID ESTERS
Walter Lorenz, Wuppertal-Vohwinkel, Reimer Colln, Wuppertal-Elberfeld, Gerhard Schrader, Wuppertal-Cronenberg, and Günter Unterstenhöfer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 29, 1964, Ser. No. 422,011
Claims priority, application Germany, Jan. 4, 1964, F 41,674
23 Claims. (Cl. 167—33)

19. Method of combating insect and acarid pests which comprises applying to at least one of (*a*) such insect pests, (*b*) such acarid pests, and (*c*) the corresponding habitat a pesticidal amount of an asymmetric thiophosphoric acid ester of the formula



in which R_1 is linear alkyl, R_2 is selected from the group consisting of branched alkyl and cycloalkyl, and X is a member selected from the group consisting of oxygen and sulfur.

3,294,632
CONTROLLING BACTERIA ON TEXTILE MATERIALS WITH REACTION PRODUCTS OF TETRAKIS (ALPHA-HYDROXYORGANO) PHOSPHONIUM HALIDES COMBINED WITH FORMALDEHYDE SOURCE MATERIALS
George M. Wagner, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,407
13 Claims. (Cl. 167—38.6)

1. A method for controlling bacteria which comprises contacting the bacteria with a composition comprising the reaction product of a tetrakis(alpha-hydroxyorgano) phosphonium halide and a formaldehyde source material, which source material forms with the phosphonium halide a reaction product capable of releasing formaldehyde and is selected from the group consisting of formaldehyde, triazines, dimethylolcyclic alkylene ureas, carbamic acid derivatives, and urea-formaldehyde resins, the amount of said reaction product being sufficient to effect the desired control of the bacteria.

3,294,633
PROCESS OF FUMIGATION WITH THIAZYL TRIFLUORIDE
Everett E. Gilbert, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 22, 1965, Ser. No. 489,410
1 Claim. (Cl. 167—39)

The process for combatting noxious insects which comprises subjecting said insects to the action of the vapors of thiazyl trifluoride.

3,294,634
FUMIGATION WITH PERFLUORODIMETHYL-PEROXIDE
Everett E. Gilbert, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 23, 1965, Ser. No. 489,731
2 Claims. (Cl. 167—39)

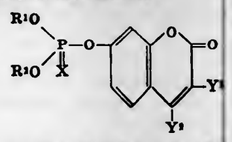
1. A process for the control of pest organisms infesting an enclosed space which comprises subjecting said organisms to an atmosphere comprising a lethal concentration of perfluorodimethylperoxide.

3,294,635
3,4-DIHYDRO-BENZOXAZINONES-(1,3,2) AS AN ANALGESIC AGENT
Jan Thesing, Erwin Gams, Karl Schulte, and Siegmund Sommer, all of Darmstadt, Germany, assignors to E. Merck, Darmstadt, Germany
No Drawing. Filed Sept. 23, 1963, Ser. No. 316,480
Claims priority, application Germany, Sept. 26, 1962, M 54,317
3 Claims. (Cl. 167—52)

3. A process for effecting analgesic activity in mammals, which process comprises orally administering to mammals 50–500 mg. of 3,4-dihydro-benzoxazinone-(1,3,2).

3,294,636
COUMARINYL PHOSPHATE INTESTINAL NEMATOCIDES AND THE METHOD FOR USING SAME
Norman Cooper Brown, Algiers, Northchurch Common, and Donald Thomas Hollinshead, Boxmoor, England, assignors to Cooper, McDougall & Robertson Limited, Berkhamsted, Hertfordshire, England, a British company
No Drawing. Continuation of application Ser. No. 156,477, Dec. 1, 1961. This application Mar. 26, 1965, Ser. No. 443,177
13 Claims. (Cl. 167—53)

1. A compound of the formula



wherein R^1 and R^2 are each alkyl of from one to six carbon atoms and at least one of the said R^1 and R^2 is substituted with one halogen atom selected from the class consisting of chlorine and bromine; X is selected from the class consisting of oxygen and sulphur atoms; and Y^1 and Y^2 are each selected from the class consisting of hydrogen and a halogen atom selected from the class consisting of chlorine and bromine, alkyl of from one to four carbon atoms, benzyl and phenyl carrying in each position of the ring a member selected from the class consisting of nitro, a hydrogen atom and a halogen atom selected from the class consisting of chlorine and bromine and alkyl containing from one to four carbon atoms, and alkylene which with other member of the Y^1 and Y^2 forms Y^1—Y^2 which is an alkylene chain containing from three to six carbon atoms.

13. A method for the treatment of an infection of nematodes of the gastro-intestinal tract comprising the oral administration of an effective amount of organo-phosphorus compound as defined in claim 1 to the host of the nematode infection.

3,294,637
METHOD OF EXTRACTING HYPOCHOLESTEROLEMIC FLAVONIC DERIVATIVES FROM *LESPEDEZA CAPITATA* LEAVES
Claude Marie Henri Corvelle, 165 Blvd. Haussmann, Paris, France
No Drawing. Filed Apr. 16, 1962, Ser. No. 187,970
Claims priority, application France, July 12, 1958, 770,205; June 20, 1959, 798,093
1 Claim. (Cl. 167—65)

A method of extraction of flavonic derivatives contained in the leaves of *lespedeza capitata*, said method comprising the steps of: reducing dried leaves of said plant to powder, exhausting said powder with ether and chloroform to carry off selectively various undesired impurities including oils and tannins, treating the exhausted powder with ethyl alcohol, distilling under reduced pressure, precipitating chlorophyll by treating the distillate with boiling water, filtering, concentrating the filtrate under reduced pressure, degreasing said filtrate with sulphuric ether, exhausting the liquor thus obtained by successive treatment with ethyl acetate and butanol, collecting together the fractions obtained by said successive treatments, distilling said flavonic derivatives to produce a crude precipitate of the flavonic derivatives, and purifying the crude precipitate by prolonged contact in the cold state of the crude precipitate and said exhaustion liquor, before separation from said exhaustion liquor, centrifuging the mixture to form a precipitate, drying the centrifuged precipitate under vacuum, exhausting said precipitate in a plurality of stages over a period of about 4 hours with boiling ethyl acetate, concentrating the exhaustion liquors until about half the solvent is driven off, cooling to crystallize the flavonic derivatives and recrystallizing said flavonic derivatives in ethyl alcohol having a concentration of about 45°.

3,294,638
METHOD AND COMPOSITIONS EMPLOYING 2-ALKYL-3-PIPERIDINOPYRAZINES
Wilson B. Lutz, North Manchester, Ind., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Nov. 20, 1963, Ser. No. 325,173
4 Claims. (Cl. 167—65)

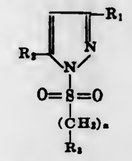
1. Process for the treatment of mentally depressed patients which comprises administering to said patients an effective amount of a compound selected from the group consisting of 2-methyl-3-piperidinopyrazine, 2-ethyl-3-piperidinopyrazine and the pharmaceutically acceptable nontoxic acid addition salts thereof.

3,294,639
TREATMENT OF INFLAMMATORY DISEASES
William Chalmers, Arthur Clarence Wood, and Alexander John Shaw, Vancouver, British Columbia, Canada, and John Julius Majnarich, Bothell, Wash., assignors to Eversharp, Inc., a corporation of Delaware
No Drawing. Filed Feb. 3, 1964, Ser. No. 342,274
5 Claims. (Cl. 167—65)

1. A method of treating inflammation in a warm-blooded animal which comprises administering an effective dose of a compound selected from the group consisting of batyl alcohol, chimyl alcohol, and selachyl alcohol.

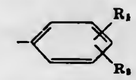
3,294,640
CONTROLLING BLOOD SUGAR WITH SULFONYL PYRAZOLES
Milton Wolf, Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,217
7 Claims. (Cl. 167—65)

1. A method of controlling the level of sugar in blood which comprises administering to an animal from about 10 mg. to about 750 mg. per day of a compound represented by the formula:



wherein R_1 and R_2 are selected from the group consisting of hydrogen, methyl, methoxymethyl;

R_3 is selected from the group consisting of hydrogen, lower alkyl, naphthyl, dimethylamino and



wherein R_5 is selected from the group consisting of hydrogen and halogen and R_6 is selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, amino, methyl and methoxy; and

n has a value of from 0 to 2 inclusive with the proviso that *n* has a value of at least 1 when R_3 is hydrogen.

3,294,641
ACCELERATING THE LYSIS OF BLOOD CLOTS
Laszlo Lorand, Evanston, Ill., assignor to Northwestern University, Evanston, Ill., a corporation of Illinois
No Drawing. Filed May 20, 1963, Ser. No. 281,796
10 Claims. (Cl. 167—73)

1. A method of accelerating the lysis of a vertebrate blood clot which comprises contacting said clot with a composition consisting essentially of urokinase and a fibrin crosslinking inhibitor selected from the group consisting of glycine methyl ester, glycineamide and glycylglycine methyl ester.

3,294,642
CONTAINER FOR SAMPLES TO BE IRRADIATED
Albert Recule, Igny, and Paul Thome, Saint-Cloud, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed May 14, 1964, Ser. No. 367,348
Claims priority, application France, May 31, 1963, 936,758
7 Claims. (Cl. 176—15)

1. A temperature-regulated sample container assembly to be positioned within a nuclear reactor core, in which a cooling fluid is circulated, for irradiating the sample, comprising: a closed container having a chamber for accommodating said sample, and means for regulating the temperature within said chamber, said means including a driven magnetic head located inside said closed container, a magnetic driving head located exteriorly of said container and coaxial with said driven head for magnetic coupling therewith, a turbine wheel rotatively mounted on the exterior surface of said container for actuation by said

circulated cooling fluid, said magnetic driving head being securely connected with said turbine wheel for rotation therewith, means actuated by said magnetic driven head



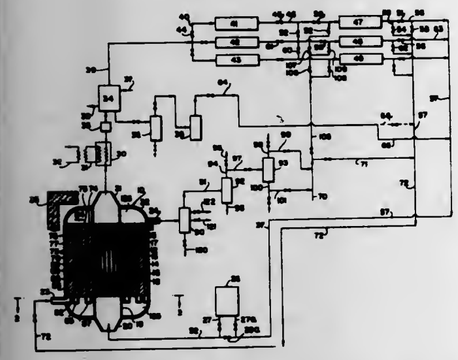
for modifying the temperature in said chamber, and means responsive to the temperature in said chamber for controlling said temperature modifying means.

3,294,643

METHOD OF OPERATING A NUCLEAR REACTOR AND OF CARRYING OUT RADIATION CHEMICAL REACTIONS

Edwin O. Guernsey, Pennington, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Mar. 24, 1964, Ser. No. 354,303
12 Claims. (Cl. 176—37)



1. Method of operating a nuclear reactor and coincidently therewith of carrying out a gaseous phase radiation-induced chemical reaction, said reactor having a porous moderated fissile-containing fuel in the core thereof and also having adjacent said core a nuclear radiation-permeable fission fragment-impermeable zone which is in heat exchange relation with the core, which comprises: flowing coolant through said core in direct contact with the fuel, picking up in the coolant volatile nuclear fission fragments comprising xenon, krypton, and iodine, separating iodine from the coolant stream including iodine-135 and removing said iodine to a decay zone to permit decay to xenon including xenon-135, flowing the stream through an absorbing zone to absorb the xenon and krypton therefrom, recirculating the stream comprising stripped coolant to said reactor, adding to the recirculating stream xenon-135 from said decay zone and flowing the resulting stream through said reactor core as a coolant, thereby controlling the reactivity of the core at least in part by the presence of said xenon-135 and, further, prolonging the lifetime of the fuel in said core, coincidently with said cooling step adding to a chemical reactant a rare gas obtained as a product of the said method and selected from the class consisting of xenon, krypton, and mixtures thereof, flowing said reactant mixture as a stream through said reactor zone, irradiating the reactant mixture in said reactor zone by means of the nuclear radiation from the reactor core but not the fission fragments thereof while coincidently subjecting the reactant mixture to heat exchange with said reactor core, thereby converting said reactant to a product under the influence of said radiation and in the presence of said rare gas, flowing the resulting reaction mixture to a separating zone to separate reaction product, unchanged reactant, and rare gas, and recirculating said unchanged reactant to said zone in the reactor.

3,294,644

METHOD OF REDUCING CORROSION CONDITIONS IN A WATER-COOLED NUCLEAR REACTOR

Gilbert Northcott Walton, Abingdon, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed June 5, 1964, Ser. No. 373,835
Claims priority, application Great Britain, June 10, 1963, 23,019/63
4 Claims. (Cl. 176—38)

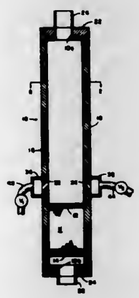
1. In a method for reducing the corrosion conditions in a water-cooled nuclear reactor having a means for circulating a coolant through the reactor to cool the same, the improvement consisting of adding to the coolant a single material to control radiolysis of the coolant, said material being ammonia which is added to the coolant in an amount sufficient to give and maintain an ammonia concentration of from 4 to 60 p.p.m. by weight in the coolant.

3,294,645

CONTROLLED UNLOADING OF GEOMETRICALLY ORDERED PACKED BEDS

Herbert Susskind, Huntington, N.Y., Walter W. Becker, Shoreham, N.Y., and Michael W. Maresca, deceased, late of East Patchogue, N.Y., by Marie Maresca, administratrix, East Patchogue, N.Y., assignors to the United States of America as represented by the Atomic Energy Commission

Filed Apr. 22, 1966, Ser. No. 545,803
1 Claim. (Cl. 176—73)



A nuclear fuel assembly comprisisng a vertically extending column containing an ordinarily stationary ordered bed of spherical fuel particles, at least one nozzle extending inwardly and upwardly through a side wall of said column above said bed of particles, and means for

varying the flow of liquid supplied under pressure through said nozzle to fluidize selectively portions of said bed to permit the removal of said particles from said column in a predictable and orderly manner.

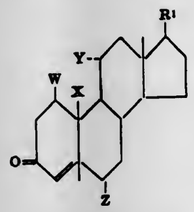
3,294,646

MICROBIOLOGICAL HYDROXYLATION OF NORSTEROIDS USING *ASPERGILLUS OCHRACEUS*

Leland L. Smith, Paoli, George Greenspan, Narberth, and Richard Rees, Newtown Square, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,154
10 Claims. (Cl. 195—51)

1. A process for preparing a compound of the formula:



(II)

wherein R^1 is selected from the group consisting of OH and =O and one of the group of W, X, Y and Z is OH and the remainder of the group of W, X, Y and Z is H, with the proviso that when W or X is OH, the representation of structure of the product is a mirror image of II, which comprises, subjecting 19-nortestosterone to the action of *Aspergillus ochraceus* under oxidizing conditions and recovering the desired product selected from the group consisting of 1β,17β-dihydroxyestr-4-en-3-one; 6β,17β-dihydroxyestr - 4 - en-3-one; 10β,17β-dihydroxyestr-4-en-3-one; 11α,17β-dihydroxyestr-4-en-3-one; and 11α-hydroxyestr-4-ene-3,17-dione.

3,294,647

PROCESS FOR PRODUCING SPORES

Surendra Nath Sehgal, St. Laurent, Quebec, Kartar Singh, Beaconsfield, Quebec, and Claude Vezina, Oka, Quebec, Canada, assignors, by mesne assignments, to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin

No Drawing. Filed May 18, 1964, Ser. No. 368,396
3 Claims. (Cl. 195—81)

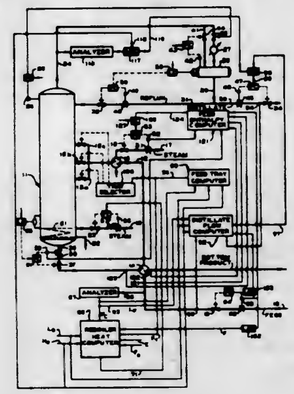
1. The process of producing spores of the spore forming molds *Septomyxa affinis*; *Mucor griseocyanus*; *Stachylidium theobromae*; *Didymella lycopersic*; *Didymella vodakii*; *Pestalotiopsis funerea*; *Pestalotiopsis funerea* var. *discolor*; *Verticillium theobromae* (*Stachylidium theobromae*); *Stachylidium bicolor* (*Verticillium bicolor*); *Fusarium moniliforme*; *Rhizopus* (*reflexus*) *circinans*; *Gliocladium catenulatum*; *Gliocladium roseum*; *Aspergillus flavipes*; *Chaetomella oblonga*; *Trichothecium roseum*; Pycnosporium sp.; *Saccharomyces pastorianus*; *Cunninghamella elegans*; *Chaetomella raphigera*; *Penicillium chrysogenum*; *Aspergillus niger*; *Fusarium javanicum* var. *ensiforme*; *Fusarium oxysporum* var. *lini*; *Fusarium solani*; Penicillium sp. Adamis; *Penicillium patulum* (*P. urticae*); *Streptomyces griseus*; *Streptomyces erythreus*; *Streptomyces diastaticus*; *Streptomyces microflavus*; *Streptomyces rimosus*; *Streptomyces lavendulae*; *Streptomyces olivochromogenus*; or *Fusarium conglutinans*, which comprises inoculating a sterile moist solid culture medium selected from the group consisting of pot barley and wheat bran, with any of said molds, culturing the resulting mixture with aeration for a time sufficient to produce spores of the mold, adding water to the culture mixture, agitating the aqueous culture mixture, and removing the resulting aqueous spore suspension from the solid culture medium.

3,294,648

CONTROLLING THE OPERATION OF A DISTILLATION COLUMN

Dale E. Lupfer and Merlon L. Johnson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 246,917
11 Claims. (Cl. 203—2)



6. In a process wherein a multicomponent feed stream is separated in a fractional distillation column into an overhead vapor stream and a liquid bottom product stream having a specified purity, said overhead stream is condensed, some of the condensed overhead is recycled to said column as an external reflux stream, and some of said condensed overhead is yielded as a distillate product stream having a specified purity, a control method comprising the steps of measuring the amounts of light key feed component and feed components lighter than the said light key feed; producing signals responsive to said measurements proportional to the amount of said key components; measuring a process variable indicative of the flow rate of feed to the column; producing a signal in response thereto proportional to the feed flow rate; combining the former signals with said feed flow rate signal in a predictive equation derived from a material balance around said column; combining the latter signals in a distillate flow computer based on the expression:

$$D=f(L_F, F, H_D, L_B)$$

where:

D=predicted volume flow rate of distillate product when flow is measured at temperature equal to feed temperature

L_F=generic symbol for the sum of the light key component and components lighter than light key, each expressed as a liquid volume fraction of said feed

F=feed flow rate (volume per unit time)

H_D=specified liquid volume decimal fraction of heavy key in distillate

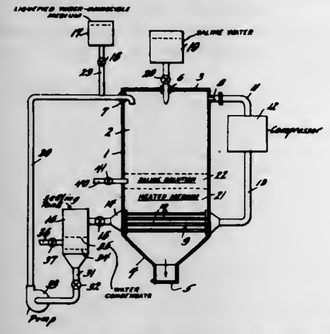
L_B=specified liquid volume decimal fraction of light key in bottoms product;

producing a signal proportional to D; analyzing one of said overhead and bottom product streams to determine the concentration of a specified key component thereof; producing a feedback signal responsive to said analyzation proportional to said concentration; comparing said signal D with said feedback signal and biasing the predicted flow rate D of said distillate product stream with said feedback signal.

3,294,649
DESALINIZATION OF WATER

William Ward Powell, Jr., R.F.D. 1, Clinton, Pa. 15026

Filed Aug. 20, 1963, Ser. No. 303,245
6 Claims. (Cl. 203—10)



1. Method for the desalinization of aqueous saline solutions comprising the steps of:

(a) maintaining a body of aqueous saline solution at its evaporation temperature in a vaporization zone in contact with and superimposed upon a body of a relatively volatile liquid heat transfer medium having limited solubility in water and in said saline solution and having a higher specific gravity than said saline solution, the aqueous saline solution being introduced above the said bodies;

(b) heating and volatilizing said liquid heat transfer medium to form vapors thereof and passing said vapors through said body of aqueous saline solution, in direct heat exchange, whereby said saline solution is heated and boiled, a portion of said heat transfer medium vapor being condensed to liquid and returned to said body of liquid heat transfer medium;

(c) vaporizing water from said saline solution and collecting water vapor and heat transfer medium vapor as a combined vapor;

(d) passing said combined vapor through a heat exchange means and in indirect heat exchange with the liquid heat transfer medium to simultaneously condense the water vapor to liquid water and the heat transfer medium vapor to liquid heat transfer medium;

(e) removing and gravity separating the condensed water and the condensed liquid heat transfer medium; and

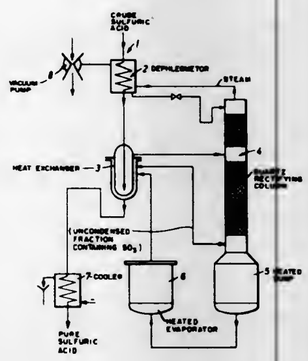
(f) returning the condensed liquid heat transfer medium to said body thereof in said varporization zone above the said bodies, said liquid heat transfer medium being maintained in liquid form when it is returned to said vaporization zone.

3,294,650
PROCESS FOR CONCENTRATING SULFURIC ACID IN A QUARTZ RECTIFYING COLUMN

Rolf Manteufel, Frankfurt am Main, Germany, assignor to Firma Heraeus Quarzschmelze G.m.b.H., Hanau (Main), a corporation

Filed July 31, 1963, Ser. No. 298,925
Claims priority, application Germany, Aug. 13, 1962, H 46,635
4 Claims. (Cl. 203—22)

1. A process for the continuous distillation of a crude sulfuric acid in a quartz rectifying column to produce analytically pure sulfuric acid, including steps of rectifying the crude sulfuric acid in said rectifying column to produce a high and a low-boiling point fraction in said column, withdrawing high boiling point friction as a liquid, evaporating withdrawn liquid and condensing a portion of the resulting vapor while leaving a portion of said vapor uncondensed, utilizing all the heat of said condensation to partially evaporate said crude sulfuric acid and form a gas-liquid mixture thereof, introducing said partially evapo-



rated mixture into the rectifying step, introducing said uncondensed vapor from the condensation of said high boiling fraction to the rectification step and withdrawing condensate produced by said condensation as the analytically pure sulfuric acid.

3,294,651
MONOMERIC ACRYLONITRILE EXTRACTION OF DIMETHYLFORMAMIDE FROM POTASSIUM SALT COAGULATION BATH SOLUTIONS

Alberto Pasin, Cesano Maderno, Italy, assignor to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy

No Drawing. Filed Oct. 16, 1963, Ser. No. 316,537
Claims priority, application Italy, Oct. 22, 1962, 676,624
9 Claims. (Cl. 203—39)

8. A method for recovering dimethylformamide solvent out of the coagulation and stretching baths used for the wet spinning of polyacrylonitrile and constituted by a mixture of said solvent with a concentrated aqueous solution of one of the following potassium salts: potassium formate and acetate, consisting in mixing said bath with monomeric acrylonitrile, allowing the mixture to stand for separating into two layers the lower of which contains the potassium salt and the upper of which contains the major fraction of the solvent with the major part of the monomeric acrylonitrile, removing said upper layer, and purifying the upper layer by a simple distillation.

3,294,652
MEASUREMENT OF SULFURIC ACID AND OLEUM CONCENTRATION

William P. Banks, Ponca City, Okla., Smith L. Holt, Jr., Providence, R.I., and Richard L. Every, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

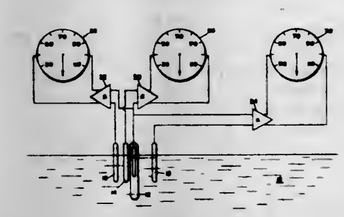
Filed Feb. 25, 1963, Ser. No. 260,803
15 Claims. (Cl. 204—1)

14. A method for measuring the concentration of sulfuric acid over certain ranges comprising:

(a) placing a reference electrode of constant potential in electrochemical communication with said acid;

(b) placing an electrode selected from the group consisting of a platinum-platinum oxide electrode and a chromium carbide electrode in contact with said acid; and

(c) measuring the potential difference between said electrodes when said potential difference varies over

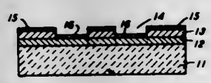


a range exceeding 150 millivolts for each 10 weight percent change in acid concentration.

3,294,653
METHOD FOR FABRICATING PRINTED CIRCUIT COMPONENTS

Harry N. Keller, Mountain Lakes, David A. McLean, Chatham, and Benjamin H. Vromen, Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 28, 1962, Ser. No. 176,298
6 Claims. (Cl. 204—15)



1. A method for the fabrication of a printed circuit component which comprises the steps of successively depositing a layer of a refractory film-forming metal selected from the group consisting of tantalum, niobium, titanium, tungsten and zirconium on a substrate, covering a portion of said layer with an aluminum pattern, anodizing the resultant assembly and removing the anodized aluminum and the aluminum contained thereunder, and removing the refractory film-forming metal lying under the said aluminum.

3,294,654
METAL PLATING PROCESS

Vello Norman, Chapel Hill, N.C., Thomas P. Whaley, Glenview, Ill., and Hamilton B. Prestridge, Houston, Tex., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 28, 1965, Ser. No. 475,569
3 Claims. (Cl. 204—38)

1. A process for producing an adherent metal coating upon an essentially non-electroplatable metal selected from the group consisting of molybdenum, tungsten and alloys thereof, which process is characterized by use of only two plating steps as follows:

(1) heating said essentially non-electroplatable metal substrate to a temperature within the range of from about 100° C. to about 500° C. and thereafter contacting said heated substrate with a heat-decomposable compound selected from the group consisting of molybdenum carbonyl and tungsten carbonyl, for a period of time sufficient to lay down on said substrate an essentially pure adherent metallic coating to serve as an electrically conducting intermediate layer, and

(2) thereupon depositing by electrolysis a final metal coating upon said intermediate adherent layer so as to form an adherent composite metal coating.

3,294,655
ZINC AND CADMIUM ELECTROPLATING

Leslie E. Lancy, Ellwood City, Pa., assignor to Lancy Laboratories, Inc., Zelienople, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,358
18 Claims. (Cl. 204—50)

1. A method of imparting an electrolytic metal deposit of the class consisting of zinc and cadmium on the surface of a base metal which comprises, applying an electroplating current to an aqueous solution containing a metal cyanide of the corresponding metal to be plated and containing normal quantities of alkali metal cyanides and hydroxides, and supplying a soluble lithium metal compound to the solution in a significant quantity sufficient to prevent aging of the solution from the standpoint of substantially preventing the formation of soluble alkali metal carbonates and soluble iron cyanides therein.

3,294,656
METHOD OF PRODUCING ALUMINIUM

Johannes Schmitt, Rheinfelden, Baden, Germany, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a joint-stock company of Switzerland

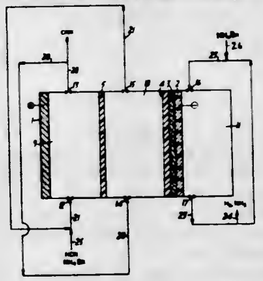
Filed Oct. 16, 1962, Ser. No. 230,855
Claims priority, application Switzerland, Oct. 17, 1961, 12,030/61
4 Claims. (Cl. 204—67)

1. The method of operating an electrolytic furnace either with prebaked anodes or with selfbaking Söderberg carbon anodes for the production of aluminum by passing direct electric current through a fluoride electrolyte composed mainly of molten cryolite $3NaF.AlF_3$ and containing an excess of aluminum fluoride AlF_3 above that amount which is combined in the cryolite as well as dissolved alumina Al_2O_3, comprising maintaining during a period of at least 12 hours and at most 48 hours the electrolyte temperature between 940° and 960° C., the concentration of alumina between 5 and 7% by weight and of aluminum fluoride excess between 5 and 7% by weight, and preventing the concentration of alumina and of excess aluminum fluoride from dropping below 5% during said period by frequent additions of alumina and aluminum fluoride to the electrolyte.

3,294,657
ELECTROLYTIC PROCESS OF MAKING CYANOGEN HALIDES

James W. Sprague, Streetsboro, and Franklin Veatch, University Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Nov. 5, 1962, Ser. No. 235,364
3 Claims. (Cl. 204—101)



1. A process for the electrochemical reaction of hydrogen cyanide and ammonium halide to form cyanogen halide, using a three-compartment cell having an anode compartment and anolyte therein, a cathode compartment and catholyte therein, and an intermediate compartment therebetween with anolyte therein, an ion-selective

membrane separating the anode compartment from the intermediate compartment, and an anion-selective membrane separating the cathode compartment from the intermediate compartment, which comprises subjecting an aqueous solution of hydrogen cyanide and ammonium halide as anolyte and an aqueous solution of ammonium halide as catholyte to a direct electric current to effect reaction in the anolyte to form cyanogen halide, withdrawing cyanogen halide-containing anolyte and recovering cyanogen halide therefrom, circulating such anolyte to the intermediate compartment to intercept hydrogen cyanide from anolyte moving towards the catholyte and ammonia from catholyte moving towards the anolyte, thereby preventing entry of the same into anolyte and catholyte, respectively, and then recycling to the anode compartment such hydrogen cyanide- and ammonia-enriched anolyte and hydrogen halide for electrochemical reaction to form cyanogen halide.

3,294,658
SELECTIVE POLYMERIZATION OF UNSATURATED EPOXIDES

George J. Atchison, Midland, and Raymond M. Narlock, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 22, 1963, Ser. No. 296,475
3 Claims. (Cl. 204—159.22)

1. A process for making a polyether containing vinyl substituents, which process comprises subjecting at least one substance of the group 3,4-epoxy-1-butene and 1,2-epoxy-4-vinylcyclohexane to a field of high energy radiation of an intensity of about 0.1 to about 100 megarads per hour and separating said polyether from the irradiated substance.

3,294,659
PROCESS FOR HYDROREFINING PETROLEUM CRUDE OIL

Mark J. O'Hara, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 6, 1965, Ser. No. 512,018
5 Claims. (Cl. 208—251)

1. A process for hydrorefining a hydrocarbon charge stock containing organo-metallic and asphaltene contaminants for the removal of such contaminants therefrom, which comprises reacting said charge stock and hydrogen at a temperature above about 225° C. and a pressure greater than about 500 p.s.i.g. in contact with a catalytic composite of boron phosphate and at least one metallic component selected from the group consisting of the metals of Groups VI–B and VIII of the Periodic Table and compounds thereof, composited with alumina and silica coprecipitated at a pH of at least about 8.0 from aqueous water glass and aluminum salt solutions, said catalytic composite having an apparent bulk denisty less than about 0.35 gram/cc., and recovering a hydrorefined liquid product.

3,294,660
AMORPHOUS ZINC OXIDE SEMICONDUCTOR AND METHOD OF MAKING

William D. Kingery, Lexington, Mass., and Reid A. Mickelsen, Bellevue, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Sept. 30, 1964, Ser. No. 400,606
7 Claims. (Cl. 204—192)

1. The method of producing an amorphous semiconducting film of zinc oxide that comprises the steps of providing a substrate, maintaining the substrate at a temperature between —90° C. and —45° C., vapor depositing a film of zinc oxide on said substrate by reactive sputtering using a zinc metal cathode and an atmosphere consisting of a mixture of oxygen and an inert gas, and permitting the film to warm to room temperature.

3,294,661
PROCESS OF COATING, USING A LIQUID METAL SUBSTRATE HOLDER

Leon I. Maissel, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 6, 1966, Ser. No. 541,935
9 Claims. (Cl. 204—192)



1. A method for fabricating microminiaturized circuit elements which comprises the steps of

placing a substrate on a liquid metal film on a holder in a chamber, the liquid metal having a vapor pressure in the range from 0 to about 10^{-9} torr and a melting temperature from room temperature to about 650° C.

providing a low pressure atmosphere within the chamber,

providing in the chamber a first electrode having a material suitable for deposition on the substrate,

providing a second electrode within said chamber, and

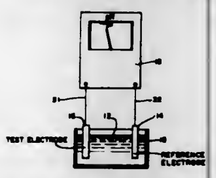
providing heat exchanging means to exchange heat uniformly from said liquid metal whereby the horizontal temperature gradient across said circuit element is substantially zero,

applying an electric potential between the first and second electrodes to sputter the materials and form a thin film on the substrate.

3,294,662
pH METER

Sheldon L. Matlow, Santa Barbara, Calif., assignor to Hoffman Electronics Corporation, a corporation of California

Filed May 16, 1962, Ser. No. 195,216
7 Claims. (Cl. 204—195)



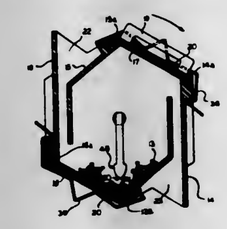
6. Apparatus for measuring the pH of basic liquids comprising: a reference electrode; a test electrode means for reacting with hydroxide ions consisting of a semiconductor material doped with an acceptor impurity; and an electrical circuit connecting said electrodes and having a high impedance voltmeter, said circuit being free of any means associated therewith other than said electrodes and said basic liquid for driving a current through said electrodes, whereby pH values between 12 and 14 may be measured.

3,294,663
ELECTROPLATING APPARATUS

Anton Lazaro, 2022 N. California Ave., Chicago, Ill. 60608

Filed May 14, 1963, Ser. No. 280,378
5 Claims. (Cl. 204—213)

1. A self-contained electroplating apparatus comprising: an electroplating barrel having solid non-perforated walls forming the longitudinal sides of said barrel, said non-perforated walls having at least one insert of non-perforated fibrous meshed material incorporated therein, said walls having longitudinal portions that are unconnected and overlapped, said unconnected and overlapped portions forming at least one slot therebetween to admit

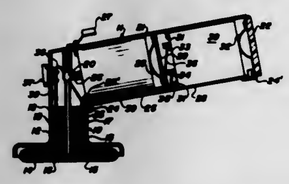


fluid when rotated in a certain direction without allowing parts to be electroplated to escape from said barrel, whereby spent electroplating fluid can be exhausted from said electroplating barrel through said non-perforated fibrous meshed portions without allowing said parts that are being electroplated to escape.

3,294,664
ELECTROLYTIC APPLIANCE FOR TREATING SURFACES

Edmond G. Franklin, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio

Filed Sept. 3, 1963, Ser. No. 305,974
4 Claims. (Cl. 204—224)

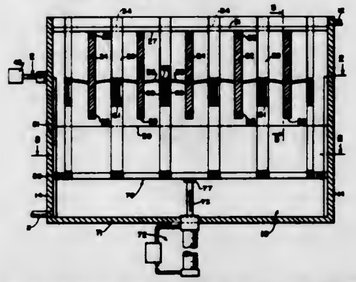


1. A surface treating appliance comprising, an applicator section for application to the surface to be treated, and a handle section, said applicator section including a vertically extending casing having an enlarged open ended lower mouth porton, a pair of angle shaped electrodes positioned in the lower end of said applicator section with the short legs of said angles extending laterally into said enlarged mouth, and with the long legs extending upwardly into the lower portion of said applicator section, insulating material insulating said electrodes from each other and from said casing, asbestos cloth surrounding the short legs of said electrodes and extending between said electrodes, a liquid dispensing tube extending upwardly from said cloth, through said insulating material and into the upper portion of said applicator casing, said tube being provided with a valve seat adjacent its upper end, a valve for opening and closing said valve seat and including a stem extending upwardly to a valve actuator positioned on top and exteriorly of said applicator casing, a port formed in said tube above said valve seat, said handle section including two compartments, the innermost of which receives a liquid carbonate container having a nozzle for entry into said port and the outermost of which receives a dry cell battery, electric conductors including a rheostat for connecting the terminals of said battery to said electrodes, the lower portion of said handle being pivoted to the upper portion whereby said receptacle and battery may be removed and replaced.

3,294,665
APPARATUS AND METHOD FOR THE ELECTROLYTIC PRODUCTION OF METAL HYDROXIDE

Paul S. Roller, 2325 42nd St., NW., Washington, D.C. 20007

Filed July 12, 1963, Ser. No. 294,677
19 Claims. (Cl. 204—227)

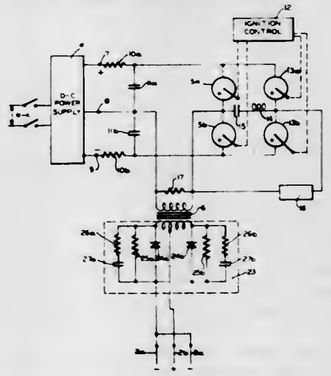


6. An apparatus for the electrolytic production of insoluble metal hydroxide in aqueous solution comprising a receptacle, the opposite lateral walls of said receptacle being provided with matching parallel grooves, metal hydroxide-producing electrode plates mounted in said grooves with their lateral ends slidingly disposed therein, means to retain said plates in said grooves, current supply means contacting said plates on their ends within said grooves, and wiping means to remove a soft gel film from said plates during electrolysis.

3,294,666
ELECTROLYTIC TREATING APPARATUS INCLUDING A PULSATING D.C. POWER SOURCE

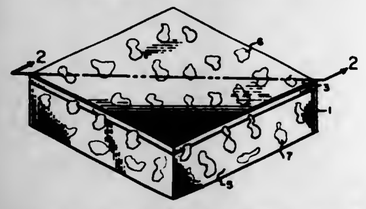
Clifford H. Wiersma, Escondido, Calif., assignor to Kentron Corporation, Escondido, Calif., a corporation of Illinois

Filed July 2, 1963, Ser. No. 292,410
1 Claim. (Cl. 204—228)



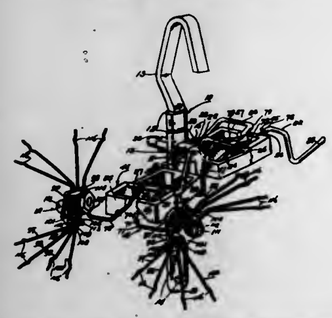
In an apparatus for electrolytically cleaning metal objects having a bath of electrolyte and spaced electrodes of opposite polarity in said bath, an improved source of power connected across said electrodes comprising a center tapped D.-C. power supply; a first mercury discharge device connected across the center tap and one side of said supply; a second mercury discharge device connected across the center tap and the opposite side of said supply; separate igniter means for making each of said mercury discharge devices conductive; separate means for terminating conduction of each of said mercury discharge devices; and ignition control means selectively igniting and terminating conduction of said mercury discharge devices in preselected sequence and time relationship.

3,294,667
MAGNETITE-STABILIZED LEAD ANODE
Anthony J. Giuffrida, North Andover, Mass., assignor to Ionics, Incorporated, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 5, 1962, Ser. No. 221,545
5 Claims. (Cl. 204—290)



1. A composite article of manufacture for use as an anode electrode comprising a lead metal base having particles of a magnetite at least partially embedded therein, the working surface of said anode comprising an adherent layer of lead peroxide and exposed particles of magnetite.

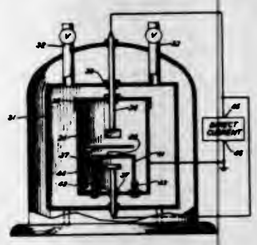
3,294,668
ELECTROPLATING RACKS
William E. Belke, Chicago, Ill.; Lester L. Linquist and Ralph E. Belke, executors of said William E. Belke, deceased, assignors to Belke Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed July 29, 1963, Ser. No. 298,381
6 Claims. (Cl. 204—297)



1. The combination of an electrically conducting spine, an electrical connector member fixedly secured to said spine and having a depending arm, a chemically inert plastic finger supporting member embraced by said arm and clamping said finger supporting member against said spine, said finger supporting member having a lower retaining shoulder and an upper supporting surface, and said connector member having a transverse integral arm engaging said upper supporting surface on said finger supporting member, and a U-shaped spring finger having its yoke engaged under said finger supporting member, and having its legs bent over said transverse arm, said legs spreading into engagement with a pair of opposed bevelled surfaces on said finger supporting member for removably securing said spring finger on said spine.

3,294,669
APPARATUS FOR SPUTTERING IN A HIGHLY PURIFIED GAS ATMOSPHERE
Henry C. Theuerer, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 22, 1963, Ser. No. 296,550
2 Claims. (Cl. 204—298)

1. A cathodic sputtering apparatus including a first vacuum chamber, means for evacuating said first vacuum chamber, means for introducing an inert gas into said first vacuum chamber, an anode member having a tightly fitted conductive lid defining a second vacuum chamber in which are disposed in succession (a) a first non-shielded cathode member, (b) a substrate support, and (c) a non-shielded second cathode member comprising the same material as said first cathode, at least one of said cathode members being disposed significantly nearer to said means

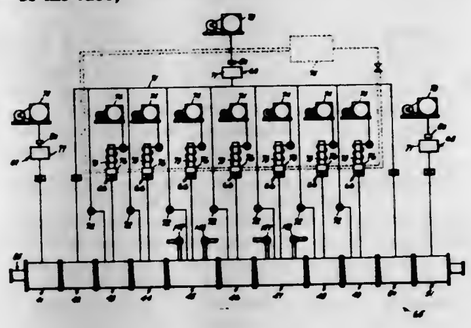


for introducing an inert gas than said substrate support, together with means for applying a potential gradient between said anode and said cathode members in all areas within said second vacuum chamber including the area surrounding said second cathode member at the furthest points from said substrate support, to effect a flow of electrons from said cathode to said anode member.

3,294,670
APPARATUS FOR PROCESSING MATERIALS IN A CONTROLLED ATMOSPHERE
Sidney S. Charschan, Levittown, Pa., and Harald Westgaard, Lawrenceville, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 7, 1963, Ser. No. 314,412
13 Claims. (Cl. 204—298)

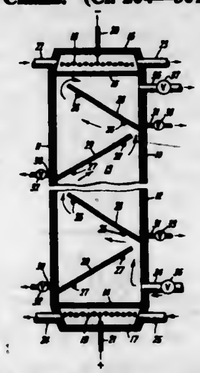
1. Open-ended, continuous processing apparatus, which comprises:
an elongated, open-ended, apertured channel extending longitudinally through the apparatus, the channel defining a passage through which material to be processed enters the apparatus from ambient atmosphere, passes through the apparatus and exits into ambient atmosphere;
a pluralty of interconnected, open-ended chambers supporting the channel, individual chambers surrounding apertured portions of the channel and containing processing atmospheres to which the material in the channel is exposed through the apertures therein;
means connected to the chambers for maintaining predetermined pressures in the processing atmospheres in the chambers;
guide means extending along the channel on the inside surface thereof;
a plurality of identically shaped carriers for conveying the material through the apparatus, the carriers having portions projecting transversely outwardly beyond the entire outer peripheries of the material carried by the carriers, segments of the projecting portions of the carriers being complementary in shape to the guide means and cooperating therewith to align the carriers axially and accurately position the carriers in the channel, the axial alignment of the carriers and positioning of the carriers accurately in the channel providing uniform, restricted clearances between the outer peripheries of the enlarged portions of the carriers and inside surfaces of the channel sufficiently large to allow the carriers to move freely through the channel and still provide sufficient resistance to the flow of fluids to and from the chambers to permit predetermined pressures to be maintained in the chambers; and
means for moving the carriers through the channel.

12. An open-ended, semiautomatic apparatus for sputtering thin films of tantalum nitride having desired electrical properties on successive substrate sheets of a series of such sheets moving continuously from ambient atmosphere through various processing chambers in the apparatus and back to ambient atmosphere, which comprises:
a plurality of open-ended, interconnected chambers communicating with each other through calibrated clearances, the chambers including heating and outgassing, sputtering and cooling chambers;
means connected to the chambers for evacuating the chambers to provide controlled, partial vacuums of predetermined pressures in the chambers;
a horizontal tube extending longitudinally through the apparatus and being supported intermediate the ends thereof by walls of the individual chambers, opposite ends of the tube being exposed to ambient atmosphere through which ends substrate sheets to be processed enter and exit from the apparatus, portions of the tube extending through the chambers being provided with apertures to permit controlled atmospheres in the chambers to communicate with inside portions of the tube extending therethrough;
guide means formed on the inner surface of the walls of the tube;



a plurality of identically shaped, vertically oriented carriers having recessed portions designed for supporting substrate sheets vertically and conveying the substrate sheets to be processed horizontally through the tube, the carriers having relatively accurately dimensioned portions cooperating with the guide means formed on the inner surface of the tube to align the carriers axially and position the carriers accurately with respect to the inner surfaces of the walls of the tube, the accurate positioning of the axially aligned carriers within the tube preventing the sides of the carriers from rubbing on the inside surface of the tube and providing uniform, restricted clearance between the outer peripheries of the carriers and the inside surfaces of the walls of the tube, the restricted clearance between the outer peripheries of the carriers and the inside surfaces of the tube being sufficiently large to allow the carriers to move freely through the tube and still provide sufficient resistance to the flow of gases through the tube to permit the partial vacuums of predetermined pressures to be maintained in the various chambers;
means for pushing the carriers through the tube in end-to-end engagement at a predetermined rate;
a vertical cathode formed of a plate of high-purity tantalum to be deposited on the substrate sheets positioned in the sputtering chamber and in a vertical plane parallel to a vertical plane containing the longitudinal axis of the tube, the vertical orientation of the substrate sheets and cathode permitting any foreign particles which may exist in the sputtering chamber to fall freely to the bottom of the chamber;
means for applying a relatively high, negative, electrical potential to the cathode;
means for introducing argon gas into the partially evacuated sputtering chamber at a predetermined rate, the argon gas entering the sputtering chamber being ionized so that ionized atoms of the argon gas bombard the cathode causing atoms of tantalum to be dislodged from the surface of the cathode and be deposited in strongly adhering, substantially uniform, thin films of tantalum on the surfaces of the substrate sheets;
means for introducing a relatively small amount of relatively pure nitrogen gas into the sputtering chamber at a controlled rate proportional to the volumetric flow of argon into the sputtering chamber to nitride the tantalum and improve the stability of the electrical resistivity of the thin films of tantalum deposited on the substrate sheets;
means for subjecting the substrate sheets being pushed to the sputtering chamber to a higher temperature and lower pressure than exist in the sputtering chamber to remove absorbed and adsorbed gases from the substrate sheets and vaporize other surface contaminants on the sheets;
the processing of the substrate sheets taking place uninterruptedly in the series of interconnected chambers having atmospheres maintained at substantially constant pressures while the substrate sheets are moved continuously into, through and out of the series of processing chambers through a series of the restricted clearances, the amount of contaminants reaching the sputtering chamber from the open ends of the tube being less than one-millionth of the volume flow of the argon gas used for the sputtering atmosphere; and
means for cooling the tantalum-coated substrate sheets being removed from the sputtering chamber to prevent the tantalum thin films on the substrate sheets from being exposed to the ambient atmosphere at an elevated temperature.

3,294,671
ELECTRODIALYSIS APPARATUS HAVING A VERTICAL SERPENTINE FLOW PATH
Jerry Hugh Brown, Springdale, and David Guy Canning, Stamford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed May 9, 1963, Ser. No. 279,176
14 Claims. (Cl. 204—301)



1. In an electrogravitational device, a container having oppositely disposed first and second sides, electrodes in the top and bottom of said container, ion selective membranes in abutting relationship with and extending at an acute angle in substantially the same vertical di-

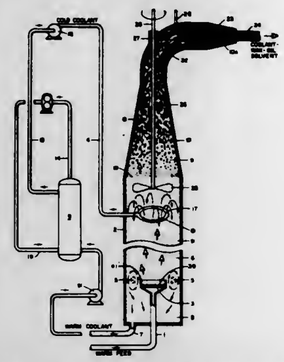
rection from said first and second sides, said ion selective membranes extending from said first side extending between at least some of said ion selective membranes extending from said second side thereby defining a vertical serpentine flow path within said container, means for introducing fluid to be treated into said container, means for withdrawing a product stream from one end of said container, and means for withdrawing fluid from said container through the sides of said container within at least some of the acute angles formed by said ion selective membranes and the sides of said container.

3,294,672

CRYSTALLIZATION PROCESS UTILIZING COMPRESSION OF THE CRYSTALLIZED MATERIAL

Leonard B. Torobin, Newark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 11, 1964, Ser. No. 350,957
12 Claims. (Cl. 208—37)



1. A process for crystallizing a crystallizable material from a feed liquid in which said material is soluble at certain temperatures and insoluble at lower temperatures, at which lower temperatures said material is crystallized from its solution, wherein the liquid containing the crystallizable material is cooled from the feed temperature to the desired crystallization temperature by countercurrent contact in a tower with a continuous phase liquid immiscible coolant of different density than the solution containing the material to be crystallized, and wherein the liquid containing the crystallizable material is introduced into the coolant phase in the form of a dense dispersion of essentially uniform size droplets, said dispersed phase collecting and collapsing at the opposite end of the tower from where it was introduced to form a substantially continuous collapsed phase of crystallized material and mother liquor forming a sharp concentration gradient between the collapsed phase and the dispersed phase, gradually compressing the collapsed phase in a constricted area of the tower to form a plug and pressure seal of essentially continuous collapsed phase material, and removing said collapsed phase from said tower.

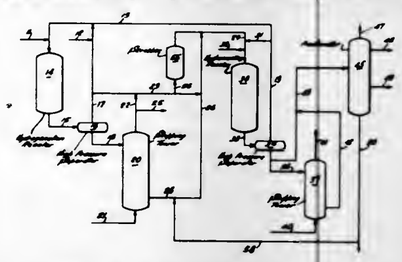
3,294,673

TREATMENT OF HYDROCARBONS

Reese A. Peck, Fishkill, N.Y., William F. Franz, Hopewell Junction, N.Y., and Donald A. Messing, Poughkeepsie, N.Y. (all of P.O. Box 509, Beacon, N.Y. 12508)

Filed Sept. 9, 1965, Ser. No. 490,767
15 Claims. (Cl. 208—89)

1. A process for the conversion of a sulfur and nitrogen-containing hydrocarbon liquid into a lighter hydrocarbon liquid which comprises contacting a sulfur and nitrogen-containing hydrocarbon liquid charge stock with a hydrogenation catalyst under conditions to convert the sulfur contained therein to hydrogen sulfide and the nitrogen contained therein to ammonia, separating the hydrogenation zone effluent into a normally gaseous portion and a normally liquid portion, removing ammonia from



the normally gaseous portion while permitting the hydrogen sulfide to remain therein, combining said normally liquid portion with the substantially nitrogen-free normally gaseous portion and passing the combined stream into contact with a hydrocracking catalyst under hydrocracking conditions.

3,294,674

HYDROCRACKING OF HYDROCARBONS WITH A SULFIDED TUNGSTEN OXIDE CATALYST ON A SILICA-ALUMINA CRACKING SUPPORT

Harold Beuther, Gibsonia, Bruce K. Schmid, McCandless Township, Allegheny County, and James R. Strom, O'Hara Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,705
9 Claims. (Cl. 208—111)

1. A hydrocracking method comprising contacting a low-nitrogen distillate hydrocarbon oil feed stock with hydrogen at hydrocracking conditions and with a sulfided tungsten hydrocracking catalyst prepared by contacting a composite consisting essentially of tungsten oxide and an active, silica alumina cracking catalyst having an activity index of at least about 35 and containing about 5 percent to 90 percent silica, with a sulfiding gas mixture containing chiefly hydrogen, in admixture with a minor proportion of a sulfiding agent, at a temperature in the range of about 300° to 900° F. and at a pressure of about 100 to 1000 p.s.i.g., for a period sufficient to sulfide at least a substantial portion of the tungsten oxide, said contact of feed stock and catalyst being carried out to form products of lower boiling range than the feed stock.

3,294,675

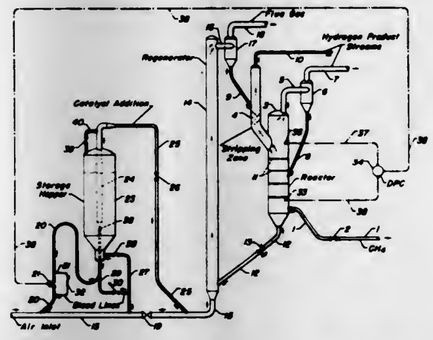
MEANS AND METHOD FOR AUTOMATIC ADDITION OF FINELY DIVIDED PARTICLES TO A FLUIDIZING CONTACTING SYSTEM

Frank H. Adams, Riverside, Ill., Leslie C. Hardison, Bloomer, Wis., and Paul J. Kuchar, Riverside, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 20, 1964, Ser. No. 368,943
7 Claims. (Cl. 208—153)

1. In a fluidized catalyst system wherein finely divided catalyst particles are introduced into a reaction zone to effect the contacting and conversion of a charge stream therein, resulting contacted catalyst particles are subjected to a fluidized contact with an air stream being introduced into a separate regeneration zone, and regenerated catalyst particles are returned to the reaction zone for reuse therein, the improved method of adding catalyst particles to the system from a storage zone to replace losses from the system by reason of entrainment with a product stream leaving the reaction zone and a flue gas stream leaving the regeneration zone, which method comprises the steps

of introducing a jet-like air stream upwardly into the lower portion of said storage zone containing a bed of fresh catalyst particles, entraining particles in said jet stream and carrying them in a fluidized confined column upwardly from said storage zone into a transfer line, al-



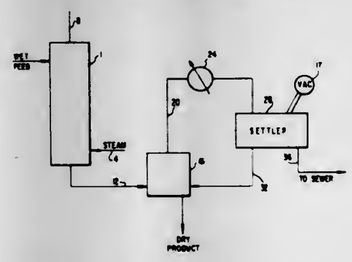
lowing the level of said bed of catalyst particles within the storage zone to vary over substantial vertical limits but not lower than the base of said fluidized confined column, and introducing the fluidized air-catalyst mixture from said transfer line into said regeneration zone to thereby add catalyst particles to said system.

3,294,676

PROCESS FOR PRODUCING DRY HYDROCARBON DISTILLATES

Paul A. Brunner, Harvey, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 29, 1964, Ser. No. 340,970
6 Claims. (Cl. 208—187)



1. A process for the production of dry petroleum hydrocarbon distillates which consists essentially of subjecting a petroleum hydrocarbon distillate boiling above the gasoline range to steam stripping to provide a liquid bottoms product which is at a temperature of about 125° F. to 500° F., flashing the stripped liquid bottoms product at a temperature of about 10 to 50° F. units below the liquid bottoms product temperature, condensing the vapors from said flashing in a condensation zone, settling the resulting condensate in a settling zone to provide a water layer and oil layer, said flashing, condensation and settling being conducted while applying a vacuum to said settling zone which vacuum serves to place the flashing, condensation and settling zones under an absolute pressure of about 50 to 200 milliliters of Hg, separating the water and oil layers, returning the oil layer to the flashing zone and removing dry liquid product from the flashing zone.

3,294,677

DESULFURIZING PETROLEUM FRACTIONS WITH NITROGEN DIOXIDE AND SULFURIC ACID

Ralph E. Martin, Tyler, Alfred R. Pate, Jr., Houston, and Raymond E. Hargis, Tyler, Tex., assignors to Howe-Baker Engineers, Inc., Tyler, Tex., a corporation of Texas

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,800
8 Claims. (Cl. 208—224)

1. A process for treating a hydrocarbon stream containing sulfur components which comprises: intimately and vigorously admixing nitrosyl sulfuric acid and sulfuric acid with said stream while adding oxygen to said stream, the amount of oxygen being in excess of the amount required to oxidize the sulfur compounds present in the hydrocarbon, the mixing of said hydrocarbon stream and the treating agents being carried out at a temperature of from about 30 to about 250° F.

ERRATUM

For Class 208—251 see:
Patent No. 3,294,659

3,294,678

PROCESS FOR DEASPHALTENING HEAVY PETROLEUM CRUDE OIL

William K. T. Gleim, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,099
10 Claims. (Cl. 208—309)

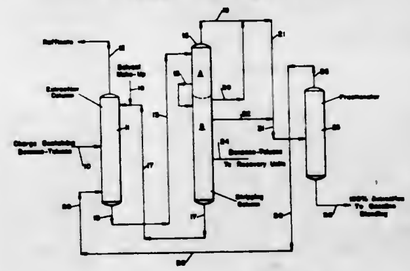
1. A method for removing asphaltenic material from a heavy hydrocarbon charge stock containing said asphaltenic material which comprises treating said charge stock, at a temperature of from about 50° C. to about 300° C. and under a pressure of sulfur dioxide of from about 150 to about 1500 p.s.i.g., with an aqueous solution of a sulfurous compound consisting of a bi-sulfide or bi-sulfite of an alkali metal, alkaline earth metal or ammonium, thereby converting at least a portion of said asphaltenic material to a water-soluble sulfonic acid salt, extracting said sulfonic acid salt with an aqueous medium, and recovering said charge stock reduced in asphaltenic concentration.

3,294,679

PROCESS OF RECOVERING AROMATIC HYDROCARBONS BY SOLVENT EXTRACTION

Roy L. Donovan, North Hills, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

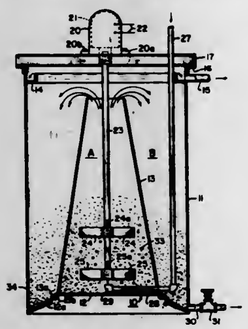
Filed Nov. 29, 1965, Ser. No. 510,286
3 Claims. (Cl. 208—333)



1. Method of separating aromatic hydrocarbons from a feed stock boiling mainly in the range of 125–250° F. and composed of aromatic and non-aromatic hydrocarbons which comprises countercurrently contacting said feed in an extraction zone with a polyalkylene glycol solvent selective for aromatics, separately removing raffinate and extract phases from the extraction zone, distilling said

extract phase in a first distillation zone to obtain fractions consisting essentially of (1) an overhead fraction composed of aromatics and a minor amount of non-aromatics, (2) an intermediate fraction comprising essentially high purity aromatics and (3) a residue comprising said solvent, returning the solvent residue to the extraction zone, distilling said overhead fraction in a second distillation zone to obtain fractions consisting essentially of (1) a distillate composed of aromatics and most of the non-aromatics in said overhead fraction, said distillate containing a major amount of aromatics but a lesser amount of aromatics than in said overhead fraction and (2) a residue product comprising essentially high purity aromatics, and recycling said distillate to the extraction zone as sole reflux at a locus intermediate the feed point and the point of removal of the extract phase from said extraction zone.

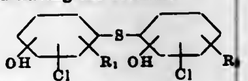
3,294,680
TREATMENT OF SPENT COOLING WATERS
Leslie E. Lancy, Ellwood City, Pa., assignor to Lancy Laboratories, Inc., Zelienople, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1964, Ser. No. 412,148
12 Claims. (Cl. 210—49)



1. A self-regulating method of quickly and effectively conditioning spent cooling water having a toxic hexavalent chromium solution content to make the water innocuous which comprises, providing a mass of hard metal sulfide granules, moving the spent cooling water through the mass in contact with surface portions of the granules and surface-reacting the granules with the hexavalent chromium solution content to fully convert it into trivalent chromium, while inhibiting the forming of a soluble sulfide in the water from the sulfide granules, and while maintaining surfaces of the metal sulfide granules reactive to the hexavalent chromium solution content of the water, and removing the water in an innocuous condition from the mass and discharging it.

3,294,681
PROCESS OF DRILLING A WELL WITH A DRILLING FLUID CONTAINING A STARCH PRODUCT
Robert O. Stearns, Barstow, Calif., and Donald J. Weintritt, Houston, Tex., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
Original application Apr. 10, 1963, Ser. No. 272,103, now Patent No. 3,256,115, dated June 14, 1966. Divided and this application Oct. 21, 1965, Ser. No. 499,644
3 Claims. (Cl. 252—8.5)

1. In a process for drilling a well by the rotary method wherein a water-base drilling fluid is circulated in said well, the method of controlling the formation of a filter cake on the wall of said well which comprises admixing with said drilling fluid and interacting therewith a gelatinized starchy flour product which has been produced by combining a moist starchy flour containing from 1% to 5% by weight of paraformaldehyde and from 1% to 5% of a compound having the formula:



where R_1 and R_2 are chosen from the group consisting of Cl and H, and extruding said flour at a pressure of at least 200 lbs. per square inch and at a temperature of at least 260° F., allowing the hot, extruded starchy flour to expand at atmospheric pressure after said extrusion, and drying and grinding the product so formed, in an amount sufficient to lower the fluid loss of said drilling fluid but insufficient to increase the viscosity of said fluid to such an extent to render said drilling mud uncirculatable.

3,294,682
MEANS FOR PREVENTING HIGH TEMPERATURE SEIZING
Michael J. MacKinnon, West Lake, Ohio, assignor to Bell Aerospace Corporation
No Drawing. Filed Apr. 11, 1962, Ser. No. 186,643
1 Claim. (Cl. 252—25)

In combination with a pair of threadedly engaged members having predetermined clearance between the threadedly engaged parts thereof,

a coating of a composition consisting essentially of boron nitride particles and a carrier therefor forming a substantially uniform layer of discrete particles of boron nitride disposed between the threadedly engaged parts of such members,

said particles being of a size to pass through a 325 mesh screen and not greater than the stated clearance so as to permit engagement of said parts while preventing any substantial degree of area contact therebetween.

3,294,683
GREASE COMPOSITION
John D. Stansfield, Stanford-le-Hope, Essex, and Charles Barnes Lancaster, Wirral, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 4, 1964, Ser. No. 342,556
Claims priority, application Great Britain, Feb. 7, 1963, 5,006/63
8 Claims. (Cl. 252—28)

1. A grease composition consisting essentially of (1) a major amount of lubricating base oil gelled to a grease consistency with (2) a minor thickening amount of colloidally dispersed water-proofed clay and (3) 0.04–1.5% by weight of the total composition of a two-component dispersant consisting of (a) 0.02–1% by weight of a normally liquid aliphatic polyhydric alcohol having a boiling point above 100° C. and (b) 0.02–1% by weight of an alkyl ester of an inorganic acid, said ester having a boiling point above 200° C., basis total grease composition.

3,294,684
LUBRICANT COMPOSITIONS CONTAINING DETERGENCY ADDITIVES
Herbert A. McNinch, Portage, and Robert E. Karll, Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed July 11, 1963, Ser. No. 294,234
6 Claims. (Cl. 252—46.7)

1. A lubricant additive composition which comprises the product of first reacting in equimolecular proportions a phosphosulfurized polybutene and an ethylene amine polyamine at 200 to 400° F. followed by reaction with an equimolecular proportion of polybutenyl succinic anhydride at a temperature of from 250 to 300° F. and then reacted with boric acid in an amount in the range of from 2 to 7 moles per mole of said polyamine at a temperature in the range of from 300 to 400° F.

3,294,685
ORGANIC COMPOSITIONS CONTAINING A METALLO CYCLOPENTADIENYL
Donald R. Stevens, Wilkinsburg, and Ronald L. Sweet, Baldwin Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Apr. 21, 1952, Ser. No. 283,513
7 Claims. (Cl. 252—49.7)

2. A composition of matter comprising an organic composition selected from the group of hydrocarbons consisting of lubricating oils, turbine oils, transformer oils, fuel oils, greases, asphalts, waxes, wax distillates and insecticidal naphthas and a minor amount, relative to said hydrocarbon, of a dicyclopentadienyl iron.

3,294,686
PIGMENT PARTICLES COATED WITH ORGANO-ALUMINUM COMPOUNDS
Joseph W. Ayers, 22 N. 14th St., Easton, Pa. 18042
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,633
8 Claims. (Cl. 252—62.5)

1. Finely divided pigment particles coated with a pigment treating agent selected from the group consisting of (1) aluminum triacylates in which the acylate radicals are those of a monocarboxylic acid having at least 12 carbon atoms and (2) modified trimeric oxy aluminum acylates in which the acylate radicals are those of a monocarboxylic acid having at least 8 carbon atoms and wherein at least one of said acylate radicals is replaced by a radical of an aliphtic or araliphatic phosphate, sulfonate, amine, or amide having at least two carbon atoms.

7. Coated pigment particles as in claim 1 wherein said pigment is a magnetic pigment.

3,294,687
MAGNETIC CERAMIC MATERIAL
William G. Carlson, Penn Hills Township, Allegheny County, Raymond J. Radus, Monroeville, and Christy J. Morasis, Penn Hills Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1962, Ser. No. 230,168
2 Claims. (Cl. 252—62.5)

1. A fired ferromagetic oxide ceramic member consisting essentially of, by weight, 74% to 78% Fe_2O_3, 10.5% to 14.5% ZnO, 7.5% to 11.5% NiO, 0.2% to 0.8% CoO and 1.2% to 1.8% MnO with up to 1% of incidental impurities, the member characterized by low loss factors and high Q factors at high frequencies.

3,294,688
THERMOELECTRIC CONVERTER COMPOSITION
Walter Precht, Towson, Md., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 6, 1962, Ser. No. 243,219
2 Claims. (Cl. 252—62.3)

1. A composition for a thermoelectric converter element, consisting essentially of between 50% and 80% strontium titanate containing 20% iron, and between 20% and 50% cerium titanate.

3,294,689
SYNERGISTIC SEQUESTERING AGENT
John S. Pierce, 813 Roseneath Road, Richmond, Va. 23221
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,519
1 Claim. (Cl. 252—82)

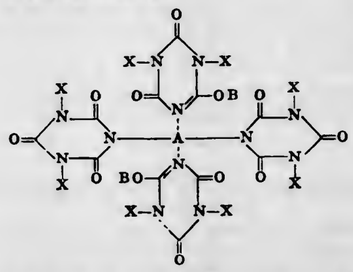
A synergistic sequestering composition of matter of wide utility which, when dissolved in water, consists essentially of an aqueous solution of

$$(HOCH_2)_3CNHCH_2CHOHCH_2NHC(CH_2OH)_3$$

and citric acid, in which the molar ratio of polyhydroxyamine to citric acid has limits of 4/1 and 1/4.

3,294,690
COMPLEX METAL HALOCYANURATE BLEACH COMPOSITIONS
Edwin A. Matzner, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 22, 1965, Ser. No. 465,840
9 Claims. (Cl. 252—99)

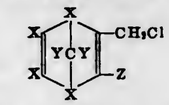
1. A composition consisting essentially of a mixture of an inorganic compound selected from the group consisting of silica and alkali metal phosphates, silicates, borates, carbonates, bicarbonates, sulfates, chlorides, and mixtures thereof, and a complex metal halocyanurate having the general formula



where A is a divalent metal selected from the group consisting of magnesium and zinc and B is an alkali metal selected from the group consisting of potassium and rubidium and X is a halogen atom, and hydrates; the said halocyanurate being present in an amount in the range of from about 0.1% to about 98% by weight of the mixture thereof.

3,294,691
GERMICIDAL SOAP COMPOSITIONS
Victor Mark, Olivette, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Original application Dec. 28, 1960, Ser. No. 78,815, now Patent No. 3,205,274, dated Sept. 7, 1965. Divided and this application Jan. 11, 1965, Ser. No. 430,788
4 Claims. (Cl. 252—107)

1. An antiseptic cleansing agent which consists essentially of alkali metal fatty acid soaps containing a bacteriostatic amount of a compound of the formula

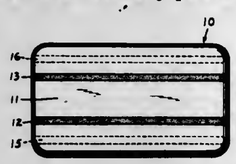


wherein X, Y, and Z are selected from a class consisting of chlorine, bromine, iodine, and fluorine.

3,294,692
STRIPED SOAP BARS AND METHOD AND APPARATUS FOR MAKING THE SAME
William A. Kelly, Teaneck, and Philip J. Petix, Lyndhurst, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
Original application Apr. 10, 1961, Ser. No. 101,906. Divided and this application Oct. 21, 1964, Ser. No. 406,668
5 Claims. (Cl. 252—134)

1. A cleansing bar comprising an extruded matrix of a first water-soluble cleansing compound in the shape of a bar having a pair of principal faces on opposite sides thereof and opposed grooves along said principal faces parallel to each other and to the grain of extrusion, said grooves extending into said matrix and terminating about

the midplane thereof, each of said grooves being offset from the nearest opposed groove by at least about ⅛ inch, and a second water-soluble cleansing compound in each of said grooves, said second compound being extruded therein concurrently with the extrusion of said matrix, said cleansing bar thereby having stripes extending into said bar in substantially parallel relationship to



each other and to the grain of said cake, said first and second water-soluble cleansing compounds each consisting essentially of at least one member of the group consisting of soaps, non-soap synthetic detergents and mixtures thereof, said compounds being of such a consistency that they may be extruded through an orifice and thereafter formed and hardened into a self-sustaining cake.

3,294,693

PHOSPHORYLATED SURFACTANTS AS HYDROTROPES

Jean Dupre, Levittown, Pa., and David B. Fordyce, Moorestown, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,472
16 Claims. (Cl. 252—135)

1. A composition which is useful in alkaline cleaning solutions and in liquid detergent concentrates, essentially consisting of: from about 75 to about 99.5 percent of an alkaline builder from the class consisting of the sodium and potassium hydroxides, carbonates, silicates and phosphates, and from about 25 to about 0.5 percent of a blend of about 10 to about 80 percent of a nonionic surfactant and from about 90 to about 20 percent of a hydrotrope therefor, said non-ionic being a member of the class consisting of alkoxy, alkylamine and alkylphenoxy polyethoxy adducts having from 1 to about 30 units of ethylene oxide, the alkyl portion of the alkoxy compounds having 10 to 15 carbon atoms, the alkyl portion of the alkylamine compounds having 10 to 15 carbon atoms, and the alkyl portion of the alkylphenoxy compounds having 8 to 12 carbon atoms, and said hydrotrope being a surface-active composition, which contains upwards of 85% primary phosphate esters, of the class consisting of the condensation product and the salts of said condensation product of the reaction of $R(CH_2CH_2O)_xH$ and polyphosphoric acid, R being a member of the class consisting of an alkyl phenoxy group, the alkyl radical of which is in the range of C_6–C_{10}, and an alkoxy group, the alkyl radical of which is in the range of C_{10}–C_{18}, and x is a number from 1 to 20; the said phosphate esters being prepared by reacting from about 0.6 mol to about 2.0 mols of polyphosphoric acid with each mol of said condensation product; and the said polyphosphoric acid being a mixture of phosphoric acids with a phosphoric acid anhydride content corresponding to about 73 to 85 percent expressed as P_2O_5.

3,294,694

CORROSION PREVENTIVE COMPOSITION

Andrew S. Wood and David E. Gensheimer, Paducah, Ky., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,764
6 Claims. (Cl. 252—146)

1. An aqueous solution consisting essentially of an aqueous solution of a non-oxidizing acid, having an acid concentration of from 1 to 15% by weight and from 0.001 to 1.0% by volume based on the volume of said aqueous acid of a corrosion inhibiting mixture consisting of 95% by volume of propargyl alcohol and 5% by volume of dipropargyl formal.

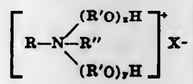
3,294,695

CORROSION INHIBITING COMPOSITIONS AND PROCESSES

Charles E. Tippett, Chicago, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,559
13 Claims. (Cl. 252—149)

1. A composition for inhibiting corrosion of ferrous metals in contact with aqueous solutions of corroding acids, consisting essentially of dibutylthiourea and from about 50 to 90 weight percent, based upon total weight of the composition, of a compound having the structure:



wherein R is an aliphatic hydrocarbon radical having between 6 and 22 carbon atoms, R' is an alkylene radical having between 2 and 3 carbon atoms, R'' is an alkyl radical having between 1 and 3 carbon atoms, X is a halogen, and x and y are integers having a sum total varying between 2 and 50.

3,294,696

DRY CLEANING PROCESS AND COMPOSITIONS

Maurice Goharel, Saint-Auban, Basses-Alpes, Laurent Seigneurin, Salindres, Gard, France, and Lucien Hamelin (by France Hamelin, executrix for the estate of Lucien Hamelin), Vanves, Seine, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed May 18, 1964, Ser. No. 368,367
Claims priority, application France, May 20, 1963, 935,401
3 Claims. (Cl. 252—172)

1. In a dry cleaning process for products containing some synthetic resinous materials, the step of washing the product with a liquid composition consisting essentially of at least 50 percent by weight hexafluorodichlorobutene as an essential and major ingredient with the remainder being formed essentially of an aliphatic halogenated dry cleaning hydrocarbon having a boiling point within 30° C. of the hexafluorodichlorobutene and which is compatible therewith.

3,294,697

STABLE SOLUTIONS FOR POLYURETHANE FOAMS

Wesley L. Le Fevre, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,788
12 Claims. (Cl. 252—188.3)

1. A polyol solution for the preparation of a polyurethane foam by reaction with an organic diisocyanate wherein said polyol is N-(2-hydroxyethyl)-N,N',N'-tris-(2-hydroxypropyl)ethylenediamine and the solution contains a catalyst for said reaction and a foaming agent, said polyol solution also containing as a stabilizer from 0.5 to 5.0 weight percent of an organic nitro compound selected from the group consisting of mono- and dinitro-substituted alkyl, aryl and aralkyl hydrocarbons.

3,294,698

HOLLOW, SPHERICAL UO_2 NUCLEAR FUEL PARTICLES

Harold N. Barr and Leonart A. Sundquist, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Original application Mar. 8, 1965, Ser. No. 438,139, now Patent No. 3,270,098, dated Sept. 6, 1966. Divided and this application Apr. 20, 1966, Ser. No. 545,225
2 Claims. (Cl. 252—301.1)

1. Spherical, refractory, nuclear fuel consisting essentially of a hollow sphere of UO_2 forming an inner, uniform, single, central, closed cell, occupying the majority of said sphere.

3,294,699

LUMINESCENT EUROPIUM ACTIVATED STRONTIUM ALUMINATE

Horst Lange, Berlin-Grunewald, Germany, assignor to Patent-Treuhand-Gesellschaft für elektrische Glühlampen m.b.H.

Filed Jan. 30, 1963, Ser. No. 254,969
Claims priority, application Germany, Feb. 8, 1962, P 28,763
6 Claims. (Cl. 252—301.4)

1. An artificial luminescent material consisting essentially of strontium aluminate activated with europium (II) oxide.

3,294,700

PHOSPHATE GLASS FOR THE DOSIMETRY OF X- AND GAMMA-RAYS

Renée Bodier, Paris, Serge Carpentier, Creteil, Henri Francois, Paris, Anne-Marie Grand-Clement, Orsay, and Jean Moneret, Sevres, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Mar. 22, 1963, Ser. No. 267,125
Claims priority, application France, Mar. 23, 1962, 892,126, Patent 1,327,099; Mar. 1, 1963, 926,582
1 Claim. (Cl. 252—301.4)

A phosphate glass suitable for use in the dosimetry of X- and gamma-rays consisting essentially of silver oxide as activator and the metaphosphates of lithium, beryllium, sodium, aluminum and silver having the percentage compositions by weight within the following limits:

	Percent
Li_2O	1.5–7.7
BeO	1.3–6.6
Na_2O	0–7.6
Al_2O_3	0.9–8.5
Ag_2O	1.5–9.3
P_2O_5	71.8–80.5

3,294,701

METHOD OF PREPARING FLUORESCENT RARE EARTH COMPOUNDS

Marcel J. Vogel and John W. Brookman, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 16, 1961, Ser. No. 152,932
9 Claims. (Cl. 252—301.6)

1. The process of forming fluorescent compounds comprising mixing a rare earth oxide and an oxide selected from the group consisting of transition metal oxides exclusive of the rare earth oxides, beryllium oxide, zinc oxide, cadmium oxide, boron oxide, aluminum oxide, indium oxide, thallium oxide, germanium oxide, arsenic oxide, antimony oxide, bismuth oxide, and polonium oxide in a molar ratio mixture of about 10:1 to 1:10, heating the mixture to its fusion point, cycling the temperature above and below the fusion point, and cooling the resulting compound to form fluorescent crystals.

3,294,702

DERIVATIVES OF GRAPHITIC OXIDE AND CARBON BLACK AND THE USE THEREOF AS THICKENERS

Delmar H. Larsen, West Hollywood, Calif., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,487
21 Claims. (Cl. 252—316)

1. A particle consisting of a central core of carbon black surrounded by an outer layer of a compound having the formula $R_1R_2R_3R_4NG$, where R_1, R_2, R_3, and R_4 are chosen from the group which consists of alkyl radicals from C_1 through C_{22}, inclusive, and hydrogen, with at least one of the R's being a straight chain alkyl from 10 to 22 carbon atoms in length and where G is graphitic anion.

9. The process of thickening a liquid organic vehicle which comprises intimately admixing therewith particles in accordance with claim 1 to a sufficient extent to impart a substantial increase in consistency to the said organic vehicle.

11. The process of thickening a liquid organic vehicle which comprises, intimately mixing therewith, in a proportion sufficient to impart a substantial increase in consistency to the said liquid organic vehicle, a salt of graphitic oxide and an organic onium cation having the formula $R_1R_2R_3R_4N^+$, where R_1, R_2, R_3, and R_4 are chosen from the group which consists of alkyl radicals from C_1 through C_{22} inclusive, and hydrogen, with at least one of the said R's being a straight chain alkyl of from 10 to 22 carbon atoms in length.

18. A liquid organic vehicle, said vehicle having intimately admixed therewith, particles in accordance with claim 1 to a sufficient extent to impart a substantial increase in consistency to the said organic vehicle.

3,294,703

DISPERSING AGENTS

Keith Liddell Johnson, Park Forest, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 27, 1961, Ser. No. 148,033
5 Claims. (Cl. 252—353)

1. The process of preparing an anionic-nonionic emulsifier composition which comprises: reacting a sulfonic acid having the formula R_1SO_3H wherein R_1 is an organic radical selected from the group consisting of alkyl and alkyl aryl radicals with a dispersion mixture comprising a member selected from the group consisting of Group II metal oxides, Group II hydroxides, and Group II metal salts in a solution of a polyethoxylated compound containing about 10 to 50 moles of ethylene oxide, said reaction being carried out in the presence of less than about 2% of water.

3,294,704

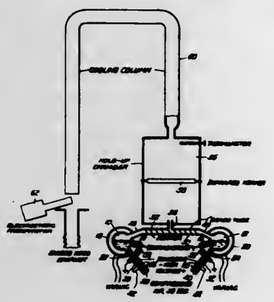
APPARATUS FOR ELECTROSTATIC ENCAPSULATION

Gerhard Langer, Downers Grove, and George Yamate, Chicago, Ill., assignors, by mesne assignments, to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

Original application, Aug. 2, 1962, Ser. No. 214,377, now Patent No. 3,159,874, dated Dec. 8, 1964. Divided and this application Oct. 2, 1964, Ser. No. 404,548
8 Claims. (Cl. 252—359)

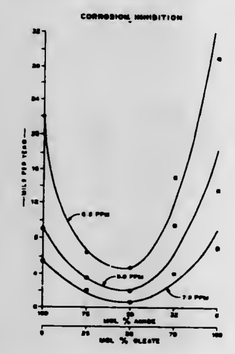
5. Apparatus for forming charged aerosol particles comprising: a reservoir containing a liquid substance; and a generator of a stream of ionized gas positioned contiguous with said liquid comprising an enclosure positioned contiguous with said liquid, a first electrode and a second electrode, said first electrode in contact with said liquid and having a hole formed therein, said second electrode positioned close enough to and coaxial with said hole so as to enable a corona to be formed under operat-

ing circumstances when a predetermined potential is applied to said electrodes, means connected to said enclosure for delivering a stream of air into said enclosure and between said electrodes and through said hole into said

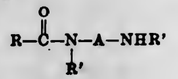


liquid; said second electrode positioned close enough to said hole so that arcing would occur if said predetermined potential was applied to said electrodes when no stream of air was passed between said electrodes.

3,294,705
REFINERY CORROSION INHIBITOR
George J. Kautsky, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 514,218
4 Claims. (Cl. 252—390)



1. A composition for inhibiting corrosion occurring in petroleum refinery fractionation equipment, said composition comprising a mixture of (1) an aminooleamide of the general formula:



in which



is the acyl residue of oleic acid, A is an alkylene radical of 2 to 4 carbon atoms, and, in the two occurrences of R', one is hydrogen and the other is selected from the group consisting of aminoethyl and hydroxyethyl radicals, and (2) an oleate salt of said aminooleamide, the mol ratio of said amide to said oleate being in the range from about 4:1 to about 1:4.

3,294,706
CATALYST REJUVENATION PROCESS
George Constabaris, Berkeley, and Hugh F. Harnsberger, San Anselmo, Calif., assignors to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Dec. 5, 1963, Ser. No. 328,170
7 Claims. (Cl. 252—412)

1. In the process of rejuvenating a deactivated hydrogenative conversion catalyst composed of at least one hydrogenating metal component selected from the iron transitional group composited with a high surface area active cracking support and deactivated by long exposure to hydrogenative conversion conditions and having carbonaceous deposits accumulated thereon, by impregnating said deactivated catalyst before removal of said carbonaceous deposits with a salt of a hydrogenating metal selected from the iron transitional group in an amount sufficient to give the resulting catalyst a hydrogenating metal content of at least one percent calculated on a metal basis and thereafter drying said impregnated catalyst, decomposing said metal salts and removing said carbonaceous deposits by heating in an oxygen-containing gas, the improvement of reducing the hydrogen consumption tendency of the rejuvenated catalyst which comprises the steps of subjecting said deactivated catalyst to an atmosphere of carbon monoxide under conditions forming normally gaseous carbonyl compounds of said hydrogenating metal component, including a temperature below about 400° F. and a total pressure between about 100 to 500 p.s.i.g., and separating said metal carbonyl compounds from the treated catalyst support, said steps being carried out before the treated catalyst is impregnated with said hydrogenating metal slat and the carbonaceous deposits are removed from the catalyst.

3,294,707
PREPARATION OF HYDROCARBON CONVERSION CATALYSTS
Ernest L. Pollitzer, Hinsdale, and Dennis J. Ward, Lombard, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Mar. 4, 1964, Ser. No. 349,482
4 Claims. (Cl. 252—438)

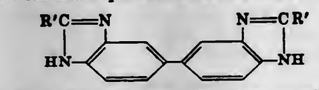
1. A process for the preparation of a catalyst which comprises promoting a substantially anhydrous, high surface area alumina support by impregnation with a compound selected from the group consisting of the salts and hydroxides of the alkali metals and alkaline earth metals, calcining the resultant promoted support, thereafter impregnating said promoted support with an alkali metal amide dissolved in an excess of liquid ammonia in an amount of from about 15 to about 25 moles of ammonia per mole of said amide, evaporating the excess ammonia at an elevated temperature of from about 35° to about 100° C. and a substantially constant pressure in the range of from about 200 to about 400 p.s.i., and recovering the catalyst comprising an alkali metal amide disposed on a promoted substantially anhydrous, high surface area alumina support.

3,294,708
METHOD OF PREPARING POLYMERIC HETEROCYCLIC AMIDES
Leo P. Parts and Morris L. Nielsen, Dayton, Ohio, and Robert Z. Greenley, St. Louis, Mo., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,173
9 Claims. (Cl. 260—2)

1. The method of preparing a solid polymer which comprises heating, at a temperature of 100° to 400° C. a phosphorus compound of the formula



wherein Y is selected from the class consisting of the imidazol-1-yl and pyrrol-1-yl radicals and R is an aromatic hydrocarbon radical of from 6 to 12 carbon atoms which is free of olefinic and acetylenic unsaturation, and is linked through nuclear carbon to the remainder of the molecule with a compound of the formula



in which R' is selected from the class consisting of hydrogen and alkyl radicals of from 1 to 5 carbon atoms.

3,294,709
COATING AGENTS
Siegfried Nitzsche, Ewald Pirson, and Michael Roth, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany
No Drawing. Filed Oct. 7, 1964, Ser. No. 402,333
Claims priority, application Germany, Oct. 16, 1963, W 35,443
3 Claims. (Cl. 260—23)

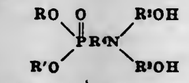
1. A composition suitable for use as a water base paint consisting essentially of an aqueous system containing (a) 50 to 95% by weight of a resinous organosiloxane polymer of the general unit formula



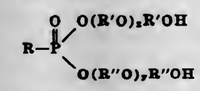
wherein each R is a monovalent hydrocarbon radical, each R' is an alkyl radical of one to four carbon atoms inclusive, x, y and z each have a value of from 0 to 3 inclusive, the sum of $x+y+z$ does not exceed 3, the average value of x is in the range from 0.9 to 1.7, the average value of y is in the range from 0.01 to 0.1 and the average value of z does not exceed 0.1, (b) 5 to 50% by weight of a film forming material selected from the group consisting of organic resin polymers prepared from monomers selected from vinyl esters of saturated monocarboxylic, vinyl ethers, acrylic and methacrylic esters, and acrylonitrile and vegetable drying oils and mixtures thereof and (c) 0.1 to 15% by weight based on the total weight of (a) and (b) of at least one alkali metal salt of a silicon containing material selected from the group consisting of silanes and siloxane polymers.

3,294,710
FLAMEPROOF POLYURETHANE RESINS
Richard H. Rosenberg and Robert S. Cooper, Park Forest, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 30, 1962, Ser. No. 213,142
9 Claims. (Cl. 260—2.5)

1. A flame resistant urethane composition comprising:
(a) a phosphorus compound selected from the class consisting of
(1) a dialkanolaminoalkylphosphonate having the formula:



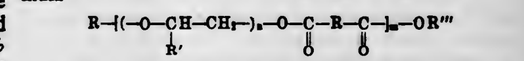
wherein R and R' are selected from the group consisting of lower alkyl and lower haloalkyl radicals, and R^2, R^3, and R^4 are lower alkylene radicals; and
(2) a phosphorus compound of the formula:



wherein R is a member of the class consisting of alkyl, aryl, alkoxy, aryloxy, chloroalkyl, hydroxy alkyl and alkanolaminoalkyl; R' and R'' are lower alkylene radicals; and x and y may vary from about 1 to about 4;
in an amount sufficient to provide about 0.75% to about 1.75% phosphorus in the final composition;
(b) a chlorinated hydrocarbon selected from the class consisting of chlorinated paraffins and chlorinated polyphenyls in an amount sufficient to provide about 5% to about 10% chlorine in the final composition,
(c) a polyisocyanate reacted with a resinous organic compound having a reactive hydrogen and selected from the group consisting of a polyester, a polyether, and castor oil, and
(d) a foaming agent.

3,294,711
GRAFT POLYMERS OF VINYL ACETATE OR VINYL CHLORIDE ONTO A SATURATED POLYESTER BACKBONE, AND POLYURETHANE FOAMS THEREFROM
Wulf von Bonin, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Apr. 22, 1963, Ser. No. 276,118
(Filed under Rule 47(b) and 35 U.S.C. 118)
8 Claims. (Cl. 260—2.5)

5. The polyurethane plastic prepared by a process which comprises reacting an organic polyisocyanate with graft polymers prepared by a process which comprises polymerizing in the presence of a free radical forming catalyst a vinyl monomer having only one vinyl group selected from the group consisting of vinyl acetate and vinyl chloride with a saturated polyester having the formula



wherein R is a member selected from the group consisting of hydrogen, a polyester radical, a monocarboxylic acid radical and a dicarboxylic acid radical, R' is a member selected from the group consisting of hydrogen and a lower alkyl radical, R'' is an aliphatic hydrocarbon radical having from 4 to 12 carbon atoms, R''' is selected from the group consisting of a hydrogen atom and alkoxy, n is 1 to 3, and m is at least 2 and the saturated polyester of the above formula has a molecular weight of about 900 to about 9000, with the proviso that the saturated polyester has a plurality of free hydroxyl groups.

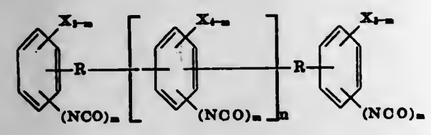
3,294,712
FLAME RESISTANT POLYURETHANE COMPOSITIONS CONTAINING P_4S_3 OR P_4S_7
Norman Jack Clark and Fred McCollough, Jr., Chicago Heights, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 29, 1963, Ser. No. 327,101
14 Claims. (Cl. 260—2.5)

1. A flame resistant urethane composition comprising a polyurethane foam and a phosphorus sulfide selected from the class consisting of P_4S_3 and P_4S_7.

3,294,713
ORGANIC POLYISOCYANATES AND POLYURETHANES PREPARED THEREFROM
George A. Hudson, Kodel, W. Va., and Kenneth A. Pigott and James H. Saunders, Bridgeville, Pa., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,930
12 Claims. (Cl. 260—2.5)

6. A polyurethane plastic prepared by a process which comprises reacting an organic compound containing at least two active hydrogen containing groups as determined by the Zerewithinoff method with a polyisocyanate

prepared by a process which comprises reacting a mixture of different polyaryl polyalkylene polyisocyanates having the formula



wherein *m* is 1 to 3, *n* is from about 0.5 to about 2.0, X is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, and halogen and R is an alkylene radical having from 1 to 6 carbon atoms, with sufficient primary or secondary monohydric alcohol or monocarboxylic acid to react with from about 2 to about 50% of the —NCO groups of said mixture of polyaryl polyalkylene polyisocyanates.

8. The polyurethane plastic of claim 6 wherein a blowing agent is included to prepare a cellular polyurethane plastic.

3,294,714
BLENDS OF RUBBERY POLYMERS, ONE HAVING BEEN PREPARED IN THE PRESENCE OF GRINDELIA EXTRACT

William R. Peterson and Ralph E. McNay, Houston, Tex., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Nov. 2, 1962, Ser. No. 235,128
15 Claims. (Cl. 260—5)

1. A blend of polymers comprising a first elastomeric polymeric component of a butadiene-1,3 polymer in admixture with a second polymeric component comprising at least one member selected from the group consisting of natural rubber and synthetic rubbery polymers of conjugated diolefins and mixtures thereof; said first polymeric component having been prepared by emulsion polymerization in the presence of about 0.5 to about 10.0%, by weight of monomer content, of an extract of the plant Grindelia.

3,294,715
PHENOLIC RESIN ADHESIVE EXTENDED WITH CAUSTICIZED LIGNITE

Fred Bryner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 1, 1962, Ser. No. 213,879
6 Claims. (Cl. 260—17.2)

1. A liquid adhesive composition comprising:
(a) a water-soluble, thermosetting, phenolic aldehydic resin,
(b) a material proportion of a finely divided, causticized lignite,
(c) a catalytic amount of a basic, alkali metal catalyst suitable for initiating the thermosetting reaction of the resin, and
(d) sufficient water such that the total solids of the liquid adhesive composition is within the range from about 35 to about 65 percent by weight of the total composition.

4. A method for the production of a highly extended, liquid, phenolic resin adhesive composition which comprises mixing together in any order:
(1) one part by weight of a water-soluble, thermosetting, phenolic aldehydic resin,
(2) from about 0.2 part up to about 2 parts by weight of a finely divided, causticized lignite obtained by mixing the finely divided lignite in the presence of water, with from 2 to 15 percent by weight caustic, based on the total weight of the dry lignite and resin solids,
(3) a catalytic amount of a basic, alkali metal catalyst suitable for initiating the thermosetting reaction of the resin, and
(4) sufficient water such that the total solids of the liquid adhesive compositions are within the range from about 35 to about 65 percent by weight of the total composition.

3,294,716
MOISTURE RESISTANT STARCH BASE CORRUGATING ADHESIVE

George C. Pinney, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,035
4 Claims. (Cl. 260—17.2)

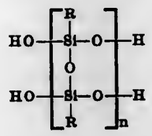
1. In the method of preparing alkaline starch base adhesive wherein an aqueous alkaline slurry containing a minor portion of the total starch solids is pasted at a temperature of at least about 145° F. to form the carrier and an aqueous slurry containing the remaining portion of the total starch solids is mixed therewith, said aqueous alkaline slurry of pasted carrier starch containing a small percent based on the total weight of the starch solids of at least one phenolic compound selected from the group consisting of resorcinol, hydroquinone, phenol, pyrocatechol, pyrogallol and bisphenol, and the resultant mixture containing at least one aldehyde selected from the group consisting of glyoxal, furfural, acetaldehyde, propionaldehyde and formaldehyde, said aldehyde being present in a mol ratio of aldehyde to phenolic compound in the range of from about 1.3:1 to about 2:1, the improvement which comprises maintaining the concentration of added phenolic compound between at least about 1% by weight but less than 2% by weight of the total starch solids, and incorporating in the adhesive approximately 1.2 to 3.1% by weight of borax based on the total starch solids to permit said adhesive to be applied at normal corrugating machine speeds.

3,294,717
PROCESS AND COMPOSITION FOR PRODUCING ORGANOPOLYSILOXANES

Karl W. Krantz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

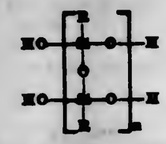
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,897
6 Claims. (Cl. 260—18)

1. A process which comprises heating (A) a toluene-soluble arylsilsesquioxane polymer in a solvent solution at a temperature of from about 100° C. to 160° C. for a time sufficient to effect its polymerization, utilizing a condensation catalyst selected from the class consisting of amines, quaternary ammonium compounds, quaternary phosphonium compounds and metal salts of organic acids, where (A) has the formula,



R is aryl and *n* has a value of from 25 to about 500, inclusive, and is the product of hydrolysis of (B), an arylsilsesquioxane polymer having an intrinsic viscosity in benzene at 25° C. of at least 0.1 dl./g., said hydrolysis being carried out in the presence of a basic amine catalyst and a cosolvent for (B) and water.

4. A composition consisting essentially of
(a) a hydrocarbon solvent solution of a polymer of the formula,



which is the product of hydrolysis of an arylsilsesquioxane polymer having an intrinsic viscosity in benzene at 25° C. of at least 0.1 dl./g., said hydrolysis being carried out in the presence of a basic amine catalyst, and a cosolvent for said arylsilsesquioxane polymer and water, and
(b) a condensation catalyst selected from the group consisting of amines, quaternary ammonium compounds, quaternary phosphonium compounds and metal salts of organic acids, where R is aryl, and *n* has a value of from about 25 to about 500, inclusive.

3,294,718
METHOD FOR PREPARING BLOCK COPOLYMERS

Robert C. Antonen, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,212
14 Claims. (Cl. 260—18)

3. The method of preparing an organosilicon block copolymer comprising
(I) mixing with sufficient agitation to form a dispersion,
(A) a diorganopolysiloxane of the general formula

$$[(CH_3)_2SiO]_s[(C_6H_5)(CH_3)SiO]_t[(C_6H_5)_2SiO]_u[RSiO_{3/2}]_v[R_2SiO]_w$$

where
R is a monovalent radical selected from the group consisting of methyl, phenyl, ethyl and vinyl radicals, the average number of organo groups per silicon atom is from 1.9 to 2.0,
s is an integer from 0 to 180,
t is an integer from 0 to 180,
u is an integer from 0 to 90,
v is an integer from 0 to 18,
w is an integer from 0 to 90,
the sum of $s+t+u+v+w$ has an average value from 5 to 180, the sum of $s+t$ is at least 50 mole percent of

$$s+t+u+v+w$$

v has a maximum value of 10 mole percent of $s+t+u+v+w$, there is at least two silicon-bonded functional radicals per molecule selected from the group consisting of halogen atoms, alkoxy radicals and hydroxyl radicals, with
(B) enough water to form a dispersion consisting essentially of
(1) an aqueous phase, and
(2) an organopolysiloxane phase,
(II) dissolving
(C) an organosilicon compound selected from the group consisting of
(a) an organosilane of the average general formula

$$R'_xSiX_{4-x}$$

where
R' is a monovalent radical selected from the group consisting of hydrocarbon radicals, halohydrocarbon radicals, cyanohydrocarbon radicals and hydrogen atoms,
X is a halogen atom,
x has an average value of from 1 to 1.4,
(b) a hydrocarbonoxy silicon compound of the general unit formula

$$R'_x(OR'')_ySiO_{4-x-y/2}$$

where
R' is a monovalent radical selected from the group consisting of hydrocarbon radicals, halohydrocarbon radicals, cyanohydrocarbon radicals and hydrogen atoms,
R'' is a monovalent hydrocarbon radical having from 1 to 6 carbon atoms,
x has an average value of from 1 to 1.4,
y has an average value of from 0.10 to 3, the sum of $x+y$ does not exceed 4, and
(c) mixtures of (a) and (b), in
(D) organic solvent to form a solution containing at least 40 weight percent of said solvent,
(III) adding the solution from (II) to the dispersion from (I) with sufficient agitation to maintain the dispersion, there being present with (A) and (C) enough organic solvent to give a concentration of at least 40 weight percent based on the weight of (A) and (C) of an organic solvent, there being present a catalytic quantity of an acid catalyst which is not a siloxane bond rearranging catalyst, and
(IV) separating the aqueous phase from the organopolysiloxane phase and removing the residual acid and water from the organopolysiloxane phase.

3,294,719
FOAMED AND DEFOAMED DIENE LATEX

Walter M. Hooper, San Pedro, and Fred Dudley Mees, Long Beach, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 10, 1962, Ser. No. 243,306
3 Claims. (Cl. 260—33.7)

1. The process for the preparation of a latex of an elastomeric polymer of a conjugated diene which comprises:
(a) forming a cement of said polymer in a C_{5-7} hydrocarbon solvent, said cement containing 5–30% by weight of polymer;
(b) emulsifying 100 parts by volume of the cement with 40–300 parts by volume of water containing 0.5–2% by weight of an alkali metal soap of a monocarboxylic acid having at least 12 carbon atoms per molecule, whereby a cement-in-water emulsion is formed;
(c) maintaining the emulsion in a quiescent state for 50–300 minutes, whereby a cream of relatively coarse particles of cement, comprising 0.5–10% of the total emulsion form a phase separate from the main body of the emulsion;
(d) removing the cream phase;
(e) heating the remaining emulsion sufficiently to vaporize substantially all of the hydrocarbon solvent while maintaining substantially all the water in a liquid state, whereby a foam of the entire body is formed;
(f) cooling the foam to a solvent-liquifying temperature whereby the foam collapses and the liquified solvent forms a phase separate from the aqueous phase now containing the polymer in colloidal dispersion as a latex;
(g) and decanting the liquified solvent from the latex.

3,294,720

MASTICATING AND HEATING OF MIXTURES COMPRISING WET RUBBER CRUMB, CARBON BLACK AND SOFTENER

Adolph J. Beber and Glenn H. Orr, Akron, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Dec. 26, 1962, Ser. No. 246,911
7 Claims. (Cl. 260—23.7)

1. In a multi-stage process of making a vulcanizable tire tread composition comprising 100 parts by weight of a coplymer of a major portion of butadiene and a minor portion of styrene having a raw Mooney viscosity of at least 100, 30 to 90 parts of fine reinforcing carbon black having a surface area of about 60 to 180 square meters per gram, about 5 to 60 parts of a compatible plasticizing oil, about 2 to 8 parts of zinc oxide, about 1 to 3 parts of stearic acid, less than 5 parts of an antioxidant, a vulcanization accelerator, and about 1 to 4 parts of sulfur, said composition being formed from a wet rubber crumb comprising a coagulum of said copolymer whose moisture content was reduced at least 50% by mechanical separation of water therefrom, said tire tread composition being formed by reducing the moisture content of said wet crumb to below 2%, mixing said fine reinforcing carbon black with the rubber in the first mixing stage of an internal mixer, thereafter cooling the rubber mixture and mixing the sulfur and accelerator with the rubber in a later mixing stage to produce said vulcanizable tire tread composition, the improvement which comprises:

mixing said fine reinforcing carbon black with said wet crumb in said mixer during the first mixing stage while the moisture content of the rubber is about 5 to about 15%,

adding compounding ingredients of said rubber composition to the wet crumb before the carbon black is completely dispersed in the rubber,

subjecting the rubber mixture to mastication and an intense shearing action in the closed receptacle of said mixer at a rotor speed of 50 to 150 revolutions per minute and a pressure of about 60 to 120 pounds per square inch to disperse the carbon black and the compounding ingredients, to increase the temperature to 320° to 375° F. and to reduce the moisture content of the rubber to less than 1% at the end of the first mixing stage,

cooling the rubber mixture, and thereafter adding and dispersing the sulfur and accelerator to complete the tire tread composition during a second and final mixing cycle,

essentially all of the compounding ingredients of said composition, except the sulfur and accelerator, being added before the end of the first mixing cycle.

3,294,721

COATING COMPOSITIONS COMPRISING EPOXY RESIN FATTY ACID ESTER-HYDROCARBON RESIN REACTION PRODUCTS

William J. Belanger, Louisville, Ky., assignor, by mesne assignments, to Devoe & Raynolds Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 4, 1963, Ser. No. 285,226
6 Claims. (Cl. 260—23.7)

1. A binder composition for use in coating compositions comprising:

(A) from 10 to 50 weight percent, based on the total weight of said binder composition, of a polymerizably unsaturated hydrocarbon resin, and

(B) from 90 to 50 weight percent, based on the total weight of said binder composition, of an epoxy resin ester free of unreacted epoxy groups and containing from 30 to 60 weight percent, based on the weight of said ester, of drying oil acids, said epoxy resin being a glycidyl ether of a polyhydric phenol,

said (A) and (B) being heat-reacted to a viscosity, expressed in centipoises at 50% solids solution in xylene, which is at least four times the viscosity of the substantially unreacted mixture of said (A) and said (B).

3,294,722

WAX COATING AND LAMINATING COMPOSITIONS

Dominic A. Apfelbaum, Laurel Springs, N.J., Charles J. Kreuser, Brookhaven, and Walter E. F. Lewis, Media, Pa., and Donald H. Russell, Pennsauken, N.J., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,981
9 Claims. (Cl. 260—28.5)

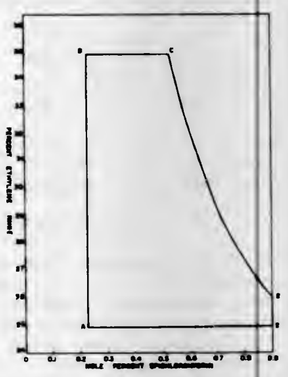
1. A wax coating and laminating composition consisting essentially of from 5 to 30 weight percent of a polymer of styrene having an initial boiling point of at least 300° F. at 7 millimeters of mercury pressure and a molecular weight in the range of from about 300 to 1500, from 5 to 30 weight percent of a copolymer of ethylene and vinyl acetate having a polymerized vinyl acetate content in the range of from 15 weight percent to 30 weight percent of the copolymer and a melt index ranging between 1 and 150, from 5 to 20 weight percent of a microcrystalline wax having a melting point in the range of from about 145° F. to 195° F. and from 40 to 85 weight percent of a paraffin wax having a melting point of from about 121° F. to 155° F.

3,294,723

COPOLYMER OF ETHYLENE IMINE AND EPICHLOROHYDRIN

Albert Goldstein, New Shrewsbury, and John W. Brook, Fanwood, N.J., assignors to Chemirad Corporation, East Brunswick, N.J., a corporation of Delaware

Filed July 9, 1965, Ser. No. 470,752
12 Claims. (Cl. 260—29.2)



1. A process for producing a stable, water-soluble copolymer of ethylene imine with epichlorohydrin comprising feeding to a reaction zone a mixture of ethylene imine and epichlorohydrin in amounts falling within the area limited by lines AB, BC, CD, DE, and EA of FIG. 1, reacting said mixture at a temperature in the range of about 100° C. to 150° C., and further heating the resulting copolymer at a temperature in the range of from about 100° C. to 150° C., and separating said co-polymer.

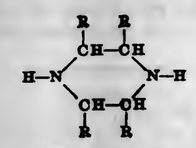
3,294,724

FILM-FORMING URETHANE LATICES, AND PREPARATION BY CHAIN EXTENDING A PREPOLYMER OF AN ORGANIC DIISOCYANATE AND A POLYMERIC DIOL WITH A PIPERAZINE COMPOUND

Seymour L. Axelrood, Trenton, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,293
14 Claims. (Cl. 260—29.2)

1. A process for the preparation of film-forming urethane latices which comprises chain extending in the presence of water a linear polyurethane prepolymer prepared by the reaction, in an equivalent ratio of NCO/OH of from 1.33:1 to 2:1, of an organic diisocyanate with a polymeric diol containing a branched polyoxyalkylene chain and having an average molecular weight of from about 400 to about 1500, with from about 0.8 to about 1.2 equivalents, for each isocyanate equivalent of said polyurethane prepolymer, of a piperazine compound having the formula:



wherein R is hydrogen or lower alkyl.

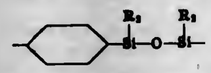
3,294,725

METHOD OF POLYMERIZING SILOXANES AND SILCARBANES IN EMULSION BY USING A SURFACE ACTIVE SULFONIC ACID CATALYST

Donald E. Findley and Donald R. Weyenberg, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,036
51 Claims. (Cl. 260—29.2)

48. An aqueous emulsion of a polymer containing the unit formula



wherein R is a member selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals.

51. A method which comprises polymerizing and copolymerizing

(1) at least one member selected from the group consisting of organosiloxanes of the unit formula $R_nSiO_{\frac{4-n}{2}}$ in which R is selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals and n has an average value of from 0.5 to less than 3, and silcarbanes having the general formula $HO(R)_2SiQSi(R)_2OH$ wherein R is selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals and Q is a divalent radical attached to both silicon atoms via a silicon-carbon bond, said Q being selected from the group consisting of radicals composed of carbon and hydrogen atoms and radicals composed of carbon, hydrogen and oxygen atoms, there being less than 15 carbon atoms in said Q radical and any oxygen that is present being in the form of ether linkages, by polymerizing said member in an aqueous medium while in a dispersed state in the presence of

(2) a surface active sulfonic acid selected from the group consisting of the aliphatically substituted benzene-sulfonic acids containing at least six carbon atoms in the aliphatic substituents, the aliphatically substituted naphthalenesulfonic acids containing at least four carbon atoms in the aliphatic substituents, the aliphatic sulfonic acids containing at least six carbon atoms in the aliphatic substituent, the silylalkylsulfonic acids containing at least six carbon atoms in the alkyl substituents, and the aliphatically substituted diphenyletherdisulfonic acids containing at least six carbon atoms in the aliphatic substituents, as the primary polymerization catalyst,

until the desired increase in molecular aggregation is obtained.

3,294,726

COMPOSITION FOR PROTECTING AND CLEANING SURFACES

Jay S. Wyner, 141—39 Parsons Crescent, Jamaica, N.Y. 11436

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,186
3 Claims. (Cl. 260—29.6)

1. A wiping composition for applying a coating to metal and non-metal surfaces by wiping said composition onto said surfaces with an absorbent cloth, said composition consisting essentially of about 1 to 25% by weight of a polyacrylic ester selected from the group consisting of ethyl acrylate, methyl acrylate, ethyl methacrylate, methyl methacrylate and copolymers thereof, about 3 to 30% of at least one substance selected from the group consisting of white mineral oil and glycerine, about 2 to 40% of a finely divided water insoluble inorganic abrasive material, about 0.1 to 5% of an emulsifying agent, about 0.2 to 4% of a coupling agent having the formula $HOCH_2CH_2OR$ in which R is a saturated radical containing 1 to 7 carbon atoms, and water in the range of 45 to 85%, whereby when said composition is applied to a surface with an absorbent cloth, only the film-forming ingredient remains on the surface being treated, the other ingredients of the composition being substantially selectively absorbed by the cloth during wiping and also removed through evaporation.

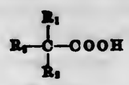
3,294,727

EMULSION POLYMERIZATION OF A TERPOLYMER COMPRISING A VINYL ESTER OF AN ALPHA-BRANCHED CARBOXYLIC ACID

Elste P. Greenmers and Geert C. Vegter, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 16, 1963, Ser. No. 251,767
Claims priority, application Netherlands, Jan. 26, 1962, 273,908
11 Claims. (Cl. 260—29.6)

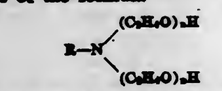
1. A process for preparing mechanically stable, freeze-tolerant latices which comprises polymerizing in aqueous emulsion (1) vinyl esters of alpha-branched saturated monocarboxylic acids, said acids having the formula:



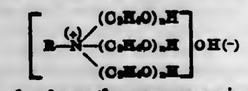
wherein R_1 and R_2 are alkyl radicals, R_3 is selected from the group consisting of hydrogen and alkyl radicals and R_1, R_2 and R_3 contain a total of from 2 to 18 carbon atoms with (2) a copolymerizable vinyl ester in the presence of (3) from 0.5% to 5% by weight of the vinyl esters of an alpha, beta-unsaturated carboxylic acid and (4) surfactants consisting essentially of surface-active agents containing one anionic group per molecule and nonionic surface-active agents.

3,294,728
PROCESS FOR PREPARING DISPERSIONS OF OLEFIN POLYMERS CONTAINING POSITIVELY CHARGED PARTICLES WITH TERTIARY OR QUATERNARY AMMONIUM ETHOXYLATED FATTY AMINES
Alfred Hilkenbach, Hofheim, Taunus, and Elmar Heinbel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Jan. 23, 1963, Ser. No. 253,274
Claims priority, application Germany, Jan. 27, 1962, F 36,873
6 Claims. (Cl. 260—29.6)

1. A process for the manufacture of an aqueous dispersion of a polymer selected from the group consisting of a homopolymer of an α-olefin, a polymer of two α-olefins and a copolymer of an α-olefin and vinyl acetate in which the solid particles are positively charged, which comprises emulsifying a solution of said polymer in a solvent not miscible with water in an aqueous solution containing as emulsifying agent 4 to 20 percent by weight, calculated on the polymer, of a salt composed of an acid and a member selected from the group consisting of a tertiary amine of the formula



wherein R means an alkyl group having 8 to 22 carbon atoms and *n* means a whole number from 1 to 30 and a quaternary ammonium hydroxide having the formula



wherein R and *n* have the same meanings as above and creaming the resulting dispersion by addition of 0.0005 to 10 percent by weight, calculated on the polymer, of a polyacrylamide as creaming agent.

3,294,729
INCREASING THE VISCOSITY OF POLYMERIC N-VINYL LACTAMS BY ADDING N_2H_4 AND H_2O_2
Eugene V. Hort, Edison, and Frederick Greuner, Midland Park, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 18, 1963, Ser. No. 309,848
8 Claims. (Cl. 260—29.6)

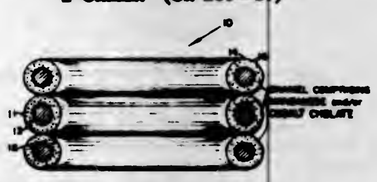
1. The process of increasing the viscosity of polymeric N-vinyl lactams which consists of treating a polymeric N-vinyl lactam in the form of aqueous solution with hydrazine and hydrogen peroxide added separately to said polymeric lactam in approximately the mole ratio of at least 2 of hydrogen peroxide to 1 of hydrazine.

2. The process of increasing the viscosity of polymeric N-vinyl lactams which consists of treating a polymeric N-vinyl lactam in the form of aqueous emulsion with hydrazine and hydrogen peroxide added separately to said polymeric lactam in approximately the mole ratio of at least 2 of hydrogen peroxide to 1 of hydrazine.

3,294,730
PROCESS FOR THE PRODUCTION OF FIRE-RESISTANT METHACRYLATE RESIN COMPOSITIONS CONTAINING PHOSPHATES
Alan William Bates, St. Albans, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 23, 1963, Ser. No. 296,211
Claims priority, application Great Britain, July 23, 1962, 28,037/62, Jan. 8, 1963, 973/63
8 Claims. (Cl. 260—89.5)

1. A polymerization process which comprises polymerizing a monomeric composition in bulk or in solution, said monomer composition, which may be partially polymerized, comprising methyl methacrylate or mixtures of methyl methacrylate with up to 15% by weight, based on the total weight of said monomeric composition, of a second copolymerizable monomer selected from the group consisting of acrylic acid, methacrylic acid acrylate acid esters, methacrylic acid esters, styrene, halogen substituted styrene, and acrylonitrile, to which has been added phosphorus pentoxide and at least one alcohol selected from the class consisting of aliphatic alcohols, cycloaliphatic alcohols and aralkyl alcohols containing from 1 to 8 carbon atoms per molecule, there being from 1.5 to 5 moles of alcohol or mixture of alcohols to each mole of phosphorus pentoxide, and initiating polymerization of the polymerizable ingredients during or after reaction of the phosphorus pentoxide and said alcohol, the amount of said phosphorus pentoxide and said alcohol initially added forming from 3 to 20% by weight of the total weight of polymerizable ingredients in the material undergoing polymerization together with any polymer present plus the weight of said initially added phosphorus pentoxide and said alcohol.

3,294,731
PYROLIZABLE ENAMEL FROM Mn AND Co CHELATES, GLASS, AND SILOXANE RESIN
Harry L. Saums, North Muskegon, and Wesley W. Pendleton, Muskegon, Mich., assignors, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Mar. 8, 1962, Ser. No. 178,349
2 Claims. (Cl. 260—37)



1. A magnet wire enamel comprising 10–25 parts by weight of fusible powdered glass, 75–90 parts by weight of terephthalate modified phenyl-methyl-siloxane resin enamel, 0.5–3 parts by weight of metal chelate selected from the group consisting of manganous and cobalt chelates.

3,294,732
METHOD OF CURING ORGANOPOLYSILOXANES WITH THE REACTION PRODUCT OF DIETHANOLAMINE AND A HYDROCARBONOXY-SILICON COMPOUND
Siegfried Nitzsche, Manfred Wick, and Ernst Wohlfarth, all of Burghausen, Bavaria, Germany, assignors to Wacker-Chemie, G.m.b.H., Munich, Bavaria, Germany
No Drawing. Filed Oct. 28, 1964, Ser. No. 407,226
Claims priority, application Germany, Oct. 31, 1963, W 36,549
8 Claims. (Cl. 260—37)

1. A method for preparing organosiloxane elastomers comprising admixing (a) 100 parts by weight of an organosiloxane polymer of the general average formula

$$(HO)_x\left(R_ySiO_{\frac{4-y}{2}}\right)_n H$$

where each R is a monovalent radical selected from the group consisting of hydrocarbon radicals, halogenohydrocarbon radicals and cyanoalkyl radicals, *x* has an average value of from 0.99 to 1.01, *y* has an average value of from 1.99 to 2.01, the sum of $x+y$ is 3.0, the value of *n* is at least 1, said polymer having a viscosity in the range from 25 cs. to 200,000 cs. at 25° C. and (b) the reaction product of (1) 0.5 to 15 parts by weight of a silicon compound containing at least 3 silicon bonded

OR' groups per molecule where R' is a monovalent radical selected from the group consisting of hydrocarbon radicals and radicals composed of carbon, hydrogen and oxygen atoms present as ether linkages, said silicon compound containing an average of from 1 to 10 inclusive silicon atoms per molecule and (2) diethanolamine the molar ratio of silicon compound (1) to diethanolamine (2) in the reaction product (b) being from 1:1 to 20:1.

3,294,733
PROCESS OF PRODUCING DISPERSANT FREE CARBON BLACK SLURRIES AND RUBBER MASTERBATCHES CONTAINING SAME
Avrom I. Medalia and Erivan Hagopian, Newton, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Mar. 29, 1962, Ser. No. 183,674
8 Claims. (Cl. 260—41.5)

5. A process for producing rubber masterbatches comprising the steps of:
(a) combining at least 7% by weight of carbon black with a liquid medium composed principally of water to form a dispersant-free slurry,
(b) violently agitating the combined black and liquid under conditions of high shear until the resultant slurry attains an apparent viscosity of at least 150 centipoises,
(c) subjecting said agitated mixture to conditions of moderate shear, whereby said slurry is made readily transportable in a concentrated form by subjection to pumping action of the type imparting only moderate shear to said slurry,
(d) combining the resulting mixture with latex, and
(e) coagulating the resulting product.

3,294,734
AMINE STABILIZED TRIOXANE COPOLYMERS
Helmut Schmidt and Günther Rosen, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Apr. 10, 1962, Ser. No. 186,342
Claims priority, application Germany, Apr. 13, 1961, F 33,651
4 Claims. (Cl. 260—45.9)

1. Composition of matter consisting essentially of (A) 90 to 99.9% of a copolymer of 90 to 99% of trioxane with 10 to 1% of at least one member selected from the group consisting of diethylene glycol formal, dioxolane, butane-diol formal, butene-diol formal, diallyl formal, ethylene oxide, oxacyclobutane and tetrahydrofurane, and (B) 0.1 to 10% by weight, calculated on the copolymer, of at least one secondary amine of the formula

$$R_1—NH—R_2$$

wherein R_1 and R_2 stand for members selected from the group consisting of $(—C_nH_{2n}—O)_mH$, in which *n* is a whole number of 2 to 10 and *m* is a whole number of 1 to 9, and 2 to 20 carbon atoms alkyl, alkenyl, aralkyl, alkylnitrile, alkylaminoalkyl and alkylaminoalkenyl radicals.

3,294,735
STABILIZED POLYAMIDES CONTAINING A COPPER COMPOUND HAVING A HALOGEN ATOM DIRECTLY LINKED TO THE AROMATIC NUCLEUS
Ian C. Twilley, Petersburg, Va., and Frederick P. Pannick, Nahcotta, Mass., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 16, 1963, Ser. No. 316,208
7 Claims. (Cl. 260—45.75)

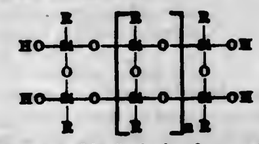
1. A composition of a polymeric amide having recurring amide groups as part of the polymer chain, of molecular weight sufficient for fiber formation, and minor effective amounts of a stabilizing mixture comprising a copper compound soluble in the molten polymer and an aromatic amine selected from the group consisting of aniline and aminobenzoic acid containing at least one ring substituent of the group consisting of chlorine, bromine and iodine atoms and soluble in the molten polymer.

3,294,736
POLYOLEFINS STABILIZED WITH HINDERED PHENOLS AND ORGANIC PHOSPHITES CONTAINING MERCAPTO GROUPS
Carl N. Jacob, Charleston, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 23, 1963, Ser. No. 304,209
7 Claims. (Cl. 260—45.95)

1. A polymer of an aliphatic mono alpha olefin having from 2 to 8 carbon atoms per molecule stabilized with from about 0.05 to 0.5 part by weight per hundred parts of polymer of a synergistic combination of an alkylated bisphenol and a trialkylmercaptoalkyl phosphite.

3,294,737
ORGANOPOLYSILOXANES
Karl Krantz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,923
3 Claims. (Cl. 260—46.5)

1. A block copolymer comprising blocks of (A) joined by siloxane linkages to blocks of (B), where (A) is the condensation product of reaction of a hydroxyl-terminated polymer of the formula,



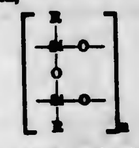
which is the product of hydrolysis of an arylsilsesquioxane polymer having an intrinsic viscosity in benzene of 25° C., of at least 0.1 dl./g., said hydrolysis being carried out in the presence of a basic amine catalyst, and a cosolvent for said arylsilsesquioxane polymer and water, and (B) is the condensation product of reaction of a polydiorganosiloxane of the formula,

$$X[(R')_2SiO]_m(R')_2SiX$$

R is aryl, R' is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, X is a member selected from the class consisting of a halogen radical and a hydroxy radical, *n* has a value of from about 25 to about 500, inclusive, and *m* is an integer equal to 1 to 1,000, inclusive.

3,294,738
METHOD FOR MAKING ARYLSILSESQUIOXANE LADDER POLYMERS
Karl W. Krantz, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,947
5 Claims. (Cl. 260—46.5)

1. A process comprising hydrolyzing a polymer having the structural formula,



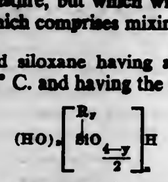
where R is an aryl radical, and *n* has a value of at least 25, said polymer having an intrinsic viscosity in benzene

at 25° C. of at least 0.1 dl./g., said hydrolysis being carried out in a solvent solution, said solvent acting as a cosolvent for both said polymer and water, in the presence of water and a basic amine catalyst.

3,294,739
METHOD OF MAKING ONE COMPONENT ROOM TEMPERATURE CURING SILOXANE RUBBERS
Donald R. Weyenberg, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Nov. 19, 1964, Ser. No. 412,312
18 Claims. (Cl. 260—46.5)

1. A method of preparing a composition which is stable in the absence of moisture, but which will cure upon exposure to moisture which comprises mixing in the absence of moisture

(1) a hydroxylated siloxane having a viscosity of at least 25 cs. at 25° C. and having the average formula



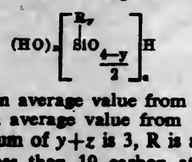
in which z has an average value from 1 to 1.01 inclusive, y has an average value from 1.99 to 2 inclusive, and the sum of $y+z$ is 3, R is a monovalent radical having less than 19 carbon atoms selected from the group consisting of hydrocarbon radicals, halogenated hydrocarbon radicals and cyanoalkyl radicals, and n is an integer.

(2) a silane of the formula $R'_xSi(OR'')_{4-x}$ in which R' is a monovalent radical having less than 19 carbon atoms selected from the group consisting of hydrocarbon radicals, halohydrocarbon radicals and cyanoalkyl radicals, R'' is a monovalent radical having less than 5 carbon atoms selected from the group consisting of haloaliphatic hydrocarbon radicals having no halogen atoms alpha to the oxygen atom and aliphatic hydrocarbon radicals, and x has an average value from 0 to 1 inclusive, (2) being present in an amount of at least 0.5 mol of silane per mol of silicon-bonded hydroxyl in (1), and

(3) at least 0.1 percent by weight, based on the weight of (1) of a titanium compound having radicals attached to the titanium atom, at least one of said radicals being an organosiloxy radical wherein each silicon-bonded organic radical is a monovalent radical selected from the group consisting of hydrocarbon radicals, and halohydrocarbon radicals, said organosiloxy radicals being attached to the titanium atom through Ti-O-Si linkages and any remaining valences of the Ti are satisfied by substituents selected from the group consisting of organic radicals which are attached to the titanium atom through Ti-O-C linkages, —OH and —O— of a Ti-O-Ti linkage.

14. A composition of matter, stable under anhydrous conditions and curable by exposure to moisture, being mixed in the absence of moisture comprising

(1) a hydroxylated siloxane having a viscosity of at least 25 cs. at 25° C. and having the average formula



in which z has an average value from 1 to 1.01 inclusive, y has an average value from 1.99 to 2 inclusive and the sum of $y+z$ is 3, R is a monovalent radical having less than 19 carbon atoms selected from the group consisting of hydrocarbon radicals, halogenated hydrocarbon radicals and cyanoalkyl radicals and n is an integer,

(2) a silane of the formula $R'_xSi(OR'')_{4-x}$ in which R' is a monovalent radical having less than 19 carbon atoms selected from the group consisting of hydrocarbon radicals, halohydrocarbon radicals and cyanoalkyl radicals, R'' is a monovalent radical having less than 5 carbon atoms selected from the group consisting of haloaliphatic hydrocarbon radicals having no halogen atoms alpha to the oxygen atom and aliphatic hydrocarbon radicals, and x has an average value from 0 to 1 inclusive, (2) being present in an amount of at least 0.5 mol of silane per mol of silicon-bonded hydroxyl in (1), and

(3) at least 0.1 percent by weight, based on the weight of (1) of a titanium compound having radicals attached to the titanium atoms, at least one of said radicals being an organosiloxy radical wherein each silicon-bonded organic radical is a monovalent radical selected from the group consisting of hydrocarbon radicals and halohydrocarbon radicals, said organosiloxy radicals being attached to the titanium atom through Ti-O-Si linkages and any remaining valences of the Ti are satisfied by substituents selected from the group consisting of organic radicals which are attached to the titanium atom through Ti-O-C linkages, —OH and —O— of a Ti-O-Ti linkage.

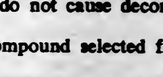
3,294,740
METHOD OF POLYMERIZING CYCLOTRISILOXANES II
Donald E. McVannel, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,969
20 Claims. (Cl. 260—46.5)

1. A method comprising heating, under temperature conditions which do not cause decomposition of the organic catalysts,

(1) a cyclic compound selected from the group consisting of

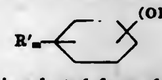
(a) cyclotrisiloxanes of the unit formula R_2SiO wherein each R is selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals and cyanoalkyl radicals, and

(b) cyclic silethylenesiloxanes of the structure



wherein each X is selected from the group consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation, monovalent halohydrocarbon radicals free of aliphatic unsaturation and cyanoalkyl radicals, in contact with

(2) a compound of the structure



wherein R' is selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals, halogen atoms and monovalent hydrocarbonoxy radicals, each R' group containing up to about 10 carbon atoms, M is selected from the group consisting of alkali metals, tetraorganonitrogen radicals and tetraorganophosphorus radicals, the organic radicals of the said nitrogen and phosphorus radicals being selected from the group consisting of alkyl and aromatic radicals attached directly to the said nitrogen and phosphorus atoms, m is an integer of from 0 to 3 inclusive, n is an integer of from 1 to 3 inclusive, and $m+n$ is an integer of from 1 to 4 inclusive,

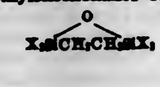
whereby (1) is polymerized.

18. A method comprising heating, under temperature conditions which do not cause decomposition of the organic catalysts,

(1) a cyclic compound selected from the group consisting of

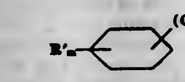
(a) cyclotrisiloxanes of the unit formula R_2SiO wherein each R is selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals and cyanoalkyl radicals, and

(b) cyclic silethylenesiloxanes of the structure



wherein each X is selected from the group consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation, monovalent halohydrocarbon radicals free of aliphatic unsaturation and cyanoalkyl radicals, in contact with

(2) a compound of the structure



wherein R' is selected from the group consisting of monovalent hydrocarbon radicals, monovalent halohydrocarbon radicals, halogen atoms and monovalent hydrocarbonoxy radicals, each R' group containing up to about 10 carbon atoms, M is selected from the group consisting of alkali metals, tetraorganonitrogen radicals and tetraorganophosphorus radicals, the organic radicals of the said nitrogen and phosphorus radicals being selected from the group consisting of alkyl and aromatic radicals attached directly to the said nitrogen and phosphorus atoms, m is an integer of from 0 to 3 inclusive, n is an integer of from 1 to 3 inclusive, and $m+n$ is an integer of from 1 to 4 inclusive, and

(3) a calcined oxide selected from the group consisting of calcium oxide, barium oxide and strontium oxide,

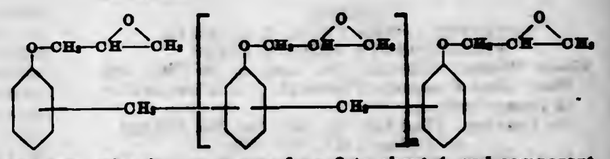
whereby (1) is polymerized.

3,294,741
METHOD OF MAKING POLYCARBONATE PARTICLES
Hermann Schnell, Krefeld-Uerdingen, and Karl Herbert Fritsch, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Apr. 20, 1960, Ser. No. 23,352
Claims priority, application Germany, Apr. 25, 1959, F 28,223
6 Claims. (Cl. 260—47)

1. A method for making a polycarbonate resin in particulate form which comprises in one step reacting a di-(monohydroxy aryl) alkane with a member selected from the group consisting of phosgene and a chlorocarbonic acid ester in a two-phase system with the di-(monohydroxy aryl) alkane in an alkaline aqueous phase and the resulting polycarbonate in an inert organic solvent therefor, said polycarbonate solution being substantially immiscible with said aqueous phase, agitating the two-phase system to suspend globules of the polycarbonate solution in the aqueous phase while simultaneously removing the solvent from the globules to form particles of polycarbonate having a diameter of from about 10 microns to about 2,000 microns.

3,294,742
HALOGEN-CONTAINING THERMOSETTING EPOXY RESIN
Bert J. Brousser, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 10, 1961, Ser. No. 109,993
7 Claims. (Cl. 260—47)

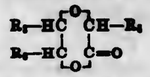
1. A composition of matter consisting of the reaction product of component (A) a polyglycidyl ether having the formula:



wherein n may vary from 0 to about 4, and component (B) 2,2 - bis(3,5 - dibromo - 4 - hydroxyphenyl)propane, at least 1 of components (A) and (B) containing bromine substituents directly attached to a phenolic nucleous thereof, in an amount by weight of components (A) and (B) to provide at least 0.1 and less than 1.0 equivalent weight of hydroxyl groups of component (B) per equivalent weight of oxirane groups of component (A) and a sufficient amount of the component containing bromine-substituted phenolic nuclei to provide at least 12% bromine by weight of said composition.

3,294,743
EPOXY ETHER RESIN-LACTONE COMPOSITIONS
George R. Mack, Allentown, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 12, 1961, Ser. No. 109,516
4 Claims. (Cl. 260—47)

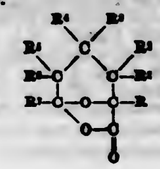
1. A composition of matter which undergoes curing in the presence of epoxy ether curing agent comprising a glycidyl polyether of a dihydric phenol having a epoxide equivalent ranging from 140 to 400 containing dissolved therein in an amount ranging from 5 to 20 parts by weight thereof of a dioxanone having the formula:



wherein R_3 represents a member selected from the class consisting of hydrogen and methyl groups.

3,294,744
THERMOSETTING POLYMERS PRODUCED FROM 6 - HYDROXYTETRAHYDROPYRAN-2-CARBOXYLIC ACID LACTONE AND PROCESS OF PREPARING SAME
Julius J. Breslauer, St. Albans, W. Va., Donald G. Kubler, Greenville, S.C., and Julian K. Rose, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 8, 1962, Ser. No. 165,031
20 Claims. (Cl. 260—47)

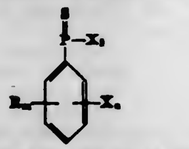
15. A method of producing a thermosetting polymer, capable of curing to a thermoset product in the absence of a catalyst at a temperature of about 75° C. to about 200° C., which comprises reacting in a liquid diluent at a temperature of about 0° C. to about 100° C. a lactone having the formula:



wherein R through R' are selected from the group consisting of hydrogen and alkyl containing from 1 to 8 carbon atoms inclusive, with a polyfunctional organic compound containing at least two reactive hydrogen atoms per molecule and selected from the group consisting of alcohols, amines, phenols and mercaptans, wherein the lactone is used in an amount of about 0.1 mole per reactive hydrogen equivalent of said polyfunctional organic compound.

3,294,745
INTERPOLYMERS FROM HALOARYL PHOSPHOROUS THIODIHALIDE
Marco Wismer, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 16, 1962, Ser. No. 173,823
10 Claims. (Cl. 260—47)

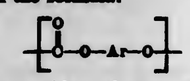
1. An interpolymer of a compound of the structure:



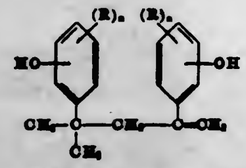
wherein X is a halogen radical selected from the class consisting of chlorine, bromine and fluorine, R is an alkyl group containing from about 1 to 6 carbon atoms, n is a whole number from 1 to 5, and m is a whole number less than 2 and including zero, and wherein the sum of m plus n does not exceed 5, and a non-adjacent polyhydroxy aromatic compound wherein the hydroxy groups are bonded directly to an aromatic nucleus.

3,294,746
POLYCARBONATES FROM DIMERS OF ALKENYL PHENOLS
Allard C. Farnham, Morristown, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 8, 1962, Ser. No. 178,287
2 Claims. (Cl. 260—47)

1. A thermoplastic polycarbonate having recurring structural units of the formula:



wherein Ar is the residue of a compound having the formula:



wherein R is selected from the group consisting of halogen and alkyl, a is an integer having a value of 0 to 4 inclusive and with the further limitation that each OH is in a position other than meta with respect to the group linking the aromatic nuclei.

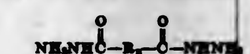
3,294,747
METHOD FOR PRODUCING THERMOPLASTIC POLYHYDROXYETHER
John S. Fry, Somerset County, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 2, 1962, Ser. No. 184,971
8 Claims. (Cl. 260—47)

1. Method for producing thermoplastic polyhydroxyether having a substantially complete absence of food solvent extractables including the steps of:

(a) reacting together a dihydric polynuclear phenol and from about 0.985 to about 1.015 moles of an epihalohydrin per mole of dihydric polynuclear phenol together with from about 0.5 to about 1.0 moles per mole of dihydric polynuclear phenol of an alkali metal hydroxide until a thermoplastic polyhydroxyether having a reduced viscosity measured at 25° C. as a 0.2 gram sample in 100 milliliters of tetrahydrofuran of at least above 0.5 is obtained,
(b) adding to the reaction mass, while the thermoplastic polyhydroxyether is alkaline, a caustic resistant, hydrophobic product recovery solvent for the reaction product thermoplastic polyhydroxyether, said solvent being selected from the group consisting of a mixture of an aromatic hydrocarbon having 6 to 10 carbon atoms and a saturated aliphatic alcohol having 4 to 10 carbon atoms in a weight ratio of 4:1 to 1:1, and an aliphatic ketone containing 4 to 10 carbon atoms exclusive of the carbonyl carbon,
(c) dissolving the thermoplastic polyhydroxyether in the product recovery solvent,
(d) heating the resultant thermoplastic polyhydroxyether solution with from about 0.1 to 0.5 mole of a monofunctional compound capable of destroying epoxy groups per mole of thermoplastic polyhydroxyether at reflux temperatures until no free epoxy groups remain in the thermoplastic polyhydroxyether,
(e) mixing the resulting solution with water,
(f) allowing the solution/water mixture to form two phases, one phase containing the thermoplastic polyhydroxyether, the other phase containing virtually all food solvent extractables,
(g) acidifying the thermoplastic polyhydroxyether phase with an aqueous acid wash to a pH of less than about 4.5,
(h) washing until all of the food solvent extractables are removed from the polyhydroxyether phase, and
(i) separating the thermoplastic polyhydroxyether phase.

3,294,748
CURING AGENTS FOR EPOXY RESINS
Dow A. Rogers, Jr., Wilkins Township, Allegheny County, Newton N. Goldberg, Pittsburgh, and Clarence L. Zeiss, Jr., Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 23, 1962, Ser. No. 196,891
9 Claims. (Cl. 260—47)

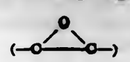
1. A liquid composition of matter comprising an admixture of a polyglycidyl ether of a polyhydric phenol, a hardening compound having the formula:



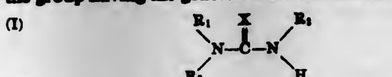
wherein R is a divalent hydrocarbon radical selected from the group consisting of phenylene and alkylene radicals and n is selected from the group consisting of zero and the integer 1, and dicyandiamide, the weight proportion of the hardening compound to dicyandiamide being in the range from 1:9 to 9:1.

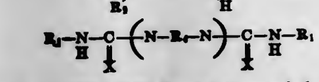
3,294,749
LATENT CATALYSTS FOR CURING EPOXY RESINS
Richard J. Pratt, Menomonee Falls, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
No Drawing. Filed May 21, 1963, Ser. No. 282,124
10 Claims. (Cl. 260—47)

1. A process for producing a resinified product which comprises mixing and heating a polyepoxide having a



epoxy equivalency greater than 1.0 with a polycarboxylic acid anhydride and a curing accelerator selected from the group having the general structural formula

(I)


(II)


where X is selected from the group consisting of oxygen and sulfur; R_1, R_2 and R_3 are selected from the group consisting of hydrogen, alkyl groups, terminally hydroxy substituted alkyl groups and phenyl groups and R_4 is selected from the group consisting of alkylene, piperazinyl and phenylene groups.

3,294,750
CATALYTIC POLYMERIZATION OF TRIOXANE
Mario Baccaredda, Enzo Butta, and Paolo Ginati, Pisa, Italy, assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,902
20 Claims. (Cl. 260—67)

1. A process for preparing solid high molecular weight polyoxymethylene of high crystallinity which comprises contacting at an initial temperature of at least the melting point of trioxane a catalytic amount of an ionic trioxane polymerization catalyst with a solution of trioxane in a viscous, nonaqueous inert solvent having a positive thermal coefficient of solution for trioxane, maintaining the solution at at least the melting point of trioxane until polymerization commences and thereafter gradually decreasing the temperature of said solution to below the melting point of trioxane at a controlled rate of decrease of from about 4° C. per hour to about 50° C. per hour until trioxane crystallizes from solution and is polymerized.

3,294,751
POLYURETHANE COMPOSITIONS FROM UREIDO-POLYOLS
Burton D. Beitchman, Springfield Township, Delaware County, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Sept. 28, 1962, Ser. No. 227,876
2 Claims. (Cl. 260—75)

1. The method of preparing a polyurethane article which consists essentially of the steps of: preparing a polyol urea by the interaction of a dialkanol amine having not more than 3 carbon atoms in the alkanol group with an organic compound having at least one but not more than two isocyanato groups, the organic group to which the isocyanato group is attached having at least three but not more than seven carbon atoms; mixing the resulting low molecular weight polyol urea with a viscous polyol having an average molecular weight from 800 to 2800, the mol ratio of the viscous polyol to polyol urea being from 0.2 to 1 to 1 to 0.2 and said viscous polyol being selected from the group consisting of polyalkyleneetherpolyols and polyesters; incorporating a catalytic amount of polyurethane catalyst with the polyol mixture; adding to the catalyst-containing polyol mixture to an organic diisocyanato compound in which each cyanato group is attached to a mononuclear aromatic group, the —NCO groups of the diisocyanate being within the range from 95% to 120% of the —OH groups of the polyol mixture; heating the liquid mixture of polyol and diisocyanate to transform it into a polyurethane article; and heating the thus formed article at a temperature below 300° C. for a period from 0.1 to 10 hours to produce a polyurethane article having a tensile strength greater than an article prepared without the presence of a urea group in the low molecular weight polyol.

3,294,752
POLYURETHANES CONTAINING A QUATERNARY NITROGEN IN THE ELASTOMER CHAIN
William K. Wilkinson, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 29, 1962, Ser. No. 183,411
2 Claims. (Cl. 260—77.5)

1. A textile fiber, having improved dyeability and washfastness when dyed with acid dyes, comprised of a long-chain synthetic elastomer composed of at least 85 percent of a segmented polyurethane containing 0.05 percent to 2 percent by weight of quaternary nitrogen in the elastomer chain, the segmented polyurethane consisting essentially of first and second segments alternating in the polymer chain, said first segments consisting of a polymer melting below 60° C. and having a molecular weight above 600, said second segments consisting of at least one repreating unit of a polymer having a melting point above 200° C. in a fiber-forming molecular weight range.

3,294,753
POLYMERIZATION PROCESS UTILIZING DIAZABICYCLOOCTANE ALKYLENE OXIDE CATALYSTS
Burton D. Beitchman, Drexel Hill, Pa., and William E. Erner, Wilmington, Del., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
No Drawing. Original application Jan. 17, 1961, Ser. No. 83,150, now Patent No. 3,168,483. Divided and this application June 5, 1964, Ser. No. 377,450
5 Claims. (Cl. 260—77.5)

1. In the process of preparing an organic polymer by the polymerization of a precursor having its principal polymerizable components selected from the group consisting of aryl isocyanates and mixtures of aryl isocyanates with polymers having per molecule a plurality of reactive hydroxyl groups, the improvement which consists of utilizing as the catalyst for the polymerization a composition consisting essentially of the unreacted anhydrous combination of diazabicyclooctane and at least one C_2–C_4 alkylene oxide in which the mole ratio of diazabicyclooctane to alkylene oxide is from 100 moles of diazabicyclooctane to 1 alkylene oxide to 1 mole of diazabicyclooctane per 20 moles of alkylene oxide.

3,294,754
ETHYLENE COPOLYMERS AND PROCESS FOR PRODUCTION THEREOF
Herbert Naarmann, Ludwigshafen (Rhine), Ernst-Guenther Kastning, Assenheim, and Gerd Schroeder, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Sept. 21, 1962, Ser. No. 225,230
Claims priority, application Germany, Sept. 22, 1961, B 64,098
3 Claims. (Cl. 260—78)

2. Copolymers consisting essentially of from 99 to 50% by weight of ethylene comonomer and 1 to 50% by weight of a polymerizable carboxylic amide comonomer selected from the group consisting of N-methylol derivatives of amides of carboxylic acids ethylenically unsaturated in α,β-position and having 3 and 4 carbon atoms, N-methylol maleic acid imide, said N-methylol derivatives containing not more than one combined N-methylol group per carboxylic amide group, alkyl ethers of said N-methylol derivatives containing from 1 to 6 carbon atoms in those alkyl groups which are only bound to the oxygen atoms of the ethers, and N-hydroxyethyl maleic acid monoamide, said copolymers having a K value of from 15 to 45 measured in decahydronaphthalene at 130° C.

3,294,755
CROSS-LINKED POLYCARBONAMIDE
David Tanner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, a corporation of Delaware
No Drawing. Filed Oct. 9, 1962, Ser. No. 229,499
1 Claim. (Cl. 260—78)

A synthetic polycarbonamide fiber having 15 to 600 gram equivalents of crosslinks per 10^6 grams of fiber, across amide nitrogens on adjacent polymer chains, said cross-links being located predominantly in the amorphous areas of the fiber and having the formula

$$—CH_2—S—(CH_2)_n—S—CH_2—$$

wherein n is 2 or 4.

3,294,756
CONTINUOUS POLYMERIZATION OF E-CAPROLACTAM
William N. Russell, Petersburg, Albert H. Wiesner, Chester, and Orvill E. Snider, Petersburg, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed May 1, 1963, Ser. No. 277,277
6 Claims. (Cl. 260—78)

1. In a process for continuous polymerization of e-caprolactam initiated by water under superatmospheric pressures, the improvement which comprises heating and thereby polymerizing epsilon-caprolactam under a water vapor pressure of about 2–10 atmospheres at temperature between about 240° C. and about 280° C. for a time of about 1–5 hours thereby forming a poly-caproamide polymerization reaction mixture, containing water; giving said polymerization reaction mixture a form having high exposed surface area of at least about 1 square inch per cubic inch of volume in contact with an atmosphere capable of evaporating water from said reaction mixture, and maintaining the reaction mixture in such high surface area form for a time of at least about 5 seconds thereby removing water therefrom; thereafter in a polymerization zone traversed subsequently to the zone containing the high surface area form of the reaction mixture, supplying the polycaproamide to a pool having exposed surface area not above about 1 square inch per 3 cubic inches of volume which pool is maintained in plug flow and with an atmosphere, over said pool, in which control is maintained on the water vapor partial pressures and with residence time in all such pools totalling at least about 1 hour; whereby subsequently to the stage of removing water while giving the reaction mixture a high surface area form, the Formic Acid Relative Viscosity of the polymer in the reaction mixture increases by at least 10%.

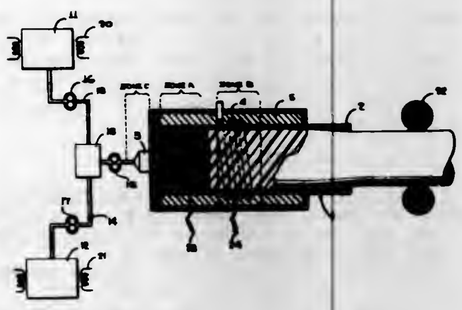
3,294,757
ADIABATIC, SOLID STATE POLYMERIZATION OF LACTAMS
Richard O. Church, Wernersville, Pa., assignor, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania
Filed Apr. 12, 1963, Ser. No. 272,786
6 Claims. (Cl. 260—78)

1. An autogenous and substantially adiabatic process for the continuous conversion of a higher lactam into an elongated, substantially uniform cross sectioned shape of polylactam by utilizing low temperature anionic polymerization processes conducted below the melting point of the polylactam shape comprising the steps of:

(1) continuously introducing into a first zone of a forming tube a polymerizable mixture comprised of a higher lactam and a catalyst and a promoter for the low temperature anionic polymerization thereof while said mixture is heated above the melting point of said higher lactam but below the temperature at which the rapid polymerization of said lactam will be initiated;

(2) continuously advancing said polymerizable mixture from said first zone to a second zone within said forming tube;

(3) initially heating a portion of said polymerizable mixture to a temperature that will initiate the rapid polymerization of said portion and then discontinuing said heating;



(4) controlling the speed of advance of said polymerizing mixture through said forming tube to be sufficient to prevent the rapid polymerization of said reactive mixture from taking place in said first zone and to be slow enough to insure the substantial completion of said polymerization in said second zone; and

(5) discharging said shape of polylactam from said forming tube.

3,294,758
AMORPHOUS POLYAMIDES FROM A MIXTURE OF AN ALKYL SUBSTITUTED ALIPHATIC DIAMINE AND UNSUBSTITUTED ALIPHATIC DIAMINE
Rudolf Gabler, Zollikerberg, Zurich, Switzerland, assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed Aug. 8, 1963, Ser. No. 300,936
Claims priority, application Germany, Aug. 14, 1962, G 35,713
4 Claims. (Cl. 260—78)

1. A linear copolyamide of an aromatic dicarboxylic acid selected from the group consisting of terephthalic acid, isophthalic acid and mixtures thereof and a substantially equimolar amount of a diamine mixture consisting of about 95 to 70 percent by weight of a substituted polymethylene diamine having a straight hydrocarbon chain of at least 6 carbon atoms, said straight chain being substituted by at least one alkyl group, the total number of side chain carbon atoms introduced by alkyl substitution being at least 3, and about 5 to 30 percent by weight of an unsubstituted polymethylene diamine of the same chain length said copolyamide being amorphous and resistant to boiling water.

3,294,759
LINEAR COPOLYAMIDES RESISTANT TO BOILING WATER
Rudolf Gabler, Zollikerberg, Zurich, Switzerland, assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,689
2 Claims. (Cl. 260—78)

1. A linear copolyamide of 3-aminomethyl-3,5,5-trimethylcyclohexylamine and a substantially equimolar amount of an acid mixture consisting of adipic acid and an aromatic dicarboxylic acid selected from the group consisting of terephthalic acid, isophthalic acid and mixtures thereof.

3,294,760
OXIDATIVE COUPLING OF ORGANIC DITHIOLS
Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Nov. 21, 1962, Ser. No. 239,317
13 Claims. (Cl. 260—79)

1. The process of producing a soluble, sulphur-containing polymer which comprises reacting oxygen with an organic dithiol, said reaction being carried out in a homogeneous solution in an organic solvent of (a) said dithiol and (b) as the active catalyst and oxygen-carrying intermediate, an amine-basic cupric salt complex in which the ratio of hydroxyl groups to copper atoms in the complex is one to one, the amine of said complex being free of a N-aryl substituent.

3,294,761
ORGANO-METAL POLYMERS
Paul F. Warner, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,635
9 Claims. (Cl. 260—79)

1. A novel solid metal containing polymeric composition produced by the process consisting of reacting a dithiol selected from the group consisting of 2,9-p-menthane dithiol vinylcyclohexene dithiol, bis(3-mercaptopropyl)sulfide, bis(3-mercaptopropyl)ether, 1,2-dimercapto ethane and 1,2-dimercapto propane with a soluble bivalent metal salt selected from those of the formula Me X wherein Me is a metal selected from the group consisting of zinc, cadmium, mercury, lead, cobalt, nickel and tin, and X is an anion selected from the group consisting of acetate, chloride, formate, propionate, bromide, iodide, fluoride, and sulfate at a temperature in the range of from 50° F. to 200° F. and a pressure in the range of 0 to 20 p.s.i.g., and thereafter recovering the insoluble solid polymer as a product of the process.

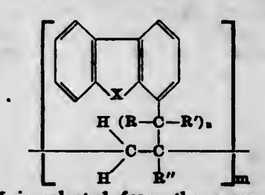
8. As a novel composition of matter, a fabric material having impregnated thereon a metal containing polymeric composition produced by the process consisting of reacting a dithiol selected from the group consisting of 2,9-p-menthane dithiol, vinylcyclohexene dithiol, bis(3-mercaptopropyl)sulfide, bis(3-mercaptopropyl)ether, 1,2-dimercapto ethane and 1,2-dimercapto propane with a soluble bivalent metal salt selected from those of the formula Me X wherein Me is a metal selected from the group consisting of zinc, cadmium, mercury, lead, cobalt, nickel and tin, and X is an anion selected from the group consisting of acetate, chloride, formate, propionate, bromide, iodide, fluoride, and sulfate at a temperature in the range of from 50° F. to 200° F. and a pressure in the range of 0 to 20 p.s.i.g., and thereafter recovering the insoluble solid polymer as a product of the process.

3,294,762
VULCANIZATION OF ELASTOMERS WITH HALOMETHANE SULFONYL CHLORIDES
John Rehner, Jr., and Peter E. Wei, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 14, 1961, Ser. No. 116,938
14 Claims. (Cl. 260—79.3)

1. A composition of matter comprising an elastomeric ethylene and C_3 to C_8 alpha-olefin copolymer and from about 0.5 to 20 parts by weight of a halomethane sulfonyl chloride per 100 parts by weight of said copolymer and from 0.1 to 10 parts of sulfur per 100 parts of said copolymer.

3,294,763
ORGANIC COMPOUNDS AND METHOD OF MAKING SAME
William A. Hewett, Saratoga, John D. Michaelson, Los Gatos, and Jan F. Schlaucheimer, Santa Clara, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
No Drawing. Filed Oct. 19, 1964, Ser. No. 404,962
31 Claims. (Cl. 260—79.7)

11. A new polymer which has the following structural formula:



wherein X is selected from the group consisting of oxygen and sulfur, and
wherein R, R' and R'' are each selected from the group consisting of hydrogen, aryl, alkyl, substituted alkyl and substituted aryl substituents, wherein n=1–21 and where m, the number average monomeric unit multiplication=2–1000.

3,294,764
HIGH POLYMERS OF TRIBUTYLVINYL-PHOSPHONIUM HALIDES
Joseph Jacinto Pellon, New Canaan, Martin Grayson, Norwalk, and Kent John Valan, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 30, 1963, Ser. No. 298,551
12 Claims. (Cl. 260—80)

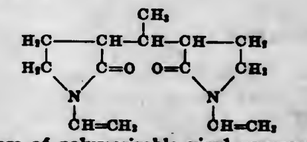
1. A normally solid homopolymer of a compound having the formula

$$(CH_3CH_2CH_2CH_2)_3—P^{\oplus}—CH=CH_2 \cdot X^{\ominus}$$

wherein X is selected from the group consisting of fluorine, chlorine, bromine and iodine radicals.

3,294,765
ETHYLIDENE-BIS-3(N-VINYL-2-PYRROLIDONE) AND POLYMERS THEREOF
Eugene V. Hort, Edison, Frederick Grenner, Midland Park, and Arthur Schwartz, Metuchen, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 2, 1963, Ser. No. 313,193
13 Claims. (Cl. 260—80.3)

1. Ethylidene-bis-3(N-vinyl-2-pyrrolidone) having the following formula:

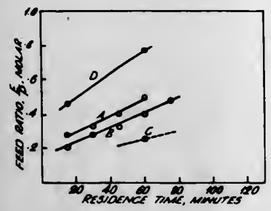


3. Polymers of polymerizable vinyl compounds copolymerized and cross-linked with 0.1% to 50% by weight of ethylidene-bis-3(N-vinyl-2-pyrrolidone).

3,294,766
POLYMERIZATION PROCESS
John F. Henderson and David Cansell, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic
Filed Apr. 10, 1963, Ser. No. 271,901
Claims priority, application Canada, May 10, 1962, 840,771/62
15 Claims. (Cl. 260—80.5)

1. The continuous process of copolymerizing ethylene and a linear 1-olefin having the formula $CH_2=CHR$ wherein R is a saturated alkyl hydrocarbon radical hav-

ing from 1 to 10 carbon atoms to produce an amorphous homogeneous copolymer having a specific comonomer composition within the range between 30 to 80 mole percent of ethylene, which process comprises (a) continuously feeding to a reaction zone containing a rapidly agitated liquid reaction mixture having turbulent randomly directed flow, a feed comprising a non-reactive organic liquid, ethylene, said 1-olefin and a hydrocarbon soluble catalyst, the mole ratio of ethylene to said 1-olefin in said feed stream being constant and in the range between 3/1 and 1/50, said catalyst being formed by mixing a compound of vanadium with an organo-alumi-



num compound and maintained in the reactor at a total catalyst concentration in the range between 0.1 and 30 millimoles per mole of total monomers and (b) continuously withdrawing from said reaction zone a liquid product stream containing copolymer dissolved in said organic liquid, the rate of addition of said organic liquid, ethylene, said 1-olefin and said catalyst being constant, the rate at which said feed enters said reaction zone being constant and equal to the rate at which said product stream is withdrawn from said reaction zone whereby to maintain a constant volume of liquid in said reaction zone, thereby establishing a constant residence time from 20 to 120 minutes.

3,294,767
THERMALLY STABLE VINYL FLUORIDE POLYMERS
Robert D. Lundberg, St. Albans, and Frederick E. Bailey, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 25, 1963, Ser. No. 290,330
12 Claims. (Cl. 260—80.5)

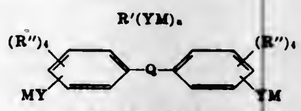
6. A shapeable solid terpolymer containing from 55 to 99.5 mole percent polymerized vinyl fluoride, the balance being polymerized bicyclo[2.2.1]hept-2-en-5-ylcarboxamide and polymerized bicyclo[2.2.1]hept-2-ene.

3,294,768
PREPARATION OF CONJUGATED DIENE POLYMERS
Clinton F. Wofford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 14, 1963, Ser. No. 323,567
15 Claims. (Cl. 260—83.7)

1. A process for preparing conjugated diene polymers which comprises contacting in a polymerization zone a monomeric material selected from the group consisting of (1) at least one conjugated diene containing from 4 to 12 carbon atoms per molcule and (2) a mixture of a conjugated diene containing from 4 to 12 carbon atoms per molecule and a vinyl-substituted aromatic hydrocarbon in which said vinyl group is attached to a nuclear carbon atom with a catalyst which forms on mixing materials consisting essentially of (a) an organolithium compound having the formula $R(Li)_x$, wherein R is a hydrocarbon radical selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals containing from 1 to 20 carbon atoms and x is an integer from 1 to 4, inclusive. and (b) an organic compound selected from the

group consisting of compounds having the following formulas:

(1) $R'(YM)_n$

(2)


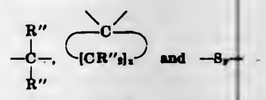
(3) $R'''\left(\begin{matrix}C{=}YN\\ \downarrow\\ Y\end{matrix}\right)_n$

(4) $R'''{-}Y{-}\underset{\underset{Y}{\downarrow}}{C}{-}YM$

and

(5)


wherein R' is selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals containing from 1 to 20 carbon atoms, M is an alkali metal selected from the group consisting of sodium, potassium, rubidium and cesium, R'' is selected from the group consisting of hydrogen, and aliphatic, cycloaliphatic and aromatic radicals containing from 1 to 6 carbon atoms, Q is selected from the group consisting of



radicals where R' is as defined before, x is an integer from 4 to 5, inclusive, and y is an integer from 1 to 3, inclusive, R''' is selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals containing from 4 to 20 carbon atoms, Y is selected from the group consisting of oxygen and sulfur, and n is an integer from 1 to 3, inclusive, said organolithium compound is in the range of 0.3 to 100 milliequivalents of organolithium compound per 100 parts by weight of monomeric material, and the relative quantities of said organolithium compound and said organic compound is in the range of 0.25 to 25 equivalents of organolithium compound (based on lithium atoms) per equivalent of organic compound, said contacting occurring at a temperature in the range of —80 to 150° C. and in the presence of a hydrocarbon diluent; and recovering a conjugated diene polymer.

3,294,769
PREPARATION OF GLYCIDYL ESTER COPOLYMERS
Darrell D. Hicks, Louisville, Ky., assignor, by mesne assignments, to Devoe & Raynolds Company, Inc., a corporation of Delaware
No Drawing. Filed Oct. 27, 1959, Ser. No. 849,114
9 Claims. (Cl. 260—86.1)

1. A process for preparing a copolymer having glycidyl ester groups which comprises:

(1) copolymerizing, in an organic solvent, in the presence of a free radical polymerization catalyst, (A) from about 5% to about 75% by weight, based on the total weight of monomers present, of a monomeric, α,β-monoethylenically unsaturated aliphatic monocarboxylic acid having not more than four carbon atoms, with (B) a different monoethylenically unsaturated comonomer free of carboxylic acid groups, to form a first copolymer having carboxyl groups, said solvent being at least 40% by weight of the total solution and being unreactive with said monomers and said first copolymer under free radical polymerization conditions,

(2) reacting said first copolymer, at a temperature of from 50° C. to 175° C. in the presence of a catalytic amount of a catalyst selected from the group consisting of tertiary amines, quaternary ammonium hydroxides, quaternary ammonium salts and N-vinylpyrrolidones, with an excess of an epihalohydrin such that the equivalent ratio of said epihalohydrin to carboxylic acid groups in said first copolymer is at least 8:1, respectively, to form a second copolymer having halohydrin ester groups, and

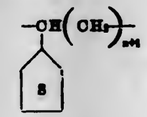
(3) dehydrohalogenating the halohydrin ester groups in said second copolymer by reacting said second copolymer, at a temperature of from 50° C. to about 115° C., with sufficient alkaline material to combine with the halogen of said halohydrin ester groups, to form said copolymer having glycidyl ester groups.

3,294,770
PROCESS FOR THE POLYMERIZATION OF VINYL MONOMERS IN THE PRESENCE OF METAL ALCOHOLATES
Mario Ragazzini, Enzo Gallinella, and Giancarlo Borsini, Milan, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy
No Drawing. Filed Mar. 18, 1963, Ser. No. 266,049
7 Claims. (Cl. 260—92.3)

1. Process for the polymerization of vinyl chloride, in mass, in the presence of inert solvents or in the presence of polar solvents, in order to obtain polyvinyl chlorides with a high syndyotactic index which comprises polymerizing vinyl chloride in the presence of a catalyst selected from the class consisting of the mono- and dialcoholates of aluminum alkyl, the tri-alcoholates of aluminum, the alkyl alcoholate of magnesium, the dialcoholates of magnesium and the alcoholates of lithium.

3,294,771
POLYMERIZATION OF ALLYL CYCLOPENTANE WITH A FRIEDEL-CRAFTS CATALYST
Arthur D. Kelley, Olney, and Raymond J. Ehrig, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Aug. 27, 1963, Ser. No. 304,962
14 Claims. (Cl. 260—93.1)

1. A solid polymer having predominantly the following recurring structural unit

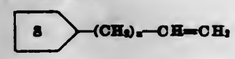


where



is a cyclopentyl group and n is an integer from 1 to 3 inclusive.

5. A polymerization process which comprises subjecting an olefin of the formula:

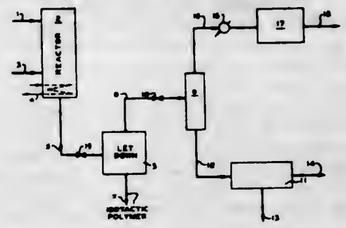


where



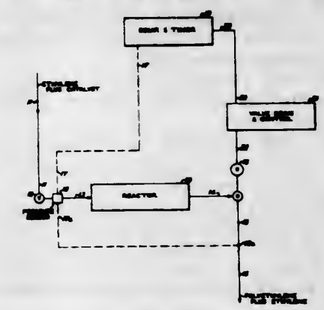
is a cyclopentyl group and n is an integer from 1 to 3 inclusive, to the action of a Friedel-Crafts catalyst and a co-catalyst selected from the group consisting of a proton donor source and a carbonium ion source at a temperature in the range minus 30 to minus 150° C.

3,294,772
SUPERCRITICAL POLYMERIZATION
John E. Cottle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,393
1 Claim. (Cl. 260—93.7)



A process for the separation of crystalline and non-crystalline polymer fractions of a polypropylene polymeric composition which comprises polymerizing propylene in a polymerization zone at a temperature and pressure above the critical temperature and pressure of propylene and in the absence of additional solvent, thereafter while maintaining sufficient pressure to retain propylene solvent in a fluid form lowering the supercritical pressure of the resulting polymer composition to precipitate only the crystalline portion of said polypropylene composition therefrom and to maintain the noncrystalline portion of said polypropylene composition in solution, thereafter fractionating the remaining solution of non-crystalline polypropylene and recovering separately as products of the process the resulting crystalline and non-crystalline polymer fractions.

3,294,773
CONTROL SCHEME FOR POLYETHYLENE REACTOR
Manfred Gans, Leonia, N.J., Robert S. Davis, New York, N.Y., and Eugene C. Su, New Brunswick, N.J., assignors to Halcon International, Inc., a corporation of Delaware
Filed Aug. 12, 1965, Ser. No. 485,637
11 Claims. (Cl. 260—94.9)



1. In a cyclic process for the polymerization of ethylene under high pressure in an elongated reactor, wherein the reaction mixture is maintained at a relatively constant pressure for a period of time and in addition, subjected to regular flow pulses at least once every two minutes, such that for each pulse there is at least a twofold increase in linear velocity of the mixture through the reactor, the improvement which comprises: adjusting the period during which a relatively constant pressure is maintained according to the degree-of-plugging factor of the previous pulse, so that if said factor for the previous pulse is smaller than its predecessor, the said period is made longer and vice versa.

3,294,774

HINDERED TERTIARY AMINES IN POLYMERIZATION OF CONJUGATED DIOLEFINS

Arthur H. Gerber, Linden, and Irving Kuntz, Roselle Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 18, 1959, Ser. No. 800,101
2 Claims. (Cl. 260—94.6)

1. In a process for preparing substantially cis-polyisoprene at an increased polymerization rate, the improvement which comprises contacting isoprene in the presence of a catalyst system consisting essentially of n-butyl lithium and N,N-diethyl aniline, in the presence of an inert solvent, at a temperature of —20° to 200° C. and a pressure from 0.5 to 100 atmospheres, the n-butyl lithium being utilized in an amount of from 0.01 to 5.0 mole percent based on the isoprene and N,N-diethyl aniline being utilized in an amount of from 0.001 to 5.0 mole percent based on the isoprene.

2. In a process for preparing substantially cis-polyisoprene at an increased polymerization rate, the improvement which comprises contacting isoprene in the presence of a catalyst system consisting essentially of n-butyl lithium and tri-isoamylamine in the presence of an inert solvent, at a temperature of from —20° to 200° C. and a pressure of from 0.5 to 100 atmospheres, the n-butyl lithium being utilized in an amount of from 0.01 to 5.0 mol percent based on the isoprene and the tri-isoamylamine being utilized in an amount of from 0.001 to 5.0 mol percent based on the isoprene.

3,294,775

REACTION PRODUCTS OF STABILIZED ROSIN AMINE AND ORGANIC ACID PHOSPHATE ESTERS

Kurt J. Wasserman, Wanaque, N.J., assignor to Wasco Laboratories, Inc., Vernon, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,957
1 Claim. (Cl. 260—100)

Resinous products formed by the reaction at a temperature from about 0° C. to 150° C., and a pressure of from about 1 to 200 atmospheres of:

(1) dehydroabietyl amine; and

(2) a reactive product selected from the group consisting of

(A) polyoxyethylene acid phosphate diesters having from 1 to 32 ethylene oxide units in each polyoxyethylene chain,

(B) acid phosphate diesters with ester moieties consisting of alkyl phenoxy polyoxyethylene condensates,

(C) polyoxyethylene acid phosphate monoesters having from 1 to 32 ethylene oxide units in the polyethylene oxide chain, and

(D) acid phosphate monoesters with an ester moiety consisting of alkyl phenoxy, polyoxyethylene condensates having from 1 to 24 carbon atoms in the alkyl chain and having from 2 to 32 ethylene oxide units in the polyoxyethylene chain.

3,294,776

METHOD OF DEALLERGENIZING CASTOR BEANS BY TREATING WITH ONE MOLAR AMMONIUM HYDROXIDE AND WITH AT LEAST ONE PART OF WATER PER PART OF CASTOR BEAN MATERIAL

Lawrence L. Layton and Frank C. Greene, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Nov. 22, 1963, Ser. No. 325,798
4 Claims. (Cl. 260—123.5)

1. A process for deallergenizing castor bean material which comprises mixing the castor bean material with at least one part water per part of said material and with ammonium hydroxide in an amount sufficient to provide at least a 1-molar concentration of NH_4OH in the water in the mixture and heating the said mixture under autogenous pressure at a temperature about from 100 to 150° C.

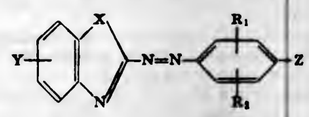
3,294,777

PRODUCTION OF HETEROCYCLIC AZO DYES

Guenter Hansen, Johannes Dehnert, and Hans Baumann, all of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Nov. 19, 1964, Ser. No. 412,339
Claims priority, application Germany, Nov. 23, 1963, B 74,374
6 Claims. (Cl. 260—157)

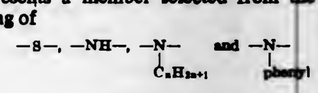
1. A process for the production of a dye of the formula



wherein

Y represents a member selected from the group consisting of hydrogen, chlorine, bromine, methyl, methoxy, ethoxy and acetylamino;

X represents a member selected from the class consisting of



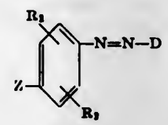
n denoting an integer from 1 to 4;

R_1 represents a member selected from the group consisting of hydrogen, methyl, methoxy and ethoxy;

R_2 represents a member selected from the group consisting of hydrogen, chlorine and methoxy; and

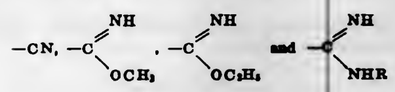
Z represents a member selected from the group consisting of chlorine, bromine, methoxy, ethoxy, dimethylamino and diethylamino;

which process comprises reacting at 10° to 150° C. a compound of the formula

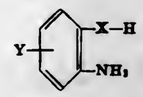


wherein

R_1, R_2 and Z have the same meanings as given above and D represents a member selected from the group consisting of



R denoting a radical of the benzene series, with a compound of the formula



wherein X and Y have the same meanings as given above.

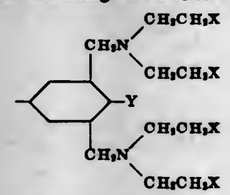
3,294,778

FIBER-REACTIVE DYESTUFFS

David Irwin Randall, Easton, Pa., and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

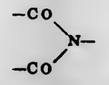
No Drawing. Filed Sept. 14, 1964, Ser. No. 396,351
The portion of the term of the patent subsequent to Feb. 16, 1982, has been disclaimed
6 Claims. (Cl. 260—163)

1. A dyestuff selected from the group consisting of azo, anthraquinone, nitro, perylene carboxylic acid imide, and oxazine dyestuffs containing a radical of the formula



joined to an aromatic nucleus in the dyestuff molecule through a moiety selected from the group consisting of

—N=N—, —SO_2NH—, —CH_2NH—, —CONH—, —NH—, and



wherein

X is an anion selected from the group consisting of chloro, bromo, sulfato, phosphato, and benzenesulfonyloxy, and Y is selected from the group consisting of —H, —CH_3 and —OCH_3.

2. An azo dyestuff as defined in claim 1 wherein said moiety is —N=N—, X is chloro, and Y is —CH_3.

3,294,779

PROCESS FOR MAKING CROSSLINKED CELLULOSE DERIVATIVES UTILIZING ACETYLENIC CARBOXYLIC ACIDS

Austin L. Bullock, Sidney L. Vail, and Charles H. Mack, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,532
6 Claims. (Cl. 260—212)

1. A process for crosslinking cellulose which comprises

(a) impregnating the said cellulose with a free unsaturated aliphatic carboxylic acid selected from the group consisting of propiolic acid, and acetylene dicarboxylic acid,

(b) draining the excess acid from the impregnated cellulose,

(c) further impregnating the acid-impregnated-and-drained cellulose with aqueous sodium hydroxide,

(d) heat-curing the doubly impregnated cellulose, and

(e) washing the heat-cured cellulose free from the impregnating agents.

3,294,780

PROCESS FOR MAKING CROSSLINKED CELLULOSE DERIVATIVES UTILIZING HALO-ACRYLIC ACIDS

Austin L. Bullock, Charles H. Mack, and John D. Guthrie, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,533
5 Claims. (Cl. 260—212)

1. A process for crosslinking cellulose which comprises:

(a) impregnating the said cellulose with an aqueous mixture containing an alkali salt of a halo-acrylic acid selected from the group consisting of the potassium salt of alpha-chloroacrylic acid, the sodium salt of beta-chloroacrylic acid, and the sodium salt of alpha-beta-dichloroacrylic acid in combination with sodium hydroxide, the ratio of salt to sodium hydroxide to water being 1:2:7, respectively, and

(b) drying and curing the said impregnated cellulose for about from 10 to 30 minutes, at about from 100° to 120° C., the shorter periods of time used with the higher temperatures.

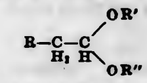
3,294,781

CARBOHYDRATE ALIPHATIC AND CYCLIC ACETALS

Mary Ollidene Weaver and Charles R. Russell, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 11, 1963, Ser. No. 287,155
8 Claims. (Cl. 260—233.3)

1. Carbohydrate acetal products having a D.S. of 0.03–2.50 and having the following structure



wherein R is selected from the group consisting of hydrogen and the 4-position residue of 3,4-dihydro-2H-pyran; R′ is selected from the group consisting of a C_2–C_{18} alkyl, a C_{14}–C_{18} alkenyl corresponding to the vegetable oil-derived fatty alcohols, and the 2-position residue of 3,4-dihydro-2H-pyran; and R″ is a carbohydrate selected from the group consisting of starch, amylose, and glucose, with the proviso that R is hydrogen only when R′ is a member of the group consisting of alkyl and alkenyl, as above defined, R otherwise being the said 4-position residue of 3,4-dihydro-2H-pyran in which latter instance R and R′ together constitute the trimethylene radical from the said 3,4-dihydro-2H-pyran.

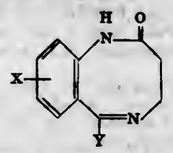
3,294,782

3,4-DIHYDRO-6-PHENYL-1,5-BENZODIAZOCIN-2-ONES

Theodore S. Sulkowski, Haverford, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 7, 1964, Ser. No. 380,926
2 Claims. (Cl. 260—239.3)

1. A compound of the formula:



wherein X is selected from the group of hydrogen, halo (lower) alkyl, and halogen and Y is selected from the group of phenyl and halophenyl.

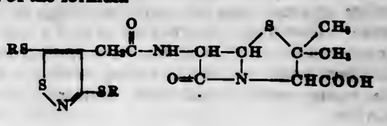
3,294,783

CERTAIN 3- AND 5-SUBSTITUTED-4-ISOTHIAZOLYLMETHYLPENICILLINS

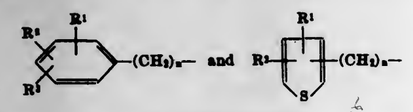
Henry M. Holava, Jr., Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 8, 1964, Ser. No. 381,224
6 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of an acid of the formula



wherein R represents a member selected from the group consisting of (lower)alkyl and the substituents of the formulae



wherein *n* is an integer from one to six inclusive and R^1, R^2 and R^3 each represent a member selected from the group consisting of fluoro, bromo, iodo, chloro, trifluoromethyl (lower)alkyl, (lower)alkoxy, (lower)alkylsulfonyl and nitro; and nontoxic, pharmaceutically acceptable salts thereof.

3,294,784

PROCESS FOR THE PREPARATION OF 3-AMINO-$\Delta^{1,3,5(10)}$-ESTRATRIENES AND 19-NOR-$\Delta^{1,3,5(10)}$-PREGNATRIENES

Francisco Alvarez, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,881
18 Claims. (Cl. 260—239.5)

1. A process for the preparation of a 3-substituted amino-$\Delta^{1,3,5(10)}$-steroid which comprises reacting a member selected from the group consisting of 10β-lower acyloxy-Δ^4-3-keto steroids of the estrane and 19-norpregnane series wherein the lower acyloxy group contains from 2 to 7 carbon atoms, inclusive, dissolved in an inert organic solvent, with a member selected from the group consisting of primary and secondary monoamines and polyamines, in the presence of a weak acid catalyst.

6. A process for the preparation of a 3-(N-piperidinyl)-$\Delta^{1,3,5(10)}$-steroid which comprises reacting a member selected from the group consisting of 10β-lower acyloxy-Δ^4-3-keto steroids of the estrane and 19-norpregnane series wherein the lower acyloxy group contains from 2 to 7 carbon atoms, inclusive, dissolved in an inert organic solvent, with piperidine in the presence of a weak acid catalyst.

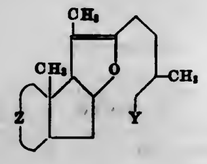
3,294,785

NOVEL PROCESS FOR THE CONVERSION OF A SAPOGENIN TO A 16-DEHYDRO STEROID AND INTERMEDIATES PRODUCED THEREBY

Masato Tanabe, Palo Alto, Calif., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed May 25, 1966, Ser. No. 552,681
25 Claims. (Cl. 260—239.55)

13. A compound selected from the group consisting of 27-halogeno-20(22)-furostene derivatives of the following formula:



wherein Y is halogeno other than fluoro, and Z represents the A, B, and C-rings of a sapogenin having at C–3 a member selected from the group consisting of hydroxy and lower alkanoyloxy, and having at C–5 a member of the group consisting of 5α-hydrogen, a 5β-hydrogen, and an additional bond to C–6 and having at C–12 a member of the group consisting of keto, hydroxy, and lower alkanoyloxy.

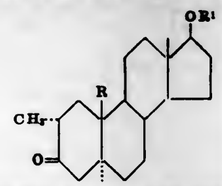
3,294,786

17-ETHERS OF 2 α-METHYL-ANDROSTANE-17β-OL-3-ONE

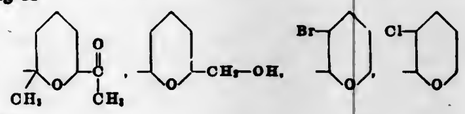
Alexander D. Cross and Ian T. Harrison, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,875
11 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein R is selected from the group consisting of hydrogen and methyl and R^1 is a member of the group consisting of



and



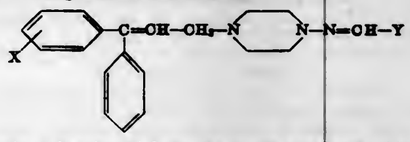
3,294,787

HYDRAZONES OF 1-AMINO-4-DIPHENYL-PROPENYLPIPERAZINES

John W. Cusic, Skokie, and Peter Yeung, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,564
4 Claims. (Cl. 260—240)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen and halogen and Y is selected from the group consisting of phenyl, hydroxyphenyl, methylenedioxyphenyl, and pyridyl.

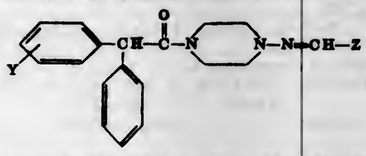
3,294,788

HYDRAZONES OF 1-AMINO-4-DIPHENYL-ACETYLPIPERAZINES

John W. Cusic, Skokie, and Peter Yeung, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,588
5 Claims. (Cl. 260—240)

1. A compound of the formula



wherein Y is selected from the group consisting of hydrogen and halogen and Z is selected from the group consisting of phenyl, hydroxyphenyl, methylenedioxyphenyl, cyanophenyl, pyridyl, and ferrocenyl.

3,294,789

2-CARBAMOYL-7-(α-2-PYRIDYL-BENZYLIDENE)-5-NORBORNENE-2-CARBOXYLIC ACID

George Ireland Poos, Ambler, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,568
1 Claim. (Cl. 260—240)

2 - carbamoyl - 7 - (α - 2 - pyridylbenzylidene) - 5-norbornene-3-carboxylic acid.

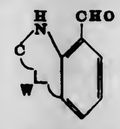
3,294,790

METHOD OF PREPARING HETEROCYCLIC ALDEHYDES

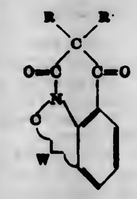
Morton Harfenist, Yonkers, N.Y., assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed May 2, 1963, Ser. No. 277,408
7 Claims. (Cl. 260—243)

1. The method of preparing a heterocyclic aldehyde represented by the formula



wherein W is a system of atoms consisting of at least one hydrocarbyl ring fused to the benzene ring shown by means of an atom selected from the group consisting of carbon, oxygen, and sulfur, wherein said carbon atom is a member of a hydrocarbyl ring, said oxygen is attached to a carbon atom of a hydrocarbyl ring, and said sulfur atom is attached to a carbon atom of a hydrocarbyl ring, consisting of reducing with lithium aluminum hydride an alkylmalonyl compound of the formula



wherein W has the value previously given, R is a lower alkyl group and R' is selected from the group consisting of a lower alkyl group and a lower tertiary amino group, said reduction being carried out in an anhydrous ethereal solution by use of at least one mole of lithium aluminum hydride for each mole of said alkylmalonyl compound, refluxing, hydrolyzing the reaction mixture in an alkaline medium and recovering the aldehyde.

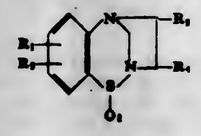
3,294,791

TETRAHYDRO-2,5-METHANO-1,2,5-BENZOTHIADIAZEPINE 1,1-DIOXIDE

Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,775
10 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of those having the formula:



wherein R_1 and R_2 are both selected from the group consisting of hydrogen, lower alkyl, halogen and sulfamoyl; and R_3 and R_4 are both selected from the group consisting of hydrogen and lower alkyl.

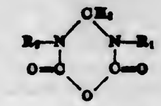
3,294,792

CERTAIN 1,3,5-OXADIAZINE-ONES AND A PROCESS FOR THEIR PREPARATION

Gerhard Müller, Leverkusen, and Rudolf Merten, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 1, 1963, Ser. No. 292,695
Claims priority, application Germany, July 21, 1962, F 37,209
6 Claims. (Cl. 260—244)

1. A member selected from the group consisting of N-substituted acid amides of the following formula:



wherein R_1 is a member selected from the group consisting of hydrogen and lower alkyl and R_2 is a member selected from the group consisting of lower alkyl and phenyl-lower-alkyl.

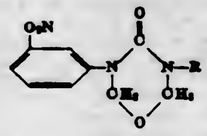
3,294,793

TETRAHYDRO-1,3,5-OXADIAZIN-4-ONES

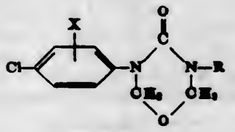
Michael C. Seidel, Levittown, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 30, 1964, Ser. No. 363,986
13 Claims. (Cl. 260—244)

1. A compound selected from the group consisting of



and



wherein R is an alkyl group of 1 to 8 carbon atoms and X is a member of the group selected from hydrogen, methyl and chlorine.

3,294,794

4-(2-ALKENOYL OR 2 HYDROXYALKANOYL) MORPHOLINES

Rufford L. Holmes and Suzy P. Hoover, New Orleans, and Arthur F. Novak, Baton Rouge, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,977
6 Claims. (Cl. 260—247.7)

6. A member selected from the group consisting of 4-(2-octenoyl)morpholine, 4-(2-nonenoyl)morpholine, 4-(2-decenoyl)morpholine, 4-(2-dodecenoyl)morpholine, and 4-(2-bromodecenoyl)morpholine.

3,294,795
PROCESS FOR THE PREPARATION OF A STABLE COMPLEX OF BROMINE AND LACTAMS
Wiley Edgar Daniels, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Original application Apr. 27, 1962, Ser. No. 190,796, now Patent No. 3,174,980, dated Mar. 23, 1965. Divided and this application May 8, 1964, Ser. No. 366,160
4 Claims. (Cl. 260—247.7)

1. The process of producing a solid crystalline stable complex of bromine and a cyclic lactam selected from the group consisting of N-methyl-2-pyrrolidone, 3-morpholinone piperidone, gamma-valerolactam, 2-piperazinone, 4-thiazolidone, 2-methyl-3-thiazolidinone, 3-thiamorpholinone, 2-phenyl-4-thiazolidinone, and 2-phenyl-4-thiazolidinone-1-dioxide, which comprises reacting in solution in a primary lower alkanol having 1–4 carbon atoms and at a temperature of from 0–15° C. 2 molecular proportions of said cyclic amide with 1 molecular proportion of HBr and 1 molecular proportion of elemental bromine and recovering the thus formed complex of bromine and said cyclic lactam, said complex being characterized by its stability and a ratio of free bromine to ionic bromine of essentially 2:1.

3. The process as defined in claim 1 wherein the cyclic amide specified is 3-morpholinone.

3,294,796
TRIS-2-MESYLOXYETHYL ISOCYANURATE
Bing T. Poon, Colonial Heights, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,498
1 Claim. (Cl. 260—248)

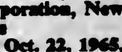
Tris-2-mesyloxyethyl isocyanurate.

3,294,797
CHLOROCYANURATE PROCESS
Clarence Douglas Shallenberger, Jr., Kirkwood, and William F. Symes, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,504
15 Claims. (Cl. 260—248)

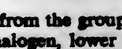
1. A process for preparing a crystalline alkali metal dichlorocyanurate characterized in being composed of large crystals and in having improved stability to loss of available chlorine which comprises reacting a dichlorocyanuric acid product containing sodium chloride but not more than 0.1% by weight of sodium chloride and an alkali metal hydroxide in an aqueous medium at a pH in the range of from about 5.5 to about 8.0 and at a temperature in the range of between about 0° C. and 65° C. until a crystalline alkali metal dichlorocyanurate is formed.

3,294,798
PROCESS FOR THE PREPARATION OF s-TRIAZINES
Frederic Charles Schaefer, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 14, 1964, Ser. No. 418,288
12 Claims. (Cl. 260—248)

1. A process for preparing tri-substituted s-triazines which comprises reactively contacting, in the presence of ammonia, (1) a nitrile selected from the group consisting of RCN and



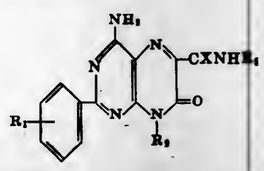
wherein R is selected from the group consisting of aryl, alkaryl, chlorophenyl, nitrophenyl, p-methanesulfonylphenyl and pyridyl, R' is selected from the group consisting of aryl and alkoxy, and R'' is selected from the group consisting of hydrogen and alkyl, and (2) a catalytic amount of a salt selected from the group consisting of NH_4X and $R'''C(NH)NH_2 \cdot HX$ wherein R''' is selected from the group consisting of R and



as defined above and X is selected from the group consisting of chlorine and bromine, and recovering resultant s-triazine.

3,294,799
2-ARYL - 7 - OXOPTERIDINECARBOXAMIDES AND 2 - ARYL-7-OXO-PTERIDINETHIOCARBOXAMIDES
Thomas S. Osdene, Richmond, Va., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,543
14 Claims. (Cl. 260—251.5)

1. A compound selected from the group consisting of those having the formula:



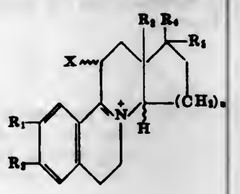
wherein R_1 is selected from the group consisting of hydrogen, trifluoromethyl, halogen, lower alkyl and lower alkoxy; R_2 is lower alkyl; R_3 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy(lower)alkyl, lower alkylthio(lower)alkyl; and X is selected from the group consisting of oxygen and sulfur.

3,294,800
PRODUCTION OF 4,5-DIHYDROURACIL
Matthias Seefelder, Ludwigshafen (Rhine), and Hans-Gerhard Reppe, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Sept. 13, 1963, Ser. No. 308,649
8 Claims. (Cl. 260—260)

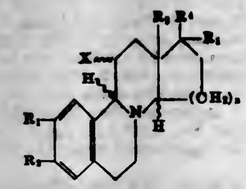
1. A process for the production of 4,5-dihydrouracil which comprises reacting acrylic acid with urea in sulfuric acid having a minimum strength of at least 90% by weight and a maximum strength of 20% by weight free SO_3 as a solvent, diluting the reaction mixture with water and separating the 4,5-dihydrouracil formed.

3,294,801
11- OR 12-SUBSTITUTED BENZO[a]CYCLOALKANA[f]QUINOLIZINE AND PROCESS FOR THEIR PRODUCTION
Richard E. Brown, Hanover, and Robert L. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Feb. 28, 1964, Ser. No. 348,286
14 Claims. (Cl. 260—286)

1. A compound selected from the group consisting of the epimeric mixture of compounds having the formula:



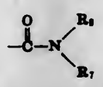
and



wherein R_1 and R_2 is each a member of the group consisting of hydrogen, hydroxy, and lower alkoxy, R_3 is a member of the group consisting of hydrogen and lower alkyl, R_4 is a member selected from the group consisting of hydrogen, hydroxy, and lower acyloxy of a carboxylic acid, R_5 is member selected from the group consisting of hydrogen, alkenyl, alkynyl, —$COCH_3$,



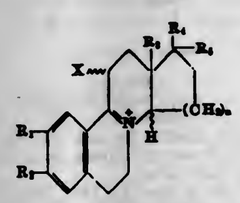
—$COCH_2OH$, cyano, —$COOR_6$ and



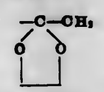
in which R_6 and R_7 are each hydrogen and R_4 and R_5 taken together with the carbon atom to which they are attached form a member selected from the group consisting of keto and cyclic ketal, X is halogen, and n is an integer of from 1 to 2 and the non-toxic pharmaceutically acceptable acid addition salts thereof.

2. 2,3,3a,5,6,11,12,12a - octahydro - 8 - methoxy - 11-bromo-1H-benzo[a]cyclopenta[f]-quinolizinium bromide.

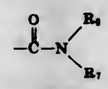
11. Process for the production of a compound of the formula:



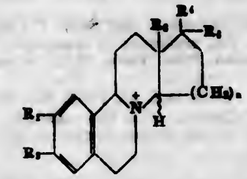
wherein R_1 and R_2 is each a member of the group consisting of hydrogen, hydroxy, and lower alkoxy, R_3 is a member of the group consisting of hydrogen and lower alkyl, R_4 is a member selected from the group consisting of hydrogen, hydroxy, and lower acyloxy of a carboxylic acid, R_5 is a member selected from the group consisting of hydrogen, alkenyl, alkynyl,



—$COCH_3$, —$COCH_2OH$, cyano, —$COOR_6$, and



in which R_6 and R_7 are each hydrogen and R_4 and R_5 taken together with the carbon atom to which they are attached form a member selected from the group consisting of keto and cyclic ketal, X is halogen, and n is an integer of from 1 to 2, which comprises treating a compound of the formula:



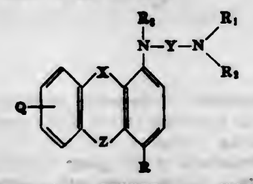
with a halogenating agent selected from the group consisting of bromide, N-bromo succinimide, chlorine and perchloryl fluoride at a temperature of about —60° C. to —70° C. in an inert solvent.

3,294,802
N-OLEOYL-N'-CARBETHOXYPIPERAZINE
Evald L. Skau, Robert M. Mod, and Frank C. Magne, all of New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Original application Sept. 4, 1964, Ser. No. 394,636. Divided and this application Apr. 13, 1966, Ser. No. 499,497
1 Claim. (Cl. 260—268)

N-oleoyl-N'-carbethoxypiperazine.

3,294,803
1-AMINOALKYLAMINO-4-HYDROXYMETHYL (OR 4-FORMYL)-THIOXANTHENE DERIVATIVES
David Read, East Green Bush, N.Y., and George P. Fornaretti, Madison, Wis., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 14, 1965, Ser. No. 463,908
Claims priority, application Great Britain, Aug. 24, 1964, 34,612/64
14 Claims. (Cl. 260—293.4)

1. A compound of the formula



where X is >C=O, >CHOH or $>CH_2$, Z is —O—, —S—, >SO or $>SO_2$, Q is hydrogen or from one to three substituents at positions 5, 6, 7 and 8 of the tricyclic ring selected from halo, lower-alkyl or lower-alkoxy, R is $-CH_2OH$ or —CHO, Y is lower-alkylene having from two to four carbon atoms and having its two connecting linkages on different carbon atoms, R_3 is hydrogen or lower-alkyl, R_1 is hydrogen, lower-alkyl or lower-2-hydroxyalkyl and R_2 is lower-alkyl or lower-2-hydroxyalkyl where R_1 and R_2 taken with N also is piperidino, hexamethyleneimino, pyrrolidino, morpholino, piperazino or lower-alkylated derivatives thereof; or its 5,6,7,8-tetrahydro derivative.

2. 1-(2-diethylaminoethylamino)-4-hydroxymethylthioxanthen-9-one.

3. 4-hydroxymethyl-1-[2-(2-methylpiperidino)-ethylamino]thioxanthen-9-one.

3,294,804
1-(3-HYDROXY-3-PHENYLPROPYL)-4-PHENYL-4-PROPIONOXY-PIPERIDINE
Philip M. Carabateas, Schenjack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 27, 1961, Ser. No. 85,195
1 Claim. (Cl. 260—294.3)

1 - (3 - hydroxy - 3 - phenylpropyl) - 4 - phenyl - 4-propionoxypiperidine.

3,294,806

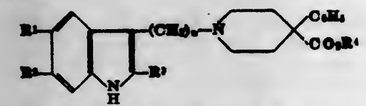
2 [illegible] ALKYL-6,7-PHENYL-4-CARBOALKOXY PIPERIDINO-LOWER ALKYL-5,6 SUBSTITUTED INDOLES

Istvan Szilagy, Wyncote, and Scott J. Childress, Newtown Square, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,199

7 Claims. (Cl. 260—294.9)

1. A member of the group consisting of a compound of the formula:



wherein R^1 and R^2 are selected from the group consisting of H and OCH_3 and R^1 and R^2 taken together are $—OCH_2O—$; R^3 is selected from the group consisting of H and CH_3; R^4 is lower alkyl having not more than 3 carbon atoms; n has a value of from 2 to 3 inclusive and the pharmaceutically acceptable acid addition salts thereof.

3,294,896

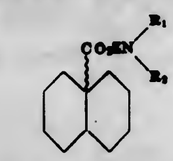
TERTIARYAMINO ALKYL AND TERTIARY-AMINO ALKYLOXY ALKYL DECALIN-9-CARBOXYLATES

Charles H. Tilford, Morristown, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Apr. 1, 1964, Ser. No. 356,660

6 Claims. (Cl. 260—294.3)

1. A decalin compound of the formula:



in which Z is a member of the group consisting of a lower alkyl having 1 to 6 carbon atoms, and together with the oxyalkylene having a total of 4 to 6 carbon atoms; and R_1 and R_2 are members of the group consisting of lower alkyl having 1 to 6 carbon atoms and together the nitro-nitrogen atom form pyrrolidino, morpholino or piperidino.

3. N-piperidino lower alkyl-decalin-9-carboxylate.

3,294,897

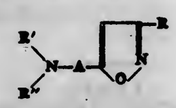
PROCESS FOR PREPARING 3,5-DISUBSTITUTED ISOXAZOLE COMPOUNDS

Hideo Kano, Kyoto-shi, Kyoto, Ikuo Adachi, Toyonaka-shi, Osaka, Ryozaburo Hida, Ikeda-shi, Osaka, and Katsumi Hirose, Nishinomiya-shi, Hyogo, Japan, assignors to Shionogi & Co., Ltd., Doshomachi, Higashi-ku, Osaka-shi, Japan

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,861

6 Claims. (Cl. 260—294.7)

1. An isoxazole of the formula:



wherein R is pyridyl, R' and R'' each is a member selected from the group consisting of hydrogen and lower alkyl and R' and R'' together represent a member selected from the group consisting of tetramethylene, pentamethylene and hexamethylene, and A is lower alkylene.

5. 3-(2-pyridyl)-5-(2-piperidinoethyl)-isoxazole.

3,294,898

N-ACYL DERIVATIVES OF CYCLIC IMINES

Ewald L. Shaw, Robert R. Mod, and Frank C. Magne, all of New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Application Apr. 2, 1964, Ser. No. 361,926, now Patent No. 3,248,396, dated Apr. 26, 1966, which is a division of application Ser. No. 249,923, Feb. 28, 1963, now Patent No. 3,219,612, dated Nov. 23, 1965. Divided and this application Sept. 10, 1965, Ser. No. 509,447

8 Claims. (Cl. 260—294.7)

1. N-oleoylpiperidine.

3,294,899

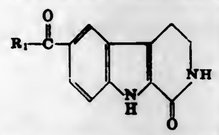
METHOD OF PREPARING 6-ACYLATED DERIVATIVES OF 1,2,3,4-TETRAHYDRO-1-OXO-β-CARBOLINE

John Shavel, Jr., Moonhaven, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,184

3 Claims. (Cl. 260—296)

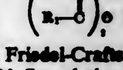
1. A method of preparing compounds of the formula:



wherein R_1 is lower alkyl, which comprises treating a solution of 1,2,3,4-tetrahydro-1-oxo-β-carboline in an inert solvent with a member selected from the group consisting of an acyl halide of the formula



where X is halogen and an acid anhydride of the formula



in the presence of a Friedel-Crafts catalyst at a temperature between about 0° C. and about 30° C.

3,294,900

BENZOFURO[2,3-c]PYRIDINES AND INTERMEDIATES

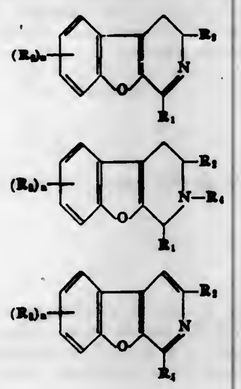
Arnold Brossi and Emilio Kyburz, Bleiken, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 13, 1962, Ser. No. 237,360

Claims priority, application Switzerland, Nov. 27, 1961, 13,790/61

9 Claims. (Cl. 260—297)

1. A compound selected from the group consisting of compounds of the formulae



and pharmaceutically acceptable acid addition salts thereof,

wherein R_1, R_2 and R_4 are each selected from the group consisting of hydrogen and lower alkyl, R_3 is selected from the group consisting of hydroxy, lower alkoxy, lower alkyl, nitro, halogen and trifluoromethyl, n is a whole integer from 0 to 3.

3,294,911

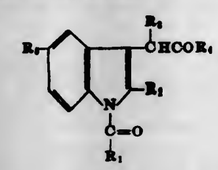
α-HALOMETHYL-1-THIAZOLE CARBONYL-3-INDOLYLACETIC ACIDS AND KETONE INTERMEDIATES THEREFOR

Tsung-Ying Shen, Westfield, and Lewis H. Sarett, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 29, 1965, Ser. No. 451,997

14 Claims. (Cl. 260—302)

1. A compound of the formula:



in which

R_1 is selected from the group consisting of thiazole, isothiazole, thiadiazole and substituted thiazole, isothiazole and thiadiazole in which the substituents are selected from the group consisting of halogen, lower alkyl, lower alkenyl, lower alkanoyl, halo-lower-alkanoyl, hydroxy-lower-alkyl, lower alkylthio, lower alkanoylamino, phthalimido, halo lower alkenyl, phenyl, nitrophenyl, halophenyl, lower alkylsulfonyl-phenyl, morpholino, and di-loweralkylamino lower alkylthio;

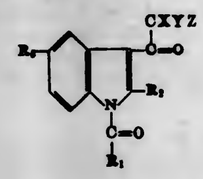
R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, tolyl and benzyl;

R_3 is selected from the group consisting of monohalomethyl, dihalomethyl and trihalomethyl in which said halogen has an atomic number less than 53;

R_4 is selected from the group consisting of hydroxy, lower alkoxy, benzyloxy, amino, lower alkylamino, di-lower alkylamino, lower alkanolamino, phenylamino, tolylamino, benzylamino, phenylethylamino, lower alkoxy-lower alkylamino and OM, where M is selected from the group consisting of ammonium, lower alkylammonium, morpholinium, cholinium, glucosammonium, methyl cyclohexylammonium, triethylammonium, N-butylammonium, anilinium, 2,3-xylidinium, piperizinium and alkali metals, aluminum, magnesium, alkali, earth metal, zinc and iron;

R_5 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, CF_3, CHF_2, nitro, cyano, aminomethyl, amino, hydroxy, benzylmercapto, lower alkylthio, diphenylamino, benzylamino, β-phenylethylamino, chloro lower alkylamino, chloro phenylamino, chloro benzylamino, lower alkoxy-loweralkylamino, anisidino, lower alkylanilino and lower alkoxyanilino.

12. A compound of the formula:



in which

R_1 is selected from the group consisting of thiazole, isothiazole, thiadiazole and substituted thiazole, isothiazole and thiadiazole in which the substituents are selected from the group consisting of halogen, lower alkyl, lower alkenyl, lower alkanoyl, halo-lower-alkanoyl, hydroxy-lower-alkyl, lower alkylthio, lower alkanoylamino, phthalimido, halo lower alkenyl, phenyl, nitrophenyl, halophenyl, lower alkylsulfonyl-phenyl, morpholino, and di-loweralkylamino lower alkylthio;

R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, phenyl, tolyl and benzyl;

R_3 is selected from the group consisting of monohalomethyl, dihalomethyl and trihalomethyl in which said halogen has an atomic number less than 53;

R_4 is selected from the group consisting of hydroxy, lower alkoxy, benzyloxy, amino, lower alkylamino, di-lower alkylamino, lower alkanolamino, phenylamino, tolylamino, benzylamino, phenylethylamino, lower alkoxy-lower alkylamino and OM, where M is selected from the group consisting of ammonium, lower alkylammonium, morpholinium, cholinium, glucosammonium, methyl cyclohexylammonium, triethylammonium, N-butylammonium, anilinium, 2,3-xylidinium, piperizinium and alkali metals, aluminum, magnesium, alkali, earth metal, zinc and iron;

R_5 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, CF_3, CHF_2, nitro, cyano, aminomethyl, amino, hydroxy, benzylmercapto, lower alkylthio, diphenylamino, benzylamino, β-phenylethylamino, chloro lower alkylamino, chloro phenylamino, chloro benzylamino, lower alkoxy-loweralkylamino, anisidino, lower alkylanilino and lower alkoxyanilino;

XYZ are selected from the group consisting of hydrogen and halogen, no more than two being hydrogen at any one time.

3,294,912

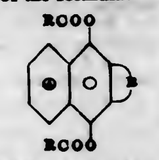
CERTAIN NAPHTHOTRIAZOLE AND NAPHTHO-THIADIAZOLE COMPOUNDS

William Lindsay Mosby, North Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

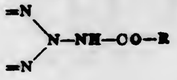
No Drawing. Filed June 16, 1965, Ser. No. 464,982

9 Claims. (Cl. 260—304)

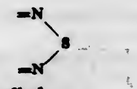
1. A compound of the formula:



wherein B is a radical selected from the group consisting of



and



and wherein R is lower alkyl.

3,294,913

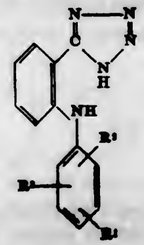
2-(5-TETRAZOLYL)-N-(SUBSTITUTED-PHENYL) ANILINES AND SALTS THEREOF

Peter F. Juby, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 2, 1966, Ser. No. 546,646

21 Claims. (Cl. 260—308)

1. The acidic compounds of the formula

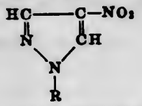


wherein R^1, R^2 and R^3 are each hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, trifluoromethoxy, trifluoro-

methylthio, (lower)alkyl, (lower)alkoxy, nitro, methylsulfonyl, di(lower)alkylamino or (lower)alkylthio; and nontoxic, pharmaceutically acceptable salts thereof.

3,294,814
4-NITROPYRAZOLES
Franz Reichenecker, Ludwigshafen (Rhine), Germany, and Karl Dury, deceased, late of Kirchheimbolanden, Germany, by Johanna Maria Dury, heiress-at-law, Kirchheimbolanden, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Mar. 4, 1965, Ser. No. 439,518
Claims priority, application Germany, Mar. 6, 1964, B 75,758
3 Claims. (Cl. 260—310)

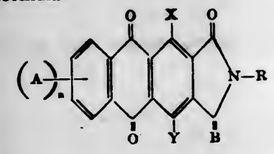
1. A 4-nitropyrazole having the formula:



in which R is a member selected from the group consisting of benzene sulfonyl, tosyl, and cycloalkyl of 5 to 8 carbon atoms.

3,294,815
PROCESS FOR PRODUCING 1,4-NAPHTHOQUINONES[2,3-f]-PHTHALIMIDES
Ernst Hartwig and Willy Braun, Heidelberg, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Nov. 24, 1964, Ser. No. 413,606
Claims priority, application Germany, Nov. 30, 1963, B 74,474
4 Claims. (Cl. 260—325)

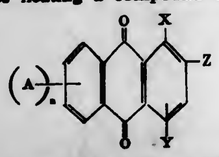
1. A process for the production of an anthraquinone dye of the formula



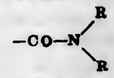
in which

X denotes a member selected from the class consisting of hydroxyl and amino,
Y denotes a member selected from the class consisting of hydroxyl, amino and methylamino,
A denotes an atom selected from the class consisting of hydrogen, chlorine and bromine,
B denotes a divalent member selected from the class consisting of oxygen and imino,
R denotes a member selected from the class consisting of hydrogen, alkyl of 1 to 4 carbon atoms and alkyl of 1 to 4 carbon atoms substituted by a member selected from the class consisting of hydroxy, methoxy, ethoxy, hydroxyethoxy, cyano, pyrrolidino, pyrrolidonyl and N-methylcyclohexyamino, and
n is one of the numbers 1 and 2,

which comprises heating a compound of the formula

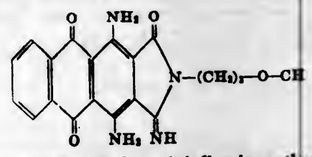


in which A, X, Y, and *n* have the meanings given above and Z denotes a member selected from the class consisting of hydrogen, cyano, carboxy, carbalkoxy, the carboxamide group of the formula —CO—NH—R in which R has one of the above meanings, and the carboxamide group of the formula



in which R has one of the above meanings, with a cyanogen compound selected from the class consisting of an ionic cyanide and a cyanogen compound which is capable of splitting off the cyano group during the reaction, and with an oxidizing agent in an inert diluent at a temperature from 30 to 230° C.

2. A process for the production of a dye of the formula



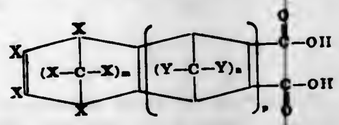
which comprises heating 1,4-diaminoanthraquinone-2-carboxylic acid γ-methoxypropylamide with a cyanogen compound selected from the class consisting of an ionic cyanide and a cyanogen compound which is capable of splitting off the cyano group during the reaction, and with an oxidizing agent in an inert diluent at a temperature of from 30 to 230° C.

3,294,816
ACID-AMINE-PHOSPHATE REACTION PRODUCT AND USE THEREOF
Edwin J. Latos, Chicago, and Charles M. Hayes, Hoffman Estates, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 12, 1963, Ser. No. 330,008
13 Claims. (Cl. 260—326)

1. Phosphate salt of the reaction product of compound (a) and compound (b) formed by reaction of said compounds at a temperature of from about 10° to about 250° C. in a proportion of from one mole of compound (a) with from one to two moles of compound (b), said compound (b) being selected from the group consisting of

(1) alkylene polyamine having from 2 to 4 nitrogen atoms per molecule and containing from 2 to 6 carbon atoms per alkylene group,
(2) alkylene polyamine having from 2 to 4 nitrogen atoms per molecule and containing from 2 to 6 carbon atoms per alkylene group and having on at least one of the nitrogen atoms an alkyl of from 1 to 20 carbon atoms,
(3) N-alkyldiaminoalkane in which the alkyl contains from about 8 to about 25 carbon atoms and the alkane moiety contains from 2 to 6 carbon atoms,
(4) ortho-, meta- and para-phenylenediamine,
(5) N-alkyl and N,N'-dialkyl phenylenediamine in which each alkyl contains from 1 to about 12 carbon atoms,
(6) diaminodiphenyl alkane containing from 1 to about 6 carbon atoms in the alkane moiety, and
(7) diaminodiphenyl ether, diaminodiphenyl sulfide, diaminodiphenyl amine and said diaminodiphenyl compounds having on at least one of the nitrogen atoms an alkyl of from 1 to about 16 carbon atoms.

and said compound (a) being selected from the group consisting of polyhalopolyhydropolycyclicdicarboxylic acid and corresponding anhydride, said acid having the formula:

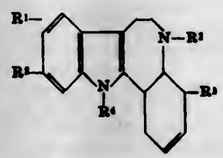


in which X is chlorine, bromine, hydrogen or alkyl of from 1 to 10 carbon atoms, at least two of the X's being chlorine or bromine, Y is chlorine, bromine, hydrogen or alkyl of 1 to 10 carbon atoms, *m* is an integer of from 1 to 4, *n* ranges from 0 to 4 and *p* ranges from 0 to 4, said phosphate salt being formed by the reaction at a temperature of from ambient to about 70° C. of one mole proportion of said reaction product of compound (a) and compound (b) with from about 0.5 to about 4 mole proportions of a phosphorus compound selected from the group consisting of

(1) phosphoric acid,
(2) alkyl phosphate and alkyl thiophosphate containing alkyl of from 1 to about 20 carbon atoms,
(3) phosphate and dithiophosphate of oxyalkylenated aliphatic alcohol containing from 4 to 20 carbon atoms and from 1 to 12 oxyalkylene groups of from 2 to 6 carbon atoms each.
(4) phosphate and dithiophosphate of oxyalkylenated phenol containing from 1 to 12 oxyalkylene groups of from 2 to 6 carbon atoms each, and
(5) phosphate and dithiophosphate of oxyalkylenated alkyl phenol containing from 1 to 3 alkyls of from 1 to 20 carbon atoms each and containing from 1 to 12 oxyalkylene groups of from 2 to 6 carbon atoms each.

3,294,817
OCTAHYDROINDOLOBENZAZEPINES AND COMPOUNDS INTERMEDIATE THERETO
Stephen Bailey, Wynnewood, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 23, 1964, Ser. No. 354,117
6 Claims. (Cl. 260—326.9)

1. A compound selected from the group consisting of (1) a compound having the formula:



wherein R^1 and R^2 are selected from the group consisting of hydrogen, lower alkyl, lower alkoxy and R^1 and R^2 taken together are —OCH_2O—; R^3 is selected from the group consisting of hydrogen and benzyl; R^4 is selected from the group consisting of hydrogen, lower alkyl and benzyl; and R^5 is selected from the group consisting of hydrogen, lower alkyl and lower alkoxy, and (2) the nontoxic, pharmaceutically acceptable acid addition salts thereof.

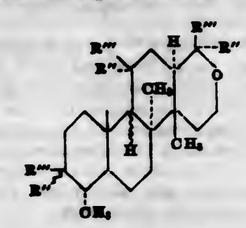
2. 1,4,4a,5,6,7,12,12b - octahydroindolo(3,2-*d*)(1)benzazepine.

3,294,818
SUBSTITUTED DIOXOLANES AND PROCESS FOR THEIR PRODUCTION
George Rebowski, East Orange, John Shavel, Jr., Mendham, and Maximilian von Strandtmann, Rockaway Township, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Apr. 6, 1964, Ser. No. 357,796
2 Claims. (Cl. 260—340.9)

1. D-threo-1-[p-2-(cyclohexyl - 1,3 - dioxolan - 2-yl) phenyl]-2-(2,2-dichloroacetamido)1,3-propanediol.

3,294,819
SYNTHESIS OF STEROIDS
Gerald W. Krakower, Hightstown, and Hilda Van Dine, Princeton, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 19, 1966, Ser. No. 526,338
15 Claims. (Cl. 260—343.2)

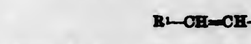
1. A compound having the formula



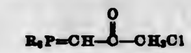
wherein R''' is hydrogen; R'' is hydroxy or the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms; and together R'' and R''' is oxo (O=).

3,294,820
PROCESS FOR PREPARING HALOMETHYL VINYL KETONES
Robert F. Hudson and Pierre-Antoine Chopard, Geneva, Switzerland, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,326
14 Claims. (Cl. 260—347.8)

3. A process for preparing a chloromethyl vinyl ketone of the formula



where R^1 is a residual organic radical of an aldehyde selected from the group consisting of lower alkyl aldehydes, lauric aldehyde, chloral, hexahydro benzaldehyde, benzaldehyde and furfural, which comprises reacting a phosphorane of the formula

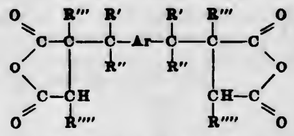


where R is selected from the group consisting of lower alkyl and phenyl, with an aldehyde from the group specified above.

12. Triphenyl chloracetonyl phosphorane.

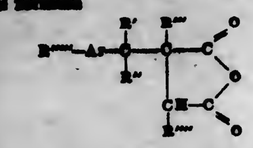
3,294,821
PROCESS FOR THE SEPARATION OF DIANHYDRIDES FROM A MIXTURE OF DIANHYDRIDES AND MONOHYDRIDE
Charles M. Selwitz, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Oct. 18, 1965, Ser. No. 497,533
7 Claims. (Cl. 260—347.8)

1. A process for separating the dianhydride having the following structural formula



wherein R' and R'' are selected from the group consisting of hydrogen and alkyl groups having from one to six carbon atoms, R''' and R'''' are selected from the group consisting of hydrogen and alkyl groups having from one to nine carbon atoms, and Ar is phenyl, from a mixture con-

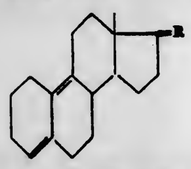
taining the ester and a monoanhydride having the following structural formula



wherein R', R'', R''' and R'''' are as defined above, R''''' is an alkyl group having from one to 13 carbon atoms, and Ar is phenyl, which comprises treating said mixture with a liquid hydrocarbon selected from the group of liquid paraffins having from four to 10 carbon atoms, aromatics having from six to 12 carbon atoms, olefins having from four to 16 carbon atoms and chlorinated derivatives thereof to precipitate said dianhydride therefrom and thereafter recovering said dianhydride.

3,294,822
3-UNSUBSTITUTED $\Delta^{4,6(10)}$-19-NORSTEROIDS AND PROCESS FOR THEIR MANUFACTURE
Albert Wettstein, Bâle, Hans Arnet, Basel, and Helmut Ueberwasser, Bâle, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 17, 1964, Ser. No. 345,126
Claims priority, application Switzerland, Mar. 1, 1963, 2,974/63, 2,977/63, Jan. 9, 1964, 259/64
26 Claims. (Cl. 260—397.3)

7. Compounds of the formula

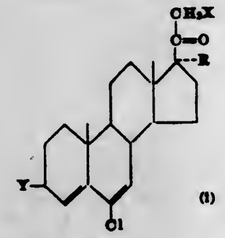


in which R represents a member selected from the group consisting of oxo, β-hydroxy and hydrogen, esterified β-hydroxy and hydrogen, etherified β-hydroxy and hydrogen, β-hydroxy and a lower aliphatic hydrocarbon radical, esterified β-hydroxy and a lower aliphatic hydrocarbon radical, and etherified β-hydroxy and a lower aliphatic hydrocarbon radical each of said etherified β-hydroxy substituents being derived from a member selected from the group consisting of an alkanol having 1–15 carbon atoms and dihydropyran.

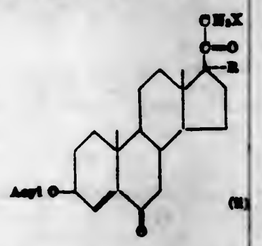
8. $\Delta^{4,6(10)}$-17-oxo-19-norandrostadiene.

3,294,823
METHOD OF PREPARING STEROIDAL 6-CHLORO-4,6-DIENES
Yvon L. Lafaivre, Pierrefonds, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 16, 1964, Ser. No. 410,292
5 Claims. (Cl. 260—397.3)

8. A process for the production of pregnane derivatives having the following structural Formula (i)



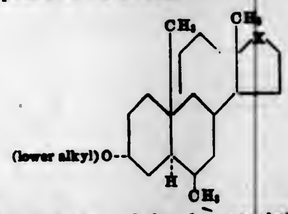
in which Y represents a substituent selected from the group consisting of acyloxy, hydroxy, and ketonic oxygen groups, in which R is a substituent selected from the group consisting of hydrogen, acyloxy, and straight-chain lower alkyl groups containing from 1 to 4 carbon atoms, and X represents a substituent selected from the group consisting of hydrogen and fluorine, comprising bringing into contact with each other a 3β-acyloxy-6-heteroprogesterone of the following structural Formula (ii)



in which R and X have the significance defined above, and phosphorus pentachloride in an inert, non-reactive solvent selected from the group consisting of carbon tetrachloride, ethyl acetate and aromatic hydrocarbons with a boiling point below 150° C., to obtain a 3β-acyloxy-6-chloro-4,6-pregnadiene of Formula (i) in which Y represents an acyloxy group, and R and X have the significance defined above, hydrolyzing said last-named compound in a basic medium, to obtain the corresponding compound of Formula (i) in which Y represents the hydroxyl group, and R and X have the significance defined above, and oxidizing said last-named compound to obtain the corresponding 6-chloro-6-dehydroprogesterone of the general structure (i) in which Y represents the ketonic oxygen group, and R and X have the significance defined above.

3,294,824
3α-ALKOXY-6β-METHYL-5α-ANDROSTAN-17-ONES AND DERIVATIVES THEREOF
Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 15, 1965, Ser. No. 426,931
7 Claims. (Cl. 260—397.4)

1. A compound of the formula



wherein X is a member of the class consisting of β-hydroxymethylene, β-(lower alkanoyl)oxymethylene, and α-(lower alkyl)-β-hydroxymethylene radicals.

3,294,825
METHOD FOR PROTECTING LIPIDS AGAINST OXIDATION
Pierre André Pottier, 56 Rue des Belles Feuilles, Paris, France
No Drawing. Filed Apr. 8, 1966, Ser. No. 20,821
1 Claim. (Cl. 260—396.5)

A method for protecting lipids containing unsaturated constituents against oxidation, which consists of distributing in the volume of the lipid to be protected a mixture consisting essentially of ascorbic acid, citric acid and a carrier selected from the group consisting of stearic acid, palmitic acid, lauric acid, linoleic acid, and an ester

formed by said acid and a polyhydric alcohol selected from the group consisting of glycerol, ethylene glycol, propylene glycol, diethylene glycol, triethylene glycol or polyoxyethylene glycol, the weights of the ascorbic acid and the citric acid each being between 1% and 18% of the total weight of the mixture and the ingredients selected from said group making up the balance of said mixture, the amount of said mixture added to said lipid being in excess of 0.03% of said lipid.

3,294,826
PROCESS FOR ACID HYDROLYSIS OF WASTE ANIMAL MATERIAL AND PRODUCT
James F. O'Neill, 1905 S. 33rd St., Omaha, Nebr. 68111
Filed July 1, 1963, Ser. No. 291,670
8 Claims. (Cl. 260—412.7)

1. Tallow from hydrolysis of animal by-products containing a small amount of sodium phosphate formed in situ during hydrolysis with phosphoric acid and less than about 1% moisture without evaporation subsequent to hydrolysis, said tallow being capable of storage without refrigeration.

3. A method for forming tallow from animal by-products which comprises grinding said animal by-products to a small particle size, heating the resulting ground animal by-product in admixture with an aqueous solution containing a major amount of phosphoric acid and a minor amount of alkali carbonate at a temperature in the range of about 190° F. to 235° F. until the animal by-product hydrolyzes to tallow, and thereafter maintaining the temperature of the conversion mass in the range of about 150° F. to 180° F. while continuously withdrawing hydrolyzed tallow having a moisture content less than about 1% from the conversion mass, adding additional ground animal by-product for hydrolysis thereof to the conversion mass as make-up and adding additional amounts of said hydrolyzing solution sufficient to hydrolyze said additional added animal by-product, said minor amount of alkali carbonate being sufficient to enhance evaporation of water from the reaction mixture and reduce moisture content in the hydrolyzed tallow to said less than about 1%.

3,294,827
QUATERNARY AMMONIUM METAL COMPOUNDS
Ronald R. Swanson, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Sept. 26, 1961, Ser. No. 140,691
12 Claims. (Cl. 260—429)

1. Complex compounds of the structure

$$X_mY$$

where X is a fatty quaternary ammonium cation wherein at least one of the four organic groups attached to the nitrogen atom is an aliphatic hydrocarbon radical of 8–24 carbon atoms, Y is an inorganic anion containing a metal of Group VIIB of the Periodic Table of Elements and m is the valence of said anion.

3,294,828
AROMATIC NITRIC ESTERS; VANADIUM TETRACARBONYLS
Robert P. M. Werner, Binningen, Basel-Land, Switzerland, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 17, 1963, Ser. No. 288,462
3 Claims. (Cl. 260—429)

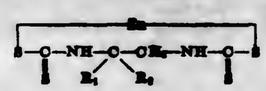
1. A compound having the formula

$$(R^1R^2R^3M)V(NO)(CO)_4$$

wherein R^1, R^2 and R^3 are aromatic benzenoid hydrocarbon radicals having 6 to about 13 carbon atoms and M is a Group VA element having an atomic number of at least 15.

3,294,829
ZINC SALTS OF ALKYLENE-BIS-DITHIOCARBAMIC ACIDS
Hellmuth Lehmann, Wuppertal-Elberfeld, Ferdinand Grewe, Cologne-Stammheim, and Walter Lautenschläger, Wuppertal-Vohwinkel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed May 1, 1963, Ser. No. 277,307
Claims priority, application Germany, May 19, 1962, F 36,846
6 Claims. (Cl. 260—429.9)

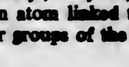
1. Zinc alkylene-bis-dithiocarbamates of the formula



wherein R_1 and R_2 are members selected from the group consisting of lower alkyl and lower alkenyl.

3,294,830
ADDITION AND TELOMERIZATION REACTIONS OF OLEFINS WITH ORGANOMERCURY COMPOUNDS
David Hervitz and William D. Baugh, Cincinnati, and Robert J. Shaw, Monroe, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 10, 1963, Ser. No. 329,368
9 Claims. (Cl. 260—431)

1. A process for preparing organomercury compounds which comprises reacting, as the sole reactants, at least one olefin with a mercury compound containing at least one carbon-mercury bond and selected from the group of R_AHgZ and R_AHgR_B wherein R_A and R_B are organic radicals selected from the group consisting of alkyl, alkenyl, aryl, β-hydroxyalkyl, β-alkoxyalkyl, β-acyloxyalkyl, cyanoalkyl, alicyclic, and heterocyclic radicals having a carbon atom linked to the mercury atom and carboxylic ester groups of the form



wherein R is an organic radical selected from the group consisting of alkyl and aryl radicals having the carbonyl carbon atom linked to the mercury atom and Z is an anion derived from an acid selected from the group consisting of mineral acids and organic acids, whereby at least one molecule of the olefin is inserted between the carbon atom and the mercury atom of the carbon-mercury linkage in the mercury compound.

3. As a new composition of matter, mercury-containing organic compounds having the general formula selected from the group consisting of R_AM_nHgZ and

$$R_AM_nHgM_nR_B$$

wherein R_A and R_B are organic radicals selected from the group consisting of alkenyl, aryl, β-hydroxyalkyl, β-alkoxyalkyl, β-acyloxyalkyl, cyanoalkyl, alicyclic, and carboxylic ester radicals of the form

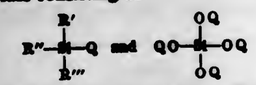


wherein R is an organic radical selected from the group consisting of alkyl and aryl radicals; M is the radical $-R'R''C-CR'''R''''-$ wherein R', R'', R''', and R'''' are radicals selected from the group consisting of hydrogen,

chlorine, bromine, iodine, fluorine, alkyl, aryl, alkoxy, acyloxy, nitrile, carboxylic acid, and carboxylic ester radicals; Z is an anion derived from an acid selected from the group consisting of mineral acids and organic acids; and m and n are integers of at least one each when R_A and R_B are alkenyl, cyanoalkyl, alicyclic, and carboxylic ester radicals and at least two each when R_A and R_B are aryl, β-hydroxyalkyl, β-alkoxyalkyl, and β-acyloxyalkyl radicals.

3,294,831
ARYLATION OF SILICON-CONTAINING AROMATIC COMPOUNDS
Ernest Bryson McCall, Llangollen, and Brian Beard Millward, Wrexham, Wales, assignors to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Filed Sept. 26, 1962, Ser. No. 226,463
Claims priority, application Great Britain, Oct. 17, 1961, 37,167/61
10 Claims. (Cl. 260—448.2)

1. A process for arylating an aromatic silicon-containing compound which comprises heating a compound selected from the class consisting of



and



where R', R'' and R''' are each selected from the class consisting of hydrogen, chlorine, bromine, lower alkyl and Q, and each Q is selected from the class consisting of phenyl, lower alkylphenyl, chlorophenyl, naphthyl and phenoxyphenyl, with a compound of the formula RSO_2X where R is selected from the class consisting of phenyl, lower alkylphenyl, chlorophenyl and nitrophenyl, X is halogen and the sulfonyl halide moiety is attached to a nuclear carbon atom of R.

3,294,832
CATALYTIC DEHYDROGENATION OF MONONITRILES
Howard S. Young and Jefferson W. Reynolds, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 27, 1965, Ser. No. 492,348
12 Claims. (Cl. 260—465.9)

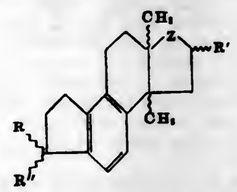
1. A process which comprises contacting in the vapor phase a mixture consisting essentially of nitrogen and an alpha-monocyanoalkane containing 3 to 8 carbon atoms, wherein the alpha and beta carbon atoms each have at least one hydrogen atom attached thereto, at a temperature of from about 500° C. to about 700° C. for 0.1 second to 20 seconds with a catalyst which is activated carbon impregnated with a promoter or porous alumina having at least 50 square meters surface area per gram impregnated with a promoter, wherein said promoter is from the group consisting of the alkali metals sodium, lithium, potassium or cesium or the cyanides, hydroxides, nitrates or oxides of said alkali metals, the amount of promoter present in the catalyst being equivalent in metal content to an amount of the oxide of the metal of from 0.1 percent to 20 percent of the weight of the activated carbon or porous alumina, and recovering the corresponding alpha, beta unsaturated mono-nitrile formed.

3,294,833
MANUFACTURING ESTERS OF 1-ALKOXYCYCLOPROPANECARBOXYLIC ACIDS
Leo V. Phillips, Overland Park, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 8, 1963, Ser. No. 278,983
2 Claims. (Cl. 260—468)

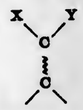
1. The method of manufacturing an ester of a 1-alkoxycyclopropanecarboxylic acid comprising reacting an ester of 2-alkoxy-4-chlorobutyric acid with sodamide at an elevated temperature in the presence of an inert solvent and recovering the ester of 1-alkoxycyclopropanecarboxylic acid from the resulting reaction mixture.

3,294,834
A-NOR-STEROIDS
Josef Fried, Princeton, and David W. Rosenthal, New Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 19, 1963, Ser. No. 288,920
16 Claims. (Cl. 260—468)

1. A compound of the formula



wherein R is hydrogen; R'' is selected from the group consisting of hydrogen, hydroxy and the acyloxy radical of a hydrocarbon carboxylic acid of less than ten carbon atoms and together R and R'' is oxo; R' is selected from the group consisting of hydrogen and the acyloxy radical of a hydrocarbon carboxylic acid of less than ten carbon atoms; and Z is selected from the group consisting of



wherein Y is iso-alkyl and X is selected from the group consisting of lower alkyl and



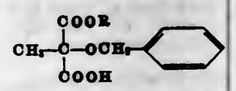
wherein B is selected from the group consisting of hydroxy and lower alkoxy; and



wherein W is selected from the group consisting of hydrogen, the acyloxy radical of a hydrocarbon carboxylic acid of less than ten carbon atoms and halogen.

3,294,835
2-METHYL-2-BENZYLOXYMALONIC ACID MONOALKYL ESTERS
Albert Hofmann, Bottmingen, Basel-Land, and Paul Stadler, Biel-Benken, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Nov. 27, 1963, Ser. No. 326,390
Claims priority, application Switzerland, Nov. 29, 1962, 13,999/62
10 Claims. (Cl. 260—473)

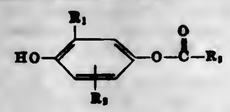
1. An optically active compound of the formula:



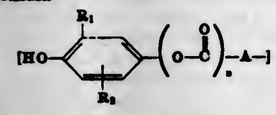
wherein R is an alkyl group of from 1 to 4 carbon atoms inclusive.

3,294,836
STABILIZATION OF ORGANIC MATERIAL WITH CERTAIN ESTERS OF SUBSTITUTED HYDROQUINONES AND ORGANIC ACIDS
Janet B. Peterson, Yonkers, and Martin Dexter, Briarcliff Manor, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 27, 1962, Ser. No. 224,602
12 Claims. (Cl. 260—475)

1. A compound of the formula:



wherein
R_1 is an alkyl group of 3 to 8 carbon atoms,
R_2 is a member selected from the group consisting of hydrogen and alkyl of 1 to 8 carbon atoms,
R_3 is a member selected from the group consisting of alkylthioalkyl of 2 to 24 carbon atoms, and the radical of the formula



wherein
R_1 and R_2 are the same as above, and
n is a member selected from the group consisting of 0 and 1, and
A is a member selected from the group consisting of lower alkylene, lower alkylenethio (lower alkylene), and phenylene.

3,294,837
STEARYL AND CETYL LACTOYL LACTATE
Stuart W. Thompson, Upper Saddle River, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Original application Apr. 18, 1961, Ser. No. 103,733, now Patent No. 3,144,341, dated Aug. 11, 1964. Divided and this application Oct. 15, 1963, Ser. No. 316,446
2 Claims. (Cl. 260—484)

1. Stearyl lactoyl lactate.
2. Cetyl lactoyl lactate.

3,294,838
NUCLEOPHILIC REACTIONS OF 2,3-DINITRONAPHTHALENE
Donald C. Morrison, Kansas City, Mo., assignor to Fundamental Research Company, Berkeley, Calif., a partnership
No Drawing. Filed Sept. 23, 1963, Ser. No. 310,866
3 Claims. (Cl. 260—505)

1. A process for producing from 2,3-dinitronaphthalene reaction product material comprising 3-nitro-1-substituted naphthalene, said process comprising reacting 2,3-dinitronaphthalene with an alkaline nucleophilic reagent in a solution at a temperature with the range of from about room temperature to the reflux temperature of said solution for a period of time within the range of from about 5 minutes to about 48 hours, said alkaline nucleophilic reagent being sodium methoxide in methanol.

3,294,839
PURIFICATION OF TRIMELLITIC ACID
Thomas Michael Binns Wilson, Cottingham, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,619
Claims priority, application Great Britain, Jan. 4, 1963, 466/63
5 Claims. (Cl. 260—525)

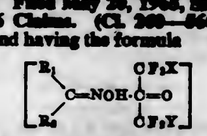
1. The process for the purification of trimellitic acid which has been prepared by the oxidation of pseudocumene by a process including a nitric acid oxidation step, which comprises washing the aromatic polycarboxylic acid with an organic solvent selected from the group consisting of alkyl esters having from five to eight carbon atoms in the molecule exclusive of carbonyl carbon, and aliphatic ketones having from five to eight carbon atoms in the molecule, exclusive of carbonyl carbon at a temperature within the range in which the washing solvent is in the liquid phase, and the trimellitic acid is in the solid phase.

3,294,840
PRODUCTION OF DIHYDRODICYCLOPENTADIENYLAMINE
Ludwig Schuster and Paul Reif, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Nov. 4, 1964, Ser. No. 408,737
Claims priority, application Germany, Nov. 22, 1963, B 74,364
8 Claims. (Cl. 260—563)

1. A process for preparing dihydrodicyclopentadienylamine which comprises reacting dicyclopentadiene and hydrocyanic acid in concentrated sulfuric acid with a molar ratio of hydrocyanic acid to dicyclopentadiene of at least 3:1 and a molar excess of sulfuric acid not exceeding a triple molar excess with reference to cyclopentadiene at a temperature of from −5° to +35° C., and saponifying the resultant N-dihydrodicyclopentadienyl formamide.

3,294,841
COMPLEXES OF HALOGENATED ACETONE-OXIMES
Karoly Szabo, Orinda, and Ashley H. Frulberg, Santa Clara, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 20, 1965, Ser. No. 457,506
6 Claims. (Cl. 260—566)

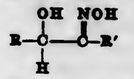
1. A compound having the formula



wherein X and Y are selected from the group consisting of chlorine and fluorine, R_1 is selected from the group consisting of hydrogen, lower alkyl and phenyl, and R_2 is selected from the group consisting of lower alkyl, phenyl, furyl and lower N-hydroxyalkanolimido groups, and R_1 and R_2 jointly are a divalent alkylene radical containing 4 to 6 carbon atoms.

3,294,842
α-HYDROXY OXIMES CONTAINING ALKENYL RADICALS
Ronald R. Swanson, New Hope, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed July 2, 1965, Ser. No. 469,335
3 Claims. (Cl. 260—566)

1. α-Hydroxy oximes having the formula



where R and R' are alkenyl radicals containing 6 to 20 carbon atoms, said oximes being further characterized as having a total carbon atom content of 14 to about 40.

3,294,843
HYDROGENATION OF DIPHENALDEHYDE
Mary J. Farquhar, McKeesport, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Mar. 8, 1963, Ser. No. 264,794
5 Claims. (Cl. 260—599)

1. A method of making 2'-hydroxymethyl-2-biphenylcarboxyaldehyde comprising reacting in an inert solvent

diphenaldehyde with one mole of hydrogen per mole of diphenaldehyde in the presence of a catalytic amount of a hydrogenation catalyst selected from the group consisting of platinum, palladium and nickel at a temperature of 20–100° C. and a pressure of up to 35 p.s.i.g.

3,294,844

PRODUCTION OF AXEROPHTHYL PHOSPHONIUM SALTS

Wilhelm Siemsch, Axel Naarmann, and Werner Reis, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 20, 1963, Ser. No. 281,790
Claims priority, application Germany, May 23, 1962, B 67,363
7 Claims. (Cl. 260—606.5)

1. A process for the production of quaternary axerophthyl phosphonium salts which comprises: reacting an ester of axerophthol with a member selected from the group consisting of a tertiary phosphine and a hydrosalt of a tertiary phosphine, with the proviso that where a tertiary phosphine is used as the reactant, an acid which will form with the tertiary phosphine a hydrosalt is present in the reaction mixture.

3,294,845

CHLORINATED SULFONES

Karoly Szabo, Orinda, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,864
6 Claims. (Cl. 260—607)

1. Compounds having the formula

$$R—CCl_2—SO_2—R^1$$

wherein R is selected from the group consisting of alkyl and alkenyl, and R^1 is selected from the group consisting of alkyl, chloroalkyl, chloroalkenyl, cyclohexyl, phenyl, nitrophenyl and chlorophenyl.

3,294,846

PROCESS FOR PREPARING META-ARYLOXY PHENOLS

John E. Livak, Midland, Mich., and Edgar C. Britton, deceased, late of Midland, Mich., by J. W. Britton, executor, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 10, 1962, Ser. No. 229,757
7 Claims. (Cl. 260—613)

1. A method for preparing m-phenoxyphenols which comprises reacting the potassium salt of resorcinol with a bromide selected from the group consisting of

aryl bromobenzene,
o-bromochlorobenzene,
m-bromochlorobenzene,
p-bromochlorobenzene,
o-dibromobenzene,
p-dibromobenzene,
m-dibromobenzene,
o-bromotoluene,
p-bromotoluene,
m-bromotoluene,
bromo-o-xylene,
bromo-p-xylene,
bromo-m-xylene,
o-bromoethylbenzene,
p-bromoethylbenzene,
m-bromoethylbenzene,
bromophenoxybenzene,
bromophenoxychlorobenzene,
bromodiphenyl,
1-bromonaphthalene and
2-bromonaphthalene,

in the presence of a catalytic amount of copper at a temperature of from about 125° to 185° C., and in the presence of a reaction solvent selected from the group consisting of resorcinol and a dialkyl amide.

3,294,847

METHOD FOR THE PREPARATION OF ETHER-CONTAINING CHLORIDES

Robert L. Albright, Philadelphia, and Charles H. McKeever, Meadowbrook, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,958
7 Claims. (Cl. 260—615)

1. A method for the preparation of a compound having the formula $R'(OCH_2CH_2)_nCl$ which comprises adding prosphorus trichloride to a compound having the formula $R(OCH_2CH_2)_nOH$ at a temperature of about 0° to 90° C. and then heating the reaction mixture in the presence of an amount of hydrogen chloride at least equal to the amount formed in the reaction to a temperature of about 80° to 200° C., the reaction being conducted at pressures of substantially at least atmospheric in which

n is an integer of from one to twenty,

R is a member selected from the class consisting of alkyl of one to eight carbon atoms, aryl of six to ten carbon atoms, alkylaryl of 7 to 18 carbon atoms, arylalkyl of 7 to 10 carbon atoms, $HOCH_2CH_2—$ or $ClCH_2CH_2—$ and

R′ is alkyl of one to eight carbon atoms, aryl of six to ten carbon atoms, arylalkyl of 7 to 10 carbon atoms, alkylaryl of 7 to 18 carbon atoms, or $ClCH_2CH_2—$, wherein said R of the reactant corresponds to said R′ of the product except that when said R represents $HOCH_2CH_2—$, said R′ represents $ClCH_2CH_2—$.

3,294,848

SURFACE ACTIVE AGENTS FROM ORGANOMETALLIC COMPOUNDS UTILIZING A FRIEDEL-CRAFTS CATALYST

Mason H. Ewing, Grosse Ile, and John T. Patton, Jr., Wyandotte, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,884
19 Claims. (Cl. 260—615)

1. A process for the production of a nonionic surface-active agent comprised of a cogeneric mixture of polymers which comprises the steps of (1) adding aluminum chloride to a Group I metal-aluminum alkyl, wherein each alkyl group has 4 to 24 carbon atoms, inclusive, in a solvent substantially inert to the reaction, (2) condensing an alkylene oxide having from 2 to 4 carbon atoms with said Group I metal-aluminum alkyl of step (1) in the presence of said aluminum chloride, and (3) hydrolyzing the product of step (2) by mixing and reacting an acid therewith.

3,294,849

PRODUCTION OF ALKYNOLS AND ALKYNEDIOLS USING CONTINUOUS PHASE SILICA GEL CARRIER IMPREGNATED WITH 15 TO 20 PERCENT COPPER AND 2 TO 9 PERCENT BISMUTH

Otto F. Hecht, deceased, late of Easton, Pa., by Friedel Elizabeth Hecht, administratrix, Easton, Pa., and Max E. Chiddix, Easton, Pa.; said Chiddix assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 15, 1965, Ser. No. 449,390
3 Claims. (Cl. 260—635)

1. In the process of preparing alkynols by causing a carbonyl compound selected from the class consisting of aliphatic hydrocarbon aldehydes and aliphatic hydro-

carbon ketones to react in the liquid phase with an acetylene hydrocarbon corresponding to the formula

$$R—C{\equiv}CH$$

wherein R represents a member selected from the class consisting of hydrogen and aliphatic hydrocarbon radicals in the presence of a catalyst, the improvement which comprises employing as such catalyst a catalyst obtained by impregnating a continuous phase silica gel carrier with an aqueous nitric acid solution of copper nitrate and bismuth nitrate, volatilizing the water and nitric acid followed by heating within the range of 450° to 720° C. for a period of time ranging from 2 to 10 hours to decompose the copper and bismuth nitrates to the oxides, whereby the said carrier contains from 15% to 20% of copper and from 2% to 9% of bismuth.

3. In the process of preparing butynediol by causing formaldehyde to react in the liquid phase with acetylene in the presence of a catalyst the improvement which comprises employing such catalyst obtained by impregnating a continuous phase silica gel carrier with an aqueous nitric acid solution of copper nitrate and bismuth nitrate, volatilizing the water and nitric acid, followed by heating within the range of 450 to 720° C. for a period of time within 2 to 10 hours to decompose the copper and bismuth nitrates to the oxides, whereby the said carrier contains from 15 to 20% of copper and from 2 to 9% of bismuth.

3,294,850

HALOALKYLATION PROCESS

George W. Ayers, Chicago, and William A. Krewer, Arlington Heights, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,528
16 Claims. (Cl. 260—651)

1. The process for the haloalkylation of an alkyl aromatic hydrocarbon which comprises reacting said hydrocarbon with one of the groups consisting of lower alkanols and polymers thereof and a hydrogen halide in the presence of a catalyst selected from the group consisting of phosphorus pentoxide, and compositions in the P_2O_5–H_2O system containing at least 84% by weight total phosphorus calculated as phosphorus pentoxide, at a temperature of about 40° to 120° C. and at atmospheric pressure.

2. The process for the preparation of para-chloromethyltoluene which comprises reacting toluene with a formaldehyde polymer and hydrogen chloride in the presence of a catalytic amount of a catalyst selected from the group consisting of phosphorus pentoxide, and compositions in the P_2O_5–H_2O system containing at least 84% by weight total phosphorus calculated as phosphorus pentoxide, at a temperature of about 40° to 120° C. and at atmospheric pressure.

3. The process of producing para-chloromethyltoluene which comprises reacting toluene with a formaldehyde polymer and phosphorus oxychloride in the presence of hydrogen chloride and a catalytic amount of a catalyst selected from the group consisting of phosphorus pentoxide, and compositions in the P_2O_5–H_2O system containing at least 84% by weight total phosphorus calculated as phosphorus pentoxide, at a temperature of about 40° to 120° C. and at atmospheric pressure.

3,294,851

SEPARATION OF PRIMARY AND SECONDARY HYDROCARBON CHLORIDES

Norman R. Boebel, Walnut Creek, and Rupert C. Morris, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,223
3 Claims. (Cl. 260—682)

1. The process for resolving a mixture consisting essentially of primary and secondary alkyl chlorides having from ten to thirty carbon atoms in the molecule, which consists essentially of contacting said mixture with a dialkylamine having up to four carbon atoms in each alkyl group, at a temperature of from about 20° to about 350° C., in a molar ratio of said dialkylamine to said primary alkyl chloride of from about 2:1 to about 60:1, thereby selectively reacting said primary alkyl chloride with said dialkylamine with the formation of a reaction mixture comprising the tertiary alkylamine corresponding to said primary alkyl chloride with said dialkylamine, and separating said tertiary alkylamine from said reaction mixture.

3,294,852

PROCESS FOR PREPARING FLUORINE CONTAINING ORGANIC COMPOUNDS

Martino Vecchio, Italo Cammarata, and Luciano Lodi, Milan, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy

No Drawing. Filed July 11, 1963, Ser. No. 294,289
4 Claims. (Cl. 260—653.7)

1. The method of preparing chloro-fluorinated methane comprising successively passing a mixture of hydrogen fluoride, chlorine and methane, together with a mixture of halogenated hydrocarbons selected from the group consisting of fluorinated, chlorinated, and chloro-fluorinated hydrocarbons having a maximum of two carbon atoms, through two reaction zones, one of said zones being maintained in the temperature range of 200°–350° C. and containing a catalyst selected from the group consisting of fluorides and oxides of a metal from the group of chromium, cobalt, nickel, aluminum, thorium fluorinated alumina; activated carbon impregnated with a metal fluoride from the group consisting of nickel, aluminum, thorium, zirconium, palladium and rare earth fluorides and mixtures thereof, and the other of said zones being maintained in the temperature range of about 350°–500° C. and containing activated carbon.

3,294,863

SELECTIVE HYDROGENATION OF TRANS,CIS-1,5-CYCLODECADIENE TO CIS-CYCLODECENE

Joseph T. Arrigo, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 4, 1966, Ser. No. 520,489
7 Claims. (Cl. 260—666)

1. A process for the preparation of cis-cyclodecene which comprises reacting hydrogen and trans,cis-1,5-cyclodecadiene under hydrogen pressure and at a temperature of from about 0° C. to about 75° C. in contact with the reaction product of a reducible nickel compound and an alkali metal borohydride.

3,294,864

CYCLIC OCTENE PRODUCTION

Lynn H. Slaugh, Pleasant Hill, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

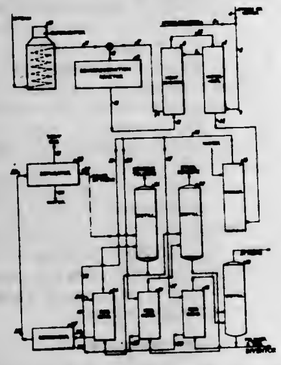
No Drawing. Filed Apr. 23, 1964, Ser. No. 362,198
13 Claims. (Cl. 260—666)

1. The process for the production of cyclic octenes by contacting in a reaction zone cyclooctadiene and metal hydride containing from 1 to 2 metals, at least one of which is selected from the group consisting of alkali and alkaline earth metal, introducing sufficient molecular hydrogen to provide a hydrogen pressure of from 0 p.s.i.g. to about 3500 p.s.i.g., and maintaining the mixture obtained thereby at a temperature from about 50° C. to about 350° C.

3,294,855
CYCLOHEXADIENE PRODUCTION
Lynn H. Slaugh, Pleasant Hill, and John H. Raley, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 19, 1964, Ser. No. 404,918
5 Claims. (Cl. 260—666)

1. The process of producing a cyclohexadiene product by contacting a mononuclear aromatic hydrocarbon of from 6 to 20 carbon atoms, selected from benzene and benzene of from 1 to 2 alkyl substituents, with lithium and ammonia, in the liquid phase, in the substantial absence of hydrolytic agent other than ammonia, at a temperature from about 10° C. to about 135° C., in a reaction mixture consisting essentially of said aromatic hydrocarbon, said lithium and said ammonia.

3,294,856
PROCESS FOR PREPARATION AND PURIFICATION OF STYRENE
Harold A. Hoehne, Jr., New Canaan, Conn., assignor to Halcon International Inc., a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 343,193
4 Claims. (Cl. 260—669)

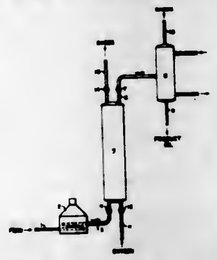


1. In a process for the production of styrene by the dehydrogenation of ethyl benzene in the presence of steam wherein the reactor effluent contains steam and organic material including styrene, and wherein the styrene is separated from the reactor effluent by distillation, the improvement which comprises: indirectly contacting at least portion of the gaseous reactor effluent with a liquid stream from said distillation so as to condense the steam, but not a substantial amount of said organic material, in said reactor effluent, thereby providing distillation heat for said distillation.

3,294,857
PROCESS FOR PRODUCING HIGH-PURE AROMATIC HYDROCARBONS
Hiroshi Tabuchiya and Hideo Tanji, Sendai, Miyagi, Japan, assignors to Yawata Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Apr. 8, 1964, Ser. No. 358,404
Claims priority, application Japan, Apr. 17, 1963, 38/19,691
10 Claims. (Cl. 260—674)

1. A process for producing high purity aromatic hydrocarbons which comprises thermally cracking crude hydrocarbon oils containing predominantly aromatic hydrocarbons, said hydrocarbon oils containing almost no paraffinic hydrocarbons and naphthenic hydrocarbons having above 9 carbon atoms as impurities, at temperatures of 500–800° C., at a contact period above 0.01 second, and at normal pressure or a raised pressure, in the presence of a gas selected from the group consisting of hydrogen, a hydrogen-containing gas and steam, with the addition of at least a member selected from the group consisting of paraffinic hydrocarbons and naphthenic hydrocarbons having above 9 carbon atoms thereby cracking the non-aromatic hydrocarbons initially present along with those added, without affecting the benzene ring, into products having boiling points below those of said aromatic hydrocarbons, and separating high-purity aromatic hydrocarbons.

3,294,858
SELECTIVE CONVERSION OF NORMAL PARAFFINS
Roger M. Butler and Jackson Eng, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware
Original application June 13, 1958, Ser. No. 741,906. Divided and this application Feb. 28, 1963, Ser. No. 267,376
5 Claims. (Cl. 260—683)



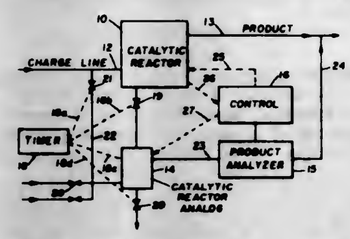
1. An improved process for selectively removing normal paraffin hydrocarbons from a hydrocarbon oil boiling between about 100° and about 750° F. which comprises contacting said oil in vapor phase with a crystalline metallic alumino-silicate having uniform port spaces of about 5 Angstrom units and concomitantly purging hydrocarbon fragments from the said pores of the crystalline metallic alumino-silicate with a gas having a molecular diameter less than about 5 Angstrom units at a temperature of from about 800 to about 1000° F. in a contacting zone, said gas selected from the group consisting of hydrogen, nitrogen, carbon dioxide and inert gas, withdrawing oil vapor containing olefins formed by the selective conversion of normal paraffins from said zone, continuing said contacting until the vapor withdrawn has an undesirably high normal paraffins content, and thereafter regenerating said metallic alumino-silicate by contact with an oxygen-containing gas at elevated temperature.

3,294,859
MULTICOMPONENT REACTION ANALYSIS AND CONTROL
Charles D. Prater, Pitman, and James Wei, Sewell, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,116
10 Claims. (Cl. 260—683.2)

9. In an operation where mixtures involving *n*-constituents are processed to produce output compositions under controlled process conditions wherein the relative amounts of said *n*-constituents of each of *n*—1 different starting mixtures are known to represent compositions along straight line reaction paths leading to equilibrium and which are orthogonal one with respect to the other in composition space, the method of controlling the constants which define the rate of change of one constituent to another in the course of said process which comprises measuring the relative proportions of said *n*-constituents at at least two points along one reaction path other than said straight line reactions paths to identify the ratios of reaction rates for all said *n*-constituents relative to one of said *n*-constituents, in response to said measuring, generating functions representative of the relative rate constant matrix K' for analysis of interactions between said *n*-constituents under said conditions by forming

$$K' = X \wedge' X^{-1}$$

where:
X is a matrix of the *n*-constituents of said composition at equilibrium and of said starting mixtures,



$\wedge'$ is a diagonal matrix of said ratios of reaction rates, and
X^{-1} is the inverse matrix of the matrix X, and, controlling said process conditions in response to said functions.

3,294,860
CATALYST AND PROCESS FOR OLEFIN POLYMERIZATION
John T. Left, Stuart S. Noblitt, and William B. York, Tulsa, Okla., assignors to Sunray DX Oil Company, a corporation of Delaware
No Drawing. Filed Mar. 22, 1962, Ser. No. 181,771
14 Claims. (Cl. 260—683.15)

2. A catalyst useful for the polymerization of olefins which consists essentially of a reaction product obtained by reacting at a temperature of about 500 to 700° F. for a period of about 0.01 to 10 hours a reactant combination selected from the group consisting of:
(a) An aluminum alkoxide with a boron alkyl;
(b) An aluminum alkoxide with an alkyl borate;
(c) Aluminum phosphate with a boron alkyl;
(d) Aluminum citrate with a boron alkyl;
(e) An aluminum alkoxide with sodium borate;
(f) Aluminum acetylacetonate with a boron alkyl;
(g) An aluminum alkoxide with boric anhydride;
(h) An aluminum alkoxide with boric acid; and
(i) Aluminum silicofluoride with a boron alkyl; with the molar ratio of the said boron reactants to the said aluminum reactants being in the range from about 0.01:1 to 100:1.

3,294,861
FABRIC OF IMPROVED SOLVENT RINGING PROPERTIES
Billy G. Simpson, Greensboro, N.C., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed June 1, 1964, Ser. No. 371,986
4 Claims. (Cl. 260—827)

1. A composition of matter consisting essentially of a mixture of
(1) a curable methylpolysiloxane and
(2) a copolymer of
(a) N-vinyl pyrrolidone and
(b) a material selected from the group consisting of styrene, vinyl acetate and alkyl esters of acrylic acid,
the proportions of (a) and (b) in (2) being from 10:90 to 90:10 by weight and the proportions of (1) and (2) being from 1 part (1) per 10 parts (2) to about 1 part (1) per part (2) based on parts by weight.

3,294,862
POLYCARBONATE RESINS MODIFIED WITH NOVOLAC POLYMERS OR COUMARONE-INDENE POLYMERS
Robert J. Piccoletta, Stockbridge, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 20, 1962, Ser. No. 246,969
12 Claims. (Cl. 260—829)

1. A resin composition comprising
(1) a high molecular weight aromatic polycarbonate resin and
(2) from about 5 to about 40% by weight of a modifier based on the weight of the polycarbonate and said modifier selected from the class consisting of
(a) a linear novolac polymer which is soluble in methylene chloride and which is an ortho-ortho alkylidene bridged novolac polymer based on the weight of the polycarbonate and said novolac polymer;
(b) an acetylated linear novolac polymer wherein all of the available hydroxyl groups are acetylated based on the weight of the polycarbonate and said novolac polymer;
(c) a phosgenated ortho-ortho novolac polymer;
(d) a coumarone-indene polymer; and
(e) a phenyl modified coumarone-indene polymer.

3,294,863
1,2-BIS(EPOXYALKYL)CYCLOBUTANE-POLYEPOXIDE COMPOSITION
William De Acetis, Berkeley, and Roy T. Holm, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 29, 1963, Ser. No. 284,913
5 Claims. (Cl. 260—830)

1. A composition comprising 1,2-bis(epoxyalkyl)cyclobutane wherein each epoxyalkyl group contains from 2 to 3 carbon atoms and a polyepoxide having a plurality of vic-epoxy groups, the amount of the 1,2-bis(epoxyalkyl)cyclobutane varying from 1% to 90% of the combined mixture.

3,294,864
POLYOLEFINS BLENDED WITH AMINE-EPOXIDE CONDENSATE
Gabriel Karoly, Elizabeth, Allan Noshay, Fanwood, Fritz B. Mariotschaffel, Berkeley Heights, and Albin F. Turbak, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Oct. 5, 1962, Ser. No. 228,754
4 Claims. (Cl. 260—836)

1. A spinnable composition of matter comprising a blend of 80–99 weight percent of a C_7–C_{12} poly alpha monoolefin with 20–1 weight percent of a linear condensate consisting essentially of the reaction product of vinylcyclohexene dioxide and a secondary polyamine compound.

3,294,865
CURING OF EPOXY RESINS WITH POLYCARBOXYLATES, POLYHYDRIC PHENOLS OR POLYHYDRIC ALCOHOLS AND, AS AN ACCELERATOR, AN ALKALI METAL SALT
Herbert P. Price, Louisville, Ky., assignor to Celanese Coatings Company, Inc., a corporation of Delaware
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,845
10 Claims. (Cl. 260—837)

1. A heat curable composition of matter comprising
(A) a polyepoxide having a 1,2 epoxy equivalency greater than one and an epoxide equivalent weight of about 50 to 4000,
(B) a cross-linking agent selected from at least one member of the group consisting of
(a) polycarboxylic acids,
(b) polycarboxylic acid anhydrides,

(c) polyhydric phenols containing no more than about 12 phenolic hydroxyls per mol, and
(d) polyhydric alcohols in admixture in a ratio of 0.5 to 1 equivalent of the acids and anhydrides per epoxide equivalent of the polyepoxide and 0.1 to 1 equivalent of the phenols and alcohols per epoxide equivalent of the polyepoxide, and

(C) as a curing accelerator, from 0.05 to 1 weight percent based on the total weight of the polyepoxide and cross-linking agent of a salt selected from at least one member of the group consisting of
(a) sodium, potassium, lithium and ammonium bromides, iodides, and thiocyanates, and
(b) lithium and ammonium chlorides.

4. The composition of claim 1 wherein the polyepoxide is a glycidyl polyether of a polyhydric phenol, wherein the acid is a copolymer of acrylic acid, ethyl acrylate and vinyl toluene and wherein the salt is potassium thiocyanate.

3,294,866
NON-HEAT-REACTIVE, HIGHER-ALKYLPHENOL RESINS AS RUBBER TACKIFIERS
Anthony C. Sobisatzo, Kendall Park, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 18, 1963, Ser. No. 273,816
13 Claims. (Cl. 260—845)

1. A composition comprising a rubber selected from the group consisting of:

polybutadiene
butadiene-styrene copolymers
polyisoprene
polychloroprene
ethylene-propylene-diene terpolymers
natural rubber, and
isobutylene-isoprene copolymers

and as a tackifier therefor from about two to about twenty parts by weight per hundred parts rubber of a fusible non-heat hardenable novolak resin of formaldehyde and a phenol having the formula:



wherein R is an alkyl group containing from about 9 to about 15 carbon atoms inclusive and said phenol is composed predominantly of branched chain para substituted alkyl groups.

3,294,867
MAR-RESISTANT POLYESTER RESINS
Alexander Christian Bristol, Stamford, and Allan Ellis Shaw, Norwalk, Conn., and William George Dolchert, Flushing, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 10, 1965, Ser. No. 454,714
9 Claims. (Cl. 260—868)

1. A composition of matter consisting essentially of a blend of (A) from about 60% to about 90%, by weight, of an unsaturated polyester resin consisting essentially of the esterification product of triethylene glycol and fumaric acid wherein the fumaric acid is substantially the only dicarboxylic acid present, (B) from about 3% to about 30%, by weight, of ethyl acrylate, (C) from about 3% to about 30%, by weight, of allyl methacrylate, and (D) from about 1% to about 20%, by weight, of triallyl cyanurate, wherein the percentages, by weight, are based on the total weight of the composition and wherein the total percentages, by weight, of (B), (C) and (D) is between about 10% and 40%, by weight, same basis.

7. A sheet of poly(methyl methacrylate) having bonded thereto a hard mar-resistant cross-linked unsaturated polyester resin composition consisting essentially of the cured reaction product of (A) from about 60% to about 90%, by weight, of an unsaturated polyester resin consisting essentially of the esterification product of triethylene glycol and fumaric acid wherein the fumaric acid is substantially the only dicarboxylic acid present, (B) from about 3% to about 30%, by weight, of ethyl acrylate, (C) from about 3% to about 30%, by weight, of allyl methacrylate, and (D) from about 1% to about 20%, by weight, of triallyl cyanurate, wherein the percentages, by weight, are based on the total weight of the composition and wherein the total percentages, by weight, of (B), (C) and (D) is between about 10% and 40%, by weight, same basis.

3,294,868
POLYPROPYLENE BLENDED WITH BUTADIENE-STYRENE BLOCK COPOLYMER
James E. Pritchard, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 4, 1964, Ser. No. 364,828
2 Claims. (Cl. 260—876)

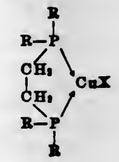
1. A blend of polypropylene and a block copolymer of butadiene and styrene, said blend comprising from 3 to 35 weight percent of said block copolymer and the remainder crystalline polypropylene; said polypropylene having a density in the range 0.900 to 0.920, a flexural modulus in the range 100,000 to 250,000, and a melt flow in the range 1 to 15; said block copolymer containing from 10 to 30 weight percent bound styrene, at least 80 percent of which is in the form of a homopolymeric polystyrene block, as determined by oxidative degradation, and an inherent viscosity in the range 0.1 to 2.

3,294,869
CROSS-LINKING OF ATACTIC POLYPROPYLENE AND ATACTIC COPOLYMERS OF PROPYLENE
Anderson E. Robinson, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Dec. 26, 1957, Ser. No. 705,104
7 Claims. (Cl. 260—878)

1. The process which comprises contacting a mixture of a polymeric material of the group consisting of atactic polypropylene and atactic ethylene-propylene copolymers and as the sole polymerizable monomeric material a modifier of the group consisting of polyallyl esters of cyanuric acid, diallyl esters of aromatic and aliphatic dibasic carboxylic acids, polyallyl ethers of polyhydric alcohols, symmetrical divinyl hydrocarbons in which the vinyl groups are separated from each other by at least 3 carbon atoms, biallyl and allyl methacrylate in an amount in the range of 0.5 to 20% under free-radical catalysis at a temperature in the range of −10° to 400° F.

3,294,870
ORGANOPHOSPHORUS-COPPER COMPLEX COMPOUNDS AND THEIR USE FOR PRODUCING FIRE RETARDANT PLASTICS
Martin Grayson and Allan Ellis Shaw, Norwalk, and Helen Currier Gilkeson and Mary Ester Castellion, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 24, 1964, Ser. No. 354,433
9 Claims. (Cl. 260—893)

1. A flame retardant composition comprising a thermoplastic polymer produced from at least one ethylenically unsaturated monomer and a flame retarding amount of a compound having the formula



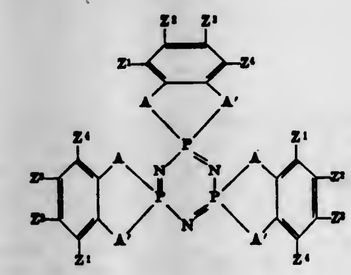
wherein X is a monovalent anion selected from the group consisting of halide, carboxylate, nitrate and phenate anions and R is selected from the group consisting of aryl and β-cyanoethyl radicals.

3,294,871
POLY(TETRAFLUOROETHYLENE)-THERMOPLASTIC RESIN COMPOSITION
Joseph Michael Schmitt, Bridgefield, and Leo Augustine Landers, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Sept. 15, 1964, Ser. No. 396,640
10 Claims. (Cl. 260—900)

1. A method for the production of a poly(tetrafluoroethylene)thermoplastic resin molding composition which consists essentially of blending a normally rigid thermoplastic resin selected from the group consisting of acrylate and methacrylate polymers, styrene polymers, polycarbonates, aldehyde polymers, cellulosic polymers, vinyl halide polymers and polyamides with a poly(tetrafluoroethylene) latex having a solids content of from about 30% to about 80%, by weight, for at least about one minute while shearing the poly(tetrafluoroethylene) into finely-divided microfibrous and submicrofibrous particles having diameters ranging from about 100 A. to about 2 microns and thereby producing a well dispersed, substantially homogeneous mixture of said poly(tetrafluoroethylene) and said thermoplastic resin, and recovering the resulting molding composition by removing the volatiles contained in the blended resins, the total amount of poly(tetrafluoroethylene) in the final molding composition ranging from about 10% to about 20%, by weight.

3,294,872
PRODUCTS OF THE REACTION OF PHOSPHONITRILIC CHLORIDE TRIMER WITH CATECHOL
Harry Rex Allcock, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 10, 1964, Ser. No. 381,901
2 Claims. (Cl. 260—927)

1. A compound of the formula



wherein Z^1 through Z^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, halogen, lower alkoxy, nitro, cyano, phenoxy, and halogeno lower alkyl, and A and A′ each represent a member selected from the group consisting of oxygen and sulfur.

3,294,873
PHOSPHORYLATED POLYETHER POLYOLS
Martin R. Lutz, Gene Newlin, and Hugo Stange, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 12, 1961, Ser. No. 137,521
3 Claims. (Cl. 260—929)

1. A diorgano phosphorylated polyether polyol comprising the condensation product of

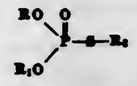
(1) a liquid polyether polyol having an average molecular weight of 200–5,000 derived from the reaction of
(a) one hydroxyl equivalent of a polyol selected from the group consisting of polyhydroxyalkanes containing 3–6 hydroxyl groups and carbohydrates containing 5–8 hydroxyl groups with
(b) at least one equivalent weight of an alkylene oxide containing 2–4 carbon atoms, and

(2) a diorgano phosphorochloridate having the formula $(X_nRO)_2P(O)Cl$ in which X is selected from the group consisting of chlorine and bromine, n is 0–4 and R is an organic radical selected from the group consisting of alkyls containing 1–5 carbon atoms, phenyl and tolyl,

said condensation product containing at least 2% by weight phosphorus and at least two hydroxyl groups per molecule, and having a viscosity of less than 4,000 poises at 25° C.

3,294,874
O-ALKYL-O-CYCLOALKYL-S-ALKYLTHIOL-PHOSPHORIC ACID ESTERS
Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Jan. 22, 1963, Ser. No. 253,070
Claims priority, application Germany, Jan. 24, 1962, F 36,839
6 Claims. (Cl. 260—969)

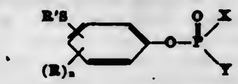
1. A compound of the formula



wherein R stands for cyclohexyl, R_1 stands for lower alkyl having up to 4 carbon atoms and R_2 stands for a member selected from the group consisting of lower alkyl mercapto substituted lower alkyl, phenyl substituted lower alkyl, chlorophenyl substituted lower alkyl, lower alkyl mercapto phenyl substituted lower alkyl, lower alkyl and lower alkyl mercapto-phenyl substituted lower alkyl, phenylmercapto substituted lower alkyl and chloro phenyl mercapto substituted lower alkyl, lower alkyl in each case having up to 4 carbon atoms.

3,294,875
PHOSPHORIC ACID ESTERS, ESTER AMIDES OR ESTER DIAMIDES
Karl Maumus, Leverkusen, Kaalfried Wedemayer, Cologne-Stammheim, and Günter Untenstein-Bär, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Mar. 12, 1963, Ser. No. 264,716
Claims priority, application Germany, Mar. 15, 1962, F 36,209
16 Claims. (Cl. 260—969)

1. A compound of the formula



wherein R and R′ stand for lower alkyl having up to 4 carbon atoms, X stands for a member selected from the group consisting of lower alkoxy, lower alkyl amino and lower dialkyl amino, alkyl and alkoxy in each case having up to 4 carbon atoms, Y stands for a member selected from the group consisting of lower alkyl amino and lower dialkyl amino, alkyl in each case having up to 4 carbon atoms and n stands for 2.

3,294,876
PREPARATION OF DITHIOPHOSPHORUS COMPOUNDS
Erik Rasti, Minden, Kreis, assignor to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Original application Jan. 26, 1962, Ser. No. 169,898, now Patent No. 3,192,272, dated July 6, 1965. Divided and this application Aug. 14, 1963, Ser. No. 301,990
17 Claims. (Cl. 260—972)

1. A process of preparing dithiophosphorus compounds which comprises reacting a member of the group consisting of PCl_3 and $RPCl_2$, where R is selected from the group consisting of lower alkyl, phenyl, lower alkylphenyl and chlorophenyl with a disulfide selected from the group consisting of bis alkyl disulfides, bis aryl disulfides and mixed alkyl aryl disulfides in the presence of aluminum chloride, reacting the resulting complex with water and separating the dithiophosphorus compound.

3,294,877
VAPOR PHASE SINTERING PROCESS
Joseph P. Hammond, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Feb. 15, 1966, Ser. No. 529,175
9 Claims. (Cl. 264—5)

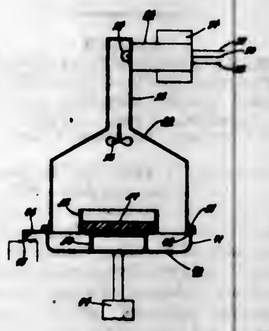
1. An improved method of forming a uranium carbide compact to a desired density which comprises sintering said compact in the presence of and in contact with a vaporized metal atmosphere, said vaporized metal being selected from a metal whose oxide has a higher negative free energy of formation than uranium dioxide, and being further characterized in that it has a vapor pressure of at least 10^{-5} millimeters mercury at the sintering temperature.

3,294,878
METHOD OF MOLDING MAGNESIUM FLUORIDE
Edward Cornish, Jr., Stanley E. Hatch, Le Roy S. Ladd, and William P. Parsons, all of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original application Oct. 20, 1959, Ser. No. 849,571. Divided and this application Mar. 20, 1961, Ser. No. 100,480
4 Claims. (Cl. 264—1)

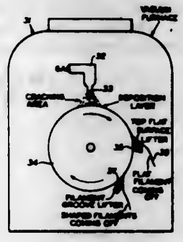
1. The method of forming a homogeneous solid of molded magnesium fluoride having a density in the range of from 99% up to and including theoretical density which comprises molding magnesium fluoride powder in an inert atmosphere under a pressure within the range of from 15,000 to 25,000 pounds per square inch and at a temperature within the range of 1380° F. to 1420° F.

3,294,879
METHOD FOR MAKING POLYURETHANE FOAM
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 30, 1962, Ser. No. 234,084
1 Claim. (Cl. 264—26)

In a method for making an improved polyurethane foam and substantially eliminating lattice stress patterns therein from polyurethane foam forming ingredients including as basic exothermic reactants an organic polyisocyanate and a polymer that will cross link with said polyisocyanate to form a polyurethane together with a volatile liquid foam forming ingredient, the steps of mixing the polyurethane foam forming ingredients and immediately thereafter prior to any substantial polymerization, uniformly heating and substantially fully expanding the exothermic reaction mixture throughout substantially the entire mass by exposure of said mass to electromagnetic energy within the band width of from 10^7 to 10^{12} cycles per second at a sufficient rate to supply at least the total latent heat of vaporization of the volatile liquid foam forming ingredient to substantially fully expand the foam forming materials before substantial polymerization thereof so that the polymerization progresses undisturbed.



3,294,880
CONTINUOUS METHOD OF MANUFACTURING ABLATIVE AND REFRACTORY MATERIALS
Michael Turkat, Bayside, N.Y., assignor, by mesne assignments, to Space Age Materials Corp., Woodside, N.Y., a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 361,521
6 Claims. (Cl. 264—29)



1. A method of forming continuous lengths of a pure crystalline filament of pyrolytic graphite, pyrolytic carbides and combinations thereof, comprising the steps of cracking hydrocarbon gases in a vacuum furnace at temperatures in the range of about 1900°–2300° C., depositing the decomposition products thereof on a rotating mandrel having filament peeling means in engagement therewith and continuously peeling said decomposition products from said rotating mandrel in the form of a continuous filament said mandrel having helical grooves formed thereon.

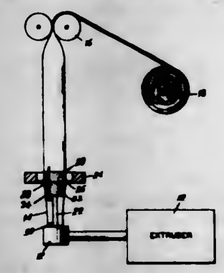
3,294,881
DIFFERENTIAL PRESSURE FORMING AND TRIM OPERATIONS
Joseph E. Wedlinger, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,739
19 Claims. (Cl. 264—92)

6. Procedure, comprising steps of forming sheet material into multi-dimensional configuration by use of differential pressure applied on an inexpensive forming buck adapted for passage of gaseous medium such as air therethrough, moving a cutting member along a channel guide

having an irregular though predetermined path for instantaneous and continuous material edged trimming regardless of shape and irregular contours, and removing the material made to pattern without need, for hard dies as well as any scissors cutting.



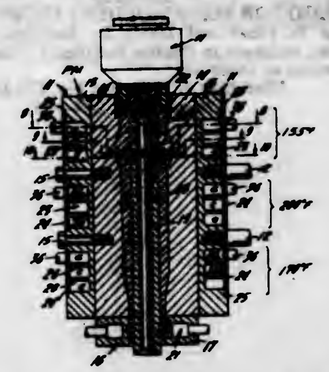
3,294,882
FILM FORMING METHOD AND APPARATUS
Hans Harald Lutzmann and Garland Eugene Raley, Terre Haute, Ind., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 24, 1963, Ser. No. 318,687
12 Claims. (Cl. 264—95)



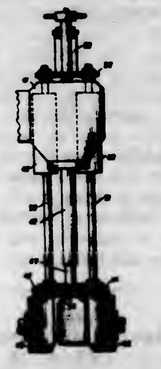
1. Method for the production of thermoplastic tubing comprising extruding from an annular die thermoplastic tubing in the formative plastic state, drawing the tubing over a cooling means spaced from the die and positioned interiorly of the tubing, supporting the tubing passing over the cooling means having a thin adherent coating of abrasion resistant material with a plurality of spaced protuberances extending laterally from the core of the cooling means and having walls and plateaus of a size and number sufficient to carry said tubing off the core, maintaining the tubing in actual contact with said plateaus and maintaining a layer of air between the tubing and the core of the cooling means.

3,294,883
CONTROL OF MATERIAL DISTRIBUTION IN MOLDED PLASTIC ARTICLES
Eugen Franz Polka, Algonquin, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Original application Oct. 30, 1962, Ser. No. 234,136, now Patent No. 3,191,225, dated June 29, 1965. Divided and this application Feb. 4, 1963, Ser. No. 430,272
4 Claims. (Cl. 264—97)

1. The method of forming a plastic container of non-uniform geometry, comprising the steps of injection molding in a closed annular mold an elongated tubular parison from a mass of heat-softened plastic material, subjecting said parison while in a hot and pliable condition to a three-dimensional temperature gradient by simultaneously bringing into close proximity to selected longitudinally spaced portions of the parison separate heat transfer media at independently controlled thermal conditions, maintaining said temperature gradient for a predetermined period of time calculated to render the plastic material in certain ones of said portions of the parison more viscous than others, transferring the thus treated parison to a blowing mold; and radially expanding said parison in said blowing mold so that the plastic material in the wall sections of the finally shaped container corresponding to said selected portions of said parison will assume a predetermined distribution.



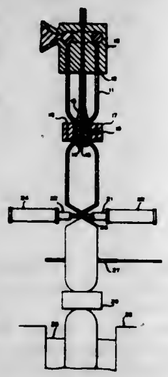
3,294,884
MANUFACTURE OF HOLLOW ARTICLES OF THERMOPLASTIC SYNTHETIC POLYMERS
Stefan Fischer and Rainer Fischer, both % Anna-Schaft Johann Fischer, Lehnen, near Cologne, Germany
Original application Mar. 8, 1960, Ser. No. 13,448, now Patent No. 3,068,503, dated Aug. 14, 1962, Ser. No. 197,127 and this application May 11, 1962, Ser. No. 194,139
Claims priority, application Germany, Mar. 10, 1959, F 27,969; June 4, 1959, F 28,693
3 Claims. (Cl. 264—99)



1. The process of forming hollow objects, including the steps of extruding a length of hollow tubing downward about a mandrel having an extension of smaller diameter, closing a separable mold about said hollow-tubing, said mandrel and said extension so that a portion of the hollow object is formed between the mandrel and separable mold; admitting an inflating medium through said mandrel and its extension, to inflate said hollow tube within said separable mold thereby forming the remainder of the hollow object; after the hollow object is in a self-sustaining state, then withdrawing said mandrel from said formed position thereof out of said formed object within said closed mold while disposing the extension of said mandrel loosely

within said formed hollow object and said closed mold, and opening said separable mold thereby ejecting said hollow object.

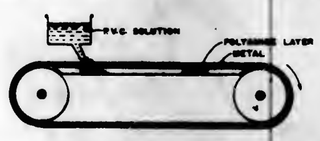
3,294,885
METHOD FOR BLOW MOLDING THERMOPLASTIC
Martin R. Chase and Doyle D. Butolph, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed May 9, 1963, Ser. No. 279,185
3 Claims. (Cl. 264—99)



1. A method of forming a bottle from polymer of a 1-olefin by blow molding which comprises extruding the molten polymer in the shape of a parison about an axially disposed mandrel, closing a neck-forming mold about a portion of said parison passing over said mandrel thereby pressing said portion between said neck-forming mold and said mandrel, cooling said portion to set same into the shape formed between said mold and mandrel, advancing said neck mold and parison portion beyond said mandrel, pressing together the walls of said parison at a point spaced from said neck mold while the polymer at said point is still in a hot, sealable condition thereby forming a seal between adjacent parison sections, cooling the polymer in the parison section between said neck mold and said seal below the crystalline freezing point of said polymer, reheating the cooled polymer in said section to within a few degrees below the crystalline melting point of said polymer, enclosing the thus reheated parison section within a bottle mold, introducing through the wall of said parison fluid pressure thereby inflating said section with internal fluid pressure against the walls of said bottle mold while said polymer is still in its reheated condition, cooling the polymer in said section to set the orientation produced on inflation, and ejecting the oriented plastic bottle from said bottle mold.

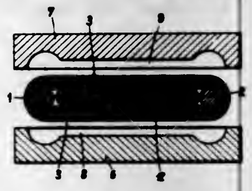
3,294,886
CASTING FILMS OR SHEETING OF POLYVINYL CHLORIDE
Gustav Loewenberg and Herbert Wagner, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Dec. 10, 1964, Ser. No. 417,484
Claims priority, application Germany, Dec. 13, 1963, B 74,667
2 Claims. (Cl. 264—166)

1. A process for the production of a casting substrate for the formation of polyvinyl chloride film having one side roughened which comprises: pouring a solvent solution of polyvinyl chloride in tetrahydrofuran containing 10 to 20% by weight of a lower alcohol having from 3 to 4 carbon atoms and from 3 to 10% by weight of water uniformly onto an endless metal band coated with a polyamide having recurring carbamoyl groups in the polymer chain; maintaining said solution in contact with said polyamide coating at an elevated temperature to



cause a roughening of said coating due to the dissolving action of said solution; evaporating the solvent; and stripping the formed film from the polyamide layer.

3,294,887
PROCESS FOR MANUFACTURING ELONGATED MEMBERS OF PLASTIC, PARTICULARLY OF SYNTHETIC RESIN, WHICH HAVE EYELIKE PORTIONS AND ARE REINFORCED BY INSERTS CONSISTING PREFERABLY OF FIBER MATERIALS
Max Altermatt, Zullwil 54A, Solothurn, Switzerland
Filed Nov. 9, 1961, Ser. No. 151,389
Claims priority, application Austria, Nov. 15, 1960, A 8,489/60; Aug. 25, 1961, A 6,543/61
4 Claims. (Cl. 264—329)



1. A process of manufacturing plastic members having reinforcing inserts and eyelets, said process comprising the steps of applying the reinforcing insert in the form of an endless loop onto two spaced apart cores; increasing the distance between said cores to pretension said endless loop; placing said endless loop only after it has been pretensioned in pretensioned condition in the cavity of a composite mold; introducing plastic material into said mold cavity; closing the mold and engaging, during closing of the mold, portions of said endless loop between said cores to press said portions toward each other and thereby further tension said loop; and curing the plastic material.

3,294,888
PROCESS FOR DECORATING CANDLES AND THE LIKE
Paul A. Lindahl, 8005 W. 86th St., Overland Park, Kans. 66212
Filed Feb. 3, 1964, Ser. No. 342,866
8 Claims. (Cl. 264—246)



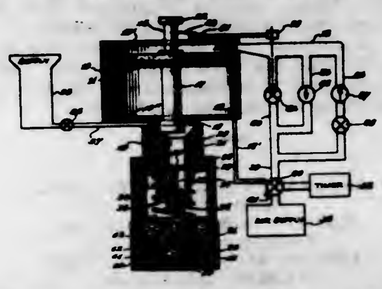
1. The process of applying a raised decoration of wax or the like to a candle or other base object formed of wax or the like comprising:
(a) forming said decoration of a wax material having a melting point higher than that of the material of which said base object is formed,

(b) heating said decoration to a temperature above the melting point of said base object but below the melting point of said decoration, and
(c) pressing said decoration against said base object, whereby said decoration is firmly bonded to said base object.

3,294,889
METHOD OF MAKING A PRINTING CYLINDER
Robert H. Dorsch and Robert V. Hershey, Neenah, and Henry W. Hoffbauer, Schofield, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 26, 1963, Ser. No. 261,867
3 Claims. (Cl. 264—255)

1. A method for preparing a multi-layer rotogravure cylinder blank which comprises casting on the smooth, cylindrical inner surface of a seamless casting mold a thin, even layer of a solid photosensitive polymeric composition, casting under centrifugal pressure at least one back-up layer of a casting resin in intimate, over-all adhering contact with said photosensitive composition layer, centering within the cylindrical interior of said mold a shaft of lesser diameter than the interior of the doubly coated mold, filling the space between said shaft and said back-up resin layer with a filler layer of a casting resin, setting said filler layer, chilling the mold assembly, and removing from the mold the composite, multi-layer rotogravure cylinder blank having a thin layer of photosensitive polymeric composition as the surface layer thereof.

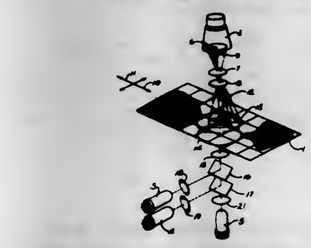
3,294,890
METHOD OF MOLDING PLASTIC MATERIAL TO A DEFORMABLE ARTICLE
Dina Alma J. Davis, Wheaton, Ill., assignor to Hermetic Cell Co., Inc., Wheaton, Ill., a corporation of Connecticut
Original application June 1, 1962, Ser. No. 200,548, now Patent No. 3,260,444. Divided and this application Jan. 18, 1965, Ser. No. 426,301
6 Claims. (Cl. 264—272)

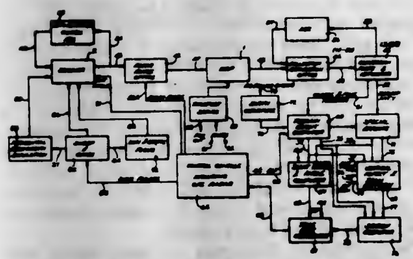


1. The method of molding a material to a deformable article comprising the steps of: placing a deformable article in a mold; admitting material in a plastic state, less than sufficient to fill the mold, into said mold at a first pressure, sufficient to damage said article; and, admitting further material in a plastic state, sufficient to fill the mold, into said mold at a continuously decreasing pressure.

ELECTRICAL

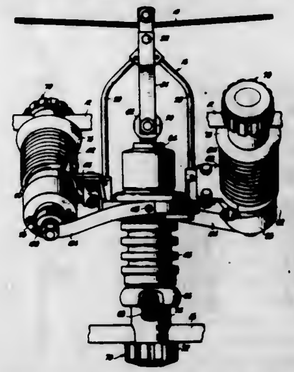
3,294,891
LAND MASS SIMULATOR
John J. Antal and Melvin E. Svenberg, both of Claremont, Calif., assignors, by mesne assignments, to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,128
2 Claims. (Cl. 35—10.4)





1. A radar land mass simulator apparatus comprising:
a unitary multicolor map having radar reflectance information encoded therein as a function of a first color and terrain elevation information encoded therein as a function of a second color;
means for scanning said map with a single beam of white light to generate a multicolor light output beam containing said encoded information;
first and second photoelectric means responsive to corresponding colors in said light output beam for generating video signals to be used in a simulated display of terrain.

3,294,892
THREE-PHASE CLUSTER MOUNTED LIGHTNING ARRESTOR
Thomas E. Curtis, Centralia, Mo., assignor to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed July 12, 1965, Ser. No. 471,101
10 Claims. (Cl. 174—2)



1. In a power transmission system provided with three current-carrying conductors disposed in a triangular pattern, the combination with said conductors of:
a base;

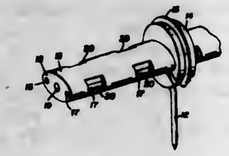
three elongated arrester units each having a pair of opposed ends and extending from said base in directions to dispose their outer ends in a triangular configuration; said

support structure adapted for connection to an earth ground, said structure being coupled with said base and positioning the latter in said pattern,

said base being provided with means securing said units thereto with the longitudinal axes thereof spaced apart longitudinally of said conductors,

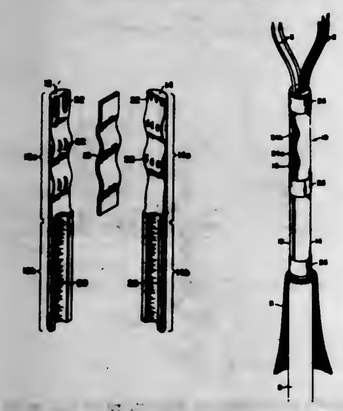
each of said units being provided with a first terminal at the outer end thereof connecting the unit with a corresponding conductor, and a second terminal electrically coupled with said structure.

3,294,896
APPARATUS FOR CONTROLLING BIRD NUISANCE
Robert V. Shaffer, 26 Erskine Ave., Youngstown, Ohio 44512
Filed June 25, 1962, Ser. No. 204,845
2 Claims. (Cl. 174—70)



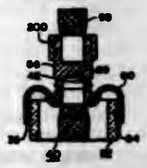
1. Apparatus for controlling a bird nuisance and comprising an elongated flexible cable having a dielectric body member and a pair of spaced electrical conductors positioned longitudinally in said flexible cable adjacent the opposite sides of said cable with oppositely disposed areas of each of said electrical conductors being exposed in longitudinally spaced notches formed in said dielectric body member of said cable.

3,294,894
MECHANICAL FASTENER FOR ELECTRICAL CABLES WITH AN INSERT HAVING MUTUALLY CONFORMING UNDULANT SURFACES
Stephen L. Bellman, Jr., North Falmouth, Mass., assignor to Woods Hole Oceanographic Institution, Woods Hole, Mass., a corporation of Massachusetts
Filed Sept. 15, 1964, Ser. No. 396,693
25 Claims. (Cl. 174—79)



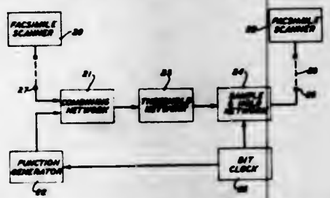
1. A fastener for a cable having a wire surrounded by a covering layer, comprising the combination of an insert having a plurality of sections with mutually conforming undulant surfaces and adapted for fitting about a length of the cable stripped of said covering, thereby imparting an undulant curvature to the wire, and means to grip the cable by applying radial pressure to the insert and to the contiguous covering of the cable.

3,294,895
SEMICONDUCTOR DEVICE WITH FLEXIBLE LEAD CONNECTION
Robert J. Reinigus, Latrobe, and Robert E. Shaw, Jeannette, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 29, 1964, Ser. No. 384,677
3 Claims. (Cl. 174—94)



1. In a semiconductor device in which one end of a flexible electrical lead is disposed in a cup-shaped electrical contact member of a given material, the improvement comprising; a collar of a material having a higher tensile strength, and a lower coefficient of thermal expansion than the given material disposed about the cup-shaped member, and both the collar and cup-shaped member being crimped about that end of the flexible lead disposed within the cup-shaped member.

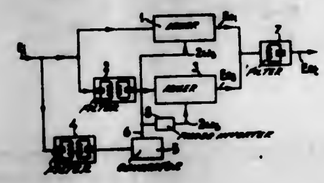
3,294,896
DIGITAL ENCODER FOR FACSIMILE TRANSMISSION
William Rae Young, Jr., Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 24, 1963, Ser. No. 297,464
11 Claims. (Cl. 178—6)



1. Encoding apparatus for image signals which comprises a source of analog image signals, means for generating threshold function signals, network means supplied with said threshold function signals and with said image signals for algebraically combining said function signals and said image signals, network means including amplitude threshold means for evaluating the amplitude of said combined signals in terms of a prescribed threshold, network means responsive to said evaluation for developing signals of a first binary state for combined signal levels above said prescribed threshold and signals of a second binary state for combined signal levels below said prescribed threshold, and means for coordinating the generation of said threshold function signals and the development of said binary signals.

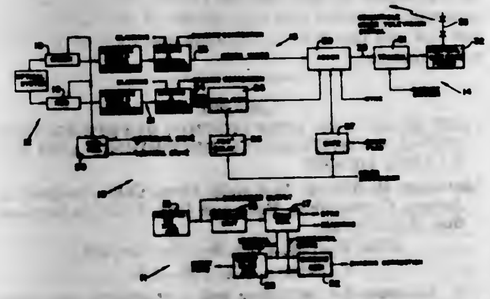
10. The method of developing a binary signal representative of an image scene that may be used to develop a multishade reproduction of the scene which includes the steps of developing analog signals representative of an image scene, establishing a threshold between two discrete image signal levels, varying the threshold according to a prescribed schedule, utilizing the scheduled threshold to establish two signal level regions, and developing binary signal representations of the two signal regions as a function of time.

3,294,897
CIRCUIT ARRANGEMENT IN A RECEIVER SUITED FOR THE RECEPTION OF A SIGNAL WHICH IS ENTIRELY OR PARTIALLY A SINGLE-SIDEBAND SIGNAL
Jan Dankbaar, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,761
Claims priority, application Netherlands, Jan. 11, 1963, 287,701
10 Claims. (Cl. 178—5.4)



1. A circuit for the reception of partially single-sideband signals comprising a source of said signals, and means for restoring the missing sideband of said signals, said means comprising first and second mixing means, means providing oscillations of twice the frequency of the carrier on which said signals are modulated, means applying said partially single-sideband signals to said first mixing means, means applying only the double-sideband portion of said signals to said second mixing means, means applying said oscillations to said first and second mixing means with opposite phases, and means for adding the uninverted outputs of said first and second mixing means to produce a double-sideband signal.

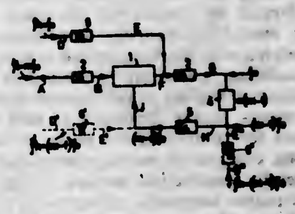
3,294,898
COMPATIBLE COLOR TELEVISION
Nathan Gold, Sharon, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,536
13 Claims. (Cl. 178—5.2)



1. A compatible color television system comprising:
(*a*) means for producing two color-separation images representing relatively long and relatively short visible wavelengths of light from a scene being televised;

(*b*) means to cause said color-separation images to be individually scanned simultaneously and in synchronism according to a given periodic program to produce two video signals each representative, at any instant, of the amount of light of a different one of said relatively long and short wavelengths of light emanating from the elemental area of the scene being scanned at any instant; at least the video signal representing the shorter wavelengths of light containing frequency components extending to at least about a frequency range required for transmission and reproduction of a monochrome television image;
(*c*) means to produce a subcarrier whose frequency is an odd multiple of half the line frequency of the system;
(*d*) means to modulate the video signal representative of the longer wavelengths of light on said subcarrier;
(*e*) means to generate a carrier associated with a preselected television channel;
(*f*) means to produce synchronizing signals of said subcarrier frequency displaced in phase from said subcarrier by a predetermined amount which will cause a three-color television receiver matrix to produce color-related output signals in the color range of relatively long wavelengths of light; and
(*g*) means to modulate on the carrier said synchronizing signals and, simultaneously, as the color-characterizing video signals thereon, signals representative of said shorter wavelengths of light and representative of the subcarrier modulated by signals representative of said longer wavelengths of light.

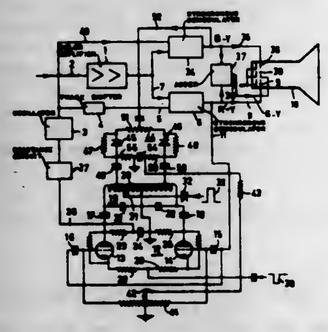
3,294,899
FREQUENCY-DIVIDING CIRCUIT ARRANGEMENT
Jan Davidse and Bernardus Hendrikus Josef Cornelissen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,916
Claims priority, application Netherlands, Sept. 12, 1962, 283,236
3 Claims. (Cl. 178—6.6)



1. A frequency divider circuit comprising a source of first signals to be divided, a mixing circuit having first and second input terminals, first channel circuit for applying said first signals to said first terminal, a positive feedback loop circuit connected between the output of said mixing circuit and said second terminal, said feedback loop circuit comprising means for multiplying signals in the output of said mixer circuit by a factor $m-1$ relative to said signals at said output of said mixer circuit having frequency $1/m$ times the frequency of said first signals, a source of starting signals of a frequency equal to the high

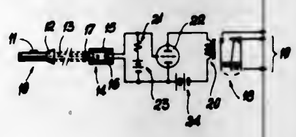
quency of signals at a predetermined point in said loop circuit, and starting channel means for applying said starting signals to said point, the transit time of said starting channel being substantially equal to the transit time of said first channel, plus the total transit time of said loop circuit divided by n, and minus the transit time of the portion of said feedback loop circuit between said point and said second terminal.

3,294,900
CIRCUIT FOR HUE CONTROL IN A COLOR TELEVISION RECEIVER
Gerrit Kool, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,469
Claims priority, application Netherlands, Nov. 29, 1962, 286,126; Sept. 9, 1963, 297,671
16 Claims. (Cl. 178—5.4)



1. In a color television receiver for receiving color television signals of the type in which two color signals are modulated in quadrature on a subcarrier wave, and synchronizing signals are provided between scanning lines, and wherein said synchronizing signals include subcarrier oscillations and have a black level, means for demodulating said television signals comprising first and second synchronous demodulator means, reference oscillator means for providing reference oscillations, means for applying said reference oscillations and television signals to said first and second synchronous demodulator means whereby the reference oscillations applied to said first synchronous demodulator means are in quadrature with the reference oscillations applied to said second synchronous demodulator means, means connected to said reference oscillator means for controlling the phase of said reference oscillations, comparator means, comprising first and second unilaterally conductive devices having control electrodes and output electrodes, a source of gating signals connected to said comparator means for rendering said comparator operative only during the time between scanning lines, means for applying the output of said first demodulator means to said comparator means for comparing the amplitude of the output signals of said first demodulator means during the occurrence of said subcarrier oscillations with the level of said black level to provide a control voltage, means for applying said control voltage to said means for controlling the phase of said reference oscillations, means for applying the output signals of said first demodulator means to said control electrodes of said unilaterally conductive device, an oscillatory circut connected between said output electrodes, said oscillatory circuit having a frequency that is a harmonic of the line flyback frequency of said television signals, means for damping said oscillatory circuit except during the time between scanning lines, and means connected to at least one of said output electrodes for providing said control voltage.

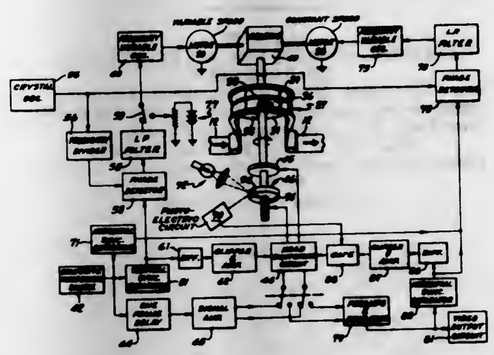
3,294,901
DEVICE FOR REMOTE CONTROLLING OF RADIO AND TELEVISION RECEIVERS
Ciro Stanghi, 21 Via Dante Pepe, Milan, Italy
Filed Apr. 3, 1963, Ser. No. 270,436
Claims priority, application Italy, Apr. 6, 1962, 6,919/62
1 Claim. (Cl. 178—6)



A device for remotely controlling the operation of a television receiver upon a viewer's command comprising, in combination, a television receiver including means for controlling operation thereof; a viewer commanded generator adapted to emit light radiations having wave lengths in the range of 3,000–12,000 Angstroms in a beam of radiations; a photoelectric sensitive element adapted to cause an electrical variation in a circuit connected thereto upon sensing of radiations having a wave length greater than the wave length of yellow light; a casing impervious to light enclosing said sensitive element and having a radiation input opening against which said beam of radiations is adapted to be directed by the viewer; color screen means in the path of said beam of radiations and located adjacent said element, said color screen means being constructed to let radiations of said greater wave lengths pass therethrough and to be substantially impervious to radiations of shorter wave lengths; light converging optical means for converging the beam of radiations reaching said radiation input opening onto said photoelectric sensitive element; a support member rotatably supported in a stationary structure and supporting said casing so as to be adapted during rotation thereof to align said input opening of said casing and said sensitive element therein with said beam of light radiations; an actuator circuit including relay means connected to said sensitive element and adapted to be actuated in response to said electrical variations produced by said sensitive element; and an electrical connection between said relay means of said actuator circuit and said means for controlling operation of said television receiver.

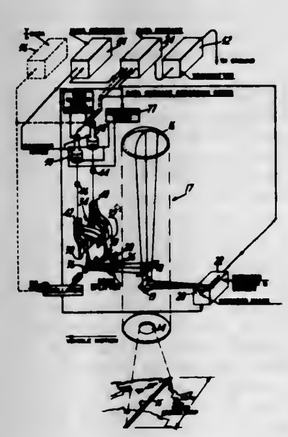
3,294,902
FAST, SLOW AND STOP MOTION REPRODUCTION USING LONGITUDINAL RECORDING AND ROTATING HEADS
Alexander R. Mazzy, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Dec. 30, 1963, Ser. No. 334,692
6 Claims. (Cl. 178—6.6)

6. A system for recording and reproducing successive frames of a video signal longitudinally on a magnetic tape comprising a plurality of magnetic head transducer means, means mounting said magnetic head transducer means for movement longitudinally along a recording track on the tape, tape positioning means for disposing a longitudinal section of the magnetic tape adjacent the magnetic heads, and means for controlling the longitudinal speed of the tape and the speed of the mounting means and for applying the video signals to the magnetic head transducer means to record the video signals in each frame on the



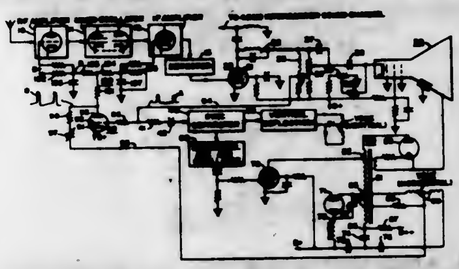
tape in the direction of its longitudinal movement while recording each successive frame in the order of its occurrence in the opposite direction.

3,294,903
ELECTRONIC RECONNAISSANCE SYSTEMS
Peter C. Goldmark, Stamford, John W. Christensen, New Canaan, and Bernard Erde, Stamford, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Apr. 19, 1961, Ser. No. 104,113
13 Claims. (Cl. 178—6.8)



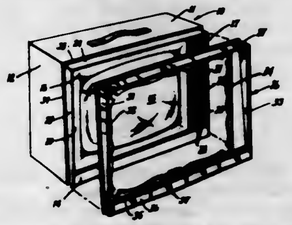
7. In reconnaissance apparatus, the combination of first optical means for viewing an area to be reconnoitered which is in relative motion thereto and for forming a moving visual line image of a portion thereof, means for immobilizing the moving visual line image, image transformer means disposed to receive a portion of said immobilized visual line image for separating said portion into series of line segments and for rearranging said segments into an image array in which the line segments are in stacked parallel relation, and electronic camera means disposed to receive said array on the face thereof for scanning the segments of said image array at a given rate to develop corresponding electrical video signals.

3,294,904
KEYED A.G.C. WITH VARIABLE REACTANCE FOR CONTROL OF KEYING PULSE AMPLITUDE
Joseph W. Percival, Columbia, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 14, 1963, Ser. No. 302,147
5 Claims. (Cl. 178—7.5)



1. A television receiver adapted to receive a television signal modulated by video signal components and periodic synchronizing-signal components, a signal channel including means for demodulating said television signal to obtain said video signal components and said synchronizing signal components, said synchronizing components defining a retrace interval, means for developing trigger pulses during said retrace interval, an automatic gain control circuit including an electric valve means, means applying said trigger pulses to said valve means including variable reactance means to vary the amplitude of said trigger pulses, and said valve means responsive to time coincidence of said trigger pulses and said synchronizing signal components to apply an automatic gain control signal to said receiver.

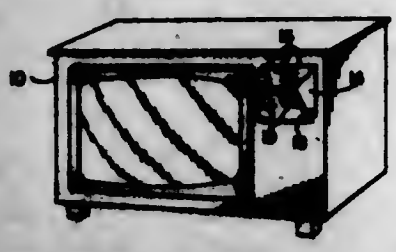
3,294,905
TELEVISION CABINET STRUCTURE WITH REMOVABLE FRAME SECTION
Severin L. Jonasson, Lafayette Hill, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Nov. 26, 1963, Ser. No. 326,169
2 Claims. (Cl. 178—7.9)



1. In a television receiver comprising a cabinet housing a cathode ray tube and having at least top and side walls and a front opening, the viewing screen of said cathode ray tube lying in the general plane of said front opening, means framing said front opening and providing a mask for said viewing screen, comprising: individual and separable first and second frame sections each having a forwardly presented peripheral portion and top and side wall portions extending from said peripheral portion toward corresponding walls of said cabinet, said top and side wall portions of said first frame section being formed as a stepped extension of said cabinet and being nested within corresponding top and side wall portions of said second frame section, in such engagement with the latter as removably to maintain the second frame section mounted upon the first frame section, the said peripheral portion of said first frame section closely overlying the edges of said viewing screen and serving as a mask for

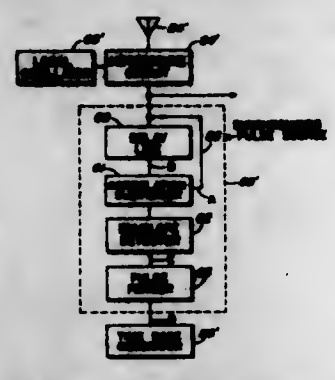
the latter, and at least a part of said peripheral portion of said first frame section closely underlying the peripheral portion of said second frame section.

3,294,926
HINGE STRUCTURE
Edward W. Swanson, Chicago, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,629
10 Claims. (Cl. 178—7.9)



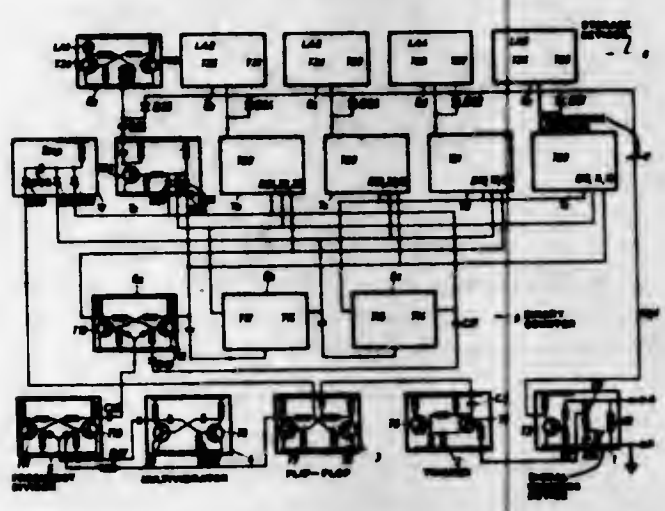
1. A hinge structure comprising: a base; movable means pivotally connected to said base and having a first position and a second position; first resilient means coupled to said movable means urging said movable means towards either said first position or said second position; and second resilient means coupled to said movable means opposing said urging by said first resilient means such that the force urging said movable means into either said first position or said second position is slightly greater than the opposing force exerted by said second resilient means, whereby a minimum of force is required to move said movable means between said first position and said second position.

3,294,927
SYNCHRONIZING SIGNAL DERIVING MEANS
Emil T. Hoold, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 3, 1963, Ser. No. 313,607
6 Claims. (Cl. 178—67)



1. In a communication system for transmitting and receiving a composite signal comprising:
a plurality of tone signals having different frequencies spaced apart by integral multiples of a difference frequency f_a with the lowest tone signal frequency f_1 bearing a ratio $N/2$ to f_a, where N is an integer;
each of said tone signals being divided into sections of equal and consecutive time intervals known as phasors, with the phasors of each tone signal having phase relationships with a reference phase indicative of the information contained therein;
and the phasors of each of said tone signals having common phase transition points and a repetition rate period greater than the period of the difference frequency f_a;
means for producing a synchronizing signal having a frequency equal to the phasor repetition rate, said synchronizing signal producing means comprising;
means for receiving said composite signal, delay means for delaying said composite signal by a time interval $1/f_a$, and;
means for comparing the delayed and undelayed received composite signal to produce signal pulses during the correlation periods of the delayed and undelayed composite signal.

3,294,966
RECEIVING SYSTEM FOR AN ELECTRONIC TELEPRINTER
Werner Schlebeier, Esslingen, Pfrondorf, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 3, 1963, Ser. No. 270,497
Claims priority, application Germany, Apr. 7, 1962, St 19,961
2 Claims. (Cl. 178—88)

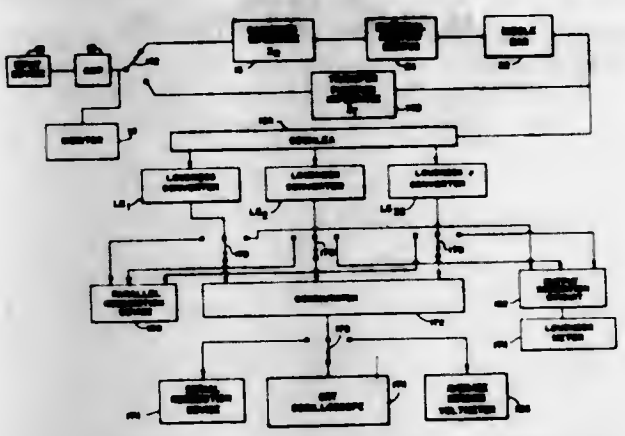


1. A receiving system for electronic teleprinters comprising:
a signal scanning device for receiving incoming signals;
means connecting said scanning device to a multivibrator and a frequency divider, such that the incoming start and stop elements of the incoming signals respectively cause the start and stopping of oscillations produced by said multivibrator and frequency divider;
a binary counter connected to said frequency divider for distributing the teleprinter signal combinations to a plurality of coincidence circuits;
a storage flip-flop connected to each of said coincidence circuits and controlled by both the coincidence circuits and the incoming signals; and
means in said signal scanning device for adjusting the scanning time position in relation to the start element of the incoming signals, whereby said coincidence circuit are successively caused to transmit positive pulses erasing their associated storage flip-flop by the action of the binary counter, and the negative pulse producted at the trailing edge of said positive pulse, depending on the potential of the incoming signals, serves in one case to mark the respective storage and in another case is directed to ground by a diode.

3,294,969
ELECTRONIC ANALOG EAR
William F. Caldwell, 5823 E. 18th St., Tucson, Ariz. 85711; Ewald Glassner, 630 N. 4th Ave., Tucson, Ariz. 85705; and John L. Stewart, 2530 N. Santa Lucia Ave., Tucson, Ariz. 85715
Filed Dec. 19, 1962, Ser. No. 245,597
20 Claims. (Cl. 179—1)

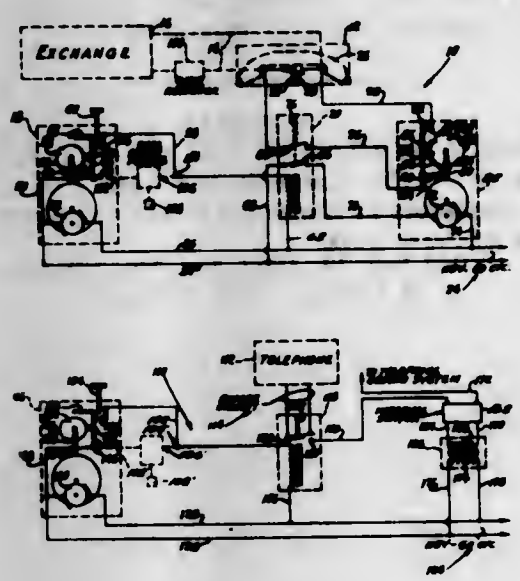
1. An electronic analog ear comprising:
(a) input means for providing an electrical signal in accordance with a sound to be analyzed;
(b) an analog cochlea in circuit with said input means including a predetermined number of resistance-inductance-capacitance sections simulating points

along the basilar membrane of an animal cochlea for providing a plurality of electrical signals at said various sections variable in accordance with said input signal and the values of said sections to thus represent motions occurring at said points, and



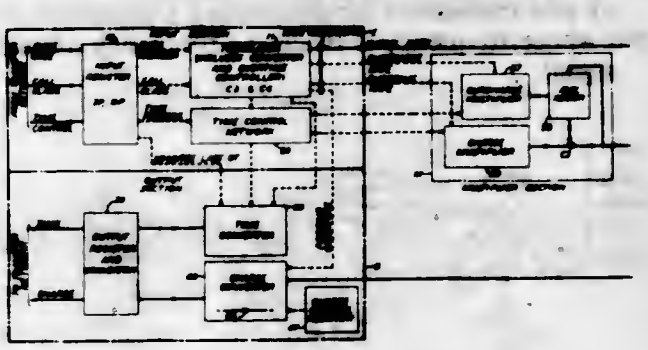
(c) means for deriving slowly varying waveforms indicative of said output signals including a filter connected to each section.

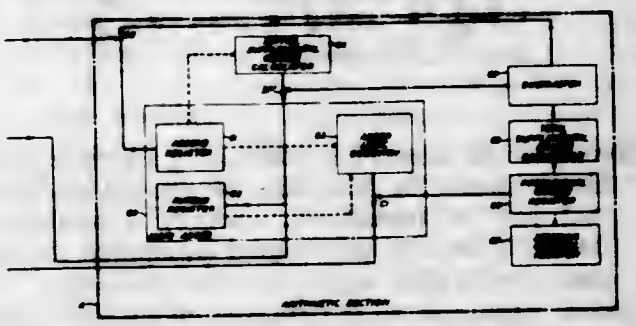
3,294,910
ALARM CLOCK ELECTRICALLY CONNECTED TO TELEPHONE BELL
Mildred J. Jackson, 549 W. Allen St., Springfield, Ill. 62704
Filed May 14, 1963, Ser. No. 280,367
12 Claims. (Cl. 179—2)



1. In combination, a telephone receiver having a bell and a bell circuit, an electric clock motor operatively connected to a voltage source, a first cam-operated switch continuously driven by the clock motor, a relay including switching means, an energizing circuit for said relay through the first cam-operated switch, circuit means including the relay switching means operatively connected through the telephone receiver bell to ring the same when the relay is energized, a normally open by-pass circuit in said energizing circuit for by-passing said first cam-operated switch and directly conductively connecting said relay means to said source, manually operated means to close said by-pass circuit, a time delay means operatively connected in said by-pass circuit to delay the energizing of said relay means for a predetermined time.

3,294,911
TELEPHONE SYSTEM CALCULATOR
John G. Nightingale, Fairlawn, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 16, 1963, Ser. No. 316,683
8 Claims. (Cl. 179—7.1)





1. Calculator apparatus for developing signals representative of total assessed charges for telephone communication services comprising:
means responsive to applied rate information for deriving a signal indicative of an initial service charge for a predetermined interval of time,
means for supplementing said initial service charge signal by an amount representing a tax percentage thereof in accordance with a prescribed format,
means responsive to said applied rate information for deriving a signal indicative of an overtime service charge for a subsequent interval of time,
means for deriving a signal representative of a tax percentage of the sum of said initial and overtime charge signals in accordance with a prescribed format,
and means for supplementing said overtime service charge signal by an amount corresponding to the difference between said two representative tax signals to derive a total assessed service charge for said subsequent interval of time.

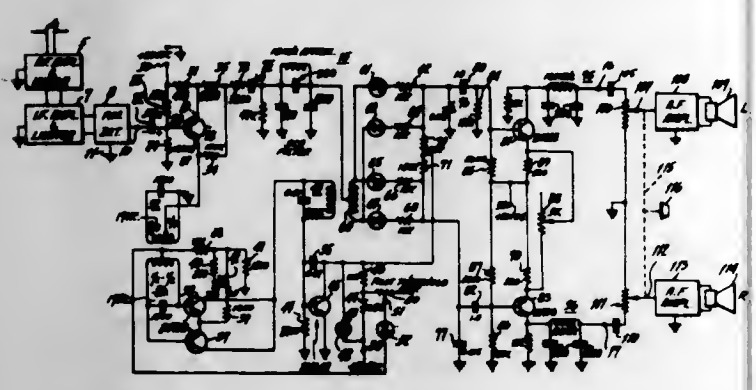
3,294,912
STEREOPHONIC FM RECEIVERS HAVING AUTOMATIC SWITCHING MEANS FOR STEREO RECEPTION
James F. Merritt, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 27, 1963, Ser. No. 261,265
7 Claims. (Cl. 179—15)

1. A circuit for frequency-modulation stereophonic receivers comprising:
an input circuit for connection to a source of demodulated frequency-modulation signals which during monophonic reception comprise audio-frequency signals and which during stereophonic signal reception includes: (1) audio-frequency signals, (2) subcarrier sideband signals, (3) a pilot signal,
means for separating said pilot signal from the remainder of said composite signal,

a frequency doubler circuit including a pair of transistors each having base, emitter and collector electrodes,

means for applying said separated pilot signal in push-pull relation between the base electrodes of said pair of transistors,

an output circuit coupled to the collector electrodes of said transistors for developing a demodulating signal whose frequency is twice the frequency of said pilot signal,



biasing circuit means for establishing a severse threshold bias between the base and the emitter electrodes of said pair of transistors, whereby a predetermined threshold level of pilot signal is required for translation of said pilot signal by said transistors,

means responsive to the translation of pilot signal by said transistors for reducing said threshold bias voltage level, and

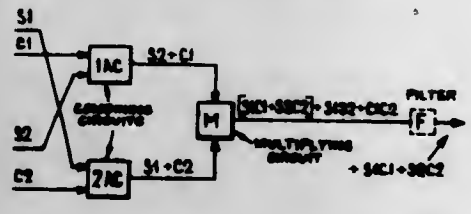
a detector coupled to receive signals from said input circuit and from the output circuit of said frequency doubler.

3,294,913

FREQUENCY DIVISION MULTIPLEX SYSTEM FOR SIDEBAND TRANSMISSION

Wolja Savage, Orpington, Kent, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Mar. 19, 1963, Ser. No. 266,384
Claims priority, application Great Britain, Mar. 23, 1962, 11,255/62
10 Claims. (Cl. 179—15)



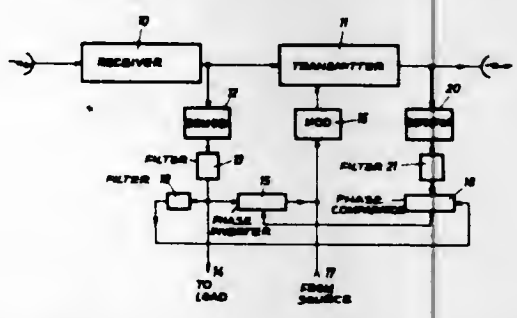
1. For a frequency division multiplex system having at least two carrier channels to which respective carrier frequencies are allocated, a modulation circuit arrangement comprising first combining means for combining the carrier of one channel and an alternating current signal to be transmitted in a second channel, second combining means for combining the carrier of this second channel and an alternating current signal to be transmitted in the first channel, and means for multiplying together the resultant combination signals from said first and second combining means to provide an output containing upper and lower sidebands corresponding to the modulation product of the carrier and the alternating current signal of the said one channel and upper and lower sidebands corresponding to the modulation product of the carrier and the alternating current signal of the said second channel.

3,294,914

FREQUENCY MULTIPLEX REPEATER STATION HAVING CHANNEL DROP FACILITIES

Martin Müller, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1963, Ser. No. 271,986
Claims priority, application Germany, May 4, 1962, St 19,181
16 Claims. (Cl. 179—15)



1. A repeater terminal for a frequency division multiplex system transmitting a multiplex signal including a plurality of frequency spaced signal channels comprising:

a receiver for said multiplex signal;

a transmitter for said multiplex signal coupled to said receiver;

means coupled to said receiver to remove the signals of given ones of said channels from said multiplex signal; and

means coupled to said means to remove to cancel said signals of said given ones of said channels from said multiplex signal in said transmitter;

said means to cancel including

a phase inverter means coupled to said means to remove to reverse the phase of said signals of said given ones of said channels; and

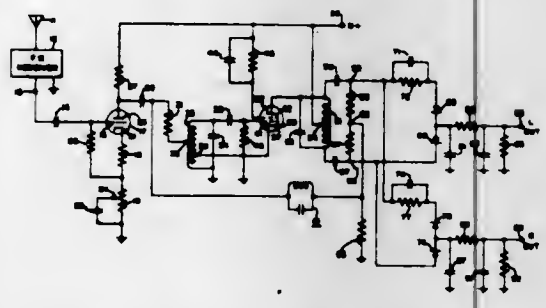
a frequency modulator coupled between said phase inverter and said transmitter.

3,294,915

PHASING CIRCUIT FOR F.M. STEREO RECEIVER

David A. Wetherby, Sesquoit, and Antal Csicsatka, Utica, N.Y., assignors to General Electric Company, a corporation of New York

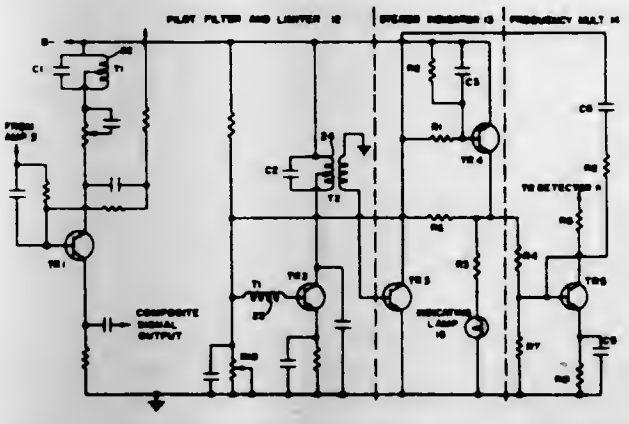
Filed July 29, 1963, Ser. No. 298,341
4 Claims. (Cl. 179—15)



1. A circuit for deriving two audio frequency signals from a composite signal containing the sum of the two audio signals and sideband components of the difference of the two audio signals which are related to a suppressed reference wave, said sideband components being delayed in time with respect to said reference wave, said circuit comprising a switching signal generator circuit for providing a switching signal related in frequency and phase to said reference wave, a sampling circuit for deriving said audio signals from said composite signal, means to apply said composite signal to said sampling circuit, and coupling means connected to said sampling circuit to apply said switching signal thereto, said coupling means having a time delay characteristic for delaying said switch-

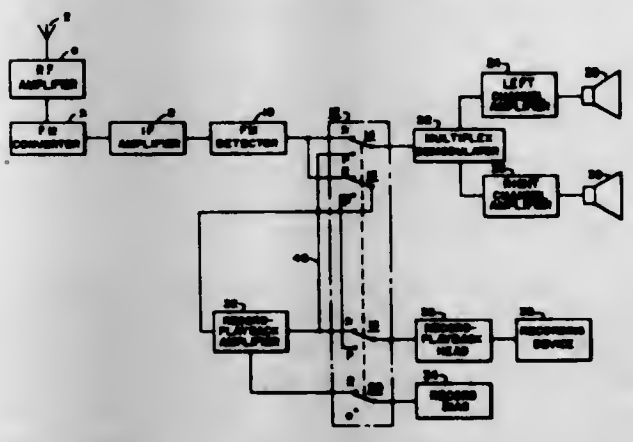
ing signal by an amount substantially correspond ng to the time delay of said sideband components with respect to said reference wave.

3,294,916
STEREOPHONIC INDICATOR AND AUTOMATIC SWITCHING MEANS
William Hubert Elias, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 1, 1964, Ser. No. 400,735
9 Claims. (Cl. 179—15)



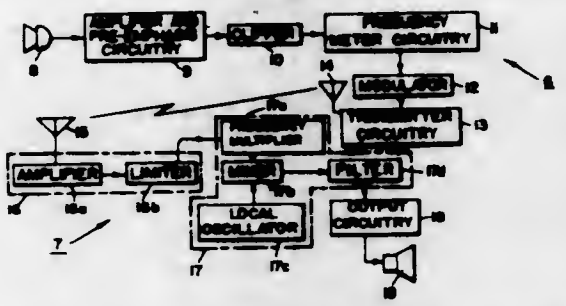
1. An indicating circuit for a stereo system including a pilot signal comprising: means for amplifying said pilot signal, transistor means for limiting the output of said amplifying means; means for integrating the output of said transistor means to obtain a direct current average value thereof; and a transistor switching means responsive to the integrated output of said transistor means.

3,294,917
STEREO MULTIPLEX RECEIVING APPARATUS
Irving E. Lempert, Metuchen, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 8, 1965, Ser. No. 446,647
5 Claims. (Cl. 179—15)



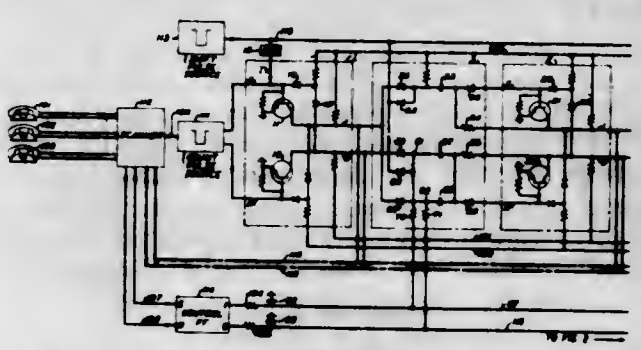
1. In stereo multiplex receiving apparatus operative with stereo multiplex signals, the combination of: receiving means for receiving said multiplex signals and for producing composite audio stereo signals; multiplex demodulator means for converting said composite signals into left and right channel information; record-playback means for recording said composite signals and switching means for selectively (1) connecting said receiving means to said record-playback means for recording said composite audio stereo signals as received from said receiving means, and (2) connecting said record-playback means to said multiplex demodulator means for playing back the recorded composite signals through said multiplex demodulator means to obtain the left and right channel information.

3,294,918
ELECTRONIC CONVERSIONS OF SPEECH
Nathan Gold, Sharon, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 18, 1962, Ser. No. 196,903
8 Claims. (Cl. 179—15.55)



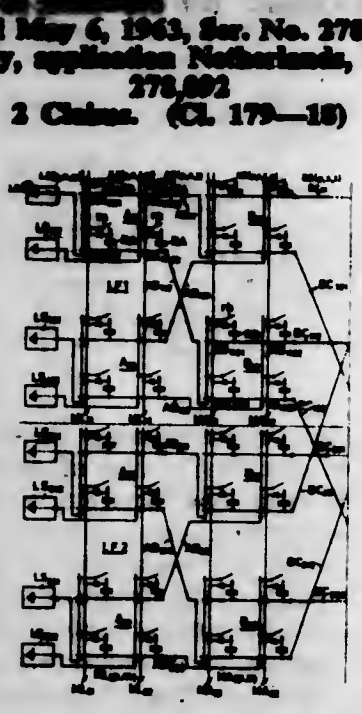
1. Apparatus for communicating the intelligibility in speech by way of electrical waves of narrow bandwith, comprising means producing electrical signals characterizing only the higher-frequency components of speech waves, means limiting the amplitudes of said signals to a substantially uniform value, frequency-metering means responsive to the limited signals producing unidirectional electrical waves having magnitudes related to the frequencies of said signals, means for producing and transmitting a carrier wave of radio frequency, modulator means for frequency modulating said carrier wave in accordance with said unidirectional electrical waves, means for receiving the frequency-modulated carrier wave and including oscillator means and means mixing the output of said oscillator means with the received frequency-modulated wave to produce audio-frequency signals having frequencies related to the magnitudes of said unidirectional electrical waves, and means for converting said audio-frequency signals into sound waves.

3,294,919
CONVERTIBLE BINARY COUNTER AND SHIFT REGISTER WITH INTERSTAGE GATING MEANS INDIVIDUAL TO EACH OPERATING MODE
Douglas A. Kerr, Springfield, and George F. Swetnam, Jr., Metuchen, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 17, 1963, Ser. No. 252,071
13 Claims. (Cl. 179—18)



1. A combined shift register and binary counting circuit including a plurality of tandemly connected stages, interstage coupling means between said stages, said coupling means including a plurality of gates interconnecting said stages, means for enabling a first of said gates continuously between said stages, means for enabling a second of said gates between said stages for operation in a binary counter mode, means for inhibiting said second gating means and enabling a third gating means between said stages to permit operation in a shift register mode, and additional means for transforming operating modes while maintaining the existing binary inputs to said gates.

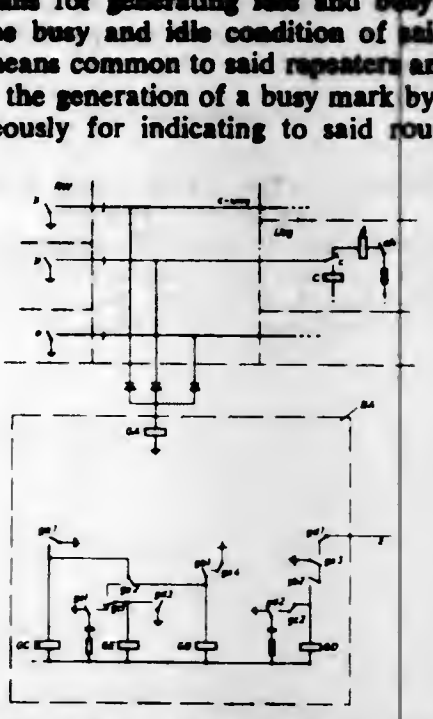
3,294,920
ARRANGEMENT FOR AUTOMATIC [illegible] SYSTEMS
[illegible], Willem Sluis, and Tjabbe Mariaus Salemink, [illegible], Netherlands, assignors to North American [illegible] Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 6, 1963, Ser. No. 278,635
Claims priority, application Netherlands, May 4, 1962, 278,692
2 Claims. (Cl. 179—18)



1. An automatic switching network comprising a first group of terminals, a second group of terminals, a plurality of switching stages, and a plurality of conductors interconnecting said terminals and switching stages to provide a plurality of channels between any terminal of said first group and any terminal of said second group, each channel extending through each switching stage, each switching stage comprising a plurality of crosspoint switch means, each crosspoint switch means comprising diode means and a relay having a winding and a pair of contacts, each said stage having marker conductor means, means serially connecting said diode means and winding between said marker conductor means and a conductor extending toward said first group of terminals from the respective stage, and means connecting each pair of relay contacts between the junction of the diode and winding of the respective relay and a conductor extending toward said second group of terminals from the respective stage, means for selectively applying marking potentials between one terminal of said first group and a marking conductor of each stage, whereby a relay of each stage is energized by way of the diode means connected thereto for closing the respective contacts to establish a conductive path between said one terminal of said first group and one terminal of said second group, and means for providing a holding potential between said one terminal of said first group and said one terminal of said second group whereby the diode means connected to said energized relays are reverse biased upon application of marking potentials between another terminal of said first group and said marking conductors of each stage.

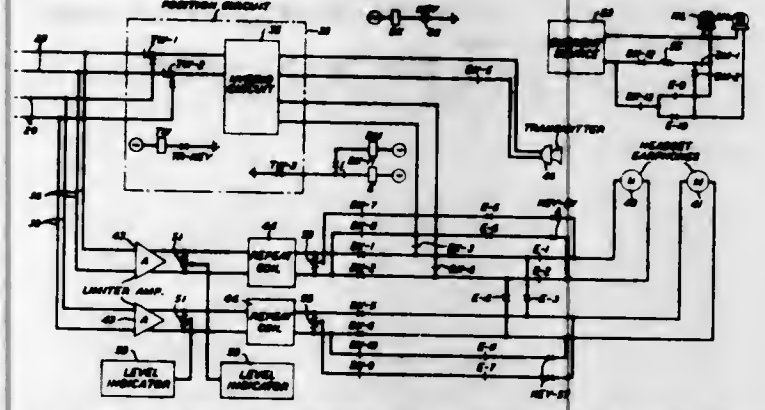
3,294,921
TRUNK-GROUP SUPERVISION
Willy Bergholtz, Stuttgart-Zuffenhausen, and Bernhard Krauss, Korntwestheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 14, 1963, Ser. No. 280,267
Claims priority, application Germany, June 8, 1962, St 19,336
4 Claims. (Cl. 179—18)

1. A telephone system supervisory arrangement for signalling the availability of trunk lines to trunk-line routing equipment operable to establish a connection therewith, comprising a group of trunk line repeaters each including means for generating idle and busy marks according to the busy and idle condition of said repeater, availability means common to said repeaters and operable responsive to the generation of a busy mark by all repeaters simultaneously for indicating to said routing equip-



ment an all-trunks-busy condition, and means in each repeater responsive to a change in the availability of the repeater for generating a preliminary mark for controlling said availability means to terminate the said all-trunk-busy condition.

3,294,922
OPERATOR POSITION EQUIPMENT FOR TELEPHONE SYSTEMS
Edward W. Schneider, Murray Hill, and Max S. Schoeffler, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 13, 1963, Ser. No. 308,725
8 Claims. (Cl. 179—27)

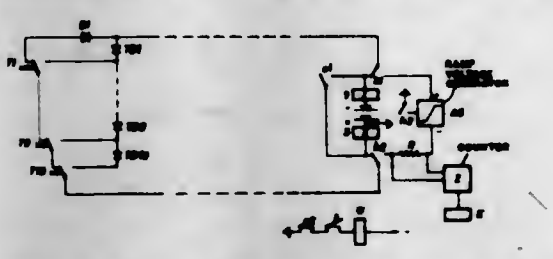


1. In a telephone system, an attendant position including a headset having a first and a second receiver and a transmitter, first and second communication channels, first means for connecting one of said receivers and said transmitter to only one of said channels, second means distinct from said first means for connecting said receiver simultaneously to individual ones of said channels, and control means for establishing one of said first and second means.

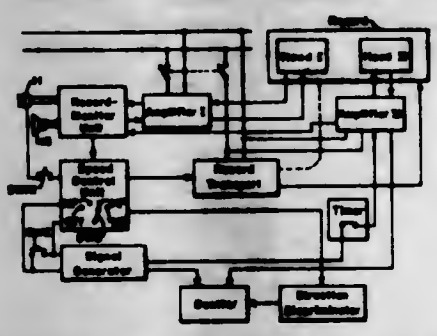
3,294,923
TELEPHONE SIGNALLING SYSTEMS UTILIZING TUNNEL DIODES
Georg Vogel, Schwieberdingen, Ludwigsburg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 12, 1962, Ser. No. 201,856
Claims priority, application Germany, June 20, 1961, St 17,973
6 Claims. (Cl. 179—84)

1. A signalling system for transmitting directory signals over telephone lines comprising transmitting means

and receiving means interconnected by at least one pair of said telephone lines, said transmitting means comprising a plurality of transmitting keys serially connected across said pair of lines to make a first path, a plurality of tunnel diodes associated with said keys, contact means responsive to the operation of any of said keys for opening said first path and completing a second path between said pair of lines, said second path comprising a selected number of said associated tunnel diodes, said receiving means comprising interrogation voltage generator means, monitor means operated responsive to the opening of said first path for disconnecting said monitor means and for connecting said interrogation voltage generator means to said second path to apply said interrogation voltage to said selected number of tunnel diodes, counting means operated responsive to the pulses generated by said selected number of tunnel diodes being switched responsive to said interrogation voltage for determining a directory number associated with said operated transmitting keys, and switching means operated responsive to said counting means to disconnect said interrogation voltage generator and to reconnect said monitoring means.

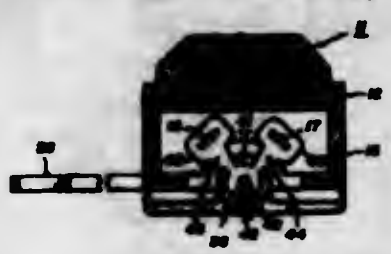


3,294,924
APPARATUS FOR CARRYING OUT INDUSTRIAL OPERATION
Samuel Fein, North Huntingdon Township, Westmoreland County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 29, 1963, Ser. No. 738,777
12 Claims. (Cl. 179—100.1)



1. Apparatus for audibly instructing an operator to carry out an industrial operation at a work position and involving a succession of coordinated steps comprising a sound record having successive coordinated messages to instruct said operator thereon, each message corresponding to one of said steps and describing said one step and each message being separated from the preceding and succeeding messages, reproducing means to be connected to said record for reproducing said record, said reproducing means including record advancing means; and control means connected to said reproducing means and operable to permit reproductions of said messages in succession and selection of any one of said messages, said control means including first manual switch means accessible to said operator at said work position, second manual switch means accessible to said operator at said work position, first circuit means including said first switch means and said advancing means and responsive to each actuation of said first switch means to cause a message on said record set for reproduction to be reproduced and thereafter automatically to stop said record at a setting for the reproduction of the succeeding message, and second circuit means including said second switch means and said advancing means and responsive to each actuation of said second switch means for causing said record to advance from said set message to the just-preceding message and for stopping said record automatically at a setting at which said just-preceding message is set for reproduction.

3,294,925
COUPLER FOR A STEREO PHONOGRAPH CARTRIDGE
Roy Daily, Warrensburg, Ill., and William A. Cavagnaro, Greece, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 213,382, July 30, 1962. This application May 13, 1965, Ser. No. 459,512
3 Claims. (Cl. 179—100.41)

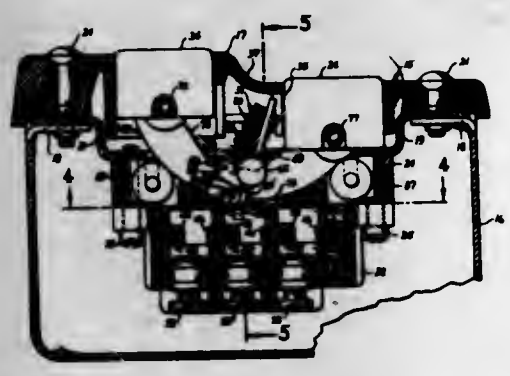


1. In a stereo phonograph pickup cartridge having a pair of transducer elements and an elongated drive rod positioned in spaced relationship with respect to the transducer elements, an improved coupler for connection between the drive rod and transducer elements, comprising a V-shaped member made from a rubber-like material, means attaching the legs of said member to said transducer elements, respectively, and an opening through said member at the apex thereof, said opening being formed by a continuous internal wall of said member, a slit formed in the apex of said member between the exterior of said apex and the internal wall of said opening thereby to allow said drive rod to be inserted in said opening and resiliently entrapped therein by being passed through said slit, said slit including a pair of contiguous walls in at least partially engaged disposition thereby to close said opening from the exterior of said apex, said drive rod being normally extended through said opening, perimetrically surrounded by and in engagement with the wall of said member, and the legs of said member being tapered between the drive rod and the transducer elements, said member being arranged as a free floating connection between said drive rod and said transducer elements thereby to resiliently couple said drive rod to said transducer elements and improve the efficiency of said coupler.

3,294,926
MOTOR CONTROL SWITCH WITH IMPROVED OPERATOR AND OVER CENTER RESILIENT MEANS
Robert C. Dellert, Bloomington, and Cyril O. Flanagan, Normal, Ill., assignors to General Electric Company, a corporation of New York
Filed Aug. 3, 1965, Ser. No. 476,203
15 Claims. (Cl. 200—67)

1. An electrical switch comprising in combination, a housing, a movable contact carrier supported within the housing for movement in opposite directions, movable contact means carried by said carrier, fixed contact means fixed within said housing for cooperation with said movable contact means, an operator mounted within said housing for pivotal movement in opposite directions about a first axis generally perpendicular to the directions of movement of said carrier, said operator being of hollow configuration having spaced end walls on opposite sides of said first axis, said operator being operatively connected to said carrier to move the carrier in response to such

pivotal movement, a lever having a pair of end sections and movable relative to said operator in opposite directions along a path extending transversely of said first axis, said lever comprising a plate defining a plane generally perpendicular to said first axis and extending through said hollow operator, said lever also having an edge spaced from one of said end walls of said operator, over-center resilient means positioned between said edge of said lever and said one of said end walls of said operator for over-center movement in opposite directions in response to movement of said lever to effect pivotal movement of said operator, a pair of actuatable pushbuttons guided by said housing for reciprocating movement along a pair of



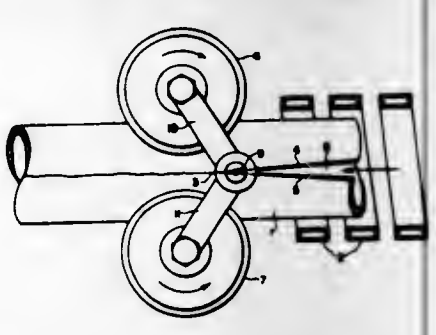
spaced parallel second axes extending generally perpendicular to said first axis, and means operatively connecting each end section of said lever to a separate one of said pushbuttons to effect movement of said lever in response to actuation of a selected pushbutton, one of said pushbuttons when actuated effecting movement of said lever in one direction to cause movement of said contact carrier in one direction for closing said fixed and movable contacts, said other pushbutton when actuated subsequent to actuation of said one pushbutton effecting movement of said lever in the opposite direction to cause movement of said contact carrier in the opposite direction for opening said fixed and movable contacts.

3,294,927
RESILIENT FLAP ELEMENT FOR SWITCH APPARATUS
George A. Hill, 3393 Fairmont Road, North Vancouver, British Columbia, Canada
Filed Feb. 1, 1965, Ser. No. 428,313
5 Claims. (Cl. 200—6)



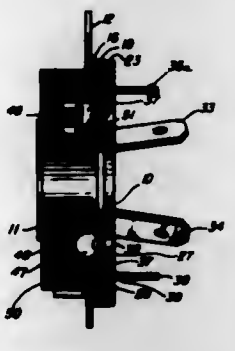
1. Electrical switch apparatus comprising a pair of resilient flap elements each fixedly mounted at one of its ends on spaced supports and swingable in the same plane, said elements normally extending towards and parallel to each other with a free end portion of one of them overlapping a free end portion of the other, the overlapping element being swingably movable against the overlapped element to move the latter out of the path of the former so as to permit the overlapped element to return to its normal position ahead of the overlapping element, and relatively fixed electrical switch contact means operatively associated with the flap elements for movement therewith between open and closed positions as overlapped disposition of said flap elements is reversed.

3,294,928
METHOD AND APPARATUS FOR SEAM WELDING OF TUBES
Hans Schäfer, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Dec. 30, 1964, Ser. No. 422,296
Claims priority, application Germany, Jan. 22, 1964, S 89,164
3 Claims. (Cl. 219—8.5)



1. A method for the seam welding of tubes by means of alternating current, comprising the steps of continuously forming metal strip into cylindrical form by longitudinal advancement while converging opposing edges of such strip to a point of meeting at a longitudinal position susceptible to variance due to irregularities in the surface of such edges, producing an electrically conducting arc between such edges by localized discharge from an electrode at a fixed logitudinal position immediately before said point of meeting, and causing alternating current to flow along such edges in advance of and by way of said electrically conducting arc to obtain welding of said edges together at their point of meeting.

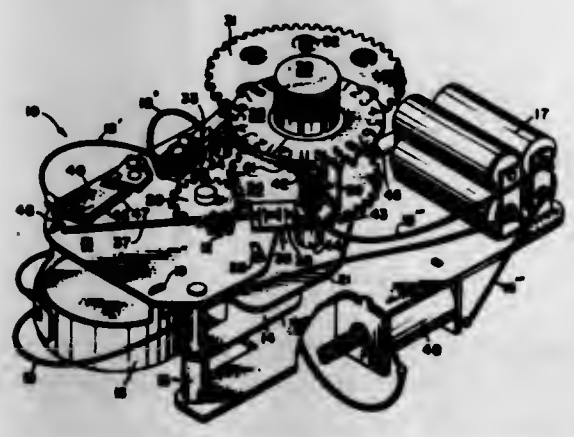
3,294,929
ELECTRIC SWITCH WITH ROLLER AND BALL CONTACT STRUCTURE
David W. Johnson, Newington, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Sept. 3, 1965, Ser. No. 485,016
6 Claims. (Cl. 200—11)



1. A rotary electric switch comprising an insulating carrier plate having a plurality of circularly arranged apertures, a plurality of central fixed contacts arranged adjacent the inner edges of said apertures, a plurality of peripheral fixed contact members adjacent the outer edges of said apertures, a manually operable rotary member, a first class of one or more resiliently supported connecting members carried by said rotary member, each of said connecting members being adapted to bridge a central fixed contact and a peripheral contact, in combination with a second resiliently supported connecting member, said second member being different geometrically from connecting members of the first class, and means for insulating said second connecting member from certain but not from all of said fixed contacts as said rotary mem-

ber is rotated, said insulating means being inoperative to insulate said first class of connecting members from any of said fixed contacts.

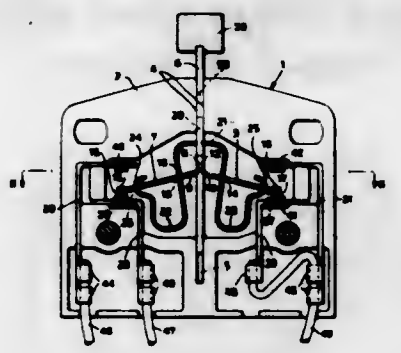
3,294,930
PULSE TIMER
James B. Putterbaugh and Joseph E. Wiser, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 17, 1965, Ser. No. 440,567
13 Claims. (Cl. 200—38)



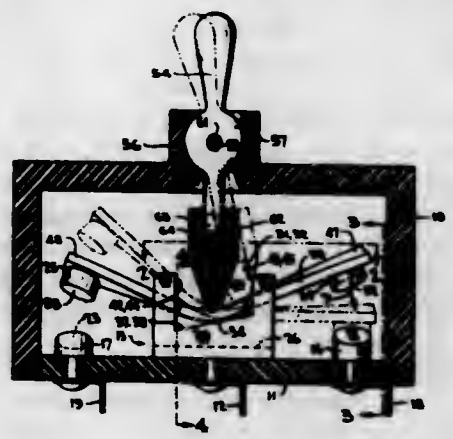
1. An electromechanical means for providing an electrical pulse comprising: a drive means; a cam means having rise and fall contours driven by said drive means; a spring biased means riding on said contours of said cam means; a deflection means having an electrically conductive upper surface and an electrically non-conductive lower surface, said deflection means placed in an interference path with said spring biased means, said spring biased means displaced in a first direction to slidably engage said lower surface of said deflection means as said spring biased means rides up said rise contour of said cam means, said spring biased means displaced in a second direction to slidably engage said upper surface of said deflection means as said spring biased means falls along said fall contour of said cam means; node means rotatably driven by said cam means; and a normally open switch means electrically connected to said deflection means, said switch means in an interference path with said node means is closed by engagement with said node means thereby closing an electrically conductive circuit between said spring biased means and said switch means as said spring biased means slidably engages said upper surface of said deflection means.

3,294,931
TWO-CIRCUIT SNAP-ACTION ELECTRICAL SWITCH HAVING A SINGLE BLADE SPRING
Guglielmo Lozza, Ivrea, Italy, assignor to Ing. C. Olivetti & Co., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Mar. 29, 1965, Ser. No. 443,347
Claims priority, application Italy, Apr. 1, 1964, 7,393/64
1 Claim. (Cl. 200—67)

An electric snap-action switch comprising:
(a) an insulating support,
(b) an elongated actuator mounted in said support for slidable movement between a first and a second position, and having pivot means thereon and an opening spaced from said pivot means,
(c) a pair of arms pivoted on said pivot means and extending substantially perpendicularly from said actuator, each arm carrying first electrical contact means and having an opening substantially in its middle portion,
(d) second electrical contact means located in said support in a position substantially adjacent to said first electrical contact means for cooperation therewith,
(e) a spring connected to the free end of said arms and adapted to snap said arms between a first contact position and a second contact position corresponding to said first and second positions of said actuator, respectively, said spring consisting of a single metallic blade having a generally sinusoidal shape and passing through all said openings.

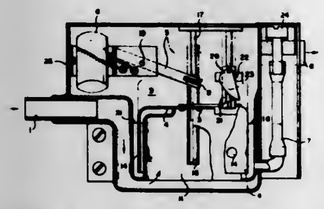


3,294,932
WIPING CONTACT SWITCH
James E. Barlow, Graham, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 17, 1965, Ser. No. 456,117
4 Claims. (Cl. 200—68)



1. A switch comprising:
a contact arm;
a pair of projections on said contact arm, each projection extending from opposite sides of said contact arm;
a cradle having a pair of contact surfaces thereon, each for supporting one of said projections, respectively, said cradle including means for allowing arcuate movement of said contact arm in first and second directions, said first direction of arcuate movement being arcuate about an axis through said projections and transverse to the arm, and said second direction having a component of direction perpendicular to said first direction;
a contact surface on said contact arm at an acute angle to said first direction of arcuate movement and parallel to said second direction of arcuate movement;
a stationary contact;
said stationary contact including camming means for moving said contact arm in said second direction; and
means for moving arcuately said arm in said first direction to engage said arm contact surface with said stationary contact camming means to wipe said arm contact surface on said stationary contact.

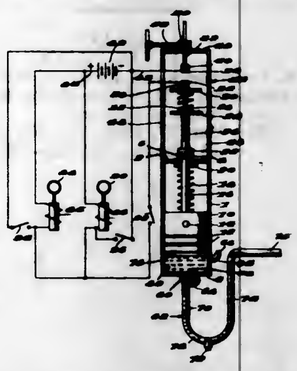
3,294,933
GAS FLOW DETECTOR
Takashi Oi, 58 6-chome, Nakamachi, Nerima-ku, Tokyo-to, Japan, and Takayuki Shioiri, 29 1665 Gakuenhigashi-machi, Kodaira-shi, Tokyo-to, Japan
Filed Oct. 2, 1964, Ser. No. 401,112
Claims priority, application Japan, Jan. 27, 1964, 39/3,687
3 Claims. (Cl. 200—81.9)



1. A gas flow detector, comprising
a hollow body containing inlet and outlet openings;
partition means defining in said body lower and upper chambers in communication with said inlet and outlet openings, respectively, said partition means including a vertically arranged upwardly extending open ended tubular wall portion defining in the lower portion of the upper chamber a trough for receiving liquid to a given level;
a downwardly directed float cup mounted for vertical movement in said upper chamber upon said tubular wall portion, said float cup having horizontal top and downwardly extending side walls defining a cup chamber in continuous communication with said lower chamber via said tubular wall portion, the lower portion of the side wall containing at least one aperture, said cup normally having a lower position in which the lower portion of said side wall and the aperture contained therein are submerged in the liquid beneath the level thereof, said float cup containing bleed passage means for venting said float cup chamber with said upper chamber when the cup is in the lower position;
closure means normally closing said vent means, whereby when the pressure differential between the lower and upper chambers gradually increases, the float cup is progressively elevated toward an upper position in which the aperture is above the liquid level and the float cup is in a pressure differential balanced condition;
means operable when the float cup rises above said upper position to open said closure means from said vent means and to maintain the closure means open as the float cup drops to the lower position;
and electrical alarm means operable when said float cup is adjacent said upper position.

3,294,934
PRESSURE RESPONSIVE DEVICES
J. T. Norris and Wilburn O. Castleman, both of Waynesboro, Tenn.
Filed Jan. 21, 1964, Ser. No. 339,306
3 Claims. (Cl. 200—82)

1. A pressure responsive device comprising a cylinder having a surrounding wall, a piston movably mounted in the cylinder, a liquid level device having a column of corrosive liquid exposed at one side to a pressure fluid and at the opposite side to the piston, a body of lubricant intermediate said column of liquid corrosive fluid and the piston for transmitting pressure to the piston and moving the latter in response to variations in pressure of the fluid, a piston rod connected with the piston and extending outwardly therefrom, means yieldably urging the piston toward one end, a bearing member mounted on the piston rod for movement axially relative thereto, means yieldably urging said member in one direction relative to the piston rod, and control means operatively connected with the bearing member.



3,294,935
FUSIBLE PROTECTIVE DEVICE
Merrill G. Leonard, Brookfield Township, Trumbull County, Ohio, and John J. Ashford, Jr., Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1961, Ser. No. 162,144
15 Claims. (Cl. 200—120)



1. A fusible device including a tubular casing having an electrode assembly blocking one end thereof, the other end of said tubular casing being open, a unitary two-break fuse assembly disposed within the casing and including a pair of spaced fusible elements, an orifice plug fixedly secured against said open end of the casing, biasing means for tensioning both the pair of fusible elements of the fuse assembly, and conducting spacing means associated with the two serially-related fuse elements having stop means associated therewith to limit the length of one of the arcs.

3,294,936
CURRENT LIMITING FUSE
Harvey W. Mikulecky, Racine, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,949
7 Claims. (Cl. 200—120)

1. In an electric current limiting fuse, an enclosing casing provided with a pair of spaced apart electrically conductive terminals, an elongated fusible element mounted in said casing between said terminals and having a continuous length of silver ribbon section provided with a plurality of longitudinally discrete portions of maximum cross sectional area and a plurality of intermediate portions of reduced cross sectional area in series with a silver wire section having a metal element thereon adapted to form an alloy with silver having a lower fusing



temperature than silver, said wire section having a cross sectional area less than the cross sectional area of said discrete ribbon portions continuously along the length of said wire, said portions of reduced cross sectional area of said ribbon section being adapted to melt before said wire section on fault currents of large magnitude, and a body of granular inert material of high dielectric strength filling said casing and embedding said fusible element.

3,294,937
TIME LAG DUAL ELEMENT FUSE HAVING MEANS FOR PRECLUDING ARC INITIATION ADJACENT TERMINALS
Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed June 3, 1965, Ser. No. 461,879
11 Claims. (Cl. 200—120)



11. In an electric time-lag fuse having a predetermined minimum fusing current and including a tubular casing of insulating material, a pair of terminal elements closing the ends of said casing, a ribbon fuse link of a metal having a relatively high fusing point inside said casing conductively interconnecting said pair of terminal elements and defining a plurality of serially related points of reduced cross-sectional area, a link-severing overlay of a metal having a relatively low fusing point supported on said link at the center region thereof, a pulverulent arc-quenching filler inside said casing surrounding said link and said overlay, said fuse being made of such materials and having such properties that it has a transfer current causing, when exceeded, a shift of the point of intial break formation from said overlay to one axially outer of said plurality of serially related points of reduced cross-sectional area, the novel feature consisting in a hollow receptacle of insulating material embedded in said body of arc-quenching filler mounted on said fuse link and limited to the center region thereof, said receptacle defining a void surrounding said overlay and limiting heat dissipation therefrom to said arc-quenching filler, the size and mass of said receptacle being sufficiently small to preclude by virtue of the presence thereof any change of said predetermined minimum fusing current.

3,294,938
ELECTRIC FUSE HAVING BALANCED LOW CURRENT INTERRUPTING PERFORMANCE AND HIGH CURRENT INTERRUPTING PERFORMANCE
Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Oct. 21, 1965, Ser. No. 499,743
3 Claims. (Cl. 200—120)



1. An electric fuse comprising in combination:
(a) a substantially tubular casing of insulating material;
(b) a pair of terminal elements closing the ends of said casing;
(c) a fusible ribbon of a high conductivity high fusing point metal having a relatively large current-carrying capacity conductively interconnecting said pair of terminal elements;
(d) an additional fusible element having a relatively small current carrying capacity conductively interconnecting said pair of terminal elements;
(e) a sleeve of woven glass cloth enveloping said additional fusible element; and
(f) a body of quartz sand finer than 40 U.S. Standard Sieve number size but coarser than 100 U.S. Standard Sieve number size inside said casing laterally surrounding said first fusible element and laterally surrounding said sleeve of woven glass cloth.

3,294,939
COMBINATION EXPENDABLE CAP HOLDER AND FUSE LINK RETAINER FOR ELECTRICAL DISTRIBUTION CUTOUT
Thomas E. Curtis, Centralia, Mo., assignor to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed July 15, 1965, Ser. No. 472,267
5 Claims. (Cl. 200—127)



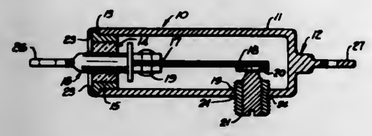
1. In a distribution cutout for use with a fuse link having a current responsive element terminating in a head:
an elongated, link-receiving fuse holder having an open end provided with structure for seating said head therewithin,
said structure having a head-receiving aperture therein and means defining a plurality of gas vents spaced around said aperture;
a retainer on said end provided with a pair of spaced-apart shoulders projecting toward said aperture for engaging said head to hold the latter seated in said structure; and

a pressure responsive, frangible cap mounted on said retainer remote from said end,

said shoulders defining an opening therebetween registering with said cap and having relieved portions clearing said vents, whereby to provide a substantially unobstructed passage communicating the vents with the cap,

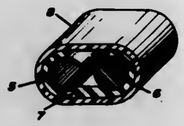
said retainer being provided with spaced, laterally extending ribs aligned with said opening and spaced from said vents, whereby to reduce heat erosion of the retainer.

3,294,940
STRUCTURALLY INTERLOCKED CAPSULE THERMOSTATS
Herman Ulanet, 473 Richmond Ave., Maplewood, N.J. 07040
Filed June 5, 1964, Ser. No. 372,821
4 Claims. (Cl. 200—138)



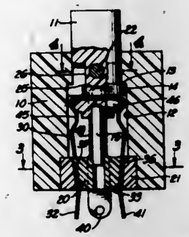
2. A structurally interlocked capsule thermostat comprising an electrically conductive hollow body with at least one counter-bored open end, a header disposed in the open end, said header comprising a core of insulating material surrounded by a metal bushing, said bushing being provided with a raised shoulder portion, a portion of the rim of the counter-bored open end turned over the periphery of the shoulder and a portion of the outside surface portion adjacent thereto, an electric terminal disposed through the header substantially at the center and extended outwardly and inwardly therefrom substantially along the longitudinal center line of the body, the outwardly extended end terminating in a flattened surface portion and the inwardly extended end being slotted with the upper and lower surfaces of the slot coplanar with the plane of the flattened surface portion, one end of a bimetallic element fixed to the slotted end of the terminal and extended toward the opposite end of the body, and means through a wall of the body in a plane substantially perpendicular to the flattened surface portion whereby the circuit through the body is opened and closed at predetermined temperatures.

3,294,941
HEAT-RESPONSIVE ELECTRIC CABLE FORMED OF HEAT SHRINKABLE MATERIAL
Robert D. Mullen, 7534 Wilbur Ave., Reseda, Calif. 91335
Filed Oct. 21, 1965, Ser. No. 499,414
5 Claims. (Cl. 200—143)



1. A self-contained, heat-actuated, continuous electric switch for energizing the electric circuit of an alarm system or the like, comprising at least two uncovered, elongated conductors electrically connected in said circuit and normally disposed throughout their lengths in substantially parallel, laterally spaced, non-contacting relation, and a common, continuous, tube-like actuating element having portions extending longitudinally alongside of diametrically opposite peripheries of respective spaced conductors, said actuating element being formed of a material which is peripherally shrinkable under the influence of a predetermined elevated temperature, whereby, when said cable is subjected to such temperature at any point along its length, said actuating element peripherally contracts and said conductors are forced laterally into line contact with one another at said point to complete said electric circuit.

3,294,942
PUSH BUTTON SWITCH
Howard F. Mason, Los Angeles, Calif., assignor to The Ansul Company, Marinette, Wis., a corporation of Wisconsin
Filed Aug. 10, 1964, Ser. No. 388,353
5 Claims. (Cl. 200—159)



1. In an electrical switch, the combination of:

a housing;

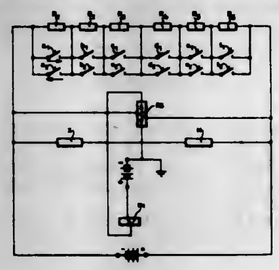
a plunger slidably mounted in said housing and movable between first and second positions and having a cam of electrical insulating material movable therewith;

a conductor carried in said plunger and having a pair of exposed contact faces; and

a pair of contact carriers mounted in said housing each including a contact resiliently urged toward said plunger and each including a cam surface separate from the contact and engageable with said insulating cam when said plunger is intermediate said first and second positions for moving said contacts away from said plunger and maintaining an open circuit between said carriers, with said contacts engaging said contact faces and completing a circuit between said carriers when said plunger is in one of said positions.

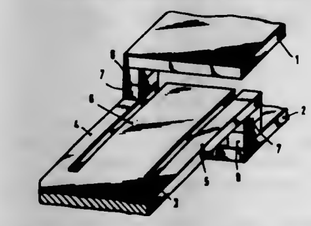
3,294,943
RESISTANCE MEASURING CIRCUIT
Eberhard Lorenz, Karlsruhe, and Franz E. Thiis, Durmersheim, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Feb. 11, 1963, Ser. No. 257,709
Claims priority, application Germany, Feb. 15, 1962, S 78,042
5 Claims. (Cl. 200—166)

1. In a measuring circuit with at least one pair of relay-actuated contacts disposed therein by means of soldered points of connection between different metals at two respective points of different temperature, whereby thermal voltages are produced, the combination of an additional pair of relay-actuated contacts disposed with its respective soldered points of connection at points of the same temperature as the corresponding soldered points of the first pair of contacts, said second contact pair being disposed in the circuit including said first pair of contacts and actuatable therewith, with the soldered points of connection of the second pair being reversed therein with respect to the corresponding soldered points of connection of the first



contact pair, whereby the respective thermal voltages produced at the respective contact pairs will be oppositely oriented.

3,294,944
MAGNETICALLY ACTUATED SWITCHING CONTACTS
Hugo Angermaier, Munich, and Thilo Schwarzmaier, Munich-Solln, Germany, assignors to Siemens & Halske Aktiengesellschaft, Munich, Germany
Filed Oct. 21, 1965, Ser. No. 499,415
Claims priority, application Germany, Mar. 2, 1965, S 95,738
5 Claims. (Cl. 200—166)



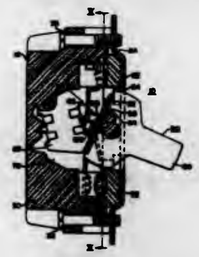
1. A sealed electrical contact set including a center and a pair of outer spring contacts of magnetic material, each having end portions opposite each other, so that at least the center contact and one of the outer contacts engage upon switch actuation, both the center contact and said outer contacts being operable to carry both magnetic flux and electrical current,

the center contact having a pair of outer longitudinally-extending tongues at said one end portion defined by a pair of parallel slots extending inwardly of the contact from the end thereof, the outer tongues being more narrow than the center tongue,

and at least a pair of electrical contact layers, one of said pair being on one of the center contact and one of the outer contacts and positioned therebetween, the other of said layers being on one of the center contact and the other of the outer contacts and positioned therebetween, with said contact layers being positioned between the outer tongues of the center contact and the fixed contacts.

3,294,945
SWITCH DEVICE WITH ILLUMINATED SWITCH HANDLE
Emmett James McLaughlin, Fairfield, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 18, 1965, Ser. No. 440,712
8 Claims. (Cl. 200—167)

1. A glow handle switch comprising an insulative housing and an operating handle movably supported in relation to said housing to actuate at least one contact arm for circuit making and breaking purposes, a pair of spaced terminal means supported by said housing, a light source assembly disposed within said handle and having flexible leads extending outwardly of said handle, means on said handle supporting respective end portions of said

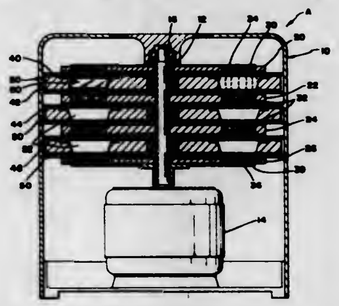


leads, a pair of resilient brush means, means for respectively connecting said brush means to said terminal means and for supporting said brush means in sliding engagement with said lead end portions, said lead end portions disposed to maintain continuous engagement with said brush means in all positions of the movable handle.

ERRATUM

For Class 219—8.5 see:
Patent No. 3,294,928

3,294,946
EDDY CURRENT HEATING DEVICE
Max Baermann, Bensberg Wuilsdorf, Cologne (Rhine), Germany
Continuation of abandoned application Ser. No. 168,616, Jan. 25, 1962. This application July 16, 1964, Ser. No. 384,820
Claims priority, application Germany, Aug. 12, 1961, B 63,637
9 Claims. (Cl. 219—10.49)

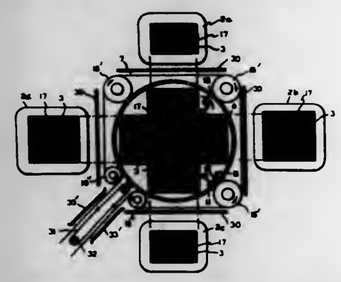


1. An eddy current heating device for heating a substance in a thin metal container, the device comprising in combination: at least a pair of spaced, multipolar magnetic disks rotatable about an axis and each disk having a plurality of circumferentially spaced, alternate north and south magnetic poles, each north magnetic pole of one disk facing a south pole of the other disk to create a plurality of magnetic fields each having an axis substantially parallel to the axis of rotation of the disks, adjacent magnetic fields being of opposite direction, electrically non-conductive means for supporting the thin metal container between the disks and means for rotating said disks while said container is stationary.

3,294,947
APPARATUS FOR THERMAL DEVELOPMENT OF PHOTOGRAPHIC MATERIALS

John H. Whitmore, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 10, 1965, Ser. No. 512,973
4 Claims. (Cl. 219—10.61)

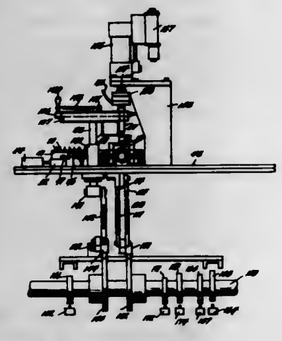


4. Apparatus for heating non-electrically conductive sheet material comprising, in combination, a rotatable hollow cylinder of high conductivity for heat and electricity, guide rollers supporting said cylinder for rotation about its axis, an elongated magnetic flux-generating element generally co-axial with said cylinder occupying a major portion of the cross sectional area within said cylinder and being sufficient to induce in said cylinder a relatively heavy electric current, and a guide belt extending around and in contact with substantially the entire periphery of said hollow cylinder, adapted to travel therewith for supporting said sheet material in surface contact with outer surface of said cylinder around substantially its entire periphery.

3,294,948
AUTOMATIC RESISTANCE WELDING MACHINE

Charles R. Fegley, Lansdale, Donald E. Horning, Wyomissing, and John H. Mattes, Reading, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 2, 1964, Ser. No. 372,123
7 Claims. (Cl. 219—78)

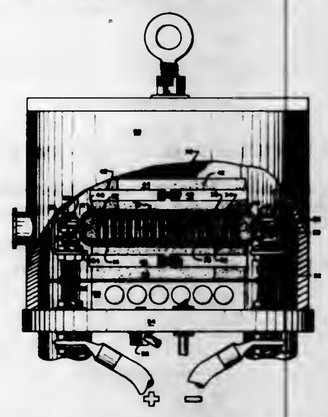


1. In a welding machine,
- means for supporting a pair of weldable articles in abutting relation,
- a first welding electrode mounted for movement into engagement with a first of said articles,
- a second welding electrode mounted for movement into engagement with said supporting means,
- means for moving said first and second welding electrodes into engagement with said first article and said supporting means,
- means for applying a striking force to one of said electrodes to forcibly impact said articles into further engagement, and
- means rendered effective upon application of said striking force for applying welding current through said electrodes and said articles.

3,294,949
APPARATUS FOR BRAZING SUPER ALLOYS AND REFRACTORY METALS

William T. Kaariela, Fort Worth, Tex., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware

Filed June 16, 1964, Ser. No. 375,514
5 Claims. (Cl. 219—85)

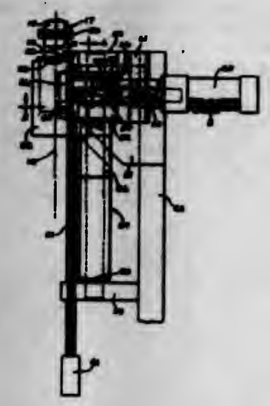


1. A device for joining refractory metal and super alloy materials without deleterious recrystallization occasioned by substantial periods within the materials recrystallization zone during the joining, comprising in combination:
- (A) an enclosure means defining a selectively closeable workspace, said enclosure having means operative therewith to control the environment therewithin;
- (B) first electrical insulation-separator means operatively associated with each major surface of an object workpiece to uniformly and rapidly distribute heat from a heat source directly to the object workpiece;
- (C) heat source means positionable on each of said first electrical insulation-separator means on the portion thereof furthest removed from the workpiece, said heat source means comprising
  - (1) a plurality of juxtapositioned, parallel ribbon resistance heater elements of a refractory metal material, and
  - (2) electrically conductive refractory metal contact elements positioned across and in intimate electrical contact with said plurality of ribbon resistance heaters to thereby transmit current to each of said ribbon elements,
- (D) second electrical insulation separator means positionable on the portion of said heat source means furthest removed from said first electrical insulation separator means to uniformly and rapidly distribute heat from said heat source to the object workpiece; and
- (E) thermal insulation means positionable on said second electrical insulation separator means on the portion thereof furthest removed from said heat source means and operative to confine heat generated by said heat source means to the immediate vicinity of the workpiece and substantially limiting the mass heated and resultant residual heat.

3,294,950
APPARATUS FOR ATTACHING LEADS TO ELECTRICAL COMPONENTS

Lawrence E. Stamer, Downers Grove, and Gustav O. Stegner, Naperville, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 28, 1963, Ser. No. 283,896
8 Claims. (Cl. 219—103)



1. In an apparatus for attaching leads to electrical components:
- means for holding a component in a predetermined position in alignment with an axis;
- a pair of electrodes disposed on opposite sides of said axis adjacent to the component for gripping a lead therebetween;
- means for feeding a lead transversely of said axis to a forward position with the lead coaxial with the axis and in a position between said electrodes;
- means for supporting said electrodes for relative movement therebetween to grip the lead adjacent the leading end thereof and for movement parallel to the axis;
- means connected to said electrodes for effecting the heating of the lead; and
- means for effecting the sequential actuation of said electrodes to cause gripping engagement of said electrodes with the lead and the axial movement of the lead against the component.

3,294,951
MICRO-SOLDERING

Kalmar O. Olsen, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 30, 1963, Ser. No. 276,877
10 Claims. (Cl. 219—117)

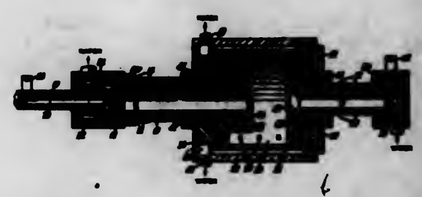


1. A method of attaching active and passive electronic circuit components to circuit boards having metalized terminal pads thereon comprising:
- applying a coating of conductive material having a lower melting point than the terminal pads to at least some of such pads on a board,
- positioning the individual circuit components on the board such that at least portions of the individual leads extending from the components contact respective individual coated terminal pads,
- locating the board generally in the path of a highly energized beam in such a position that the beam will impinge upon a first lead where it contacts a pad,
- adjusting the apparatus which generates the beam so that a beam having sufficient energy to produce holes in the leads will be generated,
- gating the beam generating apparatus on for a period sufficient to produce a capillary hole in the first lead and melt the coating on the pad, and
- causing relative movement between the beam and the board during periods when the beam is not gated on to cause the beam to impinge upon other selected leads.

3,294,952
METHOD FOR HEATING GASES

Richard C. Eschenbach, Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York

Filed Sept. 25, 1963, Ser. No. 311,493
4 Claims. (Cl. 219—121)



1. A method for heating gases having an oxidizing component with an electric arc gas heater having a water-cooled cup-shaped electrode and tubular water-cooled nozzle electrode open at both ends and axially spaced from the open end of the cup electrode; a water cooled chamber of substantially greater diameter than and surrounding the space between said two electrodes, at least one tangential gas injection means in the walls of said chamber for introducing gas to be heated; said electrodes being fabricated from at least one metal taken from the class of metals consisting of copper, aluminum, tungsten, silver, molybdenum and alloys thereof, said method comprising introducing the gas to be heated into said chamber such that the ratio of the diameter of the circle formed by the tangential injection means to the inside diameter of the front electrode times the tangential component of the Mach number is equal to or greater than 1 with the proviso that said ratio has a maximum value of 8.

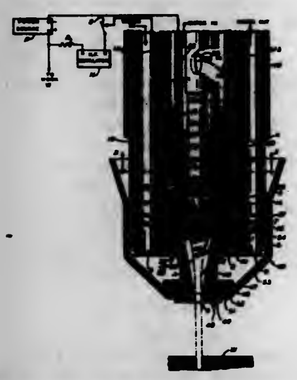
3,294,953
PLASMA TORCH ELECTRODE AND ASSEMBLY

George R. Spies, Jr., Murray Hill, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,882
14 Claims. (Cl. 219—121)

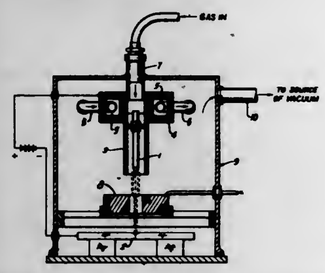
1. In a plasma torch, an electrode assembly including in combination an electrode member having a forward face, a nozzle member having a rear face and a rear orifice in that rear face and a front orifice with which through the nozzle member the rear orifice communicates, said forward face comprising a substantially flat annular portion, said forward face having a transverse dimension at least slightly greater than that of the rear orifice and overlying the rear orifice with its annular portion forming with the rear face a thin annular aperture, the distance between said electrode face and said rear face being a minimum at said annular aperture dur-

ing normal operation, and means for introducing through said annular aperture a spiral flow of gas contracting



along said forward face, said forward face centrally comprising a protuberance against which said spiral flow is directed.

3,294,954
WELDING METHOD AND APPARATUS
Paul W. Ramsey, Wauwatosa, Wis., assignor, by mesne assignments, to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 15, 1963, Ser. No. 316,280
4 Claims. (Cl. 219—123)



1. An apparatus for welding a workpiece, comprising an electrode spaced a substantial distance from a workpiece, means for supplying an inert gas to the electrode, means for making the electrode the anode in an electrical circuit, means for making the workpiece the cathode in said electrical circuit, means for establishing an arc between the electrode and the workpiece to generate a stream of positively charged ions at the anode with said stream travelling toward the workpiece, means for drawing a vacuum of between .1 and 10 mm. of mercury on said stream of ions and electromagnetic means located between the electrode and the workpiece for concentrating the stream of ions to reduce the cross section of the stream and permit said stream to traverse said substantial distance and to increase the energy density of the stream striking the workpiece.

3,294,955
FOOD WARMING APPARATUS
Seymour M. Anoff, 528 Jackson St., Glencoe, Ill. 60022
Filed Nov. 13, 1963, Ser. No. 323,347
3 Claims. (Cl. 219—347)

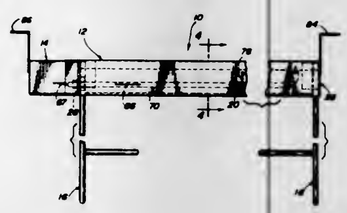
1. An improved electrical food warming apparatus having a heating element connectable across a power source, said apparatus comprising:

a first member having a pair of side walls and a back wall extending therebetween to define a box-like member open at either end and along the face opposite the back wall, said side walls terminating in a free end spaced from said back wall, each said free end having flanges along at least a portion of the length thereof;

an insulating material disposed in said first member against the back wall;

a reflector element in said first member disposed against the insulating material, said element defining edges in spaced apart relation, one edge being received in each flanged free end of the side walls of said first member;

an end cap mounted in each open end of the first member, each cap having retainer elements affixed thereto, each of the retainers in conjunction with the end caps and adjacent side wall defining a support leg receiving sockets having an open end facing the same direction as the open face of the first member, one of said end caps having an opening extending therethrough;



a heating element connected at one end through a flexible lead to one side of the power source, said one end being telescopically supported by said first member, the other end of said element being rigidly supported by the reflector element and being connected to the other side of said power source, said heating element extending lengthwise of said apparatus and being pendulously supported along its length in spaced relation to said reflector, whereby when said element is placed in heating condition heat will be reflected and focused by said reflector element and said heating element is free to expand longitudinally by telescopic movement through the opening in said one end cap thereby to prevent thermal distortion of the heating element during use.

3,294,956
MAGNETIC LEDGER CARD MACHINE
Charles S. Jenkins and Norwood K. Perkins, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,117
17 Claims. (Cl. 235—61.9)

2. A machine for automatically handling machine and human readable unit records such as a ledger card with a magnetizable track on a face thereof, the machine comprising:

(a) means for feeding and aligning the record such that the magnetizable track on the back of the record is at a magnetic transducer read-write station,

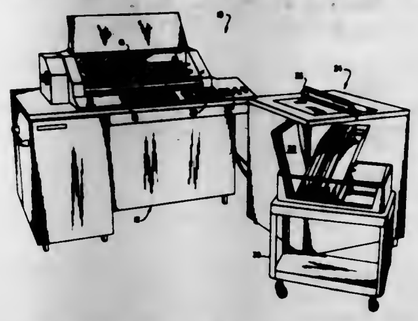
(b) a movable magnetic transducer means at the read-write station and movable along the magnetizable track of the aligned record,

(c) means for driving the magnetic transducer for a scan across the stationary aligned record,

(d) record feed means for automatically feeding the record after a scan thereof toward a print station, and automatically stopping the feeding of the record in response to a sense point thereon at a predetermined position relative to the print station, and, after a

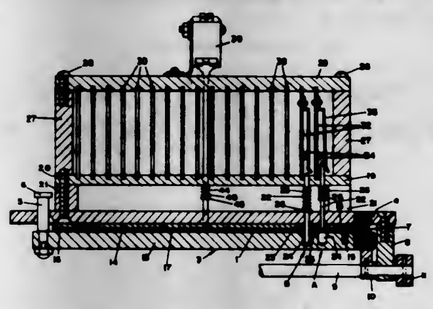
print operation, for returning the record to the magnetic transducer read-write station,

(e) means for automatically printing on a predetermined line of the record while at the printing station,



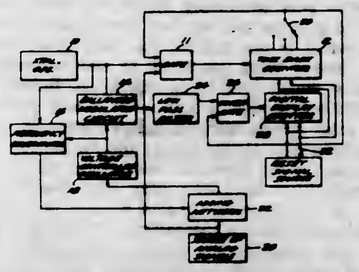
(f) and automatic means for activating the transducer drive means to scan the record at least twice while the record is stationary at the read-write station, once for recording additional information on the magnetizable track and a second time for checking the information so recorded.

3,294,957
CARD READER
Elmer T. Young, Newtown Square, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Dec. 27, 1962, Ser. No. 247,657
2 Claims. (Cl. 235—61.11)



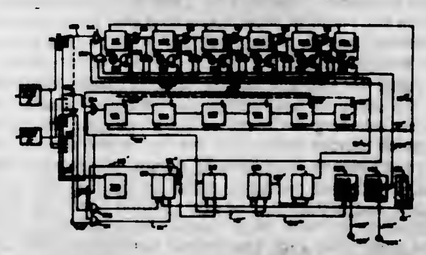
1. For reading a punched card containing information in the form of holes punched at selected ones of a multiplicity of locations arranged in a pattern on said card, a card reader comprising a card chamber for receiving a card to be read, means for moving said chamber from a card-receiving to a card-reading position, a plurality of separate printed circuit boards on each one of which are mounted a plurality of switches, providing a multiplicity of switches one for each of said locations, said circuit boards being slidably mounted in said reader and being readily removable therefrom; and a multiplicity of switch actuating members equal in number to the switches, said members being positioned at locations registering respectively with the said card locations when a card in said chamber has been moved to card-reading position, said members being aligned with the respective switches and being brought, upon movement of said chamber to card-reading position, to one or the other of two positions depending on the presence or absence of a hole in the card at the corresponding location, thereby to control each switch in accordance with the position of its corresponding member.

3,294,958
ANALOG-TO-DIGITAL CONVERTER
Wilbur E. Du Vall, Gardena, Calif., assignor, by mesne assignments, to The Electronic Corporation, Los Angeles, Calif., a corporation of Delaware
Filed July 13, 1962, Ser. No. 209,718
5 Claims. (Cl. 235—92)



1. Apparatus for converting a voltage from an analog signal source to a digital representation thereof comprising an oscillation generator, a voltage-controlled oscillator, means for applying the output from said source of analog signals to said voltage-controlled oscillator to control the frequency of oscillations of said voltage-controlled oscillator, means for combining the output of said oscillation generator and said voltage-controlled oscillator to derive a resultant signal having a frequency equal to the difference between the output of said two oscillators, a counter, and means to apply said resultant signal to said counter for a predetermined interval whereby the count output of said counter is a digital indication of the signal applied to said voltage-controlled oscillator from said source of analog signals, wherein said means to apply said resultant signal to said counter for a predetermined interval comprises a time-base counter, means for applying output from said oscillation generator to said time-base counter for a predetermined interval, means for selecting an output from said time-base counter, a gate circuit having its input connected to receive said resultant signal from said means for combining output and its output connected to said counter to apply said resultant signal thereto, and means for applying the selected output of said time-base counter to said gate to close it to prevent any further application of said resultant signal to said counter.

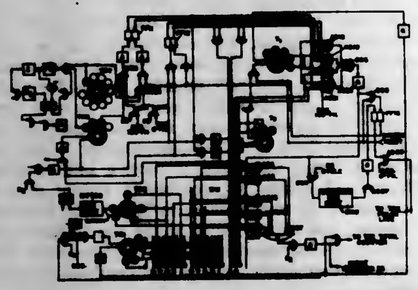
3,294,959
ELECTRICAL SYSTEM HAVING ROTATABLE INDICATOR DRUM FOR DISPLAYING STORED DATA
William Arthur Ward, 71 Deerfield Road, Norwood, Mass. 02062
Continuation of application Ser. No. 205,763, June 27, 1962. This application Mar. 14, 1966, Ser. No. 534,246
4 Claims. (Cl. 235—92)



1. An electric system comprising a rotatable drum carrying a series of indicia along its circumference, means comprising an element rotatable with said drum for producing an index pulse in response to the rotation of said

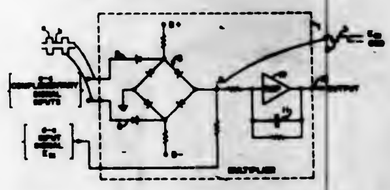
element past a predetermined location, means comprising a series of elements rotatable with said drum for producing sequential pulses in response to the rotation of said series of elements past a predetermined location, data storage means, a bistable control circuit connected to said storage means and adapted to place said storage means in read-out condition, said control circuit being connected to said index pulse-producing means and being responsive thereto to produce said read-out condition when said control circuit is in one but not the other of its states, said storage means being connected to said sequential pulse-producing means and being responsive thereto to produce data output signals only when in said read-out condition, reset means operable independently of said drum for resetting said storage means and for placing said control circuit in the other of said states, means operable independently of said drum after actuation of said reset means for commencing a data read-in period for said storage means and for thereafter terminating said read-in period and automatically placing said control circuit in said one state, and means dependent upon said data output signals for repetitively and indefinitely illuminating indicia of said drum in response to the data stored in said storage means until said reset means is actuated.

3,294,960
ELECTRONIC TAX CALCULATION CIRCUIT FOR USE IN BUSINESS ACCOUNTING SYSTEM
Ralph Townsend, Darien, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Sept. 29, 1964, Ser. No. 400,067
12 Claims. (Cl. 235—160)



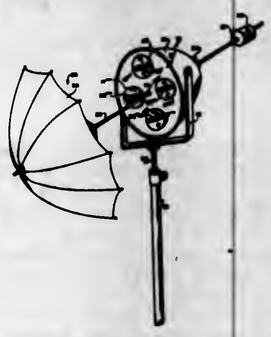
1. In combination with a first ring counter of bidirectional type, having cents, 10-cent, dollars and 10-dollar decade portions, for counting and storing therein pulses in number representing information on the total running price before tax, or sub-total price, of the quantity of commodity items, or services, sold on a single order to a customer; a circuit for computing and indicating the tax on said sub-total price comprising indicating means including mechanical tax counter means having cents and dollars portions; a plurality of gates each representing a different tax break in accordance with said law, connected to different outputs of said counter portions and adapted to be enabled thereby when said first counter counts a sum equal to that tax break; control means controlled from the output of said dollars and 10-dollar counter portions for selecting the range of tax breaks and the repetitive cycles thereof under said law applicable to said sub-total price; means responsive to signals generated by said circuit in different operating cycles for causing the tax on the cents and dollars part of said subtotal to be calculated separately in the form of an appropriate number of pulses of one cent value each transmitted through enabled ones of said gates selected by said control means; and means for transmitting the pulse outputs of all the enabled gates to said indicating means to accumulate the tax information therein.

3,294,961
PHASE AND D.-C. VOLTAGE ANALOG COMPUTING SYSTEM
Eddy Hess, Bethesda, Md., assignor to Cubic Corporation, San Diego, Calif., a corporation of California
Filed Oct. 19, 1962, Ser. No. 231,770
6 Claims. (Cl. 235—193)



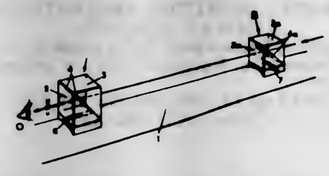
1. In combination: first and second means for producing first and second signals, respectively, wherein the first signal produced by said first means is a first A.-C. signal; output filtering means responsive to an applied varying input signal for producing an output signal whose value represents the average of the applied input signal; conductive means normally coupling said first signal to said output filtering means; means responsive to the portion of said second signal lying above a predetermined magnitude for grounding said conducting means; means for generating a reference A.-C. signal, the phase difference between said reference and said first A.-C. signal corresponding to an angle, a trigonometric value of which is to be determined, means for squaring said reference A.-C. signal to produce said second signal, said squared signal exceeding said predetermined magnitude during one-half of each cycle whereby the averaged output signal produced by said output means represents a trigonometric value of the phase difference between said reference and said A.-C. signals.

3,294,962
INDIRECT OR "BOUNCE" LIGHTING APPARATUS
Hy Hilson, 1 Shore Road Drive, Yonkers, N.Y. 10710
Filed Feb. 23, 1965, Ser. No. 434,642
7 Claims. (Cl. 240—1.3)



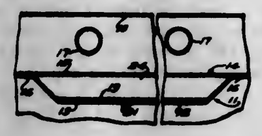
1. In an electrical lighting apparatus of the character described, a frame having a slide bearing means, an elongated rod slidably fitted through said bearing, a first reflector means on said rod, electric lamp means positioned on said frame and arranged substantially symmetrically around said bearing, second reflector means on said frame, directly opposite said first reflector means and adjacent said lamp means, adapted to direct light from said lamp means onto said first reflector means; said lamp means being intermediate said first and second reflector means and means to hold said rod in any desired position along said bearing whereby the distance from said lamp means to the first reflector means is adjustable.

3,294,963
DAY AND NIGHT AIMING DEVICE FOR WEAPONS
Félix Francis Gros, 6 Rue Copernic, Paris 16, France
Filed Mar. 12, 1964, Ser. No. 351,492
Claims priority, application France, Mar. 15, 1963, 928,198, Patent 1,393,987
7 Claims. (Cl. 240—6.41)



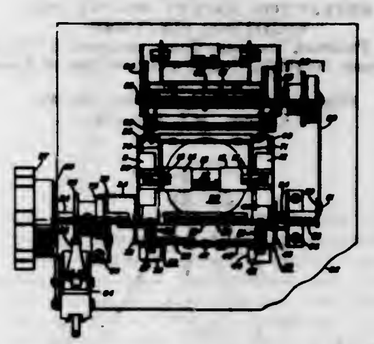
1. A sighting device comprising two blocks of clear transparent material which exhibit the phenomenon of total light reflection at their surfaces, each block being provided with an elongated opening extending at least part way therethrough, means for mounting said blocks in alignment with each other, but spaced apart along a common axis, with said elongated openings extending in different directions across said axis, and means for introducing light into each block, so that it will be reflected at the surfaces surrounding said elongated openings, thereby rendering said openings visible.

3,294,964
POLARIZED CEILING PANEL
Robert A. D. Schwartz, % United Lighting and Ceiling Company, 2626 Ford St., Oakland, Calif. 94601
Continuation of application Ser. No. 250,894, Jan. 11, 1963. This application Sept. 20, 1966, Ser. No. 580,641
10 Claims. (Cl. 240—2.5)



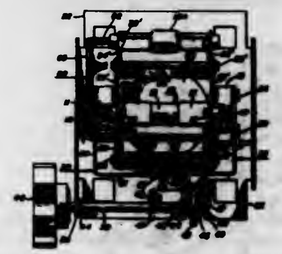
1. A ceiling panel for reducing undesirable reflection of illuminating light to an observer from an area being illuminated comprising polarizing means for intercepting the illuminating light before it reaches said area, said polarizing means transmitting said intercepted light as polarized light having a maximum percentage of polarization at an incidence angle corresponding to Brewster's angle for said polarizing means and lesser percentages of polarization at angles other than Brewster's angle, and a light refractive prismatic sheet means disposed to intercept said polarized light, substantially the entire incident surface of said prismatic sheet means having a continually changing angular relationship with respect to the opposite surface, said light refractive prismatic sheet means refracting light having maximum percentage of polarization at Brewster's angle over a range of emergent angles between 25° and 40° at which said area is to be viewed, and means for mounting said polarizing means and said light refractive prismatic sheet means to a ceiling structure having a source of illuminating light.

3,294,965
AUTOMATIC LAMP CHANGING APPARATUS
Phillip M. Field, Maplewood, and Robert N. Ross, Jackson, N.J., assignors to Cardox Sparler Company, East Orange, N.J., a partnership
Filed June 24, 1965, Ser. No. 477,705
14 Claims. (Cl. 240—37.1)



1. Apparatus comprising,
(a) a pair of axially aligned sockets normally positioned to support a lamp in an operating station,
(b) mounting means supporting the sockets for movement between first positions wherein the sockets support a lamp positioned in the operating station to second positions wherein the sockets are disengaged from such lamp,
(c) a rotatable member carrying a plurality of lamps and rotatable about an axis parallel to that of the sockets,
(d) operating means operable to move the said sockets between said first and second positions, and
(e) means actuated by the said operating means to rotate said rotatable member to position a lamp in the operating station when the sockets are in the second positions.

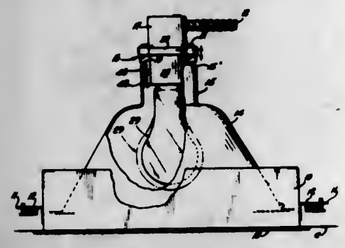
3,294,966
AUTOMATIC LAMP CHANGING APPARATUS
Phillip M. Field, Maplewood, and Robert N. Ross, Jackson, N.J., assignors to Cardox Sparler Company, East Orange, N.J., a partnership
Filed June 24, 1965, Ser. No. 291,539
17 Claims. (Cl. 240—37.1)



1. Apparatus comprising,
(a) a pair of lamps,
(b) supporting means carrying the lamps in spaced parallel relation,
(c) movable socket means normally disposed in a first position to engage a lamp positioned in a predetermined operating station, said socket means being movable to a second position out of engagement with such lamp, and

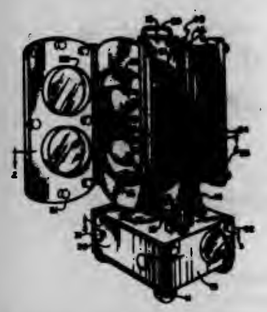
(d) operating means moving the socket means between the first and second positions and thereafter moving said supporting means to alternately position the lamps in the operating station during each complete cycle of movement of said socket means.

3,294,967
REFLECTOR SOCKET MOUNT FOR LIGHTING FIXTURES
Julio A. Pascucci, Meriden, Conn., assignor to The Miller Company, Meriden, Conn., a corporation of Connecticut
Filed Aug. 19, 1964, Ser. No. 390,549
6 Claims. (Cl. 240—78)



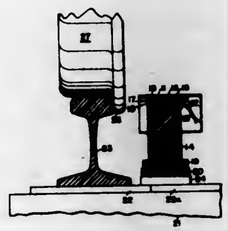
1. The combination with a reflector having a socket receiving opening, of an adjustable lamp mount to permit a given lamp to be positioned with its filaments in a predetermined location relative to said reflector comprising a tubular socket housing slidably engaging said reflector opening and movable axially thereof, a lamp socket carried by said housing, axially disposed means carried by said socket housing in angularly spaced relationship, the socket receiving opening in said reflector having recesses in the edge thereof slidably receiving said axially disposed means to prevent relative rotation of said socket housing and said reflector and means associated with said axially disposed means adjustably fixing the axial position of said housing relative to said reflector to position the filament of a lamp in a predetermined position relative to said reflector.

3,294,968
LIGHT AND CORD STORING DEVICE
Henry C. Lloyd, 912 Cherry St., Erie, Pa. 16502
Filed Mar. 2, 1964, Ser. No. 348,736
4 Claims. (Cl. 240—81)



2. In combination, a light and cleat means for supporting electric cord comprising
a base having a drawer therein,
light means in said base having openings therein emitting light in a first direction,
a standard on said base,
said standard having means defining a lamp containing enclosure generally square in horizontal cross section,
a swinging door having lense means therein swingably attached to said standard and closing said enclosure,
said enclosure defining a cleat for wrapping cord around said enclosure,
and cleat means extending rearward from said standard,
said rearwardly extending cleat means comprising integral parts of said standard.

3,294,969
HOT WHEEL DETECTOR APPARATUS FOR RAILWAY VEHICLES
Henry C. Sibley, Spencerport, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 14, 1964, Ser. No. 389,604
6 Claims. (Cl. 246—169)

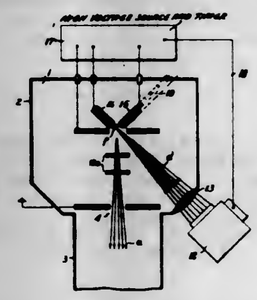


1. Apparatus for detecting the presence of overheated wheels on a railway vehicle adapted to travel on a pair of running rails comprising,
(a) heat sensitive means responsive to the heat radiated thereto from an overheated wheel passing adjacent thereby,
(b) mounting means positioned between said running rails for mounting said heat sensitive means in proper detecting position in substantial horizontal alignment with a head portion of one of said running rails, whereby said heat sensitive means is continually viewing the innerside of said rail head when no wheel is passing said detecting apparatus and whereby said heat sensitive means is particularly responsive to the heat radiated from the flange of a passing wheel, and
(c) signaling means responsive to said heat sensitive means for giving an indication of the passage of each overheated wheel.

3,294,970
MEANS COMPRISING A SOURCE OF COHERENT RADIANT ENERGY FOR THE PRODUCTION OF IONS FOR MASS SPECTROMETRY
Ludolf Jenckel, Mühlenfeld 15, Bremen-St. Magnus, Germany
Filed Oct. 24, 1962, Ser. No. 233,204
Claims priority, application Germany, October 26, 1961, A 38,667
6 Claims. (Cl. 250—41.9)

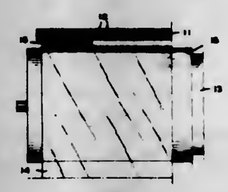
1. An ion source comprising,
means defining an enclosed fluid-tight volume having an excitation chamber for containing a substance to be ionized for analysis, an analyzing chamber for receiving a stream of ions produced upon excitation of said substance and means for transmitting said stream of ions from said excitation chamber to said analyzing chamber,

a source of high intensity coherent radiant energy located outside said volume defining means,
said volume defining means including a transmissive portion between said source and said excitation chamber that transmits rays of said radiant energy,



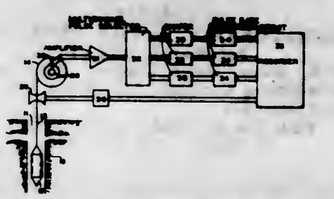
and means for focusing said radiant energy from said source substantially into a point in said excitation chamber for exciting a substance therein into a stream of ions characteristic thereof for transmission to said analyzing chamber.

3,294,971
APPARATUS FOR THE CORONA DISCHARGE TREATMENT OF THERMOPLASTIC FILMS WHEREIN THE DISCHARGE ELECTRODE HAS A PLURALITY OF KNIFE EDGES
Jack C. van der Hoble, Stratton, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Feb. 8, 1965, Ser. No. 431,845
5 Claims. (Cl. 250—49.5)



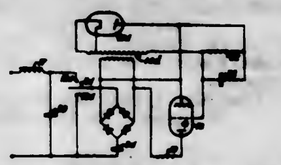
1. In apparatus for improving the adhesion characteristics of polyolefin film through corona discharge treatment, including electrode means for generating a corona discharge across a gap and upon the film being treated, means for supplying high frequency alternating electric current to said electrode means, a grounded back-up member and a dielectric layer interposed between said electrode means and said back-up member, the improvement which comprises electrode means constituted by at least one rigid rod-like member extending transversely across the width of the film being treated, said electrode means including a corona discharge surface constituted by a plurality of uniformly and closely spaced parallel knife edges disposed transversely with respect to the longitudinal axis of said rod-like member and extending into corona discharging spatial relationship with respect to said back-up member, the maximum distance between adjacent knife edges being no greater than the gap over which the corona discharge travels, the width of the gap being on the order of 0.060 of an inch and the number of knife edges on said rigid rod-like member being on the order of 16 to 18 edges per inch.

3,294,972
NEUTRON-GAMMA BOREHOLE LOGGING METHOD AND APPARATUS FOR IDENTIFYING ELEMENTS IN BOREHOLE FORMATIONS
Arthur H. Youmans, Tulsa, Okla., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 23, 1961, Ser. No. 243,230
41 Claims. (Cl. 250—83.3)



1. A method of radioactivity well logging that comprises the steps of traversing the formations penetrated by a well with a source of neutrons to thereby irradiate the formations with neutrons, simultaneously and by the same traversing step separately detecting at a first point spaced from said source gamma radiation resulting from neutron capture in the formations without detecting gamma radiation resulting from the inelastic scattering of neutrons in the formations by producing proportionally related electrical pulses, simultaneously and by the same traversing step separately detecting at a second point nearer said source than said first point gamma radiation including gamma radiation resulting from the inelastic scattering of neutrons in the formations by producing proportionally related electrical pulses, separately transmitting the electrical pulses to the surface of the earth, separately dividing the pulses into groups according to pulse height, separately deriving direct-current signals proportional to the rate of occurrence of pulses in each group, and separately recording the derived signals in correlation with the depth in the well at which detection occurred whereby comparisons of the records are indicative of the nature of the formations.

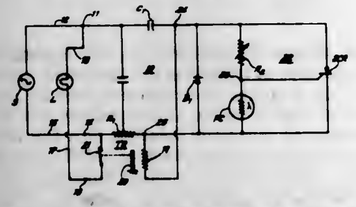
3,294,973
X-RAY TUBE POWER SUPPLY HAVING A CONDENSER AND/OR RECTIFIER IN THE PRIMARY CIRCUIT
Hans Jacobs, Ovuru Block 52, Hamburg-Fuhlsbüttel, Germany
Filed Nov. 27, 1964, Ser. No. 414,975
Claims priority, application Germany, Dec. 14, 1963, J 24,934
9 Claims. (Cl. 250—98)



1. X-ray apparatus comprising a high-voltage transformer and an X-ray tube which is connected directly to the high-voltage transformer, said transformer having at least one primary winding, an A.C. voltage source, a circuit connecting the A.C. voltage source and said primary winding; a single pole double throw switch in said circuit, a condenser in said circuit, said switch having a first position in which the condenser is connected to the A.C. source and is charged thereby and a second position in which the condenser is isolated from the source and undergoes discharge, and means coupled to the condenser and the transformer winding to produce fluxes in the same direction in the primary winding of the transformer dur-

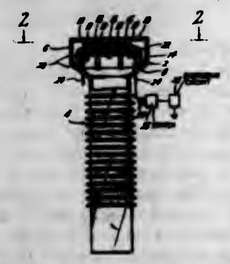
ing both charging and discharging of the condenser, said switch being driven in synchronized relation with the frequency of the A.C. voltage such that the condenser is charged and discharged 4 times in each A.C. voltage cycle, the charging periods being arranged in respective symmetrical pairs about the maximum and the minimum of the voltage sine curve.

3,294,974
PHOTO-CONTROL DEVICE EMPLOYING THERMAL RELAY
Richard E. Riehs, Helen Corners, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 339,370
10 Claims. (Cl. 250—206)



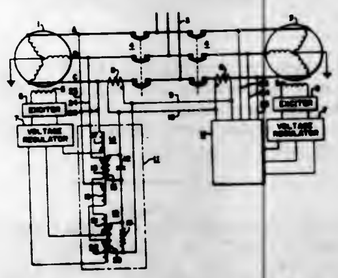
7. A three terminal photo-control device having a pair of terminals constructed and arranged for connection to a source of alternating potential, a thermal relay including a resistance heater having a pair of electrodes connected across said pair of terminals and a normally closed thermally responsive member constructed and arranged to connect one of said pair of terminals to a third terminal, an impedance means in circuit between said electrodes and said pair of terminals, a diode connected in a first sense across said electrodes, a controlled rectifier having a gate electrode and having anode and cathode electrodes connected in an opposite sense across said electrodes, a photo-sensitive resistor and an impedance connected in series across said electrodes, the gate electrode of said controlled rectifier being connected to the junction between said photo-sensitive resistor and said impedance to provide a gate potential inversely related to the level of ambient illumination, so that said resistance heater will be short-circuited when the level of ambient illumination falls below a predetermined value whereby said thermally responsive member will close to connect the one of said pair of terminals to said third terminal.

3,294,975
PHOTO-DEVICE WITH SEGMENTED PHOTOCATHODE
Horst G. Flock, Titusville, N.J., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Nov. 1, 1962, Ser. No. 234,646
9 Claims. (Cl. 250—207)



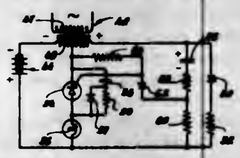
2. A photomultiplier tube having a photocathode portion and a dynode portion; said photocathode portion comprising a head, a neck joining said head with said dynode portion, a window formed of transparent material, an electrically insulating member supporting said window within said head, a plurality of slots cut through said window to divide said window into a plurality of segments; said slots extending a substantial distance into said insulating member; photoemissive means disposed on each of said segments; and means for selectively and independently connecting the photoemissive means on each of said segments to an energizing circuit.

3,294,976
UNBALANCED LOAD DETECTION IN ALTERNATING CURRENT SYSTEMS
Lynn L. Tipton and James P. Hobbs, Lima, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1964, Ser. No. 347,812
13 Claims. (Cl. 307—57)



1. In a system including a plurality of polyphase alternating current power sources operating in parallel, means for producing a signal current proportional to the difference in load currents of said power sources, and a voltage sensing circuit for each power source, each of said voltage sensing circuits including means for deriving a plurality of voltages from said signal current having predetermined phase relations thereto, and means for combining said derived voltages with the phase voltages of the power source to add vectorially thereto.

3,294,977
EMERGENCY POWER SUPPLY UNIT
Edward T. Duncan, Westport, Conn., assignor to The Maintenance Company, Inc., Long Island City, N.Y., a corporation of New York
Filed Sept. 24, 1963, Ser. No. 311,695
8 Claims. (Cl. 307—66)



1. An emergency lighting apparatus for an elevator cab which comprises: a ventilator arranged to be mounted in the ceiling of said cab; an emergency lighting unit positioned within said ventilator, said unit comprising transformer means having a primary winding connectable to an alternating power source and a secondary winding including first and second terminals, rechargeable battery means and first diode means connected in electrical series relationship, said battery means being connected to said first terminal and said first diode means being connected to said second terminal to maintain said battery in a charged condition from said transformer means, solid state switching means including an anode, a cathode, and a gate, emergency lamp means positioned to direct emergency light downward from said apparatus and connected in series with said anode and cathode, the series circuit being connected in parallel with said battery, and a series circuit comprising second diode means and relatively high impedance capacitor means connected between said second terminal and the gate of said solid state switching means.

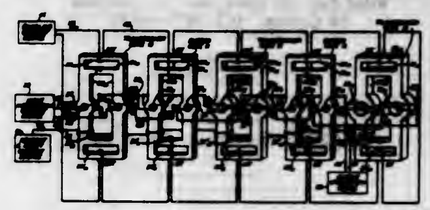
3,294,978
UNBALANCED CURRENT PROTECTION APPARATUS FOR PARALLEL GENERATOR SYSTEMS
William W. Billings, Lima, and Otto L. Applebeck, Fort Shawnee, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 6, 1963, Ser. No. 256,696
13 Claims. (Cl. 307—84)



3. In an unbalanced current protective system for use with a plurality of paralleled generators including a first generator, signal generating means operatively connected to all the generators for providing a signal of a first predetermined amplitude when the difference between the current supplied by said first generator and the mean of the currents supplied by all of the generators attains at least a first predetermined value, and for generating a signal of a second predetermined amplitude when the difference between the current supplied by the first generator and the mean of the currents supplied by all of the generators falls to a second predetermined value less than the first value, a utilization circuit including a source of energizing potential, transistor means operatively connected to the utilization circuit for switching the utilization circuit between energized and deenergized conditions in accordance with variations in the condition of the transistor means between conductive and non-conductive states, and circuit means including a semiconductor device connecting the transistor means to the signal generating means for selectively rendering the transistor means conductive and non-conductive in accordance with variations in the signal between one amplitude and the other amplitude of said first and second amplitudes.

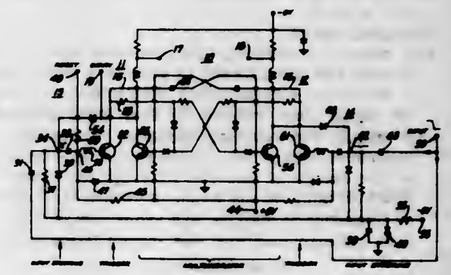
3,294,979
MULTIAPERTURE MAGNETIC CORE CIRCUIT
Edmunds E. Newhall, Brookside, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 27, 1963, Ser. No. 268,337
20 Claims. (Cl. 307—88)

1. In combination in a magnetic amplifier, two multiapertured transformer cores and a multiapertured buffer core, each of said cores including a cross leg and a driving leg which completes a closed magnetic path through said cross leg, a leg connected in shunt with each of said driving legs, each of said cross legs being apertured to form two equal-length shunt magnetic members, said transformer cores respectively including shunt cross leg members of different effective magnetic lengths, and a shunt-



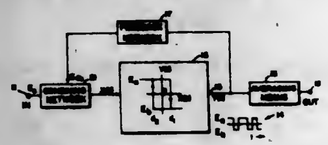
circuited winding coupled to the shunt magnetic members included in said transformer cores and said buffer core, said winding being coupled to each of said shunt magnetic members of each of said cores in an opposite polarity.

3,294,980
HIGH SPEED BINARY
LaVar E. Whittle, Granada Hills, Calif., assignor to Pacific Industries, Inc., San Fernando, Calif., a corporation of California
Filed Feb. 27, 1963, Ser. No. 261,985
5 Claims. (Cl. 307—88.5)



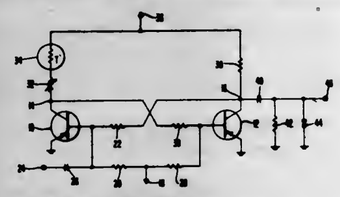
3. In a binary circuit having a bistable multivibrator circuit and a trigger circuit for coupling input pulses to the multivibrator circuit, a new and improved input steering circuit including in combination:
a first capacitor for transferring an input voltage change to a first junction point;
a second capacitor for transferring an input voltage change to a second junction point;
first means for coupling said first junction point to the trigger circuit for one side of the multivibrator circuit;
second means for coupling said second junction point to the trigger circuit for the other side of the multivibrator circuit;
a first diode connected in parallel with said first coupling means and associated trigger circuit between said first junction point and one output of the multivibrator circuit; and
a second diode connected in parallel with said second coupling means and associated trigger circuit between said second junction point and the other output of the multivibrator circuit;
with one of said diodes presenting a low impedance path to its junction point and the other of said diodes presenting a high impedance path to its junction point and with the arrangement of said high and low impedance paths switching as said multivibrator circuit switches.

3,294,981
SIGNAL TRANSLATION EMPLOYING TWO-STATE TECHNIQUES
Amar G. Bose, Chestnut Hill, Mass., assignor to Bose Corporation, a corporation of Massachusetts
Filed July 19, 1963, Ser. No. 300,404
34 Claims. (Cl. 307—88.5)



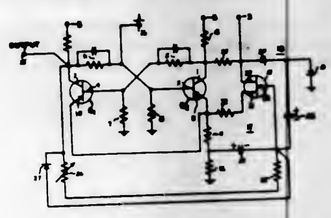
1. Signal translation apparatus comprising,
a two-state device having an input and an output for providing one of first and second output levels and shifting to the other only in response to a predetermined shift in the level on said input,
an input terminal for receiving an external signal,
means for combining a feedback signal related to the signal on said output with the signal applied to said input terminal to provide a combined signal at the combining means output,
means for coupling the output of said combining means to said input to shift said two-state device output between said first and second levels whereby the signal at said output includes a characteristic representative of the signal at said input terminal,
said output signal characteristic being its average value over a cycle,
averaging means,
and means for coupling said two-state device output to said averaging means to provide a signal having a waveform corresponding substantially to that of the signal then received by said input terminal,
said means for coupling including essentially non-dissipative means for blocking spectral components of the energy at said two-state device output from said averaging means which spectral components are of frequency at least as high as the rate at which the shift between said first and second levels occurs.

3,294,982
THERMISTOR CONTROLLED SIGNAL DELAY CIRCUIT
Luigi J. Russo, Springfield, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 26, 1963, Ser. No. 311,416
11 Claims. (Cl. 307—88.5)



1. The combination comprising:
an input terminal adapted to receive an electrical pulse;
current valve means, electrically connected to said input terminal and adapted to be connected to a source of electrical potential, for permitting the flow of current through itself upon receiving said electrical pulse from said input terminal;
temperature-sensitive means, electrically connected to the output of said current valve means, for turning off said current valve means after a predetermined amount of electrical charge has flowed through said current valve means; and
pulse generator means, electrically connected to said current valve means, for generating an output pulse that is coincident with the trailing-edge of the current pulse developed by said current valve means.

3,294,983
VARIABLE "ONE-SHOT" MULTIVIBRATOR
Cosby A. Draper, Jr., Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1964, Ser. No. 336,824
8 Claims. (Cl. 307—88.5)

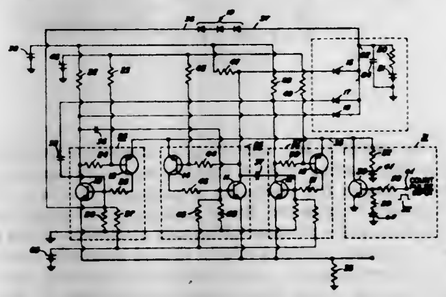


1. In a variable width pulse generator the combination comprising,
(a) a monostable multivibrator having two cross-connected conductive devices having a stable state during which one of the devices is normally conducting and the other of which is normally nonconducting;
(b) a trigger input terminal coupled to the normally conducting device for reversing the conductive states of the devices in response to a trigger pulse;
(c) an output pulse terminal connected to the normally nonconducting device, the width of the output pulse appearing at said terminal being equal to the interval that the normally nonconducting device is in the conducting state;
(d) a timing circuit coupled to said multivibrator including a voltage sensitive switch for generating a pulse which returns the multivibrator to its stable state, an R–C biasing network for said switch which charges during the interval that the normally conductive states of the devices have been reversed until a predetermined voltage level is achieved and said switch conducts, thereby generating a pulse;
(e) a control circuit coupled between the normally conductive device and said timing circuit for producing a voltage proportional to the duration that said normally conductive device is conducting, said control voltage varying the time required for the R-C biasing network to charge to the predetermined voltage level, thereby varying the time that the normally conductive device conducts and the width of the pulse at the output terminal.

3,294,984
RING COUNTER STARTING CIRCUIT EMPLOYING OR GATE FOR PRESELECTING STARTING STAGE AND THEN ISOLATING STARTING CIRCUIT
Jack E. Wisecarver, Santa Ana, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 20, 1964, Ser. No. 338,650
4 Claims. (Cl. 307—88.5)

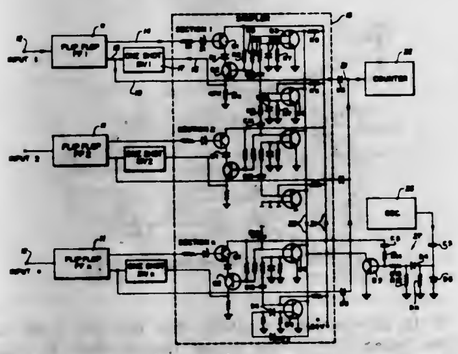
1. In combination with a ring counter having a plurality of stages, starting circuit means for starting said ring counter at a given stage, each stage of said ring counter comprising:
first input terminal means;
output terminal means whose potential will be at a first level or a second level depending upon the energization or de-energization of said stage,

means connecting the output terminal of each stage to the said first input terminal of the next adjacent stage in the ring of stages;
and pulse generating means for supplying pulses to said ring counter to cause stepping of the count within said ring counter from stage to stage;
said starting circuit means comprising:
common terminal means;
a plurality of diodes each having its high impedance presenting electrode connected to an individual one of said output terminals of said stages, and its low impedance presenting terminal connected to said common terminal means;



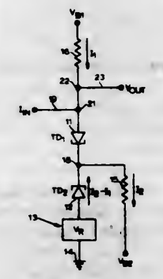
voltage source means and impedance means connected in series arrangement to said common terminal means and constructed to maintain the potential of said common terminal means substantially at the lowest actual potential of any of said output terminals;
and starting signal connecting means connected between said common terminal means and said first input means of the selected stage in which counting is to be initiated and constructed to supply the potential existing at said common terminal means to the first input means of said selected stage when said potential is above a predetermined threshold.

3,294,985
MULTIPLE INPUT COUNTER AND METHOD
Joseph G. Kramarz, Jr., 3751 Northridge Drive, Concord, Calif. 94520
Filed Sept. 11, 1964, Ser. No. 395,708
8 Claims. (Cl. 307—88.5)



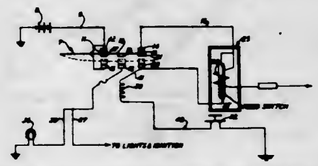
1. In a counter for counting a plurality of input signals, a plurality of bistable devices capable of assuming first and second stable states, means connecting one of the input signals to each of the bistable devices so that an input signal causes the bistable device to shift from its first stable state to its second stable state, sampling means operating in a continuous manner for determining which of said bistable devices has shifted from its first stable state to its second stable state, a signal generating device for each of said bistable devices, means connecting the sampling means to each of the signal generating devices so that the one, signal generating device for one of the bistable devices generates a signal when the sampling means determines that said one, bistable device is in its second stable state, means forming connections between the signal generating devices and the bistable devices so that the signal from said one generating device resets said one bistable device, a counting device, means connecting the signal generating devices to the counting device so that each signal from a signal generating device registers a count in the counting device.

3,294,986
BISTABLE TUNNEL DIODE CIRCUIT
Peter Pleshko, Waldwick, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,309
5 Claims. (Cl. 307—88.5)



1. An electronic circuit comprising:
a circuit branch including a series combination of a reference voltage means and a pair of tunnel diodes connected back-to-back;
means for applying bias potentials to one end of said branch and to a point between said diodes to cause forward current flow through the diodes;
an input terminal connected to said branch at a point intermediate said one end of the branch and said diodes; and
an output terminal connected to said branch at a point intermediate said one end of the branch and said diodes.

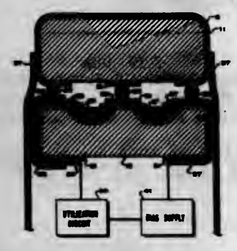
3,294,987
OVERLOAD PROTECTIVE DEVICE
Frank Skrbina, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,531
10 Claims. (Cl. 307—94)



1. In a vehicle having an electrical system including electrical accessories and an ignition system, the combination comprising a source of electrical energy, a main power supply circuit means for normally connecting said source of electrical energy to the electrical accessories and the ignition system; and an auxiliary electrical circuit means coupled to said main power supply circuit for opening said main power supply circuit means and for completing another power supply circuit from said

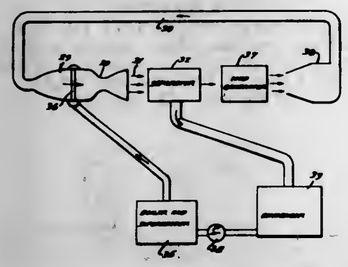
source of electrical energy to the ignition system, said auxiliary electrical circuit means being activated when the current in the main power supply circuit means reaches a predetermined level.

3,294,988
TRANSDUCERS
David Packard, Los Altos Hills, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Sept. 24, 1964, Ser. No. 398,977
4 Claims. (Cl. 310—8)



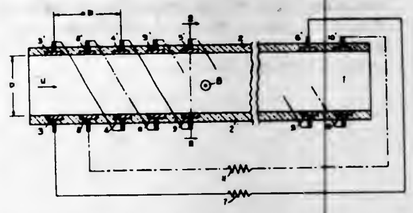
1. A solid state transducer comprising:
a quartz crystal having a shield-electrode disposed on upper and side surfaces of said crystal and having another electrode disposed on a lower surface thereof;
a field-effect transistor having a body portion including source and drain electrodes and having a gate electrode which is insulated from said body portion;
means connecting the shield-electrode of said crystal to the source electrode of said transistor;
means connecting said other electrode of said crystal to said gate electrode of said transistor;
means sealing the crystal and body of said transistor together; and
means providing electrical connections to said source and drain electrodes of said transistor;
whereby an external circuit is connectable to said electrical connections for producing an indication of external force exerted upon said crystal.

3,294,989
POWER CONVERSION SYSTEM
Hans P. Eichenberger, Cleveland, Ohio, assignor to TRW, Inc., a corporation of Ohio
Filed Sept. 25, 1961, Ser. No. 140,275
11 Claims. (Cl. 310—11)



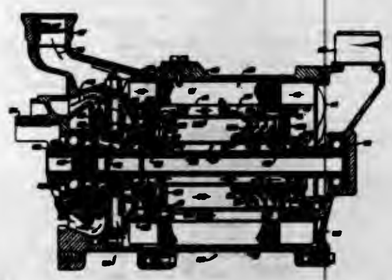
8. An energy conversion system comprising a nozzle having an inlet and an outlet, gas injection means disposed at said nozzle inlet which is adapted to be connected to a source of high pressure gas and to inject the gas into a stream of electrically conductive liquid flowing through said nozzle, a magnetohydrodynamic generator connected to said nozzle outlet, separating means connected to said generator exhaust for separating the liquid from the gas, and conduit means connected to receive liquid from said separating means and return it to said nozzle inlet.

3,294,990
MAGNETOHYDRODYNAMIC GENERATOR
Lang Shuen Duzsy, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Dec. 31, 1962, Ser. No. 248,536
Claims priority, application Switzerland, Jan. 17, 1962, 566/62
1 Claim. (Cl. 310—11)



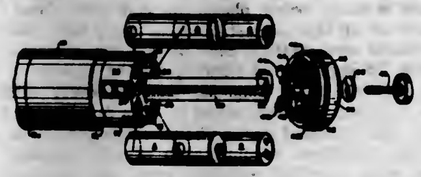
The method for operating a magnetohydrodynamic generator having a duct through which an ionized gas flows, means for producing a magnetic field extending perpendicularly to the direction of flow of the gas within said duct, and a plurality of pairs of electrodes within said duct arranged perpendicularly to said magnetic field and also perpendicularly to the direction of gas flow, the said pairs of electrodes being connected in series as regards the generated voltage and being connected to a load resistance, in order to minimize the influence of changes in load on the pressure gradient of the gas within said duct, which comprises the step of establishing a ratio of the Hall voltage set up across two pairs of electrodes, connected to one another, to the purely resistive voltage set up across the electrodes in one of such pairs which is substantially equal to the ratio of the longitudinal distance between the relevant pairs of electrodes to the transverse distance between the electrodes of one of said pairs.

3,294,991
INDUCED VAPORIZATION COOLING OF ROTARY ELECTRICAL MACHINES
Elmer F. Ward, Orange, Richard N. Rigney, Anaheim, and Richard R. Tracy, Pasadena, Calif., assignors to Task Corporation, Anaheim, Calif., a corporation of California
Filed Jan. 7, 1963, Ser. No. 249,631
8 Claims. (Cl. 310—54)



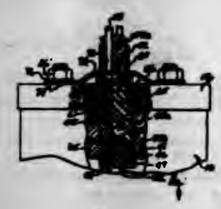
1. In an electrical machine that includes rotor and stator assemblies having a gap therebetween to which liquid has access, the improvement that comprises pump means operated during rotor assembly rotation for exerting suction tending to reduce liquid pressure in the gap and to sufficient extent that a vapor zone forms therein during machine operation, and said liquid circulating in cooling relation with at least one of said assemblies and along a path exteriorly of said gap, the pump means discharge communicating with said path.

3,294,992
END LOADING BATTERY HOLDER FOR APPLIANCE
Paul H. Nelson, Plainville, Conn., assignor, by mesne assignments, to General Electric Company, Bridgeport, Conn., a corporation of New York
Filed Feb. 26, 1964, Ser. No. 347,457
6 Claims. (Cl. 310—66)



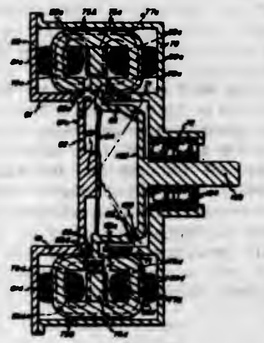
1. A battery holder for an electric motor operated appliance in combination with a power unit, including an electric motor having a pair of terminals, an insulator base having a concentric axial post, means for securing said base to said unit in axial alignment, a tubular casing concentric with said post and abutting said unit at one end, a closure cap for the other end of said casing, means for securing said cap to said post, and sets of conductor straps secured to said base and cap, to connect a plurality of dry cells in series with said terminals.

3,294,993
SUBMERSIBLE MOTOR WITH ELECTRICAL CONNECTOR ASSEMBLY
Peter S. Kosner and Elmer M. Deters, Davenport, Iowa, assignors to Red Jacket Manufacturing Company, Davenport, Iowa, a corporation of Iowa
Filed June 18, 1964, Ser. No. 376,196
6 Claims. (Cl. 310—71)



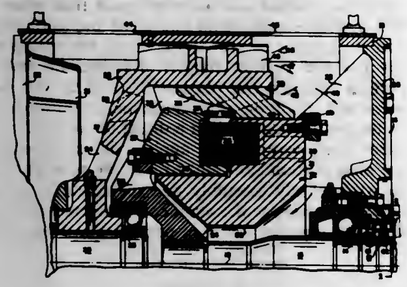
1. In a submersible electric motor including
(a) a stator body assembly and a rotor in the stator body assembly, said stator body assembly having a socket extending thereinto and opening at the outer side of the stator body assembly,
(b) an electrical connector assembly including first and second insulating bodies, said first body being mounted in said socket with its end face spaced inwardly from the end of the socket and having a first set of electrical connector elements thereon, said second insulating body including a plug portion of resilient elastomeric material extending into said socket and abutting the end face of said first body, said second body having a second set of connector elements interfitting with the connector elements of the first set,
(c) a rigid sleeve means surrounding a portion of said second body outwardly of said plug portion and having an abutment facing away from said plug portion.
(d) a resiliently deformable spring member having a first portion engaging said abutment on the sleeve means, said spring member extending laterally from the sleeve means and having an end portion spaced from the sleeve means, threaded fastener means paralleling said socket and engaging said stator body assembly and said end portion at a point laterally offset from said socket for clamping said end portion to said stator body assembly, said spring member being constructed and arranged such that, when said first portion engages said abutment and said end portion is clamped to said stator body, the spring member has the portion thereof intermediate said first portion and said end portion stressed to a resiliently deformed condition offset a substantial distance from its unstressed condition in a direction away from said stator body assembly to apply axial compresion on the plug portion sufficient to seal the plug portion to the stator body assembly and to yieldably maintain the plug portion under axial compression with dimensional changes in the plug portion due to cold flow.

3,294,994
NUTATION MOTOR OR GENERATOR
Douglas G. Anderson, Ferndale, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed May 10, 1963, Ser. No. 279,559
6 Claims. (Cl. 310—82)



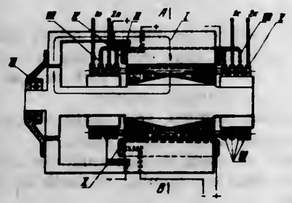
1. Apparatus comprising
a frame,
means for establishing a magnetic field,
a nutating member mounted through coupling means to said frame,
said coupling means permitting nutation of said nutating member but limiting rotation of said nutating member,
nutating member gear teeth being in a circular path on said nutating member around the axis of said coupling means,
a rotatable member mounted for rotary motion,
rotatable member gear teeth being on said rotatable member and in a circular path around the axis of rotation of said rotary member,
said rotatable member gear teeth and said nutating member gear teeth being in mesh,
the number of teeth in said rotatable member being different than the number of teeth in said nutating member,
electrical conductor means spatially associated with the magnetic field to convert between the energy of nutational motion and electrical energy,
means for connecting said electrical conductor means to an external circuit.

3,294,995
TACHOMETER GENERATOR
John D. Edick, Wickliffe, Ohio, assignor to Reliance Electric and Engineering Company, a corporation of Ohio
Filed Mar. 11, 1963, Ser. No. 264,429
8 Claims. (Cl. 310—95)



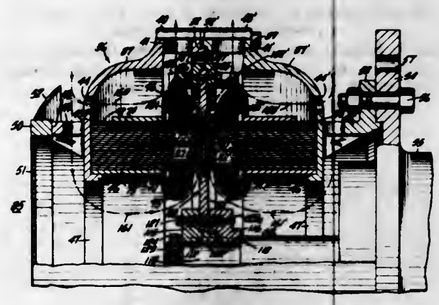
1. A tachometer generator comprising, in combination, a stator,
a bearing in said stator,
a rotor journalled in said bearing,
a permanent magnet carried on one of said rotor and stator and having pairs of poles thereon,
a generator output winding carried on the other of said rotor and stator and cooperating with said magnet,
said tachometer generator having a magnetic circuit including said rotor and stator with a permeance coefficient in the range below 10.0,
and said permanent magnet being made of material of about 8% aluminum, 15% nickel, 24% cobalt, 3% copper, 1% titanium and the balance being iron, whereby heating of said magnet within a given range above average room temperature of about 20 degrees C. has substantially no effect on the field strength of said permanent magnet of said tachometer generator and, accordingly, substantially no effect on the output voltage thereof.

3,294,996
ELECTRICAL ROTARY-MACHINE UNIPOLAR IMPULSE VOLTAGE GENERATOR
Ivan Sergeevich Rogachev, 15 Frunze Str., Apt. 4, Kharkov, U.S.S.R.; Abram Lazarevich Livshits, 5th Verkhne-Mikhailovsky Proezd 28, Apt. 9, Moscow, U.S.S.R.; and Lev Davydovich Perchik, 19 Lermontovskaya Str., Apt. 11, Kharkov, U.S.S.R.
Filed May 19, 1961, Ser. No. 136,378
2 Claims. (Cl. 310—179)



1. An electric rotary machine generator for producing unidirectional voltage pulses, provided with a stationary magnetic system comprising several pairs of salient poles thereby providing a stator provided with axial slots in the pole shoes, said poles being evenly distributed along a magnet yoke periphery of said stator and each of said poles being embraced by excitation windings, said excitation windings connected to form an alternating-pole magnetic system, a laminated armature including semi-closed slots having a pitch less than the pitch of said axial slots, said armature including a polyphase winding having a pitch equal to the polar pitch of said poles, said polyphase winding being placed in said semi-closed slots under all of said magnetic system poles and connected to several commutators, each of said commutators comprising $2p$ segments (p standing for the number of pole pairs in the stator magnetic system), every other of said segments being connected to form two insulated systems, said insulated systems being connected to the ends of said polyphase winding, each of said insulated systems being provided with two brush sets symmetric to said commutator segments whereby a homopolar pulse voltage is removed therefrom.

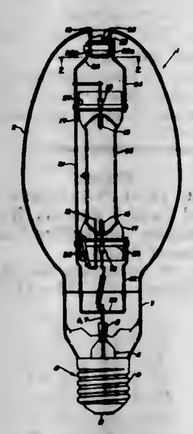
3,294,997
AXIAL AIR GAP MOTOR
Harris Shapiro, Englewood, N.J., assignor to General Dynamics Corporation, New York, N.Y., a corporation of New York
Filed Sept. 10, 1963, Ser. No. 308,013
Claims priority, application Italy, Oct. 6, 1962, 19,441/62, Patent 692,952
7 Claims. (Cl. 310—268)



1. In an axial air gap polyphase induction motor comprised of at least one stator having polyphase winding means comprised of fractional-pitch coils comprised of turns of wire received in each of a plurality of radial slots in said stator, said stator being axially spaced by a gap from a rotor and being responsive to current energization of said winding means to produce a magnetic field rotating in said gap, and said rotor being responsive to said field to undergo rotation, in combination with said motor the improvement comprising an electrical connection of the turns of wire in the slots in said stator into different phase groups of which the turns which constitute each group are spread over consecutive slots and have a variable distribution among said consecutive slots with respect to the number of turns of wire in each slot, each such variable distribution being characterized by a lesser number of turns per phase per slot in slots at the ends of said distribution than in slots intermediate those end slots, and the variable distribution of turns per slot within each such group and the fractional-pitch of said coils together providing for M.M.F. harmonics in said field an overall pitch factor less than the individual pitch factor provided by the fractional coil pitch.

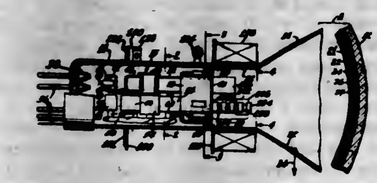
3,294,998
ARC TUBE MOUNTING FOR HIGH PRESSURE METAL VAPOR LAMPS
Everett Niles, Eastlake, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1964, Ser. No. 400,016
7 Claims. (Cl. 313—25)

1. A dual envelope electric discharge lamp comprising a vitreous outer envelope having a base at one end and an inwardly turned dimple at the other end, an inner arc tube within said outer envelope, and a frame supporting said arc tube within said outer envelope and including a transverse portion at said other end, said frame engaging said dimple by means of a clamp comprising a first



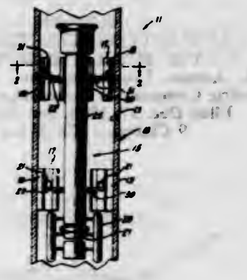
half loop formed in said transverse portion and a resilient second half loop formed by a springy clip fastened to one side of the first half loop and extending to the opposite side thereof.

3,294,999
CATHODE RAY TUBE
Frans van Heiden, East Lampeter Township, Lancaster County, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 6, 1962, Ser. No. 215,011
17 Claims. (Cl. 313—70)



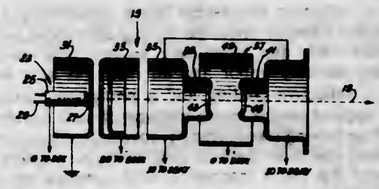
5. A cathode ray tube comprising:
(a) a luminescent screen; and
(b) a plurality of electron guns for projecting a plurality of different velocity electron beams towards said screen;
(c) each of said guns including a different unipotential electrostatic lens system comprising a pair of spaced anodes and an intermediate focus ring electrode;
(d) said plurality of focus ring electrodes being electrically connected together;
(e) said plurality of anodes being electrically connected together;
(f) said lens systems comprising means producing substantially equal length image distances for said different velocity electron beams.

3,295,000
ELECTRON GUN POSITIONING STRUCTURE
Alfred D. Johnson, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 14, 1964, Ser. No. 382,527
10 Claims. (Cl. 313—82)



1. In an electron discharge device having an evacuated envelope encompassing an assembly for generating and controlling electrons therein, nonresilient positioning means for said assembly comprising:
a plurality of spaced nonresilient positioners affixed by differential nonresilient connective means to said assembly and extended therefrom to contact the inner surface of said envelope to provide longitudinal alignment of said assembly in said envelope.

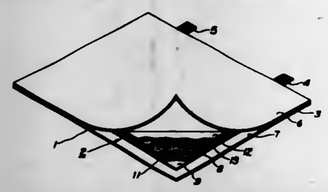
3,295,001
CATHODE RAY TUBE GUN HAVING A SECOND GRID WITH AN EFFECTIVE THICKNESS
Glen A. Burdick, Waterloo, N.Y., and Floyd K. Collins, Ottawa, Ohio, assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,384
6 Claims. (Cl. 313—82)



1. A cathode ray tube utilizing an electron gun having a cathode and sequential electrodes formed and spaced therein to provide the source, acceleration, control and focussing of an electron beam on an image screen comprising in combination:
a first grid positioned relative to said cathode having an end wall formed with a bore therein to provide a first grid aperture coaxially aligned with said cathode; and
a second grid positioned relative to said first grid having an end wall construction spaced from said first grid end wall and formed with concentric proximal

and distal apertures therein coaxially aligned with said first grid aperture, said proximal second grid aperture being adjacent said first grid aperture and having a minimum diameter larger than the diameter of said first grid aperture, said distal second grid aperture being farthest removed from said first grid aperture and having a minimum diameter larger than said diameter of said proximal second grid aperture, said second grid having an effective aperture thickness measured between the proximal aperture surface nearest said first grid aperture and the distal aperture surface farthest from said first grid aperture said effective thickness being greater than .5 time the diameter of said distal second grid aperture.

3,295,002
LIGHT TRANSMITTING ELECTRODE INCLUDING N-TYPE SEMICONDUCTIVE In_2O_3
Robert L. Ames, Lyndhurst, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 27, 1963, Ser. No. 333,950
9 Claims. (Cl. 313—108)



3. An electroluminescent device comprising a phosphor and at least one light transmitting electrode, said electrode consisting essentially of In_2O_3 dispersed in ethyl hydroxyethyl cellulose, said In_2O_3 being in an n-type semi-conductive condition.

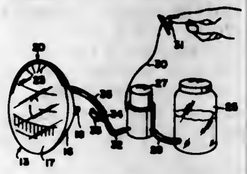
3,295,003
GROOVED REFLECTOR LAMP
Myron A. Chernin, Shaker Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Nov. 18, 1963, Ser. No. 324,550
4 Claims. (Cl. 313—109)



1. A reflector fluorescent lamp comprising a tubular elongated vitreous envelope having electrodes sealed into opposite ends and containing an ionizable medium including mercury vapor and an inert gas at a low pressure, a reflective coating and a phosphor coating thereover applied to the inside surface of said envelope, said envelope having a re-entrant groove extending continuously along one side thereof, said reflective coating extending over the entire interior of said envelope except for a relatively narrow window extending lengthwise in the wall directly opposite said groove.

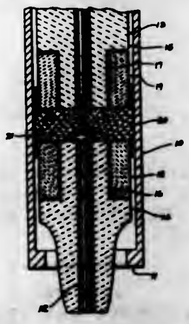
3,295,004
WASHER SYSTEM EMPLOYING AN ARCUATELY CONFIGURED FLUID DELIVERY TUBE
William A. Hirsch, 656 Cricket Ave., Ardsley, Pa. 19038
Filed May 6, 1964, Ser. No. 365,347
2 Claims. (Cl. 313—110)

2. A vehicle sealed-beam headlamp comprising a filament, an enveloping enclosing said filament, one end of said envelope being configured to define a generally circular lens, electrical-connection means on the other end of said envelope for connection to a vehicle with said lens disposed generally vertically, and a hollow elongate tubular spray head fixedly secured on the exterior of said lens extending arcuately across an upper margin thereof, said spray head having a plurality of spaced thru holes



opening downwardly toward said lens, said spray head comprising a glass tube extending laterally across an upper region of said lens and formed integrally therewith, said holes being on the underside of said tube, one end of said tube being closed and the other end being open for connection to a liquid-supply source.

3,295,005
CERAMIC SEALING STRUCTURE
Allan L. Poellet and Virgil J. Berczak, Royal Oak, Mich., assignors to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,354
6 Claims. (Cl. 313—137)



1. In a spark plug and the like, an outer shell of generally annular cross section, a ceramic insulator in said shell having a portion of generally annular cross section spaced apart from said shell, a sleeve positioned in said space between said insulator and said shell, and a sealing material extending between said sleeve and said shell and bonded to said shell, said sleeve consisting of a compressible material which melts at a temperature above the melting temperature of said sealing material, said sleeve having been reduced in volume by the radially inwardly directed compressive force incident to the cooling of said shell from a temperature at least as high as the melting temperature of said sealing material to ambient conditions, and said sleeve being sufficiently compressible that the internal compressive forces produced in the sleeve by said volume reduction is less than that required to transmit sufficient force to said insulator to crack said insulator.

3,295,006
UNANNEALED NICKEL SCREEN GRID MESH FOR PICKUP TUBES
Janis G. Zledonis, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 342,009
6 Claims. (Cl. 313—269)

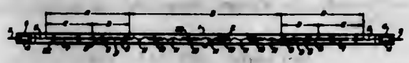
1. A pickup tube having:
(a) a planar screen grid,

(b) said screen grid including a tautly supported perforated planar metal mesh structure,
(c) the metal of said structure being unannealed and having an annealing temperature higher than the



processing and operating temperatures of said tube,
(d) said structure being uncoated,
(e) whereby said screen grid is characterized by a relatively high internal damping of vibrations.

3,295,007
DIFFERENTIAL OUTPUT TUBULAR INCANDESCENT LAMP
Warren D. Young, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 25, 1964, Ser. No. 377,973
6 Claims. (Cl. 313—273)



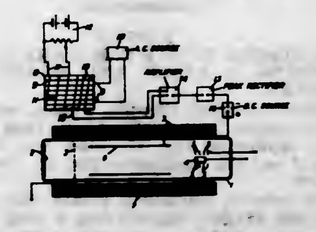
1. A differential output tubular incandescent lamp comprising an elongated tubular envelope of radiation-transmissive material, lead-in conductors sealed in and extending from respective ends of said envelope, an incandescible coiled wire filament extending longitudinally of said envelope and electrically connected solely at its ends to respective said lead-in conductors, said filament being formed of a multiplicity of helically coiled segments of closely spaced wire turns of substantially uniform pitch spaced apart longitudinally by generally straight sections of the filament wire, the relative lengths of coiled segments and spaces being varied such that the total length of coiled segments per unit length of envelope is substantially greater at the ends of the envelope than at the central portion of the envelope to the extent that about one-fourth of the overall filament length at each end thereof contains total lengths of coiled segments amounting to at least about two-thirds of the total coiled segment lengths in the central half of the filament length whereby more radiant energy is produced in the said ends than in the said central portion of the evelope.

3,295,008
ELECTRON DISCHARGE DEVICE WITH CURRENT SURGE ATTENUATING RESISTANCE
Anthony V. Colliere, Auburn, and John J. Miller, Seneca Falls, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,131
8 Claims. (Cl. 315—3)



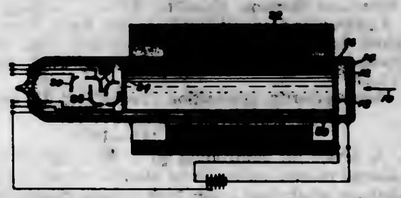
1. An electron discharge device having an envelope, an electron beam source and an electron impinging surface comprising:
a high voltage electrical conductive coating disposed upon the inner surface of said envelope;
a high voltage electrode associated with said electron beam source and spaced from said high voltage electrical conductive coating;
a low voltage electrode in spaced relationship with said high voltage electrode in said electron beam source;
electrical connective snubber means coupling said high voltage electrode with said high voltage electrical conductive coating; and
current surge attenuating resistance material incorporated as an integral part of said electrical connective snubber means.

3,295,009
FOCUS COMPENSATING CIRCUIT FOR TELEVISION CAMERA TUBES
John Frederick James, Little Baddow, Essex, England, assignor to The Marconi Company Limited, a British company
Filed Jan. 29, 1962, Ser. No. 169,191
Claims priority, application Great Britain, Feb. 3, 1961, 4,140/61
8 Claims. (Cl. 315—8)



1. In a television camera tube including means for producing an electron beam and means for focusing said electron beam, the improvement comprising magnetometer means mounted in fixed spatial relationship to said camera tube, said magnetometer means being responsive to the axial component of extraneous magnetic fields and being operable to produce an output signal proportional to the axial component of said extraneous magnetic fields, and means coupled between said magnetometer means and said focusing means for automatically varying the adjustment of said focusing means in response to variations in the output signal of said magnetometer means to compensate for undesired variations of focusing that would otherwise be produced by variations in said extraneous magnetic field.

3,295,010
IMAGE DISSECTOR WITH FIELD MESH NEAR PHOTOCATHODE
Robert H. Clayton, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Continuation of application Ser. No. 263,321, Mar. 6, 1963. This application May 25, 1966, Ser. No. 552,877
8 Claims. (Cl. 315—11)



1. An image dissector tube comprising:
an envelope;
a photoemissive cathode layer on the inner surface of one end of said envelope, said layer emitting electrons in response to an applied optical image to form a corresponding electron image;
a longitudinal tubular anode having an open end adjacent said cathode surface;

a mesh screen accelerating electrode disposed at said open end and positioned in close proximity and parallel to said cathode surface;
means applying an electron accelerating field potential to said screen and anode with respect to said cathode;
means providing a scanning aperture at the opposite end of said anode;
first electromagnetic means surrounding said tube and anode for focusing said electron image in the plane of said aperture;
second electromagnetic means surrounding said tube and anode for deflecting said electron image across said aperture, said aperture permitting passage of electrons therethrough in accordance with successively scanned elemental areas of said electron image;
electron multiplier means positioned adjacent said aperture to provide an amplified signal in accordance with said scanned image; and
means for deriving an output signal from said multiplier means.

3,295,011
TRIGGERING DEVICE FOR SPARK-GAP COMPRISING A LASER AND DESTRUCTIBLE SHIELD

Spartacus Barbini, Chaville, France, assignor to Compagnie General d'Electricite, Paris France

Original application Oct. 27, 1964, Ser. No. 406,866. Divided and this application Oct. 22, 1965, Ser. No. 515,280
Claims priority, application France, Oct. 28, 1963, 952,065, 952,066, 952,067; June 4, 1964, 977,058
4 Claims. (Cl. 315—149)



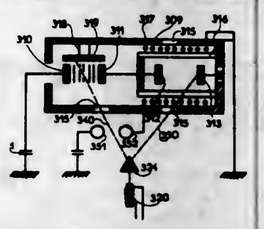
1. A device for controlling quick discharge of an electric energy storage circuit into a relatively weak load under high voltage comprising: a pair of metallic electrodes defining a spark gap, one of said electrodes connected to said energy storage circuit and the other connected to said load; a solid dielectric shield located in said spark gap between said electrodes, and a selectively triggered laser having a high density luminous beam directed onto the surface of said dielectric shield whereby said beam destroys the shield initiating an electric discharge across said gap.

3,295,012
TRIGGERING DEVICE FOR SPARK-GAP AND LOAD FOCUSING MEANS

Spartacus Barbini, Chaville, France, assignor to Compagnie Generale d'Electricite, Paris, France

Original application Oct. 27, 1964, Ser. No. 406,866. Divided and this application Oct. 22, 1965, Ser. No. 515,279
Claims priority, application France, Oct. 28, 1963, 952,066; June 4, 1964, 977,058
3 Claims. (Cl. 315—152)

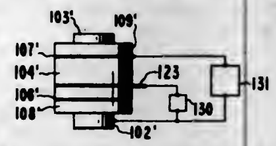
1. A device for controlling quick discharge of an electric energy storage means in an electric circuit comprising a relatively weak load under high voltage comprising two electrode means defining a spark gap, a discharge tube having two electrodes and forming a load for said circuit, a cylindrical housing means having a metal portion and partially enclosing said electrode means and said discharge tube, a first conductor connecting one of said electrode means with one of the electrodes of said discharge tube, a second conductor connecting the second electrode of the discharge tube with said metal portion of said housing means and a third conductor connecting the second electrode means to said electric energy storage means, a metallic body located adjacent said spark gap, a laser having a high density energy luminous beam directed onto the surface of said metallic body for selectively causing a discharge across said gap, and means associated with said discharge tube for focusing the electric discharge within said tube.



3,295,013
ELECTRON TUBES CONTAINING GAS BELOW CRITICAL PRESSURE

Warren C. Struven, San Carlos, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Filed Aug. 9, 1960, Ser. No. 48,454
10 Claims. (Cl. 315—168)

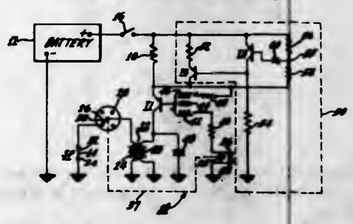


3. A gas tube comprising an envelope, two spaced electrodes disposed within said envelope, one of said electrodes being a cold cathode, a gas at a pressure below critical pressure in said envelope, said gas pressure being below critical pressure for all distances between surfaces of said two electrodes inside said envelope, a grid comprising a plurality of spaced wires positioned between said two spaced electrodes, means for providing a substantially large potential difference between said two spaced electrodes, and means for biasing said grid at a potential intermediate said two spaced electrodes.

3,295,014
TRANSISTOR IGNITION SYSTEM HAVING BALLAST RESISTOR SHUNT TO MAINTAIN CONSTANT CURRENT THROUGH THE IGNITION TRANSFORMER

Michael S. Fisher, Ringoes, and Frederick S. Kamp, Somerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Dec. 31, 1963, Ser. No. 334,755
5 Claims. (Cl. 315—219)



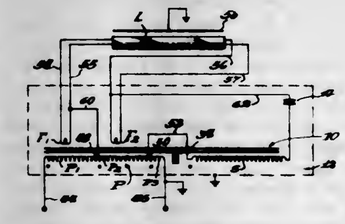
1. In an ignition system adapted to be energized from a voltage source which is subject to variation in output voltage, said voltage source having a pair of output terminals,

a transistor having an emitter, a collector and a base,
an ignition transformer having a primary winding and a secondary winding,
a ballast resistor,
means connecting said ballast resistor, the emitter to collector path of said transistor and the primary winding of said ignition transformer in series between said output terminals,
a switching means,
means for connecting the base of said transistor to a terminal of said source through said switching means, and
means for maintaining the maximum current flow through said primary winding substantially constant regardless of the voltage of said source over a predetermined range of voltage variation thereof and for applying substantially the total voltage of said source across said primary winding during the current buildup therethrough, comprising
a variable conductivity shunting means connected across said ballast resistor,
means to sense the voltage appearing across said ballast resistor, and
means to so vary the conductivity of said shunting means in response to the voltage appearing across said ballast resistor as to keep the maximum current flow through said primary winding constant over a predetermined range of variation of said source.

3,295,015
SINGLE LAMP RAPID START BALLAST

Marion Rodak, Mount Prospect, Ill., assignor to Advance Transformer Co., Chicago, Ill., a corporation of Illinois

Filed Feb. 7, 1964, Ser. No. 343,374
14 Claims. (Cl. 315—239)

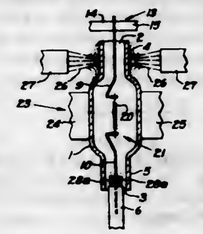


1. A ballast for igniting and thereafter operating a gaseous discharge lamp of the rapid start type from an A.C. power line one side of which is grounded and the lamp adapted to be mounted adjacent to and capacitively coupled with a grounded metal member, said ballast comprising: an elongate magnetic core, a transformer mounted on said core and having a primary winding and a secondary winding loosely coupled relative one another, the primary winding having first and second end terminals with the lead means for connecting the respective end terminals to the ungrounded and grounded sides of said A.C. line, respectively, said primary winding having first and second taps dividing said primary winding into three parts with all parts additive within the primary winding, the first primary part being between the first tap and the first end terminal, the second primary part being between the first and second taps, and the third primary part being between the second tap and the second end terminal, the secondary winding being connected in additive auto-transformer relationship with the second primary part only and together therewith having lead means including a series condenser for connecting the combined second primary part and secondary winding across the terminals of said lamp, and the secondary winding forming a branch series circuit with the third primary part in which the secondary winding bucks the third primary part, said core having a bridged gap in the vicinity of the secondary winding whereby to provide a peaked voltage wave on open circuit for starting the lamp.

3,295,016
MANUFACTURE OF ELECTRIC INCANDESCENT LAMPS

Reginald J. Ayres, Cleveland, Paul Varpe, Lyndhurst, and Arthur P. Russell, South Euclid, Ohio, assignors to General Electric Company, a corporation of New York

Filed Jan. 2, 1964, Ser. No. 335,018
10 Claims. (Cl. 316—17)

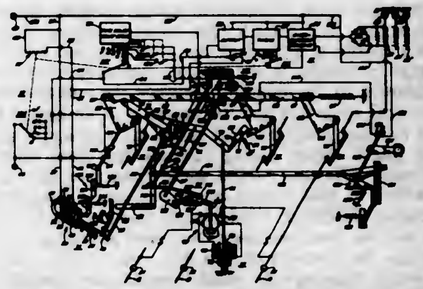


1. The method of making a mount structure for an electric incandescent lamp comprising the steps of feeding a length of wire from a continuous supply thereof and temporarily gripping it at spaced points therealong, severing the said length of wire from the remainder thereof and cutting it in two between the gripped regions thereof to form two separate lead-in wires, reshaping the adjacent severed ends of the gripped lead-in wires to form spaced filament connection portions, and then connecting a filament across the said filament connection portions of the gripped lead-in wires.

3,295,017
REPEATING CIRCUIT INTERRUPTER

Richard E. Riebs, Hales Corners, Alvin F. Loeffler, South Milwaukee, and Norbert J. Reis, Wauwatosa, Wis. assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

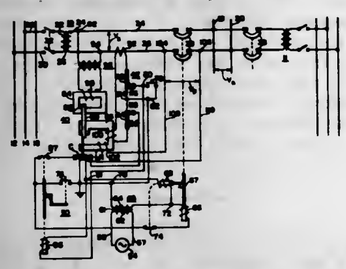
Continuation of application Ser. No. 56,259, Sept. 15, 1960. This application Nov. 21, 1963, Ser. No. 325,215
25 Claims. (Cl. 317—22)



1. A repeating circuit interrupter including main switch means in circuit with an electrical system, switch opening means operable upon the occurrence of an overload in said system, said switch opening means including overload responsive means and a plurality of time delay means for delaying the opening of said main switch means, said time delay means having different delay characteristics, one of said time delay means being in operative association with said overload responsive means during an initial

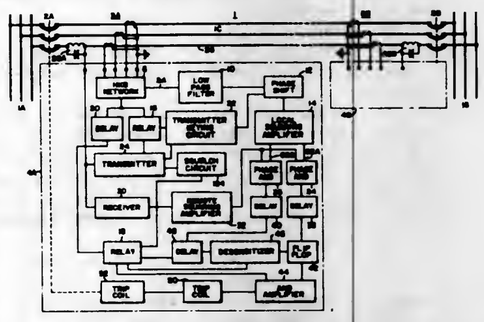
one of the operations of said switch opening means, secondary switching means operable after a subsequent opening operation of said main switch means to place a different one of said plurality of time delay means in operative association with said overload responsive means so that the time delay of the next succeeding opening operation of said main switch means will have a different time delay, electromotive means for effecting the reclosure of said main switch means, a plurality of reclosing time delay means each operable to complete an energizing circuit to said electromotive means to reclose said main switch means, said secondary switching means also being sequentially operable after each opening operation of said main switch means to actuate a different one of said reclosing time delay means so that the time delay of each reclosing operation of said main switching means may be controlled, said secondary switch means being operable after a preselected number of reclosing operations to open circuit said electromotive means and prevent the further reclosure of said main switch means.

3,295,018
ELECTRICAL APPARATUS
Richard F. Cook, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 21, 1963, Ser. No. 281,922
11 Claims. (Cl. 317—23)



1. In a protective and control system for electrical apparatus having at least two output conductors, the combination comprising first and second means responsive to the magnitude of current in said output conductors, said first and second means each having contacts that close when said current reaches preset magnitudes, third means responsive to the direction of energy flow in said output conductors, said third means having contacts that open when energy is flowing in one direction and close when energy is flowing in the reverse direction, fourth means responsive to the difference between the potential of said electrical apparatus and the potential of an electrical circuit to which said electrical apparatus is to supply energy, said fourth means having contacts that close when said potential difference would cause energy to flow in one direction in said output conductors and open when the potential difference would cause said energy to flow in the reverse direction, and fifth means providing a control voltage, the contacts of said first means being connected in circuit relation with said fifth means and causing a circuit interrupting device to open an electrical circuit when the contacts of said first means close, the contacts of said second means being connected in circuit relation with said fifth means and the contacts of said third means and causing a circuit interrupting device to open an electrical circuit when the contacts of said second and third means close, the contacts of said fourth means being connected in circuit relation with said fifth means and causing a circuit interrupting device to complete an electrical circuit when the contacts of said fourth means close.

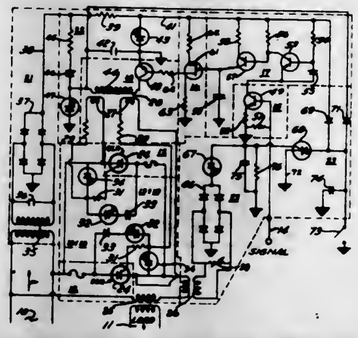
3,295,019
PHASE COMPARISON RELAYING DEVICE
Conrad T. Altfather, Basking Ridge, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1964, Ser. No. 378,552
18 Claims. (Cl. 317—27)



1. In a relaying network for protecting a line section against internal faults in which sensing means is provided to sense the direction of flow of an electrical quantity at spaced portions of the section and in which said sensing means has a pulsing output, the phase of which is dependent upon the direction of flow of said quantity, the combination of first and second phase sensing networks, first and second delaying networks, said first delaying network having a signal of predetermined magnitude at the termination of its timing period, a switching apparatus including magnitude determining means for determining the magnitude of a control signal which is required to actuate said switching apparatus, means connecting said first delay network to said switching apparatus for actuation of said apparatus thereby, a sensitizing circuit connected to said switching apparatus and effective to actuate said magnitude determining means, said sensitizing circuit having a first operating condition for actuating said magnitude determining means to provide that said required magnitude of said control signal to be of a first signal magnitude and a second operating condition in which said required magnitude of said control signal is said predetermined signal magnitude, first means for energizing said first and second phase sensing networks with a first signal pulsing at a predetermined rate, second means for energizing said first and second phase sensing networks with a second signal pulsing at said predetermined rate, said first and second phase sensing networks being connected individually to said first and second delaying networks respectively and effective to cause the respective said delaying network to time out solely when the relative phase of said first and second signals is within a predetermined magnitude, third means connecting said second delay network to said sensitizing circuit whereby said sensitizing circuit is actuated from one of its said conditions to the other of its said conditions as a consequence of the timing out of said second delaying network.

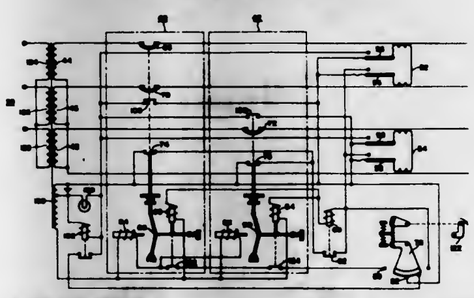
3,295,020
POWER CONTROL CIRCUIT
Henry S. Borkovitz, 1412 W. Thorndale Ave., Chicago, Ill. 60626
Filed Mar. 1, 1966, Ser. No. 530,982
3 Claims. (Cl. 317—33)

1. A power control circuit comprising an electrical valve having current conductive electrodes and a control electrode, connection to the current conductive electrodes to impress a pulsating voltage thereacross, the valve becoming conductive when a predetermined voltage is applied to the control electrode and a voltage of predetermined value is impressed across the current conducting electrodes, a pulse circuit connected to the control electrode to supply actuating pulses thereto and including a source of power and means connected to the source of power and responsive to a controlling signal to produce the pulses, means responsive to the flow of current between the current conductive electrodes of the first named



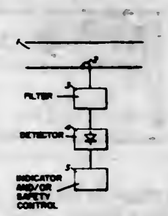
valve to generate an overload signal, means including an electrical valve responsive to the overload signal to incapacitate the source of power and the pulse producing means when the overload signal exceeds a predetermined value, and time delay means connected to the overload signal producing means to limit the rate of increase of the overload signal.

3,295,021
ELECTRICAL APPARATUS
Richard B. Pherson, Geneva, Switzerland, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 17, 1963, Ser. No. 281,220
2 Claims. (Cl. 317—46)



1. In combination,
a plurality of circuit interrupting devices each having separable contacts connected in a different phase of a polyphase electrical system,
first electroresponsive control means for releasably maintaining the separable contacts of each of said plurality of circuit interrupting devices in engagement,
auxiliary contact means associated with each of said plurality of circuit interrupting devices, which open and close in response to the opening and closing of the separable contacts of its associated circuit interrupting device,
circuit responsive means associated with each of the different phases of the polyphase electrical system, each of said circuit responsive means having contacts which close upon a predetermined circuit condition,
second electroresponsive control means associated with each of said first electroresponsive control means, each of said second electroresponsive control means having contacts which close when energized,
each of said circuit interrupting devices having an associated control circuit which includes said first and second electroresponsive control means, and said circuit responsive means connected in series circuit relation, with the contacts of said second electroresponsive control means and the auxiliary contacts of the associated circuit interrupting device being serially connected across said circuit responsive means,
said first and second electroresponsive control means being energized when the circuit responsive means closes its contacts, with the second electroresponsive control means closing its contacts to maintain the circuit through said first and second electroresponsive control means regardless of the subsequent position of the contacts of said circuit responsive means until the associated circuit interrupting means opens its separable contacts,
and means interconnecting the second electroresponsive control means of each electrical phase, to energize all of said second electroresponsive control means when the circuit responsive means of one phase closes its contacts, to energize all of said first electroresponsive control means and open the separable contacts of all of said circuit interrupting devices.

3,295,022
APPARATUS FOR THE DETECTION OF DISCHARGES IN HIGH-POWER TRANSMISSION CHANNELS
Ernst Friedrich Scheliach, Hatfield Peverel, Essex, England, assignor to The Marconi Company Limited, a British company
Filed Aug. 22, 1963, Ser. No. 303,804
Claims priority, application Great Britain, Aug. 28, 1962, 32,979/62
6 Claims. (Cl. 317—53)

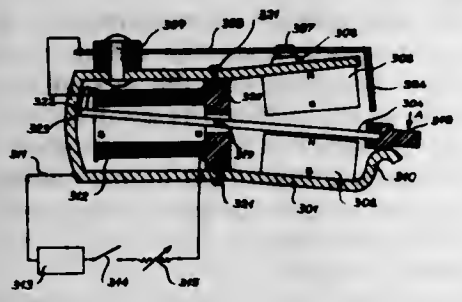


5. Apparatus for the detection of corona and arcing discharges in a high power high frequency energy transmission channel, said apparatus comprising means for tapping off energy from said channel, means for rejecting from the energy thus tapped off energy within the operating frequency band which said channel is designed to transmit, and means responsive to energy outside said band and exceeding a predetermined threshold strength, for producing an effect utilizable for taking preventative action against continuation of such discharges.

3,295,023
CIRCUIT-BREAKER DEVICES, ESPECIALLY FOR SEMI-CONDUCTOR CIRCUITS
Lucien Perus, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Dec. 17, 1962, Ser. No. 245,301
Claims priority, application France, Dec. 19, 1961, 882,497, Patent No. 1,322,838; Nov. 15, 1962, 915,553, Patent No. 82,590
15 Claims. (Cl. 317—54)

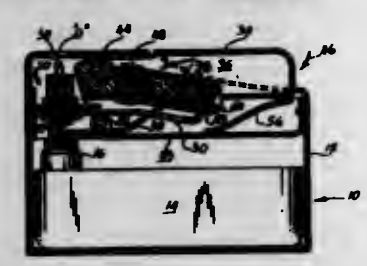
1. A circuit-breaker device having rapid action and resetting comprising a fixed magnetic frame constituted of a strip in a general U shape having two arms, at least one

permanent magnet fixedly mounted on the inside of each of said arms, a blade movably supported between said magnets, the opposite faces of said magnets being opposite poles and the distance between such magnets being such that the blade has only two stable positions of equilibrium against either of said magnets, a coil constituted by at least one separate winding surrounding said blade, an electrical switch in series with said coil, said switch having at



least two contacts at least one of which is flexibly supported on said fixed magnetic frame and at least one of which is actuated by said blade, the switch being opened when said blade is in one of said positions and shut when said blade is in the other of said positions, a circuit, to be broken comprising at least a source of current and a load apparatus in series with said coil and said switch, the device being set by mechanical actuation on a portion of said blade which extends out of said device.

3,295,024
CIGARETTE LIGHTER
Stanley H. Newmann, % Schwartz & Frohlich, 19 E. 70th St., New York, N.Y. 10021
Filed May 25, 1964, Ser. No. 369,918
9 Claims. (Cl. 317—86)



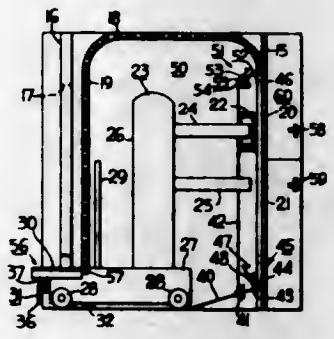
1. A gas fueled cigarette lighter of the type described including an enclosing casing, a fuel compartment within said casing for containing gaseous fuel under pressure, a burner and valve combination connected to and in communication with said fuel compartment, valve opening means controlling the flow of gaseous fuel through said burner, an air-gas ignition mixer cooperating with said burner whereby air is added to the flow of gaseous fuel from said burner, a piezoelectric spark generating mechanism including a piezoelectric element and a spark gap, said spark gap being adjacent to said air-gas mixer, means for creating electrical stress in said piezoelectric element whereby an electrical spark is generated at the spark gap to ignite air and gaseous fuel mixture flowing through said mixer.

3,295,025
MOVABLE BARRIER SERVING AS SHUTTER MEANS AND ENCLOSURE DOOR IN SWITCHGEAR HOUSING
John O. Tjebben, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 31, 1964, Ser. No. 422,861
12 Claims. (Cl. 317—103)

1. An enclosure having an access opening for receiving an electrical apparatus having a connector, said enclosure comprising:

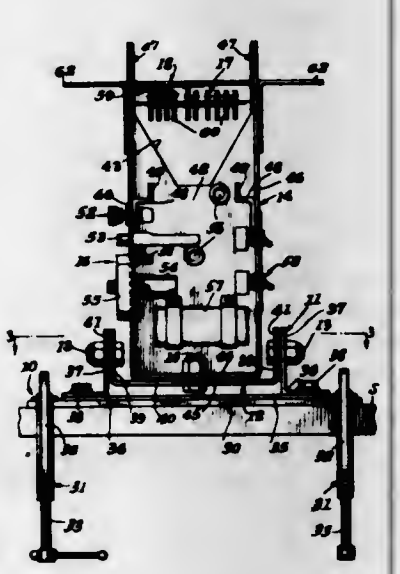
a high voltage contact located to contact the connector upon insertion of the electrical apparatus into the enclosure a first predetermined distance,

movable barrier means for uncovering the access opening and isolating the high voltage contacts in a compartment when in one position and for covering the access opening and exposing the high voltage contacts for receiving the connectors when in another position;



interlocking means for preventing movement of the barrier means from the one position without insertion of the electrical apparatus a second predetermined distance less than the first predetermined distance, and door latching means for preventing movement of the barrier means from the other position when said electrical apparatus is inserted into the enclosure beyond said second predetermined distance.

3,295,026
TEST STAND
Jim C. Garrett, Inglewood, Calif. (8060 Salt Ave., Huntington Park, Calif. 90255)
Filed Mar. 7, 1966, Ser. No. 532,285
7 Claims. (Cl. 317—112)

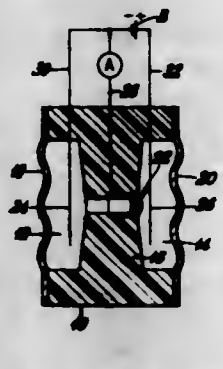


1. A test stand for a Strowger switch comprising:
(a) a base,
(b) a switch stand provided with switch-testing means,
(c) means mounting said switch stand on the base on pivots on transverse axes whereby the stand is angularly adjustable forward and backward on one axis and rotatively adjustable on the other axis,
(d) means to connect a Strowger switch to the upper end of the switch stand, and
(e) means to electrically connect said Strowger switch to the switch-testing means of the switch stand with the switch mounted on the stand.

3,295,027
ELECTROCHEMICAL LINEAR DETECTOR AND POROUS ELECTRODE THEREFOR

Nelson N. Estes and George T. Kemp, Austin, Tex., assignors to Union Carbide Corporation, a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,902
10 Claims. (Cl. 317—230)

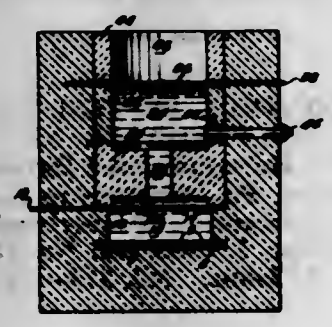


1. An electrode for a linear detector comprising an inert, hollow shell defining an open passageway along the axis thereof and having an insulating outer surface, and a porous, inert, electrically conductive mass disposed within said shell and across a whole cross-section of said passageway, said porous mass being composed of a material selected from the group consisting of the carbides, nitrides, silicides and borides of a transition metal selected from the group consisting of hafnium, titanium, zirconium, niobium, tantalum, vanadium, chromium, molybdenum and tungsten.

3,295,028
ELECTRICAL DEVICE WITH CLOSELY SPACED ELECTRODES AND METHOD FOR MAKING SAME

Gary R. Argue, Encino, and Richard F. Stewart, Los Angeles, Calif., assignors to Self Organizing Systems, Inc., Dallas, Tex., a corporation of Texas

Filed Jan. 17, 1964, Ser. No. 338,514
13 Claims. (Cl. 317—230)



1. A method of manufacturing a solion device having a pair of closely spaced electrodes and an enclosure containing a fluid electrolyte, said enclosure to be comprised of a plurality of components which are heat sealable together when heated to their softening temperature, comprising the steps of:

(a) depositing a solid coating of a material which is dissolvable in said electrolyte and which has a melting temperature in excess of said softening temperature onto the surface of one of said pair of electrodes,

(b) placing the other of said pair of electrodes on the exposed surface of said coating having said coating define the spacial relationship between said pair of electrodes,

(c) assembling said plurality of components to form said enclosure with said pair of electrodes engaged between two of said components,

(d) heating said plurality of components to at least said softening temperature to seal said components together and to fix said pair of electrodes in their respective positions, and

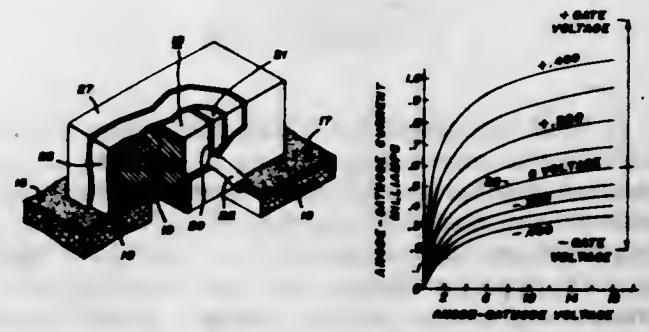
(e) filling said enclosure with an electrolyte which contacts the electrodes and dissolves the solid coating material between said pair of electrodes forming a compartment therebetween; and

(f) sealing said enclosure for retaining the electrolyte therein.

3,295,029
FIELD EFFECT SEMICONDUCTOR DEVICE WITH POLAR POLYMER COVERED OXIDE COATING

Karoly Gyorgy Fister, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 3, 1963, Ser. No. 270,294
4 Claims. (Cl. 317—235)

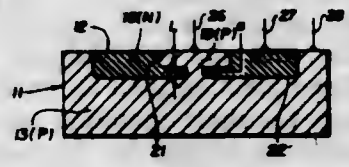


3. A semiconductor device comprising a body of silicon semiconductor material including a pair of regions of N-type conductivity and a thin region of P-type conductivity spaced between said regions of N-type conductivity and forming therewith a pair of P-N junctions, electrical connections to each of said regions, a thin silicon oxide layer covering said body having hydroxyl radicals bonded to the surface of said layer remote from said body, and a thin layer of a positive polar polymer adhered to said oxide layer, said polymer consisting of the reaction product of a hydrolizable organo-amino alkoxy silane with said hydroxyl radicals associated with said oxide layer.

3,295,030
FIELD EFFECT TRANSISTOR AND METHOD

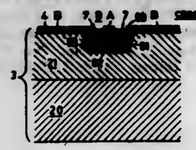
David F. Allison, Palo Alto, Calif., assignor to Signetics Corporation, Sunnyvale, Calif., a corporation of California

Filed Dec. 18, 1963, Ser. No. 331,547
2 Claims. (Cl. 317—235)



1. In a field effect transistor, a semiconductor body having a surface, said body containing a region of one conductivity type, a region of opposite conductivity type disposed in said region of one conductivity type and forming a junction which surrounds said region of opposite conductivity type and extends to said surface, a region of said one conductivity type disposed in said region of opposite conductivity type and forming a junction which surrounds said region of one conductivity type and extends to said surface, a channel of said one conductivity type extending through said region of opposite conductivity type and serving to join said regions of one conductivity type, said channel having a cross-sectional dimension substantially parallel to said surface which is substantially less than a substantially parallel cross-sectional dimension of said second named region of said one conductivity type, and contact means engaging each of said regions.

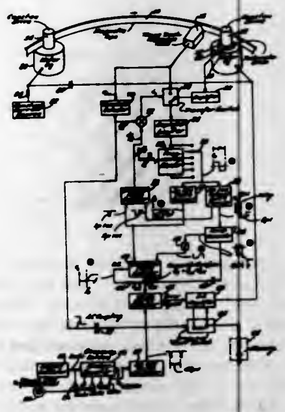
3,295,031
SOLID SEMICONDUCTOR CIRCUIT WITH CROSSING CONDUCTORS
Albert Schmitz, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 10, 1964, Ser. No. 373,953
Claims priority, application Netherlands, June 17, 1963, 294,168
3 Claims. (Cl. 317—235)



1. A solid semiconductor circuit comprising a body of semiconductive material containing a plurality of circuit elements including at least one active transistor element extending from one major surface of the body and comprising adjacent dish-shaped emitter and base diffused regions of opposite conductivity type forming two p-n junctions, said emitter region having a resistivity lower than that of said base region, a layer of insulating material on said major surface of the body and protecting the underlying circuit elements, a plurality of conductors provided on the insulating layer and providing connections to and between the circuit elements through apertures in the insulating layer, at least two of said conductors crossing one another, one of said conductors constituting a continuous conductor on the insulating layer, the other of said conductors being interrupted at said one conductor and being divided into two spaced conductive portions on the insulating layer, and means for conductively connecting together said two spaced conductive portions, said means including a first diffused surface zone extending from said major surface in the semiconductive body under the insulating layer at the crossing and of the same type conductivity as that of the main underlying body portions and having the same type of conductivity, conductivity magnitude, and depth as that of the transistor emitter diffused region and having been made simultaneously with the latter, said means further including a second diffused zone surrounding the first diffused zone and of the opposite conductivity type and having the same type of conductivity, conductivity magnitude, and depth as that of the transistor base diffused region and having been made simultaneously with the latter and forming a first p-n dish-shaped junction with the first diffused zone and a second p-n dish-shaped junction with the main underlying body portions, means for short-circuiting one of said first and second p-n junctions formed by the second diffused zone, and means connecting the adjacent ends of the two spaced conductive portions through the insulating layer to the first diffused zone.

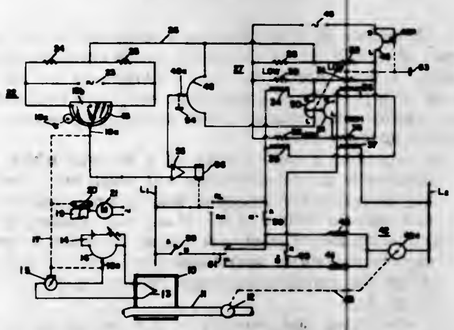
3,295,032
PLURAL MOTOR TENSION AND SPEED CONTROL FOR A MAGNETIC TAPE DRIVE
Flavio S. C. Branco, Van Nuys, Calif., assignor to Winston Research Corporation, Los Angeles, Calif., a corporation of California
Filed May 24, 1963, Ser. No. 282,980
3 Claims. (Cl. 318—7)

1. A system for controlling the speed of a magnetic tape, including:
- a first driving means for said tape to impart movement thereto, said driving means having a speed adjustment control;
- a second driving means for said tape spaced apart from said first driving means, said first and second driving means together imparting a tension to said tape, said second driving means having a speed adjustment control;
- a transducer means for producing a first electric signal having a phase related to the tape speed;
- a source of references pulses of a predetermined phase relationship;



- a phase error detector means coupled to said transducer means and to said source of reference pulses for detecting the variation in phase between said first electric signal and said source of reference pulses and for producing a composite signal directly related to said variation; and
- a coupling means for coupling said phase error detector means to said speed adjustment control on said first and a second driving means whereby the speed of said first driving means and the relative speed of said first and second driving means and therefore said tape tension are adjusted responsive to the signal from said phase error detector means.

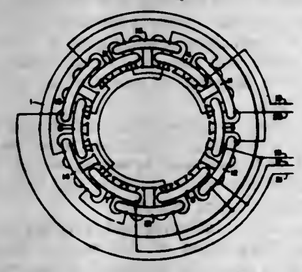
3,295,033
POSITION CONTROL SYSTEM WITH HEATED RESISTOR FEEDBACK NETWORK
Elwood T. Davis, Havertown, and Raymond L. Davis II, Newtown Square, Pa., assignors to Leeds & Northrup Company, a corporation of Pennsylvania
Filed Nov. 7, 1963, Ser. No. 322,190
7 Claims. (Cl. 318—18)

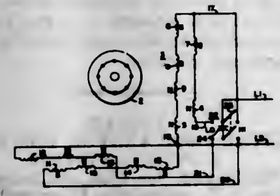


1. In a position control system for maintaining the magnitude of a condition at a predetermined desired value by operating a final control element in one direction or the other vary in one direction or the other the magnitude of a condition-controlling effect,

actuating means for the final control element,
selector means for controlling the direction of operation of said actuating means,
at least two pairs of resistors connected in a bridge network, one pair of said resistors having a low thermal inertia and the other pair of said resistors having a high thermal inertia, said bridge network including one of said resistors in each arm thereof,
means responsive to said selector means and independent of said actuating means for heating one resistor of each pair of said resistors when said selector means controls said actuating means in one direction and for heating the other resistor of each pair of said resistors when said selector means controls said actuating means in the other direction,
means connected between said pairs of resistors for selecting the relative effectiveness of each pair in producing the output signal from said bridge network,
means for producing a deviation signal corresponding in polarity and magnitude to the direction and extent of deviation of said magnitude of said condition from the desired value, and
means responsive to the difference between said deviation signal and said bridge network output signal for energizing said selector means for operation of said actuating means in operating the final control element to return said magnitude of said condition to said desired value.

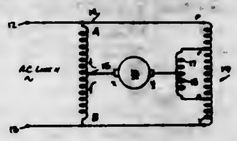
3,295,034
TWO-SPEED SINGLE-PHASE ELECTRIC MOTOR
George E. Herzog, Shawnee Township, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1963, Ser. No. 304,313
4 Claims. (Cl. 318—224)





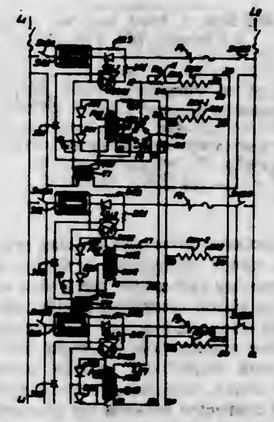
1. A two-speed single-phase motor having a main primary winding and an auxiliary primary winding, said windings having the same number of pole groups and being displaced from each other on the primary member of the motor, each of said windings comprising a first portion consisting of at least two pairs of adjacent pole groups, the pole groups of each pair being of opposite polarity, and said pairs of pole groups being separated by intervening pole groups and a second portion consisting of said intervening pole groups, the intervening pole groups being of successively opposite polarities and each intervening pole group being of the same polarity as the adjacent pole groups of the first portion, and means for alternatively connecting the first portions only of both windings to a single-phase line for operation of the motor at one speed or for connecting the first and second portions of the main winding and the second portion only of the auxiliary winding to the line for operation at a different speed.

3,295,035
CONTROL SYSTEM FOR UNIVERSAL MOTORS
Harold S. Field, Tulsa, Okla., assignor to Geophysical Research Corporation, New York, N.Y., a corporation of New Jersey
Filed Mar. 15, 1963, Ser. No. 265,466
4 Claims. (Cl. 318—245)



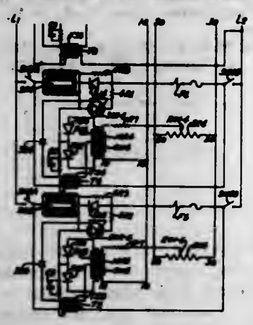
1. A control system for a variable speed variable direction alternating current motor comprising a first autotransformer having a variable terminal, a second autotransformer in shunt with said first autotransformer, a universal motor having two field windings connected in series with one another and supplied by said second autotransformer, one armature terminal of said motor being connected to the variable terminal of said first autotransformer and the second armature terminal of said motor being connected to the junction point of said windings, whereby the direction and the speed of the motor is controlled by the positioning of said variable terminal.

3,295,036
SILICON CONTROLLED RECTIFIER-SATURABLE REACTOR CONTROL
Junius Denny Scott, Homer City, Pa., assignor to Link-Belt Company, a corporation of Illinois
Filed Sept. 26, 1963, Ser. No. 311,909
6 Claims. (Cl. 318—132)



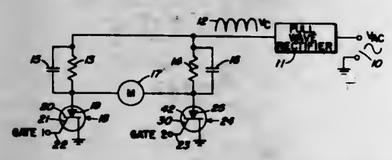
1. A control circuit consisting of a power semiconductor having an anode and cathode and placed in series with a saturable reactor and a variable controllable load for connection across an alternating current source to operate the variable controllable load on unidirectional current impulses and to vary the output of the load, a load control circuit including a silicon control rectifier with anode, cathode and gate having its anode and cathode connected reversely with respect to said cathode and anode of said power semiconductor and a gate control circuit to vary the back current through said saturable reactor and effectively vary the operation of said load,

said gate control circuit includes a resistance having a variable mid connection, a source of direct current connected in parallel with said resistance, a magnetic amplifier having a saturable control winding with one end connected relative to said variable resistance mid connection and its other end connected to the negative of said direct current supply to vary the degree of saturation of said magnetic amplifier and the control therefor, a power winding with a center tap on said magnetic amplifier, a



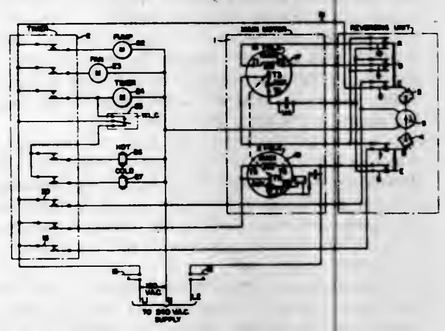
pair of diodes connected in series and in a circuit connected to the ends of said power winding, an alternating current source having one side connected to said center tap and the other side connected to said gate, a connection completing said gate load circuit from said silicon control rectifier cathode to between said pair of diodes, an adjustable magnetic amplifier load resistor with a parallel load condenser connected between said gate and said silicon control rectifier cathode.

3,295,037
ELECTRONIC BI-DIRECTIONAL D.C. MOTOR BRAKING
Robert C. Bullene, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Sept. 9, 1964, Ser. No. 395,266
5 Claims. (Cl. 318—261)



1. A bidirectional drive and braking system for a direct current motor comprising a source of full wave rectified alternating current voltage, a first resistive member and a first silicon controlled rectifier element respectively serially connected across said voltage source, a second resistive member and a second silicon controlled rectifier element respectively serially connected across said voltage source, said direct current motor having a first terminal connected between the junction of said first resistive member and said first silicon controlled rectifier and a second terminal connected to the junction between said second resistive member and said second silicon controlled rectifier, and control means associated with each of said silicon controlled rectifier to render conductive selected ones thereof, said control means affecting a first operational mode defined by both of said silicon controlled rectifiers being rendered conductive, a second operational mode defined by only said first silicon controlled rectifier being rendered conductive, and a third operational mode characterized by only said second silicon controlled rectifier being rendered conductive.

3,295,038
REVERSING MECHANISM AND CIRCUIT FOR REVERSING AN ELECTRIC MOTOR AND CONTROLLING ITS FUNCTIONS
Harold H. Trottman, Ashland, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 27, 1964, Ser. No. 362,732
2 Claims. (Cl. 318—282)

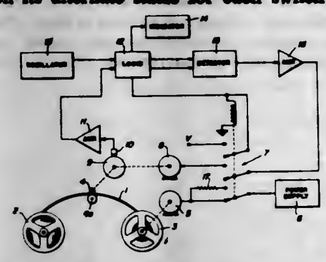


1. In a laundry appliance:
a two-speed reversible motor,
a first timer for controlling the order and the length of time intervals for a plurality of different appliance operations including periodic forward and reverse operations of said reversible motor at the lower of said two speeds,
a reversible motor reversing unit controlled by said first timer including a motorized second timer connected for energization through said first timer, and stop-start switch means controlled by said second timer for stopping and starting said reversible motor, and reversing switch means controlled by said second timer for switching connections to said reversible motor while said stop-start switch means is open to reverse the direction of operation of said reversible motor, and
a bypass circuit for energizing said second timer after its said energizing connection from said timer is opened and until said reversing switch means has established connections to drive said reversible motor in a predetermined direction,
said bypass circuit including said reversing switch means so that energization of said second timer through said bypass circuit is terminated when said reversing switch means is actuated to a position establishing said connections to drive said reversible motor in said predetermined direction.

3,295,039
DIGITAL COMPARATOR FOR SPEED CONTROL SYSTEM
Gerald S. MacDonald, Sea Cliff, and Robert Page Burr, Huntington, N.Y., assignors to Honeywell Inc., a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 339,376
9 Claims. (Cl. 318—314)

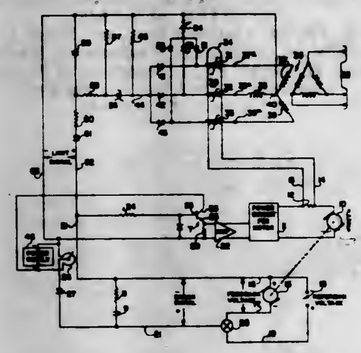
5. A tape speed control apparatus comprising a tape driving means, a reference frequency source, a tone wheel arranged to be driven by said tape driving means, digital comparing means for comparing the phase of a signal from said source with a signal from said tone wheel to produce an indication of the relationship between the compared signals, said comparing means including a pair of input signal lines connected to the signals to be compared from said source and said tone wheel, an AND gate operative to respond to the combination of said lines, a first binary element having one input side connected to an output signal from said gate to set said element

to a first one of its alternate states, gating means responsive to said first one of the alternate states of said binary means and said input lines to produce an output signal to reset said element to a second one of its alternate states upon the occurrence of an energization of one input line, second binary means arranged to switch between its alternate states for each output signal from said gating means, third binary means arranged to switch between its alternate states for each switch in alternate



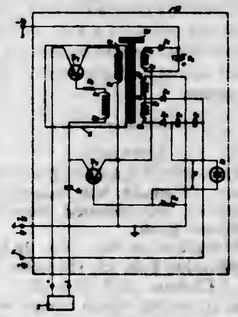
states of said second binary means and means connecting said first alternate state of said first binary means to said third binary means to place said third binary means in one of its alternate states in the absence of a change of state of said second binary means and power supply means connected to said second and said third binary means and arranged to supply an energizing signal to said driving means having a period of occurrence controlled by the states of said second and third binary means.

3,295,040
CURRENT LIMIT CIRCUIT
Robert G. Schlesman, Cleveland Heights, Ohio, assignor to Reliance Electric and Engineering Company, a corporation of Ohio
Filed Nov. 12, 1963, Ser. No. 322,836
3 Claims. (Cl. 318—326)



1. A system for limiting the current of a D.C. motor comprising:
power circuit means for controlling the armature current for the motor;
a three-phase magnetic amplifier comprising three saturable magnetic cores, three load windings in inductive relationship respectively to said cores, and a control winding in inductive relationship to said cores;
an armature shunt connected to the armature of the motor;
means connecting said control winding to said armature shunt to apply to said control winding a D.C. control signal proportional in magnitude to the current to the motor armature and which induces magnetic flux in one direction in said core;
an A.C. power supply including a three-phase transformer having a neutral point;
means for connecting each phase of the transformer to one side of a corresponding load winding for energizing the latter to induce flux in the corresponding core which is in said one direction in one-half cycle of the A.C. power supply and which is in the opposite direction in the opposite half-cycle of the A.C. power supply;
a first set of three rectifiers, each having its terminal of one polarity connected to the opposite side of a respective load winding and each having its opposite polarity terminal connected directly to the opposite polarity terminal of each other rectifier in said set, each said rectifier being operative to pass substantial current only of a polarity corresponding to said one direction of flux in the respective core;
a second set of rectifiers, each having its terminal of said opposite polarity connected to said opposite side of a respective load winding and each having its terminal of said one polarity connected directly to said one polarity terminal of each other rectifier in said second set, each of said rectifiers in the second set being operative to pass substantial current only of a polarity corresponding to said opposite direction of flux in the respective core;
variable resistance means connected between said one polarity terminals of the rectifiers in the second set and said neutral point of the transformer to selectively reduce the magnitude of said last-mentioned current;
blocking means connected to said opposite polarity terminals of the rectifiers in the first set and operative pass current therefrom only when said current exceeds a predetermined magnitude;
and a feedback circuit connected between said motor armature and said power circuit means and operative, in response to output current from the magnetic amplifier passed by said blocking means, to limit the motor armature current produced by said power circuit means.

3,295,041
ELECTRIC VOLTAGE GENERATOR WITH STABILIZING AND REGULATING SYSTEM
René Bize, Paris, France, assignor to Société Chauvin Arnoux, Paris, France, a company
Filed Sept. 4, 1963, Ser. No. 306,500
Claims priority, application France, Sept. 12, 1962, 909,265, Patent 1,333,488
2 Claims. (Cl. 321—2)



1. In a generator capable of supplying at least one stabilized electric voltage, the combination comprising: a power source having direct current voltage, a transistorized blocking oscillator working at high frequency and connected to said source, a low frequency transformer

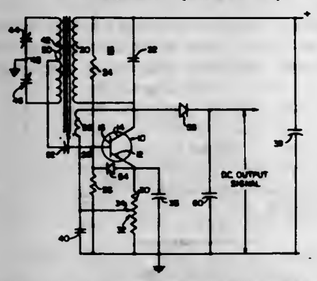
fed from said source, said transformer comprising a primary winding connected to said source and triggered by the transistor of said oscillator, a sustaining coil for said oscillator, said coil being coupled to said primary winding, a secondary circuit comprising at least one secondary winding of the honeycomb type, said transformer being designed to pass low frequency current impulses, means on said transformer for causing the oscillator to oscillate at high frequency, said primary winding and said sustaining coil providing relatively to the secondary winding substantial leakage flux and low stray capacitance both direct and indirect, a regulating circuit with resistance and capacitance for determining the low frequency of recurrence of blocking of the oscillator, said resistance being variable and comprising a transistor connected to said sustaining coil of said oscillator, means for rectifying the voltage delivered by said secondary winding, a reference element generating a stabilized voltage having a value which is adapted to the voltage desired, and means for transmitting the difference between the voltage of the secondary circuit and that of the reference element to the transistor of the oscillator regulating circuit.

3,295,042

CAPACITANCE TO D.C. VOLTAGE CONVERTER

Egils Evalds and John J. Coyne, Philadelphia, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Oct. 14, 1963, Ser. No. 315,834
6 Claims. (Cl. 321—2)



1. A capacitance to D.C. voltage converter energized from a D.C. power supply comprising a sensing capacitor; a resistor; a transistor oscillator including said capacitor and said resistor, said oscillator producing an oscillating signal having an amplitude which varies in proportion to the change in the capacitance of said sensing capacitor and having a quiescent current which flows through said resistor; an output circuit including a winding, a diode and a portion of said resistor connected in series, said winding being inductively coupled to said oscillator whereby said output circuit provides a D.C. voltage output signal which is proportional to said oscillating signal and the voltage developed across said portion of said resistor by said quiescent current.

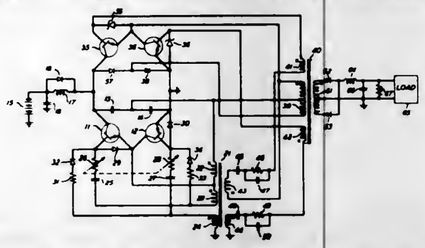
3,295,043

D.C. TO D.C. REGULATED CONVERTER

Richard P. Massey, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 263,062, Mar. 5, 1963. This application Feb. 15, 1966, Ser. No. 537,591
3 Claims. (Cl. 321—2)

1. A regulated converter which comprises a source of direct input voltage, an output rectifier, a separately excited inverter powered by said source connected to supply an alternating voltage to said output rectifier, said separately excited inverter including a pair of transistors, a pair of capacitors, the emitter-collector paths of said transistors being connected in series to form two adjacent arms of a four-terminal bridge and said capacitors being connected in series to form the remaining two arms of the same bridge, and a saturable output transformer having a primary winding connected across the diagonal of said bridge formed by the juncture between said transistors and the juncture between said capacitors, a pair of feedback windings each connected to the base electrode of a respective one of said transistors to render the emitter-collector paths of said transistors alternately conducting and non-conducting in phase opposition to each other, and a secondary winding connected to said output rectifier, said source being connected across the other diagonal of



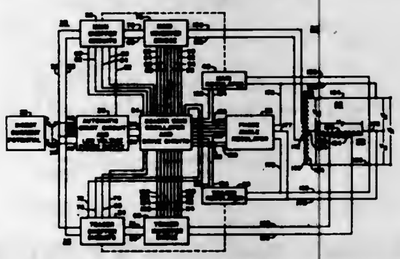
said bridge and said saturable output transformer having a substantially rectangular hysteresis loop and saturating at least once during every half cycle of said alternating voltage, and a substantially constant frequency self-excited inverter powered by said source connected with its output coupled to said feedback windings to drive said separately excited inverter at said substantially constant frequency, whereby said saturable transformer maintains the volt-time product of said alternating voltage substantially constant and the magnitude of the direct voltage derived therefrom by said output rectifier is independent of variations in the magnitude of said direct input voltage.

3,295,044

ELECTRICAL CONTROL APPARATUS FOR INVERTER SYSTEMS

Eugene R. Pledger, Churchill Boro, and Frank J. Prince, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 18, 1963, Ser. No. 296,033
8 Claims. (Cl. 321—5)



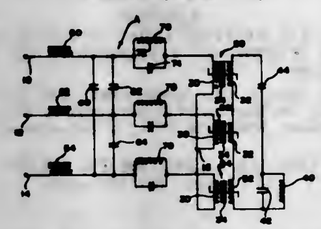
1. An electric circuit comprising first means producing first and second alternating phase potentials, second means connected in circuit relation with said first means producing first, second and third alternating line potentials, said first alternating line potential being the same as said first alternating phase potential, first regulating means maintaining said first alternating phase potential substantially constant, second regulating means sensing the second line potential and maintaining said second line potential substantially equal to said first line potential by regulating the magnitude of said second alternating phase potential, third means connected in circuit relation with said second means rectifying said second and third alternating line potentials, fourth means connected in circuit relation with said third means producing a signal responsive to any difference in the magnitudes of said rectified second and third alternating line potentials, fifth means connected in circuit relation with said first and fourth means regulating the phase angle between said first and second alternating phase potentials in response to said signal and maintaining said second and third alternating line potentials substantially equal to each other.

3,295,045

PHASE AND FREQUENCY CONVERSION SYSTEM

Dante J. Donati, Parma, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed June 21, 1963, Ser. No. 289,642
4 Claims. (Cl. 321—7)



1. A system for converting electrical power from a multiphase source of known frequency into a single phase electrical power, each phase of said source including a primary circuit with said circuits joined at a common point, said system comprising, in combination: a saturating transformer for each primary circuit and having a primary winding in that circuit; a non-saturating inductance in each primary circuit, said inductances each forming a blocking choke in said primary circuits; secondary windings on said transformers and in electrical series with each other to form a single phase output circuit; and, a separate wide band wave trap in each of said primary circuits, said wave traps being located between said primary windings and said inductances and being tuned to attenuate low order harmonics of said known frequency whereby said inductances are subjected to primarily said known frequency and high order harmonics thereof.

3,295,046

DETACHABLE SEMICONDUCTOR RECTIFIER UNIT FOR ALTERNATING CURRENT GENERATOR

Rinaldo Margaira, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy

Filed July 2, 1963, Ser. No. 292,219
Claims priority, application Italy, July 23, 1962, 14,919/62; Mar. 15, 1963, 5,322/63
5 Claims. (Cl. 321—8)



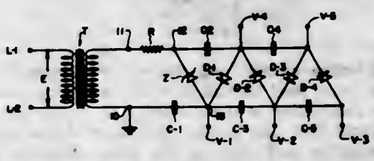
1. Alternating current generator provided with a three phase bridge rectifier unit comprising a first plurality of semiconductor diodes and a second similar plurality of semiconductor diodes electrically connected to form associated diode pairs, each diode pair having their inputs electrically connected to their respective generator phase winding, respectively, and their outputs electrically connected in parallel circuit relationship, wherein the generator comprises a tubular casing having in one end thereof a seat, the rectifier unit comprises an annular casing formed at one end with a seat complementary to the first mentioned seat, fixing means for detachably attaching said rectifier casing in said seat in the generator casing, said rectifier casing comprising a plurality of separate electrically conductive plates secured to said casing and electrically insulated therefrom, each plate supporting one diode of the first plurality having its anode connected thereto and its cathode connected to the casing, and one diode of the second plurality having its cathode connected thereto and its anode connected to a common terminal post insulated from said casing end plates, and detachable electrical connections between each generator winding and its respective pair of associated diodes.

3,295,047

HIGH VOLTAGE POWER SUPPLY

Zoltan Tarcy-Hornoch, Berkeley, Calif., assignor to W. K. Rosenberry, Berkeley, Calif.

Filed June 28, 1963, Ser. No. 289,263
3 Claims. (Cl. 321—15)



1. In a high voltage power supply, a source of low voltage alternating current electrical power having a predetermined source impedance and having first and second output terminals, semi-conductor means having the characteristics of a Zener diode and having first and second terminals, means interconnecting the first terminal of the source and the first terminal of the semiconductor means, capacitor means having first and second terminals, means interconnecting the first terminal of the capacitor means and the second terminal of the source, means including a junction interconnecting the second terminal of the capacitor means and the second terminal of the semi-conductor means and voltage multiplying means consisting of at least one serially connected diode and capacitor pair, and means connecting the first of said pairs to the first and second terminals of the semiconductor means and means connecting each succeeding pair across the diode of the preceding pair, said power supply serving to supply high voltage power substantially regulated against source of voltage variations.

3,295,048

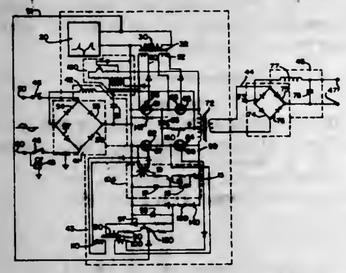
CAPACITOR MEANS FOR CONTROLLING THE CONDUCTION OF UNIDIRECTIONAL SWITCHING DEVICES IN A POWER SUPPLY

Victor Wouk, New York, N.Y., and Elias Pass, Easthaven, Conn., assignors to Electronic Energy Conversion Corporation, New York, N.Y.

Filed May 22, 1961, Ser. No. 111,746
11 Claims. (Cl. 321—16)

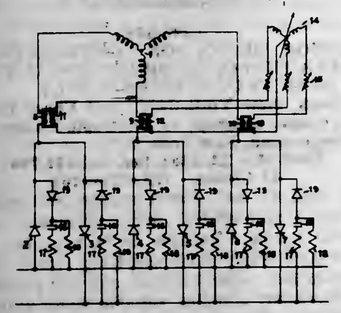
11. A D.C. to A.C. power supply converter system comprising: a pair of D.C. input terminals, an output transformer having a primary and a secondary winding and a variable width pulse supplying circuit connected between said D.C. input terminals and said primary winding for alternately coupling variable width pulses in opposite directions through said primary circuit and including first and second main load current carrying unidirectional switching means, and first and second control unidirectional switching means connected together in the

form of a bridge circuit with one of said switching means in each of its arms and the main load current carrying switching means in contiguous arms of the bridge circuit, said D.C. input terminals being connected to said bridge circuit at opposite ends of one diagonal thereof which spans the arms containing the main load current carrying switching means, one end of said primary winding being connected to one side of the other diagonal of said bridge at the junction of said main load current carrying switching means, the other end of said primary winding being connected to a common point, a first capacitor connected from one of said input terminals to said common point, a second capacitor connected from the other input terminal to said common point, a third capacitor connected as the other diagonal



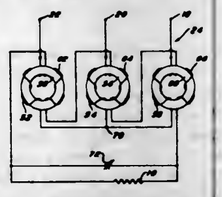
of said bridge circuit, and means for alternately causing said main load current carrying switching means to become conductive at the desired A.C. frequency to effect current flow first in one direction through said primary winding and then in the other direction therethrough and to alternately effect conduction of said first and second control switching means at said A.C. frequency to charge said third capacitor alternately in opposite directions, and means for terminating conduction of said first and second main load current carrying switching means comprising means for rendering said first and second control switching means alternately conductive at the desired A.C. frequency for connecting the charged third capacitor in current opposing relation to the conducting main current carrying switching means.

3,295,049
RECTIFIER ARRANGEMENT WITH TRANSDUCTOR COILS FOR VOLTAGE CONTROL AND PROTECTION MEANS AGAINST EXCESS VOLTAGE
Rolf Widrich and Hans Blatter, Wettingen, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Sept. 10, 1963, Ser. No. 307,915
Claims priority, application Switzerland, Sept. 14, 1962, 10,951/62
3 Claims. (Cl. 321—27)



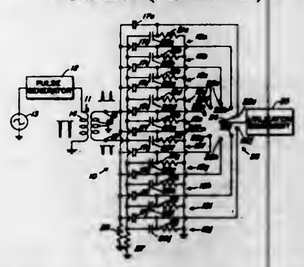
1. A polyphase rectifier system comprising a 3 phase alternating current feed mains, a principal rectifier of the semiconductor element type connected to each phase of said mains for supplying direct current to a load, a regulating transconductor impedance coil regulatable for voltage control having biasing means therefor and which is connected between each phase of said mains and the corresponding principal rectifier element, an RC circuit for each of said principal rectifiers, each said RC circuit including a condenser and a first resistance connected in series, an auxiliary rectifier connected in series with said RC circuit, said RC circuit together with said auxiliary rectifier being connected in parallel with said principal rectifier element, said auxiliary rectifier being poled oppositely to the principal rectifier element which it parallels, and a discharge resistance connected in parallel with the series connected condenser and first resistance.

3,295,050
FREQUENCY TRIPLER CIRCUIT UTILIZING THE THIRD HARMONIC COMPONENT OF TRANSFORMERS
Henry M. Rowan, Jr., Moorestown, and Theodore R. Kennedy, Burlington, N.J., assignors to Inductotherm Corporation, Rancocas, N.J., a corporation of New Jersey
Filed Aug. 13, 1962, Ser. No. 216,503
10 Claims. (Cl. 321—68)



1. An inductive unit comprising an annular ferromagnetic core forming a continuous path for flux flowing through the ferromagnetic core, a winding adapted to be connected to a source of alternating current wound around said ferromagnetic core, and spacing means for providing an annular space between said winding and said core having a lower permeability than said ferromagnetic core when said core is saturated by an alternating current flowing through said winding, said spacing means being a cemented iron powder ring concentric with said toroidal core.

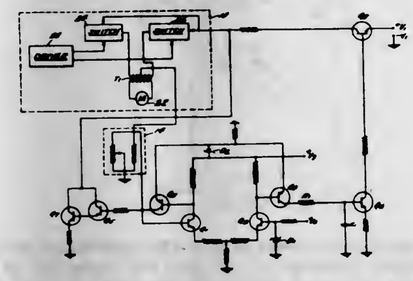
3,295,051
MULTIPLE CRYSTAL FREQUENCY SELECTIVE MULTIPLIER
Samuel L. Broadbend, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Dec. 16, 1963, Ser. No. 331,058
7 Claims. (Cl. 321—69)



1. In a frequency multiplier, a reference frequency source; a pulse generator connected for receiving the reference frequency and developing a pulse signal output; a pulse transformer having a primary coil connected for receiving the pulse signal output of said pulse generator;

a secondary coil of said pulse transformer having two output terminals connected for developing negative and positive going pulses at respective output terminals; one of said terminals being connected to multiple crystals each having a separate individual natural resonant frequency at a multiple of said reference frequency; multiple capacitors at least one paired with each of said crystals connected in parallel to the other of said secondary coil terminals; each pair of said crystals and capacitors being connected in common to one output terminal of multiple output terminals, and through impedance means to a voltage potential reference source; and means for selectively connecting the output terminals of said crystals to utilizing equipment.

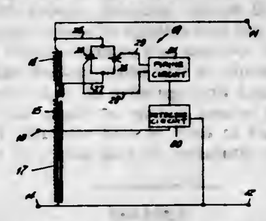
3,295,052
D.C. REGULATION CIRCUIT
Henry E. Martin, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,876
3 Claims. (Cl. 323—22)



1. Apparatus for regulating the current delivered from a current source to a load comprising:
a first variable impedance means connected in series with said source and load,
a second variable impedance means connected in parallel with said load,
means providing a signal proportional to load current,
means providing a reference signal commensurate with desired load current,
a differential amplifier responsive to said reference and proportional signals for generating first and second opposite polarity control signals indicative of the difference between said signals commensurate with actual and desired load current, and
means for respectively applying said first and second control signals to said first and second variable impedance means to thereby control the load current.

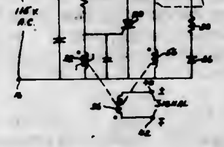
3,295,053
AUTOMATIC VOLTAGE REGULATOR
Allen R. Perrine, Cheshire, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Sept. 13, 1963, Ser. No. 308,745
13 Claims. (Cl. 323—22)

1. An automatic voltage regulator comprising input terminals adapted to be connected to a source of alternating current, a pair of output terminals at which a substantially constant value of output voltage appears, a magnetic core defining a first flux path and an alternate flux path, a main coil wound to be inductively associated with both flux paths, a first winding wound to be inductively associated with both flux paths, a second winding wound to be inductively associated with only the first flux path, means connecting the windings in series to the input terminals for causing said main winding to produce magnetic flux in both of said flux paths and to have one of said first and second windings have a voltage inducible therein that adds to the input voltage and the other of said windings having a voltage inducible therein that opposes said input voltage, means operatively connecting said output terminals with said main winding, said first flux path normally



having a lesser reluctance than said alternate flux path, and means for effectively short-circuiting the second winding to increase the reluctance of the first flux path inductively associated with the second winding to thereby limit the voltage inducible in said second winding.

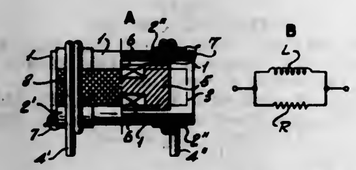
3,295,054
SWITCHING CIRCUIT
Frank W. Gutzwiller, Auburn, and Tage Peter Sylvan, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 96,775, Mar. 20, 1961. This application Oct. 13, 1965, Ser. No. 518,495
23 Claims. (Cl. 323—22)



13. A switching circuit for selectively energizing and deenergizing a load from an alternating current source comprising first and second source terminals for coupling said switching circuit to said source; means coupling one end of said load to said first source terminal; first and second saturable reactors each having a secondary winding and a feedback winding; a first control circuit having a first and second terminals and comprising a first controlled rectifier having an anode, a cathode, and a gate electrode, a first rectifier having an anode and a cathode, means coupling said cathode of said first controlled rectifier to said second terminal of said first control circuit, means coupling said feedback winding of said second saturable reactor between said first terminal of said first control circuit and said anode of said first controlled rectifier, means coupling said first rectifier between said first terminal of said first control circuit and said gate electrode of said first controlled rectifier, means coupling said secondary winding of said first saturable reactor between said gate electrode and said cathode of said first controlled rectifier; means coupling said first terminal of said first control circuit to the other end of said load and for coupling said second terminal of said first control circuit to said second source terminal; a second control circuit having first and second terminals and comprising a second controlled rectifier having an anode, a cathode, and a gate electrode, a second rectifier having an anode and a cathode, means coupling said cathode of said second controlled rectifier to said second terminal of said second control circuit, means coupling said feedback winding of said first saturable reactor be-

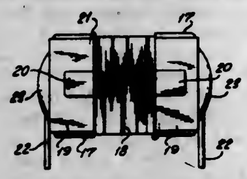
tween said first terminal of said control circuit and said anode of said second controlled rectifier, means coupling said second rectifier between said first terminal of said second control circuit and said gate electrode of said second controlled rectifier, means coupling said secondary winding of said second saturable reactor between said gate electrode and said cathode of said second controlled rectifier; means coupling said second terminal of said second control circuit to said other end of said load and for coupling said first terminal of said second control circuit to said second source terminal; and a primary winding coupled to each of said saturable reactors for controlling the saturation of said saturable reactors.

3,295,055
COMBINED UNIT OF IMPEDANCE
Mitsuo Matsushima and Shigeaki Ogawa, both of Akita-ken, Japan, assignors to Tokyo Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Apr. 17, 1962, Ser. No. 188,173
Claims priority, application Japan, Apr. 20, 1961, 36/19,457, 36/19,458
3 Claims. (Cl. 323—74)



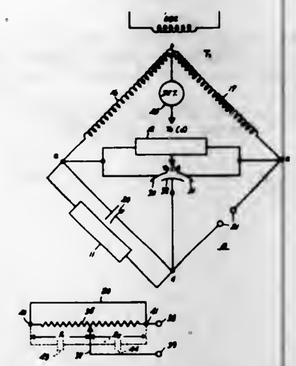
1. A compact impedance unit comprising, in combination, a tubular body of dielectric material; at least a pair of axially spaced bands of electrically conductive low resistance metal on the outer surface of said body; terminal leads each electrically connected to a respective band; a layer of high electrical resistance material on the outer surface of said body and electrically interconnecting said bands; a ferrite core positioned within said body; and a winding on said core having its opposite ends electrically connected to respective bands; said core and said winding constituting an inductive impedance component; and said bands, in combination with said layer of high electrical resistance material, constituting a resistive impedance component.

3,295,056
COMBINED UNIT OF IMPEDANCE
Mitsuo Matsushima and Shigeaki Ogawa, both of Akita-ken, Japan, assignors to Tokyo Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Apr. 17, 1962, Ser. No. 188,174
Claims priority, application Japan, Apr. 28, 1961, 36/20,813, 36/20,814, 36/20,815
3 Claims. (Cl. 323—78)



1. A compact impedance device comprising, in combination a generally cylindrical one-piece ferrite core having a circumferentially extending radial recess intermediate a pair of enlarged ends; layers of relatively low resistance electrically conductive metal each disposed on a respective end of said core, a pair of terminals each electrically connected to a respective one of said layers, a coil winding disposed in said recess having its ends respectively connected to said pair of terminals, said coil winding constituting a first impedance component, a conductor of high resistance material including at least one of said layers constituting a second impedance component, and conductive leads respectively connected to said pair of terminals.

3,295,057
VARIABLE RESISTANCE NETWORK HAVING A CONSTANT STRAY CAPACITANCE
Georg Dornberger, Union, and William M. Smith, Jersey City, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 8, 1963, Ser. No. 278,936
8 Claims. (Cl. 324—60)

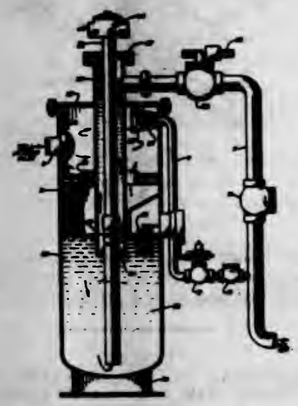


1. In an A.-C. bridge circuit which includes a pair of spaced test terminals in one arm for connection to an unknown reactive element to be measured and a variable standard reactance serially connected thereto in another arm, a variable resistance network for balancing the resistance associated with the unknown reactive element without changing the reactance associated with the other arms of the bridge, which network comprises:
- a uniformly distributed resistance element,
- two output terminals connected to the standard reactance for connecting the variable resistance network in parallel with the standard reactance, one output terminal being connected to one end of the resistance element,
- a movable contact arm having one end contacting the resistance element and having the other end connected to the other output terminal, and
- a short circuit connection means in parallel with the resistance element for maintaining the distributed stray capacitance associated therewith substantially constant as the resistance of said network is varied upon movement of the contact arm along the resistance element.

3,295,058
CAPACITANCE PROBE FOR THE DETECTION OF FLUIDS CONTAINED IN A STREAM OF CRUDE OIL
Ollie W. Graham, Tulsa, Okla., assignor to Combustion Engineering Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 138,655, Aug. 24, 1961. This application Aug. 31, 1965, Ser. No. 489,781
1 Claim. (Cl. 324—61)

A system for measuring the oil in the production of an oil well including,
- a vessel into which the production of an oil well is produced,
- structure within the vessel for separating the gaseous phase of the production from the liquid phases,

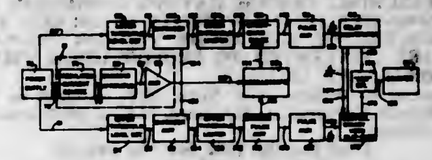
- means for collecting the degassed liquid phases in a body within the vessel,
- a first conduit mounted through a wall of the vessel and extending from its entrance positioned below the surface of the body of degassed liquid within the vessel to an exit at a delivery external the vessel,
- a second conduit mounted through a wall of the vessel and extending from its entrance positioned within the body of gaseous phase within the vessel to an exit at a delivery external the vessel,
- a level control structure mounted within the vessel and connected to control the level of the body of liquids within the vessel above a predetermined minimum,



- an electrical capacitance probe assembly mounted on the entrance of the first conduit to measure the percentage of water in the liquids and extending below the surface of the body of degassed liquids with an arrangement whereby the active section of the probe is in intimate and consistent association with the degassed liquids as the liquid flow from their body into the first conduit,
- a liquid meter mounted in the first conduit downstream of the probe assembly to measure the total volume of liquid passed through the first conduit,
- and an electric circuit connected to the probe assembly and liquid meter so as to combine their measurements and provide a measure of the oil in the total liquid volume.

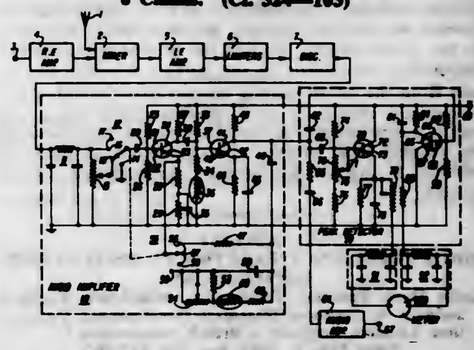
3,295,059
PARTICLE STUDYING DEVICE PULSE ANALYZER
Wallace H. Coulter, Miami Springs, and Walter R. Hogg, Hialeah, Fla., Joseph P. Morrn, Chicago, Ill., and William A. Clapp, Hialeah, Fla., assignors to Coulter Electronics, Inc., Chicago, Ill., a corporation of Illinois
Original application Aug. 19, 1959, Ser. No. 834,860, now Patent No. 3,259,842, dated July 5, 1966. Divided and this application June 28, 1965, Ser. No. 467,406
5 Claims. (Cl. 324—71)

1. A particle studying device for analyzing particles suspended in a liquid, comprising:
- (a) transducer means having a liquid suspended particle scanning apparatus for generating electrical pulses of amplitudes which are a function of the respective sizes of the respective particles which are scanned by the transducer;
- (b) a lower expander amplifier having an input connected to the transducer output;
- (c) lower threshold level set means for determining a lower threshold level, having an output connected to another input of the lower expander amplifier;
- (d) a lower threshold limiter having an input connected to the lower expander amplifier output;
- (e) delay univibrator means triggered when the height of a pulse drops below the lower threshold level for generating an allow pulse, having an input connected to the output of the lower threshold limiter;
- (f) an upper expander amplifier having an input connected to the transducer output;
- (g) upper threshold level set means for determining an upper threshold level, having an output connected to another input of the upper expander amplifier;



- (h) an upper threshold limiter having an input connected to the upper expander amplifier output;
- (i) control binary veto flip-flop means triggered into a veto state when the height of a pulse envelope exceeds the upper threshold level, having an input connected to the upper threshold limiter;
- (j) an "AND" circuit having a first input connected to the output of the univibrator means and a second input connected to the output of the flip-flop means; and
- (k) a counter having an input connected to the "AND" circuit output.

3,295,060
PEAK-TO-PEAK A.C. SIGNAL MEASURING SYSTEM USING TWO COMPLEMENTARY TRANSISTORS HAVING CAPACITOR OUTPUT MEANS AND A COMMON INPUT TO DERIVE PROPORTIONAL POSITIVE AND NEGATIVE PEAK VOLTAGES
Morton Stern, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 21, 1963, Ser. No. 266,835
8 Claims. (Cl. 324—103)



1. A peak detector circuit for use in a system for measuring the deviation of a frequency modulated wave and which includes a portion for recovering the modulation signal from the frequency modulated wave, said peak detector circuit including in combination; first and second transistors each having input and output means, said first and second transistors having complementary symmetry, means for applying the modulation signal to said input means of said first and second transistors in common whereby the same signal is applied to each of said input means, first potential storage means connected between said output means of said first transistor and a first reference potential, second potential storage means

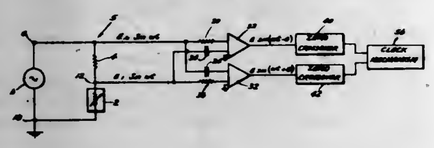
connected between said output means of said second transistor and a second reference potential, said first and second potential storage means storing the peak potential applied thereto from said first and second transistor output means, and meter means connected to said first and second potential storage means to measure and indicate the value of the peak potentials applied to said first and second potential storage means.

3,295,061

MEASURING SYSTEM HAVING CONDITION RESPONSIVE MEANS WHEREIN MEASURED AND REFERENCE AMPLITUDE VARYING SIGNALS ARE CONVERTED TO PROPORTIONAL PHASE DISPLACED SIGNALS

Thomas F. O'Hare, New York, N.Y., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Dec. 20, 1962, Ser. No. 246,262
8 Claims. (Cl. 324—140)



3. A circuit for converting a quantity expressable as a resistance to a digital measurement, comprising a source of reference voltage, a fixed resistor and a variable resistor, whose resistance changes in accordance with the quantity, connected in series and across the source so as to provide at a junction of the two resistors a divided voltage which varies in accordance with changes in the resistance of the variable resistor, phase shifting circuits connected to a terminal of the source and to the junction of the two resistors for receiving the reference voltage and the divided voltage to provide signals whose phase angles vary in opposite senses from the reference voltage and divided voltage in accordance with the amplitude difference between the voltages, detection means connected to the phase shifting circuits for producing pulses corresponding respectively to the instants at which the signals from the phase shifting circuits pass through a predetermined amplitude in a predetermined sense, and means connected to the detection means for measuring the elapsed time between the occurrence of pulses to provide a digital measurement proportional to the quantity.

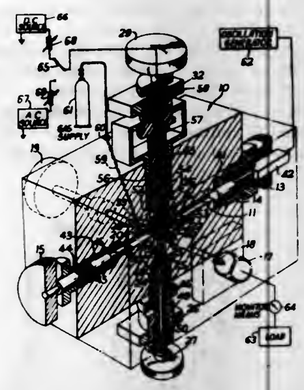
3,295,062

HIGH FREQUENCY ELECTRICAL OSCILLATION GENERATORS

Keith Davy Froome, Teddington, Middlesex, England, assignor to National Research Development Corporation, London, England, a British corporation

Filed Feb. 3, 1964, Ser. No. 342,002
Claims priority, application Great Britain, Feb. 8, 1963, 5,279/63
15 Claims. (Cl. 328—19)

1. A high frequency oscillation generator comprising a body having a sealed chamber therein, a first arc electrode of rod form projecting into said chamber, a second arc electrode of thin wire form also projecting into said chamber opposite said first electrode to define an arc gap between the ends of said arc electrodes, electric power supply means connected to said electrodes for establishing an arc discharge between said first and second arc electrodes, microwave power input means for coupling input energy from a microwave power source to one of said arc electrodes, microwave power output means for extracting from said arc discharge output energy at a harmonic frequency of said input energy, and a gaseous filling of inert gas at a pressure of at least 1000



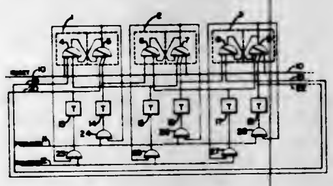
pounds per square inch in said chamber to provide a dense plasma region between and joining the opposing ends of said first and second arc electrodes.

3,295,063

BIDIRECTIONAL PULSE COUNTING CIRCUITS WITH NOR AND NAND LOGIC

Marvin Felcheck, Bayside, and James J. Walker, Bronx, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed June 15, 1964, Ser. No. 374,982
5 Claims. (Cl. 328—44)



1. In a bidirectional pulse counting circuit, the combination of

a forward count input line to which successive input pulses can be supplied;

a reverse count input line to which successive input pulses can be supplied; and

a plurality of interconnected stages each comprising

bistable circuit means including a first circuit portion and a second circuit portion, each of said circuit portions having an input and an output,

first trigger circuit means having an input, said first trigger circuit means being connected to provide an output both to said second portion of said bistable circuit means of the one of said stages including said first trigger circuit means and to said first portion of said bistable circuit means of the one of said stages preceding said one stage,

second trigger circuit means having an input and being operative to provide an output both to said second portion of said bistable circuit means of said one stage and to said first portion of said bistable circuit means of the one of said stages succeeding said one stage,

said first trigger circuit means effecting a count in a first direction coincident in time with termination of an input pulse supplied to said reverse count input line,

said second trigger circuit means being operative to effect a count in a second direction coincident in time with termination of an input pulse supplied to said forward count input line,

first logic circuit means having a first input, a second input, and an output,

said output of said first logic circuit means being connected to said input of said first trigger circuit means of said one stage,

said first input of said first logic circuit means being connected to said output of said second portion of said bistable circuit means of said one stage,

said second input of said first logic circuit means being connected to said reverse count input line,

said first logic circuit means being operative to provide an output signal only when "0" binary signals exist at said first and second inputs simultaneously, and

second logic circuit means having a first input, a second input and an output,

said output of said second logic circuit means being connected to said input of said second trigger circuit means of said one stage,

said first input of said second logic circuit means being connected to said output of said second portion of said bistable circuit means of said one stage,

said second input of said second logic circuit means being connected to said forward count input line,

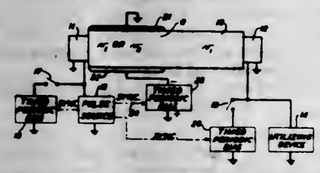
said second logic circuit means being operative to provide an output signal only when "0" binary signals exist at said first and second inputs of said second logic circuit means simultaneously.

3,295,064

ULTRASONIC PULSE MODIFIER

Donald L. White, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 20, 1962, Ser. No. 203,835
5 Claims. (Cl. 328—58)



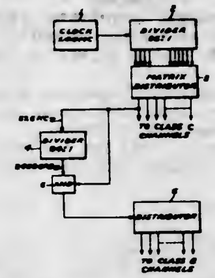
4. In combination, a source of pulses of ultrasonic wave energy, a propagation medium including a section of ultrasonic delay line of constant velocity of propagation, ultrasonic transducers for applying said pulses to said medium for propagation therealong and for receiving said pulses from said medium, means for periodically disabling said transducers to produce multiple reflections of said pulses through said medium, and means synchronized with said pulses and their propagation through said medium for changing the propagation velocity of a portion of said medium adjacent to said section in a given direction while one of said pulses is contained within said portion and in a direction opposite to said given direction when said pulse has left said portion.

3,295,065

PULSE GENERATOR EMPLOYING CASCADED COUNTERS AND COINCIDENCE CIRCUITRY FOR PRODUCING PLURAL FREQUENCY OUTPUTS

Warren G. Brown, River Vale, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Mar. 17, 1964, Ser. No. 352,523
20 Claims. (Cl. 328—62)



1. A generator to provide within a predetermined period a plurality of groups of pulse trains, each of said groups of pulse trains having a different repetition rate comprising:

a source of pulses having a given repetition rate;

first means coupled to said source to produce as a first plurality of outputs for said generator a first group of time spaced pulse trains, each pulse train of said first group having a first repetition rate equal to a first integral fraction of said given repetition rate;

second means coupled to one of said source and said first means to produce pulses having a second repetition rate equal to a second integral fraction of said given repetition rate different than said first integral fraction; and

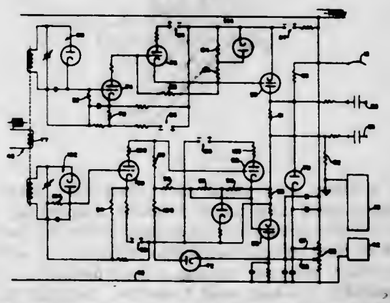
third means coupled to said first means and said second means to produce as a second plurality of outputs for said generator at least a second group of time spaced pulse trains, each pulse train of said second group having a third repetition rate equal to a third integral fraction of said given repetition rate different than said second integral fraction.

3,295,066

MULTIPLE MODULATING ANODE BEAM TYPE ELECTRON TUBE AND MODULATING CIRCUIT

James Anderson, Dallas, Tex., assignor to Continental Electronics Manufacturing Company, Dallas, Tex., a corporation of Texas

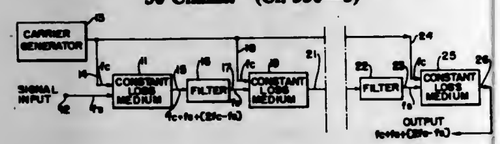
Filed July 5, 1962, Ser. No. 207,615
14 Claims. (Cl. 328—232)



1. In combination, a klystron including an electron emitting cathode and two modulating anodes, a high voltage source, and a pulse modulator, said pulse modulator

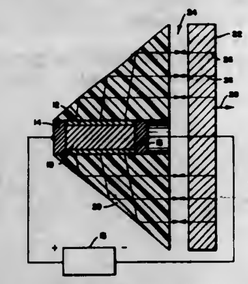
including means normally connecting the modulating anode closest to said cathode and said cathode across said high voltage source, and means responsive to an input pulse for causing a significant potential difference across said cathode and said one modulating anode and simultaneously increasing the potential between said cathode and the other modulating anode.

3,295,067
ELECTROMAGNETIC AMPLIFICATION UTILIZING A CONSTANT LOSS MEDIUM AND SUB-CENTIMETER WAVE LENGTH APPARATUS THEREFOR
Gordon Gould, Bronx, N.Y., assignor, by mesne assignments, to Control Data Corporation, South Minneapolis, Minn., a corporation of Minnesota
Filed May 21, 1962, Ser. No. 196,285
30 Claims. (Cl. 330—5)



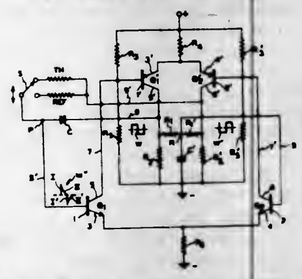
1. Apparatus for amplification of electromagnetic signals comprising, a substantially constant loss medium having a greatly reduced short term average power adsorption factor for short term average power values substantially above a predetermined saturation power value, means for applying a carrier signal of sufficient power to create said greatly reduced short term average power absorption factor in said medium, means for superimposing on said carrier signal an electromagnetic information signal to be amplified, said information signal to be amplified having a much smaller magnitude than said carrier signal, and means for propagating said combined carrier signal and superimposed information signal through said medium thereby to amplify said information signal component while diminishing the amplitude of said carrier signal component.

3,295,068
SOLID STATE SUB-MILLIMETER DEVICE UTILIZING CERENKOV EFFECT
William M. Honig, 6901 Bay Parkway, Brooklyn, N.Y. 11204
Filed Feb. 16, 1965, Ser. No. 432,948
3 Claims. (Cl. 331—81)



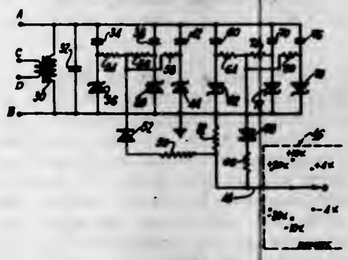
1. A short wavelength radio frequency device comprising a solid conduction material adapted to support high velocity conduction electrons, means for producing a flow of high velocity conduction electrons in said solids, a Cerenkov material having a high dielectric constant-permeability product, said Cerenkov material being situated in proximity to at least a portion of said conduction material to generate Cerenkov radiation in said Cerenkov material in response to the flow of electrons in said conduction material, a frequency determining structure adapted to select radiation at the operating frequency of said oscillator, a Cerenkov coupler arranged to couple the radiation from said Cerenkov material coherently to said frequency determining structure, means for supplying a portion of the energy selected by said frequency determining structure to a substantial portion of said conduction material to create a field for bunching the electrons flowing in said portion, and output means for coupling a portion of the energy selected by said frequency determining structure to external utilization apparatus.

3,295,069
OSCILLATION GENERATOR EMBODYING COMPLEMENTARY DIFFERENTIAL AMPLIFIER PAIRS
Kenneth E. Perry, Wayland, Mass., assignor to Geodyne Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Sept. 9, 1965, Ser. No. 486,180
10 Claims. (Cl. 331—113)



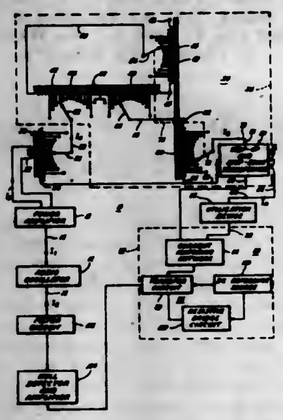
1. An oscillator circuit having, in combination, two pairs of complementary current-mode-operated differential switching relays each relay of which is provided with input and output circuits, means for connecting the output circuits of one of the pairs to the input circuits of the other pair to drive the same, a positive feedback path connected from the output circuit of one relay of the said other pair to the input circuit of one relay of the said one pair, and a negative feedback path connected from the output circuit of the other relay of the said other pair to the input circuit of one relay of the said one pair, the feedback paths containing a time-constant-controlled frequency-determining network.

3,295,070
DIODE TUNED CIRCUIT
John M. Tewksbury, Lutherville, Alfred ... Hemphill, Baltimore County, and Robert C. Smith, Timonium, Md., assignors to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,465
3 Claims. (Cl. 331—179)



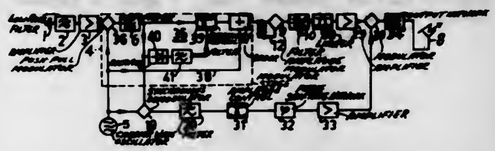
1. For use with an oscillator including a resonant circuit having an inductor and a capacitor, variable frequency selecting means comprising:
a plurality of circuits connected in parallel with said inductor and said capacitor, each of said circuits including capacitance means and Zener diode means, said diode means in each of said circuits having different selected inverse breakdown voltages,
and variable power supply means connected to said circuits capable of selectively providing operating voltages exceeding the individual breakdown voltages of said diodes for causing conduction through individual circuits whereby said capacitance means are selectively placed in said resonant circuit.

3,295,071
VARIABLE CURRENT SUPPLY SYSTEM HAVING FEEDBACK LOOP FOR OUTPUT REGULATION
Kenneth J. Koep, South Plainfield, and Peter Goltiandis, Irvington, N.J., assignors to Weston Instruments, Inc., a corporation of Texas
Filed Feb. 17, 1964, Ser. No. 345,245
1 Claim. (Cl. 331—183)



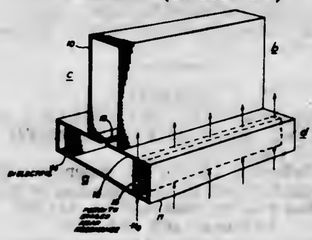
A variable current supply system comprising: a source of A.C. power; a utilization device adapted to the energized by said source of A.C. power; current ratio means having an input and output, the input being coupled directly to the power source and the output being directly coupled to said utilization device, said current ratio means selected currents for said output; a current matching network, in series relationship with the current ratio means and utilization device, for sensing the current through the utilization device and producing an output signal representative thereof; a standardization circuit having a source of fixed reference current, and including means for comparing the output signal of the current matching network with said reference current and generating an error signal representative of the algebraic sum of said output signal of said current matching network and said reference current, whenever said sum exceeds a predetermined value; and means coupled to the standardization circuit and power source for applying a control signal to the power source, representative of said error signal, to control the amplitude of output current from said A.C. power source by an amount and in a direction dependent upon the magnitude and sense of said control signal, so that the current through the utilization device remains at any desired current level; wherein said current ratio means
includes a first core; a second core; a first winding; a second winding; a third winding, said first and second windings being wound on said first core, said third winding being wound on said second core; first switching means coupling portions of said second winding to said third winding in series circuit relationship; second switching means coupling portions of said third winding to said first winding in series circuit relationship across the power source; and third switching means coupling portions of said first winding to said utilization device.

3,295,072
MEANS FOR REDUCING SIGNAL COMPONENTS OUTSIDE OF THE DESIRED BAND IN A COMPATIBLE SINGLE SIDEBAND SYSTEM
Theodorus Josef van Kessel, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,720
Claims priority, application Netherlands, Jan. 11, 1963, 287,765
9 Claims. (Cl. 332—41)



1. A transmitter for transmitting single-sideband signals comprising a source of information signals, a source of first carrier wave oscillations of predetermined frequency, first amplitude modulator means for amplitude modulating said first oscillations with said information signal to produce first single-sideband signals, second amplitude modulator means, first circuit means for applying the output of said first modulator means to said second modulator means by way of first and second paths, whereby the signals applied to said second modulator means by way of said first and second paths are multiplied in said second modulator means, means for limiting the output of said second modulator means to produce second carrier wave oscillations, output modulator means, means applying said second carrier wave oscillations to said output modulator means, second circuit means for applying said information signals to said output modulator means, whereby said second oscillations are modulated by said information signals, and dynamic control means connected in at least one of said first and second circuits, said dynamic control means comprising means for increasing the ratio between the modulation index of signals fed to said limiting means and the modulation voltage of said output modulator means with increase in the amplitude of said information signals.

3,295,073
FREQUENCY DISCRIMINATING CIRCULATOR
Harold Seidel, Fanwood, and Lawrence J. Varnerin, Jr., Watchung, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 24, 1964, Ser. No. 421,033
20 Claims. (Cl. 333—1.1)



1. A electromagnetic wave transmission path exhibiting psimary and secondary frequency discrimination characteristics including a first transmission path adapted for

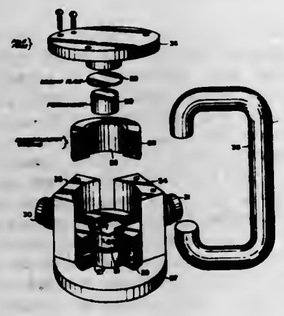
reciprocally propagating in respectively opposite longitudinal directions secondary frequency magnetic wave energies, means included in said path for nonreciprocally concentrating in a transverse direction the longitudinal lines of primary frequency magnetic wave energies and means for coupling exclusively to said longitudinal lines of magnetic field disposed longitudinally in a region of vanishing longitudinal lines of secondary frequency magnetic wave energy.

3,295,074

Y-JUNCTION STRIP LINE SWITCHABLE CIRCULATOR CONTAINED WITHIN A HOLLOW LOW MAGNETIC PERMEABILITY CYLINDRICAL TUBE

Kenneth L. Carr, Bedford, Mass., assignor to Ferrotec, Inc., Newton, Mass., a corporation of Massachusetts

Filed Mar. 5, 1965, Ser. No. 437,425
5 Claims. (Cl. 333—1.1)



1. A circulator comprising:
(1) a hollow tube of low magnetic permeability;
(2) means in the tube constituting the ground planes of a strip transmission line;
(3) a member constituting the center conductor of the strip transmission line, the center conductor having a plurality of arms symmetrical about and extending from a central portion;
(4) a ferrimagnetic medium filling the space between the center conductor and the ground planes;
(5) an electromagnetic coil closely surrounding the tube and encircling the ferrimagnetically filled strip transmission line;
(6) means for concentrating across the ground planes in the tube the magnetic field established by an electrical current flowing in the electromagnetic coil;
(7) and means external of the tube providing electrical coupling to the center conductor of the strip transmission line.

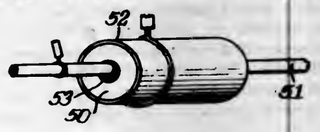
3,295,075

ELECTROMECHANICAL TRANSDUCER DEVICES EMPLOYING RADIALLY POLARIZED PIEZOELECTRIC CRYSTALS

Willard A. Schooley, Cicero, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 10, 1964, Ser. No. 343,603
5 Claims. (Cl. 333—30)

1. Transducer means for a delay line wherein a delay is established by propagating a stress wave along a wire and the transducer means is coupled to the wire for receiving the stress wave and converting the same to an electrical signal, said transducer means including in combination, a radially polarized piezoelectric crystal having an opening therethrough with the wire passing through said opening, and means within said opening mechanically



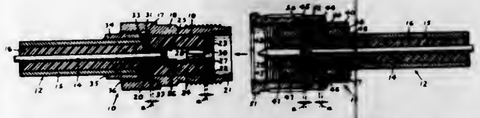
coupling said crystal to the wire, said crystal being responsive to the stress wave in the wire to be deformed thereby, and said crystal developing an electrical signal in response to said deformation.

3,295,076

ELECTRICAL CONNECTOR MEANS FOR COAXIAL CABLES AND THE LIKE

Karl Kraus, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware

Filed Aug. 17, 1964, Ser. No. 389,965
10 Claims. (Cl. 333—97)



9. The combination comprising a coaxial electrical cable having the inner and outer conductors separated by insulation, the inner conductor being exposed beyond the end of the outer conductor and the end of insulation, a tubular metallic shell having a stepped bore, a tubular insulator slidable into said shell from the rear and positioned by a rearwardly facing first shoulder in the shell, a contact slidable into the bore of said insulator and against a rearwardly facing shoulder in said insulator, tubular metallic means comprising a sleeve mounted on the end portion of the cable and means for securing the end of said sleeve within the rear end of said shell with said sleeve in end abutment with a rearwardly facing second shoulder in said shell and with said cable insulation in end-to-end abutment with said insulator.

3,295,077

CURRENT ZERO SENSING AND LATCHING ELEMENT FOR CIRCUIT BREAKERS

Howard R. Shaffer, Glenside, Pa., and John C. Lucas, Cherry Hill, N.J., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 12, 1965, Ser. No. 479,072
3 Claims. (Cl. 335—19)



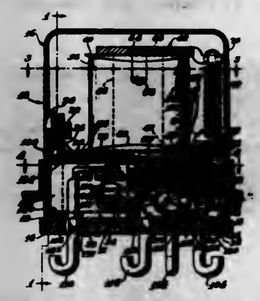
1. A latch mechanism for a circuit breaker; said circuit breaker including a pair of cooperable contacts, a latchable operating mechanism connected to one of said contacts for moving said one of said contacts between an engaged and disengaged position, and an automatic current responsive trip means; said latch mechanism comprising a first latch means, an auxiliary latch means and a current magnitude sensing means; said first latch means connected from said automatic current responsive trip means to said latchable operating mechanism and being movable between a latching and unlatching position with respect to said latchable operating mechanism; said current magnitude sensing means including circuit means connected in series with said pair of cooperable contacts; said auxiliary latching means being connected to said latchable operating mechanism and being movable between a latching position and unlatching position responsive to the current magnitude through said current magnitude sensing means; said auxiliary latching means moving to its said unlatching position after said first latch means moves to its said unlatching position and responsive to a predetermined current magnitude which will decay to a substantially zero value at the time said latchable operating mechanism moves said cooperable contacts to their said disengaged position.

3,295,078

RELAY

Orest Hrynewycz, Chicago, Ill., assignor to Guardian Electric Manufacturing Company, a corporation of Illinois

Filed Dec. 16, 1964, Ser. No. 418,796
15 Claims. (Cl. 335—124)



1. A relay construction comprising a base, a contact member insulatingly carried by said base, a mounting bracket supported by said base and having a shelf spaced from said base, electrical coil means having ends mounted on said shelf, an armature pivotally carried by said bracket and being movable in response to energization and de-energization of said coil means, and a moving blade contact insulatingly carried by said armature and movable in and out of electrical contact with said contact member as said armature is moved by said coil means, said moving blade contact being insulatingly embedded in a molded insulating mass which is secured to said armature, a current carrying member having one end embedded in said molded insulating mass in electrical contact with said moving blade contact, and a pin member insulatingly carried by said base and contiguous with and being directly electrically connected to the other end of said current carrying member.

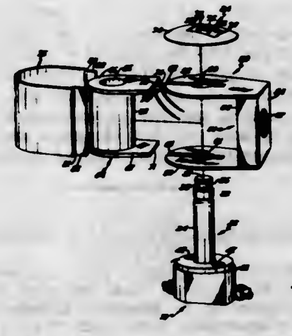
3,295,079

SOLENOID ACTUATOR ASSEMBLY HAVING A UNITARY SPRING CLIP FOR THE PLUNGER

Richard W. Brown, Excelsior, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 3, 1964, Ser. No. 415,614
7 Claims. (Cl. 335—255)

3. A solenoid valve assembly comprising:
a valve body;
an elongated plunger tube assembly having an inner end rigidly mounted on said body and an outer end extending away from said body;
a frame member formed of magnetic material and having a generally cup-shaped rear portion and first and second similar, flat, parallel legs co-extensive with said rear portion and extending forward from the open end of said cup-shaped portion on opposite sides thereof, each of said legs having forward and side edges, each of said legs having an aperture therethrough intermediate said enclosed rear portion and said forward edge, said frame member being mounted on said body with said plunger tube assembly extending through the apertures in said legs and with said first leg abutting said body and with the outer end of said plunger tube assembly extending through said second leg;
an apertured bobbin mounted between said legs with said plunger tube extending through the aperture therein, said bobbin having an end member adjacent each of said legs, said end members having forward and side edges shaped similar to said legs but said end members being somewhat smaller than said legs and terminating in a rear portion disposed slightly forward of the open end of said cup-shaped portion;



a solenoid coil on said bobbin;
an enclosure member surrounding the forward end and sides of said bobbin to form an enclosure substantially continuous with said cup-shaped portion of said frame member, said enclosure member having an in-turned flange on each side of said bobbin and extending between the rear portion of the end members of said bobbin and the forward end of said cup-shaped portion of said frame member, and said enclosure member having an out-turned flange on each side of said bobbin adjacent said in-turned flange and extending rearward on the interior of said cup-shaped portion of said frame member; and
fastening means operably connected to said outer end of said plunger tube assembly and operably associated with said second leg of the frame member to secure said frame member and thereby said bobbin and said enclosing member to said plunger tube assembly.

3,295,080

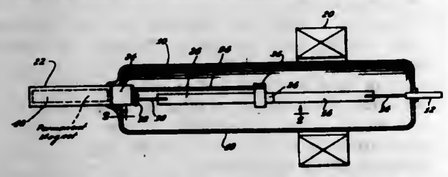
PERMANENT MAGNET LATCHING TYPE VACUUM RELAY

Victor E. De Lucia, Santa Monica, and Bruce C. Meland, Los Angeles, Calif.; said Meland assignor to Torr Laboratories, Inc., Los Angeles, Calif., a corporation of California

Filed June 8, 1965, Ser. No. 462,260
2 Claims. (Cl. 335—153)

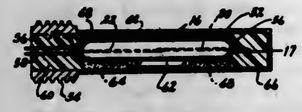
1. A vacuum relay including: an evacuated envelope; a first elongated member of magnetizable material positioned in said envelope; a further member of magnetizable material mounted at one end of said envelope coextensive with said first elongated member and extending through said envelope; permanent magnet means mounted externally of said envelope and magnetically coupled through said further member to said first elongated member to establish said first member in a particular magnetic state; a second elongated member positioned in said envelope

for selective engagement with said first member and being composed of a material capable of exhibiting first and second distinct states of remanent magnetization; means for pivotally mounting said first elongated member at one end to said further member; an electric coil magnetically coupled to said second member and responsive to electrical pulses of opposite polarities for changing the state of remanent magnetization of said second member whereby the magnetic field thereof selectively aids and opposes



the magnetic field of said first member; a member of magnetizable material; and means for supporting said last named magnetizable member in said envelope in position to be engaged by the free end of said first elongated member and magnetized thereby when said first elongated member is out of engagement with said second elongated member, said last named magnetizable member serving to hold said first elongated member against vibratory movement when so engaged thereby.

3,295,081
THERMO-MAGNETICALLY OPERATED SWITCHES
Kern M. Bowyer, Wilmington, Del., and Richard Lyons Campbell, Birmingham, Mich., assignors, by direct and mesne assignments, to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 21, 1964, Ser. No. 384,193
3 Claims. (Cl. 335—208)



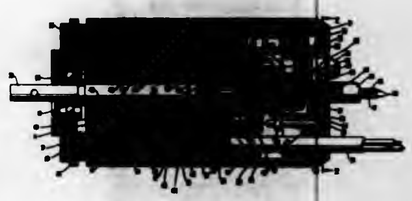
1. In combination: an elongated hollow temperature sensing probe; ferromagnetic switch means disposed in said probe; a magnet disposed in said probe adjacent said switch means; and a mass of magnetic exchange inversion powder disposed in the probe for redirecting the normal field of the magnet to operate the switch means from its normal position.

3,295,082
MAGNET COIL HAVING COOLING MEANS
Robert L. Kustom, Oak Lawn, and George E. Yurka, Berwyn, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 11, 1964, Ser. No. 395,968
6 Claims. (Cl. 335—299)



1. A magnet comprising an annular coil comprising two copper strips electrically connected to one another at their ends, a plurality of insulating cross pieces located between the copper strips in contact therewith and extending across them and beyond their side edges, the insulating pieces being spaced from one another longitudinally of the copper strips and distributed over their length, a first pair of longitudinal insulating members extending along the side edges of one copper strip in overlapping relation to the ends of the cross pieces, and a second pair of insulating members extending along the side edges of the other copper strip in overlapping relation to the ends of the cross pieces, the cross pieces and longitudinal members cooperating with the copper strips to form transverse cooling passages over the length of the copper strips, and insulating sheet means extending along one copper strip and the associated longitudinal members.

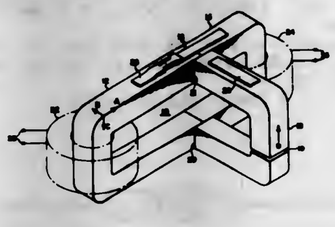
3,295,083
APPARATUS COMPRISING A WOUND ROTOR AND A ROTOR HOUSING AND BEARING STRUCTURE
William Victor Fiore, Montrose, Pa., assignor to The Bendix Corporation, South Montrose, Pa., a corporation of Delaware
Filed May 1, 1963, Ser. No. 277,242
17 Claims. (Cl. 336—30)



4. Electrical apparatus comprising a hollow casing, a stator assembly axially slidable into the casing against a stop in the latter, a bearing support axially slidable into said casing, a snap ring engaging a groove in the casing wall and resilient means interposed between said stator assembly and said support for urging said assembly and support against said stop and the inner face of said ring, respectively, means for holding said support firmly against said ring, a rotor within the stator, bearings in said casing and support for the rotor, a winding on the rotor, leads connected to the terminals of said winding and extending through the wall of the rotor into a hollow end portion thereof, and means for fixing said leads intermediate the ends thereof against movement relative to the casing at a position spaced from the winding, said leads being continuous flexible wires formed into coils between said position and the winding.

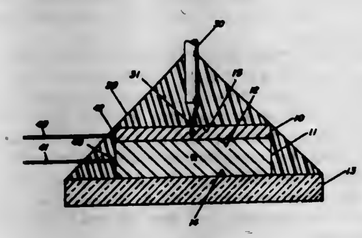
3,295,084
TRANSFORMER HAVING A MAGNETIC CORE COMPRISING A MAIN FLUX PATH HAVING ONE DEFINITE GRAIN ORIENTATION AND A SHUNT FLUX PATH HAVING A DIFFERENT DEFINITE GRAIN ORIENTATION
Clifford C. Herstrom, Sharpsville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 10, 1964, Ser. No. 417,325
2 Claims. (Cl. 336—165)

1. A transformer comprising a four sided main magnetic circuit for carrying flux, said main magnetic circuit being formed from laminations of magnetic sheet steel having a definite grain orientation, a primary winding for carrying current on one side of said main magnetic circuit, a secondary winding for carrying current on the opposite side of said main magnetic circuit from said primary winding, a shunt magnetic circuit connected to said main magnetic circuit intermediate said two winding sides, said shunt magnetic circuit comprising laminations of magnetic sheet steel having a definite grain orientation, the laminations of at least one of said magnetic circuits being grain oriented in at least two directions, the magnetic circuit from said primary winding through said secondary winding and back through said primary winding having less reluctance than the magnetic circuit from said primary winding through said shunt magnetic circuit and back through said primary winding, and the



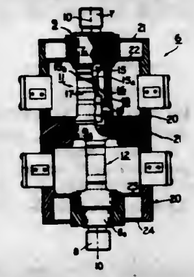
reluctance of the magnetic circuit from said secondary winding through said shunt magnetic circuit and back through said secondary winding being of such magnitude relative to the reluctance of the main magnetic circuit from said secondary winding through said primary winding that upon abnormal current flow in said secondary winding that most of the flux due to abnormal current flow in said secondary winding flows through said shunt magnetic circuit and back through said secondary winding.

3,295,085
SEMICONDUCTOR STRAIN TRANSDUCER DEVICE
Roger F. Nelson, Mountain View, Calif., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,266
9 Claims. (Cl. 338—2)



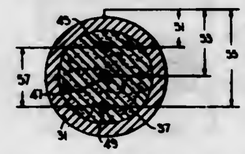
9. A device sensitive to variations in stress including a body of semiconductor material having two regions of opposite conductivity, one of said regions having a broad surface, a rectifying junction between said regions and disposed at a depth of less than 0.010 inches from said broad surface and disposed in a plane parallel thereto, means for producing a stress in said junction, said means for producing a strain comprising an elongated member bearing on said broad surface with a pointed tip having a radius of curvature of less than about 250 microns, and a deformable material enclosing said member and board surface and suspending said member in contact with said surface, said deformable material being pliable for permitting longitudinal movement of said member to cause variations in pressure upon said surface by said member and resultant stressing of a small area of the junction underlying said broad surface.

3,295,086
MULTI-RANGE LOAD CELLS
Eric Lalmins, Cambridge, and Bernard H. Shapiro, Sudbury, Mass., assignors to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed July 2, 1964, Ser. No. 379,855
5 Claims. (Cl. 338—5)



2. Force measuring apparatus comprising at least two strain-sensitive load cell elements each including different electrical strain gage means and each differently responsive to forces applied along an axis thereof, means mechanically interconnecting one end of one of said elements and one end of another of said elements and thereby maintaining said elements in series colinearly along said axis, mechanical stop means shunting one of said series-connected strain-sensitive means between the end connected with the other of said elements and the opposite end thereof, said stop means including cooperating stop members engageable to transmit forces therethrough when the applied forces in either direction are in excess of a predetermined value, a substantially rigid casing in enclosing relationship to said strain-sensitive elements, flexible diaphragm means extending between said casing and each of the free ends of said strain-sensitive means opposite said ends connected by said interconnecting means, means rigidly securing said casing with said interconnecting means at a position intermediate said diaphragm means at said free ends of said elements, and means for applying tension and compression forces to said strain-sensitive elements in series along said axis and through said free ends of said elements.

3,295,087
TEMPERATURE SENSOR
Harry M. Landis, Norton, and Joseph W. Waaleski, Jr., Mansfield, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 28, 1965, Ser. No. 498,267
3 Claims. (Cl. 338—28)



1. An NTC electrical sensor having a voltage-adjustable repeatable resistance-breakdown temperature, comprising a metallic tube forming an outer electrode and a plurality of metallic cores forming several electrodes within the outer electrode whereby several pairs of electrodes are formed, a compacted mass of particles located in the space between the electrodes, the material composing said particles being selected from the group consisting of inorganic insulators, inorganic semiconductors, crystalline organic conductors and glass, said mass of particles surrounding all of said cores throughout a substantial portion of the axial length of said tube, thereby forming several voltage-adjustable conductive paths between the

electrodes, a number less than all of the particles in the mass being solid-phase interatomically bonded to one another for strength and to provide a resistivity greater than that of the resistivity of an equal solid mass of material, particles lying adjacent to the inside of the tube and the outsides of the inner electrodes being solid-phase interatomically bonded thereto respectively to provide substantial holding strength between all the electrodes and the mass of particles.

3,295,088

ELECTRICAL HUMIDITY SENSING ELEMENT

Walter J. Smith, Arlington, Mass., assignor, by mesne assignments, to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 14, 1964, Ser. No. 403,778
14 Claims. (Cl. 338—35)



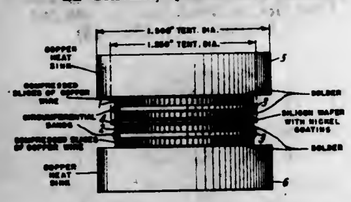
2. An electrical, synthetic, laminated humidity sensing element, comprising a first section formed of a material having a high moisture sensitivity such that the material will show a dimensional increase of more than 3% of its initial dimension with a change of relative humidity from 0% to 100%, a second section integral and coextensive with a substantial surface portion of the first section and formed of a material having a low moisture sensitivity such that the material will show a dimensional increase of less than 2% of its initial dimension with a change of relative humidity from 0% to 100% and said last named material being resistant to creep and capable of recovering substantially completely from dimensional increases up to 5% of its initial dimension, and a series of interconnected electrically conductive particles embedded within the second section and extending throughout a substantial portion of the length of said second section and disposed in sufficient contact within said second section to effect a measurement of variable resistance.

3,295,089

SEMICONDUCTOR DEVICE

Thomas W. Moore, Dayton, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Oct. 11, 1963, Ser. No. 315,647
11 Claims. (Cl. 338—284)



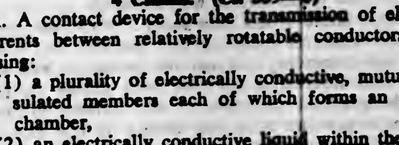
8. In combination in a semiconductor transmission device, a wafer member of semiconductive material, a base member of an electrical and thermal conductive material, an intermediate connection between said wafer and base members comprising a plurality of wire conductors and means for maintaining said wire conductors in compressed relationship to each other, means for attaching one end of each of the compressed wire conductors to said base member in thermal and electrical conduction relation therewith and each of the other ends of the compressed conductors to a selected area on the surface of said semiconductive material, said conductors being separate from each other between the attached ends thereof and free to move individually with the thermal expansion and contraction of the component parts of said device during transmission use thereby with the absence of introducing mechanical stresses to prevent appreciable change of the electrical performance and physical characteristics of the device.

3,295,090

ELECTRICAL RESISTOR HAVING A CORE ELEMENT WITH HIGH HEAT DISSIPATING PROPERTIES

Bernard F. Hay, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska

Original application Feb. 26, 1962, Ser. No. 175,654. Divided and this application Sept. 3, 1963, Ser. No. 306,242
1 Claim. (Cl. 338—302)



In an electrical resistor having a core element with high heat dissipating properties,

an elongated straight cylindrical insulative core of solid and homogeneous construction, and being comprised substantially of beryllium oxide,

said beryllium oxide comprising at least 90 percent by weight of said insulative core,

an electrical resistance element in engagement with and substantially continuously covering the outer surface of said insulative core,

and terminal elements on the ends of said core and in electrical contact with said resistance element,

said terminal elements being in firm operative engagement with a sufficient portion of the surface of said insulative core whereby heat in the center portion of said core can be substantially uniformly distributed over the length of said core and can be quickly dissipated from said resistor through the beryllium oxide in said core and thence through said terminal elements;

the operative engagement between said terminal elements and the surface of said insulative core being such that when sufficient power is applied to said resistor to cause said resistor to reach its maximum operating temperature and said power is applied for 1000 hours, the temperature rise at the warmest point on said resistor will not exceed 275 degrees centigrade, and the resistance value of said resistance element will deviate no more than one percent from its initial resistance.

3,295,091

LIQUID CONTACT ARRANGEMENT BETWEEN RELATIVELY ROTATABLE CONDUCTORS

Oskar von Mende, 3 Kennedy-Damm, Duesseldorf, Germany

Filed Dec. 28, 1964, Ser. No. 421,226
Claims priority, application Germany, Nov. 26, 1964, M 63,239
4 Claims. (Cl. 339—5)

1. A contact device for the transmission of electrical currents between relatively rotatable conductors comprising:

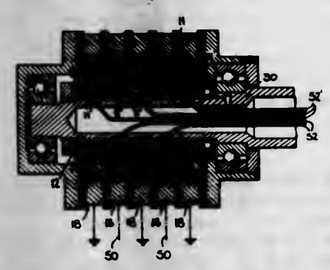
(1) a plurality of electrically conductive, mutually insulated members each of which forms an annular chamber,

(2) an electrically conductive liquid within the chambers,

(3) a plurality of electrically conductive, mutually insulated disc-like members, at least a portion of each of said disc-like members entering a chamber and contacting said liquid therewithin,

each chamber having a portion opposite to the side of the chamber through which a disc-like member enters which is wider than the portion of the chamber adjacent to the side of entry of said disc-like member, and

each disc-like member having



(a) an edge portion which is within a chamber and is wider than said portion of the chamber adjacent to the side of entry of said disc-like member, and

(b) a portion outside of any of the chambers which is wider than and overlies a said portion of the chambers adjacent to the side of entry of said disc-like member.

3,295,092

COAXIAL PATCHBAY SYSTEM FOR ELECTRONIC COMPUTERS

Donald B. Newmann, Long Branch, and Robert N. Griggs, Brick Township, Ocean County, N.J., assignors to Computer Products Incorporated, Manasquan, N.J., a corporation of New Jersey

Filed Jan. 31, 1964, Ser. No. 341,680
10 Claims. (Cl. 339—18)



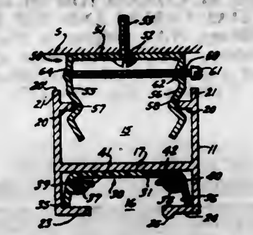
1. In an electronic computer, a patchbay comprising a metal plate and a plurality of mutually insulated contacts insulated from said plate and projecting forwardly from said plate, said contacts being connected at their rearward ends to the computing elements of the computer, a patch panel in front of said patchbay and spaced from the latter, contacts within said patch panel engaging the contacts projecting from said patchbay, and a plurality of metal shields extending the entire distance between said panel and bay and surrounding each of said engaged pairs of contacts in order to completely shield said pairs of contacts from one another.

3,295,093

ELECTRIC POWER DISTRIBUTION CONDUIT ACCESSIBLE FOR CONNECTION THERETO ALONG SUBSTANTIALLY ITS ENTIRE LENGTH

Manfred Neumann, River Edge, and Anthony Donato, Woodridge, N.J., assignors to Lightolier Incorporated, New York, N.Y., a corporation of New York

Filed May 21, 1963, Ser. No. 282,538
5 Claims. (Cl. 339—21)



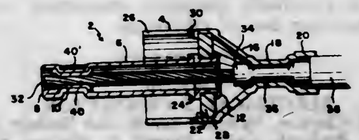
1. An electric power distribution track comprising an elongated rigid member having a track supporting channel and conductor carrying channel integral therewith, a common partition between the channels, said conductor carrying channel being substantially U-shaped and having a pair of opposed parallel legs, a flange extending inwardly from each of said legs, an elongated insulating strip within said conductor carrying channel and extending the length thereof, said strip being substantially U-shaped in cross section and having a base with a pair of spaced side walls each having an inwardly extending lip portion adjacent the base and spaced therefrom to define a sheath, a pair of spaced parallel conductors extending the length of said strip and positioned respectively adjacent each lateral edge of the base in an associated sheath, said sheaths substantially encompassing and maintaining said electrical conductors in spaced insulated relationship, said inwardly extending lips on said sheaths extending in a plane parallel to the base and extending inwardly beyond the periphery of the associated conductor thereby preventing access to the conductors other than along a plane parallel to said base, said side walls of said strip defining spacer legs extending from the lateral edges of the base thereof into contact with said flange and reacting thereagainst to urge said base against said common partition.

3,295,094

COAXIAL PLUG TERMINAL

Armand Rene de Lyon and Ralph Rupp Lee, both of Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed May 10, 1966, Ser. No. 549,050
3 Claims. (Cl. 339—177)



1. A plug terminal for shielded wire comprising a stamped and formed sheet metal pin and a metal shell, said shell being in surrounding coaxial relationship to said pin with said pin extending forwardly beyond said shell, an insulating disc in surrounding relationship to said pin at the rearward end thereof, said rearward end being upset to form a circumferential lip bearing against the rearward side of said insulating disc, radially extending shoulder means on said pin forwardly of said disc and bearing against the forward side of said disc whereby, said disc is gripped between said shoulder means and said lip, said shell having inwardly directed ears at spaced

locations around its periphery, said ears bearing against said disc, a tongue integral with a hollow cylindrical stuffer member coaxially contained within said pin thereby to adapt said pin for crimping onto a relatively small diameter center conductor of said shielded wire.

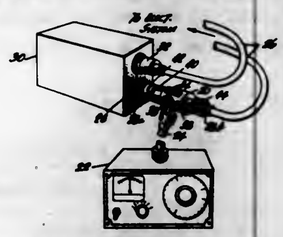
3,295,095
ELECTRICAL CONNECTOR MEANS FOR COAXIAL CABLES AND THE LIKE
Karl Kraus, Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,931
8 Claims. (Cl. 339—177)



1. The combination comprising a coaxial cable having its inner conductor exposed beyond the end of its outer conductor and the end of the cable insulation between said conductors, said inner conductor including the exposed portion thereof having a substantially uniform outer diameter and said outer conductor having a substantially uniform inside diameter, a tubular metallic casing, tubular insulating means disposed within said casing and securely captured between spaced internal shoulders in the casing, the shoulder at one end of the insulating means being constituted by the inner transverse face of an annular internal flange in the casing, said insulating means having a reduced end portion extending through said flange and terminating flush with the outer transverse face thereof and a stepped bore, the smaller diameter portion of which extends through said reduced end portion and slidably receives said exposed portion of the inner conductor, the diameter of the internal surface of said flange being substantially equal to the inner diameter of said outer conductor, a socket contact having a close fit within the larger diameter portion of said bore for receiving the exposed end of said inner conductor of the cable and positioned axially by the step between said larger and smaller bore portions, a tubular metallic member closely surrounding and secured to the end portion of the outer conductor of said cable and having a portion slidably telescopically received in one end of the casing, an end of said member being flush with the end of the outer conductor, and means for holding the tubular member in telescopic coaxial relation with the casing with the ends of said member and outer conductor in electrically conductive engagement with the outer transverse face of said flange.

3,295,096
ELECTRICAL T CONNECTOR
Serge D. Clayton, Newport Beach, and Herbert L. Gillespie, Burbank, Calif., Ronald B. Morgan, Satellite Beach, Fla., and Warren N. Olsen, Los Angeles, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, California
Filed Dec. 7, 1964, Ser. No. 416,396
7 Claims. (Cl. 339—184)

1. Indexing connector means comprising:
an inner body, said inner body including an inner section of a first end connector located at a first end of said inner body and an inner section of a second end connector located at a second end of said inner body, and said inner body being adapted to permit connection of wiring to the inner sections of said first and second end connectors;
an outer body, said outer body including an outer section of said first end connector located at a first end of said outer body and an outer section of said second end connector located at a second end of said outer member, and said inner body being journaled for relative rotation in said outer body with the inner sections of said first and second end connectors of



said inner body positioned respectively adjacent to the outer sections of said first and second end connectors of said outer body; and
means for securing said inner body relative to said outer body in a selected, predetermined fixed relationship whereby said first and second end connectors are indexed to mate only with respective, similarly keyed, complementary end connectors.

3,295,097
ELECTRICAL CONNECTOR WITH BENT PIN CONTACT
Arlen D. Van Horssen and Floyd F. Floralan, Minneapolis, Minn., assignors to Nu-Line Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed July 9, 1964, Ser. No. 381,353
5 Claims. (Cl. 339—217)

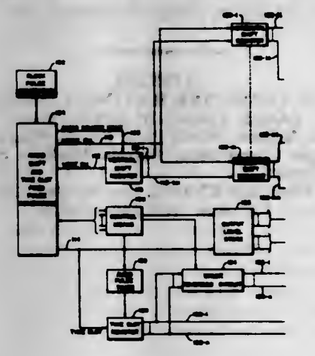


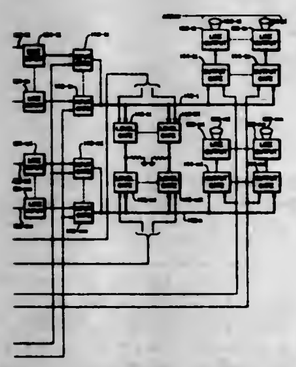
1. An electrical connector comprising:
(a) a tubular socket component;
(b) a resilient pin component;
(c) a cylindrical hood encircling said pin component,
(d) said hood having a projection extending radially inward,
(e) said pin component having a projection thereon engageable with said hood projection,
(f) said pin comopnent being bent in a direction to normally maintain its projection in engagement with said hood projection to prevent detachment of said hood from said pin component and also in a direction so that the end of said pin component that is to be received in said socket component lies adjacent one end of said hood,
(g) whereby said pin component end will be flexed away from said hood when said socket component is inserted therein.

3,295,098
SHIFT REGISTER PHASE CONTROL SYSTEM FOR USE IN PRODUCING A VARIABLE DIRECTION BEAM FROM A FIXED TRANSMITTING ARRAY
Barrie Brightman and Uwe A. Pennerstorfer, Webster, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,070
9 Claims. (Cl. 340—5)

1. A phase control system for a two-dimensional fixed transmitting array composed of a plurality of individual transducers arranged in a first number of rows and a second number of columns, said system comprising a

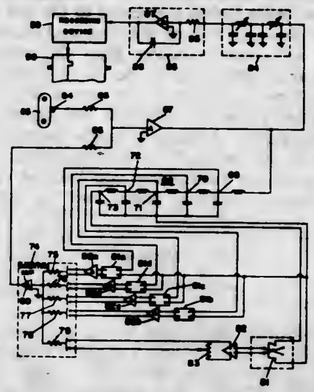
clock pulse source for generating clock pulses at a predetermined pulse repetition period, means synchronized by said clock pulses for generating a signal square wave having a period which is a given integral multiple of said predetermined period, means synchronized by said clock pulses for generating first control pulses at a first preselected repetition period, means synchronized by said clock pulses for generating second control pulses at a second preselected repetition period, each of said first and second preselected repetition periods being an integral multiple of said predetermined period which is less than said given integral multiple, a first shift register including a number of successive stages thereof equal to one of said first and second numbers, means for applying said signal square wave as a signal input to said first shift register and for applying said first control pulses as a shift input to said first shift register, a group of second





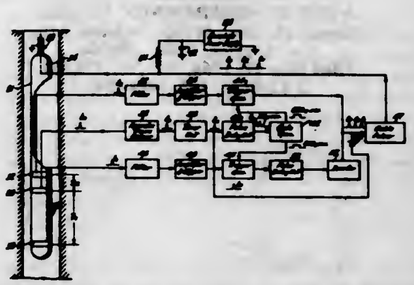
shift registers corresponding in number to said number of successive stages of said first shift register, means for applying the output of each of said successive stages of said first shift register as a signal input to the corresponding one of said second shift registers, means for applying said second control pulses as a shift input to all of said second shift registers, each of said second shift registers including a number of successive stages thereof equal to the other of said first and second numbers, individual line input means coupled to each successive stage of each second shift register including therein low-pass filter means for passing only the fundamental frequency of said signal square wave for converting said signal square wave into a sinusoidal wave, and time division multiplex means coupling said line input means to said transducers for applying each of said sinusoidal waves to a particular one of said transducers.

3,295,099
FEEDBACK INVERSE FILTERS
Philip L. Lawrence, Riverside, Conn., and Robert J. Watson, State College, Pa., assignors to Mobil Oil Corporation, a corporation of New York
Filed Jan. 9, 1964, Ser. No. 336,779
9 Claims. (Cl. 340—15.5)



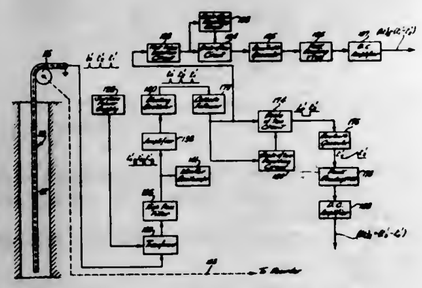
1. A system for inverse filtering a seismogram to convert it to a function representative of the velocity layering of the earth comprising
means for converting said seismogram to a time varying voltage,
an amplifier,
a summing circuit connected between said means for converting said seismogram and the input to said amplifier,
a filter having frequency response characteristics which are the same as the frequency response of the earth and the instruments used in obtaining said seismogram,
said filter being connected between the output of said amplifier and said summing circuit, the output of said filter being applied to said summing circuit with a polarity producing negative feedback in said amplifier.

3,295,100
ACOUSTIC LOGGING OF SUBSURFACE DISCONTINUITIES
Fontaine C. Armistead, Darien, Conn., assignor to Texaco Development Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,367
7 Claims. (Cl. 340—18)



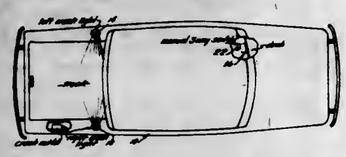
1. In acoustic logging of a borehole the combination comprising a logging tool adapted for passage through the borehole, first, second and third transducers located longitudinally in said logging tool, said first and second transducers being receiving transducers and said third transducer being a transmitting transducer positioned in-

termediate said receiving transducers, means for triggering said transmitting transducer so as to cause transmission of seismic wave pulses into adjacent borehole formation, said seismic wave pulses being received by said first and second transducers, means for providing a first and second electric pulse at the time of arrival of a seismic pulse at said respective first and second receiving transducers, delay means connected to the last mentioned means for delaying one of the first and second electric pulses by an amount greater than the predetermined maximum time difference to be encountered in actual practice between reception of any one of said transmitted acoustic wave pulses at said first and second receiving transducers, means defining a single electrical channel connected to said means for providing a first and second electrical pulse for conducting said delayed one of said first and second electrical pulses and the other one of



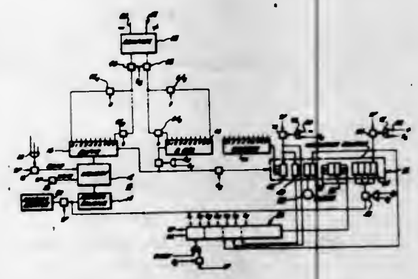
said first and second electrical pulses through the borehole, a time measuring circuit coupled to the means defining said channel at a remote point from said tool for measuring the time interval between said delayed one of said first and second electric pulses and the other one of said first and second electrical pulses, time delay compensation means coupled to said time measuring means for adjusting the time measurement made thereby to compensate for said delay added by said time delay means to said one of said first and second electric pulses, and recording means associated with said time delay compensation means for providing a record trace of the time differences between said first and second electric pulses which time differences are indicative of the velocity differences of the transmitted wave pulses in travelling through the formations between the transmitting transducer and the receiving transducers.

3,295,101
VEHICLE EMERGENCY FLARE
Thomas H. Ellis, 10740 Cushdon Ave., Los Angeles, Calif. 90064
Filed May 27, 1964, Ser. No. 370,561
3 Claims. (Cl. 340—54)



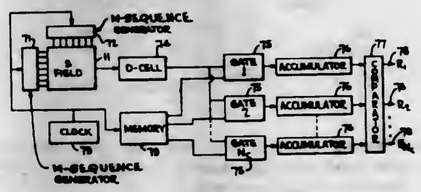
1. In a combination with a passenger-type automobile, a pair of emergency lights mounted on a portion of the top surface thereof and each for projecting a light beam upwardly, inwardly and rearwardly when illuminated, one of the lights being adjacent the left side of the vehicle and another of the lights being adjacent the right side of the vehicle, manual switch means for selectively operating each of the lights and for operating both of the lights simultaneously, a crash switch operated by inertia for operating both of the lights in the event of a collision thereby warning oncoming motorists of dangerous conditions and forming a signal to law enforcement officials of the existence of an accident or emergency condition, said crash switch including an insulating body, a roller movably mounted in said body for movement into engagement with a pair of contacts electrically connected to said lights, a stationary contact member connected electrically to a source of electrical energy whereby the battery is normally disconnected from the lights, said movable roller being constructed of conductive material and disposed within the body for movement in response to a sudden and abrupt deceleration whereby the forces of inertia keep the roller moving in the manner in which it was thereby causing the roller to move to bridge the contacts in the casing to electrically connect the battery to said lights.

3,295,102
DIGITAL COMPUTER HAVING A HIGH SPEED TABLE LOOK-UP OPERATION
Dan Allan Nelson, North Palm Beach, Fla., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 27, 1964, Ser. No. 385,157
5 Claims. (Cl. 340—146.2)



2. Apparatus for searching for a selected word in a digital storage unit in which words are stored in addressable storage positions, said apparatus comprising a first register for storing digitally coded instructions, a second register for storing a word, a digit comparator for generating signals, indicating equality or inequality between two electrically coded digits coupled thereto, means responsive to a coded instruction in the first register for reading out a selected word from the storage unit and applying a first digit of the selected word to the comparator, means responsive to said coded instruction for applying a first digit of the word in the second register to the comparator, means responsive to a signal from the comparator indicating the digits are unequal for reading out the next word in sequence from the storage unit and applying the first digit to the comparator, means responsive to a signal from the comparator indicating the digits are equal for applying a second digit from the word in the second register to the comparator together with the next lower order digit of the same selected word from the memory unit, means actuated by the generation of a comparator signal indicating equality for counting the number of pairs of digits on which an equal indication is generated by the comparator, and means responsive to the counting means for generating a signal indicating when a predetermined number of digits in the word in the second register are equal to a corresponding number of digits in a word read out of the memory unit.

3,295,103
SYSTEM FOR CLASSIFYING MINIMALLY CONSTRAINED STIMULI
Edward C. Driese, Falls Church, John S. Gerig, McLean, Malcolm R. Uffelman, Falls Church, and Richard E. Williams, Fairfax, Va., assignors to Scope, Incorporated, Falls Church, Va., a corporation of New Hampshire
Filed Aug. 16, 1962, Ser. No. 217,350
17 Claims. (Cl. 340—146.3)



7. A system for classifying a plurality of minimally constrained stimuli comprising

means responsive to a stimulus under observation, said means including a plurality of discrete sensing means, means operatively connected to said sensing means for randomly deriving a multiplicity of information signals corresponding to the stimulus under observation, and means forming a statistically random selection of connections between said sensing means and said means for randomly deriving to produce the randomness of the derivation of said information signals;

a discriminatory field responsive to said information signals, said discriminatory field deriving a plurality of signal bits, each bit being derived in response to the combined values of the random combination of said information signals;

a plurality of memory fields, each of said fields storing information bits indicative of the signal bits corresponding to each of said class of stimuli,

means for combining the stored information bits of each memory field with said signal bits to derive a plurality of combined signals, and

means for comparing said combined signals to determined the greatest correlation between said stimulus under observation and one of said classes of stimuli.

3,295,104
INDICIA REGISTRATION RESPONSIVE CHARACTER RECOGNITION SYSTEM
Matthew J. Rolls, Fair Lawn, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 11, 1964, Ser. No. 366,352
9 Claims. (Cl. 340—146.3)

7. Apparatus for recognizing indicia recorded upon a medium, comprising:

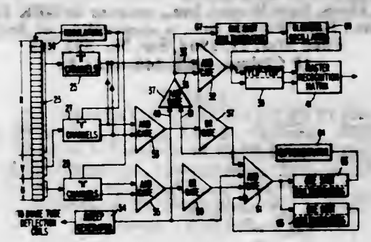
a plurality of sensing means, including a plurality of transducers, for producing signals from those transducers which are impinged upon by a portion of an image of said indicia;

scanning means for projecting the image of different portions of said indicia upon different ones of said sensing means and for deflecting said image in a vertical and horizontal direction relative to said sensing means;

identifying means responsive to said signals from said sensing means for identifying said image;

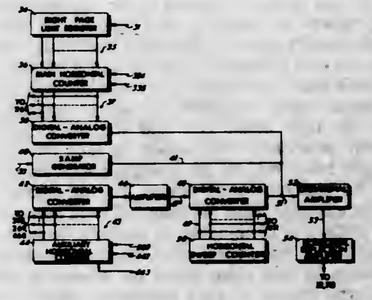
first gating means for transmitting said signals generated by said sensing means to said identifying means; and

second gating means for inhibiting transmission of said signals generated by said sensing means to said



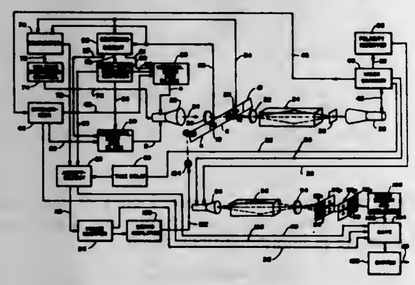
identifying means until selected ones of said transducers generate a signal indicating that a portion of said image is impinging upon them.

3,295,105
SCAN CONTROL AND NORMALIZATION FOR A CHARACTER RECOGNITION SYSTEM
Stephen B. Gray, Cambridge, and James C. Stoddard, Wayland, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,490
7 Claims. (Cl. 340—146.3)



1. In a character recognition system including scanning means for scanning across characters to be recognized and video decision means for determining whether said scanning means has traversed a portion of said characters, digital circuitry operative to control said scanning means comprising; a scan control unit operative to cause said scanning means to horizontally traverse a line of characters, first logic circuitry included in said scan control unit and operative in response to signals from said video decision means to determine the top and bottom of said line of characters, means operative in response to said first logic circuitry to cause said scanning means to vertically scan each character in said line of characters, second logic circuitry included in said scan control unit and operative in response to signals from said video decision unit to determine the left and right extreme of each character, third logic circuitry included in said scan control unit and operative in response to signals from said video decision unit to determine the upper and lower extremes of each character, means operative in response to said second logic circuitry to cause said scanning means to horizontally scan each character within the confines established by said second and third logic circuitry, and means operative in response to signals from said scanned characters to encode data representative of the scanned character.

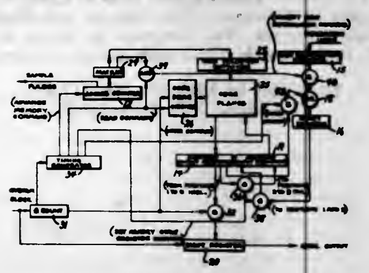
3,295,106
POSITIVE-NEGATIVE MASK COMPARISON OF MULTIPLE IMAGES GENERATED BY OPTICAL TUNNEL MEANS
Ted H. Horn, Fort Wayne, Ind., assignor to DEK Processes, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Mar. 11, 1964, Ser. No. 351,113
10 Claims. (Cl. 340—146.3)



1. In character recognition apparatus, the combination comprising means for scanning a stationary member having characters of equal size uniformly spaced thereon in successive parallel rows with a light beam which scans each successive row in sequence, said light beam being of a size to illuminate only a single character in a row at any one time with the light beam being advanced along each row in successive steps such that it will remain stationary on one character for a predetermined period of time before advancing to the next successive character, means for indexing said light beam with respect to the equally-spaced characters including registration marks on said stationary member and a photocell associated with each registration mark and adapted to produce an output signal indicative of correct registration only when the light beam and said stationary member are properly positioned with respect to each other such that the light beam will be on a single character at any one time, an electron-optics device for full-frame scanning with an electron beam an image of each successive character while it is illuminated by the light beam to produce a video signal representative of the image scanned, means responsive to said video signal for producing visible different-type images of each successive character scanned, a plurality of mask devices arranged to be compared with said different-type images, and means including photosensitive devices operatively associated with said mask devices for producing successive output signals indicative of said successive characters scanned by the electron-optics device.

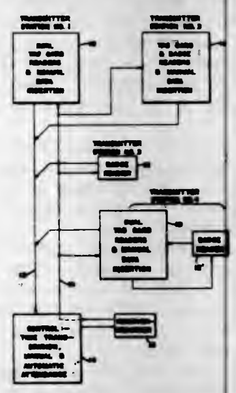
3,295,107
ELECTRONIC TIME COMPRESSION DEVICE
Robert E. Staiger, Champaign, Ill., assignor to The Magnavox Company, Fort Wayne, Ind., a corporation
Filed May 17, 1961, Ser. No. 110,734
10 Claims. (Cl. 340—172.5)

10. In a correlation device, the combination comprising:
two memory channels including first and second time compressors and first and second information inputs for signals from first and second information signal sources, respectively;
a system clock driving both compressors;
correlation command and circuit means effecting precession of one compressor with respect to the other compressor and producing an output in accordance with the total phase change between the compressors resulting from precession,
comparator means coupled to the outputs of both compressors to determine the degree of correlation therebetween;
means coupled to said comparator means to produce a correlation output representative of the degree of correlation therebetween;



and means continuously inserting new information from said sampling means into said two memory channels while correlating.

3,295,108
DATA TRANSMISSION SYSTEM
Ben A. Harris, Rochester, and John V. Neal, Pittsford, N.Y., assignors, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 254,894
35 Claims. (Cl. 340—172.5)

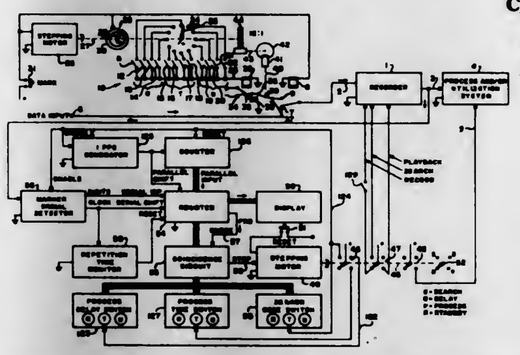


1. A data transmission system comprising a data receiver, personnel reporting means for reading and transmitting to said receiver data recorded by individual personnel-identification record media, data reporting means for reading and transmitting to said receiver data recorded by transaction record media, time reporting means for transmitting time data to said receiver, control means for permitting all of said reporting means to transmit to said receiver in preselected order of transmissions, and attendance-reporting control means selectably operable to modify the control effected by said control means to terminate all transmissions by said data reporting means and permit time-shared transmissions by each of said personnel and time reporting means.

3,295,109
DATA IDENTIFICATION AND RETRIEVAL APPARATUS FOR SERIAL RECORDING SYSTEMS
Larry W. Paine, Northport, and Charles A. Steinberg, Plainview, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 271,547
11 Claims. (Cl. 340—172.5)

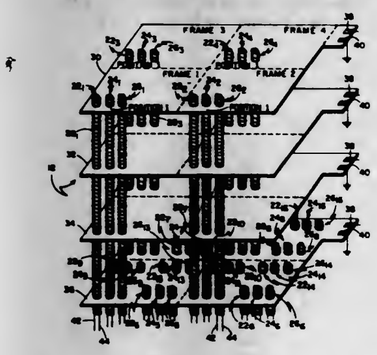
1. A data retrieval and process control system for use with a recording system adapted to receive data signals representative of phenomena resulting from or related to

the occurrence of specific events and to record such signals upon a recording medium and subsequently reproduce the recorded signals for display and utilization or processing, comprising means for producing respective marker signals upon the occurrence of such events, said marker signals differing distinguishably from each other and from any type of data signal to be received, and means for applying said data signals along with serially



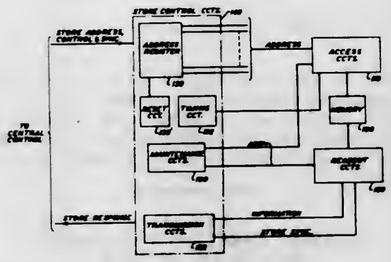
interposed marker signals to said recording system; marker signal detector means for receiving said serial data and marker signals reproduced by said recording system, rejecting the data signals and passing the marker signals, marker signal selector means adjustable to respond to a selected one only of the passed marker signals and to produce a coincidence signal in response thereto, and control means responsive to said coincidence signal to initiate an operation.

3,295,110
ASSOCIATIVE MEMORY OF MULTI-PLANE COMMON SOLENOID MATRICES
Donald B. Brick and George G. Pick, Lexington, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 302,633
15 Claims. (Cl. 340—172.5)



10. An associative memory system which comprises: a memory unit having a plurality of data planes, a plurality of elongated solenoids each passing through all of said planes, and a plurality of windings located on said planes each arranged around one of said solenoids; a searching unit arranged to selectively drive certain ones of said solenoids in accordance with data stored therein; means connected to each of said planes to sense the response of said windings on each plane to such driving action so as to determine which of said planes store data matching the search data; means for consecutively driving said matching planes; and, read-out means connected to said solenoids for sensing the response of said solenoids to said plane driving action, interpreting said response, and storing a data indication of the information stored in each of said driven planes.

3,295,111
INFORMATION STORAGE SYSTEM
Cyrus F. Ault, Lincroft, Lee E. Gallaher, Middletown, and Tancred S. Greenwood, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 25, 1963, Ser. No. 311,424
38 Claims. (Cl. 340—172.5)



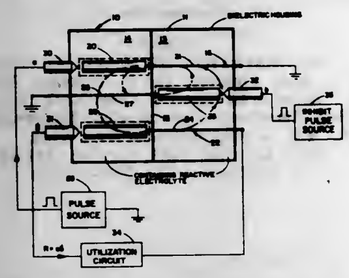
1. An information storage system comprising memory means for magnetically storing binary information in rows and columns of information addresses, an access switch for accessing said information addresses comprising rows and columns of magnetic cores corresponding to said rows and columns of addresses and a first and a second plurality of access conductors threading said rows and columns of cores, respectively; a first and a second energizing circuit for said first and second pluralities of access conductors each comprising a pair of parallel branches, one of said branches including a selected access conductor, and a normally closed shunt switch included in the other of said parallel branches; a first and a second current source for applying a drive current to each of said energizing circuits, means for coincidently opening the shunt switches of each of said energizing circuits for initiating a drive current pulse on each of said selected access conductors, and readout means responsive to information signals generated in said memory means.

3,295,112
ELECTROCHEMICAL LOGIC ELEMENTS
Robert M. Stewart, Encino, Calif., assignor to Space-General Corporation, El Monte, Calif., a corporation of California
Filed Jan. 10, 1964, Ser. No. 337,079
35 Claims. (Cl. 340—173)

1. An electrochemical logic element comprising a housing:
a fluid reactive electrolyte in said housing;
a first metallic electrode disposed in said electrolyte including a first portion chemically reactive with the electrolyte for forming a passivated unstable poorly conductive coating on the surface thereof and a second portion substantially inactive chemically with said electrolyte;
a second metallic electrode disposed in said electrolyte including a first portion chemically reactive with the electrolyte for forming a passivated unstable poorly conducting coating on the surface thereof and a second portion substantially inactive chemically with said electrolyte;

said electrodes immersed in said fluid reactive electrolyte;

means in said electrolyte for decreasing the bulk conductivity of the electrolyte in the region between the first and second portion of said electrodes;



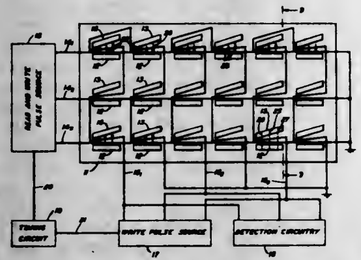
means for locally disturbing a portion of the passivated unstable coating on said first electrode; and

means for detecting a change in the condition of the passivated unstable coating on said second electrode in response to the disturbance of said first electrode.

3,295,113
MEMORY CIRCUITS INCLUDING A MAGNETIC OVERLAY

Andrew H. Bobeck, Chatham, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 7, 1962, Ser. No. 215,448
13 Claims. (Cl. 340—174)

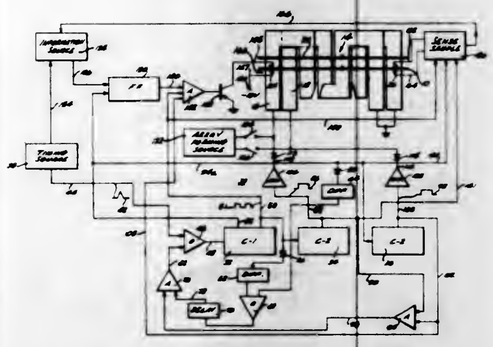


1. A magnetic memory circuit comprising a plurality of parallel first conductors, a plurality of second conductors crossing said first conductors, each of said first conductors twice crossing each of said second conductors, a magnetic material having substantially rectangular hysteresis characteristics positioned in close proximity to both said first and second conductors at each of said crosspoints, a magnetic memory cell of predetermined length being defined at each crosspoint by said first conductor, said second conductor and said magnetic material; a bit address being defined by each pair of said cells defined by a single one of said first conductors and a single one of said second conductors, means for establishing a first remanent magnetic condition along the entire length of each memory cell of a selected one of said bit addresses, and means for establishing a second remanent magnetic condition along a first fractional length of one cell and along a second fractional length of the other cell of said selected bit address representative of a first binary value and for establishing said second remanent magnetic condition along said second fractional length of said one cell and along said first fractional length of said other cell representative of a second binary value.

3,295,114
SHIFT REGISTER STORAGE AND DRIVING SYSTEM

Richard L. Snyder, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 1, 1963, Ser. No. 262,984
11 Claims. (Cl. 340—174)

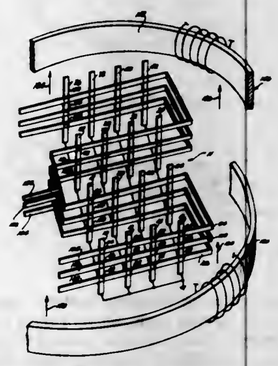


1. A shift register comprising a magnetic medium, recording means positioned adjacent to a first end of said magnetic medium for recording domains of a first polarity therein, a recording magnet positioned adjacent to the first end of said magnetic medium for recording magnetic domains of a second polarity therein, a driving array positioned adjacent to the magnetic medium for sequentially propagating the magnetic domains to a second end thereof, and a read coil adjacent to a second end of said magnetic medium for sensing magnetic domain walls between domains of first and second polarities passing thereby.

3,295,115
THIN MAGNETIC FILM MEMORY SYSTEM

Richard L. Snyder, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Apr. 15, 1963, Ser. No. 273,124
6 Claims. (Cl. 340—174)



1. A system for storing first and second binary states comprising

a first and a second conductor each having a longitudinal axis positioned substantially orthogonal to each other,

a thin film magnetic core having a selected direction of magnetic orientation and positioned adjacent to said first and second conductors,

means for applying an ambient field to said core in a fixed direction substantially parallel to said first conductor and with a fixed polarity for establishing said first binary state at a selected angle with the axis of said second conductor and said second binary state substantially parallel to the axis of said second conductor,

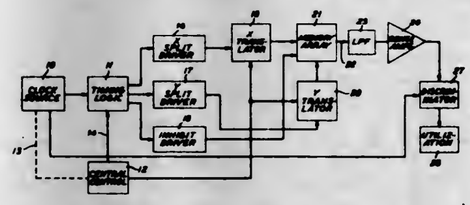
first means coupled to said first conductor for applying current therethrough in a first direction for reading and in a second direction for writing,

and second means coupled to said second conductor operative during writing for applying current therethrough in a predetermined direction for switching said core to said first state and for inhibiting current flow through said second conductor for maintaining said core in said second state.

3,295,116
MAGNETIC MEMORY DRIVE CIRCUITS FOR PRODUCING STEPPED DRIVE PULSES

Richard M. Genke, Colts Neck, Raymond W. Ketchledge, Rumson, and Richard E. Sager, Jackson, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,471
24 Claims. (Cl. 340—174)



1. In a magnetic memory that is operable in a predetermined cycle of read-out and write-in intervals and that has first and second drive circuits and a sensing circuit magnetically coupled to said drive circuits by a plurality of switchable bistable magnetic storage devices, said devices utilizing magnetic material with a predetermined switching time,

means applying signals of a first amplitude that is insufficient to switch said devices to said first and second drive circuits before said read-out interval in said cycle, and thereafter during said read-out interval applying to said drive circuits signals of a second amplitude which is sufficient to switch said devices, and

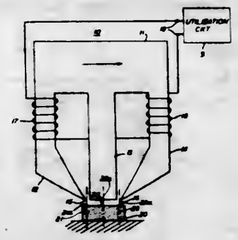
said sensing circuit including low-pass filter means having a high frequency cut-off point above a frequency which is the reciprocal of the switching time of said device material.

3,295,117
POSITION SENSING APPARATUS

Cyrus F. Ault, Lincroft, and Samuel F. Rice III, Englishtown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 21, 1963, Ser. No. 266,961
9 Claims. (Cl. 340—174.1)

1. A transducer for detecting the centerpoint of a line between a pair of opposite magnetic poles comprising three leg members of magnetic material defining two adjacent signal translating gaps separated by a distance substantially equal to the distance between said magnetic poles and single output circuit means operatively con-

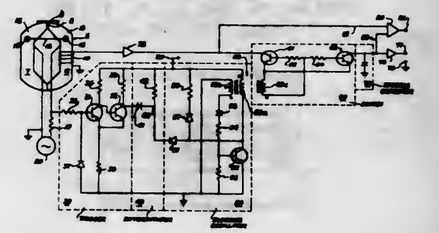


nected to both of said signal translating gaps for providing a maximum output signal level when said gaps are centered over said line centerpoint.

3,295,118
READ-OUT CIRCUIT FOR FLUX-GATE REPRODUCER HEADS

Robert F. Brown, Jr., Dallas, Tex., assignor to the United States of America as represented by the Secretary of Commerce

Filed May 2, 1963, Ser. No. 277,986
3 Claims. (Cl. 340—174.1)



1. A read-out circuit for use with a magnetic reproducer head having a pick-up gap, signal winding, and at least one saturable portion comprising, means for alternately driving said saturable portion into the saturated condition for a first time interval and into the unsaturated condition for a second time interval, means for storing signals, a pulse-operable switch connected between said signal storing means and said signal winding, means for generating a switching pulse which starts substantially when said saturable portion is driven into one of said conditions and which terminates substantially when the signal pulse developed in said signal winding by the action of said saturable portion being driven into said one of said conditions is at its maximum value, said pulse-operable switch being closed in response to said switching pulse, and means for connecting a load circuit to said signal storing means.

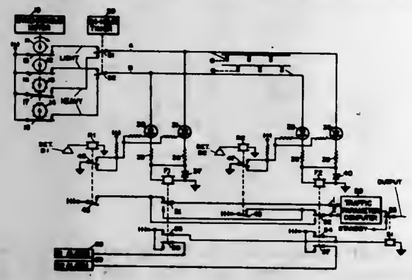
3,295,119
INACTIVITY SENSING CIRCUIT

John H. Auer, Jr., Fairport, and Lyle A. Ross, Rochester, N.Y., assignors to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed May 6, 1964, Ser. No. 365,446
11 Claims. (Cl. 340—214)

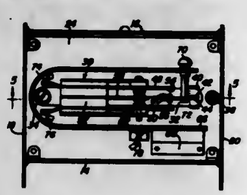
11. A detector failure sensing system comprising, timing means producing recurring time intervals of predetermined length, a first detector normally quiescent but rendered active during the presence of an object, a second detector normally quiescent but rendered active during the presence of an object, checking means normally maintained active but controlled by said timing means momentarily

to become inactive at the end of each said time interval of said predetermined length, means controlled by said first detector when rendered active during said time interval to prevent said checking means from becoming inactive, and computer means controlled by said first



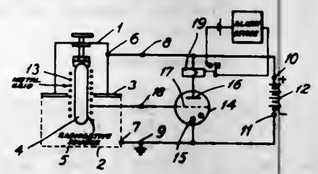
detector to record the presence of each object sensed by said first detector only if said checking means is then active, and means for shifting said computer means to control by said second detector in the event said checking means becomes inactive.

3,295,120
TEMPERATURE MONITOR
Edward L. Wichie, R.F.D. 4, (Salem), Colchester, Conn. 06415
Filed Jan. 16, 1964, Ser. No. 338,199
8 Claims. (Cl. 340—227)



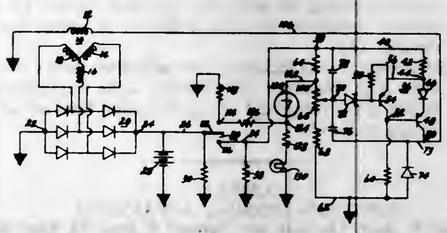
4. A temperature responsive switch comprising base means, a support arm pivotally secured at one end to said base means for rotation about an axis extending transversely of said support arm and swinging movement through a first plane, a pair of generally parallel resilient contact arms insulatively supported at one pair of corresponding ends from said support arm, means insulatively connected between the free ends of said contact arms adjustably varying the spacing between said free ends, an elongated resilient terminal arm generally paralleling and disposed between said contact arms and insulatively supported, at the end thereof corresponding to said one pair of ends, from said support arm, opposing terminals and contacts on said terminal and contact arms respectively adapted to engage each other upon movement of the free end of said terminal arms toward said contacts, and movable heat responsive actuating means oscillatable, in response to a rise and fall of the ambient temperature, in the plane containing the free ends of said terminal and contact arms and connected to said terminal arm, and first and second electrical conductor means electrically connected to said contact arms and third electrical conductor means electrically connected to said terminal arm, means operatively connected between said base and the free end of said support arm for adjustably rotating the latter, the last-mentioned means comprising a lever arm generally paralleling and disposed in side-by-side relation to said support arm and pivotally secured, at the end thereof corresponding to the free end of said support arm, to said base means for rotation about an axis generally paralleling the axis of rotation of said support arm and adapted at its free end to be manually engaged for pivoting said lever arm, and means defining a pin and slot connection between the free end of said support arm and the pivoted end of said lever arm for effecting slight pivotal movement of said support arm in response to greater pivotal movement of said lever arm.

3,295,121
ELECTRIC ALARM SYSTEM, PREFERABLY FOR FIRE ALARMS
Svend Schoel Meyer, Copenhagen Herlev, Denmark, assignor to Danske Securitas A/S, Copenhagen V., Denmark, a Danish corporation
Filed Dec. 27, 1962, Ser. No. 247,694
Claims priority, application Denmark, Dec. 30, 1961, 5,263/61
3 Claims. (Cl. 340—237)



1. An area monitoring electric alarm system preferably for fire alarms comprising, two metallic ionizing chambers connected together at a common wall, the chambers having registered apertures in the common wall for intercommunication between the interiors of the chambers, one of the chambers having closed walls to the area to be monitored, the other chamber having walls open to the area to be monitored, the chambers being connected across terminals of a voltage source, an elongated radioactive radiating member disposed within both chambers through the registered apertures the radiating member being displaceable in its longitudinal direction relative to the chambers, a plurality of interconnecting electrodes in both of the chambers, a voltage sensitive indicating member electrically connected to the electrodes, the electrodes being in the form of a metal grid surrounding the radiating member along at least a part of the length of the radiating member, and said common wall mutually separating and electrically insulating the ionizing chambers and the radiating member.

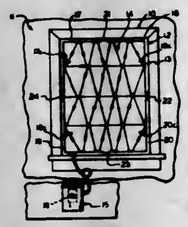
3,295,122
MALFUNCTION INDICATOR FOR SEMICONDUCTOR VOLTAGE REGULATORS
Thomas E. Kirk, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,893
2 Claims. (Cl. 340—248)



1. In combination, a generator having a field winding and an output winding, a direct current output circuit energized by said output winding, a transistor voltage regulator circuit having a voltage sensing circuit arrangement and at least one transistor, first means for connecting the emitter and collector electrodes of said transistor and said field winding in series across said direct current

output circuit, second means for connecting said voltage sensing circuit arrangement across said direct current output circuit, an electrically energizable indicating lamp, a four layer diode having a breakdown voltage rating of a selected value greater than the desired regulated voltage to be maintained by said voltage regulator circuit, and means for connecting at least said electrically energizable indicating lamp and said four layer diode in series across said direct current output circuit for providing a visual indication when the voltage across said direct current output circuit exceeds the voltage to be maintained by said voltage regulator circuit.

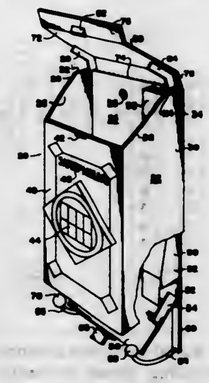
3,295,123
BURGLAR ALARM
Ray T. Winterfagin, 14421 Wallace, Riverdale, Ill. 60627
Filed Dec. 3, 1964, Ser. No. 415,690
3 Claims. (Cl. 340—274)



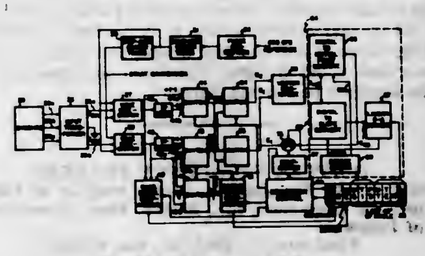
1. A burglar alarm comprising, an alarm circuit and a protective circuit, said protective circuit including a protective unit serially connected to a relay and the secondary of a transformer, the transformer having a primary connected to line voltage, said protective unit having a frame supporting a network of wire over an opening in a building, said alarm circuit including an alarm serially connected with a set of contacts operated by said relay and said secondary, eyebolts for securing the frame to the building wherein the wire in the frame is strung through the eyes of the eyebolts after they are mounted on the building to prevent removal of the eyebolts without severing the wire, and connectors along at least the wire that is strung through the eyes of the eyebolts to facilitate stringing of the wire through the eyes of the eyebolts.

3,295,124
SAFETY MAIL BOX
Louis J. Burleson and William Arnold, Leavenworth, Kans., assignors of one-third to Viola Jackson, Wichita, Kans.
Filed Dec. 26, 1962, Ser. No. 247,260
3 Claims. (Cl. 340—281)

3. Safety box means for the receipt of mail or the like comprising, in combination, a hollow box body having a back, a front, and two sides, said box having an opening in an upper portion thereof and a cover movably connected thereto of size to close said opening, an opening in a lower portion of said box and a cover movably connected thereto of size to close said lower opening, latch means on each of said upper and lower covers and another portion of said box engageable when same are in closed position, housing means within said box constructed and adapted to accommodate electrical switch means, electrical switch means mounted in said housing and having operating means projecting therefrom to a position contactable with said covers, shields positioned on each of said upper and lower covers of said box and constructed to be received within the hollow of said box when same are in closed position between outer portions of said box and said housing means, alarm signal means mountable in a house or the like in remote relation to said box, said signal means having two electrically operated signaling means, electrical conductors connecting said signal means and said switch means within said housing in said box, said safety box means for the receipt of mail constructed and adapted so that dual signals are provided to the home owner to separately indicate opening of either of said covers over said openings in the upper or lower portion of said box.

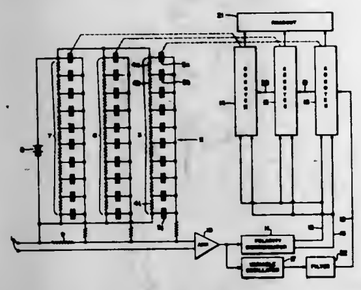


3,295,125
DEVICE FOR DIGITAL REPRESENTATION OF AND CONVERSION TO A SYNCHRO DEVICE ROTOR POSITION
Jerome M. Ickovics, Huntington Woods, John L. McClelvie, Royal Oak, Ralph W. Redliner, Southfield, and Allen E. Young, Farmington, Mich., assignors to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed May 1, 1963, Ser. No. 277,324
17 Claims. (Cl. 340—347)



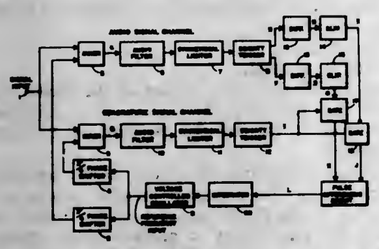
4. Apparatus for conversion between a digital number in a digital register and the angular position of a rotatable member comprising
- a digital register,
- a rotatable member,
- means for obtaining the analog of the digital number,
- means for obtaining the analog of a trigonometric function of the angular position of the rotatable member,
- means for comparing the analog of the trigonometric function of the rotatable member angle with the analog of the digital number in the digital register,
- means for establishing a predetermined relationship between the analog of the digital number in the digital register and the analog of the trigonometric function of the rotatable member angle whereby the digital number in the digital register uniquely defines the rotatable member angle.

3,295,126
ELECTRICAL APPARATUS
Richard J. Spady, Feasterville, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,986
5 Claims. (Cl. 340—347)



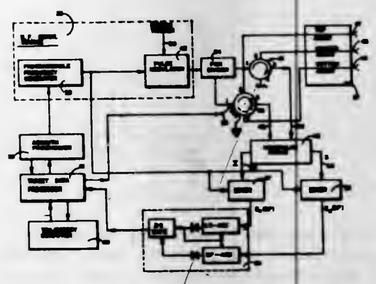
1. An analog to digital converter comprising a plurality of bidirectional counting means connected in series to form increasing decade steps whereby a completion of a count in either direction in one of said counting means is effective to transfer a count signal to a succeeding adjacent one of said counting means, said counting means each including selectively responsive control means operative to determine the direction of a count in the respective ones of said counting means, reference signal supply means controlled by said counting means and operative to supply a plurality of weighted steps in the magnitude of a reference signal in response to a count in a corresponding one of said counting means, signal comparing means operative to compare the reference signal with an unknown signal to be digitized to provide a difference signal having a magnitude representative of the difference between said reference signal and said unknown signal and a polarity representative of the direction of said difference, polarity discriminating means responsive to said difference signal to provide a control signal indicative of said polarity, means connecting said control signal to all of said control means to determine the direction of the count in said counting means, and oscillator means connected to the first one of said counting means to provide signals to be counted thereby.

3,295,127
DOPPLER FREQUENCY TRACKER
Victor Kreas, Framingham, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,225
9 Claims. (Cl. 343—7)



1. An input signal frequency tracker comprising,
(a) means for generating a reference signal,
(b) means for mixing the input signal with a reference signal to produce a first audio signal,
(c) means for mixing the input signal with the reference signal to derive a second audio signal shifted in phase with respect to the first audio signal,
(d) means for deriving pulses representing the axis crossings of the first audio signal,
(e) means responsive to the phase shifted signal to selectively transmit only those pulses indicative of the true first audio signal frequency,
(f) and means to couple to the selectively transmitted pulses to the reference signal generating means for varying the frequency of the reference signal.

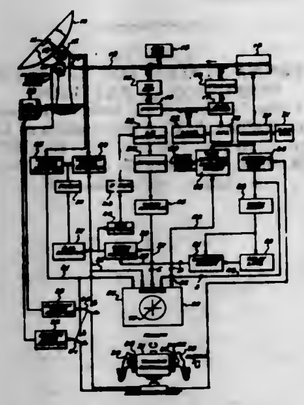
3,295,128
TRAJECTORY MEASUREMENT APPARATUS
James A. Canaday, Fullerton, James B. Gaston, La Mirada, and Jerome C. Hill, Fullerton, Calif., assignors to North American Aviation, Inc.
Filed Apr. 23, 1965, Ser. No. 450,380
15 Claims. (Cl. 343—7)



1. Radar means for detecting the time-space occurrence of two points in the trajectory of a detected projectile comprising
an azimuthally-directional, frequency-scanned antenna comprising an upper, lower and center array for providing a stacked beam pattern comprising an upper, lower and center beam said lower and center beams, and said center and upper beams defining a first and a second monopulse boresight axis respectively.
a variable-frequency, pulsed transmitter coupled to said antenna for transmitting a carrier frequency which is progressively changed from pulse-to-pulse;
monopulse sum and difference means commonly responsive to said center array and an alternative one of said upper and lower array for providing signals indicative of the range and on-boresight condition respectively of said detected target relative to an alternative one of said boresight axes.

4. A system for determining a point of origin in a datum plane for a body having a ballistic trajectory, comprising
radar means for measuring the time-space occurrence of two mutually spaced points of said ballistic trajectory relative to a reference datum;
second means responsive to said radar means for computing an average height and average vertical velocity represented by a point intermediate said two trajectory points;
third means responsive to said second means for computing the trajectory time from said point of origin to said intermediate point;
fourth means responsive to said radar means for computing the corresponding projected position and velocity component of said intermediate point in said datum plane; and
fifth means responsive to said third and fourth means for computing the location of said point of origin in said datum plane.

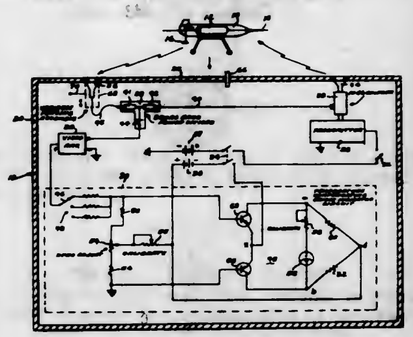
3,295,129
DIRECTION AND RANGE INDICATOR SYSTEM
Walter R. Tower, Great Neck, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 8, 1952, Ser. No. 313,703
15 Claims. (Cl. 343—13)



8. A pulse radar indicator system comprising a cathode ray oscilloscope, first sweep means for alternately sweeping the beam of said oscilloscope through first and second mutually perpendicular linear traces, second sweep means for recurrently sweeping the beam of said oscilloscope through a further trace diagonally intersecting said first and second linear traces at the radar pulse frequency, means for producing a range index on said further trace, means for introducing a received signal modulation on said further trace, and means for alternately coupling said oscilloscope to said first sweep means and to said second sweep means, said range index producing means, and said received signal modulation introducing means.

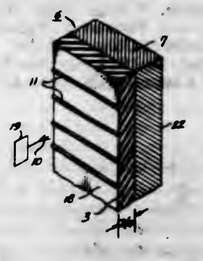
3,295,130
TESTING APPARATUS FOR TARGET AIRCRAFT MICROWAVE EQUIPMENT
Franklin H. Prestwood, Valparaiso, Fla., assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 21, 1965, Ser. No. 457,878
6 Claims. (Cl. 343—17.7)

1. In an aerial target system which includes a target-mounted amplifier intermediate receiver-transmit means, apparatus for testing the operational fitness of said amplifier, said apparatus comprising:
a transmitter operable at the frequency of the output signal of said amplifier;
energy transfer means for drawing power from said transmitter to form a reference signal of the same period as the transmitted signal;
a pair of forwardly-directed horn elements laterally spaced from one another to define an output antenna fed by said transmitter and an input antenna principally responsive to radiation from said target but simultaneously receiving spillover wave energy originating in said transmitter;
phase-comparison means having a first input terminal coupled to said input antenna, a second input terminal coupled to receive said reference signal, and an output terminal;
said phase comparison means deriving a signal substantially free of said spillover wave energy when said spillover wave energy and said reference signal are relatively phase displaced on the order of 180°;
reversible drive means for causing axial movement of said input antenna relative to said output antenna in a sense to introduce said 180° relative phase displacement;



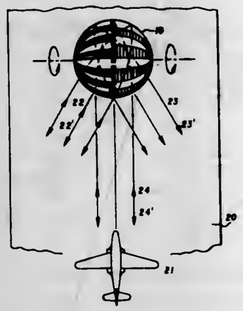
and indicating means responsive to the signal at the output terminal of said phase-comparison means to form a signal indicating when said amplifier is operating in a radiating condition subsequent to the moment a test signal is transmitted to said target.

3,295,131
APPARATUS FOR ABSORPTION OF ELECTROMAGNETIC ENERGY REFLECTED FROM A DENSE PLASMA
Guilford L. Hollingsworth, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Mar. 25, 1964, Ser. No. 354,722
12 Claims. (Cl. 343—18)



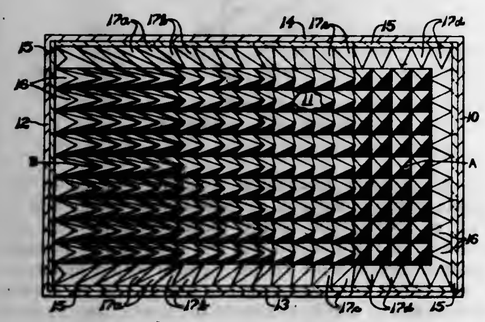
1. A composite mechanical structure disposed to cooperate with a radiator of electromagnetic energy and to effect electromagnetic energy transmission through the composite mechanical structure and subsequently through a juxtapositioned dense plasma medium with a minimum of attenuation of electromagnetic energy and to absorb electromagnetic energy reflected from a reflecting medium at a distance from the composite mechanical structure comprising:
(a) at least one sheet of ceramic magnetic material;
(b) at least one sheet of a dielectric material affixed to said sheet of ceramic magnetic material; and,
(c) energy absorbing elements disposed at said at least one sheet of dielectric material said at least one sheet of a dielectric material being interposed between said ceramic magnetic material and said energy absorbing elements in sandwich fashion.

3,295,132
MODULATING RADAR REFLECTOR
Aubrey L. Chapman, Jr., Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,182
11 Claims. (Cl. 343—18)



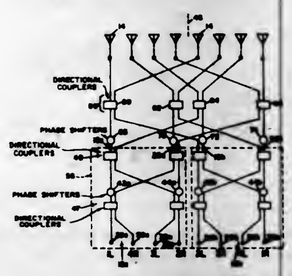
1. A reflector for reflecting radiant energy incident thereupon at different frequencies, comprising a spherical lens having opposite poles, first reflecting surfaces in associative relation with said lens, said first reflecting surfaces extending substantially from one pole and terminating substantially a predetermined distance from said pole, second reflecting surfaces in associative relation with said lens extending substantially from the opposite pole and terminating substantially a predetermined distance from said opposite pole, and means for rotating said reflector around an axis through said poles, whereby radiant energy incident upon said first reflecting surfaces is modulated at one frequency and radiant energy incident upon said second reflecting surfaces is modulated at a second frequency.

3,295,133
ANECHOIC CHAMBER
William H. Emerson, 7 High Ridge Road, Huntington, Conn. 06484, and Thomas F. Peterson, 14 Meadow Ridge Drive, Shelton, Conn. 06484
Filed Dec. 16, 1965, Ser. No. 514,334
5 Claims. (Cl. 343—18)



1. An anechoic chamber for providing an environment simulating that of outer space in which electronic devices can be evaluated, said chamber comprising a back wall toward which microwave energy is directed during the evaluation of electronic devices in said chamber, a front wall and longitudinally extending surfaces formed by side walls, a floor and a ceiling which extend between said front wall and said back wall and in conjunction with said front and back walls form said chamber, said chamber being lined with microwave energy absorbing material for absorbing microwave energy impinged thereagainst, said absorbing material lining said longitudinally extending surfaces of said chamber comprising elements projecting into the interior of said chamber that have side surfaces that slope toward an apex as they extend into said chamber and that have axes which are canted toward the front portion of the chamber.

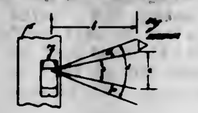
3,295,134
ANTENNA SYSTEM FOR RADIATING DIRECTIONAL PATTERNS
William R. Lowe, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Continuation of application Ser. No. 152,262, Nov. 16, 1961. This application Nov. 12, 1965, Ser. No. 507,513
17 Claims. (Cl. 343—100)



6. An antenna system for radiating directional antenna patterns having low side lobe levels, said system comprising, in combination,
(A) antenna elements,
(B) a radio frequency circuit having a plurality of first ports and a succession of second ports coupled to said antenna elements, transmission paths of different relative phase delays between each of said first ports and all of said second ports, said paths being so constructed as to couple a signal from any given first port equally to each second port with a uniform phase difference between successive second ports, so that said antenna elements radiate different spaced beams when a signal is applied to different first ports, said transmission paths including four-port couplers cross-connecting said paths and isolating said first ports from each other and said second ports from each other,
(C) a plurality of third ports, and
(D) transmission means
(1) interconnecting said first ports with said third ports so that at least two first ports are energized when a signal is delivered to one of said third ports, and
(2) adapted to impart a phase difference between the signal components delivered to said energized first ports so that said antenna elements have a substantially common phase center.

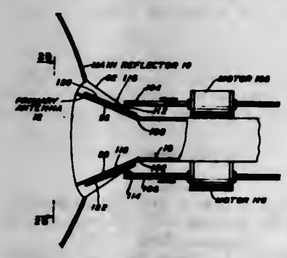
3,295,135
VEHICLE SPEED MONITORING SYSTEM
Miner S. Keeler II, 2525 Indian Trail SE., Grand Rapids, Mich. 49506, and Robert C. Thompson, Muskegon, Mich.; said Thompson assignor to said Keeler
Filed Oct. 19, 1964, Ser. No. 404,976
21 Claims. (Cl. 343—101)

1. A method of remotely determining the instantaneous speed of specific motor vehicles moving among other vehicles in traffic upon a roadway, comprising the steps of: equipping each such motor vehicle with a transmitter; altering the output of said transmitter in accordance with the instantaneous speed of the vehicle; restricting the zone of transmission of said output to a wedge-shaped beam aimed at a predetermined direction away from said vehicle



to a particularly positioned receiver adjacent said roadway; and deciphering said output to determine the instantaneous speed of said specific motor vehicle.

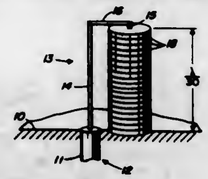
3,295,136
ANTENNA SYSTEM WHEREIN BEAMWIDTH VARIATION IS ACHIEVED BY CHANGING APERTURE AREA OF PRIMARY ANTENNA
Stewart E. Miller, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application July 9, 1963, Ser. No. 293,610. Divided and this application Aug. 13, 1965, Ser. No. 479,579
4 Claims. (Cl. 343—781)



1. An antenna system with means for changing the beamwidth of the radiation pattern of electromagnetic waves radiating from said antenna system which comprises a concave reflector having a focus and a vertex, said electromagnetic waves emanating from said concave reflector and having a plane wavefront, a single radiating primary antenna located near said vertex, said radiating primary antenna having its axis coincident with and its radiation pattern directed along the axis of said concave reflector toward said focus, an intermediate reflector having its axis coincident with the axis of said concave reflector, said intermediate reflector being situated to intercept the radiation pattern of said radiating primary antenna, thereby coupling waves between said radiating primary antenna and said concave reflector, and means for changing the aperture area of said radiating primary antenna, thereby controlling the extent of coupling between said radiating primary antenna and said concave reflector to change the beamwidth of the radiation pattern of said antenna system without changing the plane wavefront characteristics and the direction of radiation of the electromagnetic waves emanating from said concave reflector.

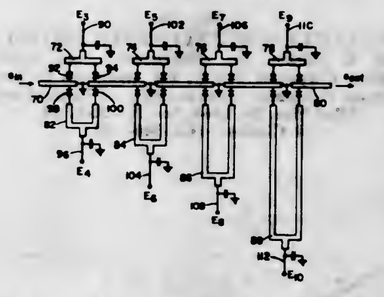
3,295,137
SHORTENED FOLDED MONOPOLE WITH RADIATION EFFICIENCY INCREASED BY FERRITE LOADING
Richard C. Fenwick, Richardson, Tex., and Walter L. Weeks, Lafayette, Ind., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Sept. 8, 1964, Ser. No. 394,979
2 Claims. (Cl. 343—787)

1. An antenna structure that can be substantially shortened while maintaining high efficiency of radiation comprising a coaxial conductor with the outer conductor connected to a ground plane, an inner conductor having a driven and grounded section coupled by a coupling section and with the grounded section connected to the



ground plane, and a disk of magnetic material mounted about the grounded section to substantially increase the efficiency of radiation.

3,295,138
PHASED ARRAY SYSTEM
Bruce K. Nelson, Concord, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,426
5 Claims. (Cl. 343—854)

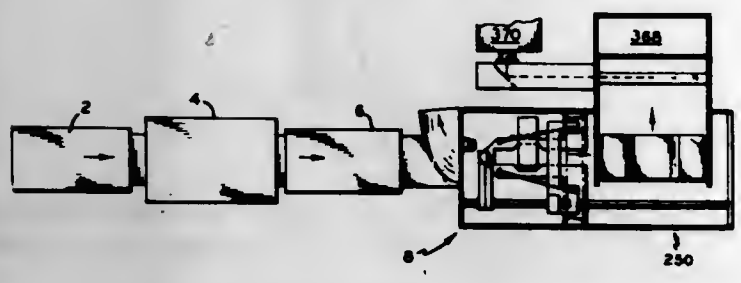


1. In a phased array antenna system which includes a plurality of antenna elements and a like plurality of signal processing channels, means for steering said array to a selected direction comprising, a source of binary control signals, and a switched delay line operatively associated with each of said channels, each of said switched delay lines comprising, a first plurality of delay lines having substantially zero time delay, a second like plurality of delay lines having in succession time delays of geometrically increasing value, and diode switching means connected between respective ones of said first and second plurality of delay lines and operative in response to said binary control signals to selectively combine said delay lines to provide selected amounts of delay in each channel.

3,295,139
DEPOSITORY MACHINE
Luther G. Simjian, Greenwich, Conn., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed Oct. 9, 1963, Ser. No. 315,016
17 Claims. (Cl. 346—22)

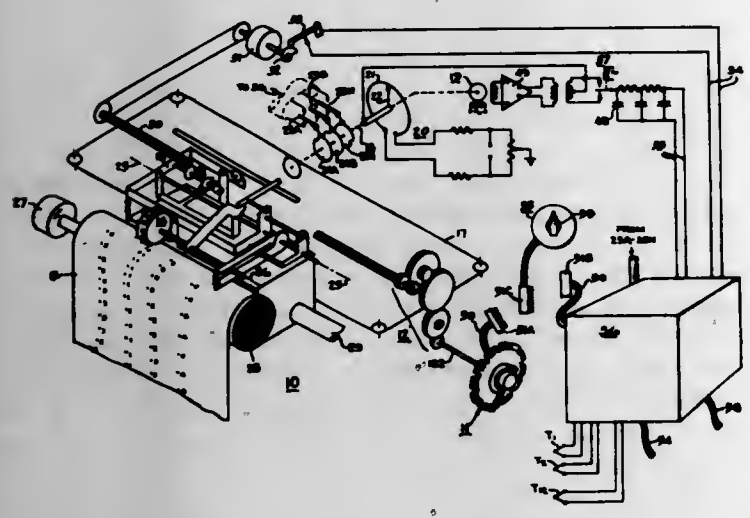
11. A document handling system comprising:
receiving means for receiving an envelope which is adapted to enclose a document between its side panels;
severing means disposed for engaging a received envelope and for dividing the envelope into independent first and second side panels, leaving any document enclosed in the envelope juxtaposed between the independent side panels;
image recording means having a field of view;
feeding means for serially feeding one of the side panels and any document enclosed in the envelope through said field of view; and

control means coupled to said receiving means, said severing means, said feeding means and said image recording means, for sensing the receipt of an envelope by said receiving means and in response



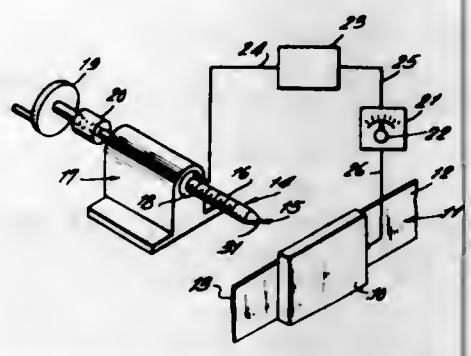
thereto causing the operation of said severing means and said feeding means, and for sensing the passage of the fed side panel and any document to said field of view and in response thereto causing the operation of said image recording means.

3,295,140
MULTIPLE POINT RECORDER SYSTEM
Kenneth B. Parker, Jr., Norristown, and Albert E. Paschkis, Gwynedd Valley, Pa., assignors to Leeds & Northrup Company, a corporation of Pennsylvania
Filed Mar. 20, 1964, Ser. No. 353,382
24 Claims. (Cl. 346—34)



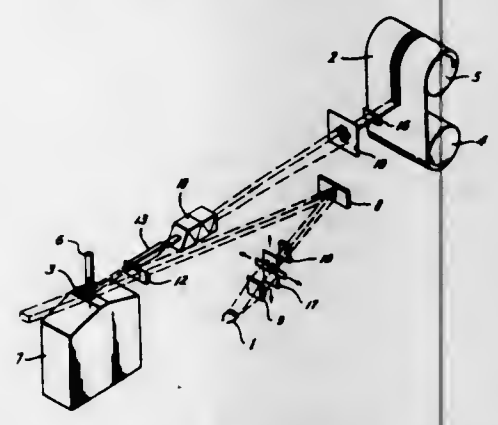
1. A recorder system comprising
a multiple-point recorder having a self-balancing measuring circuit and a multi-point synchronizing switch rotating in synchronism with the print mechanism of the recorder,
input-selector relays in number corresponding with the maximum point-recording capability of said recorder and having their coils respectively connected to corresponding points of said synchronizing switch for energization from a high-level source, each of said relays having contact means operable to connect said measuring circuit directly to input terminals for a measuring point through a low-level circuit excluding said synchronizing switch, and
means for varying the number of recorded measuring points including a network in the high-level coil circuits of said selector relays and having different groups of terminals respectively corresponding with the number of selected relays to be sequentially energized per cycle of said synchronizing switch and the number of times each selected relay is to be energized during that cycle.

3,295,141
APPARATUS FOR RECORDING BY ELECTROSTATICALLY RUPTURING MICROCAPSULES
Abraham Friedman, 288 Bay 38th St., Brooklyn, N.Y. 11214
Original application Dec. 20, 1963, Ser. No. 332,117, now Patent No. 3,286,755, dated Sept. 14, 1965. Divided and this application July 22, 1965, Ser. No. 493,947
3 Claims. (Cl. 346—74)



3. Apparatus for exposing or releasing the contents of micro-capsular material wherein a liquid substance is enclosed in a mantle of relatively impervious pressure rupturable material comprising a support having a coating of capsular material on a surface thereof, a pair of spaced electrodes between which said support is disposed, a source of high voltage connected to said electrodes whereby the application of voltage to said electrodes causes the rupture of the capsular material and exposes or releases the contents thereof to form an indication upon said support.

3,295,142
COLOR TRACE OSCILLOGRAPH
Clyde M. Slavens, 3827 Richmond Ave., Houston, Tex. 77027
Filed Oct. 16, 1964, Ser. No. 404,354
1 Claim. (Cl. 346—109)

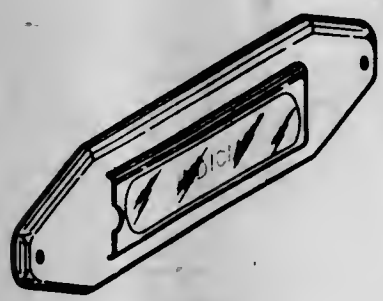


In a color trace oscillograph, a traveling light sensitive strip, a signal actuated oscillatory mirror mounted to direct a light beam toward the strip and to swing the beam in a path transverse to the direction of strip travel, a pair of prisms arranged in spaced apart and series relation between the mirror and the strip and one prism being constructed to rotate the light beam substantially ninety degrees and the other prism being constructed to separate the beam into different color zones, a beam condensing lens positioned ahead of the strip and arranged to focus the beam to substantial line impingement on the strip and a mask mounted in advance of said condensing lens and provided with a light passing aperture of predetermined size smaller than the range of beam oscillation at the mask whereby the screening of beam portions during beam oscillation is recorded by colored light passing through the aperture and the recorded color contrasts are significant of amplitudes of successive oscillations of the beam.

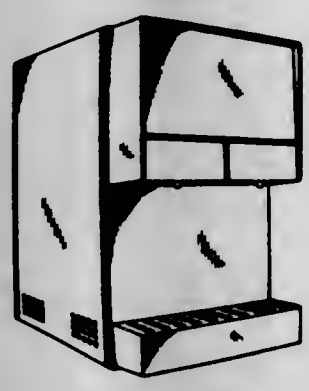
DESIGNS

DECEMBER 27, 1966

206,518
IDENTIFICATION CARD HOLDER
Pearl S. Evans, 402 Bellamy Place, Keokuk, Iowa 52632
Filed Feb. 28, 1966, Ser. No. 1,209
Term of patent 7 years
(Cl. D1—3)



206,519
LIQUID DISPENSER
Norbert Thomas Wolfe, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 66
Term of patent 14 years
(Cl. D2—3)



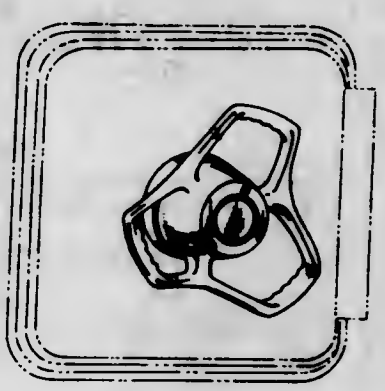
206,520
MOTOR OPERATED TOOTHBRUSH HANDLE
Jerold R. Petersen, Roselle, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 29, 1966, Ser. No. 2,865
Term of patent 14 years
(Cl. D9—2)



206,521
KNOB FOR DOORS, DRAWERS AND THE LIKE
Alfred H. Bottom, Canton, Ohio, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 694
Term of patent 14 years
(Cl. D10—5)



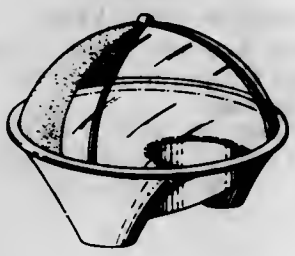
206,522
STERILIZER DOOR HANDLE
Charles F. Stephenson and Raymond Spilman, Darien, Conn., assignors to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 18, 1965, Ser. No. 87,549
Term of patent 14 years
(Cl. D10—8)



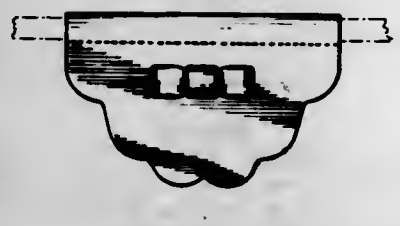
206,523
SHELTER
James L. Artig, White Bear Lake, Minn., assignor to Artig Products, Inc., a corporation of Minnesota
Filed June 11, 1965, Ser. No. 85,677
Term of patent 14 years
(Cl. D12—2)



206,524
SHELTER
James L. Artig, White Bear Lake, Minn., assignor to Artig Products, Inc., a corporation of Minnesota
Filed June 11, 1965, Ser. No. 85,678
Term of patent 14 years
(Cl. D12—2)



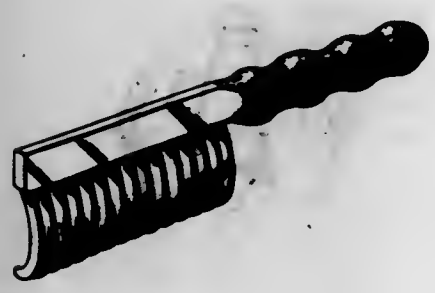
206,525
DOG COLLAR ORNAMENT OR SIMILAR ARTICLE
Daniel A. Klimkiewicz, Rutherford, N.J., assignor of one-half interest to Ronald A. Darby, Hawthorne, N.J.
Filed Sept. 23, 1965, Ser. No. 87,128
Term of patent 14 years
(Cl. D12—2)



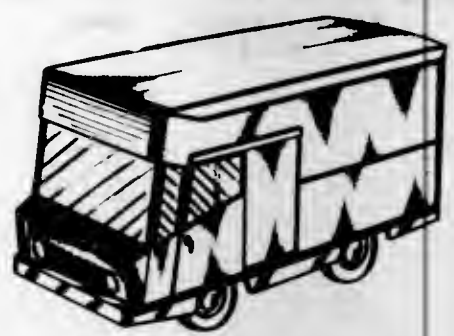
206,526
DOG COLLAR ORNAMENT OR SIMILAR ARTICLE
Daniel A. Klimkiewicz, Rutherford, N.J., assignor of one-half to Ronald A. Darby, Hawthorne, N.J.
Filed Sept. 23, 1965, Ser. No. 87,131
Term of patent 14 years
(Cl. D12—2)



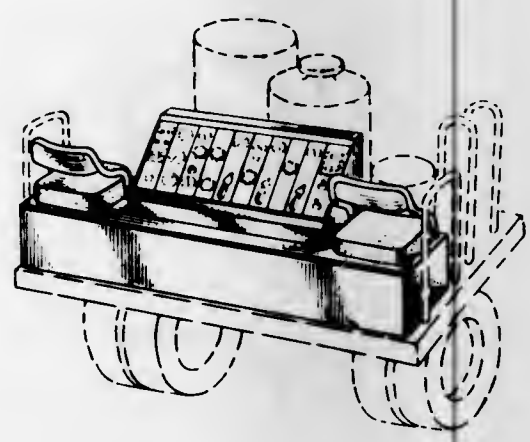
206,527
ANIMAL COMB
Lawrence A. Montecalvo, 75 Manton Ave., North Scituate, R.I. 02857
Filed Oct. 23, 1965, Ser. No. 87,865
Term of patent 14 years
(Cl. D12—2)



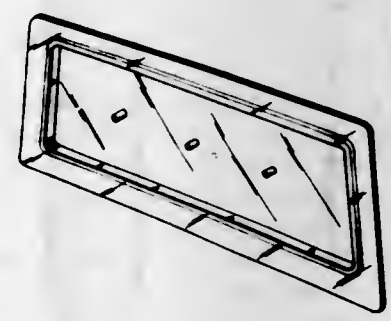
206,528
MOTOR VEHICLE
Hubert Douglas Prast, High Croft, Langley Road, Chipperfield, England
Filed Feb. 24, 1965, Ser. No. 83,953
Claims priority, application Great Britain Aug. 24, 1964
Term of patent 14 years
(Cl. D14—3)



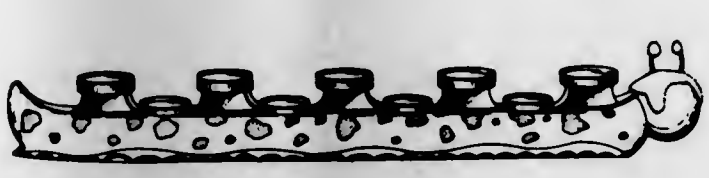
206,529
CONTROL INSTRUMENT CONSOLE AND SEATING UNIT ADAPTED FOR TRUCK MOUNTING
Donald E. Erdley, Wayne R. Mitchell, and William R. Shaffer, all of Huntingdon, Pa., assignors to Wald Industries, Inc., Huntingdon, Pa., a corporation of Pennsylvania
Filed June 25, 1965, Ser. No. 85,904
Term of patent 14 years
(Cl. D14—3)



206,530
ANTICONDENSATION PANEL FOR VEHICLE WINDOWS OR THE LIKE
Salomon Zell, 284 E. Park Drive, Blackpool, Lancashire, England
Filed May 4, 1965, Ser. No. 85,992
Term of patent 14 years
(Cl. D14—27)



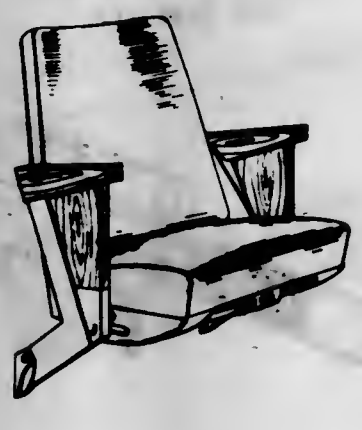
206,531
MULTIPLE SEATING UNIT
Phillip K. Rafferd, Memphis, Tenn., assignor to Shoe House, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Oct. 21, 1965, Ser. No. 87,700
Term of patent 14 years
(Cl. D15—1)



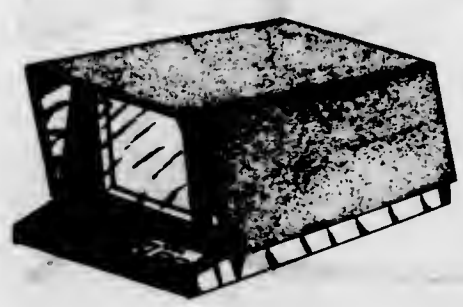
206,532
DENTAL CHAIR OR SIMILAR ARTICLE
John M. Gardella and Rudolph Vetere, Staten Island, N.Y., assignors to The S. S. White Dental Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 27, 1965, Ser. No. 86,308
Term of patent 14 years
(Cl. D15—3)



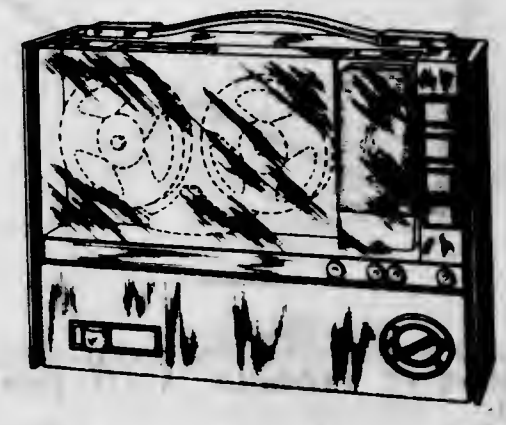
206,533
PUSH BACK THEATRE SEAT
Jacques Ducharme, Montreal, Quebec, Canada, assignor to O. Ducharme & Fils Limitee, Montreal, Quebec, Canada
Filed June 30, 1965, Ser. No. 85,955
Term of patent 14 years
(Cl. D15—8)



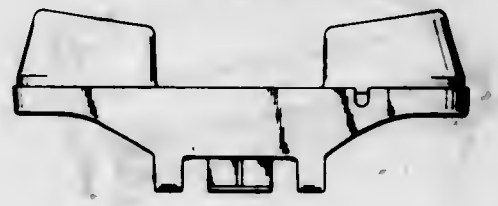
206,534
MONITORING DEVICE
John R. Regal, East Brunswick, N.J., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 87,575
Term of patent 14 years
(Cl. D26—1)



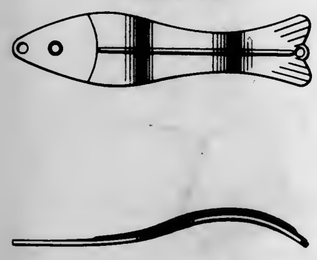
206,535
PORTABLE TAPE RECORDER
Richard E. Lee, Cazenovia, N.Y., and Kurt F. Mizen, Chicago, Ill., assignors to General Electric Company, a corporation of New York
Filed Mar. 29, 1966, Ser. No. 1,674
Term of patent 7 years
(Cl. D26—14)



206,536
ANSWERING APPARATUS FOR COUPLING A RECORDING AND PLAY-BACK SYSTEM WITH A TELEPHONE SET
H Albert Campbell, Jr., Portland, and Harold R. Burt, Beaverton, Oreg., assignors to KWF Industries, Inc., Portland, Oreg., a corporation of Washington
Filed June 21, 1965, Ser. No. 85,821
Term of patent 14 years
(Cl. D26—14)



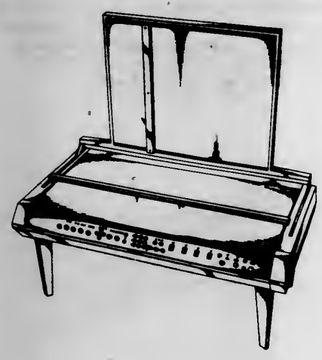
206,537
FISHING LURE
Domonick B. Bambino, 124 Graywood St., Johnstown, Pa. 15902
Filed Dec. 14, 1965, Ser. No. 177
Term of patent 14 years
(Cl. D31—4)



206,538
BOOK RACK
Peter R. Hollaender, Cincinnati, Ohio, assignor to The Hollaender Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 4, 1965, Ser. No. 87,303
Term of patent 14 years
(Cl. D33—3)



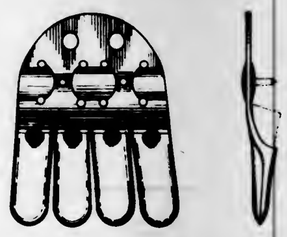
206,539
COMBINED COMPUTER-DIRECTED DRAWING INSTRUMENT CONSOLE AND DRAWING BOARD
George E. Eaton, Charles H. Hartman, and Talmage O. McCartney, all of Seattle, Wash., assignors to Perspective, Inc., Seattle, Wash., a corporation of Washington
Filed Mar. 15, 1965, Ser. No. 84,269
Term of patent 14 years
(Cl. D33—14)



206,540
PUTTER
Franklin H. Mackenzie, 307 Owen Ave., Lansdowne, Pa. 19050
Filed Jan. 25, 1966, Ser. No. 770
Term of patent 14 years
(Cl. D34—5)



206,541
HOLDER FOR GOLF TEES AND BALL MARKERS
Louise O. Hyler, Elmhurst, Ill. (R.R. 2, Marceline, Mo. 64658)
Filed June 15, 1965, Ser. No. 85,745
Term of patent 7 years
(Cl. D34—5)



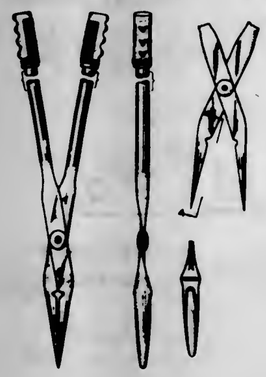
206,542
TOY GUN
John W. Ryan, Bel Air, and Floyd Evan Schlau, Redondo Beach, Calif., assignors to Mattel, Inc., a corporation of California
Filed Jan. 20, 1966, Ser. No. 696
Term of patent 14 years
(Cl. D34—15)



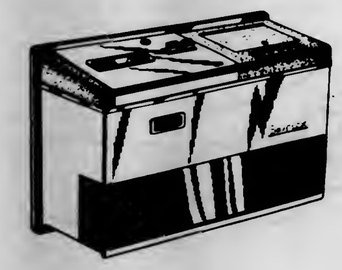
206,543
SEAT FOR A VELOCIPEDE
Alexander B. Musiclusk, Parma, Ohio, assignor to The M.T. & D. Company, a corporation of Ohio
Filed May 12, 1966, Ser. No. 2,277
Term of patent 14 years
(Cl. D94—15)



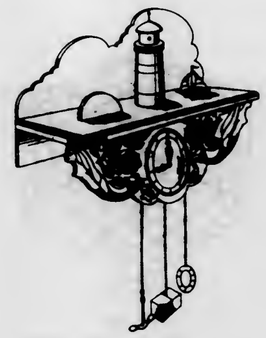
206,544
WEED PULLER
Andrew Senchak, Taylor, Mich. (8615 Evergreen, Detroit, Mich. 48228)
Filed Jan. 19, 1966, Ser. No. 681
Term of patent 14 years
(Cl. D35—2)



206,545
TIME RECORDER
Dana L. Vickery, Gardner, Mass., assignor to Simplex Time Recorder Company, Gardner, Mass., a corporation of Massachusetts
Filed July 26, 1965, Ser. No. 86,284
Term of patent 14 years
(Cl. D42—7)



206,546
CLOCK
Andrew Weising, 1317 Lynn St., Erie, Pa. 16503
Filed Sept. 8, 1965, Ser. No. 86,910
Term of patent 14 years
(Cl. D42—7)



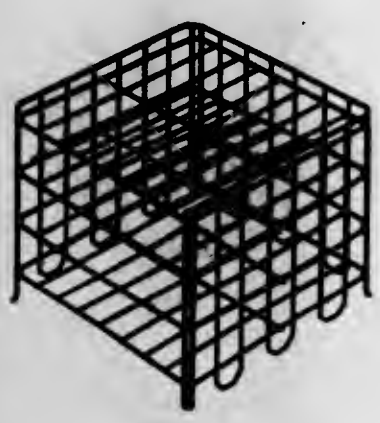
206,547
COMBINED SERVING DISH, HANDLE AND COVER THEREFOR
James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed May 5, 1964, Ser. No. 79,823
Term of patent 14 years
(Cl. D44—15)



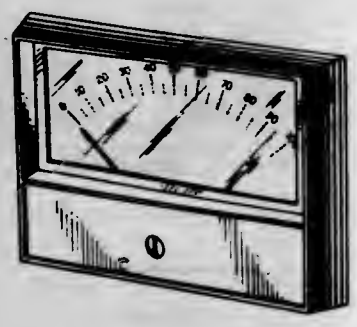
206,548
SPOON OR THE LIKE
Richard S. Latham, Chicago, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 22, 1966, Ser. No. 1,589
Term of patent 14 years
(Cl. D44—29)



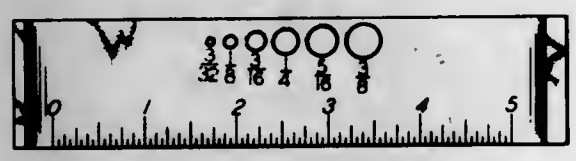
206,549
COMBINED COOLING AND STORAGE RACK FOR PIES AND THE LIKE
Signe O. Callender, P.O. Box 74, Eagle, Idaho 83616
Filed May 21, 1965, Ser. No. 85,394
Term of patent 7 years
(Cl. D44—29)



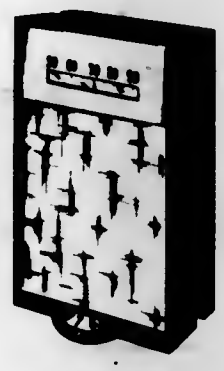
206,550
INDICATING INSTRUMENT
Kenneth J. Cumming, Manchester, N.H., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 83,945
Term of patent 14 years
(Cl. D52—6)



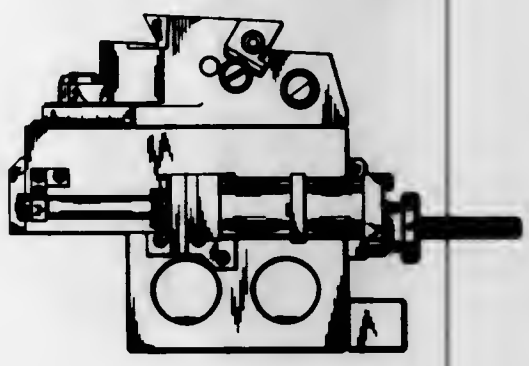
206,551
FIXTURE FOR CONSTRUCTING O-RINGS
Robert G. Nystrom, Glastonbury, Conn., assignor to Loctite Corporation, Newington, Conn., a corporation of Connecticut
Filed Oct. 19, 1965, Ser. No. 87,588
Term of patent 14 years
(Cl. D52—6)



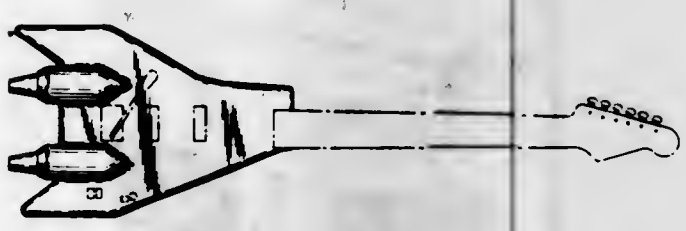
206,552
ROOM THERMOSTAT
Jean Y. Barbier, St. Louis, Mo., assignor to International Oil Burner Company, St. Louis, Mo., a corporation of Missouri
Filed Dec. 20, 1965, Ser. No. 248
Term of patent 14 years
(Cl. D52—7)



206,553
TOOLHOLDER
Michael W. Papp, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 25, 1966, Ser. No. 1,193
Term of patent 14 years
(Cl. D55—6)



206,554
GUITAR OR THE LIKE
Charles Smith, 7700 S. Wabash Ave., Chicago, Ill. 60619
Filed Apr. 29, 1966, Ser. No. 2,072
Term of patent 14 years
(Cl. D56—1)



206,555
LOUDSPEAKER ACTUATED RESONATING DEVICE FOR MUSICAL REPRODUCTION
Curt R. R. Wolfsinger, Elkhart, Ind., assignor to C. G. Conn Ltd., Elkhart, Ind., a corporation of Indiana
Filed June 24, 1965, Ser. No. 85,886
Term of patent 14 years
(Cl. D86—1)



206,556
CASE FOR PORTABLE PHONOGRAPH OR SIMILAR ARTICLE
Tobin Wolf, Bloomfield, and William J. Lawrence, Jr., Clifton, N.J., assignors, by direct and mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Substituted for abandoned design application Ser. No. 79,041, Mar. 17, 1964. This application July 15, 1965, Ser. No. 86,166
Term of patent 14 years
(Cl. D56—4)



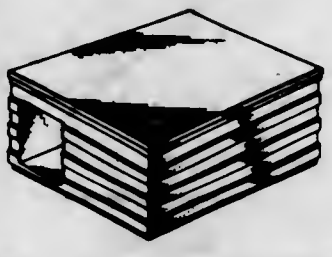
206,557
PAIR OF SPECTACLES
Donald J. McCulloch, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 17, 1965, Ser. No. 85,324
Term of patent 14 years
(Cl. D57—1)



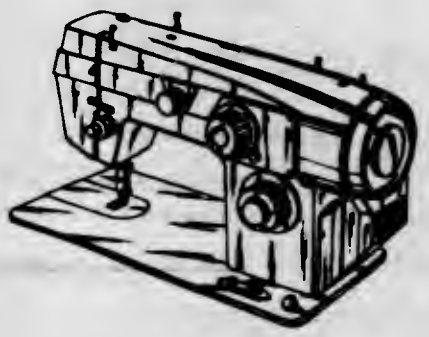
206,558
DISPLAY PACKAGE OF TOILET ARTICLES
Alan B. Lowry, Canton, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 84,217
Term of patent 14 years
(Cl. D58—2)



206,559
POWERED VENTILATOR
Albert S. Sheppard, Granada Hills, Calif., assignor to The G. C. Breidert Co., San Fernando, Calif., a corporation of California
Filed Aug. 2, 1965, Ser. No. 86,379
Term of patent 14 years
(Cl. D62—3)



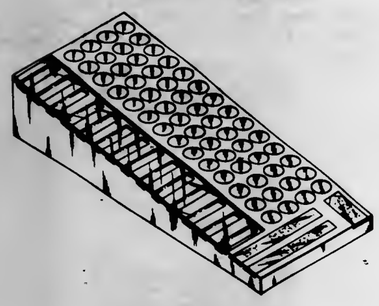
206,560
SEWING MACHINE OR SIMILAR ARTICLE
Sidney J. Hamlett, Parma, Ohio, assignor to White Consolidated Industries, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Mar. 2, 1966, Ser. No. 1,255
Term of patent 14 years
(Cl. D70—1)



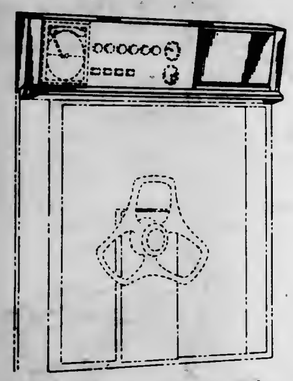
206,561
FIN FOR A WATER SKI OR SURFBOARD
Robert L. Sachse, 945 Pacific Beach Drive, San Diego, Calif. 92109
Filed Aug. 8, 1966, Ser. No. 3,384
Term of patent 14 years
(Cl. D71—1)



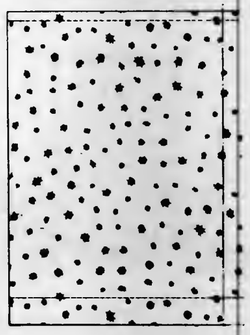
206,562
LIPSTICK DISPLAY TRAY
Leon V. Lebedeff, 1620 11th Ave. W., Seattle, Wash. 98134
Filed Oct. 24, 1965, Ser. No. 87,906
Term of patent 14 years
(Cl. D80—11)



206,563
INSTRUMENT PANEL FOR A STERILIZER
Sherman B. Campbell, Erie, Pa., Charles F. Stephenson, New York, N.Y., and Raymond Spilman, Darien, Conn., assignors to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1965, Ser. No. 87,724
Term of patent 14 years
(Cl. D83—1)



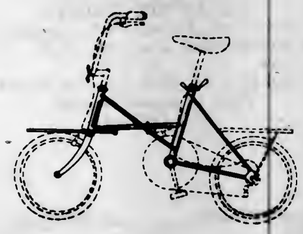
206,564
PLASTIC SHEET MATERIAL OR THE LIKE
Robert D. Becker, Wisconsin Rapids, Wis., assignor to Consoweld Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed June 3, 1965, Ser. No. 85,563
Term of patent 14 years
(Cl. D67—3)



206,565
FOUNTAIN
Arthur Forney, 1670 S. Frederica Drive, Clearwater, Fla. 33516
Filed Sept. 13, 1965, Ser. No. 86,957
Term of patent 14 years
(Cl. D91—4)



206,566
BICYCLE
Jack Fried, 555 S. Broadway, Los Angeles, Calif. 90013
Filed Dec. 7, 1965, Ser. No. 124
Term of patent 7 years
(Cl. D90—8)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 27TH DAY OF DECEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Ballinger, Kenneth P., and E. G. Chapdelaine, to Conversion Chemical Corp. Solution and method for brightening cadmium. Re. 26,130, 12–27–66, Cl. 156—20.
Chapdelaine, Eugene G.: *See*—
Ballinger, Kenneth P., and Chapdelaine. Re. 26,130.
Conversion Chemical Corp.; *See*—
Ballinger, Kenneth P., and Chapdelaine. Re. 26,130.
Johansson, Carl E., and D. F. Leonhart, to The Youngstown Steel Door Co. Railway car sides. Re. 26,131, 12–27–66, Cl. 105—409.
Leonhart, Donald F.: *See*—
Johansson, Carl E., and Leonhart. Re. 26,131.
Youngstown Steel Door Co., The: *See*—
Johansson, Carl E., and Leonhart. Re. 26,131.

LIST OF PLANT PATENTEES

Anderson, Frederic W., to A. Bright. Almond tree. 2,695, 12–27–66, Cl. 30.
Armstrong, David L., to Armstrong Nurseries, Inc. Rose plant. 2,697, 12–27–66, Cl. 6.
Armstrong Nurseries, Inc.: *See*—
Armstrong, David L. 2,697.
Bright, Arthur: *See*—
Anderson, Frederic W. 2,695.
Howard, Arthur P., to Paul J. Howard Co., Inc. Rose plant. 2,696, 12–27–66, Cl. 19.
Howard, Paul J., Co., Inc.: *See*—
Howard, Arthur P. 2,696.
Merrill, Grant. Peach tree. 2,694, 12–27–66, Cl. 43.
Thomas, George L., Jr. Water lily plant. 2,698, 12–27–66, Cl. 68.

LIST OF DESIGN PATENTEES

American Home Products Corp.: *See*—
Bottom, Alfred H. 206,521.
Latham, Richard S. 206,548.
American Steriliser Co.: *See*—
Campbell, Sherman B., Stephenson, and Spilman. 206,563.
Stephenson, Charles F., and Spilman. 206,522.
Artig, James L., to Artig Products, Inc. Shelter. 206,523, 12–27–66, Cl. D12—2.
Artig, James L., to Artig Products, Inc. Shelter. 206,524, 12–27–66, Cl. D12—2.
Artig Products, Inc.: *See*—
Artig, James L. 206,523.
Artig, James L. 206,524.
Bambino, Domenick B. Fishing lure. 206,537, 12–27–66, Cl. D13—4.
Barbier, Jean Y., to International Oil Burner Co. Room thermostat. 206,552, 12–27–66, Cl. D52—7.
Bausch & Lomb Inc.: *See*—
McCulloch, Donald J. 206,557.
Becker, Robert D., to Consoweld Corp. Plastic sheet material or the like. 206,564, 12–27–66, Cl. D67—3.
Bottom, Alfred H., to American Home Products Corp. Knob for doors, drawers and the like. 206,521, 12–27–66, Cl. D10—8.
Breidert, G. C., Co., The: *See*—
Sheppard, Albert S. 206,559.
Burt, Harold R.: *See*—
Campbell, H Albert, Jr., and Burt. 206,536.
Callender, Signe O. Combined cooling and storage rack for pies and the like. 206,549, 12–27–66, Cl. D44—29.
Campbell, H Albert, Jr., and H. R. Burt, to KWF Industries, Inc. Answering apparatus for coupling a recording and play-back system with a telephone set. 206,536, 12–27–66, Cl. D26—14.
Campbell, Sherman B., C. F. Stephenson, and R. Spilman, to American Steriliser Co. Instrument panel for a steriliser. 206,563, 12–27–66, Cl. D83—1.
Conn, C. G., Ltd.: *See*—
Wolfanger, Curt R. R. 206,555.
Consoweld Corp.: *See*—
Becker, Robert D. 206,564.
Cumming, Kenneth J., to Honeywell Inc. Indicating instrument. 206,550, 12–27–66, Cl. D52—6.
Darby, Ronald A.: *See*—
Klimkiewicz, Daniel A. 206,525.
Klimkiewicz, Daniel A. 206,526.
Ducharme, Jacques, to O. Ducharme & Fils Limitee. Push back theatre seat. 206,533, 12–27–66, Cl. D15—8.
Ducharme, O., & Fils Limitee: *See*—
Ducharme, Jacques. 206,533.
Eaton, George E., C. H. Hartman, and T. O. McCartney, to Perspective, Inc. Combined computer-directed drawing instrument console and drawing board. 206,539, 12–27–66, Cl. D33—14.
Erdley, Donald E., W. R. Mitchell, and W. R. Shaffer, to Wald Industries, Inc. Control instrument console and seating unit adapted for truck mounting. 206,529, 12–27–66, Cl. D14—3.
Evans, Pearl S. Identification card holder. 206,518, 12–27–66, Cl. D1—3.
Forney, Arthur. Fountain. 206,565, 12–27–66, Cl. D91—4.
Fried, Jack. Bicycle. 206,566, 12–27–66, Cl. D90—8.
Gardella, John M., and R. Vetere, to The S. S. White Dental Mfg. Co. Dental chair or similar article. 206,532, 12–27–66, Cl. 15—3.
General Electric Co.: *See*—
Lee, Richard E., and Misen. 206,535.
Gillette Co., The: *See*—
Lowry, Alan B. 206,558.
Hamlett, Sidney J., to White Consolidated Industries, Inc. Sewing machine or similar article. 206,560, 12–27–66, Cl. 70—1.
Hartman, Charles H.: *See*—
Eaton, George E., Hartman, and McCartney. 206,539.
Hollaender Mfg. Co., The: *See*—
Hollaender, Peter R. 206,538.
Hollaender, Peter R., to The Hollaender Mfg. Co. Book rack. 206,538, 12–27–66, Cl. D33—3.
Honeywell Inc.: *See*—
Cumming, Kenneth J. 206,550.
Wolfe, Norbert T. 206,519.
Hyler, Louise O. Holder for golf tees and ball markers. 206,541, 12–27–66, Cl. D34—5.
International Oil Burner Co.: *See*—
Barbier, Jean Y. 206,552.
KWF Industries, Inc.: *See*—
Campbell, H Albert, Jr., and Burt. 206,536.
Klimkiewicz, Daniel A., ½ to R. A. Darby. Dog collar ornament or similar article. 206,525, 12–27–66, Cl. D12—2.
Klimkiewicz, Daniel A., ½ to R. A. Darby. Dog collar ornament or similar article. 206,526, 12–27–66, Cl. D12—2.
Latham, Richard S., to American Home Products Corp. Spoon or the like. 206,548, 12–27–66, Cl. D44—29.
Lawrence, William J., Jr.: *See*—
Wolf, Tobin, and Lawrence. 206,556.
Lebedeff, Leon V. Lipstick display tray. 206,562, 12–27–66, D80—11.
Lee, Richard E., and K. F. Misen, to General Electric Co. Portable tape recorder. 206,535, 12–27–66, Cl. D26—14.
Loctite Corp.: *See*—
Nystrom, Robert G. 206,551.
Lowry, Alan B., to The Gillette Co. Display package of toilet articles. 206,558, 12–27–66, Cl. D58—2.
Mackenzie, Franklin H. Putter. 206,540, 12–27–66, Cl. D34—5.
Mattel, Inc.: *See*—
Ryan, John W., and Schlau. 206,542.
McCartney, Talmage O.: *See*—
Eaton, George E., Hartman, and McCartney. 206,539.
McCulloch, Donald J., to Bausch & Lomb Inc. Pair of spectacles. 206,557, 12–27–66, Cl. D57—1.
Mitchell, Wayne R.: *See*—
Erdley, Donald E., Mitchell, and Shaffer. 206,529.
Misen, Kurt F.: *See*—
Lee, Richard E., and Misen. 206,535.
Montecalvo, Lawrence A. Animal comb. 206,527, 12–27–66, Cl. D12—2.
Musichuk, Alexander B., to The M. T. & D. Co. Seat for velocipede. 206,543, 12–27–66, Cl. D34—15.
Nystrom, Robert G., to Loctite Corp. Fixture for constructing O-rings. 206,551, 12–27–66, Cl. D52—6.
Papp, Michael W., to The Warner & Swasey Co. Toolholder. 206,553, 12–27–66, Cl. D55—6.

Perspective, Inc.: *See*—
Eaton, George E., Hartman, and McCartney. 206,539.
Peterson, Jerold R., to Sunbeam Corp. Motor operated toothbrush handle. 206,520, 12-27-66, Cl. D8—2.
Pratt, Hubert D. Motor vehicle. 206,528, 12-27-66, Cl. D14—3.
Raiford, Phillip K., to Shoe House, Inc. Multiple seating unit. 206,531, 12-27-66, Cl. D15—1.
Regal, John R., to Sperry Rand Corp. Monitoring device. 206,534, 12-27-66, Cl. D26—1.
Rexall Drug and Chemical Co.: *See*—
Swett, James B. 206,547.
Ryan, John W., and F. E. Schlau, to Mattel, Inc. Toy gun. 206,542, 12-27-66, Cl. D34—15.
Sackett, Robert L. Fin for a water ski or surfboard. 206,561, 12-27-66, Cl. D71—1.
Schlau, Floyd E.: *See*—
Ryan, John W., and Schlau. 206,542.
Senchak, Andrew. Wood puller. 206,544, 12-27-66, Cl. D85—2.
Shaffer, William R.: *See*—
Erdley, Donald E., Mitchell, and Shaffer. 206,529.
Sheppard, Albert S., to The G. C. Breidert Co. Powered ventilator. 206,559, 12-27-66, Cl. D62—3.
Shoe House, Inc.: *See*—
Raiford, Phillip K. 206,531.
Simplex Time Recorder Co.: *See*—
Vickery, Dana L. 206,545.
Singer Co., The: *See*—
Wolf, Tobin, and Lawrence. 206,556.
Smith, Charles. Guitar or the like. 206,554, 12-27-66, Cl. D56—1.
Sperry Rand Corp.: *See*—
Regal, John R. 206,534.
Spilman, Raymond: *See*—
Stephenson, Charles F., and Spilman. 206,522.
Campbell, Sherman B., Stephenson, and Spilman. 206,563.
Stephenson, Charles F., and R. Spilman, to American Sterilizer Co. Sterilizer door handle. 206,522, 12-27-66, Cl. D10—8.
Stephenson, Charles F.: *See*—
Campbell, Sherman B., Stephenson, and Spilman. 206,563.
Sunbeam Corp.: *See*—
Peterson, Jerold R. 206,520.
Swett, James B., to Rexall Drug and Chemical Co. Combined serving dish, handle and cover therefor. 206,547, 12-27-66, Cl. D44—15.
Vetere, Rudolph: *See*—
Gardella, John M., and Vetere. 206,532.
Vickery, Dana L., to Simplex Time Recorder Co. Time recorder. 206,545, 12-27-66, Cl. D42—7.
Wald Industries, Inc.: *See*—
Erdley, Donald E., Mitchell, and Shaffer. 206,529.
Warner & Swasey Co., The: *See*—
Papp, Michael W. 206,553.
Weining, Andrew. Clock. 206,546, 12-27-66, Cl. D42—7.
White Consolidated Industries, Inc.: *See*—
Hamlett, Sidney J. 206,560.
White, S.S., Dental Mfg. Co., The: *See*—
Gardella, John M., and Vetere. 206,532.
Wolf, Tobin, and W. J. Lawrence, Jr., to The Singer Co. Case for portable phonograph or similar article. 206,556, 12-27-66, Cl. D56—4.
Wolfanger, Curt R. R., to C. G. Conn. Loudspeaker actuated resonating device for musical reproduction. 206,555, 12-27-66, Cl. D56—1.
Wolfe, Norbert T., to Honeywell Inc. Liquid dispenser. 206,519, 12-27-66, Cl. D2—3.
Zell, Salomon. Anticondensation panel for vehicle windows or the like. 206,530, 12-27-66, Cl. D14—27.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 27TH DAY OF DECEMBER, 1966

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Tetra Pak: *See*—
Wettlen, Lars M. R. 3,294,232.
ACF Industries, Inc.: *See*—
Korte, Alfred C. 3,294,240.
Niemeyer, Edgar, and Jeep. 3,294,625.
Smith, Robert J., and Rickmann. 3,294,874.
Smith, Robert J. 3,294,877.
Szwargulski, Jesse L. 3,294,875.
AGA-Elbak Batteriewerke Gesellschaft m.b.H.: *See*—
Puhm, Helmut. 3,294,259.
AGA-Platforadling Aktieboleg: *See*—
Lundberg, Olof. 3,294,360.
A.J. Industries Corp.: *See*—
Pawly, John G. 3,294,138.
AMP Inc.: *See*—
Brooke, William F. 3,293,732.
De Lyon, Armand R., and Lau. 3,295,094.
Lovendusky, Charles M. 3,293,735.
AMS Corp.: *See*—
MacGregor, James G. 3,293,817.
Abbott, Earl: *See*—
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Abelsma, Cornelis B., to Burlington Industries, Inc. Yarn splicing apparatus. 3,294,614, 12-27-66, Cl. 156—433.
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Adams, Edward A., W. F. Brown, J. J. Jarosi, and G. C. Mook, to Libbey-Owens-Ford Glass Co. Blending of granular materials. 3,294,292, 12-27-66, Cl. 222—429.
Adams, Frank H., L. C. Hardison, and P. J. Kuchar, to Universal Oil Products Co. Means and method for automatic addition of finely divided particles to a fluidizing contacting system. 3,294,675, 12-27-66, Cl. 208—152.
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Adcock, Curtis J. Toothbrush device. 3,294,100, 12-27-66, Cl. 132—84.
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Alderson, Samuel W., to Alderson Research Laboratories, Inc. Dosimetry system for penetrating radiation. 3,294,083, 12-27-66, Cl. 128—2.
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Gilbert, Everett E. 3,294,634.
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Allison, David F., to Signetics Corp. Field effect transistor and method. 3,295,030, 12-27-66, Cl. 317—235.
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Grayson, Martin, Sberr, Gillham, and Castellion. 3,294,870.
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Brown, Jerry H., and Conning. 3,294,671.
Felcheck, Marvin, and Walker. 3,295,063.
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Anderson, Ralph F. Capping apparatus. 3,293,823, 12–27–66, Cl. 53—131.

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Anderson, Thomas P. Aperture card. 3,293,786, 12–27–66, Cl. 40—159.

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Antul, John J., and M. E. Swanberg, to Conduction Corp. Land mass simulator. 3,294,891, 12–27–66, Cl. 35—10.4.

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Billings, William W., and Apfelbeck. 3,294,978.

Apgar, John N., Sr. Load apportioning tandem suspension structure for vehicles. 3,294,414, 12–27–66, Cl. 280—104.5.

Apikos, Dominic A., C. J. Kremer, and W. E. F. Lewis, to The Atlantic Refining Co. Wax coating and laminating compositions. 3,294,722, 12–27–66, Cl. 260—28.5.

Appeldorn, Roger H., to Minnesota Mining and Mfg. Co. Overhead projector with an unsymmetrical reflective supporting stage. 3,293,982, 12–27–66, Cl. 88—24.

Applied Power Industries, Inc.: *See*—
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Argue, Gary R., and R. F. Stewart, to Self Organizing System, Inc. Electrical device with closely spaced electrodes and method for making same. 3,295,028, 12–27–66, Cl. 317—230.

Arlington Aluminum Co.: *See*—
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Armbruster, Fritz. Plastic barrel. 3,294,271, 12–27–66, Cl. 220—5.

Armistead, Fontaine C., to Texaco Development Corp. Acoustic logging of subsurface discontinuities. 3,295,100, 12–27–66, Cl. 340—18.

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Arnekley, Duane R., and R. Curtis, to Stauffer Chemical Co. Synergistic herbicidal composition and method. 3,294,520, 12–27–66, Cl. 71—2.3.

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Arrow-Hart & Hegeman Electric Co., The: *See*—
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Arzo, Palmer. Reusable box construction. 3,294,269, 12–27–66, Cl. 217—12.

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Peterson, William R., and McNay. 3,294,714.

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Astleford, John J., Jr.: *See*—
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Atchison, George J., and R. M. Narlock, to The Dow Chemical Co. Selective polymerization of unsaturated epoxides. 3,294,658, 12–72–66, Cl. 204—159.22.

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Apikos, Dominic A., Kremer, and Lewis. 3,294,722.

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Auer, John H., Jr., and L. A. Ross, to General Signal Corp. Inactivity sensing circuit. 3,295,119 12–27–66, Cl. 340—214.

Auer, Otis N. Article transfer. 3,293,668, 12–27–66, Cl. 5—81.

Ault, Cyrus F., and S. F. Ris III, to Bell Telephone Laboratories, Inc. Position sensing apparatus. 3,295,117, 12–27–66, Cl. 340—174.1.

Aurora Equipment Co.: *See*—
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Axelrood, Seymour L., to Wyandotte Chemicals Corp. Film-forming urethane latices, and preparation by chain extending a prepolymer of an organic diisocyanate and a polymeric diol with a piperazine. 3,294,724, 12–27–66, Cl. 260—29.2.

Ayers, George W., and W. A. Krewer, to Union Oil Co. of California. Haloalkylation process. 3,294,850, 12–27–66, Cl. 260—651.

Ayers, Joseph W. Pigment particles coated with organo-aluminum compounds. 3,294,686, 12–27–66, Cl. 252—62.5.

Ayres, Reginald J., P. Vargo, and A. P. Russell, to General Electric Co. Manufacture of electric incandescent lamps. 3,295,016, 12–27–66, Cl. 316—17.

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Baccaredda, Mario, E. Butta, and P. Ginsti, to Continental Oil Co. Catalytic polymerization of trioxane. 3,294,750, 12–27–66, Cl. 260—67.

Back, Frank G. Optically compensated varifocal lens assembly. 3,294,471, 12–27–66, Cl. 350—194.

Baden, Harry C., C. C. Bard, and J. M. Seemann, to Eastman Kodak Co. Photographic prehardener compositions. 3,294,336, 12–27–66, Cl. 96—50.

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Hartwig, Ernst, and Braun. 3,294,815.
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Naarmann, Herbert, Kastning, and Schroeder. 3,294,754.
Pommer, Horst, Stilz, Hantge, and Rosenkranz. 3,294,570.
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Sarnecki, Wilhelm, Nuerrenbach, and Reif. 3,294,844.
Seefelder, Matthias, and Reppe. 3,294,800.

Baermann, Max. Eddy current heating device. 3,294,946, 12–27–66, Cl. 219—10.49.

Bailey, Frederick E., Jr.: *See*—
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Bailey, Joseph, to Eastman Kodak Co. Light-filtering dyes for photographic elements. 3,294,539, 12–27–66, Cl. 96—84.

Baillie, William R.: *See*—
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Baker Oil Tools, Inc.: *See*—
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Baljet, Anton F. Baseboard heater. 3,294,158, 12–27–66, Cl. 165—55.

Balint, Rudolph D., to International Tools Ltd. Apparatus for stripping injection molded articles from a mold. 3,293,697, 12–27–66, Cl. 18—42.

Ballantine, P., & Sons: *See*—
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Banca, Maggio C., N. E. Engborg, and D. W. Fisher, to Barnes Engineering Co. Radiometer control means. 3,293,915. 12–27–66, Cl. 73—355.

Baker, David M., to The Ohio Brass Co. Ceramic supports. 3,293,774, 12–27–66, Cl. 34—134.

Banks, William P., S. L. Holt, Jr., and R. L. Every, to Continental Oil Co. Measurement of sulfuric acid and oleum concentration. 3,294,652, 12–27–66, Cl. 204—1.

Barany, George, to Cambridge Filter Co. Pleated filter. 3,293,833, 12–27–66, Cl. 55—500.

Barbini, Spartacus, to Compagnie Generale D'Electricite. Triggering device for spark-gap comprising and destructible shield. 3,295,011, 12–27–66, Cl. 315—149.

Barbini, Spartacus, to Compagnie Generale D'Electricite. Triggering device for spark-gap and road focusing means. 3,295,012, 12–27–66, Cl. 315—152.

Barczak, Virgil J.: *See*—
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Baden, Harry C., Bard, and Seemann. 3,294,536.

Barlow, James E., to Western Electric Co., Inc. Wiping contact switch. 3,294,932, 12–27–66, Cl. 200—68.

Barnard, Dale, to Glass-Tite Industries, Inc. Machine for welding articles of manufacture. 3,293,743, 12–27–66, Cl. 29—563.

Barnard, Walter C., and I. G. Dutcher, to Whirlpool Corp. Door construction. 3,294,461, 12–27–66, Cl. 312—213.

Barnes, Charles R., and C. R. Geesner, to United States of America, Air Force. Deposition of nickel films on the interior surface of polytetrafluorethylene tubing. 3,294,059, 12–27–66, Cl. 118—49.5.

Barnes, Charles R., and C. R. Geesner, to United States of America, Air Force. Vapor plating copper. 3,294,575, 12-27-66, Cl. 117—93.

Barnes Engineering Co.: *See*—
Banca, Maggio C., Engborg, and Fisher. 3,293,915.

Barnes, Loyd A., to Continental Oil Co. Refrigerant flow control means. 3,293,877, 12-27-66, Cl. 62—223.

Barr, Harold N., and L. A. Sundquist, to United States of America, Atomic Energy Commission. Hollow, spherical UO_2 nuclear fuel particles. 3,294,698, 12-27-66, Cl. 252—301.1.

Barrett, Edward L., ⅓ to K. T. Snow, and E. L. Benno. Deferred action type of dry cell battery. 3,294,589, 12-27-66, Cl. 136—90.

Barroero, Louis F. Refrigerated display case having self-contained refrigeration unit. 3,293,878, 12-27-66, Cl. 62—255.

Bartaco Industries Ltd.: *See*—
Kemp, David C. S., and Strong. 3,294,276.

Bartlett, Charles B., R. Wirsing, Jr., and L. P. Hatch, to United States of America, Atomic Energy Commission. Process for decladding zirconium from zirconium clad nuclear fuel elements. 3,294,492, 12-27-66, Cl. 23—324.

Barton, Raymond W., to Mead Johnson & Co. Apparatus and method for filling nurser. 3,294,126, 12-27-66, Cl. 141—9.

Barton, Raymond W., and J. T. Herron, to Mead Johnson & Co. Nurser. 3,294,268, 12-27-66, Cl. 215—11.

Basset, Donald M. Spoking jig. 3,294,145, 12-27-66, Cl. 157—1.5.

Batey, Truman R., to Mac-Lean-Fogg Lock Nut Co. Sliding retractable lading strap anchor. 3,294,854, 12-27-66, Cl. 248—361.

Batsch, Guy. Thermal treatment of textile yarns. 3,293,838, 12-27-66, Cl. 57—34.

Bauduin, Albert, to Societe Anonyme Glaverbel. Apparatus for and process of annealing glass as it is being drawn upwardly. 3,294,510, 12-27-66, Cl. 65—84.

Bauer, Friedrich: *See*—
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Bauer, Matthew F. Valve swivel fitting for coolant systems. 3,294,359, 12-27-66, Cl. 251—148.

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Baumann, Hans D., to A. W. Cash Co. Fluid actuator. 3,293,992, 12-27-66, Cl. 91—386.

Baumgartner, August, to Zellweger A.G. Apparate- und Maschinenfabriken Uster. Lubricating means in a reeding machine. 3,293,721, 12-27-66, Cl. 28—45.

Bausch & Lomb Inc.: *See*—
Dakin, Ralph K., Rickless, and Ruben. 3,294,470.
Letter, Eugene C. 3,294,469.

Bavera, Elliott. Rotational molding apparatus for thermoplastic articles. 3,293,696, 12-27-66, Cl. 18—43.

Bay Distributors Ltd.: *See*—
Donachiue, James P. 3,293,834.

Baymiller, John W., W. J. Bohrn, and W. A. Moggio. Encapsulating apparatus. 3,293,695, 12-27-66, Cl. 18—2.6.

Bayne, Peter D., and J. J. Solomon, to Jos. Schlitz Brewing Co. Dispensing unit. 3,294,289. 12-27-66, Cl. 222—95.

Beattie, John R., to Pilkington Bros. Ltd. Apparatus for annealing glass. 3,294,518, 12-27-66, Cl. 65—194.

Beattie, Peter E., to Ford Motor Co. Thrust bearings. 3,293,931, 12-27-66, Cl. 74—325.

Beaufrere, Albert H., and L. E. Johnson, to Caterpillar Tractor Co. Rotary regenerator. 3,294,156, 12-27-66, Cl. 165—9.

Beber, Adolph J., and G. H. Orr, to The General Tire & Rubber Co. Masticating and heating of mixtures comprising wet rubber crumb carbon black and softener. 3,294,720, 12-27-66, Cl. 260—23.7.

Beck, Curt B.: *See*—
Dobbin, Rolline E., and Beck. 3,294,567.

Becker, Philipp: *See*—
Clark, Hubert M., Drutchas, and Becker. 3,294,029.

Becker, Walter W.: *See*—
Susskind, Herbert, Becker, and Maresca. 3,294,645.

Beckman, Ernest C., and B. O. Anderson, to Modern Metal Products Co. Seat back latch. 3,294,443, 12-27-66, Cl. 297—369.

Beckman, Ronald H.: *See*—
Blodee, Leif, and Beckman. 3,294,465.

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Bedell, Stanley F., to Monsanto Research Corp. Eutectics of triaminoguanidine perchlorate with lithium perchlorate and propulsive method. 3,293,853, 12-27-66, Cl. 60—219.

Bedier, Renee, S. Carpentier, H. Francois, A.-M. Grand-Clement, and J. Meneret, to Commissariat a l'Energie Atomique. Phosphate glass for the dosimetry of X- and gamma-ray. 3,294,700, 12-27-66, Cl. 252—301.4.

Beitchman, Burton D., to Air Products and Chemicals, Inc. Polyurethane compositions from ureido-polyols. 3,294,751, 12-27-66, Cl. 260—75.

Beitchman, Burton D., and W. E. Erner, to Air Products and Chemicals, Inc. Polymerization process utilizing dizabicyclooctane alkylene oxide catalysis. 3,294,753, 12-27-66, Cl. 260—77.5.

Belanger, William J., to Devoe & Raynolds Co. Coating compositions comprising epoxy resin fatty acid ester-hydrocarbon resin reaction products. 3,294,721, 12-27-66, Cl. 260—23.7.

Belke Mfg. Co.: *See*—
Belke, William E. 3,294,668.

Belke, Ralph E.: *See*—
Belke, William E. 3,294,668.

Belke, William E., deceased; L. L. Linquist and R. E. Belke, executors, to Belke Mfg. Co. Electroplating racks. 3,294,668, 12-27-66, Cl. 204—297.

Bell Aerospace Corp.: *See*—
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Bell, Alan, to Foster Wheeler Corp. Gas-cooled reactors. 3,294,070, 12-27-66, Cl. 122—32.

Bell & Howell Co.: *See*—
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Bell, Stanley C.: *See*—
Wei, Peter H. L., and Bell. 3,294,791.

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Beltzer, Morton, and D. G. Levine, to Esso Research and Engineering Co. Method of operating fuel cell with electrolyte containing quinone or dyes. 3,294,588, 12-27-66, Cl. 136—86.

Bemrose & Sons Ltd.: *See*—
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Bender, Charles E.: *See*—
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Idelsohn, Jerome M., McKelvie, Rothfusz, and Young. 3,295,125.
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Bergholtz, Willy, and B. Krause, to International Standard Electric Corp. Trunk-group supervision. 3,294,921, 12-27-66, Cl. 179—18.

Bergmann, Raymond W., and L. W. Albers. Plow mounted harrow. 3,294,180, 12-27-66, Cl. 172—197.

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Berry, John D.: *See*—
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Bertea, Octavian, S. R. Seagle, and J. R. Gross, to National Distillers and Chemical Corp. Method of imparting corrosion resistance to zirconium base alloys. 3,294,594, 12-27-66, Cl. 148—11.5.

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Field, Philip M., and Ross. 3,294,966.

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Beuther, Harold, B. K. Schmid, and J. R. Strom, to Gulf Research & Development Co. Hydrocracking of hydrocarbons with a sulfided tungsten oxide catalyst on a silica-alumina cracking support. 3,294,674, 12–27–66, Cl. 208—111.

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Biegler, Hanns, and F. Endter. Method and apparatus for circulating coolant. 3,294,155, 12–27–66, Cl. 165—1.

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Birkenseier, Henry P., to International Telephone and Telegraph. Pressure relief valve having means to insure full opening upon failure of the diaphragm. 3,294,114, 12–27–66, Cl. 137—510.

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Bize, Rene, to Societe Chauvin Arnoux. Electric voltage generator with stabilizing and regulating system. 3,295,-041, 12–27–66, Cl. 321—2.

Bjornaes, Bjorn G., T. J. Lechner, Jr., and P. H. Sorenson, to Johnson Service Co. Pure fluid integrator. 3,294,319, 12–27–66, Cl. 235—200.

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Black and Decker Mfg. Co., The: *See*—
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Black Products Co.: *See*—
Lau, Erwin M. 3,294,127.

Black, Sivalls & Bryson, Inc.: *See*—
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Blix, Weltzin B., Jr., and E. H. Krause, Jr., to Nordberg Mfg. Co. Tie bed scarifier. 3,294,083, 12–27–66, Cl. 104—9.

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Boag, James T., to Honeywell Inc. Tape reel cartridge. 3,294,324, 12–27–66, Cl. 242—55.13.

Boassy, Emil J., L. M. Lipman, deceased (by W. Furst, administrator). Junctures, frames and windows. 3,293,803, 12–27–66, Cl. 49—503.

Bobeck, Andrew H., and J. L. Smith, to Bell Telephone Laboratories, Inc. Memory circuits including a magnetic overlay. 3,295,113, 12–27–66, Cl. 340—174.

Bobowski, George, J. Shavel, Jr., and M. von Strandtmann, to Warner-Lambert Pharmaceutical Co. Substituted dioxolanes and process for their production. 3,294,818, 12–27–66. Cl. 260—340.9.

Bodenheimer, Bert A., and J. Dioguardi, to American Machine & Foundry Co. Cargo container for airplanes. 3,294,034, 12–27–66. Cl. 105—366.

Bodner, Charles H. Adjustable impeller. 3,294,175, 12–27–66. Cl. 170—160.61.

Boehmer, Andrew P., and B. M. Jaremus, to Borg-Warner Corp. Cooling apparatus for oxygen tents. 3,294,088, 12–27–66, Cl. 128—191.

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Hollingsworth, Guilford L. 3,295,131.

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Bond, Frank D.: *See*—
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Booth, Alfred, to Stone-Wallwork Ltd. Variable-speed belt gearing. 3,293,929, 12–27–66, Cl. 74—230.17.

Boots, Verdie A. Method and apparatus for rejuvenating sugar cane stubble. 3,294,046, 12–27–66, Cl. 111—8.

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Boehmer, Andrew P., and Jaremus. 3,294,088.
Dahl, Carl P. 3,294,028.
Ferris, Ernest A., and Zanoni. 3,294,340.

Borkovits, Henry S. Power control circuit. 3,295,020, 12–27–66, Cl. 317—33.

Born, Robert E., to American Well Works. Solid dome diffuser with trap. 3,294,380, 12–27–66, Cl. 261—121.

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Borst, Dean, and F. X. Mittereder, to Pittsburgh Plate Glass Co. Transverse heat absorption from a drawn glass sheet subsequent to roll forming. 3,294,507.

Boschi, Antonio, and M. Rubietti, to Societa Applicazioni Gomma Antivibranti "SAGA" S.p.A. Elastic universal joints for the transmission of torque. 3,293,862, 12–27–66, Cl. 64—14.

Boschi, Antonio, and G. Martorani, to Societa Applicazioni Gomma Antivibranti "SAGA" S.p.A. Torque transmitting resilient joint and manufacturing method. 3,293,883, 12–27–66, Cl. 64—14.

Bose, Amar G., to Bose Corp. Signal translation employing two-state techniques. 3,294,981, 12–27–66, Cl. 307—88.5.

Bose Corp.: *See*—
Bose, Amar G. 3,294,981.

Bottiger, Gustav: *See*—
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Bourne, Joseph R., and Eisberg, to Carrier Corp. Refrigerant control for absorption refrigeration systems. 3,293,873, 12–27–66, Cl. 62—141.

Bowles Engineering Corp.: *See*—
Bowles, Romald E. 3,294,103.

Bowles, Romald E., to Bowles Engineering Corp. Flow splitter for reducing dominant edge tone frequencies in fluid systems. 3,294,103, 12–27–66, Cl. 137—81.5.

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Ludwig, Walter D., and Bowman. 3,294,106.

Bowyer, Kern M., and R. L. Campbell, to American Radiator & Standard Sanitary Corp. Thermo-magnetically operated switches. 3,295,081, 12–27–66, Cl. 335—206.

Boydell, Kenneth R., and B. C. Kempson, to Dowty Hydraulic Units Ltd. Clutch control. 3,293,932, 12–27–66, Cl. 74—339.

Branco, Flavio S. C., to Winston Research Corp. Plural motor tension and speed control for a magnetic tape drive. 3,295,032, 12–27–66, Cl. 318—7.

Branson Instruments, Inc.: *See*—
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Braun, Willy: *See*—
Hartwig, Ernst, and Braun. 3,294,815.

Breit, John N.: *See*—
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Bremmer, Bart J., to The Dow Chemical Co. Halogen-containing thermosetting epoxy resin. 3,294,742, 12–27–66, Cl. 260—47.

Brennan, Bernice B. Safety devices. 3,294,299, 12–27–66, Cl. 224—28.

Brenner, Murry J. Means for fastening or securing in closed position, hand containers, particularly portfolio or courier cases. 3,294,135, 12–27–66, Cl. 150—1.6.

Bressan, Ferruccio, to I. Irwin Lubowe. Attachment for internal combustion engines for reducing noxious gases in the exhaust. 3,294,073, 12–27–66, Cl. 123—119.

Bresinski, Julius J., D. G. Kubler, and J. K. Rose, to Union Carbide Corp. Thermosetting polymers produced from 6-hydroxytetrahydropyran-2-carboxylic acid lactone and process of preparing same. 3,294,744, 12–27–66. Cl. 260—47.

Brick, Donald B., and G. G. Pick, to Sylvania Electric Products, Inc. Associative memory of multi-plane common solenoid matrices. 3,295,110, 12–27–66, Cl. 340—172.5.

Brightman, Barrie, and U. A. Pommerening, to General Dynamics Corp. Shift register phase control system for use in producing a variable direction beam from a fixed transmitting array. 3,295,098, 12–27–66, Cl. 340—5.

Brinkley, Amiel W., Jr., G. S. Mabrey, and J. W. Gilbert, to International Paper Co. Continuous digestion and purification with recirculation of liquor. 3,294,623, 12–27–66, Cl. 162—19.

Bristol, Alexander C., A. E. Sherr, and W. G. Deichert, to American Cyanamid Co. Mar-resistant polyester resins. 3,294,867, 12–27–66, Cl. 260—868.

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British Nylon Spinners Ltd.: *See*—
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Horwood, John M. 3,294,327.

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Britton, J. W.: *See*—
Livak, John E., and Britton. 3,294,846.

Broadhead, Samuel L., Jr., to Collins Radio Co. Multiple crystal frequency selective multiplier. 3,295,051, 12–27–66, Cl. 321—69.

Broadwell, John C.: *See*—
Urso, Sebastian J., and Broadwell. 3,294,228.

Brockman, Henry. Engine crankshaft. 3,293,940, 12–27–66, Cl. 74—596.

Brockmuller, Friedrich F., to Windmoller & Holscher. Guillotine for cutting webs of plastics material sheeting. 3,293,-970, 12–27–66, Cl. 83—328.

Broder, Leonard J. Universal child's chair. 3,294,440, 12–27–66, Cl. 297—150.

Brodrick, Merrill S. Milk extraction, processing and packaging system. 3,294,063, 12–27–66, Cl. 119—14.02.

Bron, Albert W. Construction gage. 3,293,764, 12–27–66, Cl. 33—194.

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Brook, James H. T., and R. L. Allen, to Shell Oil Co. Stabilised hydrocarbon compositions. 3,294,490, 12–27–66, Cl. 44—63.

Brookfield, Richard A. Hypodermic needle. 3,294,089, 12–27–66, Cl. 128—221.

Broske, William F., to AMP Inc. Hand tool for crimping electrical connectors. 3,293,732, 12–27–66, Cl. 29—155.5.

Brookman, John W.: *See*—
Vogel, Marcel J., and Brookman. 3,294,701.

Brossi, Arnold, and B. Kyburz, to Hoffmann-La Roche Inc. Benzofuro [2,3-c] pyridines and intermediates. 3,294,810, 12–27–66, Cl. 260—297.

Broverman, Irwin, and G. Jagaciak, to Olin Mathieson Chemical Corp. Composite aluminum article and method for obtaining same. 12–27–66, Cl. 29—167.3.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Dzung, Lang S. 3,294,990.
Lenz, Rudolf, and Meyer zu Hoberge. 3,296,705.
Wüthrich, Rolf, and Blatter. 3,295,049.

Brown, Cicero C. Well tools, such as well packers. 3,294,-172, 12–27–66, Cl. 166—139.

Brown Co.: *See*—
Coe, Merrill J. 3,294,309.

Brown, Jerry H., and D. G. Conning, to American Machine & Foundry Co. Electrodialysis apparatus having a vertical serpentine flow path. 3,294,671, 12–27–66, Cl. 204—301.

Brown, Kenneth G. Package dispensing means with delivery elevator. 3,294,282, 12–27–66, Cl. 221—12.

Brown, Norman C., and D. T. Hollinshead, to Cooper, McDougall & Robertson Ltd. Coumarinyl phosphate intestinal nematecides and the method for using same. 3,294,-636, 12–27–66, Cl. 167—53.

Brown, Richard E., and R. I. Meltzer, to Warner-Lambert Pharmaceutical Co. 11- or 12-substituted benzo[a]cycloalkane[f] quinolizine and process for their production. 3,294,801, 12–27–66, Cl. 260—286.

Brown, Richard W., to Honeywell Inc. Solenoid actuator assembly having a unitary spring clip for the plunger. 3,295,-079, 12–27–66, Cl. 335—255.

Brown, Robert F., Jr., to United States of America, Commerce. Read-out circuit for flux-gate reproducer heads. 3,295,118, 12–27–66. Cl. 340—174.1.

Brown, Robert O. Vibration eliminators. 3,293,939, 12–27–66. Cl. 74—574.

Brown, Victor, to New Life Foundation. Composting apparatus. 3,294,491, 12–27–66, Cl. 22—259.1.

Brown, Warren G., to International Telephone and Telegraph Corp. Pulse generator employing cascaded counters and coincidence circuitry for producing plural frequency outputs. 3,295,065, 12–27–66, Cl. 328—62.

Brown, Wayne B.: *See*—
Cunningham, Fred A., Klatt, Pinson, and Brown. 3,294,-545.

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Adams, Edward A., Brown, Jarosi, and Mook. 3,294,-292.

Brown, William W.: *See*—
Hagins, Homer H., and Brown. 3,293,864.

Brusi, Gaetano, to Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A. Special spinnerets for obtaining yarns of synthetic linear polymers having high regularity of count and of dyeability. 3,293,696, 12–27–66, Cl. 18—8.

Brunner, Paul A., to Sinclair Research, Inc. Process for producing dry hydrocarbon distillates. 3,294,676, 12–27–66, Cl. 208—187.

Brunson, Marion O., and J. E. Huffaker, to Eastman Kodak Co. Hot melt composition for three-dimensional printing. 3,294,532, 12–27–66, Cl. 96—27.

Brunson, Robert B., and K. M. Christensen, to The Pillsbury Co. Continuous roasting and broiling oven for food products. 3,294,011, 12–27–66, Cl. 99—443.

Bryan, Morris M., Jr., to The Jefferson Mills, Inc. Spindle mounted automatically doffable warp bobbin. 3,293,842, 12–27–66, Cl. 57—130.

Bryner, Fred, to The Dow Chemical Co. Phenolic resin adhesive extended with causticised lignite. 3,294,715, 12–27–66, Cl. 260—17.2.

Buckley, Frank H., to Fairey Engineering Ltd. Machines for removing splitter blades from nuclear reactor fuel cans. 3,293,734, 12–27–66, Cl. 29—200.

Buechler, Milton. Space coupe carnival ride. 3,294,398, 12–27–66, Cl. 272—36.

Buell, Eugene F., to Tartan Industries Inc. Rock bits and methods of making the same. 3,294,186, 12–27–66, Cl. 175—410.

Buffalo Forge Co.: *See*—
Stewart, Derrel N., and Olson. 3,294,315.

Bull, Douglas T., D. A. Street, and W. S. Wagner, to General Motors Corp. Vehicle body trim support. 3,294,436, 12–27–66, Cl. 296—28.

Bullene, Robert C., to Collins Radio Co. Electronic bi-directional D.C. motor braking. 3,295,037, 12–27–66, Cl. 318—261.

Bullock, Austin L., S. L. Vail, and C. H. Mack, to United States of America, Agriculture. Process for making cross-linked cellulose derivatives utilising acetylenic carboxylic acids. 3,294,779, 12–27–66, Cl. 260—212.

Bullock, Austin L., C. H. Mack, and J. D. Guthrie, to United States of America, Agriculture. Process for making cross-linked cellulose derivatives utilising halo-acrylic acids. 3,294,780, 12–27–66, Cl. 260—212.

Bullock, K. G.: *See*—
McClure, Malcolm C., McClellan, Stewart, and Bullock. 3,294,342.

Bunting, Ernest V., and H. V. Lind, to Massey-Ferguson Inc. Draft control system with independent range and sensitivity adjusting means. 3,294,179, 12–27–66, Cl. 172—10.

Bunn, B. H., Co.: *See*—
Gregory, Douglas A., and Berry. 3,294,421.

Bunting Brass and Bronze Co., The: *See*—
Williams, Joseph M., and Oyler. 3,294,456.

Burdick, Glen A., and F. K. Collins, to Sylvania Electric Products Inc. Cathode ray tube gun having a second grid with and effective thickness. 3,295,001, 12–27–66, Cl. 313—82.

Burgess, John L.: *See*—
Bibby, Norman W., Burgess, Crabbe, and Jones. 3,293,-843.

Burkhardt, Rolf, R. Lankes, and A. Imhof, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Microtome. 3,293,972, 12–27–66, Cl. 83—414.

Burleson, Louis J., and W. Arnold, ½ to V. Jackson. Safety mail box. 3,295,124, 12–27–66, Cl. 340—281.

Burlington Industries, Inc.: *See*—
Abelsma, Cornelis B. 3,294,614.

Burnside Steel Foundry Co.: *See*—
Dreher, George K. 3,294,044.

Burr, Robert P.: *See*—
Macdonald, Gerald S., and Burr. 3,295,039.

Burroughs Wellcome & Co., (U.S.A.) Inc.: *See*—
Harfenist, Morton. 3,294,790.

Burroughs Corp.: *See*—
Nellson, Dan A. 3,295,102.
Pilsetnieks, Dzidris. 3,294,293.
Relis, Matthew J. 3,295,104.
Russo, Luigi J. 3,294,982.

Burtis, Wilson A., to Dover Corp. Metal seal construction. 3,294,409, 12–27–66. Cl. 277—180.

Burwell, Blair. Process for recovering pure vanadium oxide from low grade vanadium ores or concentrates. 3,294,481, 12–27–66, Cl. 23—15.

Busche, Louis R., J. T. Welch, and C. E. Lanyon, to John A. Manning Paper Co., Inc. Paper product. 3,294,616, 12–27–66, Cl. 161—97.

Butler, Alan H., to The General Electric Co. Ltd. Variable speed drives. 3,294,369, 12–27–66, Cl. 254—172.

Butler, Roger M., and J. Eng, to Esso Research and Engineering Co. Selective conversion of normal paraffins. 3,294,-858, 12–27–66, Cl. 260—683.

Butta, Enzo: *See*—
Baccaredda, Mario, Butta, and Giusti. 3,294,750.

Butte Knitting Mills: *See*—
Willis, David M. 3,293,675.

Buttke, Richard A.: *See*—
Sabatino, Anthony, Buttke, and Lowe. 3,294,258.

Buttolph, Doyle D.: *See*—
Cines, Martin E., and Buttolph. 3,294,885.

C.P.W. Valve & Instrument Ltd.: *See*—
Vanderheyden, George A. 3,293,917.

Cabaret, Jean, V. Gerard, and A. Valentin, to Commissariat A l'Energie Atomique. Lifting mechanism. 3,294,255, 12–27–66, Cl. 214—1.

Cabot Corp.: *See*—
Dobbin, Rolline E., and Beck. 3,294,567.
Medalia, Avrom I., and Hagopian. 3,294,733.

Cagigal Gutierrez, Jesus A. Device for filing plans. 3,294,-093, 12–27–66, Cl. 129—1.

Cain, Carl C., and B. Sutton. Keyholding accessory for a ladies' handbag. 3,294,136, 12–27–66, Cl. 150—34.

Caldwell, Washington J., and J. G. Holt, to C. M. Hall Lamp Co. Plastic retainer assembly machine and method. 3,293,738, 12–27–66, Cl. 29—451.

Caldwell, William F., E. Glaesser, and J. L. Stewart. Electronic analog ear. 3,294,909, 12–27–66, Cl. 179—1.

Calfax, Inc.: *See*—
Cosenza, Frank J. 3,294,140.

Cambridge Filter Corp.: *See*—
Barany, George. 3,293,833.

Campbell, Richard L.: *See*—
Bowyer, Kern M., and Campbell. 3,295,081.

Campese, Joseph F., to W. F. Wessendorf, Jr. Automatic restaurant. 3,294,343. 12–27–66, Cl. 243—29.

Canaday, James A., J. B. Gaston, and J. C. Hill, to North American Aviation, Inc. Trajectory measurement apparatus. 3,295,128, 12–27–66, Cl. 343—7.

Canadian International Paper Co.: *See*—
Kidd, John W. 3,294,279.

Canmarata, Italo: *See*—
Vecchio, Martino, Canmarata, and Lodi. 3,294,852.

Caprio, Mario J., and R. F. Krisleit, to Aluminum Co. of America. Refractory composition. 3,294,562, 12–27–66, Cl. 106—64.

Carabateas, Philip M., to Sterling Drug Inc. 1-(3-hydroxy-3-phenylpropyl)-4-phenyl-4-propionoxy-piperidine. 3,294,804, 12–27–66, Cl. 260—294.3.

Carlson, William G., R. J. Radus, and C. J. Moratis, to Westinghouse Electric Corp. Magnetic ceramic material. 3,294,687, 12–27–66, Cl. 252—62.5.

Carn, Felix F. Day and night aiming device for weapons. 3,294,963, 12–27–66, Cl. 240—6.41.

Carnall, Edward, Jr., S. E. Hatch, L. S. Ladd, and W. F. Parsons, to Eastman Kodak Co. Method of molding magnesium fluoride. 3,294,878, 12–27–66, Cl. 264—1.

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Gerteis, Karl M. 3,293,874.
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Carroll, Joseph J., J. B. Galletti, Jr., and J. F. O'Kelly, Jr., to J and J Marine Diving Co. Pile cutter. 3,293,963, 12–27–66, Cl. 83—54.
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Carson, William W., Jr., and W. J. Murgas, to Nelvac, Inc. Removable mirror assembly. 3,294,438, 12–27–66, Cl. 296—152.
Carter, Giles F., to E. I. du Pont de Nemours and Co. Cr-Fe diffusion coating ferrous metal substrate. 3,294,498, 12–27–66, Cl. 29—196.6.
Casalini, Carlo. Steam producing system, particularly adapted for sanna baths. 3,293,666, 12–27–66, Cl. 4—175.
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Searight, Charles E., Alexander, Ryan, and Labino. 3,294,559.
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Chavannes, Marc A. Laminated cellular material. 3,294,389, 12–27–66, Cl. 267—1.
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Clements, Albert, to The Minster Machine Co. Horizontal press and method of operation, especially for forming can bodies. 3,293,900, 12–27–66, Cl. 72—456.
Cloyd, Henry C. Light and cord storing device. 3,294,968, 12–27–66, Cl. 240—81.
Cloutier, Joseph A., Jr. Continuous drive feed for oxidation-diffusion furnace. 3,294,261, 12–27–66, Cl. 214—18.
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Cochran, William W. Fertilizer mixer. 3,294,373, 12–27–66, Cl. 259—107.
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Barbini, Spartacus. 3,295,012.
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Continental Can Co., Inc.: *See*—
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Walter, Charles T. 3,294,215.
Continental Electronics Mfg. Co.: *See*—
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Coons, Woodrow. Portable shower. 3,293,664, 12–27–66, Cl. 4—155.
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Duncan, James E., and Cooper. 3,294,561.
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Cox, Monroe J., and W. J. Steier, Jr. Combination wall tie, draft stop and drainage means for wall constructions. 3,293,810, 12–27–66, Cl. 52—303.
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Cronwell, Ralph H. Putt direction finding method. 3,293,755, 12–27–66, Cl. 33—46.
Cross, Alexander D., and J. T. Harrison, to Syntex Corp. 17-ethers of 2α-methyl-androstane-17β-ol-3-one. 3,294,786, 12–27–66, Cl. 260—239.55.
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Curtis, Thomas E., to A. B. Chance Co. Combination expendable cap holder and fuse link retainer for electrical distribution cutout. 3,294,939, 12–27–66, Cl. 200—127.
Cusic, John W., and P. Yonan, to G. D. Searle & Co. Hydrazones of 1-amino-4-diphenylpropenylpiperasines. 3,294,787, 12–27–66, Cl. 260—240.
Cusic, John W., and P. Yonan, to G. D. Searle & Co. Hydrazones of 1-amino-4-diphenylacetylpiperasines. 3,294,788, 12–27–66, Cl. 260—240.
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Dakin, Ralph K., N. B. Rickless, and P. L. Ruben, to Bausch & Lomb Inc. Pancratic condenser for projectors. 3,294,470, 12–27–66, Cl. 350—184.

Daline, Gordon. Easily installable post for fences, docks and the like. 3,293,809, 12–27–66, Cl. 52—157.

Dally, Roy, and W. A. Cavagnaro, to General Electric Co. Coupler for a stereo phonograph cartridge. 3,294,925, 12–27–66, Cl. 179—100.41.

Dalton, A. Stanley, and A. Olevitch, to United States of America, Air Force. Liquid encapsulated fastener device. 3,293,977, 12–27–66, Cl. 85—37.

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Daniels, Wiley E., to General Aniline & Film Corp. Process for the preparation of a stable complex of bromine and lactams. 3,294,795, 12–27–66, Cl. 260—247.7.

Danielson, Richard E. Hammer holder. 3,294,298, 12–27–66, Cl. 224—5.

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Davidse, Jan, to North American Philips Co., Inc. Circuit arrangement in a receiver suited for the reception of a signal which is entirely or partially a single-sideband signal. 3,294,897, 12–27–66, Cl. 178—5.4.

Davidse, Jan, and B. H. J. Cornelissen, to North American Philips Co., Inc. Frequency-dividing circuit arrangement. 3,294,899, 12–27–66, Cl. 178—5.4.

Davies, Miles A., and L. B. Miller, to Columbia Machine Inc. Package-handling apparatus. 3,294,257, 12–27–66, Cl. 214—6.

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Davis, Elwood T., and R. I. Davis, II, to Leeds & Northrup Co. Position control system with heated resistor feedback network. 3,295,033, 12–27–66, Cl. 318—18.

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Davis, Kenneth J., to National Broach & Machine Co. Method of honing a gear. 3,293,805, 12–27–66, Cl. 51—287.

Davis, Raymond L., II: *See*—
Davis, Elwood T., and R. L., II. 3,295,033.

Davis, Robert H.: *See*—
Morgan, Allan Clark, Meager, and Davis. 3,294,606.

Davis, Robert S.: *See*—
Glass, Manfred, Davis, and Su. 3,294,773.

Danberry, Jean. Process and apparatus for annealing thin steel plates. 3,294,596, 12–27–66, Cl. 148—16.

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Dayco Corp.: *See*—
Rothermel, Edward M., and Waddell. 3,294,607.

Dayes, Frank. Aquarium aerator. 3,294,239, 12–27–66, Cl. 210—169.

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De Acetis, William, and E. T. Holm, to Shell Oil Co. 1,2 bis(epoxyalkyl) cyclobutane-polyepoxide composition. 3,294,863, 12–27–66, Cl. 260—830.

Dean, James T., to Mobil Oil Corp. Method and apparatus for marking, relocating, and re-establishing contact with a submarine wellhead. 3,293,667, 12–27–66, Cl. 61—72.3.

Dearing, Bertram S., to Aladdin Industries Ltd. Liquid fuel burning heating appliances. 3,294,149, 12–27–66, Cl. 158—88.

De Benedetti, Neri, to Bombrini Parodi-Delfino Societa per Azioni. Device for detecting the angular position of a luminous source. 3,293,980, 12–27–66, Cl. 88—14.

Decker, Raymond F.: *See*—
Floreen, Stephen, and Decker. 3,294,527.

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Deering Milliken Research Corp.: *See*—
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Defiandre, René, to Societe dite: DEREFA, Etablissement pour le Developpement pour le Developpement, Recherches et Fabrications Industrielles. Rotatable device for supporting parts to be machined. 3,293,990, 12–27–66, Cl. 90—58.

Dehnert, Johannes: *See*—
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Bristol, Alexander C., Sherr, and Deichert. 3,294,867.

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De Kroes, Jan L., W. Smit, and T. M. Schuringa, to North American Philips Co., Inc. Arrangement for automatic switching systems. 3,294,920, 12–27–66, Cl. 179—18.

De Lajarte, Stephane D., to Compagnie De Saint-Gobain. Electrically resistant glass compositions. 3,294,557, 12–27–66, Cl. 106—52.

Dellert, Robert C., and C. O. Finnegan, to General Electric Co. Motor control switch with improved operator and over center resilient means. 3,294,926, 12–27–66, Cl. 200—5.

Delta Research, Inc.: *See*—
Suzuki, Fred K., and Sprinez. 3,294,101.

De Lucia, Victor E., and B. C. Meland, to said Meland assor. to Torr Laboratories, Inc. Permanent magnet latching type vacuum relay. 3,295,080, 12–27–66, Cl. 335—153.

De Lyon, Armand E., and R. R. Lau, to AMP Inc. Coaxial plug terminal. 3,295,094, 12–27–66, Cl. 339—177.

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Denholtz, Melvin. Muscle anchorage appliance. 3,293,747, 12–27–66, Cl. 32—14.

Denis, Louis, to Societe Anonyme des Etablissements. Centrifugal pump impeller. 3,294,027, 12–27–66, Cl. 103—115.

Denton, Arnold E., J. M. Hogan, W. J. McBrady, and J. F. Beuk, to Swift & Co. Enzymatic removal of meat from bones. 3,293,687, 12–27–66, Cl. 17—1.

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Derbasov, Alexandr M.: *See*—
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Desmarchais, Walter E., and L. R. Katz, to Westinghouse Electric Corp. Apparatus for handling and transporting components. 3,294,453, 12–27–66, Cl. 302—2.

Desperier, Michel, to l'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude. Guarded perforated tray for contacting liquids and gases. 3,294,379, 12–27–66, Cl. 261—114.

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Di Loreto, Albert, E. Di Loreo, P. Romano and C. W. Ippoliti, to Rodel Metal Mfg. Co. Meat tenderizing apparatus. 3,294,009, 12–27–66, Cl. 99—254.

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Dinsmore, Joseph A., and R. I. Seddon, to Ampex Corp. Magnetic tape transport and transducing apparatus. 3,294,304, 12–27–66, Cl. 226—95.

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Dorr, Robert O., to Oscar Mayer & Co., Inc. Printing apparatus for packaging machines. 3,293,824, 12–27–66, Cl. 53—131.

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Downie, Robert H., R. V. Hersey, and H. W. Hoftiezer, to American Can Co. Method of making a printing cylinder. 3,294,889, 12–27–66, Cl. 264—255.

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Dreher, George K., to Burnside Steel Foundry Co. Grate bar. 3,294,044, 12–27–66, Cl. 110—40.

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Driese, Edward C., J. S. Gerig, M. R. Uffelman, and R. E. Williams, to Scope, Inc. System for classifying minimally constrained stimuli. 3,295,103, 12–27–66, Cl. 340—146.3.

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Duncan, Edward T., to The Maintenance Co., Inc. Emergency power supply unit. 3,294,977, 12–27–66, Cl. 307—66.

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Duncan, James E., and J. E. Cooper, to Pittsburgh Plate Glass Co. Bronze-smoke segment glass. 3,294,561, 12–27–66, Cl. 106—54.

Duncan, Joseph R. Prefabricated cornice for roof construction. 3,293,808, 12–27–66, Cl. 52—92.

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Daung, Lang S., to Aktiengesellschaft Brown, Boveri & Cie. Magnetohydrodynamic generator. 3,294,900, 12–27–66, Cl. 310—11.

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Ellinger, Herbert E., and A. H. Humphrey, to General Gas Light Co. Gas compressors. 3,294,316, 12–27–66, Cl. 230—187.

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Ensley, Donald L., to Harvest Queen Mill & Elevator Co. Ultrasonic angular displacement system. 3,293,919, 12–27–66, Cl. 73—505.

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Ettlinger, Ralph. Silverware washer construction. 3,294,273, 12–27–66, Cl. 220—23.83.

Evalds, Egils, and J. J. Coyne, to Robertshaw Controls Co. Capacitance to D.C. voltage converter. 3,295,042, 12–27–66, Cl. 321—2.

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Falkenau, Vernon A., and C. W. Church, to United States Rubber Co. Process for making mold for vacuum-forming materials. 3,293,737, 12–27–66, Cl. 29—423.

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Farnow, Arthur D., to Superior Packaging Equipment Corp. Package end flap folding and sealing machine. 3,293,827, 12–27–66, Cl. 53—374.

Farnow, Arthur D., to Superior Packaging Equipment. Container opening device and method of opening a knock-down container. 3,293,998, 12–27–66, Cl. 93—53.

Farquhar, Mary J., to Kopper Co., Inc. Hydrogenation of diphenaldehyde. 3,294,843, 12–27–66, Cl. 260—599.

Fedows-Fedotowsky, Leonid, to Sprague Electric Co. Process of coating a silicon semiconductor with indium using an ion beam. 3,294,583, 12–27–66, Cl. 117—227.

Fegley, Charles R., D. E. Horning, and J. H. Mattes, to Western Electric Co., Inc. Automatic resistance welding machine. 3,294,948, 12–27–66, Cl. 219—78.

Felck, George, III, to Anaconda Wire and Cable Co. Method of making electric cable having compressed insulation. 3,294,604, 12–27–66, Cl. 156—56.

Feil, Sam C. Automatic rural mail box flag tripper. 3,294,057, 12–27–66, Cl. 116—132.

Fein, Samuel, to Westinghouse Electric Corp. Apparatus for carrying out industrial operation. 3,294,924, 12–27–66, Cl. 179—100.1.

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Feldwisch, Philip. Automatic turning machine with automatic dimensional control. 3,293,960, 12–27–66, Cl. 82—2.

Fenwick, Richard C., and W. L. Weeks, to Collins Radio Co. Shortened folded monopole with radiation efficiency increased by ferrite loading. 3,295,137, 12–27–66, Cl. 343—787.

Ferri, Giampiero, and J. Marinal. Toy weapon for explosion of plastic material percussion caps and their extraction. 3,293,788, 12–27–66, Cl. 42—54.

Ferris, Ernest A., and S. J. Zanoni, to Borg-Warner Corp. Vehicle safety belt retracting device. 3,294,340, 12–27–66, Cl. 242—107.11.

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Field, Philip M., and R. N. Ross, to Charles Beseler Co. Automatic lamp-changing apparatus. 3,294,965, 12–27–66, Cl. 240—37.1.

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Findlay, Donald E., and D. R. Weyenberg, to Dow Corning Corp. Method of polymerising alloxanes and silicarbanes in emulsion by using a surface active sulfonic acid catalyst. 3,294,725, 12–27–66, Cl. 260—29.2.

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Fischer, Stefan and R. Manufacture of hollow articles of thermoplastic synthetic polymers. 3,294,884, 12–27–66, Cl. 264—99.

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Fish, Donald H., and J. O. Acciani, to Leeds & Northrup Co. Immersion thermocouple assembly. 3,294,592, 12–27–66, Cl. 136—234.

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Fisher, Michael S., and F. S. Kamp, to Radio Corp. of America. Transistor ignition system having ballast resistor shunt to maintain maximum current through the ignition transformer. 3,295,014, 12–27–66, Cl. 315—219.

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Fontaine, John G. Seat belt and locking means therefor. 3,294,339, 12–27–66, Cl. 242—107.4.

Fontaine, John G. Controlling means for vehicle seat belts. 3,294,446, 12–27–66, Cl. 297—388.

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Franklin, Edmond G., to The Hoover Co. Electrolytic appliance for treating surfaces. 3,294,664, 12–27–66, Cl. 204—224.

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Goldstein, Albert, and J. W. Brook, to Chemirad Corp. Copolymer of ethylene imine and epichlorhydrin. 3,294,723, 12–27–66, Cl. 260—29.2.

Goldstein, Albert, and J. W. Brook, to Chemirad Corp. Copolymer o fethylene imine and epichlorhydrin. 3,294,723, 12–27–66, Cl. 260—29.2.

Goldstein, Sidney. Dancing apparatus. 3,294,400, 12–27–66, Cl. 273—1.

Gonzales, Frank A., to Medical Electroscience, Inc. Fluid cooling apparatus. 3,293,868, 12–27–66, Cl. 62—3.

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Gore, LeRoy D., to The Vendo Co. Guide and positive delivery mechanism for product dispensing machine conveyor. 3,294,283, 12–27–66, Cl. 221—77.

Gossmann, Bernhard, to Fuoratilch Hohensalbernoche Huttenverwaltung Laucherthal. Process for the production of plain bearings. 3,294,568, 12–27–66, Cl. 117—8.

Gottfried, Herbert, and S. Natelson. Tray lyophilization apparatus. 3,293,772, 12–27–66, Cl. 34—92.

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Graham, Ollie W., to Combustion Engineering Inc. Capacitance probe for the detection of fluids contained in a stream of crude oil. 3,295,058, 12–27–66, Cl. 324—61.

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Granzow, Kurt H., to Lawrence Bros., Inc. Magnetic holding unit. 3,294,433, 12–27–66, Cl. 292—251.5.

Graser, Earl J., to Olin Mathieson Chemical Corp. Wrap-around article carrier with floating internal partition. 3,294,280, 12–27–66, Cl. 220—112.

Gratsmuller, Jean L. Injection system for internal combustion engines. 3,294,075, 12–27–66, Cl. 123—139.

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Grayson, Martin, A. E. Sberr, H. C. Gillham, and M. E. Castellion, to American Cyanamid Co. Organophosphorus-copper complex compounds and their use for producing fire retardant plastics. 3,294,870, 12–27–66, Cl. 260—993.

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Gregoire, Resta S., to Gregoire Engineering and Development Co. Panel seal and lock. 3,293,818, 12–27–66, Cl. 52—468.

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Ratway, Michael, and Wood. 3,293,905.
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Gunter, Addison Y., and T. E. Owen, to Hudson Engineering Corp. Rolled sheets having openings therethrough and process for their manufacture. 3,293,725, 12–27–66, Cl. 29—6.1.

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Halip, Nickolas J. Display board assembly and parts thereof. 3,294,430, 12–27–66, Cl. 287—189.36.

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Nebel, Max B. 3,293,886.

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Hanks, Fletcher. Method and apparatus for cultivating oysters. 3,294,062, 12–27–66, Cl. 119—4.

Hannon, Bruce M., to National Distillers and Chemical Corp. Jet reaction flowmeter. 3,293,913, 12–27–66, Cl. 73—228.

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Hanson, Ove O., to Mayes Bros. Tool Mfg. Co. Measuring instrument. 3,293,757, 12–27–66, Cl. 33—94.

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Haugen, Norman D., to The Benson Optical Co. Visual acuity projector with electric motor control for film chart and rotary astigmatic test element. 3,294,473, 12–27–66, Cl. 351—30.

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Henning, Lawrence M. Apparatus for mounting sliding doors. 3,293,801, 12–27–66, Cl. 49—130.

Heonis, Angelo A. Apparatus for simultaneously printing images with different kinds of inks. 3,294,018, 12–27–66, Cl. 101—115.

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Hess, Frederic O., to Selas Corp. of America. Apparatus for forming glass beads. 3,294,511, 12–27–66, Cl. 65—142.

Hessler, Albert. Saddletree construction and method. 3,293,828, 12–27–66, Cl. 54—44.

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Hinde, James N. Method of distributing fluids in bodies of liquid and apparatus therefor. 3,293,861, 12–27–66, Cl. 61—1.

Hinkson, Clair L. Fishing gear. 3,293,791, 12–27–66, Cl. 43—44.4.

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Hirsch, William A. Washer system employing an arcuately configured fluid delivery tube. 3,295,004, 12–27–66, Cl. 313—110.

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Holland, John B., to Ford Motor Co. Production of burr free aluminum parts. 3,293,806, 12–27–66, Cl. 51—320.

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Hort, Eugene V., F. Grosser, and A. Schwartz, to General Aniline & Film Corp. Ethylidene-bis-3(N-vinyl-2-pyrrolidone) and polymers thereof. 3,294,765, 12–27–66, Cl. 260—80.3.

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Jacob, Carl N., to National Distillers and Chemical Corp. Polyolefins stabilized with bisphenols and organic phosphites containing mercapto groups. 3,294,736, 12–27–66, Cl. 260—45.95.

Jacobs, Hans. X-ray tube power supply having a condenser and/or rectifier in the primary circuit. 3,294,973, 12–27–66, Cl. 250—98.

Jacobs, James W., to General Motors Corp. Method for making polyurethane foam. 3,294,879, 12–27–66, Cl. 264—26.

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Jerome, Jack, to Marine Steel Corp. Hatch covers. 3,294,154, 12–27–66, Cl. 160—188.

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Jordan, John P., to Gulton Industries, Inc. Sealed battery. 3,294,591, 12–27–66, Cl. 136—133.

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Jukes, Alan W., to Imperial Chemical Industries Ltd. Process for the production of fire-resistant methacrylate resin compositions containing phosphates. 3,294,730, 12–27–66, Cl. 260—30.6.

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Kachman, Robert D., and W. R. Kee, to United States of America, Atomic Energy Commission. Friction mechanism with sapphire friction surface. 3,294,209, 12–27–66, Cl. 192—66.

Kafferlin, William H., G. B. Hasbrouck, and T. Q. Stohlberg, to Corry Jamestown Corp. Drawer and fastener combination. 3,294,463, 12–27–66, Cl. 312—234.5.

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Karoly, Gabriel, A. Noshay, F. B. Markticheffel, and A. F. Turbak, to Esso Research and Engineering Co. Polyolefins blended with amine-epoxide condensate. 3,294,864, 12–27–66, Cl. 260—836.

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Kawamura, Koreichi, Y. and K. Device for automatically controlling water jets of artificial fountains in synchronism with musical sounds. 3,294,822, 12–27–66, Cl. 239—17.

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Keller, George F., K. Sor, H. M. Smith, and J. D. De Ment, to Esso Research and Engineering Co. Automatic irrigation of pot cultures in plant growth rooms and greenhouses. 3,293,799, 12–27–66, Cl. 47—38.

Keller, Harry N., D. A. McLean, and B. H. Vromen, to Bell Telephone Laboratories, Inc. Method for fabricating printed circuit components. 3,294,653, 12–27–66, Cl. 204—15.

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Kelley, Emory A., to Otis Engineering Corp. Hydraulic operated well tools. 3,294,171, 12–27–66, Cl. 166—120.

Kelley, Omer J., and W. K. MacCurdy, to Stanford Research Institute. Seed pregerminating and planting process. 3,294,045, 12–27–66, Cl. 111—1.

Kelly, Anthony H., to Westinghouse Electric Corp. Room air conditioner with comtrols therefor. 3,293,875, 12–27–66, Cl. 62—180.

Kelly, William A., and P. J. Petix, to Lever Brothers Co. Striped soap bars and method and apparatus for making the same. 3,294,692, 12–27–66, Cl. 252—134.

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Kennard, Thomas A. Pipe supporting well tool. 3,293,959, 12–27–66, Cl. 81—54.1.

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Kenyon, Charles H., to Corning Glass Works. Combined shipping package and protective armor for glass pipe. 3,294,225, 12–27–66, Cl. 206—46.

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Kerr, Douglas A., and G. F. Swetnam, Jr., to Bell Telephone Laboratories, Inc. Convertible binary counter and shift register with interstage gating means individual to each operating mode. 3,294,919, 12–27–66, Cl. 179—18.

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Ketterer, Stanley J., and M. F. Ivanko, to The Singer Co. Lubricating devices for sewing machines. 3,294,049, 12–27–66, Cl. 112—254.

Keuffel & Esser: *See*—
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Khelstovsky, Leonide, to Compagnie Generale d'Equipements Pour les Travaux. Apparatus for drilling in deep water. 3,294,051, 12–27–66, Cl. 114—.5.

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Lovendusky, Charles M., to AMP Inc. Inserting apparatus. 3,293,735, 12–27–66, Cl. 29—203.

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Ludwig, Walter D., and W. J. Bowman, to Mac Valves, Inc. Shuttle valve with integrated detent means. 3,294,106, 12–27–66, Cl. 137—110.

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Lundberg, Olof, to AGA-Platforadling Aktiebolag. Valve with resilient disc. 3,294,360, 12–27–66, Cl. 251—205.

Lundberg, Robert D., and F. E. Bailey, Jr., to Union Carbide Corp. Thermally stable vinyl fluoride polymers. 3,294,767, 12–27–66, Cl. 260—80.5.

Lundgren, Herbert K. Hanger for window sash balance. 3,293,686, 12–27–66, Cl. 16—197.

Luning, George A., to International Business Machines Corp. Film record cards and method for making the same. 3,293,-996, 12–27–66, Cl. 93—1.

Lupfer, Dale E., and M. L. Johnson, to Phillips Petroleum Co. Controlling the operation of a distillation column. 3,294,648, 12–27–66, Cl. 203—2.

Lutz, Martin R., G. Nowlin, and H. Stange, to FMC Corp. Phosphorylated polyester polyols. 3,294,873, 12–27–66, Cl. 260—929.

Lutz, Wilson B., to Warner-Lambert Pharmaceutical Co. Method and compositions employing 2-alkyl-3-piperidinopyrazine. 3,294,638, 12–27–66, Cl. 167—65.

Lutzman, Hans H., and G. E. Raley, to Union Carbide Corp. Film forming method and apparatus. 3,294,882, 12–27–66, Cl. 264—95.

Lyon, Gilbert T., to L & L Mfg. Co. Self-flaring tube coupling. 3,294,426, 12–27–66, Cl. 285—334.5.

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Macare, Gabriel. Ceremonial font. 3,294,288, 12–27–66, Cl. 222—78.

Macdonald, Gerald S., and R. P. Burr, to Honeywell Inc. Digital comparator for speed control system. 3,295,039, 12–27–66, Cl. 318—314.

MacDonald, John Graham. Hydrostatic transmission systems and controls. 3,293,943, 12–27–66, Cl. 74—687.

Machlan, George R., C. L. McKinnis, and H. I. Glaser, to Owens-Corning Fiberglas Corp. Apparatus for producing fine continuous filaments. 3,294,503, 12–27–66, Cl. 65—1.

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Bullock, Austin L., Mack, and Guthrie. 3,294,780.
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MacKinnon, Michael J., to Bell Aerospace Corp. Means for preventing high temperature seizing. 3,294,682, 12–27–66, Cl. 252—35.
Macklin, Lance. Protective visors or face shields for the drivers and other occupants of vehicles. 3,293,060, 12–27–66, Cl. 2—9.
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Warmbeseel, Harry J. 3,294,390.
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Batey, Truman R. 3,294,354.
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Magne, Frank C.: *See*—
Skau, Evald L., Magne, and Mod. 3,294,808.
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Susskind, Herbert, Becker, and Maresca. 3,294,645.
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Martin, Ralph E., A. E. Pate, Jr., and R. E. Hargis, to Howe-Baker Engineers, Inc. Desulfurizing petroleum fractions with nitrogen dioxide and sulfuric acid. 3,294,677, 12–27–66, Cl. 208—224.
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Martin-Vegue, Charles A., and E. F. W. Kellermann, to Hersey-Sparling Meter Co. Automatic motor controller. 3,294,023, 12–27–66, Cl. 103—11.
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Mason, Frederick P., to Creed & Co. Ltd. Type printing apparatus with motion generator and indicating means. 3,294,211, 12–27–66, Cl. 197—48.
Mason, Howard F., to The Ansul Co. Push button switch. 3,294,942, 12–27–66, Cl. 200—159.
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Massey, Richard P., to Bell Telephone Laboratories, Inc. D.C. to A.C. regulated converter. 3,295,043, 12–27–66, Cl. 321—2.
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Matlow, Sheldon L., to Hoffman Electronics Corp. pH meter. 3,294,662, 12–27–66, Cl. 204—195.
Matross, Irving B. and S., to Montrose Mfg. Co., Inc. Wardrobe bag. 3,294,134, 12–27–66, Cl. 150—1.
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Ryan, John W. 3,293,795.
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Moretti, Francesco, to Officine Meccaniche E Fonderie A. Bosco S.p.a. Device for opening the discharge opening of a hydro-extractor and concurrently locking the extractor. 3,294,-317, 12–27–66, Cl. 233—20.

Morgan, Allan C., R. A. Mesger, and R. H. Davis. Method of making a vulcanized wire reinforced tire by means of induction heating. 3,294,606, 12–27–66, Cl. 156—124.

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Penberthy, Harvey L. Glass furnace. 3,294,512, 12-27-66, Cl. 65—178.

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Perras, Lucien, to Regie Nationale des Usines Renault. Circuit-breaker devices, especially for semiconductor circuits. 3,295,023, 12-27-66, Cl. 317—54.

Percival, Joseph W., to Westinghouse Electric Corp. Keyed A.G.C. with variable reactance for control of keying pulse amplitude. 3,294,904, 12-27-66, Cl. 178—7.5.

Perrins, Allen R., to The Superior Electric Co. Automatic voltage regulator. 3,295,053, 12-27-66, Cl. 323—22.

Perry, Kenneth E., to Goodyear Corp. Oscillation generator embodying complementary differential amplifier pairs. 3,293,069, 12-27-66, Cl. 331—113.

Person, Philip H., to Lake Shore, Inc. Crane. 3,294,262, 12-27-66, Cl. 214—38.

Peterson, Janet B., and M. Dexter, to Geigy Chemical Corp. Stabilization of organic material with certain esters of substituted hydroquinones and organic acids. 3,294,836, 12-27-66, Cl. 260—475.

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Popoff, Ivan C. 3,294,628.
Popoff, Ivan C. 3,294,522.

Perchik, Lev D.: *See*—
Rogachev, Ivan S., Livshits, and Perchik. 3,294,996.

Perkins, George R.: *See*—
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Perkins, Norwood K.: *See*—
Jenkins, Charles S., and Perkins. 3,294,956.

Perrin, Jack L.: *See*—
Tucker, Council A., and Perrin. 3,294,329.

Peruzzotti, George P.: *See*—
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Peterson, John, to United States of America, Agriculture. Method of prestressing a wood beam. 3,294,608, 12-27-66, Cl. 156—160.

Peterson, Thomas F.: *See*—
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Peterson, William R., and R. E. McNay, to Ashland Oil Refining Co. Blends of rubbery polymers, one having been prepared in the presence of Grindelia extract. 3,294,714, 12-27-66, Cl. 260—5.

Petropoulos, John C., R. Saxon, and J. S. Noland, to Formica Corp. Resins from aliphatic and cycloaliphatic dicarboxylic acid and glycol mixtures. 3,294,620, 12-27-66, Cl. 161—232.

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Phillips, Asa R., Jr. Automobile window shield and clip assembly. 3,294,439, 12-27-66, Cl. 296—152.

Phillips, Lee V., to Gulf Oil Companies. Manufacturing esters of 1-alkoxycyclopropanecarboxylic acids. 3,294,833, 12-27-66, Cl. 260—468.

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Cottle, John E. 3,294,772.
Fols, John M. 3,293,870.
Karbosky, Joseph T., and Harper. 3,293,869.
Lupfer, Dale E., and Johnson. 3,294,648.
Pritchard, James E. 3,294,868.
Warner, Paul F. 3,294,761.
Wofford, Clinton F. 3,294,768.
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Pick, George G.: *See*—
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Picken, William. Drafting apparatus. 3,293,736, 12-27-66. Cl. 33—80.

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Pierotti, Gino J.: *See*—
Dunlop, Arthur K., Meeker, and Pierotti. 3,294,488.

Pierzina, Floyd F.: *See*—
Van Horssen, Arden D., and Pierzina. 3,295,097.

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Pillsbury Co., The: *See*—
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Pinney, George C., to A. E. Staley Mfg. Co. Moisture resistant starch base corrugating adhesive. 3,294,716, 12-27-66, Cl. 260—17.2.

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Pitkin, Courtney G., and J. J. Fahey, to Lewis-Howe Co. Apparatus for gauging and sorting articles. 3,294,235, 12-27-66, Cl. 209—104.

Pittman, Paul R., Jr., to Globe Industries, Inc. Speed regulating device. 3,293,922, 12-27-66, Cl. 74—1.5.

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Duncan, James E., and Cooper. 3,294,561.
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Laseck, Frank B., and Ressler. 3,294,518.
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Pledger, Eugene R., and F. J. Prines, to Westinghouse Electric Corp. Electrical control apparatus for inverter systems. 3,295,044, 12-27-66, Cl. 321—5.

Pleshko, Peter, to General Precision Inc. Bistable tunnel diode circuit. 3,294,986, 12-27-66, Cl. 307—88.5.

Poellet, Allan L., and V. J. Barcsak, to Champion Spark Plug Co. Ceramic sealing structure. 3,295,005, 12-27-66, Cl. 313—137.

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Gold, Nathan. 3,294,898.
Gold, Nathan. 3,294,918.

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Pommer, Horst, W. Stils, H. Hantge, and M. Rosenkranz, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Optical brightening of materials of synthetic polyesters and polyamides. 3,294,570, 12-27-66, Cl. 117—33.5.

Pommerening, Uwe A.: *See*—
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Poon, Bing T., to Allied Chemical Corp. Tris-2-mercaptoethyl isocyanurate. 3,294,796, 12-27-66, Cl. 260—248.

Poos, George I., to McNeil Laboratories, Inc. 2-cambamoyl-7-(o-2-pyridylbenzylidene)-5-norbornene-3-carboxylic acid. 3,294,769, 12-27-66, Cl. 260—240.

Popeck, Stanley P., to General Aniline & Film Corp. Deposition of a metallic coat on metal surfaces. 3,294,578, 12-27-66, Cl. 117—130.

Popoff, Ivan C., to Pennsalt Chemicals Corp. Composition and method for desiccating, defoliating and destroying plants. 3,294,522, 12-27-66, Cl. 71—2.7.

Popoff, Ivan C., to Pennsalt Chemicals Corp. Dialkyl carbamyl and thiocarbamyl phosphonic diamide acaricidal composition and method of use. 3,294,828, 12-27-66, Cl. 167—22.

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Pottier, Pierre A. Method for protection of lipids against oxidation. 3,294,623, 12-27-66, Cl. 260—398.5.

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Powell, Jonathan S., and P. Weldon, to Southern California Gas Co. Method and apparatus for inserting a tube into a pipe. 3,294,121, 12-27-66, Cl. 138—97.

Powell, William W., Jr. Desalinization of water. 3,294,640, 12-27-66, Cl. 203—10.

Powers, John B., to Union Carbide Corp. Process for developing diazotype article comprising molecular sieve with alkaline material absorbed therein. 3,294,535, 12-27-66, Cl. 96—49.

Poynter, Corbin C., to Dover Corp. Automatic dispensing nozzle. 3,294,128, 12-27-66, Cl. 141—209.

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Pratt, Richard J., to Allis-Chalmers Mfg. Co. Latent catalysts for curing epoxy resins. 3,294,749, 12-27-66, Cl. 260—47.

Precht, Walter, to United States of America, Atomic Energy Commission. Thermoelectric converter composition. 3,294,688, 12-27-66, Cl. 252—62.3.

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Prestwood, Franklin H., to United States of America, Air Force. Testing apparatus for target aircraft microwave equipment. 3,295,130, 12-27-66, Cl. 343—17.7.

Preziosi, Joseph R., to Elastic Stop Nut Corp. of America. Plastic patch, self-locking threaded fasteners. 3,294,139, 12-27-66, Cl. 151—7.

Price, Herbert P., to Celanese Coatings Co., Inc. Curing of epoxy resins with polycarboxylates, polyhydric phenols of polyhydric alcohols and, as an accelerator, an alkali metal salt. 3,294,865, 12-27-66, Cl. 260—837.

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Pritchard, Peter E., to Audio Dynamics Corp. Phonograph pick-up. 3,294,405, 12-27-66, Cl. 274—37.

Prochaska, Robert J., to General Electric Co. Polycarbonate resins modified with novolac polymers or coumarone-indene polymers. 3,294,862, 12-27-66, Cl. 260—829.

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Leduc, Joseph A. M. 3,294,686.
Leduc, Joseph A. M. 3,294,687.
Martin, John J., and Hitch. 3,294,419.
Martin, John J. 3,294,420.
Rasmussen, Robert A. 3,294,388.

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Rabelos, Nicholas A. Emergency escape ladder and amusement device. 3,294,190, 12-27-66, Cl. 182—100.

Rademakers, Petrus J., to Laboratorium voor Instrumentatie Dataweld N. V. Stabilisation system. 3,294,467, 12-27-66, 312—351.

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Ramsell, William H. Dual projection theater and console. 3,293,807, 12-27-66, Cl. 52—6.

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Randall, David I., and W. Schmidt-Nickels, to General Aniline & Film Corp. Fiber-reactive dyestuffs. 3,294,778. 12-27-66, Cl. 260—163.

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Ratway, Michael, and R. S. Wood, to Gulf Research & Development Co. Flash-point detector for pipeline operation. 3,293,905, 12-27-66, Cl. 73—36.

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Reicheneder, Franz, and K. Dury, deceased by, J. M. Dury, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. 4-nitropyrazoles. 3,294,814, 12-27-66, Cl. 260—310.

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Rosenbaum, Seymour, to Olin Mathieson Chemical Corp. Apparatus for forming rigid porous metal body. 3,293,692, 12–27–66, Cl. 18—26.
Rosenberg, Richard H., and R. S. Cooper, to Stauffer Chemical Co. Flameproof polyurethane resins. 3,294,710, 12–27–66, Cl. 260—2.5.
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Rosenfeld, Henry, to Pride Creations, Inc. Greeting display device. 3,293,783, 12–27–66, Cl. 40—61.
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Field, Philip M., and Ross. 3,294,966.
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Searight, Charles E., Alexander, Ryan, and Labino. 3,294,559.
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Ryan, John W., to Mattel Inc. Animated speaking figure toy. 3,293,795, 12–27–66, Cl. 46—118.
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Schlesinger, William A., and K. T. Lang, to F. W. Huck. Variable diameter V-belt pulley. 3,293,930, 12–27–66, Cl. 74—230.17.
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Scoright, Charles E., E. M. Alexander, J. R. Ryan, and D. Lehmo, to Cataphote Corp. Yellow glass bead compositions. 3,294,559, 12–27–66, Cl. 106—54.

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Seay, Andrew H. Feeder for nursing animals. 3,294,066, 12–27–66, Cl. 119—51.11.

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Seidel, Harold, and L. J. Varnerin, Jr., to Bell Telephone Laboratories, Inc. Frequency discriminating circulator. 3,295,073, 12–27–66, Cl. 333—1.1.

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Servadio, Robert. Lapel construction. 3,293,661, 12–27–66, Cl. 2—93.

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Shaffer, Robert V. Apparatus for controlling bird nuisance. 3,294,893, 12–27–66, Cl. 174—70.

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Siegal, Burton L., to O'Brien Mfg. Corp. Sewer cleaning machine. 3,293,681, 12–27–66, Cl. 15—104.3.

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Graham, Richard P. 3,294,047.

Sinn, William L. Gold leaf placing device. 3,294,434, 12–27–66, Cl. 294—64.

Sittenfield, Marcus. N'N'-bis(alkoxymethyl) treatment of hides. 3,294,478, 12–27–66, Cl. 8—94.33.

Sjostrom Automations, Inc.: *See*—
Sjostrom, Robert L. 3,294,395.

Sjostrom, Robert L., to Sjostrom Automations, Inc. Sheet folder. 3,294,395, 12–27–66, Cl. 270—69.

Skaptason, Joseph B. Field sprayer. 3,294,824, 12–27–66. Cl. 239—288.

Skau, Evald L., R. M. Mod, and F. C. Magne, to United States of America, Agriculture. N-oleoyl-N'-carbethoxypiperazine. 3,294,802. 12–27–66. Cl. 260—268.

Skau, Evald L., F. C. Magne, and R. R. Mod, to United States of America, Agriculture. N-acyl derivatives of cyclic imines. 3,294,806, 12–27–66, Cl. 260—294.

Skinner, Clawson N. Physiologic method and apparatus for determining mandibular relations. 3,293,748, 12–27–66, Cl. 32—19.

Skrbina, Frank, to Ford Motor Co. Overload protective device. 3,294,987, 12–27–66. Cl. 307—94.

Slaugh, Lynn H., to Shell Oil Co. Cyclic octene production. 3,294,854, 12–27–66. Cl. 260—666.

Slaugh, Lynn H., and J. H. Raley, to Shell Oil Co. Cyclohexadiene production. 3,294,855, 12–27–66, Cl. 260—666.

Slavens, Clyde M. Color trace oscillograph. 3,295,142, 12–27–66, Cl. 346—109.

Sloan, Raymond W., to Mobil Oil Corp. System for generating seismic waves. 3,294,194, 12–27–66, Cl. 181—.5.

Sloman, Arthur R., to Associated Pulp and Paper Mills Ltd. Bleaching treated wood chips. 3,294,624, 12–27–66, Cl. 162—19.

Slotterbeck, Lealia G.: *See*—
Michael, James R., Yuhas, Koenecke, and Slotterbeck. 3,294,573.

Slotterbeck, Ober C.: *See*—
Michael, James R., Yuhas, Koenecke, and Slotterbeck. 3,294,573.

Smit, Willem: *See*—
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Kuchera, Gerald J. 3,294,597.

Smith, Charles E.: *See*—
Ward, William F., and Smith. 3,293,751.

Smith, Charles J., and W. W. Higginbotham, to Monroe Auto Equipment Co. Shock absorber construction. 3,294,391, 12–27–66, Cl. 267—64.

Smith, Darcy. Hydraulic control apparatus with air purging means. 3,293,995, 12–27–66, Cl. 92—110.

Smith, David F. Synergistic decomposable set-inhibitors for plaster of Paris. 3,294,667, 12–27–66, Cl. 128—91.

Smith, Elbridge G. Finger-mounted tweezers. 3,293,958, 12–27–66, Cl. 81—42.

Smith, Frank J. Steam boiler system. 3,294,069, 12–27–66, Cl. 122—1.

Smith, Harlan M.: *See*—
Keller, George F., Sor, Smith, and De Ment. 3,293,799.

Smith, John J., to Mueller Co. Sealing means for fire hydrant actuator. 3,294,109, 12–27–66, Cl. 137—298.

Smith, Leland L., G. Greenspan, and R. Rees, to American Home Products Corp. Microbiological hydroxylation of norsteroids using aspergillus orchraceus. 3,294,646, 12–27–66, Cl. 195—51.

Smith, Lofton H. Charging, cleaning and metering apparatus. 3,293,700, 12–27–66, Cl. 19—204.

Smith, Richard B. Apparatus for sharpening obliquely beveled tool edges. 3,293,804, 12–27–66, Cl. 51—128.

Smith, Robert C.: *See*—
Tewksbury, John M., Hemphill, and Smith. 3,295,070.

Smith, Robert H., to Chrysler Corp. Vehicle braking system. 3,293,849, 12–27–66. Cl. 60—54.5.

Smith, Robert J., and O. J. Eickmann, to ACF Industries Inc. Carburetor. 3,294,374, 12–27–66, Cl. 261—23.

Smith, Robert J., to ACF Industries Inc. Carburetor. 3,294,377, 12–27–66, Cl. 261—39.

Smith, Russell G., to Continental Mfg. Co. Auxiliary, external, pressure seal for shank of plug valve. 3,294,408, 12–27–66, Cl. 277—58.

Smith, Walter J., to Johnson Service Co. Electrical humidity sensing element. 3,295,088, 12–27–66, Cl. 338—35.

Smith, Wayburn S. Prefabricated hollow building panel. 3,293,820, 12–27–66. Cl. 52—589.

Smith, William M.: *See*—
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Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A.: *See*—
Bruni, Gaetano. 3,293,696.
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Rogers, Francis R., McCombs, and Snider. 3,293,847.

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Snow, Elza. Means for supporting and lifting a trash container or the like for tilting movement. 3,294,266, 12–27–66, Cl. 214—314.

Snow, Kenneth T.: *See*—
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Snyder, Richard L., to Hughes Aircraft Co. Thin magnetic film memory system. 3,295,115, 12–27–66, Cl. 340—174.

Snyder, Richard L., to Hughes Aircraft Co. Shift register storage and driving system. 3,295,114, 12–27–66, Cl. 340—174.

Sobey, Albert J.: *See*—
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Societa Applicazioni Gomma Antivibranti "SAGA" S.p.A.: *See*—
Boschi, Antonio, and Martorana. 3,293,883.
Boschi, Antonio, and Rubietti. 3,293,882.

Societe Anonyme Glaverbel: *See*—
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Société Anonyme dite: Simca Automobiles: *See*—
Cauvin, Andre. 3,294,191.

Societe Anonyme des Etablissements: *See*—
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Societe Chauvin Arnoux: *See*—
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Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone: *See*—
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Defandre, Rene. 3,293,990.

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Ernst, Adolphe O. G. 3,294,323.

Societe Noxa, Societe Anonyme de droit Francais: *See*—
Renoult, Marius. 3,293,914.

Soldatos, Anthony C., to Union Carbide Corp. Non-heat-reactive, higher-alkylphenol resins as rubber tackifiers. 3,294,866, 12–27–66, Cl. 260—845.

Solheim, Karsten. Gauge and measuring device for golf clubs. 3,293,752, 12–27–66, Cl. 33—174.

Solomon, Frank, to Yardney International Corp. Electrochemical cell. 3,294,590, 12–27–66, Cl. 136—120.

Solomon, James J.: *See*—
Bayne, Peter D., and Solomon. 3,294,289.

Sommer, Siegmund: *See*—
Thesing, Jan, Gams, Schulte, and Sommer. 3,294,635.

Sommers, Norman A. Steam boiler cleaner and method for cleaning steam boilers. 3,294,584, 12–27–66, Cl. 134—22.

Sor, Kamil: *See*—
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Soubier, Leonard D. (deceased, by O. M. Soubier, executrix), and A. B. Swain, Jr., to Owens-Illinois Inc. Method of and apparatus for producing non-thermal currents in a body of molten glass. 3,294,509, 12–27–66, Cl. 65—134.

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Soubier, Leonard D., and Swain. 3,294,509.

South, Howard D. Power-driven hand-held polishing and cleaning device. 3,293,678, 12–27–66, Cl. 15—29.

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Southwick, Max B.: *See*—
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Spady, Richard J., to Honeywell Inc. Electrical apparatus. 3,295,126, 12–27–66, Cl. 340—347.

Sparing, Klaus, and W. Tilse, to The United States Time Corp. Vibratory frequency standard for a timekeeping device. 3,293,845, 12–27–66, Cl. 58—23.

Spaulding, Jerry L., to New England Envelope Mfg. Co. Envelope. 3,294,313, 12–27–66, Cl. 229—85.

Spencer, Robert E.: *See*—
Jurosek, Max L., and Spencer. 3,294,413.

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Gehman, Roland P., Koch, and McCarty. 3,293,835.
Hollyday, James H. 3,293,831.

Spies, George R., Jr., to Air Reduction Co., Inc. Plasma torch electrode and assembly. 3,294,953, 12–27–66, Cl. 219—121.

Spitsberg, Albert E., to Lincoln Mfg. Co. Inc. Seal construction. 3,294,274, 12–27–66, Cl. 220—46.

Sprague Electric Co.: *See*—
Fedows-Fedotowsky, Leonid. 3,294,583.

Sprague, James W., and F. Veatch, to The Standard Oil Co. Electrolytic process of making cyanogen halides. 3,294,657, 12–27–66, Cl. 204—101.

Sprincs, Michael: *See*—
Suzuki, Fred K., and Sprincs. 3,294,101.

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Fried, Josef, and Rosenthal. 3,294,834.

Stadler, Hans, H. Gawlick, and H. Bendler, to Dynamit Nobel Aktiengesellschaft. Ignition device. 3294,020, 12–27–66, Cl. 102—39.

Stalnes, Alfred J., to Harris-Intertype Corp. Sheet feeding mechanism having a single control member for actuating a suction, air pressure, and pump means. 3,294,396, 12–27–66, Cl. 271—26.

Stalcup, Robert E., to The Magnovox Co. Electronic time compression device. 3,295,107, 12–27–66, Cl. 340—172.5.

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Standard Oil Co., The: *See*—
Kawahara, Fred K. 3,294,501.
McNinch, Herbert A., and Karli. 3,294,684.
Sprague, James W., and Veatch. 3,294,657.

Standard Packaging Corp.: *See*—
Richter, Joseph. 3,294,301.

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Ohl, David, and Davis. 3,293,693.

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Kelley, Omer J., and MacCurdy. 3,294,045.

Stange, Hugo: *See*—
Lutz, Martin R., Nowlin, and Stange. 3,294,873.

Stanghi, Cino. Device for remote controlling of radio and television receivers. 3,294,901, 12–27–66, Cl. 178—6.

Stanke, Walter, to H. Koppers, G.m.b.H. Conveyor. 3,293,776, 12–27–66, Cl. 34—194.

Stanko, George L., to Richardson-Merrell Inc. Artificial sweetener-arabinogalactan composition and edible foodstuff utilizing same. 3,294,544, 12–27–66, Cl. 99—79.

Stanley, Max W., to General Electric Co. Rotor assembly. 3,294,364, 12–27–66, Cl. 253—77.

Stanley, William L.: *See*—
Ikeda, Robert M., Stanley, Vannier, and Rolle. 3,294,550.

Stanray Corp.: *See*—
Manyek, Leonard F. 3,294,253.

Stansfield, John D., and C. B. Lancaster, to Shell Oil Co. Grease composition. 3,294,683, 12–27–66, Cl. 252—28.

Stanton, Leo F., J. R. Stewart, and D. E. Ripley, to United Shoe Machinery Corp. Shoe transfer mechanism. 3,293,677, 12–27–66, Cl. 12—1.

Starr, John R.: *See*—
Hervey, Laurence R. B., and Starr. 3,294,581.

Stauff, Emile, and R. Fluer, to Nord-Aviation Societe Nationale de Constructions Aeronautiques. Firing turret for teleguided missiles. 3,293,985, 12–27–66, Cl. 89—1.815.

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Arnekley, Duane R., and Curtis. 3,294,520.
Clark, Norman J., and McCollough. 3,294,712.
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Stoffey, Donald G., Maxwell, Gutman, Fancher, and Hallett. 3,294,627.
Szabo, Karoly. 3,294,845.
Szabo, Karoly, and Freiberg. 3,294,841.

Stearns, Robert O., and D. J. Weintritt, to National Lead Co. Process of drilling a well with a drilling fluid containing a starch product. 3,294,681, 12–27–66, Cl. 252—8.5.

Stedfeld, Rowland L., to General Motors Corp. Filament wound container having reinforced opening. 3,293,860, 12–27–66, Cl. 60—263.

Steele, Eugene K.: *See*—
Noster, Charles F., Nichols, and Steele. 3,294,123.

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Hagner, Lawrence R., and Stegner. 3,294,950.

Steier, William J., Jr.: *See*—
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Stein, Gary, R. C. Hare, and W. A. Mohl, to Applied Power Industries, Inc. Trailer transmission. 3,293,942, 12–27–66, Cl. 74—664.

Steinberg, Charles A.: *See*—
Paine, Larry W., and Steinberg. 3,295,109.

Steingas, Richard R.: *See*—
Middlesworth, Tommy A., Findlay, Steingas, and Knapp. 3,294,418.

Stell, Edward J. Center punch micrometer. 3,293,763, 12–27–66, Cl. 33—191.

Steppan, Hartmut: *See*—
Sus, Oskar, and Steppan. 3,294,533.

Sterling Drug Inc.: *See*—
Rosi, David, and Peruzzotti. 3,294,803.

Stern, Morton, to Motorola, Inc. Peak-to-peak A.C. signal measuring system using two complementary transistors having capacitor output means and a common input to derive proportional positive and negative peak voltages. 3,295,060, 12–27–66, Cl. 324—103.

Steunenberg, Robert K.: *See*—
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Stevens, Donald R., and R. L. Sweet, to Gulf Research & Development Co. Organic compositions containing a metallo cyclopentadienyl. 3,294,685, 12–27–66, Cl. 252—49.7.

Stewart, Derrel N., and E. Olson, to Buffalo Forge Co. Fan construction. 3,294,315, 12–27–66, Cl. 230—134.

Stewart, George M.: *See*—
McClure, Malcolm C., McClellan, Stewart, and Bullock. 3,294,342.

Stewart, James R.: *See*—
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Stiles, John C.: *See*—
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Stillman, Stephen L., Jr., to Woods Hole Oceanographic Institution. Mechanical fastener for electrical cables with an insert having mutually conforming undulant surfaces. 3,294,894, 12–27–66, Cl. 174—79.

Stilz, Walter: *See*—
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St. John, Douglas F., to Owens-Illinois Inc. Process and apparatus for electrostatically printing on hot substrate. 3,294,017, 12–27–66, Cl. 101—114.

Stock, Hans J.: *See*—
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Stockton, Thomas R., to Ford Motor Co. Infinitely variable speed transmission. 3,293,945, 12–27–66, Cl. 74—740.

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Gray, Stephen B., and Stoddard. 3,295,105.

Stoffey, Donald G., R. C. Maxwell, A. D. Gutman, L. W. Fancher, and J. T. Hallett, to Stauffer Chemical Co. Killing pests with applications of carbamyl phosphates. 3,294,627, 12–27–66, Cl. 167—22.

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Stone-Wallwork Ltd.: *See*—
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Stoner, Eugene M. Magazine for belted ammunition. 3,293,986, 12–27–66, Cl. 89—34.

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Kohan, Leonard R., and Storace. 3,293,895.

Storchheim, Samuel, to Alloys Research & Mfg. Corp. Flash sintering. 3,294,530, 12–27–66, Cl. 75—214.

Strader, George C., to Wham-O Mfg. Co. Formable sheet having pile fabric secured to both surfaces. 3,293,796, 12–27–66, Cl. 46—156.

Street, Donald A.: *See*—
Bull, Douglas T., Street, and Wagner. 3,294,436.

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Strom, James R.: *See*—
Beuther, Harold, Schmid, and Strom. 3,294,674.

Strong, John W.: *See*—
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Struven, Warren C., to Varian Associates. Electron tubes containing gas below critical pressure. 3,295,013, 12–27–66, Cl. 315—168.

Stuhlmiller, Max, G. Bottiger, and C. Heid, to Cassella Farbwerke Mainkur Aktiengesellschaft. Method of dyeing cellulosic textiles with mixtures of thiosulfonic acid-sulfur dyes and reactive dyes and compositions thereof. 3,294,474, 12–27–66, Cl. 8—25.

Stuts, Sherla L., to United States of America, Air Force. Initiator, mechanical exploding device. 3,294,021, 12–27–66, Cl. 102—70.

Su, Eugene C.: *See*—
Gans, Manfred, Davis, and Su. 3,294,773.

Suchy, George E., to General Motors Corp. Process of making impregnated paper filter elements and composition therefor. 3,294,582, 12–27–66, Cl. 117—155.

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Dolen, Cecil W., and Sullivan. 3,294,341.

Sullivan, Robert E.: *See*—
Pail, Daniel R., and Sullivan. 3,294,612.

Sulzmann, Erich J. Tubular double drum type counterflow washing machine for textiles, especially laundry. 3,293,891, 12–27–66, Cl. 68—58.

Sulkowski, Theodore S., to American Home Products Corp. 3,4-dihydro-6-phenyl-1,5-benzodiazocin-2-ones. 3,294,782, 12–27–66, Cl. 260—239.3.

Summers, Willard. Safety means for protecting a rider in an aircraft crash. 3,294,346, 12–27–66, Cl. 244—121.

Sun Oil Co.: *See*—
Donovan, Roy L. 3,294,679.
Hodges, James W. 3,294,173.
Hardy, William C., Shepard, and Reddick. 3,294,164.
Young, Elnar T. 3,294,957.

Sundblom, Leif J., to Rockwell Mfg. Co. Metering pump. 3,294,032, 12–27–66, Cl. 103—160.

Sundquist, Lennart A.: *See*—
Barr, Harold N., and Sundquist. 3,294,698.

Sunray DX Oil Co.: *See*—
Loft, John T., Nesbitt, and York. 3,294,660.

Superior Electric Co., The: *See*—
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Superior Packaging Equipment Corp.: *See*—
Farnow, Arthur D. 3,293,827.
Farnow, Arthur D. 3,293,998.

Sus, Oskar, and H. Schafer, to Keuffel & Esser. Photosensitive diazo compositions. 3,294,542, 12–27–66, Cl. 96—91.

Sus, Oskar, and H. Steppan, to Azoplate Corp. Presensitised printing plate and process of developing printing plate. 3,294,533, 12–27–66, Cl. 96—33.

Susskind, Herbert, W. W. Becker, and M. W. Maresca, deceased, by M. Maresca, administratrix, to United States of America, Atomic Energy Commission. Controlled unloading of geometrically ordered packed beds. 3,294,645, 12–27–66, Cl. 176—73.

Sutton, Betty: *See*—
Cain, Carl C., and Sutton. 3,294,136.

Suvor, Tosun, and M. H. Windell. Wheel drive and suspension arrangement for transport vehicle. 3,294,190, 12–27–66, Cl. 180—27.

Suzuki, Fred K., and M. Sprincz, to Delta Research, Inc. Immersion treatment apparatus. 3,294,101, 12–27–66, Cl. 134—58.

Svrchek, Joseph G., to W. R. Grace & Co. Coating compositions comprising unsaturated hydrocarbon polymers and a drying oil. 3,294,565, 12–27–66, Cl. 106—265.

Swain, Arthur B.: *See*—
Soubier, Leonard D., and Swain. 3,294,509.

Swanberg, Melvin E.: *See*—
Antul, John J., and Swanberg. 3,294,891.

Swanson, Edward W., to Admiral Corp. Hinge structure. 3,294,906, 12–27–66, Cl. 178—7.9.

Swanson, Ronald R., to General Mills, Inc. Quaternary ammonium metal compounds. 3,294,827, 12–27–66, Cl. 260—429.

Swanson, Ronald R., to General Mills, Inc. α-Hydroxy oximes containing alkenyl radicals. 3,294,842, 12–27–66, Cl. 260—566.

Sweet, Ronald L.: *See*—
Stevens, Donald R., and Sweet. 3,294,685.

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Swift & Co.: *See*—
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Johnson, Keith L. 3,294,703.

Swift, Harvey C., to Kelsey-Hayes Co. Automatic brake adjuster. 3,294,201, 12–27–66, Cl. 188—79.5.

Swingline, Inc.: *See*—
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Sylvania Electric Products Inc.: *See*—
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Brick, Donald B., and Pick. 3,295,110.
Burdick, Glen A., and Collins. 3,295,001.
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Symes, William F.: *See*—
Shallenberger, Clarence D., Jr., and Symes. 3,294,797.

Syncrofio, Inc.: *See*—
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Syntex Corp.: *See*—
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Cross, Alexander D., and Harrison. 3,294,786.

Szabo, Karoly, to Stauffer Chemical Co. Chlorinated sulfones. 3,294,845, 12–27–66, Cl. 260—607.

Szabo, Karoly, and A. H. Freiberg, to Stauffer Chemical Co. Complexes of halogenated acetone-oximes. 3,294,841, 12–27–66, Cl. 260—566.

Szwarguiski, Jesse L., to ACF Industries Inc. Carburetor. 3,294,375, 12–27–66, Cl. 201—23.

TRW Inc.: *See*—
Clark, Hubert M., Drutchas, and Becker. 3,294,029.
Eichenberger, Hans P. 3,294,989.

TV Bank Equipment Corp.: *See*—
McClure, Malcolm C., McClellan, Stewart, and Bullock. 3,294,342.

Taccone, Arthur R. Vacuum molding apparatus. 3,293,703, 12–27–66, Cl. 22—26.

Taini, John, to Bell & Howell Co. Developer tank guide wall structure. 3,294,003, 12–27–66, Cl. 95—94.

Takagi, Kachio: *See*—
Hitomi, Keiichi, Takagi, Nomura, and Okada. 3,293,719.

Tamer, Ergun, O. Schneider, and M. Quaedvlieg, to Farbenfabriken Bayer Aktiengesellschaft. Process for the continuous coloring of silk, wool and/or synthetic polyamide fibres or materials containing such fibres. 3,294,477, 12–27–66, Cl. 8—85.

Tanabe, Masato, to Schering Corp. Novel process for the conversion of a sapogenin to a 16-dehydro steroid and intermediates produced thereby. 3,294,785, 12–27–66, Cl. 260—239.55.

Tanji, Hideo: *See*—
Tokuhisa, Hiroshi, and Tanji. 3,294,857.

Tanner, David, to E. I. du Pont de Nemours and Co. Cross-linked polycarbonamide. 3,294,755, 12–27–66, Cl. 260—78.

Tarcsy-Hornoch, Zoltan, to W. K. Rosenberry. High voltage power supply. 3,295,047, 12–27–66, Cl. 321—15.

Tartan Industries Inc.: *See*—
Buell, Eugene F. 3,294,186.

Task Corp.: *See*—
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Taylor, Joseph W.: *See*—
Abercrombie, Bolling A., and Taylor. 3,294,111.

Taylor, Norman W., to Addressograph-Multigraph Corp. Rotary printing machine. 3,294,019, 12–27–66, Cl. 101—144.

Taylor, Thomas G., Jr., to Dayton Precision Corp. Mold apparatus for making sub-flush commutators. 3,293,694, 12–27–66, Cl. 18—36.

Teleflex Inc.: *See*—
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34	3,294,976	37	3,293,778	37	3,294,511	37	3,294,982	42	3,294,111	46	3,293,791
	3,294,978		3,293,815		3,294,518		3,294,999		3,294,113		3,293,821
	3,294,989		3,293,818		3,294,519		3,295,004		3,294,119		3,293,862
	3,294,995		3,293,829		3,294,522		3,295,006		3,294,122		3,293,909
	3,294,998		3,293,831		3,294,523		3,295,018		3,294,163		3,293,955
	3,295,002		3,293,835		3,294,524		3,295,033		3,294,164		3,294,052
	3,295,003		3,293,894		3,294,560		3,295,036		3,294,167		3,294,175
	3,295,007		3,293,896		3,294,561		3,295,042		3,294,170		3,294,257
	3,295,016		3,293,904		3,294,562		3,295,044		3,294,171		3,294,269
	3,295,034		3,293,905		3,294,575		3,295,077		3,294,172		3,294,407
	3,295,038		3,293,906		3,294,584		3,295,083		3,294,173		3,294,512
	3,295,040		3,293,908		3,294,601		3,295,084		3,294,194		3,294,626
	3,295,045		3,293,926		3,294,628		3,295,094		3,294,219		3,295,131
	3,295,089		3,293,947		3,294,640		3,295,126		3,294,277	47	3,294,713
35	3,293,819		3,293,971		3,294,646		3,295,140		3,294,440		3,294,744
	3,293,869		3,293,976		3,294,649	38	3,294,137		3,294,543		3,294,767
	3,293,870		3,294,005		3,294,655	39	3,293,675		3,294,545	48	3,293,686
	3,293,877		3,294,006		3,294,670		3,293,722		3,294,567		3,293,699
	3,293,881		3,294,009		3,294,674		3,293,723		3,294,677		3,293,836
	3,293,918		3,294,015		3,294,680		3,294,843		3,294,697		3,293,884
	3,294,024		3,294,040		3,294,685	40	3,293,763		3,294,714		3,293,898
	3,294,174		3,294,042		3,294,686		3,293,800		3,294,761		3,293,927
	3,294,648		3,294,063		3,294,687		3,294,272		3,294,907		3,293,941
	3,294,652		3,294,069		3,294,693		3,294,398		3,294,949		3,293,942
	3,294,768		3,294,123		3,294,743	41	3,293,741		3,295,027		3,294,033
	3,294,772		3,294,129		3,294,745		3,293,757		3,295,066		3,294,131
	3,294,860		3,294,176		3,294,748		3,293,844		3,295,118		3,294,138
	3,294,868		3,294,186		3,294,751		3,293,854		3,295,132		3,294,248
	3,294,885		3,294,197		3,294,753		3,293,910		3,295,137		3,294,289
	3,294,972		3,294,210		3,294,757		3,294,300		3,295,142		3,294,318
	3,295,035		3,294,229		3,294,778		3,294,341	43	3,293,864		3,294,319
	3,295,058		3,294,263		3,294,782		3,294,346	44	3,293,724		3,294,378
36	3,294,079		3,294,308		3,294,789		3,294,351	45	3,293,708		3,294,438
	3,294,144		3,294,338		3,294,791		3,294,494		3,294,066		3,294,553
	3,294,151		3,294,386		3,294,793		3,294,532		3,294,162		3,294,597
	3,294,181		3,294,390		3,294,795		3,294,832		3,294,514		3,294,599
	3,294,189		3,294,400		3,294,805		3,294,877		3,294,614		3,294,608
	3,294,247		3,294,419		3,294,817	42	3,293,663		3,294,621		3,294,749
37	3,293,661		3,294,420		3,294,821		3,293,725		3,294,689		3,294,813
	3,293,691		3,294,435		3,294,847		3,293,789		3,294,735		3,294,899
	3,293,695		3,294,453		3,294,849		3,293,808		3,294,752		3,294,936
	3,293,703		3,294,463		3,294,895		3,293,867		3,294,756		3,294,954
	3,293,732		3,294,478		3,294,905		3,293,919		3,294,796		3,294,974
	3,293,735		3,294,482		3,294,924		3,293,959		3,294,799		3,295,017
	3,293,743		3,294,484		3,294,948		3,293,963		3,294,983		3,295,025
	3,293,768		3,294,502		3,294,957		3,294,108		3,295,103	51	3,293,983
	3,293,770		3,294,507		3,294,968						

Design Patents

4	206,542	12	206,520	21	206,544	29	206,534	34	206,553	37	206,563
	206,559		206,541	22	206,519		206,556		206,560	38	206,527
	206,561		206,548		206,523	31	206,532	36	206,536		206,547
	206,566		206,554		206,524		206,535	37	206,529	41	206,531
6	206,522	13	206,555	24	206,552		206,557		206,537	46	206,539
	206,551	14	206,518	28	206,550	34	206,521		206,540		206,562
9	206,565	20	206,545	29	206,525		206,538		206,546	48	206,564
11	206,549		206,558		206,526		206,543				

Plant Patents

4	2,694	4	2,695	4	2,697	19	2,698	20	2,696

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 27, 1966 Volume 833 Number 4

TRADEMARKS
NOTICES

Notice of Tentative Recordation of a Trade Name

[T.D. 66-268]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., Nov. 29, 1966

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

"GIAN DEL VALENTINO" is a trade name used by Gian Del Valentino, an Italian knitting company, located at Via Vittoria Colonna 8, Milan, Italy, and Via Circonvallazione 97, Broni (Pavia), Italy. The trade name is used in connection with ladies' knitted suits (three pieces and two pieces), ladies' knitted dresses, and ladies' knitted coats. The merchandise is manufactured in Italy.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C. 20226, before the expiration of 30 days after December 30, 1966, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after December 30, 1966, of any opposition proceedings.

Until 45 days after December 30, 1966, all articles of foreign manufacture of the descriptions above stated, bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

(Signed) EDWIN F. RAINS,
Acting Commissioner of Customs.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 69,233 (ABSORBINE), Wilbur F. Young, Liniments and embrocations; Reg. No. 69,736 (ABSORBINE, JR. AND DESIGN), same, Liniment, filed Oct. 28, 1966, D.C., W.D. Mich. (Grand Rapids), Doc. 5465, *W. F. Young, Incorporated v. L. Perrigo Company, Inc.*

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1966

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	27,254
Date of oldest new application	Sept. 13, 1965
Date of oldest amended application (filing date)	Sept. 11, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	9-12-66	3-8-66
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 26, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	12-22-65	9-12-66
Renewals (All Classes)	9-8-66	
Sec. 12(c) Publications (All Classes)	9-27-66	

Applications filed during the month of October—2,265

Registrations Issued 449—No. 820,938 to No. 821,386
Renewals Issued 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.50 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 89,786. (See Reg. No. 49,322.)

Reg. No. 280,509 (KENT), The Kent Brush Sales Corporation, Toothbrushes, hairbrushes, hand brushes, bath brushes, etc.; **Reg. No. 322,623** (KENT AND DESIGN), Cosby Brush & Import Company, Inc., Shaving and toilet soaps; **Reg. No. 417,568** (KENT OF LONDON ETC. AND DESIGN), G. B. Kent & Sons, Limited, Toothbrushes, hairbrushes, nail brushes, hand brushes, etc., filed July 23, 1965, D.C., S.D.N.Y., Doc. 65/2270, *G. B. Kent & Sons, Ltd. et ano.* v. *Kent 5th Avenue, Inc., also known as Kent Creations, Ltd.* Order enjoining defendant Kent 5th Avenue.

Reg. No. 315,277 (LASCCO in script), Los Angeles Smoking & Curing Co., Smoked, salted, spiced, and canned fish; **Reg. No. 561,677** (LASCCO (in script) AND DESIGN), same, Canned, spiced, smoked, salted and barbecued fish, herring in sour cream, etc., filed Oct. 24, 1966, D.C. Ariz. (Phoenix), Doc. 6152 Phx., *Los Angeles Smoking & Curing Co., Inc.* v. *Allen Foods, Inc.*

Reg. No. 322,685 (FRANCISCAN), Gladding, McBean & Co., Pottery—namely, tableware and art pottery; **Reg. No. 536,945**, same, Tableware of fine china and pottery; **Reg. No. 720,858**, same, Wall and floor tile—namely, ceramic tile and mosaic tile, filed Oct. 12, 1966, D.C., S.D. Calif. (San Diego), Doc. 66–80–C, *International Pipe & Ceramics Corp.* v. *Oneida, Ltd. et al.*

Reg. No. 389,813 (BECOTIN), Eli Lilly and Company, Medicinal preparation composed of nicotinic acid and vitamins, useful among other things, in the treatment of pellagra, many forms of anemia, and any type of vitamin B deficiency; **Reg. No. 584,576** (MI-CEBRIN), same, Medicinal preparation of vitamin-mineral supplements used for prophylactic or therapeutic treatment of vitamin and mineral deficiencies in the diet; **Reg. No. 694,666** (MI-CEBRIN T), same, Therapeutic vitamin-mineral useful in speeding recovery by meeting increased nutritional demands, filed Sept. 6, 1966, D.C.N.J. (Newark), Doc. 897–66, *Eli Lilly and Company* v. *American Vitamin Products, Inc. et al.* Consent judgment for injunction Nov. 14, 1966.

Reg. No. 362,623. (See Reg. No. 280,509.)

Reg. No. 380,578 (LUSTEROID), Lusteroid Container Company, Inc., Bottles, vials, and tubes made of plastic, thermoplastic, and thermosetting materials, for holding liquids, powders, and pastes, filed Dec. 10, 1964, D.C.N.J. (Newark), Doc. 1101–64, *Lusteroid Container Company, Inc.* v. *Beckman Instruments, Inc.* Consent order of dismissal Oct. 19, 1966.

Reg. No. 417,568. (See Reg. No. 280,509.)

Reg. No. 513,573 (LIGHTGUARD), The Electric Storage Battery Company, Electrical emergency lighting apparatus, filed Sept. 15, 1966, D.C., S.D. Tex. (Houston), Doc. 66–H–595, *The Electric Storage Battery Company* v. *Lightguard Electronics Mfg. Co., Inc.* Action dismissed Nov. 7, 1966.

Reg. No. 537,669 (PNEUMAFIL), Pneumafil Corporation, Apparatus and parts therefor for picking up and collecting broken ends of textile materials on spinning frames, etc.; **Reg. No. 621,164** (PNEUMACARD), same, Auxiliary equipment for textile machines; **Reg. No. 645,662** (PNEUMACLEAR), same, Auxiliary cleaning equipment for textile machinery and the like; **Reg. No. 754,557** (PNEUMAFILTER), same, Auxiliary equipment for textile machines—namely, apparatus for removing and collecting foreign matter from an airstream used in the processing of textiles, and the components of such equipment, filed Oct. 4, 1966, D.C., W.D.N.C. (Charlotte), Doc. 2180, *Pneumafil Corporation* v. *Pneumapulse Company, Inc. et al.*

Reg. No. 532,722 (AMERICAINE in script), Americaine, Inc., Pharmaceutical preparations used in the control of pain or itching and for the antiseptic and therapeutic treatment of injured, inflammed or irritated skin surfaces and mucous membranes, filed Oct. 18, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1882, *Arnar-Stone Laboratories, Inc.* v. *Medical Supply Co. et al.*

Reg. No. 579,679 (MEDCOLATOR in script), Medco Products Co., Electrical treatment machine for the stimulation of muscles by an electric current applied through pad electrodes; **Reg. No. 722,146** (MEDCO-SONLATOR in script), Medco Products Co., Inc., assignee of Medco Electronics Company, Inc., Combined electrical and ultrasonic medical therapy apparatus; **Reg. No. 793,449** (MEDCO), Medco Products Co., Inc., Electrical equipment in the medical field for diagnostic and therapeutic purposes for use in connection with the body, etc., filed Oct. 28, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1972, *Medco Products Company, Inc.* v. *Medco Hospital Supply Corp. et al.*

Reg. No. 561,677. (See Reg. No. 315,277.)

Reg. No. 584,576. (See Reg. No. 389,812.)

Reg. No. 586,945. (See Reg. No. 323,685.)

Reg. No. 594,474 (QUAKER MAID AND DESIGN), Quaker Maid Kitchens, Inc., Kitchen equipment comprising base cabinets, upper cabinets, tall cabinets, etc., filed Aug. 5, 1965, D.C.N.J. (Newark), Doc. 854–65, *Quaker Maid Kitchens, Inc.* v. *Van Beusekom Kitchens, Inc.* Consent decree for injunction Oct. 3, 1966.

Reg. No. 602,662 (HYREL), Sprague Electric Company, Electrical capacitors and resistors; **Reg. No. 744,710**, same, Electrical circuit components and assemblies therefor, particularly capacitors, resistors and interference filters, filed Nov. 24, 1961, D.C., S.D.N.Y., Doc. 61/4160, *Armel Electronics, Inc.* v. *Sprague Electric Company.* Final judgment—defendant's Trademark Registration Nos. 602,662 and 744,710 held valid and infringed; plaintiff's complaint in its entirety dismissed; plaintiff enjoined Aug. 15, 1966. (Note: Reg. No. 633,899, owned by plaintiff was listed on original notice of filing, but not mentioned in final judgment.)

Reg. No. 608,451 (PINCH), Haig & Haig Limited, Scotch whisky; **Reg. No. 670,723** (DESIGN OF BOTTLE), same, Whisky, filed Dec. 10, 1965, D.C., S.D.N.Y., Doc. 65/3772, *Haig & Haig, Ltd.* v. *Meradel Products, Inc.* Final consent judgment; defendant enjoined Oct. 3, 1966.

Reg. No. 617,131 (VOLKSWAGEN), Volkswagenwerk G.m.b.H., Vehicles—namely, automobiles and trucks, aircraft, boats, and parts and accessories for automobiles, namely, radiators, direction indicators, etc.; **Reg. No. 631,649** (VW AND DESIGN), same; **Reg. No. 653,695** (VW), same, filed Sept. 22, 1966, D.C., E.D. Ky. (Lexington), Doc. 1727, *Volkswagenwerk Aktiengesellschaft* v. *Bugg's Used Cars, et al.*

Reg. No. 619,844 (CHROMALLIZING), Chromalloy Corporation, Applying chrome metal to ferrous surfaces to render the treated metals resistant to steam erosion and corrosion, filed Oct. 17, 1966, D.C., N.D. Tex. (Dallas), Doc. 3–1720, *Chromalloy American Corporation (formerly Chromalloy Corp.)* v. *Chromco, Inc.*

Reg. No. 621,164. (See Reg. No. 527,089.)

Reg. No. 631,649. (See Reg. No. 617,131.)

Reg. No. 640,431 (YE OLDE TAVERN), Cheese Products Co., Inc., Cheese, mayonnaise, salad dressing, pickle relish, lemon beverage mix, cherries, and olives, filed July 9, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1187, *Cheese Products Co., Inc.* (shown on amended and supplemental complaint: *Ye Olde Tavern Cheese Products, Inc.*) v. *Planters Peanuts Division, Standard Brands Incorporated.* Order dismissing complaint and counterclaim Oct. 4, 1966.

Reg. No. 645,662. (See Reg. No. 527,089.)

Reg. No. 652,766 (TAFFY'S (in script) OF CALIFORNIA), Taffy Original Designs, Inc., Dresses, tunics, blouses, skirts, sweaters, etc., filed Mar. 8, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c345, *Taffy Original Designs, Inc. et al.* v. *Taffy's, Inc.* Defendant's motion for summary judgment granted; order complaint dismissed; order motion for cancellation of trademark denied Oct. 31, 1966.

Reg. No. 653,695. (See Reg. No. 617,131.)

Reg. No. 662,256 (SEA-FARE), Sea Fare Restaurant, Inc., doing business as Sea Fare, Salad dressing and coffe, filed Dec. 8, 1963, D.C., E.D. Mich. (Detroit), Doc. 24666, *Sea Fare Restaurant, Inc.* v. *Sea Fare Foods, Inc.* Decision holding that defendant has not committed any act of trademark infringement Sept. 27, 1966. Order granting defendant's motion for summary judgment and denying plaintiff's motion for summary judgment; action dismissed Oct. 10, 1966.

Reg. No. 670,723. (See Reg. No. 608,451.)

Reg. No. 684,668. (See Reg. No. 359,812.)

Reg. No. 709,677 (A.D.T.), American District Telegraph Company, Central station electric protection service including fire alarm service, watchmen's supervisory service, etc.; **Reg. No. 710,508**, same, filed Oct. 7, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1809, *American District Telegraph Co.* v. *Reuben H. Donnelley Corp. et al.*

Reg. No. 768,769 (AVIS), Avis, Inc., Vehicle rental and leasing services, filed Oct. 18, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–967, *Avis Rent-A-Car System, Inc.* v. *Avis Airmotive, Inc.*

Reg. No. 710,508. (See Reg. No. 709,677.)

Reg. No. 720,858. (See Reg. No. 322,685.)

Reg. No. 722,146 (FB AND DESIGN), Egidio Bonella, doing business as Fratelli Bonella Via Marconi, Pictures and greeting cards, filed Oct. 13, 1966, D.C., S.D.N.Y., Doc. 66/3332, *Fratelli Bonella* v. *Plastic Seal Products Co. et al.*

Reg. No. 722,149. (See Reg. No. 579,679.)

Reg. No. 742,596 (PLUS WHITE AND DESIGN), Hazel Bishop, Inc., assignee of Harold Keobrick, doing business as Arco Co., Dentifrice, filed Oct. 6, 1966, D.C., S.D.N.Y., Doc. 66/3242, *Hazel Bishop, Inc.* v. *Cecilia Products, Ltd.*

Reg. No. 744,710. (See Reg. No. 602,662.)

Reg. No. 754,557. (See Reg. No. 537,669.)

Reg. No. 762,414 (WATER PIK), Aqua-Tec Corporation, Readily portable oral hygiene appliance utilizing a pulsed jet of water for massaging the gums and cleaning spaces adjacent the teeth; **Reg. No. 765,673** (WATER PIK AND DESIGN), same; **Reg. No. 800,634** (AQUA PIK), same; **2,227,155**, J. W. Mattingly, METHOD AND APPARATUS FOR ORAL HYGIENE, filed Oct. 19, 1966, D.C. Colo. (Denver), Doc. 66–C–550, *Aqua Tec Corporation* v. *Montgomery Ward & Co., Incorporated.*

Reg. No. 763,769 (ENGINEERING OPPORTUNITIES), Press-Tech, Inc., Magazine, filed Apr. 15, 1966, D.C.N.J. (Trenton), Doc. 299–66, *Press-Tech, Inc.* v. *Resource Publications, Inc.* Order of dismissal without prejudice Oct. 26, 1966.

Reg. No. 765,673. (See Reg. No. 762,414.)

Reg. No. 782,435 (WONDER WAND in script), Greenbriar Manufacturing Company, Inc., Portable electric lights for use in factories, garages, and the construction industry, filed Feb. 10, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c339, *Manufacturing & Trading Co. "VO"* v. *Greenbrier Manufacturing Company, Inc. et al.* Cause dismissed as to defendant Wm. F. Behringer July 1, 1966. Consent decree against J. I. Case Co., Gordon H. Beer, and Complete Reading Electric Co. Sept. 22, 1966. Cause dismissed as to Greenbriar Mfg. Co. Oct. 21, 1966; case dismissed as per order of Oct. 21, 1966.

Reg. No. 789,228 (INNOCENT BEIGE), Clairol Incorporated, Hair tinting, dyeing, and coloring preparation, filed Oct. 13, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–969, *Clairol, Inc.* v. *The Gillette Co.*

Reg. No. 792,449. (See Reg. No. 579,679.)

Reg. No. 805,737 (NICE 'N EASY), Clairol Incorporated, Hair tinting, dyeing, and coloring preparation, filed Oct. 10, 1966, D.C., S.D.N.Y., Doc. 66/3301, *Clairol Incorporated* v. *Helene Curtis Industries, Inc.*

Reg. No. 807,800 (DESIGN OF A BOTTLE REPRESENTING A HUMAN FIGURE), Foremost Sales Promotions, Inc., Retail liquor store services, filed Aug. 2, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1422, *Foremost Sales Promotions, Inc.* v. *L. P. Liquors, Inc. et al.* Consent judgment enjoining defendants Oct. 12, 1966.

Reg. No. 809,694. (See Reg. No. 762,414.)

Reg. No. 812,670 (DECORATOR INDUSTRIES), Decorator Industries, Inc., Curtains and draperies, filed Oct. 31, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–1029, *Decorator Industries, Inc.* v. *I & B Bedspread Co., Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.106.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 201,293. Lynch Corporation, Detroit, Mich. Filed Sept. 4, 1964.

COX

Owner of Reg. No. 548,975.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Waste Treatment Equipment—Namely, Equipment for Treating Cyanide Wastes and Chromium Wastes; and Pumping Apparatus for Pumping Liquids.

First use September 1958.

Class 26—Measuring and Scientific Appliances

For Fluid Controlling and Measuring Indicating Apparatus—Namely, Flowmeters, Flow Indicators, Fluid Flow Metering Nozzles, Fluid Flow Straighteners, and Flowmeter Calibrators; Apparatus for Measuring and Testing—Namely, Electronic Weighing Equipment, Temperature Indicators, Speedometers, Force and Thrust Measuring Apparatus, Viscometers, Hydrometers; Aircraft Engine and Accessory Test Equipment—Namely, Engine and Accessory Analysing and Performance Test Equipment, Instrument Test Equipment; Automotive Test Equipment—Namely, Drive Train, Engine, Chassis and Accessory Analysing and Performance Test Equipment, and Test Equipment for Dynamically Testing Alignment and Brakes; and Electrical and Electronic Equipment for Measuring, Testing and Laboratory Use—Namely, Frequency Converters, Frequency Counters, Pulse Totalisers, Electronic Timers for Performing a Measuring Function.

First use June 1944.

Class 31—Filters and Refrigerators

For Contamination Control Apparatus—Namely, Filters, Liquid Purifiers, and Fluid Filtration Equipment for Filtering Fluids for Industrial and Processing Operations.

First use April 1963.

SN 212,473. Cenco Instruments Corporation, Chicago, Ill. Filed Feb. 23, 1965.

cenco

Owner of Reg. Nos. 178,274, 607,884, and others.

Class 2—Receptacles

For Plastic and Metal Vessels and Bottles, and Metal Boxes.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Animal Cages.

Class 4—Abrasives and Polishing Materials

For Abrasive in the Form of Paper, Cloth, and Powders, and Grinding Wheels and Belts.

Class 5—Adhesives

For Adhesives for General Scientific Laboratory Use; and Marking and Friction Tapes.

Class 6—Chemicals and Chemical Compositions

For Organic and Inorganic Chemical Compounds, Solutions and Reagents and Test Paper for Use in Scientific Laboratories for Testing, Educational and Experimental Purposes.

Class 11—Inks and Inking Materials

For Inks for Scientific Recording Instruments and for Glass-Marking.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves.

Class 14—Metals and Metal Castings and Forgings

For Metals in the Form of Rod, Sheet, Foil, Powder, Balls and Shot; Mercury; All for Scientific Use.

Class 15—Oils and Greases

For Vacuum Pump Oils; Lubricating Oils and Greases for Use With Scientific Laboratory Apparatus.

Class 16—Protective and Decorative Coatings

For Acid Resistant Paints and Finishes.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical and Electrically Operated Devices and Test Equipment and Accessories and Parts Therefor—Namely, Basic Electricity and Electronics Trainer, Instructor Demonstrator for Basic Electronics and A.M. Radio, F.M. Radio, Receiver and Transmitter Panel Set, F.M. Radio Receiver and Transmitter Trainer, Transistor Demonstrator, Transistor Trainer Unit, Instructor Demonstrator and Student Trainer for Pulse Circuits, Electronic Measuring Instruments, Signal Generators, Electronic Computers, Micro-Wave Apparatus and Micro-Wave Accessories, Audio Frequency Oscillator, Microphones and Head Phones, Electric Power Supplies, Electrical Discharge Tubes, Electrical Motor Driven Rotator, Stroboscope, Electric Synchronous Spot Timer, Audio Amplifier and Speaker, Wheatstone Bridge, Decade Capacitor, Experimental Capacitor, Standard Capacitors, Electromagnets, Permanent Magnets, Electrically Operated Flux Meters, Electrically Operated Sonar and Ultrasonics Demonstrator, Standard Cells, Electrically Operated X-Y Recorders, Choke Coil and Electrical Resistance Apparatus, Electroplating Apparatus, All for Use in Demonstration and Experimentation Relating to Physical Science Phenomena in Scientific Laboratories and Institutions of an Educational, Medical or Industrial Nature; Electrical Hot Plates.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pumps and Pump Accessories and Valves for Use Therewith; General Carpentry and Machine Shop Hand Tools; Glass-Blower's Tools; Tools Principally for Class-Room and Scientific Laboratory Use—Namely, Wrenches, Miniature Jack Screw, Hand Operated Adjustable Supports, Spatulas, Mechanically Operated Gas Lighters of the Spark Type, Tongs, Forceps, Clamps, Round, Triangular and Rattail Files, Glass Cutters, Mechanical Cork Press, Cork Borers, Hand Operated Drill Type Cork Boring Machines, Transplanting Trowel, Pruning Shears, Knives, Scissors, Hand Operated Homogeniser, Timers, Snips, Shears, Pliers, and Allen Wrench Sets; Fluid Operated Motors; Ball Mills; Machines for Metallurgical Sample Preparation; Electrical Motor Driven Centrifuges; and Typewriters.

Class 26—Measuring and Scientific Appliances

For Drafting Tools; Dissecting Equipment; Measuring Instruments, Implements, Apparatus and Accessories Therefor for Use in Scientific Laboratories and Institutions for Testing, Demonstration, Educational and Research Purposes in the Industrial, Biological, Physical, Chemical, Agricultural and School Science Fields—Namely, Balances and Weights; Thermometers and Hydrometers; Instruments for Gas and Pollution Analysis, Hydrogen Ion (pH) Analysis, Industrial Testing Spectrophotometry, Colorimetry, Refinery Analyses, and Bacteriological Analyses, Microscopic Analyses, Analyses in Physics and Chemistry, Chromatographic Analyses, Soil Testing; Physics, Chemical, Nuclear, Electronic, Electrical, Optical and Metallurgical Measuring Apparatus and Equipment; Apparatus for the Demonstration of Scientific Phenomena; Rulers and Scales; Protractors, Micrometers, Calipers; Pressure Gauges; Magnifiers and Projectors for Visual Educational Purposes; Incubators and Sterilisers for Laboratory Use; Porcelain and Silicaware for Scientific Laboratory Use; Scientific Laboratory Glassware; Unprepared Microscopic Slides; Molecular Models; Insect, Botanical and Micrological Collections; Anatomical, Biological and Botanical Models; Prepared Microscopic Slides Individually and in Sets Arranged for Educational Use; Live and Preserved Botanical and Zoological Cultures and Specimens; Transparent Mathematical and Geometrical Models; Models for Demonstration of Scientific Phenomena; Lenses; Prisms; Gas and Alcohol Burners for Scientific Laboratory Use; Laboratory Ovens, Laboratory Combustion and Heat Treating Furnaces; Laboratory Lamps and Light Sources; Laboratory Carts; Celestial and Terrestrial Globes; Electrical and Mechanical Timers; Electric Projection Equipment for Projecting Slides and Other Material; Mirrors for Scientific and Educational Purposes; Centrifuges, Refrigerators and Refrigerated Centrifuges for Laboratory Use; and Personnel Protective Equipment—Namely, Protective Eye Glasses, Goggles, Head Shields, Face Shields, and Protective Masks.

Class 27—Horological Instruments

For Stop Watches.

Class 29—Brooms, Brushes, and Dusters

For Laboratory Brushes.

Class 32—Furniture and Upholstery

For Cabinets, Crib, Bed, Adult, Twin, Crank Multi-Height Bed, Overbed Tables, Hospital Mattresses, Cubicle Sections, Garment Rack, Cafeteria Type Pedestal Tables, Chairs, Desks and Desk Chairs, Transfer Wheel Chairs, and Chart Carriers.

Class 33—Glassware

For Glass Bottles and Glass Bottle Stoppers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Distillation Apparatus; Constant Temperature Equipment—Namely, Ovens, Combustion, Crucible and Muffle Furnaces and Controllers Therefor, Incubators, Autoclaves, Water Baths, and Thermo-Regulators.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

Rubber Hose.

Class 36—Musical Instruments and Supplies

For Metronomes, Tuning Forks, Gamut Bells, Organ Pipes and Whistles, and Vibrating Bars.

Class 37—Paper and Stationery

For Filter Paper; Graph Paper; Blueprint Paper; Charts for Recording Instruments; and Gummed and Perforated Labels.

Class 38—Prints and Publications

For Charts, Films, Film-Strips, and Film Transparencies Mounted in the Form of Slides for Educational Purposes in the Natural and Physical Sciences; Periodicals, Catalogs, Bulletins, and Laboratory Experiment Instructional Publications.

Class 39—Clothing

For Personnel Protective Equipment—Namely, Laboratory Coats, Aprons, and Gloves.

Class 44—Dental, Medical, and Surgical Appliances

For Analytical Instruments for Use in Medical Laboratories for Bacteriological and Clinical Testing Purposes; Bedpans, Urinals, Basins, Stethoscopes, Sphygmomanometers, Surgical Supplies and Apparatus and Allied Hospital Equipment; Syringes; and Sterilisers.

Class 50—Merchandise Not Otherwise Classified

For Cork, Rubber, and Plastic Bottle Stoppers; Aquaria and Aquarium Supplies and Accessories.

First use on or about Aug. 1, 1954.

SN 221,232. Guy-Claude Jacob, Autigny-le-Grand, Haute Marne, France. Filed June 16, 1965.

SPÉCILAIT

Priority claimed under Sec. 44(d) on French Reg. No. 371, dated Jan. 20, 1965 (Saint Dizier); Natl. Inst. No. 243,203.

Class 18—Medicines and Pharmaceutical Preparations

For Vitamins and Minerals and Medicated Feeds for Calves.

Class 46—Foods and Ingredients of Foods

For Meat, Fish, Fowl and Game; Livestock Feeds and Dog and Cat Foods; Food Extracts of Protein-Containing Substances, Including Meat and Fish, and Food Preserves; Fresh and Powdered Eggs, Fluid and Dry Milk and Lacto-Serum, Edible Oils and Fats; Coffee, Tea, Cocoa, Sugar, Rice, Tapioca, Manioca, Wheat and Bud-Wheat, Barley, Maize; Flours Made of Grains; Bread, Biscuits and Cakes, Including Oil Linseed Cakes, Earth Nut Cakes and Soja Cakes; Pastry and Confectionery; Edible Ices, Honey, Molasses and Syrups; Yeast, Salt, Mustard, Pepper, Vinegar, Sauces, and Spices.

SN 223,936. Roach-Appleton Manufacturing Company, South Bend, Ind. Filed July 22, 1965.

BM

Owner of Reg. No. 840,116.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Connectors.

First use Dec. 1, 1935.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Indenter Tools for Applying Electrical Connectors.

First use Jan. 1, 1957.

SN 225,000. Aqua-Marine Mfg. Limited, Toronto, Ontario, Canada. Filed Aug. 5, 1965.



The mark consists of the letters "AM" and design. Priority claimed under Sec. 44(d) on Canadian application filed May 4, 1965; Reg. No. 143,369, dated Jan. 7, 1966.

Class 7—Cordage

For Rope and Wire Rope.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Cigar Lighters.

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Distress Flares.

Class 12—Construction Materials

For Sealing Compounds.

Class 13—Hardware and Plumbing and Steam Fitting Supplies

For Rope Guides, Clamps and Eyes, Pennant Poles, Chocks, Cleats, Handles, Oar Locks, Fender Holders, Flag Pole Sockets, Sinks, Taps, Swivels, Safety Snaps, Hinges, Pipe Fittings for Marine Use, Boat Hooks, Step Plates, Door Latches, Marine Water Closets, Rigging Screws, Pins and Links, and Shackles.

Class 14—Metals and Metal Castings and Forgings

For Anchors.

Class 15—Oils and Greases

For Gasoline, Motor Oil, and Motor Greases.

Class 19—Vehicles

For Steering Wheels, Steering Assemblies for Outboard and Inboard Motors, Convertible Tops and Fittings Therefor, Windshields and Fittings Therefor, Ventilators, Propellers, Railings and Fittings Therefor, Couplers and Hitches for Trailers, Built-In Landing Gear Jacks, Boat Hull Launching Rollers for Trailers, Mirrors, Boat Fenders, Boarding Ladders, Fishing Rod Racks, Seats, and Buoys.

Class 21—Electrical Apparatus, Machines, and Supplies

For Search Lights, Bow, Stern Clearance and Navigation Lights, Light Fixtures, Electric Horns, Ignition Switches, Battery Boxes, Batteries, Trailer Lamps and Fittings, Electrical Fittings for Marine Use, Battery Chargers, and Marine Table Lamps.

Class 22—Games; Toys, and Sporting Goods

For Water Skis, Water Ski Tow Rope, Bridles and Handles, and Water Ski Harness.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Inboard and Outboard Motor Control Pulleys, Winches, Bilge Pumps, Fire Extinguishers, Chlorinators, and Air Horns.

Class 26—Measuring and Scientific Appliances

For Rudder Angle Indicators, Speedometers, Tachometers, Depth Finders, Vapor Detectors, Compasses, and Sunglasses.

Class 29—Brooms, Brushes, and Dusters

For Paint Brushes.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Stoves.

Class 39—Clothing

For Yachting Caps and Boat Shoes.

Class 50—Merchandise Not Otherwise Classified

For Numbers and Letters, Reflectors, Flags and Pennants.

SN 231,356. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed Oct. 23, 1965.



Class 37—Paper and Stationery

For Stationery—Namely, Note Paper and Envelopes.
First use July 1, 1965.

Class 51—Cosmetics and Toilet Preparations

For Sachet.
First use Feb. 1, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 208,714. Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy. Filed Dec. 23, 1964.

VITREDIL

Priority claimed under Sec. 44(d) on Italian application filed July 31, 1964; Reg. No. 167,134, dated Nov. 26, 1964.

For Plastic Sheets for Building, Decorating, and Lighting Purposes.

SN 219,012. Marble Products Company of Ga., Atlanta, Ga. Filed May 17, 1965.

HERCULANEUM BOTTICINO

The word "Botticino" is disclaimed apart from the mark as shown.

For Chips and Flakes of Marble for Use in the Manufacture of Terrasso.

First use at least as early as May 1955.

SN 225,936. The Dow Chemical Company, Midland, Mich. Filed Aug. 18, 1965.

REDIFRAC

Owner of Reg. Nos. 584,015, 788,902, and others.
For Thickeners for Addition to Fluids for the Treatment of Wells and Underground Earth Formations.
First use Feb. 22, 1965.

SN 233,986. Lucille S. Antles, d.b.a. L. C. Antles, Pollen, Wenatchee, Wash. Filed Dec. 6, 1965.

MILL-O-IZED

For Live Pollen.
First use on or about Apr. 15, 1949.

SN 244,485. Hugh S. Stoller, d.b.a. Stoller Processing Co., Akron, Ohio. Filed Apr. 27, 1966.

ASTRO-26

For Core Wash and Mold Coating.
First use Dec. 28, 1964.

Class 2—Receptacles

SN 223,722. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed July 19, 1965.

SWEET SAVER

Owner of Reg. No. 796,589.
For Syrup Dispenser.
First use June 7, 1965.

SN 228,749. Reusche-De Grace, San Francisco, Calif. Filed Sept. 27, 1965.

SECURITY BLANKET

For Holders for Savings Bank Books, Credit Plan Books, Deposit Books, Checkbooks, and Insurance Policy Jackets.
First use Aug. 25, 1965.

SN 229,288. Rexall Drug and Chemical Company, Los Angeles, Calif. Filed Oct. 4, 1965.

EL REXENE

Owner of Reg. No. 764,487.
For Plastic Food Containers.
First use Sept. 9, 1965.

SN 231,466. Robert K. Naf and Gordon J. Naf (partnership), d.b.a. Highland Printers & Plastic Molders, Pasadena, Calif. Filed Oct. 28, 1965.

HI-PLAS

For Molded Plastic Containers for Consumer Packaging.
First use on or before Dec. 31, 1958.

SN 232,254. West Virginia Pulp and Paper Company, New York, N.Y. Filed Nov. 5, 1965.

CORRACOOL

For Corrugated Paperboard Boxes.
First use July 5, 1946.

SN 232,920. Keyes Fibre Company, Waterville, Maine. Filed Nov. 18, 1965.

POCKET-PAK

For Molded Pulp Packing Trays and Lids.
First use Oct. 22, 1965.

SN 233,333. The Folger Coffee Company, Cincinnati, Ohio. Filed Nov. 26, 1965.

TOTE-ABOUT

For Reusable Containers Whose Initial Use Is for Packaging Coffee.
First use Oct. 28, 1965.

SN 233,705. The Finn Industries, Chicago, Ill. Filed Dec. 1, 1965.

SHOW-OFF

For Transparent Plastic Cartons.
First use Nov. 1, 1965.

SN 235,563. Wilbert W. Haase Co., Forest Park, Ill. Filed Dec. 30, 1965.

MONARCH CUSTOM

No claim is made to the word "Custom" apart from the mark as shown. Owner of Reg. Nos. 420,694, 773,422, and others.
For Burial Vaults.
First use on or about May 1, 1965.

SN 238,489. Bopp-Decker Incorporated, Birmingham, Mich. Filed Feb. 10, 1966.

DINEX

For Plastic Tableware.
First use Feb. 9, 1966.

SN 252,061. Sinclair & Powell Proprietary Limited, Huntingdale, Victoria, Australia. Filed Aug. 10, 1966.

Rota

Owner of Australian Reg. No. 152,000, dated Dec. 15, 1958.
For Metal Boxes and Receptacles—Namely, Tool Boxes and Bins, Letter Boxes, Filing Boxes, Picnic Boxes, Portable Fuel Storage Boxes, Receptacles for Kitchen Refuse, Milk Bottle Boxes, Containers for Pegs, and Shoe and Boot Receptacles.

Class 4—Abrasives and Polishing Materials

SN 241,217. Epic Chemicals, Inc., Brooklyn, N.Y. Filed Mar. 17, 1966.

SNAP

For Floor Wax and Finish.
First use Feb. 18, 1966.

Class 5—Adhesives

SN 252,150. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 11, 1966.

DUPONT

Owner of Reg. Nos. 161,936, 511,942, and 568,836.
For Pressure Sensitive Tapes.
First use Mar. 10, 1966.

Class 6—Chemicals and Chemical Compositions

SN 216,003. K. J. Quinn & Co., Inc., Malden, Mass. Filed Apr. 7, 1965.

PERMALUSTRE

For Dressing for Tanned Leather.
First use at least as early as January 1945.

SN 216,004. K. J. Quinn & Co., Inc., Malden, Mass. Filed Apr. 7, 1965.

EASY MAY

For Dressing for Tanned Leather.
First use Feb. 3, 1965.

SN 216,005. K. J. Quinn & Co., Inc., Malden, Mass. Filed Apr. 7, 1965.

WEATHERFOIL

For Dressing for Tanned Leather.
First use Feb. 3, 1965.

SN 222,563. Epic Chemicals, Inc., Brooklyn, N.Y. Filed July 2, 1965.

VAN-DYKE

The name "Van-Dyke" is fanciful and does not identify any particular individual.
For Pine Oil Disinfectant for Use in Institutions, Hotels, and Homes.
First use August 1955.

SN 228,208. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 20, 1965.

DICOM

For Terpenes.
First use on or about Feb. 25, 1964.

SN 228,662. Dexter Chemical Corporation, Bronx, N.Y. Filed Sept. 27, 1965.

DELVANOL

For Finishing Agents Which Impart Properties Such as Lubricity, Softness, Flexibility, Water Repellency, Stiffness, Dullness and Resistance to Static Electrical Charge, for Use in the Textile, Pulp and Paper Industries.
First use March 1947.

SN 228,663. Dexter Chemical Corporation, Bronx, N.Y. Filed Sept. 27, 1965.

AMPITOL

For Finishing Agents Which Impart Properties Such as Lubricity, Softness, Flexibility, Water Repellency, Stiffness, Dullness and Resistance to Static Electrical Charge, for Use in the Textile, Pulp and Paper Industries.
First use November 1948.

SN 228,664. Dexter Chemical Corporation, Bronx, N.Y. Filed Sept. 27, 1965.

DEXENE

For Finishing Agents Which Impart Properties Such as Lubricity, Softness, Flexibility, Water Repellency, Stiffness, Dullness and Resistance to Static Electrical Charge, for Use in the Textile, Pulp and Paper Industries.
First use March 1947.

SN 231,191. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

TRULANOL

Owner of Reg. No. 630,679.
For Arterial Embalming Preparation.
First use January 1956.

SN 235,977. Hamblet & Hayes Co., Salem, Mass. Filed Jan. 7, 1966.

TEK-FLOC

For Chemicals—Namely, Liquid Sodium Aluminate.
First use on or about Oct. 6, 1965.

SN 236,886. Paul H. Jamieson, d.b.a. Jamieson Products Co., Dallas, Tex. Filed Jan. 13, 1966.

HIBADYE

For Dye and Dye Controlling Formulations for Dyeing Colloid Coated Surfaces.
First use Nov. 4, 1965.

SN 236,609. Electric Reduction Company of Canada, Ltd., Toronto, Ontario, Canada. Filed Jan. 18, 1966.

ERCO CHEMICALS

The word "Chemicals" is disclaimed apart from the mark as shown. Owner of Canadian Reg. No. 119,962, dated Oct. 28, 1960; and U.S. Reg. No. 710,060.
For Chemicals—Namely, Elemental Phosphorous and Phosphoric Acids, Inorganic Phosphates of Sodium, Calcium and Potassium, Inorganic Chlorates of Sodium and Potassium, Phosphoric Esters and Their Salts and Compounds Containing Any of the Previously Recited Materials.

SN 236,809. General Aniline & Film Corporation, New York, N.Y. Filed Jan. 19, 1966.

ANSCOCOLOR

Owner of Reg. No. 402,828.
For Photographic Color Processing Chemicals.
First use Sept. 17, 1965.

SN 240,146. Apogee Chemical, Inc., Richmond, Calif. Filed Mar. 4, 1966.

APOSET

For Industrial Chemicals—Namely, Specialty Organic and Inorganic Chemicals and Chemical Intermediates.
First use Sept. 14, 1965.

SN 240,862. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 14, 1966.

FILIRAN

For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Feb. 2, 1966.

SN 243,299. Armour Pharmaceutical Company, Chicago, Ill. Filed Apr. 13, 1966.

REHLOSO

For Low Sodium Aluminum Hydroxide Gel.
First use on or prior to Mar. 30, 1966.

SN 243,300. Armour Pharmaceutical Company, Chicago, Ill. Filed Apr. 13, 1966.

REHOGEL

For Aluminum Hydroxide Gel.
First use Mar. 30, 1966.

SN 243,301. Armour Pharmaceutical Company, Chicago, Ill. Filed Apr. 13, 1966.

REHSORPTAR

For Aluminum Hydroxide Gel.
First use on or prior to Mar. 30, 1966.

SN 245,162. Gordon L. Schneider, d.b.a. The Central Chemical Co., Fresno, Calif. Filed May 9, 1966.

SA-1

For Chemical Used in the Stabilization of Soil.
First use July 16, 1963.

SN 247,211. FMC Corporation, New York, N.Y. Filed June 3, 1966.

AVIBEST

For Microcrystalline Silicate.
First use Apr. 28, 1966.

SN 247,306. Armour and Company, Chicago, Ill. Filed June 6, 1966.

ARMOUR

Owner of Reg. No. 542,329.
For Ammonia.
First use on or prior to Feb. 26, 1966.

SN 247,360. Hercules Glue Co., Ltd., d.b.a. Colloidal Products Corporation, Sausalito, Calif. Filed June 6, 1966.

TRYAD

For Adjuvant for Agricultural Sprays.
First use May 24, 1966.

SN 254,217. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Sept. 12, 1966.

ELVACE

Owner of Reg. Nos. 507,021, 813,258, and others.
For Copolymers of Vinyl Acetate and Ethylene.
First use Aug. 12, 1966.

SN 254,975. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 23, 1966.

GLYTEL

For Laboratory Reagent for Glucose Determination.
First use Aug. 30, 1966.

SN 255,011. Monsanto Company, St. Louis, Mo. Filed Sept. 23, 1966.

WALBOP

For Herbicide and Herbicide-Insecticide Combinations.
First use Apr. 4, 1966.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 239,554. Ten Ring Mfg. Corp., New York, N.Y. Filed Feb. 24, 1966.

RIFLE-MATE

For Firearm Equipment—Namely, a Portable, Removable Gun Support Designed To Steady a Rifle or Other Suitable Portable Weapon When Same Is Being Fired.
First use Jan. 16, 1966.

SN 253,092. Colt's Inc., Hartford, Conn. Filed Aug. 25, 1966.

AR-15

For Rifles.
First use May 11, 1964.

Class 12—Construction Materials

SN 222,900. Air Products and Chemicals Inc., Allentown, Pa. Filed July 8, 1965.

apache

Owner of Reg. No. 787,415.
For Urethane Foam Insulation—Namely, Rigid Urethane Foam Board.
First use Mar. 18, 1964.

SN 224,755. K-S-H Plastics, Inc., Kirkwood, Mo. Filed Aug. 2, 1965.

K-LUX

For Acoustical and Light Transmitting Suspended Ceiling Systems, Comprising Grid Systems and Decorative Composition Lighting and Ceiling Panels and the Essential Hardware Therefor, Sold as a Unit; and Plastic Architectural and Decorator Panels in Various Patterns and Colors for Use as Shutters, Room Dividers, Door Trim, Shower Doors, Wall Covering, and the Like Which Are Normally Sold Through Building Product Channels of Distribution.
First use Sept. 11, 1963.

SN 228,629. Carboline Company, St. Louis, Mo. Filed Sept. 27, 1965.

For Seamless Resilient Surfacing Compositions for Wood, Metal, Concrete Walls, Floors, Ceilings, and the Like.
First use Sept. 9, 1965.

SN 230,946. Einar Svensson, Seattle, Wash. Filed Oct. 21, 1965.

HAIDA HIDE

For Prefabricated Wood Cabin.
First use Oct. 26, 1964.

SN 232,691. The Georgia Marble Company, Atlanta, Ga. Filed Nov. 15, 1965.

Marble top..

For Rock Roofing Aggregate.
First use at least as early as Feb. 26, 1965.

SN 232,692. The Georgia Marble Company, Atlanta, Ga. Filed Nov. 15, 1965.

Marble top..

For Rock Roofing Aggregate.
First use at least as early as Feb. 26, 1965.

SN 234,631. Dur-O-Wal National, Inc., Cedar Rapids, Iowa. Filed Dec. 15, 1965.

SPIDER-FORM

For Ties, Clips, Clamps, and Panels for Use in Concrete Walls.
First use Oct. 20, 1965.

SN 235,040. Inland Homes Corporation, Piqua, Ohio. Filed Dec. 16, 1965.

INLAND HOMES

No registration rights are claimed for the word "Homes" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof. Owner of Reg. No. 626,905.
For Prefabricated Homes.
First use Mar. 11, 1961.

SN 236,951. United States Plywood Corporation, New York, N.Y., assignee of Allied Building Components, Inc., Tacoma, Wash. Filed Jan. 21, 1966.

JET SET

For Bifold Door Units.
First use Mar. 1, 1963.

SN 241,729. Anchor Sales Corporation, Brooklyn, N.Y. Filed Mar. 24, 1966.

ANCHOR-PLY

For Prefinished Plywood Panels.
First use April 1964.

SN 241,785. L & H Lumber Co., Sutherlin, Oreg. Filed Mar. 24, 1966.

TRU-WELD

For Lumber.
First use on or about Jan. 2, 1966.

SN 243,450. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Apr. 14, 1966.

For Refractory Material Used in the Lining of Industrial Furnaces.
First use at least as early as Oct. 30, 1964.

SN 244,649. American Forest Products Corporation, San Francisco, Calif. Filed May 2, 1966.

BOND-DECK

Owner of Reg. No. 630,266.
For Panelized Lumber.
First use Feb. 15, 1966.

SN 244,796. P. M. Barger Lumber Co., d.b.a. Barger Millwork Co., Statesville, N.C. Filed May 3, 1966.

ARKITEK

For Window Units and Door Units for Buildings.
First use Feb. 15, 1966.

SN 246,262. Brooks-Willamette Corporation, Portland, Oreg. Filed May 23, 1966.

FlorPINE

For Particleboard, Produced in Sheets and Used as an Underlayment for Floors and for Other Purposes.
First use on or about Apr. 26, 1966.

SN 246,796. Larsen Products Corporation, Bethesda, Md. Filed May 27, 1966.

CRETE-LOX

For Curing Compound for Coating Concrete Floors and the Like.
First use 1960.

SN 247,308. Asbestos Products and Fabricators, Los Angeles, Calif. Filed June 6, 1966.

PEB-ROCK

For Rock and Aggregate Coated Building Panels.
First use Nov. 16, 1965.

SN 256,041. Martha Turi and Associates, Inc., Eastchester, N.Y. Filed Oct. 10, 1966.

CRYSTALICS

For Decorative Plastic Panels.
First use Mar. 24, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 214,692. Phifer Wire Products, Tuscaloosa, Ala. Filed Mar. 22, 1965.

For Woven Wire Screen or Cloth Having Flat Wires in One Direction Woven With Round Wires in the Other Direction To Block Out Part of the Heat and Glare.
First use Feb. 15, 1963.

SN 230,726. Western Newell Mfg. Co., Freeport, Ill. Filed Oct. 20, 1965.

FIRST FAMILY IN DRAPERY HARDWARE

No rights are claimed in the words "Drapery Hardware" apart from the mark as shown.
For Drapery Hardware Products.
First use June 25, 1965.

SN 231,544. Continental Oil Company, Ponca City, Okla. Filed Oct. 24, 1965.

THE PIPE WITH THE STRIPE

For Plastic Pipe.
First use about 1954.

SN 237,896. Wayne Manufacturing Company, Staatsburg, N.Y. Filed Feb. 2, 1966.

WAYNE-CLAD

For Coated Metal Cookware.
First use Jan. 10, 1966.

SN 245,451. Aluminum Specialty Company, Manitowoc, Wis. Filed May 12, 1966.

CHILTON ALUMINUM

The Word "Aluminum" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 673,072, 793,899, and 795,442.
For Cooking Utensils—Namely, Combination Pan Sets, Covered Sauce Pans, Covered Sauce Pots, Drip Coffee Makers, Fry Pans, and Percolators.
First use June 1965.

SN 245,626. Ulrich W. Stoll and Mira Stoll, Ann Arbor, Mich. Filed May 13, 1966.

STOLLOCK

For Lock Nuts.
First use at least as early as Jan. 1, 1958.

SN 246,563. Grand Automotive Products, Inc., Chicago, Ill. Filed May 25, 1966.

SUPER-SEAL

For Clamps for Automobile Mufflers.
First use May 3, 1966.

Class 15—Oils and Greases

SN 233,923. Marathon Oil Company, Findlay, Ohio. Filed Dec. 3, 1965.

Old Dutch

For Gasoline and Motor Oil.
First use Dec. 31, 1929.

SN 255,168. Pacific Candle Company, Hayward, Calif. Filed Sept. 27, 1966.

CHEF

For Candles.
First use Feb. 9, 1966.

Class 16—Protective and Decorative Coatings

SN 196,884. Metalife Limited, Harrogate, York, England, by change of name from Metalife Liquid Metals Limited, Harrogate, York, England. Filed July 1, 1964.

METALIFE

Owner of British Reg. Nos. 734,939 and 737,493, dated Oct. 12, 1954 and Dec. 22, 1954, respectively.
For Zinc Galvanizing Solutions, Paints and Preservatives Against Rust for the Protection of Steel and the Like Metals Against Corrosion.

SN 220,188. Artex Hobby Products, Inc., Lima, Ohio. Filed June 2, 1965.

"ROLL-ON"

For Paint in Ball Point Tube for Making Decorative Designs on Fabrics, Metal, Glass, Wood, Paper, and the Like.
First use Aug. 15, 1963.

SN 230,503. Badger Manufacturing Corporation, Chicago, Ill. Filed Oct. 19, 1965.

KANDY Ripple

For Spray-Type Paint for Use on Wood and Metal and Engine Parts and Accessories.
First use Oct. 18, 1965.

SN 235,183. The Glidden Company, Cleveland, Ohio. Filed Dec. 23, 1965.

GLID-COOL

Owner of Reg. Nos. 134,658, 717,343, and others.
For Enamels.
First use Oct. 12, 1959.

SN 236,780. Clyde R. Ryan, d.b.a. Ryan Paint Company, Redwood City, Calif. Filed Jan. 18, 1966.



The mark is lined for green and silver.
For Paints—Namely, Interior and Exterior Primers and Finishes, Wood and Metal Primers, Metallic Paints, Emulsion Paints, Backing and Dipping Paints, Blockout Sign Finishes, Marine Paints, Stucco and Masonry Sealers, Fluorescent Paints, Specification Primers, and Finish Coats; Varnishes; Enamels—Namely, Outdoor Advertising Bulletin Enamels, Sash and Trim, Interior and Exterior, Marine, Drum and Equipment and Specification Enamels; Emulsions—Namely, Interior and Exterior Acrylic, P.V.A., Vinyl and Latex Paints, Primers and Sealers; Colors-In-Oil, Thinners, and Driers.
First use July 18, 1963.

SN 243,552. Elliott Paint & Varnish Co., Chicago, Ill. Filed Apr. 15, 1966.

CRAFTEEK

For Decorative Stains.
First use on or about Jan. 25, 1965.

SN 243,746. C. A. Woolsey Paint & Color Co., Inc., New York, N.Y. Filed Apr. 18, 1966.

SEA-MATE

For Spar Varnish.
First use Mar. 4, 1966.

SN 243,754. Agate Lacquer Manufacturing Co., Inc., Long Island City, N.Y. Filed Apr. 19, 1966.

AGATEEN ACQUATIC

Owner of Reg. No. 794,333.
For Water Base Lacquer.
First use Mar. 11, 1966.

SN 243,972. Evr-Gard Coatings Corporation, Los Angeles, Calif. Filed Apr. 21, 1966.

ELAST-A-BOND

For Interior and Exterior House Paint.
First use on or about Dec. 8, 1965.

SN 256,037. American Lava Corporation, Chattanooga, Tenn. Filed Oct. 10, 1966.

ALSICOAT

For Ceramic Coating for Metals.
First use Sept. 23, 1966.

Class 17—Tobacco Products

SN 229,249. Jamestown Leaf Tobacco Co., Inc., Richmond, Va. Filed Oct. 4, 1965.



For Leaf Tobacco Purchased From Warehouse Floor and Subsequently Processed for Use as Pipe Tobacco, Cigarette Tobacco, Snuff, Cigar Filler, and Chewing Tobacco or Resold to Manufacturers in Bundle, Scrap, or Whole-Leaf Form for Export Purposes.
First use Aug. 31, 1965.

SN 239,671. Siboney Cigars, Inc., Tampa, Fla. Filed Feb. 25, 1966.

SIBONEY

For Cigars.
First use Aug. 18, 1965.

Class 18—Medicines and Pharmaceutical Preparations

SN 187,607. Pepsinic Seltzer Corporation, Worcester, Mass. Filed Feb. 27, 1964.

PEPSINIC SELTZER

For Medicinal Preparation for the Relief of Upset Stomach, Acid Indigestion and Heartburn, Due to Excess Gastric Acidity.
First use on or about Oct. 10, 1916.

SN 239,871. Beecham Group Limited, d.b.a. Beechams of St. Helens, Brentford, Middlesex, England. Filed Mar. 1, 1966.

DIOCALM

Owner of British Reg. No. 876,665, dated Mar. 9, 1965.
For Preparation for the Control of Diarrhea.

SN 239,923. Muro Pharmacal Laboratories, Inc., Quincy, Mass. Filed Mar. 1, 1966.

MURO OPHTHALMICS

The word "Ophthalmics" is disclaimed apart from the mark as shown. Owner of Reg. No. 753,587.
For Ophthalmic Preparations.
First use September 1965.

SN 241,354. Mallard, Incorporated, Detroit, Mich. Filed Mar. 18, 1966.

PREDISAL

For Medicinal Preparation for the Relief of Pain.
First use Jan. 16, 1961.

SN 247,922. Horton & Converse, d.b.a. Professional Drug Products, Los Angeles, Calif. Filed June 13, 1966.

TETRA-PRO

For Tetracycline Hydrochloride Crystals in Capsules.
First use on or about Feb. 1, 1966.

Class 19—Vehicles

SN 237,892. Velocidad, Inc., d.b.a. Fiberfab, Sunnyvale, Calif. Filed Feb. 2, 1966.

AZTEC

For Automobile Bodies.
First use June 1964.

SN 238,055. Daybrook-Ottawa Corporation, Ottawa, Kans. Filed Feb. 4, 1966.

SPACE-MISER

For Truck Tractors of the Fifth Wheel Type for Terminal Operations.
First use Dec. 6, 1965.

SN 238,088. Karpak Company, Minneapolis, Minn. Filed Feb. 4, 1966.

TRAVELER

For Enclosed Luggage Carriers for Mounting on Car Tops, Bar Type Luggage Carriers for Mounting on Car Tops, Porch Attachments for Station Wagons and Attachable Car Window Screens.
First use May 31, 1956.

SN 238,427. Hammersley Inc., Brighton, Mich. Filed Feb. 9, 1966.

ROBIN HOOD

For Travel Trailers and Parts Thereof.
First use July 1965.

SN 238,524. Golden Crown Products Co., Inc., d.b.a. Canaveral Supply Co., Jacksonville, Fla. Filed Feb. 10, 1966.

CANAVERAL

For Mobile Homes—Namely, Campers.
First use Dec. 10, 1965.

SN 239,039. The Frigikar Corporation, Dallas, Tex. Filed Feb. 17, 1966.

TEMPKING

For Air Conditioning Units for Automotive Vehicles.
First use June 11, 1965.

SN 239,130. Doughboy Industries, Inc., New Richmond, Wis. Filed Feb. 18, 1966.

ESCORT

For Motor Vehicle Floor Mats.
First use July 27, 1965.

Class 20—Linoleum and Oiled Cloth

SN 233,567. American Biltrite Rubber Co. Inc., Trenton, N.J. Filed Nov. 30, 1965.

AMTICO

Owner of Reg. Nos. 385,013 and 808,389.
For Resilient Coverings of Rubber and Asphalt for Floors and Walls.
First use Oct. 7, 1964; July 1, 1923, as to the mark "Amtico."

SN 238,855. Ex-Cell Homefurnishings, Inc., New York, N.Y. Filed Feb. 15, 1966.

TWINZ

For Self-Adhesive Decorative Plastic Sheeting by the Yard, With Peal-Off Plastic Backing, Applicable for Use as Shelving, Drawer Linings, and Multiple Household Uses.
First use Apr. 2, 1965.

SN 244,467. Congoleum-Nairn Inc., Kearny, N.J. Filed Apr. 28, 1966.

COLONNADE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 19, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 208,575. Sigmund F. Hiller, d.b.a. Richlite Electric Products, Memphis, Tenn. Filed Dec. 21, 1964.

C-M W-55+

For Fluorescent Lighting Tubes.
First use Feb. 21, 1961.

SN 210,115. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 18, 1965.

FISHER

Owner of Reg. No. 601,590.
For Radio Phonographs.
First use July 10, 1964; Dec. 14, 1965, in the combination, "The Fisher."

SN 216,487. Dasa Corporation (Massachusetts corporation), Andover, Mass., assignee of Dasa Corporation (California corporation), Andover, Mass. Filed Apr. 14, 1965.

MAGICALL

Owner of Reg. No. 488,938.
For Automatic Dialing Equipment for Storing and Reproducing Coded Signals, as Telephone Call Signals.
First use Apr. 17, 1966.

SN 216,610. Northern Electric Company, Limited, Montreal, Quebec, Canada. Filed Apr. 15, 1965.

NE

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 11, 1965; Reg. No. 141,686, dated Aug. 27, 1965.
For Telephone Station Apparatus and Equipment; Telephone Transmission Apparatus and Equipment; Telephone Switching Apparatus and Equipment; Loudspeaking Telephone Inter-Communication Systems; Business Interphones; Telephone Circuit Protection Devices; Telephone Power Plants; Splice Cases; Loading Coils; Audio Frequency Apparatus and Equipment; Public Address Sound Systems and Apparatus; Speech Input Equipment; Video Equipment; Voice Frequency Telegraph Equipment; Teletypewriter Equipment; Carrier and Multiplex Equipment; Radio and Microwave Equipment; Semiconductor Devices; Wires and Cables; Digital Data Communication Equipment and Apparatus; Tropospheric Scatter Radio Communication Equipment; Electron Tubes.

SN 216,611. Northern Electric Company Limited, Montreal, Quebec, Canada. Filed Apr. 15, 1965.

NE

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 11, 1965; Reg. No. 141,685, dated Aug. 27, 1965.
For Telephone Station Apparatus and Equipment; Telephone Transmission Apparatus and Equipment; Telephone Switching Apparatus and Equipment; Loudspeaking Telephone Intercommunication Systems; Business Interphones; Telephone Circuit Protection Devices; Telephone Power Plants; Splice Cases; Loading Coils; Audio Frequency Apparatus and Equipment; Public Address Sound Systems and Apparatus; Speech Input Equipment; Video Equipment; Voice Frequency Telegraph Equipment; Teletypewriter Equipment; Carrier and Multiplex Equipment; Radio and Microwave Equipment; Semiconductor Devices; Wires and Cables; Digital Data Communication Equipment and Apparatus; Tropospheric Scatter Radio Communication Equipment; Electron Tubes.

SN 221,057. Hycon Mfg. Company, Monrovia, Calif. Filed June 14, 1965.

hy

Owner of Reg. Nos. 603,805, 796,312, and others.
For Microwave Apparatus, Electrical and Electronic Components and Accessories Therefor.
First use Dec. 13, 1961.

SN 226,249. Kistler Instrument Corporation, Clarence, N.Y. Filed Aug. 23, 1965.

PIEZOTRON

For Electronic Devices, Including Particularly Transducers, Amplifiers.
First use April 1965.

SN 227,048. R. H. Macy & Co., Inc., New York, N.Y. Filed Sept. 2, 1965.

PROMPT PICTURE

No registration rights are claimed for the word "Picture" apart from the mark as shown, but applicant waives none of its common law rights therein.
For Television Receivers.
First use May 3, 1965.

SN 230,647. Industrial Electric Reels, Inc., Omaha, Nebr. Filed Oct. 20, 1965.



The drawing is lined for the colors red and silver, but applicant does not limit the mark to those specific colors. The words "Mill Duty" are disclaimed apart from the mark.
Owner of Reg. No. 583,273.
For Automatic Take-up Reels for Electrical Cords and Cables.
First use at least as early as Oct. 4, 1965.

SN 236,159. Thomas Industries Inc., Louisville, Ky. Filed Jan. 10, 1966.

CLASSMATE

For Electric Lighting Fixtures.
First use on or before Nov. 26, 1965.

SN 236,306. International Telephone and Telegraph Corporation, New York, N.Y. Filed Jan. 12, 1966.

ROYAL

For Electrical Wire and Cable, Fuses and Wiring Devices.
First use about 1955.

SN 236,743. Great Western Battery Manufacturing Corporation, Abilene, Tex. Filed Jan. 18, 1966.

GREAT WESTERN

For Storage Batteries.
First use March 1964.

SN 236,787. Tri-Lite Industries, Inc., Addison, Ill. Filed Jan. 18, 1966.

Tri-Lite

For Florescent Lighting Fixtures for Commercial and Industrial Use.
First use Sept. 17, 1964.

SN 236,855. Transene Company, Inc., Danvers, Mass. Filed Jan. 19, 1966.

SSE

For Plasticized Protective Coating of Siloxane Derivative Which Is Self-Contalysing for Semiconductor Junctions and Surfaces in Diodes, Rectifiers, Transistors, and Integrated Circuits; and for Potting Electronic Components and Circuit Modules.
First use Nov. 26, 1965.

SN 237,091. Dearborn Electronics, Inc., Orlando, Fla. Filed Jan. 24, 1966.

DIMIE

For Electrical Capacitors.
First use Nov. 13, 1965.

SN 252,934. Oak Electro/Netics Corp., Crystal Lake, Ill. Filed Aug. 23, 1966.



For Indicator Lights, Lighted Switches, Rotary Switches, and Flexible Shielding Conduit for Electric Wiring.
First use spring of 1963.

SN 238,104. P. G. Foret, Inc., Sudbury, Mass. Filed Aug. 25, 1966.

VAC-U-TORQ

For Electro-Vacuum Drives Including Electro-Vacuum Brakes, Clutches, and Valves.
First use on or about May 19, 1966.

Class 22—Games, Toys, and Sporting Goods

SN 230,499. Blake W. Asquith, St. Clair, Mich. Filed Oct. 19, 1965.

CAD-A-BOUT

For Carrier and Support for Golf Clubs and Accessories.
First use Sept. 9, 1963.

SN 235,298. Harts Mountain Products Corp., New York, N.Y. Filed Dec. 27, 1965.

FRENCH FRIED RAWHIDE

The word "Rawhide" is disclaimed apart from the mark as shown.
For Chewing Sticks for Dogs.
First use Oct. 1, 1965.

SN 239,510. Forrest Enterprises, Inc., Piqua, Ohio. Filed Feb. 24, 1966.

MOR-GRIP

For Anti-Perspirant for the Hands of Bowlers, Golfers, and Other Sports Participants.
First use Aug. 3, 1965.

SN 239,544. Rose Tool & Plastics Inc., d.b.a. Arrowmate Products Co., Milwaukee, Wis. Filed Feb. 24, 1966.

ARROWMATE

For Archery Accessories—Namely, Arrow-Heads, Quivers, and Archery Targets.
First use February 1956.
Subj. to Intf. with SN 246,161.

SN 239,573. The Ajac Corporation, Baltimore, Md. Filed Feb. 25, 1966.

HAWK EYE

For Golf Clubs.
First use Mar. 18, 1965.

SN 239,970. Colt's Inc., Hartford, Conn. Filed Mar. 2, 1966.

GRAND NATIONAL

For Archery Bows.
First use Feb. 5, 1966.

SN 240,227. Wonder Toys, Inc., St. Paul, Minn. Filed Mar. 4, 1966.

FLEX-A-TOY

For Plastic Dolls Which Can Be Bent to Various Positions.
First use Feb. 21, 1966.

SN 240,474. Pierre-Carole Corporation, Miami, Fla. Filed Mar. 8, 1966.

THE MAGIC CARPET

For Polyethylene Foam Pad Used as a Bench Pad, Raft, and Water Float.
First use Feb. 8, 1966.

SN 240,496. BZ Industries, El Segundo, Calif. Filed Mar. 9, 1966.

BZ

For Slot Car Racers.
First use Nov. 15, 1965.

SN 240,497. BZ Industries, El Segundo, Calif. Filed Mar. 9, 1966.

BANSHEE

For Slot Car Racers.
First use Feb. 3, 1966.

SN 240,556. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed Mar. 9, 1966.

SECRET SUE ♥♥

For Dolls.
First use Feb. 4, 1966.

SN 240,691. World Engines Incorporated, Cincinnati, Ohio. Filed Mar. 10, 1966.

CONTROLAIRE

For Transmitting and Receiving Devices and Parts Therefor To Remotely Control the Flight of Model Airplanes.
First use November 1945.

SN 241,241. Columbia Industries, Inc., San Antonio, Tex. Filed Mar. 17, 1966.

Wildcat

For Bowling Balls.
First use Feb. 25, 1966.

SN 241,886. Barton Import Company Ltd., Vancouver, British Columbia, Canada. Filed Jan. 17, 1966.

JOHNNY COMBAT

For Dolls and Doll Clothing.
First use Nov. 8, 1965; in commerce Nov. 8, 1965.

SN 246,161. Colt's Inc., Hartford Conn. Filed May 20, 1966.

ARROWMASTER

For Archery Bows.
First use Feb. 5, 1966.
Subj. to Intf. with SN 239,544.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 209,625. National Uni-Pac, Inc., Atlanta, Ga. Filed Jan. 8, 1965.

UNI-PAC

For Automatic Vending Machines.
First use Nov. 6, 1962.

SN 222,102. Atlas Copco Aktiebolag, Nacka, Sweden. Filed June 28, 1965.

CAVO

Priority claimed under Sec. 44(d) on Swedish application filed Dec. 30, 1964; Reg. No. 115,769, dated Apr. 1, 1966.
For Loading Machines, Drill Carriages, Mine Locomotives; Compressed Air Driven, Internal Combustion, and Hydraulic Motors for Mine Loading Machines, Mine Locomotives, Trucks and Loaders, and Parts and Accessories for All the Above-Mentioned Goods.

SN 223,131. James G. Lindsey, d.b.a. Cherokee Stone Center, Harrison, Ark. Filed July 12, 1965.

TERM-O-SPRA

For Termite Extermination Spray Equipment.
First use June 19, 1965.

SN 224,811. Townsend Engineering Company, Des Moines, Iowa. Filed Aug. 2, 1965.

TECO

For Meat Skinning, Trimming, and Membrane Removing Machines, Sausage and Weiner Stuffing and Linking Machines, Weiner Untwisting Machines, Meat Emulsion Pumps, and Accessories for the Foregoing Goods.
First use July 6, 1965, on meat skinning machines.

SN 226,203. Baron Blakeslee Incorporated, Chicago, Ill. Filed Aug. 23, 1965.

HALO-CIRCUIT

For Circuit Board Processing Equipment for Use in the Manufacture of Printed Electrical and/or Electronic Circuits.
First use July 27, 1965.

SN 226,725. Conco Engineering Works, Inc., Mendota, Ill. Filed Aug. 30, 1965.

BALANCE MASTER

No claim is made to the use of the word "Balance," apart from the mark as shown.
For Load Balancers Useful for the Support and Manipulation of Tools and Workpieces in Connection With Machining and Manufacturing Operations and for Support of Other Loads, Parts Thereof, and Accessories Therefor.
First use July 28, 1965.

SN 228,035. Harwil Company, Santa Monica, Calif. Filed Sept. 17, 1965.

HARWIL

For Plastic Bag Sealers and Lead Benders Useful in the Fabrication of Electrical and Electronic Circuit Boards.
First use on or before July 31, 1962.

SN 228,587. Kinemotive Corporation, Farmingdale, N.Y. Filed Sept. 24, 1965.

KINEFLEX

For Flexible Shaft Couplings.
First use Aug. 5, 1965.

SN 229,731. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

REGENT PISTON PUMP

Applicant disclaims the words "Piston Pump" separate and apart from the mark.
For Aquarium Air Pumps.
First use in or about April 1963.

SN 229,733. Aquariums Incorporated, Maywood, N.J. Filed Oct. 11, 1965.

LEADER PISTON PUMP

Applicant disclaims "Piston Pump" separate and apart from the mark as shown.
For Aquarium Air Pumps.
First use in or about April 1963.

SN 230,424. Potatomaster Corporation, San Bruno, Calif. Filed Oct. 18, 1965.

POTATOMASTER

For Machines for Peeling and Slicing Potatoes and Vegetables.
First use June 1958.

SN 231,474. Ojai Industrial Tools, Inc., d.b.a. Industrial Tools, Inc., Ojai, Calif. Filed Oct. 28, 1965.

For Carbide and High Speed Steel, Formed, or Standard Cutting Tools.
First use on or before Mar. 1, 1964.

SN 231,883. Bissell Inc., Grand Rapids, Mich. Filed Nov. 1, 1965.

BISSELL

Owner of Reg. Nos. 87,595, 770,091, and others.
For Shovels, Spades, Scoops; and Garden, Lawn, and Farm Tools—Namely, Cultivators, Edgers, Grass Trimmers, Forks, Hoes, Rakes, Scrapers, Trowels, Diggers, Augers, Manual Snow Pushers, and Weeders; and Replacement Handles Therefor.
First use Sept. 17, 1965.

SN 231,988. Eversharp, Inc., Milford, Conn. Filed Nov. 2, 1965.

FLOATING CONVEX EDGE

Applicant disclaims the term "Convex Edge" apart from the mark as shown.
For Safety Razor Blades and Dispensers Therefor.
First use Oct. 11, 1965.

SN 232,177. Albritton Engineering Corporation, Bryan, Tex. Filed Nov. 5, 1965.

FLEX-LIFT

For Mounted Hydraulic Cranes.
First use on or before Feb. 12, 1962.

SN 232,619. Universal Technical Products Inc., Forest Hills, N.Y. Filed Nov. 12, 1965.

TRICEPS

For Hand Tools for Handling Small Articles.
First use July 27, 1965.

SN 233,087. Empac-O-Matic, S.A., Mexico City, Mexico. Filed Nov. 22, 1965.

OLYMPIA

For Automatic Flexible Film Bag Filling Machines, Automatic Bag Making and Filling Machines, and Automatic Wrapping Machines.
First use Oct. 7, 1965; in commerce Oct. 7, 1965.

SN 233,267. The Hy-Dynamic Co., Lake Bluff, Ill. Filed Nov. 24, 1965.

HY-DYNAMIC

For Front and Rear Loading Tractor Shovel.
First use at least as early as July 24, 1960.

SN 234,245. Scovill Manufacturing Company, Waterbury, Conn. Filed Dec. 8, 1965.

HYDRO-TROL

For Hydraulic Control Means for Use With Air Cylinders.
First use Mar. 19, 1965.

SN 234,246. Scovill Manufacturing Company, Waterbury, Conn. Filed Dec. 8, 1965.

HYDRO-PAC

For Integrated Combinations of an Air Cylinder and an Hydraulic Control Means for Use Therewith.
First use Mar. 1, 1965.

SN 234,838. The Caltype Corp., Los Angeles, Calif. Filed Dec. 10, 1965.

CALTYPE

For Office Business Machines—Namely, Typewriters.
First use at least as early as 1959.

SN 235,188. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 23, 1965.

PEBBLE BEACH

For Stainless Steel Knives, Forks, and Spoons.
First use Nov. 19, 1965.

SN 235,190. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 23, 1965.

GEMINI

For Pocket Knives, Hunting Knives, and Kitchen Knives.
First use Oct. 26, 1965.

SN 235,192. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 23, 1965.

MARCHIONESS

For Stainless Steel Knives, Forks, and Spoons.
First use Nov. 16, 1965.

SN 235,193. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 23, 1965.

ASTRO-EDGE

For Pocket Knives, Hunting Knives, and Kitchen Knives.
First use Oct. 26, 1965.

SN 240,331. Partek Corporation, Houston, Tex. Filed Mar. 7, 1966.

LIQUA-BLASTER

For High Pressure, Hydraulic Cleaning and Pumping Equipment Useful for Cleaning Metal, Concrete, Wood or Other Surfaces, and Machinery, Equipment, Buildings, and Other Structures.
First use Jan. 12, 1966.

SN 241,111. Howard F. Wood, d.b.a. Lookout Vending & Supply, Chattanooga, Tenn. Filed Mar. 15, 1966.

-The Ole- MEDICINE MAN

For Coin-Operated Vending Machine To Dispense Patent Medicine.
First use Sept. 9, 1965.

SN 241,588. Great Neck Saw Manufacturers, Inc., Mineola, N.Y. Filed Mar. 22, 1966.



Owner of Reg. Nos. 705,942 and 712,812.
For Axes, Hammers, Hatchets, Saws, Saw Blades, Saw Frames, Chisels, Screw Drivers, Planes, Scratch Awls, Putty Knives, Wall Scrapers, Tool Kits, Mitre Boxes, Squares, Pliers, Utility Knives, Files, Screw Extractors, Flaring Tools, and Garden Tools.
First use December 1964; during 1937 as to the representation of a giraffe.

SN 241,589. Great Neck Saw Manufacturers, Inc., Mineola, N.Y. Filed Mar. 22, 1966.

Great Neck

Owner of Reg. Nos. 696,730, 705,942, and 712,812.
For Axes, Hammers, Hatchets, Saws, Saw Blades, Saw Frames, Chisels, Screw Drivers, Planes, Scratch Awls, Putty Knives, Wall Scrapers, Tool Kits, Mitre Boxes, Squares, Pliers, Utility Knives, Files, Screw Extractors, Flaring Tools, and Garden Tools.
First use during December 1964; during 1932 as to the trademark "Great Neck"; during 1937 as to the representation of a giraffe.

SN 241,662. Ingersoll-Rand Company, New York, N.Y. Filed Mar. 28, 1966.

INLINER

For Centrifugal Pumps.
First use Feb. 17, 1966.

SN 242,011. Houston Engineers, Inc., Houston, Tex. Filed Mar. 28, 1966.

ACCELERATOR

For Oil Well Tool—Namely, a Combined Tensile Energy Accumulator and Shock Absorbing Device.
First use Nov. 28, 1958.

SN 242,669. Schaurmans & Van Ginneken, Amsterdam-N, Netherlands. Filed Apr. 4, 1966.

Schugi

Priority claimed under Sec. 44(d) on Dutch application filed Oct. 1, 1965; Reg. No. 157,281, dated Nov. 10, 1965.
For Installations (Mixers) for Mixing and Circulating Powdered and Liquid Substances, Including the Apparatus Regulating and Working Them.

SN 242,742. The Miles Standard Corporation, Saginaw, Mich. Filed Apr. 5, 1966.

MULTIWAY

For Machine Tools, Particularly Machine Tools Capable of Reaming, Drilling, Chamfering, Tapping, Counterboring, Spot Facing, Turning, Recessing, Countersinking, Boring, Milling, and Grooving.
First use Feb. 24, 1964.

SN 245,683. Clayton Manufacturing Company, El Monte, Calif. Filed May 16, 1966.

Clayton

Owner of Reg. Nos. 526,535, 526,153, and 763,431.
For Steam Cleaners.
First use Dec. 1, 1957; Aug. 1, 1951, in a different form.

SN 245,694. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed May 16, 1966.

TORSIONETIC

For Power Transmitting Couplings—Namely, Universal Joints.
First use on or about Apr. 26, 1966.

SN 246,485. Rice Barton Corporation, Worcester, Mass. Filed May 24, 1966.



For Pulp and Papermaking Machinery; Textile Printing Machines; Non-Woven Fabric Producing Machines; Paper Coating and Finishing Equipment; and Wet Baling Systems and Fiber Flash Drying Systems for Pulp; as Well as Components of and Parts and Instrumentation Cabinets and Controls for Each of the Foregoing.
First use 1950.

SN 246,755. Colgate-Palmolive Company, New York, N.Y. Filed May 27, 1966.

UNI-SHAVER

Owner of Reg. No. 764,272.
For Razor Blades and Dispensers for Razor Blades.
First use May 3, 1966.

SN 247,097. Southern Elevator Company, Greensboro, N.C. Filed June 2, 1966.



The mark as shown in the accompanying drawing comprises the letters SE with the top portions of the SE being the same and the bottom portions of the SE being inverted each from the other.
For Electrical Elevators, Hoists, and Lifts.
First use July 1, 1959.

SN 222,627. The Singer Company, New York, N.Y. Filed Aug. 18, 1966.

VERTA-L

For Packaging Machinery.
First use July 25, 1966.

SN 256,030. Stop-Motion Devices Corporation, Plainview, N.Y. Filed Oct. 10, 1966.

WESCO

Owner of Reg. No. 621,169.
For Knitting Machines and Components Thereof, Stop Motion Mechanisms for Knitting Machines, Sewing Machines and Looms, Hole-Detecting Mechanisms for Detecting Holes, Runs and Other Defects in Knitted and Woven Fabrics, Said Hole-Detecting Mechanisms Being Used on Knitting Machines and Looms, and Yarn-Detecting Mechanisms for Detecting Yarn Ends, Broken Yarn, Loose Yarn, Yarn Knots, Slubs and Press-Offs, Said Yarn-Detecting Mechanisms Being Used on Knitting Machines, Sewing Machines and Looms, Including Fixed and Adjustable Brackets and Mountings for Said Hole-Detecting and Yarn-Detecting Mechanisms.
First use Oct. 1, 1937.

Class 24—Laundry Appliances and Machines

SN 234,705. Norva Maskinfabrik A/S, Copenhagen NV, Denmark. Filed Dec. 14, 1965.

NORVA

Owner of Danish Reg. No. 825—1933, dated Aug. 19, 1933.
For Clothes Washing Machines, Clothes Dryers, Garment Presses, Ironing Tables, and Clothes Presses.

Class 26—Measuring and Scientific Appliances

SN 204,049. Cinematic-Anstalt, Vaduz, Liechtenstein. Filed Oct. 15, 1964.

KARINA

Owner of Liechtenstein Reg. No. 1492, dated May 21, 1963.
For Photographic and Cinematographic Equipment and Accessories—Namely, Photographic and Cinematographic Cameras and Projectors, Developing Tanks and Developing Apparatus, Objectives and Lenses, Objectives and Lens Mounts, Viewfinders, Diaphragms, Enlargers, Ground Glass Plates for Reflex Cameras, Viewers, Photographic and Cinematographic Focusing Units; and Optical Instruments—Namely, Light Meters, Testers for Objectives and Lenses, Optical Prisms, Optical Wedges, Telescopes, Binoculars, Magnifiers, Collimators, and Microscopes.

SN 220,239. Saroo Canada Limited, Agincourt, Ontario, Canada. Filed June 2, 1965.

EDSCO

Owner of Canadian Reg. No. 138,869, dated Jan. 15, 1965.
For Automatic Electronic Control for Regulating the Combustion of Fuels in a Furnace; for Controlling and/or Measuring the Alkalinity of Solutions in Drycleaning Machines, Laundry Units and Dishwashers; and for Regulating the Flow of Liquids Through a Pump; Warehouse or Batch Supplying Control Traffic Apparatus for Automatically Controlling the Movement and Discharge of Materials Between Various Locations.

SN 221,058. Hycon Mfg. Company, Monrovia, Calif. Filed June 14, 1965.

hy

The mark consists of the letters "H" and "Y." Owner of Reg. Nos. 603,805, 781,304, and 781,225.
For Digital Computers, Analog Computers, Oscilloscopes, Electronic Camera Controllers, Photographic Rectifiers, Cameras, Photographic Printers, and Photogrammeters.
First use Dec. 13, 1961.

SN 228,515. Collins Microflat Company, Inc., Hawthorne, Calif. Filed Sept. 24, 1965.

MICROFLAT

Owner of Reg. Nos. 570,596 and 694,215.
For Precision Measuring and Test Equipment and Accessories for Determining Surface Flatness and Establishing a Measurement Reference of Precise Flatness—Namely, Optical Rails, Posts, Leveling Devices and Rail Riders Therefor; Precision Reference Angles; Optical Measuring Beds; Slip Tables; Instrument Beds; Bench Center Beds; Stands for Surface Plates.
First use Jan. 5, 1951.

SN 229,170. Acme-Lite Manufacturing Co., Chicago, Ill. Filed Oct. 4, 1965.

FILTREX

For Attachment for Mounting a Flood Lamp on a Camera.
First use on or about Aug. 12, 1965.

SN 229,864. Oceanographic Engineering Corporation, La Jolla, Calif. Filed Oct. 11, 1965.



For Scientific Apparatus, Instruments or Devices Used in Measuring, Indicating or Recording Oceanographic Phenomena, Including Salinometers, Photographic Cameras, Sea Bed Corers, Irradiance Meters, Transmissometers, Pingers (Underwater Sound Sources), Sonar Beacons, Fluid Current Meters, Temperature Probes, Turbidity Meters, Floats and Buoys, Explosive Releases, Television Cameras and Monitors, Anemometers, Graphic Recorders, Pan and Tilt Drives, Dye Release Units, Water Samplers, Vane Shear Meters, and Sampling Boxes.
First use June 10, 1962; Dec. 14, 1961, in a different form.

SN 230,562. Pyles Industries, Inc., Southfield, Mich. Filed Oct. 19, 1965.

ECONOSHOT

For Apparatus for Pumping and Metering Flowable Plural-Part Components as, for Example, Epoxies, Polyurethanes, Polyesters, and Foams.
First use on or about July 22, 1965.

SN 231,820. Fischer & Porter Co., Warminster, Pa. Filed Oct. 29, 1965.

CENTURY

For Flowmeters for Measuring Fluid Flow and the Like.
First use June 11, 1965.

SN 232,793. Royco Instruments Inc., Menlo Park, Calif. Filed Nov. 16, 1965.

ROYCO

Owner of Reg. No. 704,605.
For Measuring and Scientific Appliances—Namely, Meters for Measuring Conditions Such as Temperature and Particle Count, Ion Measuring and Generating Instrumentation, Flow Rate Indicators and Meters.
First use on or about January 1956.

SN 234,072. Saphira Creations, Inc., New York, N.Y. Filed Dec. 6, 1965.

THE GEM OF FRAME ELEGANCE

The word "Frame" is disclaimed apart from the mark as shown.
For Eye Glass Frames.
First use Aug. 1, 1965.

SN 236,413. Ponder & Best, Hollywood, Calif. Filed Jan. 13, 1966.

KOBENA

For Cameras and Photographic Equipment.
First use on or about July 1, 1965.

SN 236,484. Fotorite, Inc., Chicago, Ill. Filed Jan. 14, 1966.

FOTORITE

Owner of Reg. No. 772,243.
For Photographic Print Processing Apparatus—Namely, Units for Processing Exposed Photographic Sensitized Materials, Portable Dark Rooms, Dryers for Photographic Prints and Apparatus for Varying the Contrast Characteristics of Photographic Sensitized Materials.
First use June 15, 1961, on photographic print processing apparatus.

SN 236,950. Accura, Ltd., Flushing, N.Y. Filed Jan. 21, 1966.

VIDEOCOM

For Photographic Accessories—Namely, Slide Projectors.
First use Jan. 11, 1966.

SN 237,265. Veb Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany. Filed Jan. 25, 1966.

PRAKTISIX

Owner of U.S. Reg. Nos. 535,920, 555,290, and 640,279.
For Cameras.
First use Feb. 6, 1957; in commerce October 1957.

SN 237,276. Vermögensverwaltungs G.m.b.H., Wetzlar, Germany. Filed Jan. 6, 1966.

STEREOFLOAT

HH

Wetzlar

Applicant disclaims the term "Wetzlar" apart from the mark as shown. Owner of German Reg. No. 800,369, dated Jan. 13, 1965; and U.S. Reg. No. 775,768.
For Optical Instruments—Namely, Binoculars.

SN 237,355. Stanley C. Kaiser, d.b.a. Kaiser Products, Colorado Springs, Colo. Filed Jan. 26, 1966.

PRESS-O

For Photographic Slide Mount and Photographic Slide Mount Riveting Press.
First use June 3, 1964.

SN 237,393. Sperry Rand Corporation, New York, N.Y. Filed Jan. 26, 1966.

UNIPRO

For Microfilm Processor Units.
First use Feb. 9, 1959.

SN 237,743. Railway Research, Inc., Cleveland, Ohio. Filed Feb. 1, 1966.

TIME-O-TEST

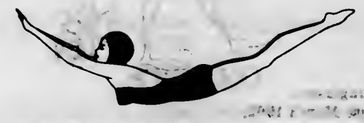
For Terminal Air Brake Time Testing Device, Which Devices Are Used for the Purpose of Testing the Air Brakes of Trains at Railroad Terminals.
First use Sept. 8, 1959.

SN 239,150. Jantzen Inc., Portland, Oreg. Filed Feb. 18, 1966.

JANTZEN

Owner of Reg. Nos. 213,637, 727,742, and others.
For Sunglasses.
First use Jan. 19, 1966.

SN 239,151. Jantzen Inc., Portland, Oreg. Filed Feb. 18, 1966.



Owner of Reg. Nos. 213,637, 722,456, and others.
For Sunglasses.
First use Jan. 19, 1966.

SN 239,365. Anelex Corporation, Boston, Mass. Filed Feb. 23, 1966.

ANELEX

Owner of Reg. No. 504,281.
For Data Processing Equipment.
First use Sept. 18, 1951.

SN 239,408. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 28, 1966.

ANSCOPAK

Owner of Reg. Nos. 720,808 and 728,889.
For Packaging and Dispensing Containers for Photographic Materials, Especially Cartridges.
First use Dec. 28, 1965.

SN 239,409. Giannini Controls Corporation, Duarte, Calif. Filed Feb. 28, 1966.

OLO

For Opacimeter for Measuring the Opacity of Paper Continuously During Its Manufacture.
First use on or about Feb. 7, 1965.

SN 239,548. Simmon Brothers, Inc., Woodside, N.Y. Filed Feb. 24, 1966.

CHROMEGA

Owner of Reg. No. 691,659.
For Photographic Enlargers and Timing Computing Equipment for Such Enlargers.
First use on or about Mar. 1, 1959.

SN 243,768. Brown & Sharpe Manufacturing Company, North Kingstown, R.I. Filed Apr. 19, 1966.

BS

Owner of Reg. Nos. 56,130 and 674,563.
For Machinists' Hand Gaging Tools Such as Micrometers, Height Gages, Depth Gages, etc.; Manual, Automatic, and Electronic Dimensional Gaging Apparatus and Dimensional Comparators.
First use 1897.

SN 245,436. Mr. Mod Shop, Inc., New Orleans, La. Filed Apr. 4, 1966.



For Sunglasses.
First use March 1962.

SN 249,282. Sekisui Chemical Company Ltd. of Japan, Osaka, Japan. Filed June 30, 1966.

Eslon

For Vinyl-Coated Fibre Glass Tape Measures.
First use in or about May 1962; in commerce in or about May 1962.

Class 27 — Horological Instruments

SN 237,931. Bulova Watch Company, Inc., Flushing, N.Y. Filed Feb. 3, 1966.

ACCUTIME

Owner of Reg. Nos. 709,055, 782,828, and 785,768.
For Watches and Parts Thereof.
First use Jan. 17, 1966.

SN 237,958. General Electric Company, Schenectady, N.Y. Filed Feb. 3, 1966.

Vanlarm

For Clock Timers.
First use Jan. 20, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 218,754. Haskell Faber, d.b.a. Chatani Pearl Company, Los Angeles, Calif. Filed May 13, 1965.

Culturesque Pearls de FABRÉ

Applicant disclaims the word "Pearls" separate and apart from the mark as a whole.
For Cultured and Simulated Pearls and for Jewelry Such as Earrings, Necklaces, and the Like Made From or Embodying Such Pearls.
First use on or about Feb. 15, 1965.

SN 235,400. F.O.P.E. di Odino Cassola, Vicenza, Italy. Filed Dec. 28, 1965.

FOPE

Owner of Italian Reg. No. 169,920, dated Mar. 20, 1965.
For Jewelry—Namely, Bracelets Including Watch Bracelets and Satinized Necklaces.
First use Feb. 1, 1965; in commerce Feb. 1, 1965.

SN 235,577. Neumann & Wensel Bijouteriewarenfabrik, Enns, Austria. Filed Dec. 30, 1965.

NEWE AUSTRIA

The word "Austria" is disclaimed apart from the mark as shown. Owner of Austrian Reg. No. 55,770, dated May 20, 1965.
For Costume Jewelry.

SN 236,783. Herbert Rosenthal Jewelry Corp., New York, N.Y. Filed Jan. 18, 1966.

HR

For Rings, Bracelets, Earrings, and Necklaces.
First use Dec. 2, 1963.

SN 245,438. Mr. Mod Shop, Inc., New Orleans, La. Filed Apr. 4, 1966.



For Jewelry.
First use March 1962.

Class 31 — Filters and Refrigerators

SN 228,902. General Star Products, Inc., New Haven, Conn. Filed Sept. 29, 1965.

PURA-TROL

For Internal Combustion Fluid Filters—Namely, Oil Reconditioners and Oil Filters.
First use July 7, 1965.

SN 242,968. Donaldson Company, Inc., Minneapolis, Minn. Filed Apr. 8, 1966.

Vee-Pac

For Air Cleaners Specifically for Use With Internal Combustion Engines.
First use Feb. 18, 1966.

SN 248,651. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 22, 1966.

DUPONT

Owner of Reg. Nos. 413,806 and 760,912.
For Permeating Apparatus for Separating Components of a Mixture.
First use May 5, 1966.

Class 32 — Furniture and Upholstery

SN 239,061. McKesson & Robbins, Incorporated, New York, N.Y. Filed Feb. 17, 1966.

REDI-MED

For Cabinets for the Storage and Dispensing of Pharmaceuticals in Hospitals.
First use at least as early as Dec. 20, 1965.

SN 241,880. Dohrmann Co., Brisbane, Calif. Filed Mar. 25, 1966.

FLEX-O-SLIDE

For Racks for Transporting Pans in Restaurants, Stores, or the Like.
First use May 21, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 192,383. Donald Francis Fleck, Jacksonville Beach, Fla. Filed Apr. 30, 1964.

TRIATOMIC

For Air Purification, Odor Elimination, and Dehumidification Apparatus.
First use May 18, 1959.

SN 211,741. Milton Roy Company, Philadelphia, Pa. Filed Feb. 10, 1965.

X-OX

For Purifier Units Containing a Catalyst for Removing Traces of Oxygen From Hydrogen Source Gases.
First use Oct. 6, 1964.

SN 218,051. American Screen Process Equipment Co., Chicago, Ill. Filed May 5, 1965.

AUTO RACK

Applicant disclaims the word "Rack" apart from the mark as shown.
For Dryers for Printed Objects.
First use Apr. 1, 1955.

SN 218,055. American Screen Process Equipment Co., Chicago, Ill. Filed May 5, 1965.

STEREO

For Dryers for Synchronized Drying of Plastic Bottles and Other 3-Dimensional Parts.
First use July 1, 1961.

SN 234,251. Spanner Boilers Limited, Bracknell, England. Filed Dec. 8, 1965.

SPANNER

Owner of British Reg. No. 711,364, dated Oct. 15, 1952.
For Steam Boilers and Heat Exchangers (None Being Parts of Machines) for Industrial and Commercial Use and Parts of All Such Goods.

SN 242,392. Rotron Manufacturing Company, Inc., Woodstock, N.Y. Filed Mar. 31, 1966.

FANTOM

For Electric Motor Driven Ventilating Fan.
First use on or about Mar. 2, 1966.

SN 242,650. James A. Phillips, Jr., Salisbury, Md. Filed Apr. 4, 1966.



No claim is made to the word "Steam" apart from the mark as shown.
For Steam Operated Hot Water Heater.
First use Jan. 8, 1966.

SN 244,894. Embassy Overseas Corp., Farmingdale, N.Y. Filed May 4, 1966.



For Baseboard Radiation Equipment and Parts Thereof—Namely, Fin Type Hot Water Radiation Units, Hanger Brackets, Cover Panels, and Corner Trim Therefor.
First use Jan. 19, 1966.

SN 245,126. Yandle Heating Supply, Inc., Charlotte, N.C. Filed May 6, 1966.

SILENT-AIRE

For Furnaces for Buildings.
First use on or about Sept. 1, 1964.

SN 245,298. Eclipse Fuel Engineering Co., Rockford, Ill. Filed May 10, 1966.

VEL-AIR

For Gaseous Fuel Burners for Use in Connection With Air Heating.
First use on or about Mar. 15, 1963.

SN 245,351. Standard Oil Company of California, San Francisco, Calif. Filed May 10, 1966.



The drawing is lined for the colors red and blue. Applicant claims the colors red, white and blue. Owner of Reg. Nos. 807,521 and 807,520.
For Coils and Disks for Use as Attachments to the Burners of Oil-Fired Furnaces To Increase the Combustion Properties Thereof.
First use Nov. 10, 1964.

SN 245,430. Tri-Ex, Incorporated, Tulsa, Okla. Filed May 11, 1966.



For Heat Exchangers as Used in Petroleum Refineries and Related Facilities.
First use Feb. 15, 1965.

SN 245,433. United Lighting and Ceiling Co., Oakland, Calif. Filed May 11, 1966.

CYLINDRICELL

For Plastic Louvers and Light Diffusing Ceiling Systems.
First use July 17, 1958.

SN 254,080. Voorheis Industries, Inc., Caldwell, N.J. Filed Sept. 8, 1966.

GASIFORM

For Fuel Burners.
First use November 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 228,536. Kinemotive Corporation, Farmingdale, N.Y. Filed Sept. 24, 1965.

TRIMSEAL

For Hermetic Rotary Seals.
First use Aug. 5, 1965.

SN 228,538. Kinemotive Corporation, Farmingdale, N.Y. Filed Sept. 24, 1965.

CONIFLEX

For Hermetic Rotary Seals.
First use Aug. 5, 1965.

SN 236,768. Jetsea Tire and Rubber Corporation, Bridgeport, Conn. Filed Jan. 18, 1966.

CUTLASS

For Tires for Vehicles.
First use Jan. 6, 1966.

SN 248,440. Dayco Corporation, Dayton, Ohio. Filed June 20, 1966.

DS+7

For Power Transmission Belts.
First use on or about May 2, 1966.

SN 255,757. Abex Corporation, New York, N.Y. Filed Oct. 5, 1966.

STOPPER

Owner of Reg. No. 426,175.
For Friction Elements for Brakes and Clutches.
First use Aug. 2, 1966.

Class 36—Musical Instruments and Supplies

SN 224,685. Pickwick International, Inc., Long Island City, N.Y. Filed July 29, 1965.

pickwick/33

Applicant disclaims the word "Records" and the numeral "33" apart from the mark as shown.
For Phonograph Records.
First use Mar. 16, 1965.

SN 225,129. Euphonics Corporation, Guayanbo, Puerto Rico. Filed Aug. 6, 1965.

MINICONIC

Owner of Reg. No. 717,895.
For Phonograph Cartridges, Tone Arms for Use With Phonograph Cartridges, Phonograph Pickup Conversion Kits, Power Supplies and Power Sources for Use With Phonograph Cartridges, Styluses for Use With Phonograph Cartridges; and Components Thereof; and Accessories Used With Said Cartridges, Tone Arms, Kits, Power Supplies and Power Sources; Also Microphones and Parts Thereof and Accessories Therefor.
First use Jan. 9, 1965.

SN 227,693. Liberty Records, Inc., Los Angeles, Calif. Filed Sept. 13, 1965.

aura

For Phonograph Records and Albums Thereof.
First use October 1963.

SN 227,694. Liberty Records, Inc., Los Angeles, Calif. Filed Sept. 13, 1965.



The background lines on the drawing represent a part of the mark and do not represent color.
For Phonograph Records and Albums Thereof.
First use October 1963.

SN 230,729. The H. N. White Company, Inc., Cleveland, Ohio. Filed Oct. 20, 1965.

FLAIR

For Trumpets.
First use Sept. 10, 1965.

SN 231,026. Bernardo, S.A., San Luis, Potosi S.L.P., Mexico. Filed Oct. 22, 1965.

BERNARDO

For Guitars.
First use Sept. 3, 1965; in commerce Sept. 3, 1965.

SN 231,119. The Fred. Gretsch Mfg. Co., Brooklyn, N.Y. Filed Oct. 22, 1965.

B & D

For Banjos and Banjo Picks.
First use Feb. 2, 1925.

SN 231,202. Pacific Electro Magnetics Co., Inc., Palo Alto, Calif. Filed Oct. 22, 1965.

PEMCO

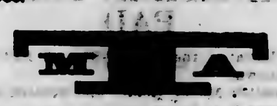
Owner of Reg. No. 725,626.
For Magnetic Tape Recorders.
First use Sept. 30, 1960.

SN 231,225. The Reactors, Inc., Norfolk, Va. Filed Oct. 22, 1965.

ABLAZE

For Phonograph Records.
First use Oct. 14, 1965.

SN 243,564. MTA Productions, Ltd., New York, N.Y. Filed Apr. 15, 1966.



For Phonograph Records.
First use Mar. 5, 1966.

Class 37—Paper and Stationery

SN 209,549. H. S. Crocker Co., Inc., San Bruno, Calif. Filed Dec. 21, 1964.

Rembrandt

For Ballpoint Pens and Felt Tip Markers.
First use May 1961.

SN 224,490. Saxon Paper Corporation, New York, N.Y., assignee of Weyerhaeuser Company, Tacoma, Wash. Filed July 28, 1965.

OLD TREATY BOND

Applicant disclaims any right in the use of the word "Bond" apart from the mark.
For Bond Paper.
First use 1937.

SN 227,448. Sanford Ink Company, Bellwood, Ill. Filed Sept. 8, 1965.

CAPT. ACCENT

Owner of Reg. Nos. 791,854 and 797,227.
For Liquid Paint Felt Tip Marking and Coloring Applicators.
First use in or about May 1965.

SN 229,113. Mitsubishi Pencil Company, Ltd., Shinagawa, Tokyo, Japan. Filed Oct. 1, 1965.

GOLDEN AXE

For Stationery Supplies—Namely, Pencils, Mechanical Pencils, Pencil Sharpeners, Lead Pointers, Pens, Ball Point Pens, and Fiber Pens.
First use Dec. 23, 1964; in commerce Dec. 23, 1964.

SN 230,749. The Allen Pen Company, Inc., Needham Heights, Mass. Filed Oct. 21, 1965.

ALLEN PEN

The word "Pen" is disclaimed apart from the mark as shown.
For Stationery Supplies—Namely, Pens, Pencils, Index Tabs, Index Cards, Composition Books, Stenographer Notebooks and Notebook Fillers, Paper, and Pads of Paper.
First use About 1944.

SN 235,628. Crown Zellerbach Corporation, San Francisco, Calif. Filed Jan. 3, 1966.

CHIFFON

Owner of Reg. Nos. 507,000, 573,236, and 587,676.
For Boxed Facial Tissue.
First use January 1954.

SN 236,458. F. Willis Brown, Nome, Alaska. Filed Jan. 14, 1966.

THE ALASKAN SCRATCH PAD

Applicant disclaims the words "Scratch Pad" apart from the mark as shown.
For Combination Money Holder and Scratch Pad Containing Currency and Note Paper.
First use Sept. 30, 1965.

SN 240,333. Peninsular Paper Company, Ypsilanti, Mich. Filed Mar. 7, 1966.

FANFARE

For Printing Paper.
First use Jan. 12, 1966.

SN 244,739. The Procter & Gamble Company, Cincinnati, Ohio. Filed May 2, 1966.

SOFT-CHARM

Owner of Reg. Nos. 609,613, 625,879, and others.
For Soft Paper Products—Namely, Facial Tissues, Toilet Tissues, Paper Napkins, and Paper Towels.
First use on or about Jan. 1, 1961.

SN 245,084. Manifold Supplies Company, Brooklyn, N.Y. Filed May 6, 1966.

PANASTAT

For Electrostatic Copy Paper.
First use Sept. 1, 1965.

SN 246,376. Scripto, Inc., Atlanta, Ga. Filed May 23, 1966.

COMPUTER

For Fiber Tip Pens and Ball Point Pens.
First use May 9, 1966.

SN 246,377. Scripto, Inc., Atlanta, Ga. Filed May 23, 1966.

CREATIVE COLORS

For Fiber Tip Pens.
First use May 9, 1966.

SN 247,196. The Carter's Ink Company, Cambridge, Mass. Filed June 3, 1966.

TRIM-TIP

For Fiber Point Pen Type Markers.
First use Apr. 18, 1966.

SN 247,695. Hammermill Paper Company, Erie, Pa. Filed June 9, 1966.

HAMMERMILL PALETTE

Applicant disclaims the word "Palette" apart from the mark. Applicant's related company is the owner of Reg. No. 619,951.
For Paper for Writing, Printing, Duplicating, and General Office Use.
First use April 27, 1966.

SN 247,945. Moss Key-Rec Systems, Inc., Dayton, Ohio. Filed June 13, 1966.

PRE-REC

Owner of Reg. No. 643,607.
For Partially Printed Business Forms—Namely, Prescription Record Forms.
First use in or about March 1966.

Class 38—Prints and Publications

SN 218,953. Beaver Tool & Engineering Corporation, Clare, Mich. Filed May 17, 1965.

QUICKDEX

For Cross-Reference Pages to a Catalog, Published From Time to Time.
First use Apr. 1, 1965.

SN 229,521. Camille H. Glenn, Louisville, Ky. Filed Oct. 7, 1965.

FLAVOR TO TASTE

For Newspaper Feature Containing Recipes and Culinary Comment.
First use Apr. 14, 1965.

SN 231,673. Albert Skira, d.b.a. Editions d'Art Albert Skira, Geneva, Switzerland. Filed Oct. 27, 1965.



For Books of Art.
First use 1949; in commerce 1949.

SN 231,674. Albert Skira, d.b.a. Editions d'Art Albert Skira, Geneva, Switzerland. Filed Oct. 27, 1965.

SKIRA

For Books of Art.
First use 1949; in commerce 1949.

SN 234,646. Instructional Aids Inc., Owatonna, Minn. Filed Dec. 15, 1965.



Applicant disclaims the letters "Inc" except as used as part of the mark.
For Teaching Aids—Namely, Educational Charts, Transparencies, and Printed Mathematical Cards and Wheels.
First use Sept. 16, 1965.

SN 238,927. Dimensions In Living, Inc., New York, N.Y. Filed Feb. 16, 1966.

Dimensions in Living

For Magazine Section for Newspapers.
First use Apr. 15, 1965.

SN 239,069. National Electrical Manufacturers Association, New York, N.Y. Filed Feb. 17, 1966.

MEDALLION HOME

For Magazine Published From Time to Time.
First use on or about Jan. 27, 1966.

SN 239,254. Free Enterprise Publications Inc., Washington, D.C. Filed Feb. 21, 1966.

THE BANK DIRECTOR

For Publication and Newsletter That Is Circulated to Directors of National and State Banks.
First use Feb. 4, 1966.

SN 239,529. The Macmillan Company, New York, N.Y. Filed Feb. 24, 1966.



For Books and Booklets, Brochures, and Bulletins.
First use 1947.

SN 239,778. Llewellyn King Associates, Inc., Long Island City, N.Y. Filed Feb. 28, 1966.

WOMEN NOW

For Bi-Monthly Women's Service Magazine.
First use Dec. 29, 1965.

SN 241,497. Nashua Corporation, Nashua, N.H. Filed Mar. 21, 1966.

TRANSDEC

For Custom Transfer Labels for Packages.
First use August 1965.

SN 241,574. American Plywood Association, Tacoma, Wash. Filed Mar. 22, 1966.

PANEL

For Periodical, Magazine Issued at Least Quarterly and Directed to the Plywood Industry.
First use Mar. 14, 1966.

SN 241,906. Kierulf Electronics, Inc., Los Angeles, Calif. Filed Mar. 25, 1966.

RELAYMASTER

For Catalogs for Electric Relays.
First use Jan. 15, 1966.

SN 241,904. Kierulf Electronics, Inc., Los Angeles, Calif. Filed Mar. 25, 1966.

METERMASTER

For Catalogs for Electric Meters.
First use July 1, 1963.

SN 241,924. Noble and Noble Publishers, Inc., New York, N.Y. Filed Mar. 25, 1966.



For Books.
First use Aug. 23, 1949.

Class 39—Clothing

SN 200,263. Jacobson Stores Inc., Jackson, Mich. Filed Aug. 20, 1964.

MISS J SHOP

The word "Shop" is disclaimed apart from the mark as shown.
For Women's Coats, Dresses, Suits, Sweaters, Skirts, Blouses, Pants, Swimwear, and Shoes.
First use May 1, 1964.

SN 216,129. Atlas Shirt Company, Inc., New York, N.Y. Filed Apr. 9, 1965.

TIGER "440"

For Men's Outer Shirts.
First use Mar. 30, 1965.

SN 222,979. Sea & Ski Corporation, Reno, Nev. Filed July 8, 1965.

SEA & SKI

Owner of Reg. Nos. 636,963, 774,099, and others.
For Swimsuits.
First use on about Feb. 15, 1965.

SN 225,162. Endicott Johnson Corporation, Endicott, N.Y. Filed Aug. 6, 1965.

PRINCESSA

For Girls' Shoes.
First use Aug. 7, 1964.

SN 225,810. Hart Schaffner & Marx, Chicago, Ill. Filed Aug. 9, 1965.

GRAHAM & GUNN LTD.

For Men's Suits, Coats and Trousers, Sport Coats, Outer Coats, and Slacks.
First use January 1965.

SN 225,680. Somerset Knitting Mills, Inc., Philadelphia, Pa. Filed Aug. 13, 1965.

BABY LINKS

For Sweaters.
First use June 28, 1965.

SN 226,443. Groves Junior Fashions Limited, Bushey Heath, England. Filed Aug. 25, 1965.

DORRINDA

Owner of British Reg. No. 851,175, dated July 3, 1963.
For Suits, Coats, Jackets, Dresses, Skirts, Blouses, and Slacks for Children.

SN 226,674. A. Rivets Co., Inc., Boston, Mass. Filed Aug. 27, 1965.



The drawing is lined for yellow or gold.
For Woven Fabrics Made Up Into Neckwear.
First use on or about July 7, 1965.

SN 227,678. Glen Mfg. Inc., Milwaukee, Wis. Filed Sept. 13, 1965.

PERENNIALS

For Women's Apparel—Namely, Suits, Coats, Dresses, Shirts, Skirts, Shorts, Slacks, and Belts.
First use Oct. 14, 1964.

SN 228,441. Denton Sleeping Garment Mills, Inc., Chicago, Ill. Filed Sept. 23, 1965.

DENTON

Owner of Reg. Nos. 806,150 and 504,101.
For Underwear and Layette Items—Namely, Shirts, Pants, Gowns, Sacques, Kimonos and Bibs, Stretch Tights, and Hosiery.
First use Jan. 24, 1966.

SN 229,143. Somerset Knitting Mills, Inc., Philadelphia, Pa. Filed Oct. 1, 1965.

HEATHERSPUN

For Sweaters for Men, Women, and Children.
First use Sept. 14, 1965.

SN 230,206. J. P. Stevens & Co., Inc., New York, N.Y. Filed Oct. 14, 1965.

SPIRIT

For Hosiery.
First use Sept. 23, 1965.

SN 231,513. Evan Wayne Knits, Inc., New York, N.Y. Filed Oct. 28, 1965.

EVAN WAYNE

The name "Evan Wayne" is fanciful. Owner of Reg. No. 686,335.
For Women's and Misses' Knit Dresses.
First use Aug. 26, 1964.

SN 232,359. Somerset Knitting Mills, Inc., Philadelphia, Pa. Filed Nov. 8, 1965.

BABY CABLE

For Sweaters for Men, Women, and Children.
First use Oct. 18, 1965.

SN 233,309. Barlan Furs, Inc., New York, N.Y. Filed Nov. 26, 1965.

SNO-FLURRY

For Ladies' Fur Garments.
First use Oct. 1, 1965.

SN 235,493. Craddock-Terry Shoe Corporation, Lynchburg, Va. Filed Dec. 29, 1965.

♥ miss Billiken

Owner of Reg. Nos. 93,161, 148,383, and 185,420.
For Shoes.
First use Dec. 14, 1965.

SN 235,511. Jaymar-Ruby, Inc., Michigan City, Ind. Filed Dec. 29, 1965.

JAYPREST

Owner of Reg. Nos. 546,057, 810,812, and others.
For Men's Trousers.
First use Nov. 24, 1965.
Subj. to Intf. with SN 236,492.

SN 236,271. Keystone Adjustable Cap Co., d.b.a. Keystone Adjustable Cap Company, Philadelphia, Pa. Filed Jan. 12, 1966.



The representation of the face shown is fanciful and does not identify a living individual. Applicant disclaims the word "Cap" and the representation of a cap alone and apart from the mark as shown.
For Paper Caps.
First use on or about Jan. 1, 1937.

SN 237,947. El Greco Leather Products Co. Inc., New York, N.Y. Filed Feb. 3, 1966.

EL GRECO

The English translation of the Greek words "El Greco" is "the Greek."
For Ladies' Shoes, Sandals and Thongs, etc.
First use September 1965.

SN 237,985. Maljana S.p.A., Milan, Italy. Filed Feb. 3, 1966.

maljana

For Ladies' Dresses, Two-Piece and Three Piece Suits, Blouses, Pullovers, Slacks, Hostess Gowns, and Coats.
First use Aug. 7, 1959; in commerce Aug. 7, 1959.

SN 238,672. Royce Hosiery Mills, Inc., New York, N.Y. Filed Feb. 11, 1966.

Cor Lisle

Applicant disclaims the word "Lisle" apart from its use in the mark as shown.
For Men's Hosiery.
First use Dec. 7, 1965.

SN 239,129. Diana Stores Corporation, North Bergen, N.J. Filed Feb. 18, 1966.

PRINCE ELEGANT

For Wearing Apparel for Boys—Namely, Sports Shirts, Knit Shirts, Slacks, Shorts, Jackets, Ties, Sweaters, Jeans, Swimwear, Hose, Pajamas, and Underwear.
First use September 1961.

SN 239,223. Capco Sales Corp., New York, N.Y. Filed Feb. 21, 1966.

CAPCO MATES

For Boys' Wearing Apparel—Namely, Shirts, Sweaters, Jackets Shorts, and Pants.
First use Nov. 22, 1965.

SN 239,673. Target Stores, Inc., Minneapolis, Minn. Filed Feb. 25, 1966.

TARVAL

For Infants', Boys', and Men's Clothing—Namely, Infants' Diapers, Gowns, Kimonos and Undershirts; Men's and Boys' Briefs and Undershirts; Boys' Hose and Jeans; and Men's Pajamas, Boxer Shorts, and Shirts.
First use on or about Mar. 1, 1964.

SN 240,007. S. S. Kresge Company, Detroit, Mich. Filed Mar. 2, 1966.

Owner of Reg. No. 809,587.
For Training Pants.
First use on or before Dec. 20, 1965.

SN 240,323. National Association of Supermarket Apparel Distributors, New York, N.Y. Filed Mar. 7, 1966.

Applicant disclaims the generic word "Sox" a misspelling of "socks" apart from the mark as shown.
For Socks, That Is, Stockings With Short Legs.
First use on or before Nov. 1, 1965.

SN 240,350. Ship 'N Shore, Inc., Upland, Pa. Filed Mar. 7, 1966.

SOFT SHELL

For Women's and Misses' Blouses and Knitted Tops.
First use Feb. 16, 1966.

SN 241,197. Summit Sportswear Co., Boston, Mass. Filed Mar. 16, 1966.

BRAE MIST

For Misses Sportswear—Namely, Sweaters.
First use Feb. 11, 1966.

SN 241,264. Monte Vardi Sportswear Co., Inc., New York, N.Y. Filed Mar. 17, 1966.

For Children's Sweaters, Bootie Sets, Shawls, and Children's Swimwear.
First use June 1964.

SN 241,606. Unishops, Inc., Jersey City, N.J. Filed Mar. 22, 1966.

QUINELLA

The word "Quinella" is a term used in "Jai Lai" meaning a "combination of two."
For Men's and Boys' Sportcoats, Suits, Jackets, Overcoats, Sport Shirts, Pajamas, Sweaters, Gloves, Hosiery, Knit Shirts, and Bathing Trunks.
First use Feb. 18, 1966.

SN 241,666. Kinney Shoe Corporation, New York, N.Y. Filed Mar. 23, 1966.

NANCY ARDEN

The name "Nancy Arden" is fanciful and does not refer to any living individual.
For Women's Hosiery.
First use July 2, 1965.

SN 241,766. Donmoor, Inc., New York, N.Y. Filed Mar. 24, 1966.

TUMBLEWEEDS

For Boys' and Girls' Jeans, Jackets, Slacks, Shirts, and Sweaters.
First use Feb. 1, 1966.

SN 241,778. Hark Importing Corp., New York, N.Y. Filed Mar. 24, 1966.

HARK IMPORTS

Applicant disclaims any exclusive right in the word "Imports" apart from the mark as shown.
For Ladies' Sweaters, Blouses, Shirts, Dresses, Jackets, Coats, Pants, and Skirts.
First use Apr. 26, 1963.

SN 242,014. Interco Incorporated, St. Louis, Mo. Filed Mar. 28, 1966.

VITA CUSHION

Applicant makes no claim to the word "Cushion" apart from the mark as shown.
For Shoes.
First use Feb. 11, 1966.

SN 242,377. The N & B Company, Milwaukie, Oreg. Filed Mar. 31, 1966.

For Aprons.
First use Mar. 18, 1966.

SN 242,503. Sarong, Inc., Dover, Del. Filed Apr. 1, 1966.

BODY MAGIC

For Foundation Garments.
First use Mar. 24, 1966.

SN 242,755. Societe Rhodiaceta, Paris, France. Filed Apr. 5, 1966.

Priority claimed under Sec. 44(d) on French Reg. No. 3,544, dated Nov. 9, 1965.
For Wearing Apparel for Men, Women and Children—Namely, Dresses, Robes, Coats, Suits, Vests, Slacks, Shirts, Blouses, Lingerie and Underwear, Pullovers, Cardigans, Housecoats, Pajamas, Jackets, Layette Articles, Scarfs, Ties, and Hosiery.

SN 242,856. Thurman Manufacturing Company, Philadelphia, Pa. Filed Apr. 6, 1966.

The name "Rob Scot" does not identify any particular living individual.
For Men's Sweaters.
First use December 1958.

SN 243,222. Chock Ful O'Knits, Inc., New York, N.Y. Filed Apr. 12, 1966.

CHOCK FUL O·KNITS

For Knitted Apparel—Namely, Sweaters, Suits, and Skirts for Women and Children.
First use Mar. 28, 1966.

SN 243,224. Rapid-American Corporation, New York, N.Y. Filed Apr. 12, 1966.

PALLADIUM

For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests.
First use Feb. 11, 1966.

SN 243,225. Ben Cooper, Inc., Brooklyn, N.Y. Filed Apr. 12, 1966.

SUPER HERO

For Masquerade Costumes.
First use Oct. 29, 1965.

SN 243,456. Kenrose Manufacturing Co., Inc., New York, N.Y. Filed Apr. 14, 1966.

KENTIMER

For Women's Dresses, Housecoats, Slacks, and Blouses.
First use Dec. 21, 1962.

SN 243,628. Belleville Shoe Manufacturing Company, Belleville, Ill. Filed Apr. 18, 1966.

For Athletic Shoes for Men, Women, and Children.
First use Nov. 1, 1963.

SN 243,870. Halpern & Christenfeld Inc., New York, N.Y. Filed Apr. 20, 1966.

crisprest

For Men's, Women's, and Children's Pants, Slacks, Walking Shorts, Suits, Vests, Jackets, and Shirts.
First use Mar. 9, 1966.

SN 243,899. Royal Industries, Inc., Concord, N.C. Filed Apr. 20, 1966.

HIGHER UPPERS

For Ladies' Hosiery.
First use Mar. 14, 1966.

SN 244,693. Exquisite Form Industries, Inc., New York, N.Y. Filed May 2, 1966.

YOUNG HAPPENINGS

For Bras, Panties, Garter Belts, Girdles, Slips, Petticoats, and Sleepwear.
First use Apr. 22, 1966.

SN 244,828. Kayser-Roth Corporation, New York, N.Y. Filed May 3, 1966.

MACSHAG

For Men's and Boys' Hosiery.
First use Mar. 25, 1965.

SN 250,213. Ben Cooper Inc., Brooklyn, N.Y. Filed July 14, 1966.

FAMOUS HEROS

For Masquerade Costumes.
First use June 1, 1966.

SN 250,214. Ben Cooper Inc., Brooklyn, N.Y. Filed July 14, 1966.

MIGHTY HERO

For Masquerade Costumes.
First use June 1, 1966.

SN 250,216. Ben Cooper Inc., Brooklyn, N.Y. Filed July 14, 1966.

GREAT HEROS

For Masquerade Costumes.
First use June 1, 1966.

SN 251,260. Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. Filed July 29, 1966.

MEBRA

For Foundation Garments—Namely, Brassieres.
First use July 13, 1966.

SN 255,785. Diana Foundations, Inc., New York, N.Y. Filed Oct. 5, 1966.

J.G.

For Girdles, Pantie Girdles, and Corsets.
First use on or before May 21, 1946.

Class 40—Fancy Goods, Furnishings, and Notions

SN 246,430. Aimcee Wholesale Corporation, New York, N.Y. Filed May 24, 1966.

AMCREST

For Stamped Linens Used for Embroidery.
First use July 20, 1965.

Class 41—Canes, Parasols, and Umbrellas

SN 245,487. [illegible] Shop, Inc., New Orleans, La. Filed Apr. 4, 1966.



For Umbrellas.
First use March 1962.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 231,419. Indian Head Mills, Inc., New York, N.Y. Filed Oct. 28, 1965.

POLY-LOK

For Knit-Stitch Fabrics of Various Materials, Used for Making Into Garments, Draperies, and the Like.
First use Mar. 16, 1965.

SN 233,897. Registered Fabrics Corp., New York, N.Y. Filed Nov. 26, 1965.

TWINKLE-AIRE

For Fabrics Made of Polyester Fibres and Cotton.
First use Oct. 14, 1965.

SN 234,252. Max P. Steinway, Detroit, Mich. Filed Dec. 8, 1965.

ADWAY

For Carpets and Carpeting in Roll and Rug Form.
First use Oct. 15, 1965.

SN 236,590. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Jan. 14, 1966.

COLOR FORECAST COLLECTION

Applicant disclaims the words "Color" and "Collection" apart from the mark as shown.
For Draperies and Bedspread Ensembles and Slipcover and Upholstery Fabrics in the Piece, All Made of Cotton, Rayon, Acetate and/or Other Synthetic or Natural Fibers, and Combinations Thereof.
First use on or about Dec. 16, 1965.
Subj. to Intf. with SN 238,608.

SN 238,608. Chatham Manufacturing Company, Elkin, N.C. Filed Feb. 11, 1966.

FORECAST

For Blankets.
First use Dec. 21, 1965.
Subj. to Intf. with SN 236,590.

SN 239,576. American Biltrite Rubber Co., Inc., Chelsea, Mass. Filed Feb. 25, 1966.

KARPET-KLEEN

For Elastomeric Flooring—Namely, Nylon-on-Rubber Rugs, Carpets, Carpeting, and Runners.
First use Sept. 24, 1965.

SN 242,756. Societe Rhodiaceta, Paris, France. Filed Apr. 5, 1966.



Priority claimed under Sec. 44(d) on French Reg. No. 3,544, dated Nov. 9, 1965.
For Textile Fabrics for Making Into Dresses, Suits, Coats, Bed and Table Covers.

SN 244,182. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Apr. 25, 1966.

HOTHOUSE FLOWERS

For Bedspreads, Blankets, Tablecloths, Towels, and Other Household Linens.
First use Mar. 14, 1966.

SN 245,519. Shapiro & Son Curtain Corp., New York, N.Y. Filed May 12, 1966.



The words "Designed by" are disclaimed apart from the mark as shown without waiver of any common-law rights. "Mr. Sid" is the pseudonym of Mr. Sidney Shapiro, whose consent is of record.
For Bedspreads.
First use Mar. 7, 1966.

SN 247,199. Dan River Mills, Incorporated, Danville, Va. Filed June 3, 1966.

SATINCALE

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof, and Including Sheets, Sheeting, and Pillowcases.
First use May 19, 1966.

SN 247,200. Dan River Mills, Incorporated, Danville, Va. Filed June 3, 1966.

SWEEPSTAKES

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use May 24, 1966.

SN 247,201. Dan River Mills, Incorporated, Danville, Va. Filed June 3, 1966.

TRANQUALE

For Sheets, Sheeting, and Pillowcases.
First use May 24, 1966.

SN 247,542. Thomas Pride Mills, Inc., Atlanta, Ga. Filed June 7, 1966.

RESISTAL

For Backing for Carpets.
First use on or about Jan. 1, 1966.

Class 43—Thread and Yarn

SN 242,153. Stretch Yarns, Incorporated, Fall River, Mass. Filed Mar. 29, 1966.

SEMI-COR

For Elasticized Yarns.
First use on or about Feb. 18, 1966.

SN 242,676. Spinnerin Yarn Co., Inc., South Hackensack, N.J. Filed Apr. 4, 1966.

HIGHLAINE

For Yarns of Natural Fibers Wholly or in Substantial Part of Wool.
First use Aug. 16, 1965.

SN 242,757. Societe Rhodiaceta, Paris, France. Filed Apr. 5, 1966.



Priority claimed under Sec. 44(d) on French Reg. No. 3,544, dated Nov. 9, 1965.
For Threads and Yarns of Synthetic Fibers.

SN 243,779. Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix (Nord), France. Filed Apr. 19, 1966.

ALMEE

Owner of French Reg. No. 6,901, dated Jan. 21, 1966.
For Yarns and Threads.

SN 247,345. Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix (Nord), France. Filed June 6, 1966.

AGE D'OR

Owner of French Reg. No. 6,889, dated Jan. 21, 1966.
For Yarns and Threads.

Class 44—Dental, Medical, and Surgical Appliances

SN 237,129. Hudson Oxygen Therapy Sales Company, Los Angeles, Calif. Filed Jan. 24, 1966.

CORR-A-TUBE

For Flexible Plastic Tubing for Medical Use.
First use Dec. 27, 1965.

SN 238,112. Rexall Drug and Chemical Company, d.b.a. The Absorbent Cotton Company, Los Angeles, Calif. Filed Feb. 4, 1966.

WHITE BEAUTY

Applicant disclaims the word "White" apart from the mark as shown.
For Cotton Rolls for Barber and Beauty Shops.
First use November 1958.

SN 241,990. Deseret Pharmaceutical Company, Inc., Salt Lake City, Utah. Filed Mar. 28, 1966.

BRONCHOCATH

For Indwelling Catheter Placement Units.
First use at least as early as Mar. 14, 1966.

SN 241,992. Deseret Pharmaceutical Company, Inc., Salt Lake City, Utah. Filed Mar. 28, 1966.

TRACHEOCATH

For Indwelling Catheter Placement Units.
First use at least as early as Mar. 14, 1966.

SN 242,382. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Mar. 31, 1966.

ORTHO-WHITE

Owner of Reg. Nos. 298,222, 774,407, and others.
For Diaphragms.
First use August 1949.

SN 242,924. Pharmaseal Laboratories, Glendale, Calif. Filed Apr. 7, 1966.

CONTROLFLATE

For Catheter With Pre-Filled Syringe.
First use Jan. 20, 1966.

SN 243,762. American Home Products Corporation, New York, N.Y. Filed Apr. 19, 1966.

ENCASE

For Cotton Tipped Swabs.
First use Mar. 23, 1966.

SN 254,967. Stylors, Inc., Jacksonville, Fla. Filed Sept. 23, 1966.



For Electrically Operated Radiant Heat Hair Treating Machine for Enhancing the Action of Bleaches, Tints, Toners, Permanent Waves, and Hair Conditioners.
First use Aug. 12, 1966.

Class 46—Foods and Ingredients of Foods

SN 213,694. Ray Moss Farms, Inc., Chattanooga, Tenn. Filed Mar. 9, 1965.

MILK JUG

For Whipping Cream, Sour Cream, Onion Flavored Food Dip and Dressing, Cottage Cheese, Ice Cream, Sherbet, and Ice Milk.
First use Mar. 31, 1960.
Subj. to Intf. with SN 198,502.

SN 231,911. Gubbens A/S, Hundested, Denmark. Filed Nov. 1, 1965.



"Gubbens" is the Swedish language equivalent of "old men." Owner of Danish Reg. No. 1460/47, dated Oct. 18, 1947.
For Canned Fish.

SN 233,219. Ralph Samsel, d.b.a. Ralph Samsel Co., El Centro, Calif. Filed Nov. 22, 1965.



For Fresh Lettuce.
First use Oct. 12, 1965.

SN 237,241. Mother's Cake & Cookie Co., Oakland, Calif. Filed Jan. 25, 1966.

WHITE ANGEL

For Cookies.
First use Jan. 16, 1962.

SN 237,242. Mother's Cake & Cookie Co., Oakland, Calif. Filed Jan. 25, 1966.

RANGER

For Cookies.
First use Aug. 25, 1961.

SN 237,243. Mother's Cake & Cookie Co., Oakland, Calif. Filed Jan. 25, 1966.

SORRENTO

For Cookies.
First use June 16, 1961.

SN 239,609. Frito-Lay, Inc., Dallas, Tex. Filed Feb. 25, 1966.

NU-WAY

For Barbecue Sauce, Powdered Broth, Food Flavorings, Spices, Mayonnaise, Salad Dressing, Tartar Sauce, French Dressing, Salt, Pepper, Mustard and Catsup, Meat Tenderizers, and Antioxidant for Use in Solution on Fruits and Vegetables To Prevent Discoloration.
First use Dec. 31, 1953.

SN 241,947. Ultra-Life Laboratories, Inc., East St. Louis, Ill. Filed Mar. 25, 1966.

RIDERS PRIDE

For Horse Feed.
First use May 18, 1965.

SN 241,970. H. P. Cannon & Son, Incorporated, Bridgeville, Del. Filed Mar. 28, 1966.

POTATO PATCH

For Canned Beans.
First use Mar. 28, 1961.

SN 241,971. Castleberry's Food Company, Augusta, Ga. Filed Mar. 28, 1966.

CASTLEBERRY'S

Owner of Reg. No. 340,607.
For Chili; Hash; Brunswick Stew; Barbecued Pork; Pork With Barbecue Sauce; Barbecued Beef; Beef With Barbecue Sauce; Spaghetti With Ground Beef in Tomato Sauce; Ground Beef and Onions; Chili Beans and Franks; Chili and Beans; Beef Stew; Brown Gravy With Chopped Beef; Barbecue Sauce; Steak and Meat Sauce; Worcestershire Sauce; Seafood and Cocktail Sauce; Hot Polish Sausage.
First use Jan. 10, 1966.

Class 47—Wines

SN 190,644. Jack Poust & Company, Inc., New York, N.Y. Filed Apr. 8, 1964.

CHERRY JULEP

Owner of Reg. No. 578,659.
For Cherry Flavored Wine Specialty.
First use Jan. 25, 1950.

Class 49—Distilled Alcoholic Liquors

SN 232,597. Charles Rosenblum, d.b.a. Stuart Lloyd Co., New York, N.Y. Filed Nov. 12, 1965.

18-64

For Rum.
First use July 1959.

SN 241,815. R. Stevenson Taylor and Company, Limited, Dumbarton, Scotland. Filed Mar. 24, 1966.



Owner of U.S. Reg. Nos. 644,950 and 698,723.
For Whisky.
First use Mar. 16, 1959; in commerce Mar. 16, 1959.

Class 50—Merchandise Not Otherwise Classified

SN 244,035. Shaw & Slavsky, Inc., Detroit, Mich. Filed Apr. 21, 1966.

GLAMOUR

For Number Tags for Shelf Merchandise.
First use on or about Jan. 3, 1966.

SN 252,933. Broadloom Imports, Inc., New York, N.Y. Filed Aug. 23, 1966.

VINYLAN

For Carpets, Mats, and Runners Made of Plastic as by Molding.
First use July 21, 1966.

Class 51—Cosmetics and Toilet Preparations

SN 211,402. Yardley of London, Inc., Totowa, N.J. Filed Feb. 4, 1965.

FROSTED SLICKER

Applicant disclaims any exclusive right in the word "Frosted."
For Lip Polish.
First use Jan. 18, 1965.

SN 224,880. Professional Research Laboratory, Inc., New Haven, Conn. Filed Aug. 3, 1965.

CLORO-5

For Denture Cleansers.
First use July 1, 1965.

SN 229,905. Viviane Woodard Corporation, Panorama City, Calif. Filed Oct. 11, 1965.

ONCE UPON A TIME

For Cosmetics—Namely, Cologne, Bubble Bath, and Perfume.
First use Sept. 1, 1965.

SN 242,658. Josephine K. Preston, d.b.a. Jo Preston Cosmetics, Wantagh, N.Y. Filed Apr. 4, 1966.

IMH

For Perfume and Cologne.
First use Jan. 2, 1964.

SN 245,434. Mr. Mod Shop, Inc., New Orleans, La. Filed Apr. 4, 1966.



For Men's Cologne.
First use March 1962.

SN 254,028. Holiday Magic, San Rafael, Calif. Filed Sept. 8, 1966.



For Cologne, After-Shave Lotion, Shave Cream, and Personal Deodorant.
First use June 5, 1966.

SN 254,974. Jean Nate, Inc., New York, N.Y. Filed Sept. 23, 1966.

ORDER OF THE BATH

For Bath Oil.
First use Aug. 22, 1966.

Class 52 — Detergents and Soaps

SN 219,880. Margaret Cormier, d.b.a. Shimmer-Ol Co., Stratford, Conn. Filed May 27, 1965.

SHIMMER-OL

For Hair Shampoos.
First use Feb. 9, 1944.

SN 234,017. Eve Elmes, d.b.a. Eve of Roma, Rome, Italy. Filed Dec. 6, 1965.

EVE OF ROMA

No claim is made to the word "Roma" apart from the mark as shown.
For Toilet Soap.
First use on or about Mar. 15, 1960; in commerce on or about Mar. 15, 1960.

SN 242,070. Trina, Inc., Fall River, Mass. Filed Mar. 28, 1966.

POOF

For Spot Remover.
First use on or about Jan. 7, 1966.

SN 244,304. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 26, 1966.

003½

For Toilet Soap.
First use Feb. 21, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 241,127. Dutch Inns of America, Inc., Miami, Fla. Filed Mar. 16, 1966.



For Motel Services.
First use July 1, 1964.

Class 101 — Advertising and Business

SN 198,502. Sunnydale Farms, Inc., Brooklyn, N.Y. Filed July 24, 1964.

MILK-JUG

For Retail Dairy and Grocery Store Services.
First use May 18, 1964.
Subj. to Intf. with SN 213,693 and SN 213,694.

SN 213,693. Ray Moss Farms, Inc., Chattanooga, Tenn. Filed Mar. 9, 1965.

MILK JUG

For Retail Dairy and Grocery Store Services.
First use Mar. 31, 1960.
Subj. to Intf. with SN 198,502.

SN 216,162. Guaranteed Reservations, Incorporated, Palm Beach, Fla. Filed Apr. 9, 1965.

Guaranteed Reservations

No claim is made to the words "Guaranteed Reservations" apart from the mark without waiving applicant's common law rights therein.
For Service Rendered to Travelers Whereby They Can Obtain a Room Reservation in a Hotel, Motel or Inn Without Making a Deposit, and to Operators of Hotels, Motels or Inns Whereby They Will Be Reimbursed if the Room Is Not Paid For.
First use Feb. 1, 1965.

SN 219,399. Camera & Craft, Inc., Chattanooga, Tenn. Filed May 21, 1965.

At camera and craft
we teach you how!

The representation of the camera and the words "We Teach You How" are disclaimed apart from the mark as shown.
For Retail Photographic Supply Store and Hobby Craft Shop Services.
First use Apr. 1, 1961.

SN 228,504. Art Iron, Inc., Toledo, Ohio. Filed Sept. 24, 1965.

ART IRON

No claim is made to the word "Iron" apart from the mark as shown. Owner of Reg. No. 637,595.
For Engineering and Manufacturing of Metal Parts for Use in Building Construction.
First use in or about January 1945.

SN 231,046. Mary Carter Paint Co., Tampa, Fla. Filed Oct. 22, 1965.



The drawing is lined for red and blue.
For Retail Paint Store Services.
First use Apr. 1, 1965.

SN 232,581. A. C. Nielsen Company, Chicago, Ill. Filed Nov. 12, 1965.

VIEWERS IN PROFILE

For Marketing Research With Reference to Characteristics of Television Viewing Audiences.
First use Nov. 2, 1965.

SN 239,700. Aries Corporation, Minneapolis, Minn. Filed Feb. 28, 1966.



The mark consists of a design of a ram's horn.
For Providing Design and Consultation Services to Management in the Field of Electronic Computer Programming, Digital Data Processing Systems, and Information Retrieval Systems.
First use January 1962.

SN 239,701. Aries Corporation, Minneapolis, Minn. Filed Feb. 28, 1966.

ARIES

For Providing Design and Consultation Services to Management in the Field of Electronic Computer Programming, Digital Data Processing Systems, and Information Retrieval Systems.
First use January 1962.

Class 102 — Insurance and Financial

SN 218,211. Nationwide Financial Corporation, New York, N.Y. Filed May 6, 1965.



The wording "Ready Cash Credit Plan" is disclaimed apart from the mark as shown.
For Passing Upon the Credit of Individuals and Firms for Others, and Arranging Immediate Payments to Retailers for Articles and Services Purchased Therefrom by Firms and Individuals.
First use on or about Jan. 15, 1965.

Class 104 — Communication

SN 237,885. Spectrum Fabrics Corporation, d.b.a. Telespectrum, New York, N.Y. Filed Feb. 2, 1966.

TELESPECTRUM

For Communication Services—Namely, Installation and Maintenance of Community Antenna Systems for Television, and Consultation in Relation to Such Installation and Maintenance.
First use Dec. 15, 1965.

Class 107 — Education and Entertainment

SN 180,338. Theatravel Ticket Agency, Inc., New York, N.Y. Filed Nov. 1, 1963.

THEATRAVEL

For Theater Ticket Broker Services, Especially for Travel Agents.
First use Oct. 10, 1963.

SN 235,016. Show Biz, Inc., Nashville, Tenn. Filed Dec. 21, 1965.

THE !!!! BEAT

For Television Program Title.
First use Nov. 27, 1965.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 239,650. The National Press Club of Washington, D.C., Washington, D.C. Filed Feb. 25, 1966.



The word "Washington" is disclaimed apart from the mark as shown. The lining on the drawing is for shading purposes only and does not represent color.
For Indicating Membership in the applicant.
First use April 1920.

SN 242,002. Flying Educators, Inc., Van Nuys, Calif. Filed Mar. 28, 1966.

FLYING EDUCATORS

For Indicating Membership in Applicant's Non-Profit Recreational and Educational Corporation.
First use in or before 1937.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

820,938. NURSERYMAN. Dolly Madison Foods, Inc. MULTIPLE CLASS (Classes 1 and 10). SN 220,989. Pub. 10–11–66. Filed 6–14–65.

820,939. AEROSIL AND DESIGN. Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. SN 236,063. Pub. 10–11–66. Filed 1–10–66.

820,940. QULENE. Beaunit Corporation. SN 238,388. Pub. 10–11–66. Filed 2–9–66.

820,941. QULAIRE. Beaunit Corporation. SN 238,389. Pub. 10–11–66. Filed 2–9–66.

820,942. DSN. Beaunit Corporation. SN 238,999. Pub. 10–11–66. Filed 2–17–66.

820,943. SKYBOND. Monsanto Company. SN 239,429. Pub. 10–11–66. Filed 2–23–66.

820,944. AEROSIL. Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. SN 241,323. Pub. 10–11–66. Filed 3–18–66.

820,945. EL REXENE AND DESIGN. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company. SN 241,805. Pub. 10–11–66. Filed 3–24–66.

820,946. CONWED. Wood Conversion Company. SN 242,160. Pub. 10–11–66. Filed 3–29–66.

820,947. VYLOR. E. I. du Pont de Nemours and Company. SN 249,278. Pub. 10–11–66. Filed 6–30–66.

Class 2 — Receptacles

820,948. JIFFIES. Flex-O-Glass, Inc., d.b.a. Warp Brothers. SN 191,273. Pub. 10–11–66. Filed 4–16–64.

820,949. STA-PUT AND DESIGN. Bemis Company, Inc., by change of name from Bemis Bro. Bag Company. SN 213,275. Pub. 10–11–66. Filed 3–4–65.

820,950. INTERCORR AND DESIGN. Interstate Container Corporation. SN 218,773. Pub. 10–11–66. Filed 5–13–65.

820,951. ELEPHANT HEAD (DESIGN). Mammoth Plastics, Inc. SN 220,394. Pub. 10–11–66. Filed 6–4–65.

820,952. T.N.T. Thomas E. Wright, d.b.a. Wright Industries. SN 221,869. Pub. 10–11–66. Filed 6–23–65.

820,953. TISSUE N' TIDY. Thomas E. Wright, d.b.a. Wright Industries. SN 221,870. Pub. 10–11–66. Filed 6–23–65.

820,954. BOLTA-WOOD. The General Tire & Rubber Company. SN 222,144. Pub. 10–11–66. Filed 6–28–65.

820,955. THERMO-CADDY. Club Aluminum Products Company. SN 222,657. Pub. 10–11–66. Filed 7–6–65.

820,956. MIRA-FOAM. American Can Company. SN 223,004. Pub. 10–11–66. Filed 7–9–65.

820,957. TRAY CHAMP. Southern Champion Tray Company. SN 224,805. Pub. 10–11–66. Filed 8–2–65.

820,958. FANCIFUL DESIGN. Gilman Paper Company. SN 226,144. Pub. 10–11–66. Filed 8–20–65.

820,959. CPI AND DESIGN. Consolidated-Papers, Inc. SN 228,499. Pub. 10–11–66. Filed 2–10–66.

820,960. ASTROLITE. Wanskuck Company. SN 250,715. Pub. 10–11–66. Filed 7–21–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

820,961. CITY SPRITES ETC. AND DESIGN. Aetna Leather Novelty Co., Inc. SN 221,436. Pub. 10–11–66. Filed 6–18–65.

820,962. EMSON. E. Mishan & Sons. MULTIPLE CLASS (Classes 3, 37, and 41). SN 224,829. Pub. 10–11–66. Filed 8–3–65.

820,963. ABSOLITE. Samsonite Corporation. SN 228,409. Pub. 10–11–66. Filed 9–22–65.

820,964. BARONET. Baronet Corp. MULTIPLE CLASS (Classes 3 and 8). SN 237,293. Pub. 10–11–66. Filed 1–26–66.

Class 4 — Abrasives and Polishing Materials

820,965. COUGHLAN. G. N. Coughlan Co. MULTIPLE CLASS (Classes 4, 12, and 15). SN 212,653. Pub. 10–11–66. Filed 2–24–65.

Class 5 — Adhesives

820,966. TRC TIRE SEAL AND DESIGN. Texas Refinery Corp. SN 225,881. Pub. 10–11–66. Filed 8–16–65.

Class 6 — Chemicals and Chemical Compositions

820,967. VUNI 64 AND DESIGN. Dr. Liselotte Falkenstein. SN 188,430. Pub. 10–11–66. Filed 3–11–64.

820,968. ELEC-TREX. Geigy Chemical Corporation. SN 202,466. Pub. 10–11–66. Filed 9–23–64.

820,969. MASSEY-FERGUSON. Massey-Ferguson Limited. SN 211,292. Pub. 10–11–66. Filed 2–3–65.

820,970. STAT-TEST. Mallinckrodt Chemical Works. SN 220,117. Pub. 10–11–66. Filed 6–1–65.

820,971. EVODE. Evode Limited. SN 220,288. Pub. 10–11–66. Filed 6–3–65.

820,972. PERMA SHIELD AND DESIGN. Cutler Packaging Corporation. SN 223,097. Pub. 10–11–66. Filed 7–12–65.

820,973. CSP. Calgon Corporation. SN 224,921. Pub. 10–11–66. Filed 8–4–65.

820,974. TRIBOFAX. Surface Processes Corp. SN 224,982. Pub. 10–11–66. Filed 8–4–65.

820,975. CHROMOFAX. Surface Processes Corp. SN 224,984. Pub. 10–11–66. Filed 8–4–65.

820,976. PENTEK. Tenneco Chemicals, Inc. SN 224,986. Pub. 10–11–66. Filed 8–4–65.

820,977. SUPRASEC. Imperial Chemical Industries Limited. SN 225,420. Pub. 10–11–66. Filed 8–10–65.

820,978. "OLD HICKORY." Mrs. Thornton Hopkins, d.b.a. Thornton Hopkins Chemicals. SN 226,325. Pub. 10–11–66. Filed 7–12–65.

820,979. SPRAY AND DESIGN. Spray Products Corporation. SN 230,943. Pub. 10–11–66. Filed 10–21–65.

820,980. VETEV. Petrx Corporation, d.b.a. Vetev Laboratories. SN 232,418. Pub. 10–11–66. Filed 11–9–65.

820,981. AGLUTON-TEST. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 234,629. Pub. 10–11–66. Filed 12–15–65.

820,982. TRANID. Union Carbide Corporation. SN 237,183. Pub. 10–11–66. Filed 1–24–66.

820,983. COLOR-CICLES. General Experimental Products Corporation. SN 239,761. Pub. 10–11–66. Filed 2–28–66.

820,984. FROZEN RAINBOWS. General Experimental Products Corporation. SN 239,762. Pub. 10–11–66. Filed 2–28–66.

820,985. DRIBAC. Warner-Lambert Pharmaceutical Company. SN 241,107. Pub. 10–11–66. Filed 3–15–66.

820,986. WAFOLINE. H. Kohnstamm & Co., Inc. SN 241,258. Pub. 10–11–66. Filed 3–17–66.

820,987. CRONATONE. E. I. du Pont de Nemours and Company. SN 241,995. Pub. 10–11–66. Filed 3–28–66.

820,988. NORPAR. Humble Oil & Refining Company. SN 242,013. Pub. 10–11–66. Filed 3–28–66.

820,989. PURGE. American Enzyme Products Co. SN 242,179. Pub. 10–11–66. Filed 3–30–66.

820,990. AZTEC. Aztec Chemicals Inc. SN 242,199. Pub. 10–11–66. Filed 3–30–66.

820,991. NH–5. Heico, Inc. SN 242,242. Pub. 10–11–66. Filed 3–30–66.

820,992. VAC-U-FRESH. Colgate-Palmolive Company. SN 242,433. Pub. 10–11–66. Filed 4–1–66.

820,993. VIVITONER. General Aniline & Film Corporation. SN 242,585. Pub. 10–11–66. Filed 4–4–66.

820,994. FORVOL. Ford Deep Rock Oil Co. SN 243,117. Pub. 10–11–66. Filed 4–11–66.

820,995. SCRIPTANE. Scripto, Inc. SN 243,177. Pub. 10–11–66. Filed 4–11–66.

820,996. QUIET PLEASE. James Varley & Sons, Inc. SN 243,202. Pub. 10–11–66. Filed 4–11–66.

820,997. CRAMERCIDE. The Cramer Chemical Company. SN 243,412. Pub. 10–11–66. Filed 4–14–66.

820,998. MOCA. E. I. du Pont de Nemours and Company. SN 243,427. Pub. 10–11–66. Filed 4–14–66.

820,999. CAYTUR. E. I. du Pont de Nemours and Company. SN 243,428. Pub. 10–11–66. Filed 4–14–66.

821,000. VITA PLUS AND DESIGN. Vita Plus Corporation. SN 243,504. Pub. 10–11–66. Filed 4–14–66.

821,001. ACARABEN. Geigy Chemical Corporation. SN 250,151. Pub. 10–11–66. Filed 7–13–66.

821,002. ACARALATE. Geigy Chemical Corporation. SN 250,153. Pub. 10–11–66. Filed 7–13–66.

Class 7 — Cordage

821,003. BOMPAC. CF&I Steel Corporation, by change of name from The Colorado Fuel and Iron Corporation. SN 218,066. Pub. 10–11–66. Filed 3–9–65.

Class 8 — Smokers' Articles, Not Including Tobacco Products

820,964. (See Class 3 for this trademark.)

Class 9 — Explosives, Firearms, Equipments, and Projectiles

821,004. POWERDYN. American Cyanamid Company. SN 228,596. Pub. 10–11–66. Filed 9–27–65.

821,005. BANKERS SPECIAL. Colt's Inc. SN 232,529. Pub. 10–11–66. Filed 11–12–65.

821,006. RAMPANT COLT IN OVAL (DESIGN). Colt's Inc. SN 232,530. Pub. 10–11–66. Filed 11–12–65.

Class 10 — Fertilizers

820,938. (See Class 1 for this trademark.)

821,007. FARMYARD GOLD. Organic Compost Corporation. SN 189,607. Pub. 10–11–66. Filed 3–25–64.

821,008. FARMYARD GOLD AND DESIGN. Organic Compost Corporation. SN 189,608. Pub. 10–11–66. Filed 3–25–64.

821,009. ZONIC MADE NATURE'S WAY AND DESIGN. H. W. Misell, d.b.a. Zonic Humus Company. SN 222,048. Pub. 10–11–66. Filed 6–25–65.

821,010. SOIL SOKE. San Juan Chemical Company. SN 225,071. Pub. 10–11–66. Filed 8–5–65.

821,011. AGRI-BASE. Continental Oil Company, assignee of American Agricultural Chemical Company. SN 228,105. Pub. 10–11–66. Filed 9–20–65.

821,012. AGRI-BLEN. Continental Oil Company, assignee of American Agricultural Chemical Company. SN 229,932. Pub. 10–11–66. Filed 10–12–65.

821,013. AGRI-BLEND. Continental Oil Company, assignee of American Agricultural Chemical Company. SN 229,934. Pub. 10–11–66. Filed 10–12–65.

Class 11 — Inks and Inking Materials

821,014. MADAME BUTTERFLY. Columbia Ribbon & Carbon Manufacturing Co., Inc. SN 230,784. Pub. 10–11–66. Filed 10–12–65.

Class 12 — Construction Materials

820,965. (See Class 4 for this trademark.)

821,015. PROCESA. Industrias Procesa, S.A. de C.V. SN 181,094. Pub. 10–11–66. Filed 10–15–63.

821,016. "INSUL-LINER." Stephen J. Swiercs, d.b.a. Bay Window Mfg. SN 211,476. Pub. 10–11–66. Filed 2–5–65.

821,017. MARLIN. Paddock of California, Inc. SN 219,135. Pub. 10–11–66. Filed 5–18–65.

821,018. CHROMTRIM. Richard D. Werner. SN 222,527. Pub. 10–11–66. Filed 7–1–65.

821,019. SHUR-LOK. Shur-Lok Corporation. SN 223,835. Pub. 10–11–66. Filed 7–20–65.

821,020. ARMSTRONG. Armstrong Paint & Varnish Works, Inc. SN 224,833. Pub. 10–11–66. Filed 8–3–65.

821,021. WESTWIND. Clopay Corporation. SN 238,609. Pub. 10–11–66. Filed 2–11–66.

821,022. MOBILAIR. Clopay Corporation. SN 238,610. Pub. 10–11–66. Filed 2–11–66.

821,023. CONWED. Wood Conversion Company. SN 242,161. Pub. 10–11–66. Filed 3–29–66.

821,024. CONWED. Wood Conversion Company. SN 242,162. Pub. 10–11–66. Filed 3–29–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

821,025. PROCESA. Industrias Procesa, S.A. de C.V. SN 181,095. Pub. 10–11–66. Filed 10–15–63.

821,026. MAGIK-PAK. Ace Manufacturing Co., Inc. SN 182,554. Pub. 10–11–66. Filed 12–9–63.

821,027. TARGETWARE. Columbus Plastic Products, Inc. MULTIPLE CLASS (Classes 13 and 31). SN 229,764. Pub. 10–11–66. Filed 10–11–65.

821,028. ZJ AND DESIGN. Zimmermann & Jansen G.m.b.H. SN 240,816. Pub. 10–11–66. Filed 3–11–66.

821,029. AMP-FIT. AMP Incorporated. SN 241,015. Pub. 10–11–66. Filed 3–15–66.

821,030. API AND DESIGN. American Pamcor, Incorporated. SN 241,228. Pub. 10–11–66. Filed 3–17–66.

821,031. MICRO-SET. John Sterling Corporation. SN 241,696. Pub. 10–11–66. Filed 3–23–66.

821,032. BIRD SPA. Katherine K. Mitchell, d.b.a. Kay Mitchell Designs. SN 241,922. Pub. 10–11–66. Filed 3–25–66.

821,033. KONSILET. Kay & Company (Engineers) Limited. SN 242,133. Pub. 10–11–66. Filed 3–29–66.

821,034. BAROQUE AND DESIGN. Sterling Faucet Company. SN 242,152. Pub. 10–11–66. Filed 3–29–66.

821,035. DECO ROOM AND DESIGN. American Tack & Hardware Co., Inc. SN 242,313. Pub. 10–11–66. Filed 3–31–66.

Class 15—Oils and Greases

820,965. (See Class 4 for this trademark.)

821,036. CANDY STRIPED. Halo Sales Corporation. SN 235,296. Pub. 10–11–66. Filed 12–27–65.

821,037. FORVOL. Ford Deep Rock Oil Co. SN 243,118. Pub. 10–11–66. Filed 4–11–66.

Class 16—Protective and Decorative Coatings

821,038. MCDB. McDougall-Butler Co., Ic. SN 225,588. Pub. 10–11–66. Filed 8–12–65.

821,039. TOPS ALL AND DESIGN. Tobias Paint Manufacturing Co. SN 237,604. Pub. 10–11–66. Filed 1–28–66.

Class 17—Tobacco Products

821,040. MISCELLANEOUS DESIGN. Helme Products, Inc. MULTIPLE CLASS (Classes 17 and 46). SN 221,231. Pub. 10–11–66. Filed 6–16–65.

Class 18—Medicines and Pharmaceutical Preparations

821,041. PECLAVUS. Spezialchemie Gesellschaft mit beschränkter Haftung & Co., Arzneimittelfabrik. SN 230,715. Pub. 10–11–66. Filed 10–20–65.

821,042. PECLAVUS AND DESIGN. Spezialchemie Gesellschaft mit beschränkter Haftung & Co., Arzneimittelfabrik. SN 232,483. Pub. 10–11–66. Filed 11–10–65.

821,043. DILOR. Savage Laboratories, Inc. SN 235,042. Pub. 10–11–66. Filed 12–16–65.

821,044. HISTATYME. Kasar Company. SN 237,567. Pub. 10–11–66. Filed 1–28–66.

821,045. SUPPLETS. Chas. Pfizer & Co., Inc. SN 237,736. Pub. 10–11–66. Filed 2–1–66.

821,046. SCARTIL. Geigy Chemical Corporation. SN 238,862. Pub. 10–11–66. Filed 2–15–66.

821,047. PERIVADIL. Breon Laboratories Inc. SN 239,116. Pub. 10–11–66. Filed 2–18–66.

821,048. ALCOGEN. Betan Company, Inc. SN 246,864. Pub. 10–11–66. Filed 5–31–66.

821,049. BARBINAL. Betan Company, Inc. SN 246,868. Pub. 10–11–66. Filed 5–31–66.

821,050. SEIDAL. Betan Company, Inc. SN 246,870. Pub. 10–11–66. Filed 5–31–66.

Class 19—Vehicles

821,051. WA AND DESIGN. Westland Aircraft Limited. SN 223,760. Pub. 10–11–66. Filed 7–19–65.

821,052. EXPRESS. Hillman Equipment Company, Inc. SN 228,824. Pub. 10–11–66. Filed 9–28–65.

821,053. SLIM-JIM. Bearfoot Airway Corporation. SN 228,982. Pub. 9–27–66. Filed 9–30–65.

821,054. KITTEN ON SCOOTER (DESIGN). Projects Unlimited, Inc. SN 230,561. Pub. 10–11–66. Filed 10–19–65.

821,055. STOP-LOCK. Rockwell-Standard Corporation. SN 234,467. Pub. 10–11–66. Filed 12–13–65.

821,056. WING DING. D. P. Harris Hardware & Manufacturing Co., Inc. SN 234,564. Pub. 10–11–66. Filed 12–14–65.

821,057. CUSH 'N TOW. Nutting Truck and Caster Company. SN 250,207. Pub. 10–11–66. Filed 7–1–66.

Class 20—Linoleum and Oiled Cloth

821,058. COLOR-CRAFT. Color-Craft Products, Inc. SN 229,415. Pub. 10–11–66. Filed 10–6–65.

Class 21—Electrical Apparatus, Machines, and Supplies

821,059. BEAULIEU. Marcel Beaulieu. MULTIPLE CLASS (Classes 21 and 26). SN 175,460. Pub. 10–11–66. Filed 8–21–63.

821,060. TRYLON AND DESIGN. Trylon Incorporated. SN 188,681. Pub. 10–11–66. Filed 3–13–64.

821,061. BIVIATOR. Biviator S.A. SN 195,922. Pub. 10–11–66. Filed 6–18–64.

821,062. ELECTRICAL MANUFACTURERS OF NEW YORK INC. ETC. AND DESIGN. Electrical Manufacturers of New York Inc. SN 208,055. COLLECTIVE MARK. Pub. 10–11–66. Filed 12–14–64.

821,063. INLAND CONTROLS AND DESIGN. Inland Controls, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 218,642. Pub. 10–11–66. Filed 5–12–65.

821,064. NELCO AND DESIGN. Nelco Corporation. SN 219,899. Pub. 10–11–66. Filed 5–27–65.

821,065. KISTLER. Kistler Instrument Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 220,002. Pub. 10–11–66. Filed 5–28–65.

821,066. FERRAL. The Cleveland Crane & Engineering Company. SN 223,972. Pub. 10–11–66. Filed 7–22–65.

821,067. AIR-SHIELDS. Air-Shields, Inc. MULTIPLE CLASS (Classes 21, 23, 26, 31, 34, and 44). SN 224,140. Pub. 10–11–66. Filed 7–26–65.

821,068. THE ANNOUNCER. Robosonics, Inc. SN 224,333. Pub. 10–11–66. Filed 7–27–65.

821,069. RIG-A-LITE. The Rig-A-Lite Company of Texas, Inc. SN 225,511. Pub. 10–11–66. Filed 8–11–65.

821,070. PROXIMIT. Tann Corporation. SN 228,950. Pub. 10–11–66. Filed 9–29–65.

821,071. FEDTRO AND DESIGN. Fedtro, Inc. SN 230,239. Pub. 10–11–66. Filed 10–15–65.

821,072. INSPECTIONEERED. Harvey Hubbell, Incorporated. SN 230,638. Pub. 10–11–66. Filed 10–20–65.

821,073. BRADFORD AND DESIGN. Bradford Novelty Co., Inc. SN 230,768. Pub. 10–11–66. Filed 10–21–65.

821,074. AUTO-PAK. Westinghouse Electric Corporation. SN 230,984. Pub. 10–11–66. Filed 10–21–65.

821,075. MAXI-WATT AND DESIGN. Wincharger Corporation. SN 230,987. Pub. 10–11–66. Filed 10–21–65.

821,076. INTERSEAL. International Battery, Inc. SN 231,918. Pub. 10–11–66. Filed 11–1–65.

821,077. MULTIMATIC. Advance Chemical Company. SN 233,976. Pub. 10–11–66. Filed 12–6–65.

821,078. BETA-LITE. Lehigh Valley Industries, Inc. SN 249,276. Pub. 10–11–66. Filed 6–30–66.

Class 22—Games, Toys, and Sporting Goods

821,079. GUMBY'S PAL POKEY. Lakeside Industries, Inc. SN 219,346. Pub. 10–11–66. Filed 5–20–65.

821,080. 444. Cortland Industries, Inc. SN 220,617. Pub. 10–11–66. Filed 6–7–65.

821,081. BACHSTEIN AND DESIGN. Anton Lintner, d.b.a. Sportschuhfabrikation Anton Lintner. SN 222,851. Pub. 10–11–66. Filed 7–7–65.

821,082. V AND DESIGN. W. Goebel Porzellanfabrik Oeslau und Wilhelmsfeld. MULTIPLE CLASS (Classes 22, 38, and 50). SN 223,552. Pub. 10–11–66. Filed 7–16–65.

821,083. NEEDLEFISH. Luhr Jensen & Sons, Inc. SN 225,327. Pub. 10–11–66. Filed 8–9–65.

821,084. UNEEDA. Uneeda Doll Company, Inc. SN 228,089. Pub. 10–11–66. Filed 9–17–65.

821,085. BASS AND DESIGN. Old Pal, Inc. SN 231,927. Pub. 10–11–66. Filed 11–1–65.

821,086. FLAG AND CIRCLE (DESIGN). Jarman-Williamson Company. SN 233,181. Pub. 10–11–66. Filed 11–23–65.

821,087. BABY WADDLES. Goldberger Doll Mfg. Co., Inc. SN 233,489. Pub. 10–11–66. Filed 11–29–65.

821,088. BEEP BEENY. Louis Marx & Co. Inc. SN 233,723. Pub. 10–11–66. Filed 12–1–65.

821,089. BRONCO. Carl D. Russell. SN 234,771. Pub. 10–11–66. Filed 12–16–65.

821,090. MUSTANG. Carl D. Russell. SN 234,772. Pub. 10–11–66. Filed 12–16–65.

821,091. JAI-LITE AND DESIGN. General Sportcraft Company Ltd. SN 234,815. Pub. 10–11–66. Filed 12–17–65.

821,092. SQUEE-ZOOS. Kiddie Products, Inc. SN 234,907. Pub. 10–11–66. Filed 12–20–65.

821,093. CHRISTY. Mattel, Inc. SN 246,023. Pub. 10–11–66. Filed 5–19–66.

821,094. TEACHY KEEN. Mattel, Inc. SN 246,025. Pub. 10–11–66. Filed 5–19–66.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

821,067. (See Class 21 for this trademark.)

821,095. MILOMATIC. Clayton Dewandre Company Limited. SN 208,545. Pub. 10–11–66. Filed 12–21–64.

821,096. POLLARD. Pollard Bearings Corporation, by change of name from Pollard Ball & Bearing Corporation. SN 221,515. Pub. 10–11–66. Filed 6–18–65.

821,097. MIST-JET AND DESIGN. The Cleveland Twist Drill Company. SN 225,111. Pub. 10–11–66. Filed 8–6–65.

821,098. EASY-TITE. Oscar C. Lee, d.b.a. Lee Manufacturing Co. SN 230,551. Pub. 10–11–66. Filed 10–19–65.

821,099. SPRAY AND DESIGN. Spray Products Corporation. SN 230,944. Pub. 10–11–66. Filed 10–21–65.

821,100. PDR. Eaton Yale & Towne Inc., by merger and change of name from Eaton Manufacturing Company. SN 233,082. Pub. 10–11–66. Filed 11–22–65.

821,101. TRANDEM. Eaton Yale & Towne Inc., by merger and change of name from Eaton Manufacturing Company. SN 233,083. Pub. 10–11–66. Filed 11–22–65.

821,102. GATHERMATIC. Thomas Collators, Inc. SN 233,148. Pub. 10–11–66. Filed 11–22–65.

821,103. ROTOMATIC. Thomas Collators, Inc. SN 233,149. Pub. 10–11–66. Filed 11–22–65.

821,104. HALLMATIC. Hall Ski-Lift Company, Inc. SN 233,498. Pub. 10–11–66. Filed 11–29–65.

821,105. RIGID-RESTRIKE. The Cincinnati Shaper Co. SN 233,580. Pub. 10–11–66. Filed 11–30–65.

821,106. QUICK-SET. The Cleveland Twist Drill Company. SN 235,764. Pub. 10–11–66. Filed 1–4–66.

821,107. 3M. Minnesota Mining and Manufacturing Company. SN 237,468. Pub. 10–11–66. Filed 1–27–66.

821,108. IMPERIAL. Minnesota Mining and Manufacturing Company. SN 237,469. Pub. 10–11–66. Filed 1–27–66.

821,109. 3D WAVY EDGE. Washington Forge, Incorporated. SN 237,610. Pub. 10–11–66. Filed 1–28–66.

821,110. NEOPOST. Roneo-Neopost Limited. SN 240,663. Pub. 10–11–66. Filed 3–10–66.

821,111. HONEST AND DESIGN. Honest Charley, Inc. SN 240,913. Pub. 10–11–66. Filed 3–14–66.

821,112. CONWED. Wood Conversion Company. SN 241,613. Pub. 10–11–66. Filed 3–22–66.

821,113. KENROC. Kennametal Inc. SN 242,134. Pub. 10–11–66. Filed 3–29–66.

821,114. KNOT (DESIGN). B. H. Bunn Company. SN 242,213. Pub. 10–11–66. Filed 3–30–66.

821,115. BANTAM AND DESIGN. True Temper Corporation. SN 249,196. Pub. 10–11–66. Filed 6–29–66.

Class 24—Laundry Appliances and Machines

821,116. CONWED. Wood Conversion Company. SN 242,163. Pub. 10–11–66. Filed 3–29–66.

Class 26—Measuring and Scientific Appliances

821,059. (See Class 21 for this trademark.)

821,063. (See Class 21 for this trademark.)

821,065. (See Class 21 for this trademark.)

821,067. (See Class 21 for this trademark.)

821,117. COLEMAN. Coleman Instruments Corporation. SN 222,552. Pub. 10–11–66. Filed 7–2–65.

821,118. MISCELLANEOUS DESIGN. Adaptronics, Inc. SN 226,498. Pub. 10–11–66. Filed 8–26–65.

821,119. ADAPTRONICS. Adaptronics, Inc. SN 226,499. Pub. 10–11–66. Filed 8–26–65.

821,120. COFLEXIC. L. M. Prince Co. SN 230,694. Pub. 10–11–66. Filed 10–20–65.

821,121. FLEXITRON. Triangle Package Machinery Company. SN 230,960. Pub. 10–11–66. Filed 10–21–65.

821,122. COPY-CAT. Coastal Abrasive and Tool Company, Inc. SN 232,193. Pub. 10–11–66. Filed 11–5–65.

821,123. PHOTO-DIRECT. Addressograph Multigraph Corporation. SN 232,497. Pub. 10–11–66. Filed 11–12–65.

821,124. THERMANOMETER. Harvestall Industries, Inc. SN 237,115. Pub. 10–11–66. Filed 1–24–66.

Class 27—Horological Instruments

821,125. CHRONODIVER. Movado Watch Agency, Inc. SN 234,573. Pub. 10–11–66. Filed 12–14–65.

821,126. HONDA. Sheffield Watch Inc. SN 234,672. Pub. 10–11–66. Filed 12–15–65.

Class 30—Crockery, Earthenware, and Porcelain

821,127. ROYAL ALBERT. Thos. C. Wild & Sons Limited. SN 233,545. Pub. 10–11–66. Filed 11–29–65.

Class 31 — Filters and Refrigerators

821,027. (See Class 13 for this trademark.)

821,067. (See Class 21 for this trademark.)

821,128. BEVERAGE-AIR. Beverage-Air Company. SN 210,637. Pub. 10–11–66. Filed 1–26–65.

821,129. LIND. Union Tank Car Company. SN 235,734. Pub. 10–11–66. Filed 1–3–66.

821,130. LINDWATER. Union Tank Car Company. SN 235,735. Pub. 10–11–66. Filed 1–3–66.

821,131. LINDSOFT. Union Tank Car Company. SN 235,736. Pub. 10–11–66. Filed 1–3–66.

821,132. LINDSMOOTH. Union Tank Car Company. SN 235,739. Pub. 10–11–66. Filed 1–3–66.

821,133. CONWED. Wood Conversion Company. SN 241,614. Pub. 10–11–66. Filed 3–22–66.

Class 32 — Furniture and Upholstery

821,134. AMERICANA. Plaza Barber and Beauty Supply, Inc. SN 234,766. Pub. 10–11–66. Filed 12–16–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

821,067. (See Class 21 for this trademark.)

821,135. DYNAMASTAT. Dynamics Corporation of America. SN 232,454. Pub. 10–11–66. Filed 11–10–65.

821,136. GOODWIN AND DESIGN. Goodwin of California Incorporated. SN 233,900. Pub. 10–11–66. Filed 12–3–65.

821,137. STYLIST. Eaton Yale & Towne Inc. SN 241,649. Pub. 10–11–66. Filed 3–23–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

821,138. FENAPLAST. J. H. Fenner & Co. Limited. SN 227,798. Pub. 10–11–66. Filed 9–13–65.

821,139. TAP-MASTER. Tap-Master Corporation Ltd. SN 242,405. Pub. 10–11–66. Filed 3–31–66.

Class 36 — Musical Instruments and Supplies

821,140. OLD HISTORIAN. Louis J. Rocke. SN 219,068. Pub. 10–11–66. Filed 5–17–65.

821,141. FLASHBACK AND DESIGN. Bell Records, Inc. SN 220,829. Pub. 10–11–66. Filed 6–10–65.

821,142. DIAL-O-MATIC. The Lionel Toy Corporation. SN 222,390. Pub. 10–11–6. Filed 6–30–65.

821,143. HOPE. Betty S. Feldman, d.b.a. Bella Flowers. SN 222,477. Pub. 10–11–66. Filed 7–1–65.

821,144. TMP-TING AND DESIGN. Talent Management and Promotions, Inc. SN 224,807. Pub. 10–11–66. Filed 8–2–65.

821,145. 3M. Minnesota Mining and Manufacturing Company. SN 238,550. Pub. 10–11–66. Filed 2–10–66.

821,146. AURA SONIC. Aura Sonic Corp. SN 245,657. Pub. 10–11–66. Filed 5–16–66.

Class 37 — Paper and Stationery

820,962. (See Class 3 for this trademark.)

821,147. K-LITH VISIONEASE MUSIC WRITING PAPER AND DESIGN. Grossman Music Corporation, assignee of Mills Music, Inc. SN 230,178. Pub. 10–11–66. Filed 10–14–65.

821,148. KINGSTON. Kingston Products Company. SN 231,827. Pub. 10–11–66. Filed 10–29–65.

821,149. TELENOTE. Francis Greif. SN 234,819. Pub. 10–11–66. Filed 12–17–65.

821,150. 7099. A. W. Faber-Castell Pencil Co., Inc. SN 235,542. Pub. 10–11–66. Filed 12–30–65.

821,151. AIRFORM. The Northwest Paper Company. SN 237,248. Pub. 10–11–66. Filed 1–25–66.

821,152. SNAPPI-GRAM. Valley Business Aids, Inc. SN 243,201. Pub. 10–11–66. Filed 4–11–66.

Class 38 — Prints and Publications

821,082. (See Class 22 for this trademark.)

821,153. INFORMAL PACKETTE. Noreross, Inc. SN 149,588. Pub. 10–11–66. Filed 7–23–62.

821,154. SCIENCE CITATION INDEX. Institute for Scientific Information, Inc. SN 200,937. Pub. 10–11–66. Filed 8–31–64.

821,155. REPORT AND TAX BULLETIN. The Corporation Trust Company. SN 201,823. Pub. 10–11–66. Filed 9–14–64.

821,156. RECTANGLE LINED FOR YELLOW AND BLACK (DESIGN). Cliff's Notes, Incorporated. SN 224,584. Pub. 10–11–66. Filed 7–30–65.

821,157. MY THREE EYES. The Rushelle Agency, Inc. SN 226,474. Pub. 10–11–66. Filed 8–25–65.

821,158. P ETC. AND DESIGN. The Pulse, Inc. SN 234,233. Pub. 10–11–66. Filed 12–8–65.

821,159. WELLINGTON ENTERPRISE. The Lorain Journal Company. SN 235,070. Pub. 10–11–66. Filed 12–20–65.

821,160. DEVELOPMENTS. Cole-Parmer Instrument & Equipment Co. SN 236,180. Pub. 10–11–66. Filed 1–11–66.

821,161. SPACE-FRAMED. Ebnersons Associates. SN 239,508. Pub. 10–11–66. Filed 2–24–66.

821,162. CRAF-TONE. The Craftint Manufacturing Company. SN 239,739. Pub. 10–11–66. Filed 2–28–66.

821,163. CRAF-TYPE AND DESIGN. The Craftint Manufacturing Company. SN 239,740. Pub. 10–11–66. Filed 2–28–66.

821,164. ACTION. The United States Jaycees. SN 246,839. Pub. 10–11–66. Filed 5–31–66.

Class 39 — Clothing

821,165. SILHOUETTE OF LONDON. Corsets Silhouette Limited. SN 206,236. Pub. 10–11–66. Filed 11–16–64.

821,166. BEM-SETA. Rapid-American Corporation, assignee of Joseph H. Cohen & Sons, Inc. SN 227,008. Pub. 10–11–66. Filed 9–2–65.

821,167. SLIM TRIM. The B.V.D. Company, Inc. SN 227,386. Pub. 5–10–66. Filed 9–8–65.

821,168. DOILEN-LOFT. Vereinigte Glanzstoff-Fabriken Aktiengesellschaft. MULTIPLE CLASS (Classes 39, 42, and 43). SN 229,909. Pub. 10–11–66. Filed 8–23–65.

821,169. SURF DECK. Surf Deck, Inc. SN 231,778. Pub. 10–11–66. Filed 10–28–65.

821,170. TRADITIONAL BY COUNTRY SET AND DESIGN. Country Set, Inc. SN 234,393. Pub. 10–11–66. Filed 12–13–65.

821,171. PHIL ROSE AND VERTICAL DESIGN. Phil Rose of California, Inc. SN 235,428. Pub. 10–11–66. Filed 12–28–65.

821,172. PHIL ROSE AND LATERAL DESIGN. Phil Rose of California, Inc. SN 235,429. Pub. 10–11–66. Filed 12–28–65.

821,173. BANDERIN. Con-Stan Industries, Inc. SN 237,668. Pub. 10–11–66. Filed 2–1–66.

821,174. DEVIL 'N ANGEL. Host Pajamas, Inc. SN 237,700. Pub. 10–11–66. Filed 2–1–66.

821,175. PAMPERS. The Procter & Gamble Company. SN 237,741. Pub. 10–11–66. Filed 2–1–66.

821,176. FANCIPANTS. R. Lowenbaum Manufacturing Company. SN 237,849. Pub. 10–11–66. Filed 2–2–66.

821,177. THOM MCAN CASTAWAY. Melville Shoe Corporation. SN 237,865. Pub. 10–11–66. Filed 2–2–66.

821,178. POCAHONTAS AND DESIGN. Shields Slipper Corporation. SN 237,876. Pub. 10–11–66. Filed 2–2–66.

821,179. MONOGRAMS. G. H. Bass & Co. SN 237,923. Pub. 10–11–66. Filed 2–3–66.

Class 40 — Fancy Goods, Furnishings, and Notions

821,180. KIRBY BEARD. Newey Brothers Limited. SN 181,488. Pub. 10–11–66. Filed 11–19–63.

821,181. DIANA. The Boye Needle Company. SN 204,548. Pub. 10–11–66. Filed 10–22–64.

821,182. CAPABELLE. A.C.T. SN 226,329. Pub. 10–11–66. Filed 8–24–65.

821,183. THEODORA AND DESIGN. Theodora Wig Corporation. SN 233,655. Pub. 10–11–66. Filed 11–30–65.

Class 41 — Canes, Parasols, and Umbrellas

820,962. (See Class 3 for this trademark.)

821,184. SCOPE. D. Klein & Son, Inc. SN 240,182. Pub. 10–11–66. Filed 3–4–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

821,168. (See Class 39 for this trademark.)

821,185. SEVILLE. Fruit of the Loom, Inc., assignee of Fruit of the Loom, Inc. SN 196,442. Pub. 10–11–66. Filed 6–25–64.

821,186. LYNNFIELD OF BOSTON. Lynnfield Fabrics Inc. SN 216,771. Pub. 10–11–66. Filed 4–2–65.

821,187. HYGEIA. Erex Hypo-Allergenic Products Company. SN 235,288. Pub. 10–11–66. Filed 12–27–65.

821,188. SEAM-EASY. Emile Bernat & Sons Co. SN 237,208. Pub. 10–11–66. Filed 1–25–66.

821,189. SYNOCHLOR. United Merchants and Manufacturers, Inc. SN 240,129. Pub. 10–11–66. Filed 3–3–66.

821,190. WOONASKA. Deering Milliken, Inc. SN 240,510. Pub. 10–11–66. Filed 3–9–66.

821,191. RA-LOC. Deering Milliken, Inc. SN 240,511. Pub. 10–11–66. Filed 3–9–66.

821,192. DANRISE. Dan River Mills, Incorporated. SN 240,587. Pub. 10–11–66. Filed 3–10–66.

821,193. GUILD CREST. Jersey Carpet Corporation. SN 240,622. Pub. 10–11–66. Filed 3–10–66.

821,194. WEBLOY. The Kendall Company. SN 240,628. Pub. 10–11–66. Filed 3–10–66.

821,195. MILLISET. Deering Milliken, Inc. SN 240,714. Pub. 10–11–66. Filed 3–11–66.

821,196. RAND. Renard Linoleum and Rug Company. SN 240,956. Pub. 10–11–66. Filed 3–14–66.

821,197. CONWED. Wood Conversion Company. SN 242,166. Pub. 10–11–66. Filed 3–29–66.

Class 43 — Thread and Yarn

821,168. (See Class 39 for this trademark.)

821,198. GAELIC TWEED. Spinnerin Yarn Co., Inc. SN 226,864. Pub. 10–11–66. Filed 2–3–66.

821,199. CHENILLE CHERIE. Spinnerin Yarn Co., Inc. SN 233,198. Pub. 10–11–66. Filed 11–23–65.

821,200. QUTRON. Beaunit Corporation. SN 238,385. Pub. 10–11–66. Filed 2–9–66.

821,201. QULENE. Beaunit Corporation. SN 238,387. Pub. 10–11–66. Filed 2–9–66.

821,202. QULAIRE. Beaunit Corporation. SN 238,390. Pub. 10–11–66. Filed 2–9–66.

821,203. DSN. Beaunit Corporation. SN 239,000. Pub. 10–11–66. Filed 2–17–66.

821,204. UNEL. Union Carbide Corporation. SN 240,557. Pub. 10–11–66. Filed 3–9–66.

Class 44 — Dental, Medical, and Surgical Appliances

821,067. (See Class 21 for this trademark.)

821,205. LIFE SYSTEMS AND DESIGN. Bourns, Inc. SN 225,721. Pub. 10–11–66. Filed 8–16–65.

821,206. HIGHLANDER. Institutional Industries, Inc. SN 236,491. Pub. 10–11–66. Filed 1–14–66.

821,207. ELECTREX. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 237,029. Pub. 10–11–66. Filed 1–21–66.

821,208. ATTRACT-O-MAT. Surgitool Incorporated. SN 237,261. Pub. 10–11–66. Filed 1–25–66.

821,209. PRO-FIXX. Lerner Laboratories, Inc. SN 237,573. Pub. 10–11–66. Filed 1–28–66.

821,210. SONET. Sonotone Corporation. SN 237,600. Pub. 10–11–66. Filed 1–28–66.

Class 45 — Soft Drinks and Carbonated Waters

821,211. CROWN IN CIRCLE (DESIGN). Royal Castle System, Inc. SN 219,731. Pub. 10–11–66. Filed 5–25–65.

821,212. DIET TYME. Party-Tyme Products, Inc. SN 226,668. Pub. 10–11–66. Filed 8–27–65.

Class 46 — Foods and Ingredients of Foods

821,040. (See Class 17 for this trademark.)

821,213. FAT FEEDS FOR SLICK CHICKS AND DESIGN. Southwest By-Products, Inc. SN 197,787. Pub. 10–11–66. Filed 7–13–64.

821,214. SHAKE BREAK AND DESIGN. Shake Break, Inc., assignee of The Cornelius Company. SN 202,773. Pub. 10–11–66. Filed 9–28–64.

821,215. MOGEN DAVID. Mogen David Food Products, Inc. SN 211,554. Pub. 10–11–66. Filed 2–8–65.

821,216. MANOLETE. Morenó, S.A. SN 220,017. Pub. 10–11–66. Filed 5–28–65.

821,217. CANDY FOR YOU NOW MONEY WHEN YOU NEED IT. Fine Products Company, Inc., assignee of Fine Products Corporation. SN 222,479. Pub. 10–11–66. Filed 7–1–65.

821,218. DOROTHY MURIEL'S. Brigham's, Inc., d.b.a. DOROTHY MURIEL'S. SN 228,215. Pub. 10–11–66. Filed 7–13–65.

821,219. IDAHO SPRINGS RAINBOW TROUT AND DESIGN. Idaho Springs Trout Company. SN 224,619. Pub. 10–11–66. Filed 7–30–65.

821,220. FREIA. Aktjeselskapet Freia. SN 225,626. Pub. 10–11–66. Filed 8–13–65.

821,221. FLINT'S HAMBURGERS AND DESIGN. Flint's, Incorporated. SN 228,899. Pub. 10–11–66. Filed 9–29–65.

821,222. FRUIT FAIR. Meshulam's Inc., d.b.a. Fruit Fair. SN 231,169. Pub. 10–11–66. Filed 10–22–65.

821,223. CREAMETTE. The Creamette Company. SN 231,393. Pub. 10–11–66. Filed 10–23–65.

821,224. CREAMETTES. The Creamette Company. SN 231,396. Pub. 10–11–66. Filed 10–23–65.

821,225. MOTHER'S. The Creamette Company. SN 231,397. Pub. 10–11–66. Filed 10–23–65.

821,226. LEM-RICH. Jeannie B. Fitzsimmons, d.b.a. Howind Fitzsimmons. SN 231,411. Pub. 10–11–66. Filed 10–23–65.

821,227. DUKE'S CAPTAIN GOGO AND DESIGN. The C. F. Sauer Company. SN 233,636. Pub. 10–11–66. Filed 11–30–65.

821,228. AVALANCHE. Cel-A-Pak. SN 234,510. Pub. 10–11–66. Filed 12–13–65.

821,229. BESTEX. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company. SN 234,535. Pub. 10–11–66. Filed 12–14–65.

821,230. HILLS BROS AND DESIGN. Hills Bros. Coffee, Inc. SN 237,118. Pub. 10–11–66. Filed 1–24–66.

821,231. HILLS BROS AND DESIGN. Hills Bros. Coffee, Inc. SN 237,119. Pub. 10–11–66. Filed 1–24–66.

821,232. HILLS BROS AND ARAB FIGURE. Hills Bros. Coffee, Inc. SN 237,120. Pub. 10–11–66. Filed 1–24–66.

821,233. ACTION. Warner-Lambert Pharmaceutical Company. SN 237,407. Pub. 10–11–66. Filed 1–26–66.

821,234. VITA PLUS AND DESIGN. Vita Plus Corporation. SN 243,505. Pub. 10–11–66. Filed 4–14–66.

821,235. COFFEE MAGIC A & W ROOT BEER AND DESIGN. A & W Root Beer Co. SN 246,225. Pub. 10–11–66. Filed 5–23–66.

821,236. A & W AND DESIGN. A & W Root Beer Co. SN 246,228. Pub. 10–11–66. Filed 5–23–66.

821,237. A & W ROOT BEER AND DESIGN. A & W Root Beer Co. SN 246,229. Pub. 10–11–66. Filed 5–23–66.

821,238. WESSON. Hunt Foods and Industries, Inc., d.b.a. Hunt-Wesson Foods. SN 249,474. Pub. 10–11–66. Filed 7–5–66.

821,239. BOUNCE. Deer Park Baking Co. SN 250,075. Pub. 10–11–66. Filed 7–12–66.

821,240. FUN LOVERS. Lever Brothers Company. SN 250,228. Pub. 10–11–66. Filed 7–14–66.

821,241. LITTLE NOTHINGS. Lever Brothers Company. SN 250,229. Pub. 10–11–66. Filed 7–14–66.

821,242. SNAXVILLE. Lever Brothers Company. SN 250,231. Pub. 10–11–66. Filed 7–14–66.

Class 47 — Wines

821,243. F. CHAUVENET. Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M." SN 220,570. Pub. 10–11–66. Filed 6–7–65.

821,244. EMERALD GREEN. Paul Masson, Inc., d.b.a. Paul Masson and Paul Masson Vineyards. SN 222,854. Pub. 10–11–66. Filed 7–7–65.

821,245. CARSTENS SC AND DESIGN. Sektkellerei Carstens KG. SN 224,344. Pub. 10–11–66. Filed 7–27–65.

821,246. JONKER CAPERO. Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt. SN 228,916. Pub. 10–11–66. Filed 9–29–65.

Class 49 — Distilled Alcoholic Liquors

821,247. GENDARME. Schenley Distillers, Inc. SN 225,899. Pub. 10–11–66. Filed 8–17–65.

821,248. KENTUCKY NECTAR. Geeting & Fromm, Inc. SN 226,738. Pub. 10–11–66. Filed 8–30–65.

821,249. CAPRICE. Joseph E. Seagram & Sons, Inc., d.b.a. Calvert Distilling Co., SN 232,865. Pub. 10–11–66. Filed 11–17–65.

821,250. LIDO. Joseph E. Seagram & Sons, Inc., d.b.a. Calvert Distilling Co. SN 232,866. Pub. 10–11–66. Filed 11–17–65.

821,251. RANCHMAN. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co. SN 233,375. Pub. 10–11–66. Filed 11–26–65.

821,252. BONVILLE. Schieffelin & Co. SN 234,470. Pub. 10–11–66. Filed 12–13–65.

821,253. BRONCO. Standard Food Products Corp. SN 237,049. Pub. 10–11–66. Filed 1–21–66.

Class 50 — Merchandise Not Otherwise Classified

821,082. (See Class 22 for this trademark.)

821,254. PENDELFIN. Pendelfin Studios Limited. SN 235,710. Pub. 10–11–66. Filed 1–3–66.

821,255. GICS. General Items Company. SN 239,142. Pub. 10–11–66. Filed 2–18–66.

821,256. MOOD SCROLL. Herbert A. Otto, d.b.a. Mood Enterprises. SN 240,187. Pub. 10–11–66. Filed 3–4–66.

821,257. CONWED. Wood Conversion Company. SN 242,167. Pub. 10–11–66. Filed 3–29–66.

821,258. FABRI-KAP. Fabri-Kal Corporation. SN 243,433. Pub. 10–11–66. Filed 4–14–66.

Class 51 — Cosmetics and Toilet Preparations

821,259. COLOR AHEAD! John H. Breck, Inc., assignee of Technique, Inc. SN 210,057. Pub. 10–11–66. Filed 1–15–65.

821,260. ULTRALUCENT. Max Factor & Co., d.b.a. Max Factor. SN 211,082. Pub. 10–11–66. Filed 2–1–65.

821,261. BENDENE. Ben Dinerstein, d.b.a. Bendyne Products, Inc. SN 223,537. Pub. 10–11–66. Filed 7–16–65.

821,262. SHIDEN. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 224,209. Pub. 10–11–66. Filed 7–26–65.

821,263. O.BA.O. Cadoricin, Societe Anonyme. SN 224,915. Pub. 10–11–66. Filed 8–4–65.

821,264. 'COLOR GALLERIA.' Revlon, Inc. SN 225,600. Pub. 10–11–66. Filed 8–12–65.

821,265. 'COLOR PALAZZO.' Revlon, Inc. SN 225,601. Pub. 10–11–66. Filed 8–12–65.

821,266. ODELL TROL HAIR TRAINER. The Odell Company, Inc. SN 229,868. Pub. 10–11–66. Filed 10–5–65.

821,267. BEFOR 9. Pharmaceutical Laboratories, Inc. SN 232,142. Pub. 10–11–66. Filed 11–4–65.

821,268. DEPROVINYLLOL. Dep Corporation. SN 233,080. Pub. 10–11–66. Filed 11–22–65.

821,269. BY AMY MERLE AND DESIGN. Amy Merle Company. SN 233,269. Pub. 10–11–66. Filed 11–24–65.

821,270. PENNANT. Food Products Company of America, assignee of Pharmaceutical Laboratories, Inc. SN 233,819. Pub. 6–21–66. Filed 12–2–65.

821,271. DAMSEL. Daggett and Ramsdell International Corporation. MULTIPLE CLASS (Classes 51 and 52). SN 234,625. Pub. 10–11–66. Filed 12–15–65.

821,272. BAIN NOUVEAU. Houbigant, Inc. SN 235,304. Pub. 10–11–66. Filed 12–27–65.

821,273. MIX 'N MATCH. Stensel Products. SN 236,664. Pub. 10–11–66. Filed 1–17–66.

821,274. TRIAL BY JURY. James Ray Wingfield, d.b.a. Wingfield Laboratories. SN 238,028. Pub. 10–11–66. Filed 2–3–66.

821,275. CARNEGIE. Hattie Carnegie, Inc. SN 238,710. Pub. 10–11–66. Filed 2–14–66.

821,276. COLOGNE SILK. Avon Products, Inc. SN 239,703. Pub. 10–11–66. Filed 2–28–66.

821,277. WORTH. Les Parfums Worth de Paris, Inc. SN 240,184. Pub. 10–11–66. Filed 3–4–66.

821,278. LUMAR. Luzier Incorporated. SN 240,450. Pub. 10–11–66. Filed 3–8–66.

821,279. WHITE WHITE. Bonne Bell, Inc. SN 240,848. Pub. 10–11–66. Filed 3–14–66.

821,280. KID GLOVE. Lan-O-Sheen, Inc. SN 241,151. Pub. 10–11–66. Filed 3–16–66.

821,281. ZARIS. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 247,068. Pub. 10–11–66. Filed 6–1–66.

821,282. PEEK-A-DOO. The Gillette Company, d.b.a. The Toni Company. SN 248,282. Pub. 10–11–66. Filed 6–17–66.

821,283. CONCERN. American Home Products Corporation. SN 249,285. Pub. 10–11–66. Filed 6–30–66.

Class 52 — Detergents and Soaps

821,271. (See Class 51 for this trademark.)

821,284. WILESWOOD COUNTRY STORE. Wileswood, Inc., d.b.a. Wileswood Country Store. SN 181,288. Pub. 10–11–66. Filed 11–15–63.

821,285. BOYLOUT. Donald E. Ostermeier, d.b.a. Apex Engineering Company. SN 226,560. Pub. 10–11–66. Filed 8–26–65.

821,286. PRINCESS. Armour and Company. SN 227,811. Pub. 10–11–66. Filed 9–15–65.

821,287. BOUQUET OF BUBBLES. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics. SN 236,143. Pub. 10–11–66. Filed 1–10–66.

821,288. RUG-MATE. Zynolyte Products Company. SN 236,692. Pub. 10–11–66. Filed 1–17–66.

821,289. CONTRACTOR SPECIAL. American-Lincoln Corporation. SN 239,206. Pub. 10–11–66. Filed 2–21–66.

821,290. MASK-N-GLAS. Chemtronics Inc. SN 241,033. Pub. 10–11–66. Filed 3–15–66.

821,291. TRI-KEM. Airkem, Inc. SN 241,218. Pub. 10–11–66. Filed 3–17–66.

821,292. DOG (DESIGN). Big Kernel Pet Foods, Inc. SN 241,298. Pub. 10–11–66. Filed 2–28–66.

821,293. PANHANDLER. Aerosol Corporation of America. SN 241,407. Pub. 10–11–66. Filed 3–21–66.

821,294. H.E.B. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Company. SN 249,702. Pub. 10–11–66. Filed 7–5–66.

821,295. BEAUTY SEAL. Dr. Vladimir Alexandre Oneskiw, d.b.a. Laboratories du Dr. V. A. Oneskiw, and/or Beauty Seal. SN 250,114. Pub. 10–11–66. Filed 7–13–66.

Service Marks

Class 100 — Miscellaneous

821,296. THE JOLLY ROGER. Arthur L. Salisbury. SN 196,810. Pub. 10–11–66. Filed 6–30–64.

821,297. STERL-O-MATT AND DESIGN. Bernard Manufacturing Co. SN 200,403. Pub. 10–11–66. Filed 8–24–64.

821,298. H AND DESIGN. Hospitality Motor Inns. SN 201,842. Pub. 10–11–66. Filed 9–14–64.

821,299. AGRICARE. Continental Oil Company, assignee of American Agricultural Chemical Company. SN 209,382. Pub. 10–11–66. Filed 1–6–65.

821,300. NUTCO. Nassau Industrial Uniform Service, Inc. SN 224,545. Pub. 10–11–66. Filed 7–29–65.

821,301. MAN (DESIGN). Nassau Industrial Uniform Service, Inc. SN 224,546. Pub. 10–11–66. Filed 7–29–65.

821,302. RMA AND DESIGN. The Rubber Manufacturers Association, Inc. SN 224,966. Pub. 10–11–66. Filed 8–4–65.

821,303. CHICKEN PLATTER AND DESIGN. Tyburski & Wood. SN 226,688. Pub. 10–11–66. Filed 8–27–65.

821,304. WEYERHAEUSER REGISTERED HOME. Weyerhaeuser Company. SN 227,903. Pub. 10–11–66. Filed 9–15–65.

821,305 FLINT'S AND DESIGN. Flint's Incorporated. SN 228,900. Pub. 10–11–66. Filed 9–29–65.

821,306. MISCELLANEOUS DESIGN. Howard Johnson's Motor Lodges, Inc. SN 229,012. Pub. 10–11–66. Filed 9–30–65.

821,307. MAGICOMBE. Fantastique Designes, Inc. SN 229,222. Pub. 10–11–66. Filed 10–4–65.

821,308. NFPA AND DESIGN. National Fire Protection Association International. SN 230,872. Pub. 10–11–66. Filed 10–21–65.

821,309. BOAT—US AND DESIGN. Boat Owners Association of the United States. SN 232,968 Pub. 10–11–66. Filed 11–19–65.

821,310. POLO BAR. Knott Hotels Corporation. SN 244,864. Pub. 10–11–66. Filed 5–4–66.

Class 101 — Advertising and Business

821,311. BONNIE, THE PLAID LASSIE AND DESIGN. E. F. MacDonald Stamp Company. SN 137,535. Pub. 7–9–63. Filed 2–8–62.

821,312. REPRESENTATION OF GIRL CHARACTER. E. F. MacDonald Stamp Company. SN 137,537. Pub. 4–16–63. Filed 2–8–62.

821,313. C AND DESIGN OF GIRL IN PLAID. E. F. MacDonald Stamp Company, assignee of Consumers Trading Stamp Corporation. SN 145,808. Pub. 6–25–63. Filed 5–31–62.

821,314. KELLOGG'S. Kellogg Company. SN 201,496. Pub. 10–11–66. Filed 9–8–64.

821,315. DATA CORE AND DESIGN. Hallcraft Homes, Inc. SN 224,092. Pub. 10–11–66. Filed 7–23–65.

821,316. WEYERHAEUSER REGISTERED HOME. Weyerhaeuser Company. SN 227,904. Pub. 10–11–66. Filed 9–15–65.

821,317. CIRCLE BUSINESS SERVICES AND DESIGN. Circle Business Services. SN 229,065. Pub. 10–11–66. Filed 10–1–65.

821,318. FTD AND DESIGN. Florists' Transworld Delivery Association. SN 236,983. Pub. 10–11–66. Filed 1–21–66.

821,319. MISS BATHING BEAUTY OF THE YEAR. Charlie See, d.b.a. Charlie See & Associates. SN 237,271. Pub. 10–11–66. Filed 1–25–66.

821,320. MISS BIKINI QUEEN. Charlie See, d.b.a. Charlie See & Associates. SN 237,272. Pub. 10–11–66. Filed 1–25–66.

821,321. MISS QUEEN OF QUEENS. Charlie See, d.b.a. Charlie See & Associates. SN 237,275. Pub. 10–11–66. Filed 1–25–66.

Class 102 — Insurance and Financial

821,322. DIVERSIFIED INDUSTRIES. Diversified Industries, d.b.a. Diversified Industries Realtors. SN 188,621. Pub. 10–11–66. Filed 3–13–64.

821,323. NGM AND DESIGN. National Grange Mutual Insurance Company. SN 227,606. Pub. 10–11–66. Filed 9–10–65.

821,324. WEYERHAEUSER REGISTERED HOME. Weyerhaeuser Company. SN 227,905. Pub. 10–11–66. Filed 9–15–65.

821,325. MI PLAN AND DESIGN. Motorists Insurance Agency, Inc. SN 228,234. Pub. 10–11–66. Filed 9–20–65.

821,326. MARKET CREDIT CORP. AND DESIGN. The H. F. MacDonald Company. SN 234,662. Pub. 10–11–66. Filed 12–15–65.

Class 103 — Construction and Repair

821,327. AUSTIN SPIRA-PARK. The Austin Company. SN 202,127. Pub. 10–11–66. Filed 9–18–64.

821,328. TRAVEL-OASIS. Marathon Oil Company. SN 244,790. Pub. 10–11–66. Filed 5–3–66.

Class 105 — Transportation and Storage

821,329. WEYERHAEUSER. Weyerhaeuser Company. SN 241,209. Pub. 10–11–66. Filed 3–16–66.

Class 107 — Education and Entertainment

821,330. FURRY ANIMAL (DESIGN). Deando Limited. SN 206,426. Pub. 10–11–66. Filed 11–18–64.

821,331. STENOSPEED. Stenospeed, Incorporated. SN 224,036. Pub. 10–11–66. Filed 7–22–65.

821,332. HOUSE OF JAMES ACCREDITED AND DESIGN. James J. Whitlock, d.b.a. House of James. SN 224,134. Pub. 10–11–66. Filed 7–23–65.

821,333. LOLLIPOP STORY BOX. Lin Folk. SN 229,422. Pub. 10–11–66. Filed 10–6–65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

821,334. Tesco Chemicals, Inc., Atlanta, Ga. SN 232,440. Filed 11–10–65.

FIRST IN WATER CHEMISTRY

Class 6—Chemicals and Chemical Compositions

For Industrial Maintenance Chemicals—Namely, Chlorine Gas, Acids, Alums, Calcium Hypochlorite, Activated Carbon, Caustic Soda, Copper and Ferric Sulphates, Lime Phosphate, Soda Ash, Sodium Chlorite, Fluorides, Anhydrous Ammonia, Calcium Chloride, Chromate of Soda, Liquid Chlorine, Organic Chlorine, Chlorine Stabiliser, Filming Amine Complexes, Flocculating Agents, and Non-Poisonous Algaecides.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automatic Water Chlorinators.

First use on or about October 1962.

SECTION 2

Class 6 — Chemicals and Chemical Compositions

821,336. See Section 1 (Combined certificate).

821,334. AFTA Solvents Corporation, Glen Cove, N.Y. SN 210,717. Filed P.R. 1–27–65; Am. S.R. 10–21–66.

NO-TRAK

For Chemical Spray To Hold Dirt and Dust on Rugs and Door Mats.

First use Jan. 12, 1965.

821,335. The Herbert Stanley Co., Inc., Winnetka, Ill. SN 220,699. Filed P.R. 6–8–65; Am. S.R. 10–25–66.

DUST-AIDE

For Dust Cloth and Dust Mop Spray Preparation.

First use on or about Feb. 23, 1965.

Class 7 — Cordage

821,337. Minnesota Mining and Manufacturing Company, St. Paul, Minn. SN 219,806. Filed P.R. 5–26–65; Am. S.R. 9–26–66.

HOLLY TIE

For Ribbon.

First use Oct. 20, 1961.

Class 10 — Fertilizers

821,338. The General Tire & Rubber Company, Akron, Ohio. SN 215,497. Filed P.R. 4–1–65; Am. S.R. 9–12–66.

DELUXE LAWN

Applicant makes no claim to the word "Deluxe" apart from the mark for the goods recited.

For Lawn and Plant Fertilizer.

First use Mar. 5, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

821,339. Pharmaceutical Laboratories, Inc., Plainfield, N.J. SN 211,463. Filed P.R. 2–5–65; Am. S.R. 10–24–66.

PAGET

For Analgesics, Vitamin Preparations and Rubbing Alcohol.

First use on or about Dec. 10, 1964.

821,340. Banfi Products Corp., New York, N.Y. SN 223,958. Filed P.R. 7–23–65; Am. S.R. 8–25–66.



The word "Amaro" means "bitter" in the Italian language, and the words "Stomatico-Aperitivo" mean "stomach soothing aperitif."

For Stomach and Appetising Bitters.

First use September 1964.

821,341. Kasar Laboratories, Niles, Ill. SN 229,818. Filed P.R. 10–11–65; Am. S. R. 9–30–66.

PRIVATE PAIN IS AS UNNECESSARY AS A HEADACHE

For Local Anesthetic, Antiseptic Pharmaceutical Preparation.

First use Sept. 29, 1965.

821,342. Southwestern Drug Corporation, d.b.a. Tru-Lab Products, Dallas, Tex. SN 231,307. Filed P.R. 10–22–65; Am. S.R. 10–3–66.

TRU·BALM

For Analgesic Heat Balm.

First use Aug. 25, 1964.

Class 22 — Games, Toys, and Sporting Goods

821,343. Original Toy Corporation, Brooklyn, N.Y. SN 218,572. Filed P.R. 5–11–65; Am. S.R. 10–20–66.

THE GAME THAT'S PLAYED AROUND THE WORLD

For Apparatus Sold as a Unit for Playing a Chess and Checker-Type Parlor Game.

First use May 3, 1965.

821,344. John E. Price, Jr., d.b.a. Surfboards Hawaii, Encinitas, Calif. SN 233,128. Filed P.R. 11–22–65; Am. S.R. 10–7–66.



For Surfboards.

First use Aug. 1, 1962.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

821,336. See Section 1 (Combined certificate).

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

821,345. United States Rubber Company, New York, N.Y. SN 255,139. Filed 9–26–66.



For Pneumatic Tires.

First use May 1965.

Class 38 — Prints and Publications

821,346. Pittsburgh Railways Company, Pittsburgh, Pa., assignee of The Industrial Publishing Corporation, Cleveland, Ohio. SN 203,091. Filed P.R. 10–1–64; Am. S.R. 10–25–66.

GOVERNMENT PURCHASING DIGEST

For Trade Magazine Published Monthly or From Time to Time.

First use on or about Sept. 15, 1964.

821,347. Paper Industry Management Association, Des Plaines, Ill. SN 206,958. Filed P.R. 11–25–64; Am. S.R. 10–10–66.

PAPER WEEK

For Newsletter Issued From Time to Time Containing Information of Interest to the Paper Industry.

First use on or about Nov. 2, 1964.

821,348. American Nuclear Society Incorporated, Hinsdale, Ill. SN 214,597. Filed P.R. 3–22–65; Am. S.R. 10–26–66.

NUCLEAR APPLICATIONS

Owner of Reg. Nos. 656,620, 764,723, and 775,380.

For Technical Magazine Published Periodically.

First use Feb. 15, 1965.

821,349. Norcross, Inc., New York, N.Y. SN 220,134. Filed P.R. 6-1-65; Am. S.R. 10-21-66.

KING SIZE

For Greeting Cards.
First use June 1953.

821,350. The Hat Institute, Philadelphia, Pa. SN 228,680. Filed P.R. 9-27-65; Am. S.R. 10-19-66.

Paris Fashion Headlines

The drawing is lined for the color blue.
For Press Bulletins Published Periodically Containing News and Information Relating to Hat Design, Particularly Fashions in Women's Hats, Especially of Foreign Origin, for Promoting the Business of Hat Manufacturers.
First use Aug. 16, 1965.

821,351. Rodale Press, Inc., Emmaus, Pa. SN 229,455. Filed P.R. 10-6-65; Am. S.R. 10-31-66.

RODALE'S
health·bulletin

Owner of Reg. Nos. 789,187 and 789,188.
For Weekly Report Covering Pertinent Health News.
First use Sept. 18, 1965.

821,352. Technical Publishing Company, Barrington, Ill. SN 231,287. Filed P.R. 10-22-65; Am. S.R. 10-13-66.

Plant Engineering

DIRECTORY & SPECIFICATIONS CATALOG

Owner of Reg. Nos. 534,821 and 721,041.
For Technical Trade Publications.
First use Sept. 23, 1965; Jan. 21, 1948 as to "Plant Engineering."

821,353. The Miller Publishing Company, Minneapolis, Minn. SN 234,050. Filed P.R. 12-6-65; Am. S.R. 10-24-66.

GERIATRIC NURSING

For Bi-Monthly Trade Magazine.
First use Oct. 20, 1965.

821,354. Farm Journal, Inc., Philadelphia, Pa. SN 238,856. Filed 2-15-66.

PRICE FORECAST

For Section of Magazine.
First use Jan. 19, 1963.

821,355. Clark Equipment Company, Buchanan, Mich. SN 239,018. Filed P.R. 2-17-66; Am. S.R. 10-31-66.

trallers

For House Organ.
First use on or about Apr. 27, 1964.

821,356. McGraw-Hill, Inc., New York, N.Y. SN 241,070. Filed 3-15-66.

ELECTRONICS ABROAD

Owner of Reg. No. 560,986.
For Section of a Monthly Magazine.
First use Oct. 19, 1964.

Class 40—Fancy Goods, Furnishings, and Notions

821,357. Lilo Ackerman, d.b.a. Frill Craft Co., Hollis, N.Y. SN 198,694. Filed P.R. 7-29-64; Am. S.R. 9-15-66.

FRILL CRAFT

For Kit for Making Articles of Material.
First use Jan. 2, 1961.

821,358. The Boye Needle Company, Chicago, Ill. SN 201,862. Filed P.R. 9-8-64; Am. S.R. 9-15-66.

PERFECTION POINTS

For Hand Knitting Needles.
First use on or before Jan. 1, 1962.

821,359. K. Delbanco Incorporated, New York, N.Y. SN 208,555. Filed P.R. 12-21-64; Am. S.R. 9-9-66.

LUS-TRESS

For Wigs.
First use Aug. 10, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

821,360. Venetianaire Corporation of America, Yonkers, N.Y. SN 228,583. Filed P.R. 9-24-65; Am. S.R. 10-4-66.

Strand-o-Beads

For Bead Chains Used for Draperies.
First use Nov. 15, 1964.

Class 45—Soft Drinks and Carbonated Waters

821,361. Robert Charles Schmidt, d.b.a. Cascade Carbonating Company, St. Louis, Mo. SN 225,603. Filed P.R. 8-12-65; Am. S.R. 8-10-66.



For Carbonated Sarsaparilla-Flavored Soft Drink.
First use July 29, 1965.

821,362. Sun Drop Sales Corporation of America, St. Louis, Mo. SN 232,248. Filed P.R. 11-5-65; Am. S.R. 11-2-66.

ENJOY EVERY *Golden Drop*

For Soft Drinks.
First use Sept. 24, 1965.

Class 46—Foods and Ingredients of Foods

821,363. R & J Corporation, Ogden, Utah. SN 194,420. Filed P.R. 5-27-64; Am. S.R. 10-12-66.

BURGER SPUD

For Restaurant Dishes Comprising Ground Beef, Bun, Mashed Potatoes, Dressing and Gravy.
First use Apr. 1, 1947.

821,364. Harry and David, Medford, Oreg. SN 196,375. Filed P.R. 6-24-64; Am. S.R. 9-28-66.

INTERNATIONAL COFFEE CLUB

For Coffee.
First use May 27, 1964.

821,365. Beatrice Foods Co., Chicago, Ill. SN 215,582. Filed P.R. 4-2-65; Am. S.R. 9-14-66.

CUP O' TOFFEE

For Candy.
First use Mar. 18, 1965.

821,366. Ronsoni Macaroni Co., Inc., Long Island City, N.Y. SN 221,636. Filed P.R. 6-21-65; Am. S.R. 10-25-66.

RONZONI SONO BUONI-RONZONI IS SO GOOD

For Alimentary Pastes, Grated Cheeses, and Spaghetti Sauces.
First use at least prior to Jan. 1, 1953; year 1940 as to "Ronsoni Sono Buoni."

821,367. George N. Ashley, Jr., d.b.a. Ashley's Restaurant, El Paso, Tex. SN 223,210. Filed P.R. 7-13-65; Am. S.R. 8-11-66.

Ashley's K-SO BRAND

For Cheese Dip and Cheese Sauce.
First use June 10, 1963.

821,368. J. H. Filbert, Inc., Baltimore, Md. SN 228,450. Filed P.R. 9-23-65; Am. S.R. 9-14-66.

DIET SPRED

For Oleomargarine.
First use Sept. 10, 1965.

821,369. J. H. Filbert, Inc., Baltimore, Md. SN 228,451. Filed P.R. 9-23-65; Am. S.R. 9-14-66.

DIET SPREAD

For Oleomargarine.
First use Sept. 10, 1965.

821,370. Tillie Lewis Foods, Inc., Stockton, Calif. SN 230,670. Filed P.R. 10-20-65; Am. S.R. 10-21-66.

MONTINI

For Canned Peeled Italian Style Tomatoes.
First use Oct. 9, 1965.

821,371. United Fruit Company, Boston, Mass. SN 232,431. Filed P.R. 11-9-65; Am. S.R. 10-11-66.

PETITE 150'S

For Fresh Bananas.
First use July 6, 1965.

Class 49—Distilled Alcoholic Liquors

821,372. David Sherman Corporation, d.b.a. Nation Hill Company, St. Louis, Mo. SN 209,203. Filed P.R. 12-31-64; Am. S.R. 10-28-66.

ROSTOV

For Vodka.
First use Dec. 16, 1964.

821,373. Puerto Rico Distillers, Inc., d.b.a. Barcelo Marques & Co., Arecibo, Puerto Rico. SN 240,537. Filed P.R. 3-9-66; Am. S.R. 11-2-66.

VIEJO SAN JUAN

For Alcoholic Beverages—Namely, Rum.
First use Sept. 27, 1965.

Class 50—Merchandise Not Otherwise Classified

821,374. National Sanitary Laboratories, Inc., Chicago, Ill. SN 211,457. Filed P.R. 2-5-65; Am. S.R. 10-19-66.

COMIC-COINS

For Medallions and Tokens.
First use Nov. 25, 1963.

821,375. Paul J. Gruen, West Concord, Mass. SN 216,864. Filed P.R. 5-14-65; Am. S.R. 10-24-66.

DARWIN

For Three-Dimensional Figurines.
First use July 17, 1963.

Class 51 — Cosmetics and Toilet Preparations

821,376. Richard Hudnut, Morris Plains, N.J. SN 186,171. Filed P.R. 2–6–64; Am. S.R. 10–21–66.

ROLL QUICK

For Permanent Waving Kit Containing Waving Solutions and Rollers for Use Therewith.
First use Jan. 30, 1964.

821,377. Century Creations, Incorporated, Santa Monica, Calif. SN 206,923. Filed P.R. 11–25–64; Am. S.R. 10–19–66.

Soothe

For Cosmetic Dandruff Spray.
First use Aug. 13, 1964.

821,378. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,770. Filed P.R. 4–30–65; Am. S.R. 10–3–66.

BUNNY ROSE

For Lipsticks.
First use Mar. 11, 1965.

821,379. Chas. Pfizer & Co., Inc., New York, N.Y. SN 217,771. Filed P.R. 4–30–65; Am. S.R. 10–3–66.

COME CLOSER HONEY

For Lipsticks.
First use Mar. 11, 1965.

821,380. Foster-Milburn Company, Buffalo, N.Y. SN 226,635. Filed P.R. 8–27–65; Am. S.R. 9–26–66.

PreSun

For Protective Sun Cream for the Skin, for Prevention of Sunburn.
First use May 19, 1965.

821,381. Milkmaid Inc., New York, N.Y. SN 253,714. Filed P.R. 9–1–66; Am. S.R. 10–17–66.

FOOL'S GOLD

For Lipsticks.
First use April 1964.

Class 52 — Detergents and Soaps

821,382. John T. Stanley Co., Inc., New York, N.Y. SN 228,415. Filed P.R. 9–22–65; Am. S.R. 10–10–66.

CAGE BRITE

For Cleaning Preparation Particularly Suited for Cleaning Pet Cages, but Also Useful as a General-Purpose Household Cleaner.
First use Aug. 2, 1965.

Service Marks

Class 101 — Advertising and Business

821,383. Industrial National Bank of Rhode Island, Providence, R.I. SN 217,090. Filed P.R. 4–21–65; Am. S.R. 3–7–66.

THE COMPUTER CENTER OF [illegible]

The lining on the drawing is for shading, and does not represent color.
For Furnishing Accounting, Bookkeeping, Payroll, Banking, Billing, Fiscal Agency, and Other Stenographic Services for Others Using Electronic Data Processing Equipment.
First use Feb. 28, 1965.

821,384. Lowell Wholesale Drug, Inc., Lowell, Mass. SN 227,951. COLLECTIVE MARK. Filed P.R. 9–16–65; Am. S.R. 10–7–66.

THIS IS A QUALITY SAVINGS SERVICE DRUG STORE

For Retail Drug Store Services.
First use Apr. 1, 1965.

821,385. National Service Industries Inc., Atlanta, Ga. SN 236,914. Filed P.R. 1–20–66; Am. S.R. 11–2–66.

NATIONAL SERVICE INDUSTRIES INC.

For Rental of Linens, Uniforms, and Work Clothes.
First use December 1964.

Class 107 — Education and Entertainment

821,386. Shirley Roses, Jersey City, N.J. SN 233,218. Filed P.R. 11–22–65; Am. S.R. 9–14–66.

SINGLE COLLEGE GRADUATES' CLUB

For Organizing and Operating Club for Single College Graduates.
First use Aug. 4, 1964.

TRADEMARK REGISTRATIONS RENEWED

29,034. PEARL BOND 1896. Cl. 37. 10–27–1896.
29,436. L L BROWN PAPER CO. FINE. Cl. 37. 1–12–1897.
56,449. THE EPICURE. Cl. 49. 9–25–06.
57,034. COLGATE'S. Cl. 51. 10–30–06.
57,035. COLGATE & CO. Cl. 51. 10–30–06.
57,185. BUCKSKIN. Cl. 2. 11–6–06.
57,186. EXCELSIOR. Cl. 2. 11–6–06.
57,189. FOX. Cl. 2. 11–6–06.
57,191. REX. Cl. 2. 11–6–06.
57,192. TIP-TOP. Cl. 2. 11–6–06.
57,203. SUPERIOR. Cl. 2. 11–6–06.
57,545. BANKERS LINEN. Cl. 37. 11–13–06.
57,570. BANKERS. Cl. 37. 11–13–06.
60,109. GLASS VALVE. Cl. 23. 1–29–07.
60,287. AD-EL-ITE. Cl. 16. 2–5–07.
61,662. AMBROSIA. Cl. 46. 4–2–07.
61,863. PETER PAN. Cl. 36. 4–9–07.
216,506. NUTONEX. Cl. 6. 8–10–26.
220,398. DMC AND DESIGN. Cl. 43. 11–9–26.
220,399. DMC AND DESIGN. Cl. 43. 11–9–26.
220,400. DMC AND DESIGN. Cl. 43. 11–9–26.
220,536. ACTION BOND. Cl. 37. 11–9–26.
220,653. DMC AND DESIGN. Cl. 43. 11–16–26.
220,666. ARISTOCRAT. Cl. 21. 11–16–26.
220,680. BIGUY AND DESIGN. Cl. 39. 11–16–26.
220,816. GEM. Cl. 2. 11–16–26.
220,944. KNAPP-FELT AND DESIGN. Cl. 39. 11–16–26.
221,146. DALCROSE. Cl. 51. 11–23–26.
221,219. COLTEX. Cl. 42. 11–23–26.
221,863. HELOS. Cl. 21. 12–14–26.
222,255. HOUGHTO-CLEAN. Cl. 52. 12–28–26.
222,459. FOSTORIA. Cl. 33. 1–4–27.
222,775. OTIS. Cl. 15. 1–11–27.
223,259. PRESIDENT. Cl. 27. 1–25–27.
223,439. SERGEANT'S. Cl. 18. 2–1–27.
223,660. SANI-FLAT AND DESIGN. Cl. 16. 2–8–27.
224,110. TAQUINE. Cl. 51. 2–15–27.
224,141. BIG JESS. Cl. 39. 2–22–27.
224,515. KOLODUST. Cl. 6. 3–1–27.
224,750. CHINALINE. Cl. 16. 3–1–27.
225,072. LOXSTEEL. Cl. 21. 3–8–27.
225,185. OPHIR. Cl. 15. 3–15–27.
225,340. ES. Cl. 21. 3–15–27.
226,008. SILVER GATE. Cl. 46. 3–29–27.
226,218. DEVIL DOGS. Cl. 46. 4–5–27.
226,798. REDYREF RACK. Cl. 32. 4–19–27.
422,558. KAYDOL. Cl. 51. 7–30–46.
422,728. WOVENTEX. Cl. 39. 8–13–46.
423,011. REDIGEN AND DESIGN. Cl. 18. 8–20–46.
423,478. QUIK-TATCH AND DESIGN. Cl. 23. 9–3–46.
423,918. MILRITE. Cl. 14. 9–17–46.
424,426. SPIRACTOR. Cl. 23. 10–8–46.
424,693. RAF-TON-PEP. Cl. 48. 10–22–46.
424,930. PARCHLINED. Cl. 2. 10–29–46.
424,969. BLUE RIDGE. Cl. 39. 10–29–46.
425,128. LONG FELLOW. Cl. 32. 11–5–46.
425,522. Z CRETE AND DESIGN. Cl. 12. 11–26–46.
425,600. TERRY TOONS AND DESIGN. Cl. 26. 11–26–46.
425,749. INGBEE. Cl. 3. 12–3–46.
426,260. WM. AINSWORTH. Cl. 26. 12–24–46.
426,446. TORNADO. Cl. 21. 12–24–46.
426,739. EAGER BEAVER. Cl. 22. 1–7–47.
426,932. AMERSE. Cl. 6. 1–21–47.
427,125. MISCELLANEOUS DESIGN. Cl. 4. 1–28–47.
427,521. NITROSE. Cl. 18. 2–11–47.
427,890. SEA SNAP. Cl. 46. 2–25–47.
428,513. DUTRAX. Cl. 21. 3–25–47.
428,528. COC. Cl. 26. 3–25–47.
428,548. SOMISEA. Cl. 46. 3–25–47.
428,870. TEXTILENE SUNSURE. Cl. 42. 4–8–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Nov. 8, 1960

706,889. STIRRUP. Cl. 1.
706,892. TREVIRA. Cl. 1.
706,893. ASTROLITE. Cl. 1.
706,894. DREAM CALF. Cl. 1.
706,895. HEREDITARE AND DESIGN. Cl. 1.
706,899. DERMATAN AND DESIGN. Cl. 1.
706,913. STACKED CALF. Cl. 1.
706,919. ROLL-A-GARDEN. Cl. 1.
706,920. FLOWER FESTIVAL. Cl. 1.
706,921. FLORAL FIESTA. Cl. 1.
706,922. SHOWERS OF BLOOM. Cl. 1.
706,924. CASU-FOAM. Cl. 1.
706,926. GOLD PRIZE. Cl. 1.
706,927. SPROUT. Cl. 1.
706,931. ROLL 'N GRO. Cl. 1.
706,932. PRIME TEX. Cl. 1.
706,938. CASUALPAC. Cl. 1.
706,940. JIFFY-SILO. Cl. 2.
706,941. TUFF AND WV AND DESIGN. Cl. 2.
706,942. MERIDIAN. Cl. 3.
706,943. LUSTRETILE. Cl. 4.
706,945. VELVETEX. Cl. 5.
706,949. ROSE-ALL. Cl. 6.
706,951. WEEVIL-FUME. Cl. 6.
706,957. UNIDRI AND DESIGN. Cl. 6.
706,958. CONTROLSOL. Cl. 6.
706,960. CONTROLEX. Cl. 6.
706,961. CONTROLCAL. Cl. 6.
706,962. ELITE AND DESIGN. Cl. 7.
706,964. ZEPHYR. Cl. 9.
706,966. GOLDEN GROOM. Cl. 10.
706,969. OVEN-EASE. Cl. 13.
706,970. AER-O-TORQ AND DESIGN. Cl. 13.
706,973. PLANTA-CRAFT. Cl. 13.
706,978. JIGGLE-SMASHER. Cl. 13.
706,983. CADDY-KIT. Cl. 16.
706,991. GRISOVIN. Cl. 18.
706,993. SINCURETTE. Cl. 18.
706,902. COLENTIN. Cl. 18.
706,903. SHOSEPTIN. Cl. 18.
706,907. DYNALTENT. Cl. 18.
706,909. XECAIN. Cl. 18.
706,910. PREDOCAIN. Cl. 18.
706,913. ALLOY AND DESIGN. Cl. 19.
706,918. PYRIL. Cl. 21.
706,921. BRAND-N-LOOP. Cl. 22.
706,922. DAFFY DINOSAURS. Cl. 22.
706,923. SKOOKER. Cl. 22.
706,928. RICKY TICKY TOYS AND DESIGN. Cl. 22.
706,933. TG TRANSOMATIC AND DESIGN. Cl. 23.
706,960. EXCELSIOR ROTUNDA AND DESIGN. Cl. 36.
706,955. TAPER LINE. Cl. 32.
706,946. TERRACE. Cl. 23.
706,945. GENTOOL AND DESIGN. Cl. 23.
706,943. DURATHERM. Cl. 23.
706,942. LIL. Cl. 23.
706,939. CROFT-RING. Cl. 23.
706,937. FANCIFUL FIGURE OF A MAN. Cl. 23.
706,935. PAY-O-TROL. Cl. 23.
706,934. MIGHTY MIDGET. Cl. 23.
706,985. SATELLITES. Cl. 39.
706,984. STORY CLUB OF THE OLD WEST. Cl. 38.
706,983. FARMERS CORN HOG NEWS AND DESIGN. Cl. 38.
706,981. HOMEMASTER. Cl. 38.
706,980. SLIDE-A-STAIN. Cl. 38.
706,974. GARDEN SUPPLY MERCHANDISER. Cl. 38.
706,972. GRAFICOR. Cl. 38.
706,969. DIALA FLOWER. Cl. 38.
706,963. DIANA. Cl. 37.
706,961. LANCER AND DESIGN. Cl. 36.
760,991. HOLE IN ONE AND DESIGN. Cl. 39.
707,000. HEROX. Cl. 42.
707,009. DORANN PIZZA KIT. Cl. 46.
707,013. EASTERN STATES PRODUCTS AND DESIGN. Cl. 46.
707,015. 1ST BY A HEAD AND DESIGN. Cl. 46.

707,016. HONEY-VIN. Cl. 46.
707,017. CARTE BLANCHE. Cl. 46.
707,018. HAMPTON HOUSE. Cl. 46.
707,021. TEXAS PRAIRIEFIRE. Cl. 46.
707,039. BLONTOP. Cl. 51.
707,040. INVISIBLE HAT. Cl. 51.
707,043. CHARLES ANTELL. Cl. 51.
707,046. NO-BUF WONDER. Cl. 52.
707,047. LI-ZAIN. Cl. 52.
707,052. BISMUTHOL. Cl. 18.
707,053. MOIST-AIR GUIDE AND DESIGN. Cl. 26.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

29,592. WISH BONE AND DESIGN. Cl. 46. 2-23-97. *J. F. Humphreys & Co.* Thomas J. Lipton, Inc., Englewood Cliffs, Calif. Amended: In the statement, column 1, lines 8 through 14, the description of goods is deleted and *coffee and spices* is inserted, line 15 through line 29 is deleted, and the drawing is amended to appear:

WISH-BONE

64,717. GOODYEAR CROWN FLEXOR AND DESIGN. Cls. 44, 50. 8-20-07. American Hard Rubber Co. Humble Oil & Refining Company, Houston, Tex. Amended to appear:



216,131. ENNA JETTICK. Cl. 39. 9-21-26. Dunn & McCarthy, Inc., Auburn, N.Y. Amended: In the statement, column 1, lines 9 through 11, "Made of leather, rubber or fabric or combinations of these materials" is deleted, and the drawing is amended to appear:

ENNA JETTICKS

306,965. ORTHALETIC. Cl. 44. 10-10-33. The Bay Company. Parke, Davis & Company, Detroit, Mich. Amended to appear:

ORTHALETIC

530,597. MARK-TIME AND DESIGN. Cl. 21. 9-12-50. M. H. Rhodes Incorporated, Hartford, Conn. Corrected: In the certificate, lines 4 and 15, in the heading, signature and in the statement, column 1, lines 1 and 19, "Incorporated" should be deleted and *, Inc.* should be inserted, in the certificate, line 5, second occurrence and in the statement, column 1, lines 2 and 3, "Connecticut" should be deleted and *Delaware* should be inserted.

545,089. MARK-TIME AND DESIGN. Cl. 26. 7-17-51. M. R. Rhodes Incorporated, Hartford, Conn. Corrected: In the certificate, lines 4 and 15, in the heading, signature and in the statement, column 1, line 1 and column 2, line 5, "Incorporated" should be deleted and *, Inc.* should be inserted and in the certificate, line 5, second occurrence and in the statement, column 1, lines 2 and 3, "Connecticut" should be deleted and *Delaware* should be inserted.

546,414. XEROX. Cl. 101. 8-7-51. The Haloid Company. Xerox Corporation, Rochester, N.Y. Amended to appear:

XEROX

782,813. MAXIMUM SECURITY AND DESIGN. Cl. 26. 1-5-65. M. H. Rhodes, Inc., Hartford, Conn. Corrected: In the statement, column 1, line 1, "Connecticut" should be deleted and *Delaware* should be inserted.

816,354. THE CARMEL SYSTEM AND DESIGN. Cl. 107. 10-4-66. Carmel Chemical Corporation, Westfield, Ind. Corrected: In the statement, column 2, line 5, "107" should be deleted and *100* should be inserted.

817,243. LIME CREST. Cl. 12. 10-25-66. Limestone Products Corporation of America, Newton, N.J. Corrected: In the statement, column 2, line 2, "build" should be deleted and *built* should be inserted.

INDEX OF REGISTRANTS

DECEMBER 27, 1966

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

A.C.T., Paris, France. 821,182, pub. 10-11-66. Cl. 40.
AMP Inc., Harrisburg, Pa. 821,029, pub. 10-11-66. Cl. 13.
A & W Root Beer Co., Santa Monica, Calif. 821,235, pub. 10-11-66. Cl. 46.
A & W Root Beer Co., Santa Monica, Calif. 821,236, pub. 10-11-66. Cl. 46.
A & W Root Beer Co., Santa Monica, Calif. 821,237, pub. 10-11-66. Cl. 46.
Ace Mfg. Co. Inc., Chalfont, Pa. 821,026, pub. 10-11-66. Cl. 13.
Ackerman, Lilo, d.b.a. Frill Craft Co., Hollis, N.Y. 821,357. Cl. 40.
Adams & Hiting Co., Chicago, Ill., to The Glidden Co., Cleveland, Ohio. 60,287, ren. 12-27-66. Cl. 16.
Adaptronics, Inc., Alexandria, Va. 821,118, pub. 10-11-66. Cl. 26.
Adaptronics, Inc., Alexandria, Va. 821,119, pub. 10-11-66. Cl. 26.
Addressograph Multigraph Corp., Cleveland, Ohio. 821,123, pub. 10-11-66. Cl. 26.
Advance Chemical Co., San Francisco, Calif. 821,077, pub. 10-11-66. Cl. 21.
Aer-o-Line Mfg. and Supply Co., Burbank, Calif. 706,870, canc. Cl. 13.
Aerosol Corp. of America, Clifton, N.J. 821,293, pub. 10-11-66. Cl. 52.
Aetna Leather Novelty Co., Inc., West New York, N.J. 820,961, pub. 10-11-66. Cl. 3.
Afta Solvents Corp., Glen Cove, N.Y. 821,334. Cl. 6.
Ainsworth, Wm., & Sons, Inc., Denver, Colo. 426,260, ren. 12-27-66. Cl. 26.
Airkem, Inc., New York, N.Y. 821,291, pub. 10-11-66. Cl. 52.
Air-Shields, Inc., Hatboro, Pa. 821,067, pub. 10-11-66. Multiple Class (Classes 21, 23, 26, 31, 34, and 44).
Aksjeselskapet Freia, Norwegian Joint Stock Co., Oslo, Norway. 821,220, pub. 10-11-66. Cl. 46.
Aktiebolaget Bofors, Bofors, Sweden. 706,909, canc. Cl. 18.
Aktiebolaget Bofors, Bofors, Sweden. 706,910, canc. Cl. 18.
Alloy Marine Products, Inc., Algonac, Mich. 706,913, canc. Cl. 19.
Ambrosia Chocolate Co., Milwaukee, Wis., to W. R. Grace & Co., New York, N.Y. 61,662, ren. 12-27-66. Cl. 46.
American Agricultural Chemical Co.: *See*—
Continental Oil Co.
American Aluminum Products, Inc., Bridgeport, Conn. 706,873, canc. Cl. 18.
American Can Co., New York, N.Y. 820,956, pub. 10-11-66. Cl. 2.
American Cyanamid Co., Wayne, N.J. 821,004, pub. 10-11-66. Cl. 9.
American Enzyme Products Co., Sheldon, Iowa. 820,989, pub. 10-11-66. Cl. 6.
American Hard Rubber Co. Humble Oil & Refining Co., Houston, Tex. 64,717. Am. 7(d). Cl. 44.
American Home Products Corp.: *See*—
Fort Dodge Laboratories, Inc.
American Home Products Corp., New York, N.Y. 821,283, pub. 10-11-66. Cl. 51.
American Home Products Corp., d.b.a. Fort Dodge Laboratories, New York, N.Y., from Fort Dodge Laboratories, Inc., Fort Dodge, Iowa. 707,052, canc. Cl. 18.
American-Lincoln Corp., Toledo, Ohio. 821,289, pub. 10-11-66. Cl. 52.
American Nuclear Society Inc., Hinsdale, Ill. 821,348. Cl. 38.
American Pamcor, Inc., Berwyn, Pa. 821,030, pub. 10-11-66. Cl. 13.
American Scientific Laboratories, Inc., Madison, Wis. 706,902, canc. Cl. 18.
American Scientific Laboratories, Inc., Madison, Wis. 706,903, canc. Cl. 18.
American Tack & Hardware Co., Inc., New York, N.Y. 821,035, pub. 10-11-66. Cl. 13.
Anaconda Wire and Cable Co., to Anaconda Wire and Cable Co., New York, N.Y. 428,513, ren. 12-27-66. Cl. 21.
Apex Engineering Co.: *See*—
Ostermeier, Donald E.
Armand Co., The, to Evert D. Weeks, d.b.a. The Armand Co., Des Moines, Iowa. 234,110, ren. 12-27-66. Cl. 51.
Armored Luggage Mfg. Co., Inc., Hawthorne, Calif. 706,842, canc. Cl. 3.
Armour and Co., Chicago, Ill. 706,888, canc. Cl. 1.
Armour and Co., Chicago, Ill. 706,889, canc. Cl. 1.
Armour and Co., Chicago, Ill. 821,286, pub. 10-11-66. Cl. 52.
Armstrong Paint & Varnish Works, Inc., Chicago, Ill. 821,020, pub. 10-11-66. Cl. 12.
Ashley, George N., Jr., d.b.a. Ashley's Restaurant, El Paso, Tex. 821,367. Cl. 46.
Ashley's Restaurant: *See*—
Ashley, George N., Jr.
Aura Sonic Corp., Runnemede, N.J. 821,146, pub. 10-11-66. Cl. 36.
Austin Co., The, Cleveland Heights, Ohio. 821,337, pub. 10-11-66. Cl. 103.
Astec Chemicals Inc., Elyria, Ohio. 820,990, pub. 10-11-66. Cl. 6.
Avon Products, Inc., New York, N.Y. 821,276, pub. 10-11-66. Cl. 51.
Babbitt, B. T., Inc., New York, N.Y. 707,043, canc. Cl. 51.
Banfi Products Corp., New York, N.Y. 821,340. Cl. 18.
Barcelo Marques & Co.: *See*—
Puerto Rican Corp.
Baronet Corp., Secaucus, N.J. 820,964, pub. 10-11-66. Multiple Class (Classes 3 and 8).
Bass, G. H., & Co., Wilton, Maine. 821,179, pub. 10-11-66. Cl. 39.
Bay Co., The, Parke, Davis & Co., The, Detroit, Mich. 306,965. Am. 7(d). Cl. 44.
Bay Window Mfg.: *See*—
Swiercz, Stephen J.
Bearfoot Airway Corp., Wadsworth, Ohio. 821,053, pub. 9-27-66. Cl. 19.
Beatric Foods Co., Chicago, Ill. 821,365. Cl. 46.
Beaulieu, Marcel, Fontenay-sous-Bois, Seine, France. 821,059, pub. 10-11-66. Multiple Class (Classes 21 and 26).
Beaunit Corp., New York, N.Y. 821,200, pub. 10-11-66. Cl. 43.
Beaunit Corp., New York, N.Y. 821,201, pub. 10-11-66. Cl. 43.
Beaunit Corp., New York, N.Y. 821,202, pub. 10-11-66. Cl. 43.
Beaunit Corp., New York, N.Y. 821,203, pub. 10-11-66. Cl. 43.
Beaunit Corp., New York, N.Y. 820,940, pub. 10-11-66. Cl. 1.
Beaunit Corp., New York, N.Y. 820,941, pub. 10-11-66. Cl. 1.
Beaunit Corp., New York, N.Y. 820,942, pub. 10-11-66. Cl. 1.
Beer Park Baking Co., Hammonton, N.J. 821,239, pub. 10-11-66. Cl. 46.
Belden Mfg. Co., Chicago, Ill. 706,918, canc. Cl. 21.
Bell, Bonnie, Inc., Lakewood, Ohio. 821,279, pub. 10-11-66. Cl. 51.
Bell Records, Inc., New York, N.Y. 821,141, pub. 10-11-66. Cl. 26.
Bemis Bro. Bag Co.: *See*—
Bemis Co., Inc.
Bemis Bro. Bag Co., St. Louis, Mo., to Bemis Co., Inc., Minneapolis, Minn. 424,930, ren. 12-27-66. Cl. 2.
Bemis Co., Inc.: *See*—
Bemis Bro. Bag Co.
Bemis Co., Inc., from Bemis Bro. Bag Co., Minneapolis, Minn. 820,949, pub. 10-11-66. Cl. 2.
Bendyne Products, Inc.: *See*—
Dinerstein, Ben.
Bernard Mfg. Co., Windsor, Mo. 821,297, pub. 10-11-66. Cl. 100.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 821,188, pub. 10-11-66. Cl. 42.
Betan Co., Inc., Knoxville, Tenn. 821,048, pub. 10-11-66. Cl. 18.
Betan Co., Inc., Knoxville, Tenn. 821,049, pub. 10-11-66. Cl. 18.
Betan Co., Inc., Knoxville, Tenn. 821,050, pub. 10-11-66. Cl. 18.
Beverage-Air Co., Spartanburg, S.C. 821,128, pub. 10-11-66. Cl. 31.
Big Kernel Pet Foods, Inc., Chicago, Ill. 821,292, pub. 10-11-66. Cl. 52.
Biviator S.A., Geneva, Switzerland. 821,061, pub. 10-11-66. Cl. 21.
Blue Jay Mfg. Co., Huntington, W. Va., to Imperial Reading Corp., New York, N.Y. 220,680, ren. 12-27-66. Cl. 39.
Blue Ridge Manufacturers, Inc., Baltimore, Md., to Imperial Reading Corp., New York, N.Y. 424,969, ren. 12-27-66. Cl. 39.
Boat Owners Association of the United States, Washington, D.C. 821,309, pub. 10-11-66. Cl. 100.
Boston Electric Heating Corp., Whitman, Mass. 221,663, ren. 12-27-66. Cl. 21.
Boundary Produce: *See*—
Boundary Produce Co.
Boundary Produce Co., d.b.a. Boundary Produce, El Centro, Calif. 707,015, canc. Cl. 46.
Bourns, Inc., Riverside, Calif. 821,205, pub. 10-11-66. Cl. 44.
Boye Needle Co., The, Chicago, Ill. 821,181, pub. 10-11-66. Cl. 40.
Boye Needle Co., The, Chicago, Ill. 821,338. Cl. 40.
Bradford Novelty Co., Inc., Boston, Mass. 821,073, pub. 10-11-66. Cl. 21.
Breck, John H., Inc., Springfield, Mass., from Tecnique, Inc., Clifton, N.J. 821,259, pub. 10-11-66. Cl. 51.
Breon Laboratories Inc., New York, N.Y. 821,047, pub. 10-11-66. Cl. 16.
Breuer Electric Mfg. Co., Chicago, Ill. 426,446, ren. 12-27-66. Cl. 21.
Bridgton Shoe Co., Bridgton, Maine. 706,985, canc. Cl. 39.

Brigham's, Inc., d.b.a. Dorothy Muriel's, Cambridge, Mass. 821,218, pub. 10–11–66. Cl. 46.
Brown, L. L., Paper Co., Adams, Mass. 29,436, ren. 12–27–66. Cl. 37.
Bulova Watch Co., Inc., New York, N.Y. 223,259, ren. 12–27–66. Cl. 27.
Bunn, B. H., Co., Chicago, Ill. 821,114, pub. 10–11–66. Cl. 23.
Butt, H. E., Grocery Co., d.b.a. Harlingen Canning Co., Corpus Christi, Tex. 821,229, pub. 10–11–66. Cl. 46.
Butt, H. E., Grocery Co., d.b.a. Harlingen Canning Co., Corpus Christi, Tex. 821,294, pub. 10–11–66. Cl. 52.
B.V.D. Co., Inc., The, New York, N.Y. 821,167, pub. 5–10–66. Cl. 39.
CBS Films Inc.: *See*—
Terrytoons, Inc.
CF & I Steel Corp. from The Colorado Fuel and Iron Corp., Denver, Colo. 821,003, pub. 10–11–66. Cl. 7.
Cadericia, Societe Anonyme, Bobigny (Seine), France. 821,263, pub. 10–11–66. Cl. 51.
Calgon Corp., Pittsburgh, Pa. 820,973, pub. 10–11–66. Cl. 6.
Calvert Distilling Co.: *See*—
Seagram, Joseph E., & Sons, Inc.
Carborundum Co., The, Niagara Falls, N.Y. 427,125, ren. 12–27–66. Cl. 4.
Carmel Chemical Corp., Westfield, Ind. 816,354, cor. Cl. 107.
Carnegie, Hattie, Inc., New York, N.Y. 821,275, pub. 10–11–66. Cl. 51.
Carte Blanche: *See*—
Hilton Credit Corp.
Cascode Carbonating Co.: *See*—
Schmidt, Robert C.
Cal-A-Pak, Salinas, Calif. 821,228, pub. 10–11–66. Cl. 46.
Century Creations, Inc., Santa Monica, Calif. 821,377. Cl. 51.
Chemtronics Inc., Brooklyn, N.Y. 821,290, pub. 10–11–66. Cl. 52.
Cincinnati Shaper Co., The, Cincinnati, Ohio. 821,105, pub. 10–11–66. Cl. 23.
Circle Business Services, Los Angeles, Calif. 821,317, pub. 10–11–66. Cl. 101.
Clark Equipment Co., Buchanan, Mich. 821,355. Cl. 38.
Clayton Dewandre Co. Ltd., Lincoln, England. 821,095, pub. 10–11–66. Cl. 23.
Cleveland Crane & Engineering Co., The, Wickliffe, Ohio. 821,066, pub. 10–11–66. Cl. 21.
Cleveland Twist Drill Co., The, Cleveland, Ohio. 821,097, pub. 10–11–66. Cl. 23.
Cleveland Twist Drill Co., The, Cleveland, Ohio. 821,106, pub. 10–11–66. Cl. 23.
Cliff's Notes, Inc., Lincoln, Nebr. 821,156, pub. 10–11–66. Cl. 38.
Clopay Corp., Cincinnati, Ohio. 821,021, pub. 10–11–66. Cl. 12.
Clopay Corp., Cincinnati, Ohio. 821,022, pub. 10–11–66. Cl. 12.
Club Aluminum Products Co., La Grange Park, Ill. 820,955, pub. 10–11–66. Cl. 2.
Coastal Abrasive and Tool Co., Inc., Long Island City, N.Y. 821,122, pub. 10–11–66. Cl. 26.
Cohen, Joseph H., & Sons, Inc.: *See*—
Rapid-American Corp.
Coleman Instruments Corp., Maywood, Ill. 821,117, pub. 10–11–66. Cl. 26.
Cole-Parmer Instrument & Equipment Co., Chicago, Ill. 821,160, pub. 10–11–66. Cl. 38.
Colgate & Co., to Colgate-Palmolive Co., New York, N.Y. 57,034, ren. 12–27–66. Cl. 51.
Colgate & Co., to Colgate-Palmolive Co., New York, N.Y. 57,035, ren. 12–27–66. Cl. 51.
Colgate-Palmolive Co.: *See*—
Colgate & Co.
Colgate-Palmolive Co., New York, N.Y. 820,992, pub. 10–11–66. Cl. 6.
Colorado Fuel and Iron Corp., The: *See*—
CF & I Steel Corp.
Color-Craft Products, Inc., Detroit, Mich. 821,058, pub. 10–11–66. Cl. 20.
Colt's Inc., Hartford, Conn. 821,005, pub. 10–11–66. Cl. 9.
Colt's Inc., Hartford, Conn. 821,006, pub. 10–11–66. Cl. 9.
Columbia Bag & Paper Corp., Long Island City, N.Y., to Union Bag Corp., New York, N.Y. 220,816, ren. 12–27–66. Cl. 2.
Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, N.Y. 821,014, pub. 10–11–66. Cl. 11.
Columbus Plastic Products, Inc., Columbus, Ohio. 821,027, pub. 10–11–66. Multiple Class (Classes 13 and 31).
Columbus Vaccine Co., The: *See*—
Terry, Robert W.
Concrete Thermal Casings, Inc.: *See*—
Universal Zonolite Insulation Co.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 820,959, pub. 10–11–66. Cl. 2.
Con-Stan Industries, Inc., El Monte, Calif. 821,173, pub. 10–11–66. Cl. 39.
Consumers Trading Stamp Corp.: *See*—
MacDonald, E. F., Stamp Co.
Continental Oil Co., Ponca City, Okla., from American Agricultural Chemical Co., New York, N.Y. 821,011, pub. 10–11–66. Cl. 10.
Continental Oil Co., Ponca City, Okla., from American Agricultural Chemical Co., New York, N.Y. 821,012, pub. 10–11–66. Cl. 10.
Continental Oil Co., Ponca City, Okla., from American Agricultural Chemical Co., New York, N.Y. 821,013, pub. 10–11–66. Cl. 10.
Continental Oil Co., Ponca City, Okla., from American Agricultural Chemical Co., New York, N.Y. 821,299, pub. 10–11–66. Cl. 100.
Continental Optical Co., Inc., Indianapolis, Ind., to Textron, Inc., Providence, R.I. 428,528, ren. 12–27–66. Cl. 26.
Cook-Waite Labratories, Inc., New York, N.Y. 706,907, canc. Cl. 18.
Cormac Chemical Corp., New York, N.Y. 706,857, canc. Cl. 6.
Cornelius Co., The: *See*—
Shake Break, Inc.
Corp. Trust Co., The, New York, N.Y. 821,155, pub. 10–11–66. Cl. 38.
Corsaw Co.: *See*—
Corsaw, Harry B.
Corsaw, Harry B., d.b.a. Corsaw Co., Palo Alto, Calif. 706,878, canc. Cl. 13.
Corsets Lilhouette Ltd., London, England. 821,165, pub. 10–11–66. Cl. 39.
Cortland Industries, Inc., Cortland, N.Y. 821,080, pub. 10–11–66. Cl. 22.
Coughlan, G. N., Co., West Orange, N.J. 820,965, pub. 10–11–66. Multiple Class (Classes 4, 12, and 15).
Country Set, Inc., St. Louis, Mo. 821,170, pub. 10–11–66. Cl. 39.
Craftint Mfg. Co., The, Cleveland, Ohio. 821,162, pub. 10–11–66. Cl. 38.
Craftint Mfg. Co., The, Cleveland, Ohio. 821,163, pub. 10–11–66. Cl. 38.
Cramer Chemical Co., The, Gardner, Kans. 820,997, pub. 10–11–66. Cl. 6.
Creamette Co., The, Minneapolis, Minn. 821,223, pub. 10–11–66. Cl. 46.
Creamette Co., The, Minneapolis, Minn. 821,224, pub. 10–11–66. Cl. 46.
Creamette Co., The, Minneapolis, Minn. 821,225, pub. 10–11–66. Cl. 46.
Crocker-McElwain Co., Holyoke, Mass., to Minnesota Mining and Mfg. Co., St. Paul, Minn. 220,536, ren. 12–27–66. Cl. 37.
Crofts (Engineers) Ltd., Bradford, England. 706,939, canc. Cl. 23.
Crofut & Knapp Co., The, South Norwalk, Conn., to Hat Corp. of America, New York, N.Y. 220,944, ren. 12–27–66. Cl. 39.
Cutler Packaging Corp., Lansing, Mich. 820,972, pub. 10–11–66. Cl. 6.
Daggett and Ramsdell International Corp., New York, N.Y. 821,271, pub. 10–11–66. Multiple Class (Classes 51 and 52).
Dan River Mills, Inc., Danville, Va. 821,192, pub. 10–11–66. Cl. 42.
Davis & Co., The: *See*—
Bay Co., The.
Deando Ltd., St. Louis, Mo. 821,330, pub. 10–11–66. Cl. 107.
Deere & Co., Moline, Ill. 423,478, ren. 12–27–66. Cl. 23.
Deering Milliken, Inc., New York, N.Y. 821,190, pub. 10–11–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 821,191, pub. 10–11–66. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 821,195, pub. 10–11–66. Cl. 42.
Delbanco, K., Inc., New York, N.Y. 821,359. Cl. 40.
Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 820,981, pub. 10–11–66. Cl. 6.
Dep Corp., Los Angeles, Calif. 821,268, pub. 10–11–66. Cl. 51.
Dermatan Leather Co., Inc., Newark, N.J. 706,809, canc. Cl. 1.
Desert Range, Inc., Lawndale, Calif. 706,984, canc. Cl. 38.
Deutsche Gold- und Silver-Scheideanstalt vormals Roessler, Frankfurt (Main), Germany. 820,939, pub. 10–11–66. Cl. 1.
Deutsche Gold- und Silver-Scheideanstalt vormals Roessler, Frankfurt (Main), Germany. 820,944. pub. 10–11–66. Cl. 1.
Dinerstein, Ben, d.b.a. Bendyne Products, Inc., New York, N.Y. 821,261, pub. 10–11–66. Cl. 51.
Diversified Industries, d.b.a. Diversified Industries Realtors, Boston, Mass. 821,322, pub. 10–11–66. Cl. 102.
Diversified Industries Realtors: *See*—
Diversified Industries.
Doggett-Pfeil Co., Springfield, N.Y. 706,849, canc. Cl. 6.
Dollfus-Mieg & Cie., Societe Anonyme, Paris, France. 220,398, ren. 12–27–66. Cl. 43.
Dollfus-Mieg & Cie., Societe Anonyme, Paris, France. 220,399, ren. 12–27–66. Cl. 43.
Dollfus-Mieg & Cie., Societe Anonyme, Paris, France. 220,400, ren. 12–27–66. Cl. 43.
Dollfus-Mieg & Cie., Societe Anonyme, Paris, France. 220,653, ren. 12–27–66. Cl. 43.
Donovan Industries, Inc., Southport, Conn. 706,804, canc. Cl. 1.
Donovan Industries, Inc., New York, N.Y. 706,813, canc. Cl. 1.
Dorann Foods, Inc., Rye, N.Y. 707,009, canc. Cl. 46.
Dubarry Perfumery Co., Ltd., The, Hove, England, to Richard Hudnut, Morris Plains, N.J. 221,146, ren. 12–27–66. Cl. 51.
Dunn & McCarthy, Inc., Auburn, N.Y. 218,181. Am. 7(d). Cl. 39.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 707,000, canc. Cl. 42.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 820,947, pub. 10–11–66. Cl. 1.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 820,987, pub. 10–11–66. Cl. 6.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 820,998, pub. 10–11–66. Cl. 6.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 820,999, pub. 10–11–66. Cl. 6.
Dynamics Corp. of America, New York, N.Y. 821,135, pub. 10–11–66. Cl. 34.
Eastern States Farmers' Exchange, Inc., Springfield, Mass. 707,013, canc. Cl. 46.

Eaton Mfg. Co.: *See*—
Eaton Yale & Towne Inc.
Eaton Yale & Towne Inc., Cleveland, Ohio. 821,137, pub. 10–11–66. Cl. 34.
Eaton Yale & Towne Inc., from Eaton Mfg. Co., Cleveland, Ohio. 821,100, pub. 10–11–66. Cl. 23.
Eaton Yale & Towne Inc., from Eaton Mfg. Co., Cleveland, Ohio. 821,101, pub. 10–11–66. Cl. 23.
Ebcor Mfg. Co.: *See*—
Riner, Theodore H.
Ebnersons Associates, Chelmsford, Mass. 821,161, pub. 10–11–66. Cl. 38.
Edes, Frank, Philadelphia, Pa. 706,934, canc. Cl. 23.
Ekco Products Co., Chicago, Ill. 706,869, canc. Cl. 13.
Ekco Products Co., Chicago, Ill. 706,942, canc. Cl. 23.
El Cajon Valley Citrus Association, El Cajon, to Paramount Citrus Association, Inc., San Fernando, Calif. 226,008, ren. 12–27–66. Cl. 46.
Electrical Mfg. of New York Inc., New York, N.Y. 821,062, pub. 10–11–66. Cl. 21.
Elevator Supplies Co., Inc., Hoboken, N.J., to Montgomery Elevator Co., Moline, Ill. 225,340, ren. 12–27–66. Cl. 21.
Erec Hypo-Allergenic Products Co., St. Louis, Mo. 821,187, pub. 10–11–66. Cl. 42.
Evode Ltd., Stafford, England. 820,971, pub. 10–11–66. Cl. 6.
Excelsior Accordions, Inc., New York, N.Y. 706,960, canc. Cl. 36.
Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 821,150, pub. 10–11–66. Cl. 37.
Fabri-Kal Corp., Kalamazoo, Mich. 821,258, pub. 10–11–66. Cl. 50.
Factor, Max: *See*—
Factor, Max, & Co.
Factor, Max, & Co., d.b.a. Max Factor, Hollywood, Calif. 821,260, pub. 10–11–66. Cl. 51.
Falkenstein, Dr. Liselotte, Roethenbach, near St. Wolfgang, Germany. 820,967, pub. 10–11–66. Cl. 6.
Fantastique Designes, Inc., Los Angeles, Calif. 821,307, pub. 10–11–66. Cl. 100.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt (Main), Germany. 706,802, canc. Cl. 1.
Farm Journal, Inc., Philadelphia, Pa. 821,354. Cl. 38.
Farmers Hybrid Seed Corn Co., Hampton, Iowa. 706,983, canc. Cl. 38.
Fedtro, Inc., Rockville Centre, N.Y. 821,071, pub. 10–11–66. Cl. 21.
Feldman, Betty S., Baltimore, Md. 821,143, pub. 10–11–66. Cl. 36.
Fenner, J. H., & Co., Ltd., Kingston-Upon-Hull, England. 821,138, pub. 10–11–66. Cl. 35.
Ferry-Morse Seed Co., Detroit, Mich. 706,969, canc. Cl. 38.
Filbert, J. H., Inc., Baltimore, Md. 821,368. Cl. 46.
Filbert, J. H., Inc., Baltimore, Md. 821,369. Cl. 46.
Fine Products Corp.: *See*—
Fine Products Co., Inc.
Fine Products Co., Inc., Augusta, Ga., from Fine Products Corp., Augusta, Ga. 821,217, pub. 10–11–66. Cl. 46.
Fitzsimmons, Howind: *See*—
Fitzsimmons, Jeannie B.
Fitzsimmons, Jeannie B., d.b.a. Howind Fitzsimmons, Birmingham, Ala. 821,226, pub. 10–11–66. Cl. 46.
Flex-O-Glass, Inc., d.b.a. Warp Brothers, Chicago, Ill. 820,948, pub. 10–11–66. Cl. 2.
Flint's Inc., Englewood, Ohio. 821,221, pub. 10–11–66. Cl. 46.
Flint's Inc., Englewood, Ohio. 821,305, pub. 10–11–66. Cl. 100.
Floral Gardens Sales Corp., New York, N.Y. 706,819, canc. Cl. 1.
Floral Gardens Sales Corp., New York, N.Y. 706,820, canc. Cl. 1.
Floral Gardens Sales Corp., New York, N.Y. 706,821, canc. Cl. 1.
Floral Gardens Sales Corp., New York, N.Y. 706,822, canc. Cl. 1.
Florists' Transworld Delivery Association, Detroit, Mich. 821,318, pub. 10–11–66. Cl. 101.
FMC Corp.: *See*—
Niagara Sprayer Co.
Folk, Lin, Nashville, Tenn. 821,333, pub. 10–11–66. Cl. 107.
Food Products Co. of America, Chicago, Ill., from Pharmaceutical Laboratories, Inc., Plainfield, N.J. 821,270, pub. 6–21–66. Cl. 51.
Ford Deep Rock Oil Co., Minneapolis, Minn. 821,037, pub. 10–11–66. Cl. 15.
Ford Deep Rock Oil Co., Minneapolis, Minn. 820,994, pub. 10–11–66. Cl. 6.
Fort Dodge Laboratories, Inc., Fort Dodge, Iowa, to American Home Products Corp., New York, N.Y. 427,521, ren. 12–27–66. Cl. 18.
Fort Dodge Laboratories, Inc.: *See*—
American Home Products Corp.
Fort Dodge Laboratories: *See*—
American Home Products Corp.
Foster-Milburn Co., Buffalo, N.Y. 821,380. Cl. 51.
Fostoria Glass Co., Moundsville, W. Va. 222,459, ren. 12–27–66. Cl. 33.
Friedman Hosiery Co., assor. to Friedman Hosiery Corp., to Woventex Inc., New York, N.Y. 422,728, ren. 12–27–66. Cl. 39.
Frill Craft Co.: *See*—
Ackerman, Lilo.
Fruit Fair: *See*—
Meshulam's Inc.
Fruit of the Loom, Inc., New York, N.Y., from Fruit of the Loom, Inc., New York, N.Y. 821,185, pub. 10–11–66. Cl. 42.
Garden Supply Merchandiser, Inc., Towson, Md. 706,974, canc. Cl. 38.
Geeting & Fromm, Inc., Chicago, Ill. 821,248, pub. 10–11–66. Cl. 49.
Geigy Chemical Corp., Ardsley, N.Y. 821,001, pub. 10–11–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 821,002, pub. 10–11–66. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 821,046, pub. 10–11–66. Cl. 18.
Geigy Chemical Corp., Ardsley, N.Y. 820,968, pub. 10–11–66. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 820,993, pub. 10–11–66. Cl. 6.
General Dry Batteries, Inc., Cleveland, Ohio, to P. R. Mallory & Co., Inc., Indianapolis, Ind. 220,666, ren. 12–27–66. Cl. 21.
General Experimental Products Corp., Dowagiac, Mich. 820,983, pub. 10–11–66. Cl. 6.
General Experimental Products Corp., Dowagiac, Mich. 820,984, pub. 10–11–66. Cl. 6.
General Items Co., Richmond, Va. 821,255, pub. 10–11–66. Cl. 50.
General Sportcraft Co. Ltd., Bergenfield, N.J. 821,091, pub. 10–11–66. Cl. 22.
General Steel Warehouse Co., Inc., Chicago, Ill. 706,945, canc. Cl. 23.
General Tire & Rubber Co., The, Akron, Ohio. 821,338. Cl. 10.
General Tire & Rubber Co., The, Akron, Ohio. 820,954, pub. 10–11–66. Cl. 2.
Gillette Co., The, d.b.a. The Toni Co., Chicago, Ill. 821,282, pub. 10–11–66. Cl. 51.
Gilman Paper Co., New York, N.Y. 820,958, pub. 10–11–66. Cl. 2.
Ginden Nursery Co.: *See*—
Plant Hybridizers of California.
Glaxo Laboratories Ltd., Greenford, England. 706,891, canc. Cl. 18.
Glidden Co., The: *See*—
Adams & Elting Co.
Goebel, W., Porzellanfabrik Oeslau und Wilhelmfeld, Oeslau, near Coburg, 13 A, Bavaria, Germany. 821,082, pub. 10–11–66. Multiple Class (Classes 28, 38, and 50).
Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. 821,087, pub. 10–11–66. Cl. 22.
Goodwin of California Inc., Berkeley, Calif. 821,136, pub. 10–11–66. Cl. 34.
Grace, W. R., & Co.: *See*—
Ambrosia Chocolate Co.
Yestal Chemical Co.
Great Western Toy Co., Inc., Portland, Oreg. 706,921, canc. Cl. 22.
Greif, Francis, London, England. 821,149, pub. 10–11–66. Cl. 37.
Grossman Music Corp., Cleveland, Ohio, from Mills Music, Inc., New York, N.Y. 821,147, pub. 10–11–66. Cl. 37.
Gruen, Paul J., West Concord, Mass. 821,375. Cl. 50.
Gumpert, S., Co., Inc., Brooklyn, N.Y. 226,218, ren. 12–27–66. Cl. 46.
Guthals, Al, Clovis, N. Mex. 707,053, canc. Cl. 26.
Hall Ski-Lift Co., Inc., Watertown, N.Y. 821,104, pub. 10–11–66. Cl. 23.
Hallcraft Homes, Inc., Scottsdale, Ariz. 821,315, pub. 10–11–66. Cl. 101.
Haloid Co., The, Xerox Corp., Rochester, N.Y. 546,414. Am. 7(d). Cl. 101.
Halo Sales Corp., San Francisco, Calif. 821,030, pub. 10–11–66. Cl. 15.
Hampton House Coffee Corp., Queens, N.Y. 707,018, canc. Cl. 46.
Harlingen Canning Co.: *See*—
Butt, H. E., Grocery Co.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 821,056, pub. 10–11–66. Cl. 19.
Harry and David, Medford, Oreg. 821,364. Cl. 46.
Harvestall Industries, Inc., New Hampton, Iowa. 821,124, pub. 10–11–66. Cl. 26.
Hat Corp. of America: *See*—
Crofut & Knapp Co., The.
Hat Institute, The, Philadelphia, Pa. 821,350. Cl. 38.
Hazard Mfg. Co., Wilkes-Barre, Pa., to The Okonite Co., Passaic, N.J. 225,072, ren. 12–27–66. Cl. 21.
Helco, Inc., Stroudsburg, Pa. 820,991, pub. 10–11–66. Cl. 6.
Helme Products, Inc., New York, N.Y. 821,040, pub. 10–11–66. Multiple Class (Classes 17 and 46).
Hills Bros. Coffee, Inc., San Francisco, Calif. 821,230, pub. 10–11–66. Cl. 46.
Hills Bros. Coffee, Inc., San Francisco, Calif. 821,231, pub. 10–11–66. Cl. 46.
Hills Bros. Coffee, Inc., San Francisco, Calif. 821,232, pub. 10–11–66. Cl. 46.
Hilman Equipment Co., Inc., Sea Girt, N.J. 821,052, pub. 10–11–66. Cl. 19.
Hilton Credit Corp., d.b.a. Carte Blanche, Los Angeles, Calif. 707,017, canc. Cl. 46.
Holley Carburetor Co., Warren, Mich. 706,937, canc. Cl. 23.
Homesmaster Publications, Inc., Jamaica, N.Y. 706,981, canc. Cl. 38.
Honest Charley, Inc., Chattanooga, Tenn. 821,111, pub. 10–11–66. Cl. 23.
Hopkins, Mrs. Thornton, d.b.a. Thornton Hopkins Chemicals, Nashville, Tenn. 820,978, pub. 10–11–66. Cl. 6.
Hopkins, Thornton, Chemicals: *See*—
Hopkins, Mrs. Thornton.
Hospitality Motor Inns, Cleveland, Ohio. 821,298, pub. 10–11–66. Cl. 100.

Heat Pajamas, Inc., New York, N.Y. 821,174, pub. 10–11–66. Cl. 39.
Hemigant, Inc., New York, N.Y. 821,272, pub. 10–11–66. Cl. 51.
Houghton, E. F., & Co., Philadelphia, Pa. 222,255, ren. 12–27–66. Cl. 52.
House of James: *See*—
Whitlock, James J.
Hubbell, Harvey, Inc., Bridgeport, Conn. 821,072, pub. 10–11–66. Cl. 21.
Hudnut, Richard: *See*—
Dubarry Perfumery Co., Ltd., The.
Hudnut, Richard, Morris Plains, N.J. 821,376. Cl. 51.
Humble Oil & Refining Co.: *See*—
American Hard Rubber Co.
Humble Oil & Refining Co., Houston, Tex. 820,988, pub. 10–11–66. Cl. 6.
Humphreys, J. P., & Co. Thomas J. Lipton, Inc., Englewood Cliffs, Calif. 29,592. Am. 7(d). Cl. 46.
Hunt Foods and Industries, Inc., d.b.a. Hunt-Wesson Foods, Fullerton, Calif. 821,238, pub. 10–11–66. Cl. 46.
Hunt-Wesson Foods: *See*—
Hunt Foods and Industries, Inc.
Idaho Springs Trout Co., Buhl, Idaho. 821,219, pub. 10–11–66. Cl. 46.
Industrial Plastics & Chemicals: *See*—
Rae, James F.
Industrial National Bank of Rhode Island, Providence, R.I. 821,383. Cl. 101.
Industrial Publishing Corp., The: *See*—
Pittsburgh Railways Co.
Industrias Procesa, S.A. de C.V., Monterrey, Mexico. 821,015, pub. 10–11–66. Cl. 12.
Industrias Procesa S.A. de C.V., Monterrey, Mexico. 821,025, pub. 10–11–66. Cl. 13.
Ingber, Inc.: *See*—
Ingber & Co.
Ingber & Co. to Ingber, Inc., Philadelphia, Pa. 425,749, ren. 12–27–66. Cl. 3.
Inland Controls, Inc., Boston, Mass. 821,063, pub. 10–11–66. Multiple Class (Classes 21 and 26).
Institute For Scientific Information, Inc., Philadelphia, Pa. 821,154, pub. 10–11–66. Cl. 38.
Institutional Industries, Inc., Cincinnati, Ohio. 821,206, pub. 10–11–66. Cl. 44.
International Battery, Inc., Schiller Park, Ill. 821,076, pub. 10–11–66. Cl. 21.
Interstate Container Corp., New York, NY. 820,950, pub. 10–11–66. Cl. 2.
Intner, William, Co., Inc., New York, to William Intner Co., Inc., Glendale, N.Y. 425,128, ren. 12–27–66. Cl. 32.
Imperial Chemical Industries Ltd., London, England. 820,977, pub. 10–11–66. Cl. 6.
Imperial Beading Corp.: *See*—
Blue Jay Mfg. Co.
Blue Ridge Manufacturers, Inc.
Jarman-Williamson Co., Portland, Oreg. 821,086, pub. 10–11–66. Cl. 22.
Jensen, Lehr, & Sons, Inc., Hood River, Oreg. 821,083, pub. 10–11–66. Cl. 22.
Jersey Carpet Corp., Clifton, N.J. 821,193, pub. 10–11–66. Cl. 42.
Johnson's, Howard, Motor Lodges, Inc., Wollaston, Mass. 821,396, pub. 10–11–66. Cl. 100.
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Miyakojima-ku, Osaka, Japan. 821,262, pub. 10–11–66. Cl. 51.
Kanegafuchi Spinning Co., Ltd.: *See*—
Kanegafuchi Boseki Kabushiki Kaisha.
Kasar Co., Niles, Ill. 821,044, pub. 10–11–66. Cl. 18.
Kasar Laboratories, Niles, Ill. 821,341. Cl. 18.
Kay & Co., Ltd., Bolton, Lancashire, England. 821,033, pub. 10–11–66. Cl. 13.
Kellogg Co., Battle Creek, Mich. 821,314, pub. 10–11–66. Cl. 101.
Kendall Co., The, Walpole, Mass. 821,194, pub. 10–11–66. Cl. 42.
Kennametal Inc., Latrobe, Pa. 821,113, pub. 10–11–66. Cl. 23.
Kiddie Products, Inc., Squantum, Mass. 821,092, pub. 10–11–66. Cl. 22.
Kingston Products Co., Skokie, Ill. 821,148, pub. 10–11–66. Cl. 37.
Kistler Instrument Corp., Clarence, N.Y. 821,065, pub. 10–11–66. Multiple Class (Classes 21 and 26).
Klein, D., & Son, Inc., Hackensack, N.J. 821,184, pub. 10–11–66. Cl. 41.
Knott Hotels Corp., New York, N.Y. 821,310, pub. 10–11–66. Cl. 100.
Kohnstamm, H., & Co., Inc., New York, N.Y. 820,986, pub. 10–11–66. Cl. 6.
Kohr, Luther, Enterprises, Clearwater, Fla. 745,150, canc. Cl. 38.
Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Cape Province, Republic of South Africa. 821,246, pub. 10–11–66. Cl. 47.
Kreider-Creveling Shoe Co.: *See*—
Tedcastle, A. W., & Co.
L.C.S. Enterprises, Inc., Dallas, Tex. 706,928, canc. Cl. 22.
Laboratories du Dr. V. A. Oneskiw, and/or Beauty Seal: *See*—
Oneskiw, Dr. Vladimir A.
Lakeside Industries, Inc., Minneapolis, Minn. 821,079, pub. 10–11–66. Cl. 22.
Lancer Music, Inc., Philadelphia, Pa. 706,961, canc. Cl. 36.
Lan-O-Sheen, Inc., St. Paul, Minn. 821,280, pub. 10–11–66. Cl. 51.
Lawn & Grass Seeds, Inc., Buffalo, N.Y. 706,826, canc. Cl. 1.
Lawn & Grass Seeds, Inc., Buffalo, N.Y. 706,827, canc. Cl. 1.
Lee Mfg. Co.: *See*—
Lee, Oscar C.
Lee, Oscar C., d.b.a. Lee Mfg. Co., River Falls, Wis. 821,098, pub. 10–11–66. Cl. 23.
Lehigh Valley Industries, Inc., New York, N.Y. 821,078, pub. 10–11–66. Cl. 21.
Lerner Laboratories, Inc., Greenwich, Conn. 821,209, pub. 10–11–66. Cl. 44.
Les Parfums Worth de Paris, Inc., New York, N.Y. 821,277, pub. 10–11–66. Cl. 51.
Lever Brothers Co., New York, N.Y. 821,240, pub. 10–11–66. Cl. 46.
Lever Brothers Co., New York, N.Y. 821,241, pub. 10–11–66. Cl. 46.
Lever Brothers Co., New York, N.Y. 821,242, pub. 10–11–66. Cl. 46.
Lewis, Tillie, Foods, Inc., Stockton, Calif. 821,270. Cl. 46.
Limestone Products Corp. of America, Newton, N.J. 817,243, cor. Cl. 12.
Lintner, Anton, d.b.a. Sportschuhfabrikation Anton Lintner, Mollin, Austria. 821,081, pub. 10–11–66. Cl. 22.
Lionel Toy Corp., The, Wilmington, Del. 821,142, pub. 10–11–66. Cl. 36.
Lipton, Thomas J., Inc.: *See*—
Humphreys, J.
Li-Zain Products: *See*—
Watson, Samuel T.
Lorain Journal Co., The, Lorain, Ohio. 821,159, pub. 10–11–66. Cl. 38.
Lowell Wholesale Drug, Inc., Lowell, Mass. 821,384. Cl. 101.
Lowenbaum, R., Mfg. Co., St. Louis, Mo. 821,176, pub. 10–11–66. Cl. 39.
Lozier Inc., Kansas City, Mo. 821,278, pub. 10–11–66. Cl. 51.
Lynnfield Fabrics Inc., Boston, Mass. 821,186, pub. 10–11–66. Cl. 42.
MacDonald, E. F., Stamp Co., Dayton, Ohio. 821,311, pub. 7–9–63. Cl. 101.
MacDonald, E. F., Stamp Co., Dayton, Ohio. 821,312, pub. 4–16–63. Cl. 101.
MacDonald, E. F., Stamp Co., Dayton, Ohio, from Consumers Trading Stamp Corp., Chicago, Ill. 821,313, pub. 6–25–63. Cl. 101.
Madeleine de Martel Cosmetics: *See*—
Sherman, Robert M.
Madison, Dolly, Foods, Inc., Louisville, Ky. 820,938, pub. 10–11–66. Multiple Class (Classes 1 and 10).
Mallinckrodt Chemical Works, St. Louis, Mo. 820,970, pub. 10–11–66. Cl. 6.
Mallory, P. R., & Co., Inc.: *See*—
General Dry Batteries, Inc.
Mammoth Plastics, Inc., Clinton, Mass. 820,951, pub. 10–11–66. Cl. 2.
Marathon Oil Co., Findlay, Ohio. 821,328, pub. 10–11–66. Cl. 103.
Marx, Louis, & Co., Inc., New York, N.Y. 821,088, pub. 10–11–66. Cl. 22.
Massey-Ferguson Ltd., Toronto, Ontario, Canada. 820,969, pub. 10–11–66. Cl. 6.
Masson, Paul, and Paul Masson Vineyards: *See*—
Masson, Paul, Inc.
Masson, Paul, Inc., d.b.a. Paul Masson and Paul Masson Vineyards, San Francisco, Calif. 821,244, pub. 10–11–66. Cl. 47.
Mattel, Inc., Hawthorne, Calif. 821,093, pub. 10–11–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 821,094, pub. 10–11–66. Cl. 22.
Melville Shoe Corp., New York, N.Y. 821,177, pub. 10–11–66. Cl. 39.
Merle, Amy, Co., Havertown, Pa. 821,269, pub. 10–11–66. Cl. 51.
Meshulam's Inc., d.b.a. Fruit Fair, Los Angeles, Calif. 821,222, pub. 10–11–66. Cl. 46.
Milkmaid Inc., New York, N.Y. 821,381. Cl. 51.
Miller, Polk, Products Corp., Richmond, Va. 223,439, ren. 12–27–66. Cl. 18.
Miller Publishing Co., The, Minneapolis, Minn. 821,353. Cl. 38.
Mills Music, Inc.: *See*—
Grossman Music Corp.
Minnesota Mining and Mfg. Co.: *See*—
Crocker-McElwain Co.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 821,107, pub. 10–11–66. Cl. 23.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 821,108, pub. 10–11–66. Cl. 23.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 821,145, pub. 10–11–66. Cl. 36.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 821,337. Cl. 7.
Mishan, E., & Sons, New York, N.Y. 820,962, pub. 10–11–66. Multiple Class (Classes 3, 37, and 41).
Mitchell, Katherine K., d.b.a. Kay Mitchell Designs, Rancho Santa Fe, Calif. 821,032, pub. 10–11–66. Cl. 13.
Mitchell, Kay, Designs: *See*—
Mitchell, Katherine K.
Mizell, H. W., d.b.a. Zonic Humus Co., Pine Bluff, Ark. 821,009, pub. 10–11–66. Cl. 10.
Mogen David Food Products, Inc., Chicago, Ill. 821,215, pub. 10–11–66. Cl. 46.
Molalla Forest Products Co., Cloverdale, Calif. 706,866, canc. Cl. 10.
Monsanto Co., St. Louis, Mo. 820,943, pub. 10–11–66. Cl. 1.
Montgomery Elevator Co.: *See*—
Elevator Supplies Co., Inc.
Mood Enterprises: *See*—
Otto, Herbert A.

Moore, Benjamin, & Co., New York, N.Y. 223,660, ren. 12–27–66. Cl. 16.
Moreno, S.A., Cordoba, Spain. 821,216, pub. 10–11–66. Cl. 46.
Motorists Insurance Agency, Inc., Columbus, Ohio. 821,325, pub. 10–11–66. Cl. 102.
Movado Watch Agency, Inc., New York, N.Y. 821,125, pub. 10–11–66. Cl. 27.
Mud Control Laboratories, Inc., Oklahoma City, Okla. 706,858, canc. Cl. 6.
Mud Control Laboratories, Inc., Oklahoma City, Okla. 706,860, canc. Cl. 6.
Mud Control Laboratories, Inc., Oklahoma City, Okla. 706,861, canc. Cl. 6.
Muriel's, Dorothy: *See*—
Brigham's Inc.
Myers, Carl J., d.b.a. No-Buf Products, St. Louis, Mo. 707,046, canc. Cl. 52.
Myers, F. E., & Bro. Co., The: *See*—
Myers, F. E., & Bro.
Myers, F. E., & Bro., to The F. E. Myers & Bro. Co., Ashland, Ohio. 60,109 ren. 12–27–66. Cl. 23.
McDonald, E. F., Co., The, Dayton, Ohio. 821,326, pub. 10–11–66. Cl. 102.
McDougall-Butler Co., Inc., Buffalo, N.Y. 821,038, pub. 10–11–66. Cl. 16.
McGraw-Hill, Inc., New York, N.Y. 821,336. Cl. 38.
Nassau Industrial Uniform Service, Inc., Freeport, N.Y. 821,300, pub. 10–11–66. Cl. 100.
Nassau Industrial Uniform Service, Inc., Freeport, N.Y. 821,301, pub. 10–11–66. Cl. 100.
Nation Hill Co.: *See*—
Sherman, David, Corp.
National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 821,251, pub. 10–11–66. Cl. 49.
National Distillers Products: *See*—
National Distillers and Chemical Corp.
National Fabric and Finishing Co., Boston, Mass., to Turner Halsey Co., Inc., New York, N.Y. 221,219, ren. 12–27–66. Cl. 42.
National Fire Protection Association International, Boston, Mass. 821,308, canc. Cl. 100.
National Grange Mutual Insurance Co., Keene, N.H. 821,323, pub. 10–11–66. Cl. 102.
National Lead Co., New York, N.Y. 423,918, ren. 12–27–66. Cl. 14.
National Sanitary Laboratories, Inc., Chicago, Ill. 821,374. Cl. 50.
National Service Industries Inc., Atlanta, Ga. 821,385. Cl. 101.
Neiman-Marcus Co., Dallas, Tex. 707,021, canc. Cl. 46.
Nelco Corp., Kent, Wash. 821,064, pub. 10–11–66. Cl. 21.
Nelson Laboratories, Inc., Hyattsville, Md. 706,955, canc. Cl. 32.
Newey Bros. Ltd., Birmingham, England. 821,180, pub. 10–11–66. Cl. 40.
Niagara Sprayer Co., Middleport, to FMC Corp., New York, N.Y. 224,515, ren. 12–27–66. Cl. 6.
No-Buf Products: *See*—
Myers, Carl J.
Norcross, Inc., New York, N.Y. 821,153, pub. 10–11–66. Cl. 38.
Norcross, Inc., New York, N.Y. 821,349. Cl. 38.
Noreen, Inc., Denver, Colo. 707,039, canc. Cl. 51.
Noreen, Inc., Denver, Colo. 707,040, canc. Cl. 51.
Northrup, King & Co., Minneapolis, Minn. 706,831, canc. Cl. 1.
Northwest Paper Co., The, Cloquet, Minn. 821,151, pub. 10–11–66. Cl. 37.
Nutting Truck and Caster Co., Faribault, Minn. 821,057, pub. 10–11–66. Cl. 19.
Odell Co., Inc., The, New York, N.Y. 821,266, pub. 10–11–66. Cl. 51.
Okonite Co., The: *See*—
Hazard Mfg. Co.
Old Pal, Inc., Lititz, Pa. 821,085, pub. 10–11–66. Cl. 22.
Oneskiw, Dr. Vladimir A., d.b.a. Laboratories du Dr. V. A. Oneskiw, and/or Beauty Seal, Montreal, Quebec, Canada. 821,295, pub. 10–11–66. Cl. 52.
Original Toy Corp., Brooklyn, N.Y. 821,343. Cl. 22.
Otis Elevator Co., New York, N.Y. 222,775, ren. 12–27–66. Cl. 15.
Paddock of California, Inc., Colonie, N.Y. 821,017, pub. 10–11–66. Cl. 12.
Paper Industry Management Association, Des Plaines, Ill. 821,347. Cl. 38.
Paramount Citrus Association, Inc.: *See*—
El Cajon Valley Citrus Association.
Party-Tyme Products, Inc., New York, N.Y. 821,212, pub. 10–11–66. Cl. 45.
Pendelfin Studios Ltd., Burnley, Lancaster, England. 821,254, pub. 10–11–66. Cl. 50.
Permutit Co., The, New York, N.Y., to Ritter Pfaudler Corp., Rochester, N.Y. 424,426, ren. 12–27–66. Cl. 23.
Petrx Corp., d.b.a. Vetev Laboratories, Chicago, Ill. 820,980, pub. 10–11–66. Cl. 6.
Pfaudler, Ritter, Corp.: *See*—
Permutit Co., The.
Pfizer, Chas., & Co., Inc., New York, N.Y. 821,045, pub. 10–11–66. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 821,378. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 821,379. Cl. 51.
Pharmaceutical Laboratories, Inc., Plainfield, N.J. 821,267, pub. 10–11–66. Cl. 51.
Pharmaceutical Laboratories, Inc.: *See*—
Food Products Co. of America.
Pharmaceutical Laboratories, Inc., Plainfield, N.J. 821,339. Cl. 18.
Pittsburgh Chemical Laboratory: *See*—
Schmidt, Lois R.
Pittsburgh Plate Glass Co.: *See*—
United States Gutta Percha Paint Co.
Pittsburgh Railways Co., Pittsburgh, Pa., from The Industrial Publishing Corp., Cleveland, Ohio. 821,346. Cl. 38.
Plant Hybridizers of California, d.b.a. Ginden Nursery Co., Sebastopol, Calif. 706,805, canc. Cl. 1.
Plaza Barber and Beauty Supply, Inc., Washington, D.C. 821,134, pub. 10–11–66. Cl. 32.
Pollard Ball & Roller Bearing Corp.: *See*—
Pollard Bearings Corp.
Pollard Bearings Corp., from Pollard Ball & Roller Bearing Corp., New York, N.Y. 821,096, pub. 10–11–66. Cl. 23.
Pressed and Welded Steel Products Co., Inc., Long Island City, N.Y. 226,798, ren. 12–27–66. Cl. 32.
Price, John E., d.b.a. Surfboards Hawaii, Encinitas, Calif. 821,344. Cl. 22.
Prime Mfg. Co., Lynn, Mass. 706,832, canc. Cl. 1.
Prince, L. M., Co., Cincinnati, Ohio. 821,120, pub. 10–11–66. Cl. 26.
Procter & Gamble Co., The, Cincinnati, Ohio. 821,175, pub. 10–11–66. Cl. 39.
Projects Unlimited, Inc., Dayton, Ohio. 821,054, pub. 10–11–66. Cl. 19.
Puerto Rican Corp.: *See*—
Puerto Rico Distillers, Inc.
Puerto Rico Distillers, Inc., Puerto Rican Corp., d.b.a. Barcelo Marques & Co., Arecibo, Puerto Rico. 821,373. Cl. 49.
Pulse, Inc., The, New York, N.Y. 821,158, pub. 10–11–66. Cl. 38.
Organic Compost Corp., Germantown, Wis. 821,007, pub. 10–11–66. Cl. 10.
Organic Compost Corp., Germantown, Wis. 821,008, pub. 10–11–66. Cl. 10.
Ostermeier, Donald E., d.b.a. Apex Engineering Co., Naperville, Ill. 821,285, pub. 10–11–66. Cl. 52.
Otto, Herbert A., Salt Lake City, Utah. 821,256, pub. 10–11–66. Cl. 50.
R & J Corp., Ogden City, Utah. 821,363. Cl. 46.
Rae, James F., d.b.a. Industrial Plastics & Chemicals, Oakland, Calif. 706,803, canc. Cl. 1.
Rapid-American Corp., New York, N.Y., from Joseph H. Chen & Sons, Inc., New York, N.Y. 821,166, pub. 10–11–66. Cl. 39.
Rarolite Chemical Co. Inc.: *See*—
Velveray Corp.
Rawlplug Co., Inc., The, New Rochelle, N.Y. 706,943, canc. Cl. 23.
Regal Shirt Corp., New York, N.Y. 706,991, canc. Cl. 39.
Reliance Products Sales Corp., Woonsocket, R.I. 706,922, canc. Cl. 22.
Renard Linoleum and Rug Co., St. Louis, Mo. 821,196, pub. 10–11–66. Cl. 42.
Revlon, Inc., New York, N.Y. 821,264, pub. 10–11–66. Cl. 51.
Revlon, Inc., New York, N.Y. 821,265, pub. 10–11–66. Cl. 51.
Rexall Chemical Co.: *See*—
Rexall Drug and Chemical Co.
Rexall Drug and Chemical Co., d.b.a. Rexall Chemical Co., Los Angeles, Calif. 820,945, pub. 10–11–66. Cl. 1.
Rexall Drug Co.: *See*—
Rexall Drug and Chemical Co.
Rexall Drug and Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 821,207, pub. 10–11–66. Cl. 44.
Rexall Drug and Chemical Co., d.b.a. Vanda Cosmetics, Los Angeles, Calif. 821,287, pub. 10–11–66. Cl. 52.
Rhodes, M. H., Inc., Hartford, Conn. 530,597. Cl. 21.
Rhodes, M. H., Inc., Hartford, Conn. 545,089, cor. Cl. 26.
Rhodes, M. H., Inc., Hartford, Conn. 782,513. Am. 7(d). Cl. 26.
Rig-A-Lite Co. of Texas, Inc., The, Houston, Tex. 821,069, pub. 10–11–66. Cl. 21.
Riner, Theodore H., d.b.a. Ebcor Mfg. Co., Bakersfield, Calif. 426,739, ren. 12–27–66. Cl. 22.
Robosonics, Inc., Bronx, N.Y. 821,068, pub. 10–11–66. Cl. 21.
Rocks, Louis J., Wethersfield, Conn. 821,140, pub. 10–11–66. Cl. 36.
Rockwell-Standard Corp., Pittsburgh, Pa. 821,055, pub. 10–11–66. Cl. 19.
Rodale Press, Inc., Emmaus, Pa. 821,351. Cl. 38.
Roneo-Neopost Ltd., Richmond, Surrey, England. 821,110, pub. 10–11–66. Cl. 23.
Ronzoni Macaroni Co., Inc., Long Island City, N.Y. 821,366. Cl. 46.
Rose, Phil, of California, Inc., Los Angeles, Calif. 821,171, pub. 10–11–66. Cl. 39.
Rose, Phil, of California, Inc., Los Angeles, Calif. 821,172, pub. 10–11–66. Cl. 39.
Roses, Shirley, Jersey City, N.J. 821,386. Cl. 107.
Royal Castle Systems, Inc., Miami, Fla. 821,211, pub. 10–11–66. Cl. 45.
Rubber Mfg. Association, Inc., The, New York, N.Y. 821,302, pub. 10–11–66. Cl. 100.
Rushelle Agency, Inc., Detroit, Mich. 821,157, pub. 10–11–66. Cl. 38.
Russell, Carl D., Muskogee, Okla. 821,089, pub. 10–11–66. Cl. 22.
Russell, Carl D., Muskogee, Okla. 821,090, pub. 10–11–66. Cl. 22.
S.A. Etablissements A. Van Haute-Vercauteren, Hamme Durme, Belgium. 706,862, canc. Cl. 7.
Salisbury, Arthur L., Costa Mesa, Calif. 821,296, pub. 10–11–66. Cl. 100.
Samsonite Corp., Denver, Colo. 820,963, pub. 10–11–66. Cl. 3.
San Juan Chemical Co., Seattle, Wash. 821,010, pub. 10–11–66. Cl. 10.

Sauer, C. F., Co., The, Richmond, Va. 821,227, pub. 10–11–66. Cl. 46.
Savage Laboratories, Inc., Bellaire, Tex. 821,043, pub. 10–11–66. Cl. 18.
Schecter, Herman J.: *See*—
Sommers Plastic Products Co.
Schecter, Herman J., d.b.a. Sommers Plastic Products Co., New York, N.Y. 706,824, canc. Cl. 1.
Schenley Distillers, Inc., New York, N.Y. 821,247, pub. 10–11–66. Cl. 49.
Schieffelin & Co., New York, N.Y. 821,252, pub. 10–11–66. Cl. 49.
Schmidt, Karl W., Nuremberg, Germany. 706,898, canc. Cl. 18.
Schmidt, Lois R., d.b.a. Pittsburgh Chemical Laboratory, Pittsburgh, Pa. 706,843, canc. Cl. 4.
Schmidt, Robert C., d.b.a. Cascade Carbonating Co., St. Louis, Mo. 821,361. Cl. 45.
Scripto, Inc., Atlanta, Ga. 820,995, pub. 10–11–66. Cl. 6.
Seaboard-Somis Lemon Association: *See*—
Somis Lemon Association.
Seagram, Joseph E., & Sons, Inc., d.b.a. Calvert Distilling Co., New York, N.Y. 821,249, pub. 10–11–66. Cl. 49.
Seagram, Joseph E., & Sons, Inc., d.b.a. Calvert Distilling Co., New York, N.Y. 821,250, pub. 10–11–66. Cl. 49.
Sears, Roebuck and Co., Chicago, Ill. 706,946, canc. Cl. 23.
See, Charlie, and Associates: *See*—
See, Charlie.
See, Charlie, d.b.a. Charlie See & Associates, Hollywood, Calif. 821,319, pub. 10–11–66. Cl. 101.
See, Charlie, d.b.a. Charlie See & Associates, Hollywood, Calif. 821,320, pub. 10–11–66. Cl. 101.
See, Charlie, d.b.a. Charlie See & Associates, Hollywood, Calif. 82,321, pub. 10–11–66. Cl. 101.
Sektkellerei Carstens KG., Neustadt, Weinstrasse, Germany. 821,245, pub. 10–11–66. Cl. 47.
Shake Break, Inc., Minneapolis, from The Cornelius Co., Anoka, Minn. 821,214, pub. 10–11–66. Cl. 46.
Sheffield Watch Inc., New York, N.Y. 821,126, pub. 10–11–66. Cl. 27.
Sherman, David, Corp., d.b.a. Nation Hill Co., St. Louis, Mo. 821,372. Cl. 49.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 821,281, pub. 10–11–66. Cl. 51.
Shields Slipper Corp., Bombay, N.Y. 821,178, pub. 10–11–66. Cl. 39.
Shur-Lok Corp., Santa Ana, Calif. 821,019, pub. 10–11–66. Cl. 12.
Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M." Nuits-St-Georges, Code d'Or, France. 821,243, pub. 10–11–66. Cl. 47.
Somis Lemon Association to Seaboard-Somis Lemon Association, Oxnard, Calif. 427,890, ren. 12–27–66. Cl. 46.
Somis Lemon Association to Seaboard-Somis Lemon Association, Oxnard, Calif. 428,548, ren. 12–27–66. Cl. 46.
Sonneborn, L. Sons, Inc., to Witco Chemical Co., Inc., New York, N.Y. 422,558, ren. 12–27–66. Cl. 51.
Sonotone Corp., Elmsford, N.Y. 821,210, pub. 10–11–66. Cl. 44.
Southern Champion Tray Co., Chattanooga, Tenn. 820,957, pub. 10–11–66. Cl. 2.
Southwest By-Products, Inc., Springfield, Mo. 821,213, pub. 10–11–66. Cl. 46.
Southwestern Drug Corp., d.b.a. Tru-Lab Products, Dallas, Tex. 821,342. Cl. 18.
Southworth Co., West Springfield, Mass. 29,034, ren. 12–27–66. Cl. 37.
Southworth Co., West Springfield, Mass. 57,545, ren. 12–27–66. Cl. 37.
Southworth Co., West Springfield, Mass. 57,570, ren. 12–27–66. Cl. 37.
Spray Products Corp., Camden, N.J. 821,099, pub. 10–11–66. Cl. 23.
Spray Products Corp., Camden, N.J. 820,979, pub. 10–11–66. Cl. 6.
Spezialchemie Gesellschaft mit beschrankter Haftung & Co., Arzneimittelfabrik, Munich, Germany. 821,041, pub. 10–11–66. Cl. 18.
Spezialchemie Gesellschaft mit beschrankter Haftung & Co., Arzneimittelfabrik, Munich, Germany. 821,042, pub. 10–11–66. Cl. 18.
Spinnerin Yarn Co., Inc., New York, N.Y. 821,198, pub. 10–11–66. Cl. 43.
Spinnerin Yarn Co., Inc., South Hackensack, N.J. 821,199, pub. 10–11–66. Cl. 43.
Sportschuhfabrikation Anton Lintner: *See*—
Lintner, Anton.
Standard Food Products Corp., Long Island City, N.Y. 821,253, pub. 10–11–66. Cl. 49.
Staedtler, J. S., Nurnberg, Germany. 706,963, canc. Cl. 37.
Stanley, Herbert, Co., Inc., The, Winnetka, Ill. 821,335. Cl. 6.
Stanley, John T., Co., Inc., New York, N.Y. 821,382. Cl. 52.
Stenospeed, Inc., Jacksonville, Fla. 821,331, pub. 10–11–66. Cl. 107.
Stensel Products, Chicago, Ill. 821,278, pub. 10–11–66. Cl. 51.
Sterling Faucet Co., Morgantown, W. Va. 821,034, pub. 10–11–66. Cl. 13.
Sterling, John, Corp., Richmond, Ill. 821,031, pub. 10–11–66. Cl. 13.
Stoeger Arms Corp., Long Island City, N.Y. 706,864, canc. Cl. 9.
Straub, W. F., & Co., Chicago, Ill. 707,016, canc. Cl. 46.
Sun Drop Sales Corp. of America, St. Louis, Mo. 821,362. Cl. 45.
Surfboards Hawaii: *See*—
Price, John E.
Surf Deck, Inc., New York, N.Y. 821,169, pub. 10–11–66. Cl. 39.
Surface Processes Corp., Dallas, Pa. 820,974, pub. 10–11–66. Cl. 6.
Surface Processes Corp., Dallas, Pa. 820,975, pub. 10–11–66. Cl. 6.
Surgitool Inc., Pittsburgh, Pa. 821,208, pub. 10–11–66. Cl. 44.
Swiercz, Stephen J., d.b.a. Bay Window Mfg., Bay City, Mich. 821,016, pub. 10–11–66. Cl. 12.
Talent Management and Promotions, Inc., Chicago, Ill. 821,144, pub. 10–11–66. Cl. 36.
Tann Corp., Detroit, Mich. 821,070, pub. 10–11–66. Cl. 21.
Tap-Master Corp., Ltd., Calgary, Alberta, Canada. 821,139, pub. 10–11–66. Cl. 35.
Taylor, R. Stevenson, & Co., Ltd.: *See*—
Walker, Hiram, & Sons, Ltd.
Technical Publishing Co., Barrington, Ill. 821,352. Cl. 38.
Technique, Inc.: *See*—
Breck, John H., Inc.
Tedcastle, A. W., & Co., to Kreider-Creveling Shoe Co., Boston, Mass. 61,863, ren. 12–27–66. Cl. 39.
Tenneco Chemicals, Inc., New York, N.Y. 820,976, pub. 10–11–66. Cl. 6.
Terry, H. Sue: *See*—
Terry, Robert W.
Terry, Robert W., d.b.a. Columbus Vaccine Co., to H. Sue Terry, d.b.a. The Columbus Vaccine Co., Columbus, Ohio. 423,011, ren. 12–27–66. Cl. 18.
Terrytoons, Inc., New Rochelle, N.Y., to CBS Films Inc., New York, N.Y. 425,600, ren. 12–27–66. Cl. 26.
Tesco Chemicals, Inc., Atlanta, Ga. 821,336. Multiple Class (Classes 6 and 23).
Texaco Inc.: *See*—
Texas Co., The.
Texas Co., The, to Texaco Inc., New York, N.Y. 225,135, ren. 12–27–66. Cl. 15.
Texas Refinery Corp., Fort Worth, Tex. 820,966, pub. 10–11–66. Cl. 5.
Textron, Inc.: *See*—
Continental Optical Co., Inc.
Theodora Wig Corp., New York, N.Y. 821,183, pub. 10–11–66. Cl. 40.
Thomas Collators, Inc., New York, N.Y. 821,102, pub. 10–11–66. Cl. 23.
Thomas Collators, Inc., New York, N.Y. 821,103, pub. 10–11–66. Cl. 23.
Tidy House Products Co., Shenandoah, Iowa. 706,980, canc. Cl. 38.
Tobias Paint Mfg. Co., Cleveland, Ohio. 821,039, pub. 10–11–66. Cl. 16.
Tonic Co., The: *See*—
Gillette Co.
Transmission & Gear Co., The, Dearborn, Mich. 706,933, canc. Cl. 23.
Transogram Co., Inc., New York, N.Y. 706,923, canc. Cl. 22.
Triangle Package Machinery Co., Chicago, Ill. 821,121, pub. 10–11–66. Cl. 26.
Tri-Chem, Inc., West Orange, N.J. 706,883, canc. Cl. 16.
True Temper Corp., Cleveland, Ohio. 821,115, pub. 10–11–66. Cl. 23.
Tru-Lab Products: *See*—
Southwestern Drug Corp.
Trylon Inc., Elverson, Pa. 821,060, pub. 10–11–66. Cl. 21.
Turner Halsey Co., Inc.: *See*—
National Fabric and Finishing Co.
Twitchell, E. W., Inc., Philadelphia, Pa. 428,870, ren. 12–27–66. Cl. 42.
Tyburski & Wood, Springfield, Va. 821,303, pub. 10–11–66. Cl. 100.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 821,084, pub. 10–11–66. Cl. 22.
Union Bag Corp.: *See*—
Columbia Bag & Paper Corp.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,185, ren. 12–27–66. Cl. 2.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,186, ren. 12–27–66. Cl. 2.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,189, ren. 12–27–66. Cl. 2.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,191, ren. 12–27–66. Cl. 2.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,192, ren. 12–27–66. Cl. 2.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 57,203, ren. 12–27–66. Cl. 2.
Union Camp Corp.: *See*—
Union Bag & Paper Co., The.
Union Carbide Corp., New York, N.Y. 820,982, pub. 10–11–66. Cl. 6.
Union Carbide Corp., New York, N.Y. 821,204, pub. 10–11–66. Cl. 43.
Union Tank Car Co., Chicago, Ill. 821,129, pub. 10–11–66. Cl. 31.
Union Tank Car Co., Chicago, Ill. 821,130, pub. 10–11–66. Cl. 31.
Union Tank Car Co., Chicago, Ill. 821,131, pub. 10–11–66. Cl. 31.
Union Tank Car Co., Chicago, Ill. 821,132, pub. 10–11–66. Cl. 31.
U.S. Fiber & Plastics Corp., Sterling, N.Y. 706,840, canc. Cl. 2.
United Fruit Co., Boston, Mass. 821,371. Cl. 46.
United Merchants and Mfg., Inc., New York, N.Y. 821,189, pub. 10–11–66. Cl. 42.
United States Gutta Percha Paint Co., Providence, R.I., to Pittsburgh Plate Glass Co., Pittsburgh, Pa. 224,750, ren. 12–27–66. Cl. 16.

United States Jaycees, The, Tulsa, Okla. 821,164, pub. 10–11–66. Cl. 38.
United States Rubber Co., New York, N.Y. 821,345. Cl. 35.
Universal Zonolite Insulation Co., Chicago, Ill., to Concrete Thermal Casings, Inc., Kirkland, Wash. 425,522, ren. 12–27–66. Cl. 12.
Valley Business Aids, Inc., New York, N.Y. 821,152, pub. 10–11–66. Cl. 37.
Vanda Cosmetics: *See*—
Rexall Drug and Chemical Co.
Varley, James, & Sons, Inc., St. Louis, Mo. 820,996, pub. 10–11–66. Cl. 6.
Velveray Corp., New York, N.Y., from Parolite Chemical Co., Inc., Raritan, N.J. 706,845, canc. Cl. 5.
Venetianaire Corp. of America, Yonkers, N.Y. 821,360. Cl. 42.
Vereinigte Glanstoff-Fabriken Aktiengesellschaft, Wuppertal-Elberfeld, Germany. 821,168, pub. 10–11–66. Multiple Class (Classes 39, 42, and 43).
Vestal Chemical Co., St. Louis, Mo., to W. R. Grace & Co., New York, N.Y. 426,932, ren. 12–27–66. Cl. 6.
Vetev Laboratories: *See*—
Petrix Corp.
Villarreal, Elisabeth, Chicago, Ill. 424,693, ren. 12–27–66. Cl. 48.
Vita Plus Corp., Madison, Wis. 821,000, pub. 10–11–66. Cl. 6.
Vita Plus Corp., Madison, Wis. 821,284, pub. 10–11–66. Cl. 46.
Walker, Hiram, & Sons, Ltd., Walkerville, Ontario, Canada, and Detroit, Mich., to R. Stevenson Taylor & Co., Ltd., Dumbarton, Scotland. 56,449, ren. 12–27–66. Cl. 49.
Wampole Laboratories: *See*—
Denver Chemical Mfg. Co., The.
Wanskuck Co., Attleboro, Mass. 820,960, pub. 10–11–66. Cl. 2.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 820,985, pub. 10–11–66. Cl. 6.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 821,233, pub. 10–11–66. Cl. 46.
Warp Bros.: *See*—
Flex-O-Glass, Inc.
Washington Forge, Inc., Englishtown, N.J. 821,109, pub. 10–11–66. Cl. 23.
Washington Mfg. Co., to Washington Mfg. Co., Nashville, Tenn. 234,141, ren. 12–27–66. Cl. 39.
Watson, Samuel T., d.b.a. Li-Zain Products, Chicago, Ill. 707,047, canc. Cl. 52.
Weeks, Evert D.: *See*—
Armand Co., The.
Weevil-Cide Co., The, Kansas City, Mo. 706,851, canc. Cl. 6.
Werner, Richard D., New York, N.Y. 821,018, pub. 10–11–66. Cl. 12.
Westinghouse Electric Corp., Elkridge, Md. 821,074, pub. 10–11–66. Cl. 21.
Westland Aircraft Ltd., Yeovil, Somerset, England. 821,051, pub. 10–11–66. Cl. 19.
West Virginia Pulp and Paper Co., New York, N.Y. 706,841, canc. Cl. 2.
Weyerhaeuser Co., Tacoma, Wash. 821,304, pub. 10–11–66. Cl. 100.
Weyerhaeuser Co., Tacoma, Wash. 821,316, pub. 10–11–66. Cl. 101.
Weyerhaeuser Co., Tacoma, Wash. 821,324, pub. 10–11–66. Cl. 102.
Weyerhaeuser Co., Tacoma, Wash. 821,329, pub. 10–11–66. Cl. 105.
Whitlock, James J., d.b.a. House of James, Indianapolis, Ind. 821,332, pub. 10–11–66. Cl. 107.
Wild, Thos. C. & Sons Ltd., Stoke-on-Trent, England. 821,127, pub. 10–11–66. Cl. 30.
Wilcswood Country Store: *See*—
Wilcswood, Inc.
Wilcswood, Inc., d.b.a. Wilcswood Country Store, Huron, Ohio. 821,254, pub. 10–11–66. Cl. 52.
Wincharger Corp., Sioux City, Iowa. 821,075, pub. 10–11–66. Cl. 21.
Wingfield, James R., d.b.a. Wingfield Laboratories, Appomattox, Va. 821,274, pub. 10–11–66. Cl. 51.
Wingfield Laboratories: *See*—
Wingfield, James R.
Witco Chemical Co., Inc.: *See*—
Sonneborn, L., Sons, Inc.
Wood Conversion Co., St. Paul, Minn. 820,946, pub. 10–11–66. Cl. 1.
Wood Conversion Co., St. Paul, Minn. 821,023, pub. 10–11–66. Cl. 12.
Wood Conversion Co., St. Paul, Minn. 821,024, pub. 10–11–66. Cl. 12.
Wood Conversion Co., St. Paul, Minn. 821,112, pub. 10–11–66. Cl. 23.
Wood Conversion Co., St. Paul, Minn. 821,116, pub. 10–11–66. Cl. 24.
Wood Conversion Co., St. Paul, Minn. 821,133, pub. 10–11–66. Cl. 31.
Wood Conversion Co., St. Paul, Minn. 821,197, pub. 10–11–66. Cl. 42.
Wood Conversion Co., St. Paul, Minn. 821,257, pub. 10–11–66. Cl. 50.
Woolfolk Chemical Works, Ltd.: *See*—
Woolfolk, J. W., Co., Inc., The.
Woolfolk, J. W., Co., Inc., The, to Woolfolk Chemical Works, Ltd., Fort Valley, Ga. 216,506, ren. 12–27–66. Cl. 6.
Wowentex Inc.: *See*—
Friedman Hosiery Co.
Wright Industries: *See*—
Wright, Thomas E.
Wright, Thomas E., d.b.a. Wright Industries, Chicago Ridge, Ill. 820,952, pub. 10–11–66. Cl. 2.
Wright, Thomas E., d.b.a. Wright Industries, Chicago Ridge, Ill. 820,953, pub. 10–11–66. Cl. 2.
Wunderlich Spring Machinery Co., Chicago, Ill. 706,935, canc. Cl. 23.
Xerox Corp.: *See*—
Haloid Co., The.
Zagelow, Guenther P. O., Munich, Germany. 706,972, canc. Cl. 28.
Zimmermann & Jansen G.m.b.H., Duren/Rhineland, Germany. 821,028, pub. 10–11–66. Cl. 13.
Zonic Humus Co.: *See*—
Misell, H. W.
Zynolyte Products Co., Compton, Calif. 821,288, pub. 10–11–66. Cl. 52.

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